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#### Abstract

This report evaluates the U.S. and world sugar markets for 2003-2013 using the Global Sugar Policy Simulation Model. This analysis is based on assumptions about general economic conditions, agricultural policies, population growth, weather conditions, and technological changes.

Both the U.S. and world sugar economies are predicted to improve over the next 10 years after the current over-supply is reduced. World demand for sugar is expected to grow faster than world supply, resulting in Carribean sugar prices gradually increasing from 7.57 cents/lb in 2003 to 8.75 cents/lb in 2013. The U.S. wholesale price of sugar is projected to increase from 25.35 cents/lb in 2003 to 27.0 cents $/ l b$ in 2013, if the United States maintains its sugar programs. The CAFTA agreement is expected to increase U.S. imports slightly, but with little impact on U.S. prices. World trade volumes of sugar are expected to increase throughout the forecast period.


Keywords: sugar, production, exports, consumption, ending stocks

## Highlights

Total world sugar trade is projected to increase by $14.9 \%$ between 2003 and 2013 from 29.6 million metric tons to 34.0 million metric tons. Brazil's exports are projected to increase from 12.4 million metric tons in 2003 to 16.0 million metric tons in 2013. World sugar prices also are projected to increase from 7.57 cents $/ l b$ in 2003 to 8.75 cents $/ \mathrm{lb}$ in 2013. The U.S. domestic wholesale price reached the lowest level in 2000 and should recover slowly for the 2003-2013 period. Sugar price is projected to be 25.35 cents/lb in 2003 and 27.0 cents/lb in 2013 if the U.S. sugar programs are maintained.
U.S. sugar imports are predicted to increase $56.4 \%$ for the 2003-2013 period due to increased sugar imports from Mexico. U.S. sugar consumption is projected to increase $8.8 \%$. Ending stocks are predicted to decrease 5.1\%.

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

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

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

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

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

Most importing countries, including Algeria, China, Japan, and Korea, are predicted to increase their imports for the 2003-2013 period.

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

Won W. Koo and Richard D. Taylor*

## INTRODUCTION

Sugar is produced in over 100 countries worldwide. In most years, over $70 \%$ of world sugar production is consumed domestically, implying that only a small portion of production is traded internationally. A significant share of this trade takes place under bilateral long-term agreements or on preferential terms such as the European Union's (EU) Lome Agreement. Since only a small proportion of world production is traded freely, small changes in production and government policies tend to have large effects on world sugar markets. As a result, sugar prices have been very unstable in the world market.

This report evaluates the U.S. and world sugar industry for 2003-2013 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). The outlook projection is based on an assumption that farm and trade policies adopted by sugar exporting and importing countries remain unchanged.

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

Raw sugar and refined sugar are two different products. They are both traded internationally. Beet sugar producing countries export refined sugar, while cane sugar producing countries export either raw or refined sugar. In recent years, the share of raw sugar in total sugar exports has been about $50 \%$.

## OVERVIEW OF THE WORLD SUGAR INDUSTRY AND SUGAR POLICIES

For the 1999-2003 period, annual global sugar production was approximately 133 million metric tons with about $30 \%$ of production exported from its country of origin. The largest sugar producing region is Brazil, followed by India and the EU (Table 1).

[^0]Table 1. World Sugar Supply and Utilization, 1999 to 2003 Average

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

Per capita sugar consumption was highest in Cuba ( 63 kg ), followed by Australia and Brazil. Per capita sugar consumption in the United States was 33 kg , which was above world average per capita consumption ( 20 kg ). Per capita sugar consumption was lowest in China at 7 kg per capita, but that may increase substantially as per capita income increases. Annual global sugar consumption for the 1999-2003 period was 133 million metric tons.

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

The Caribbean raw sugar price is usually considered to be the world market price for sugar. Except for years with high world market prices, there was a substantial wedge between the U.S. wholesale price of raw sugar and the world market price. Over the last decade, U.S. wholesale prices fluctuated between $\$ 0.22$ and $\$ 0.29$ per pound. World market prices ranged between $\$ 0.06$ per pound and $\$ 0.13$ per pound (Figure 1). Both real Caribbean raw sugar prices and U.S. raw sugar import prices have long-term downward trends.

The volatility of world sugar prices could be due to the nature of supply response to price changes stemming from high fixed costs of sugar production. An increase in sugar production in response to rising sugar prices requires significant investments in processing facilities, and it takes some time until new production capacity becomes available. Once the facilities are in place, they tend to be used at full capacity to spread the fixed costs. Thus, when prices fall, production remains at full capacity. Sugar production is relatively unresponsive to price in the short run.

The United States produces both beet and cane sugar. Cane sugar is produced mainly in Florida, Louisiana, Texas, and Hawaii. Beet sugar is produced largely in the Great Lakes region, Upper Midwest, Great Plains, and far western states. Beet sugar production increased $14 \%$ for the 1991 to 2003 period, while cane sugar production increased $26 \%$ (Figure 2). U.S. total sugar production increased about $19 \%$ from 7.0 million metric tons in 1991 to 8.2 million metric tons in 2003 (Figure 3).
U.S. consumption of sugar also increased $8 \%$ from 8.6 million metric tons in 1991 to 9.2 million metric tons in 2003 (Figure 4). The balance was imported from more than 40 countries. U.S. sugar imports decreased $71 \%$ from 4.5 million metric tons in 1974 to 1.3 million metric tons in 1987 and then increased to an average of 1.4 million metric tons during the 1989 to 2003 period. Under the North American Free Trade Agreement (NAFTA), Mexico can export 260,000 metric tons of sugar to the United States as of October 2000, and its exports to the United States will be unlimited beginning in 2009 when implementation of NAFTA is completed. If the US-Central American Free Trade Agreement, which is an FTA currently with four Central American countries, is ratified by the U.S. Congress, additional sugar imports allowed would initially be 100,000 metric tons, increasing by about 3,000 metric tons per year.

## U.S. Sugar Programs and Policies

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

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

Under the FSRI Act, the sugar loan rate is set at 18 cents per pound for raw cane sugar and 22.9 cents per pound for refined beet sugar. Loans under the FSRI Act become recourse loans if the tariff rate quota (TRQ) is at 1.5 million metric tons or below, regardless of the price. When the TRQ is set above 1.5 million metric tons, the loans are nonrecourse. Under the nonrecourse loan, a processor can forfeit collateral (sugar) to the Commodity Credit Corporation (CCC) instead of loan repayment if market prices fall below the loan rates. Processors who obtain a nonrecourse loan must pay farmers an amount for their sugarbeets and sugarcane that is proportional to the loan value of sugar. This is the same as under previous legislation.

The Uruguay Round Agreement (URA) on agriculture made minor adjustments for sugar trade. U.S. import quotas on sugar were converted into TRQs, implying that a specified amount of sugar can be imported at the lower of two alternative duty rates. The amount of raw cane sugar subject to the lower duty rate must be no less than $1,117,195$ metric tons in a fiscal year. The minimum low-duty import of refined sugar is 22,000 metric tons. The minimum low-duty imports for raw and refined sugar add up to 1.256 million metric short tons raw value of sugar per year. The high duty (about 15.82 cents per pound) is imposed on the amount of sugar imported over the import quota. The first-tier duty ranges from zero to 0.625 cents per pound.

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

The sugar quota has been allocated among more than 40 quota-holding countries, allowing imports of specific quantities of sugar at first-tier duty rates. The quota allocation is based on historical exports to the United States for the 1975 to 1985 period.

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

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

## Domestic and Export Subsidies in the EU, South Africa, and Mexico

The basic tools of the EU's sugar policies are (1) import restrictions with limited free access for certain suppliers; (2) internal support prices that ensure returns to producers for fixed quantities of production and permit the maintenance of refining capacity; and (3) export subsidies for a quantity of domestically produced sugar.

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

Since marketing year 1995, EU subsidized exports of sugar to third-world countries have been limited, in volume and value, under the URA commitments of the EU. However, the EU did not make an export subsidy commitment on its subsidized exports of a quantity of sugar equal to its preferential imports under the Lome Convention.

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

## State Trading Enterprises in Australia, China, and India

Australia's sugar exports are handled by the Queensland Sugar Corporation (QSC), a statutory authority established under the Sugar Industry Act 1991. The QSC is responsible for the domestic marketing and export of $100 \%$ of the raw sugar produced in the state of Queensland, which produces $95 \%$ of the sugar produced in Australia. The QSC supports domestic producers through buyer-seller arrangements, marketing quotas, dual pricing arrangements, and other quasigovernment mechanisms that isolate domestic producers from foreign competition. State trading enterprises (STEs) were not included in the URA. Other countries, including China and India, handle their sugar trade through STEs similar to the QSC.

## OUTLOOK FOR THE WORLD SUGAR INDUSTRY

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

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

## United States

Table 2 shows production, consumption, imports, and ending stocks of sugar for the United States. U.S. sugar production is predicted to increase to 7.8 million metric tons in 2013. Imports are predicted to increase $56.4 \%$ from the 2001-03 average of 1.3 million metric tons to
2.0 million metric tons in 2013, under an assumption that Mexico increases its exports to the United States at NAFTA levels.

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

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

The domestic wholesale price for U.S. sugar is projected to increase from 25.3 cents $/ 1 \mathrm{~b}$ in 2003 to 27.1 cents $/ l \mathrm{~b}$ in 2013 under the current TRQ system. If CAFTA is implemented, the domestic price of sugar would decrease slightly. The United States will increase imports to over $20 \%$ of its domestic sugar consumption. U.S. sugar consumption is predicted to increase $8.8 \%$ from 8.5 million metric tons (the 2001-2003 average) to 9.0 million metric tons in 2013. Ending stocks are also predicted to decrease $5.1 \%$ (Table 2).

## Exporters

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

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

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

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

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

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

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

2001-2003 average to 0.81 million metric tons in 2013. These projections are based on the assumption that the political situation remains the same between the United States and Cuba.

Mexico's production is predicted to increase $17.1 \%$ from 5.1 million metric tons in 2001-2003 to 6.0 million metric tons in 2013. Mexico's exports are predicted to increase to 0.7 million metric tons in 2013, due mainly to its exports to the United States under NAFTA. Sugar consumption is predicted to increase $9.3 \%$ from 5.2 million metric tons in 2001-2003 to 5.7 million metric tons in 2013. Ending stocks are predicted to decrease $47.7 \%$. If Mexico replaces the sugar that is used in soft drinks with HFCS, the excess sugar will likely be exported to the United States under NAFTA.

South Africa's production is predicted to increase $14.8 \%$ from 2.7 million metric tons in 2001-2003 to 3.1 million metric tons in 2013. South Africa's exports are predicted to increase $27.9 \%$ from 1.1 million metric tons in 2001-2003 to 1.5 million metric tons in 2013, due mainly to increased production. Sugar consumption is predicted to increase $3.9 \%$. Ending stocks are predicted to decrease $1.5 \%$.

## Importers

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

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

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

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

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

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

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

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

Egypt's imports are predicted to increase $37.2 \%$ from 1.0 million metric tons in 20012003 to 1.3 million metric tons in 2013, due mainly to increased consumption. Consumption is predicted to increase $21.4 \%$ from 2.3 million metric tons to 2.7 million metric tons in 2013.

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

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

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

## CONCLUDING REMARKS

This report provides an overview of the U.S. and world sugar markets for 2003-2013 using the Global Sugar Policy Simulation Model. The baseline projections are based on a series of assumptions about general economic conditions, agricultural policies, weather conditions, and technological change.

Total world sugar trade is projected to increase by $14.9 \%$ from 29.6 million metric tons in 2003 to 34.0 million metric tons in 2013. The price of Caribbean sugar is expected to increase about $15.6 \%$ from 7.57 cents/lb in 2003 to 8.75 cents $/ \mathrm{lb}$ in 2013 because of faster growth in world consumption of sugar compared to world production. The wholesale price of U.S. sugar is projected to increase $6.8 \%$ from 25.35 cents $/ \mathrm{lb}$ in 2003 to 27.0 cents $/ \mathrm{lb}$ in 2013. If the CAFTA is implemented for 2005 , the U.S. price of sugar would decrease slightly.

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

Imports from all importing countries except the FSU and India are predicted to increase over the forecasting period. China's imports are predicted to increase $65.7 \%$, while Japan's imports are predicted to increase $9.6 \%$. South Korea's imports are predicted to increase $10.5 \%$, while Algeria's imports are predicted to increase $19.9 \%$.
U.S. sugar consumption is predicted to increase $8.8 \%$ for the forecasting period, while production is expected to increase $3.7 \%$. Imports are predicted to increase $56.4 \%$ for the period because of increased sugar from Mexico. However, the U.S. sugar industry could face greater uncertainty mainly because of upcoming free trade agreements with the Western Hemisphere countries and Thailand.

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Figures


Figure 1. United States and World Sugar Price


Figure 2. United States Beet and Cane Sugar Production


Figure 3. United States Sugar Production and Imports


Figure 4. United States Consumption and Ending Stocks


Figure 5. World Sugar Exports by Country


Figure 6. World Sugar Imports by Country, Major Importers


Figure 7. World Sugar Imports by Country, Asian Countries


Figure 8. World Sugar Imports by Country, African Countries

## Appendix

World Sugar Policy Simulation Model

2004 Baseline Solution

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

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

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

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

United States - Area Harvested (1000 acres)

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

United States - Yields (short tons/acre)

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

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

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

United States - Sugar Extraction Rates (percent)

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

United States - Sugar Production (1000 short tons)

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

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

| Variable | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Tariff Rate Quota | 1256 | 1256 | 1256 | 1256 | 1256 | 1256 | 1256 | 1256 | 1256 | 1256 | 1256 |
| Below Quota | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tariff <br> Above Quota | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 | 15.36 |
| Tariff |  |  |  |  |  |  |  |  |  |  |  |

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

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

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

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

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

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

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

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

Canada - Sugar Beet Exogenous Variables

| Variable | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Extraction Rate <br> $(\%)$ | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 | 11.30 |

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption <br> Stocks/Consumpt 10.43 <br> ion | 36.65 | 37.31 | 37.97 | 38.65 | 39.35 | 40.05 | 40.74 | 41.43 | 42.11 | 42.79 |  |


| Mexico - Sugarcane Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production ( 1000 metric tons) |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Area Harvested | 620 | 621 | 622 | 625 | 629 | 632 | 636 | 640 | 644 | 648 | 653 |
| Yield | 73.00 | 73.96 | 74.51 | 74.95 | 75.37 | 75.77 | 76.18 | 76.59 | 76.99 | 77.40 | 77.80 |
| Production | 45289 | 45894 | 46371 | 46858 | 47375 | 47915 | 48469 | 49034 | 49608 | 50190 | 50776 |

Mexico - Sugar Extraction Rates (percent)

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

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption | 48.90 | 48.34 | 47.78 | 47.36 | 47.10 | 47.00 | 46.94 | 46.92 | 46.95 | 47.03 |
| Stocks/Consumpt <br> ion | 18.66 | 17.25 | 16.46 | 15.98 | 15.68 | 15.49 | 15.38 | 15.31 | 15.27 | 15.24 |

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

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

Algeria - Sugar Extraction Rates (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugarbeet | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 | 7.41 |

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

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

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

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

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

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

Australia - Sugar Extraction Rate (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugarcane | 13.30 | 13.30 | 13.30 | 13.30 | 13.30 | 13.30 | 13.30 | 13.30 | 13.30 | 13.30 |

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption <br> Stocks/Consumpt <br> ion | 60.00 | 56.78 | 57.60 | 58.41 | 59.22 | 60.03 | 60.85 | 61.66 | 62.48 | 63.31 |

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Carry-in Stocks | 100 | 100 | 139 | 161 | 176 | 186 | 193 | 199 | 204 | 209 |
| Production | 22400 | 23666 | 24010 | 24454 | 24750 | 25098 | 25495 | 25942 | 26190 | 26538 |
| Net Exports | 12420 | 13844 | 14175 | 14588 | 14820 | 15068 | 15382 | 15723 | 15844 | 16001 |
| Exports | 12420 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| \#N/A |  |  |  |  |  |  |  |  |  |  |
| Imports | 0 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| \#N/A |  |  |  |  |  |  |  |  |  |  |
| Consumption | 9980 | 9783 | 9812 | 9851 | 9920 | 10023 | 10107 | 10213 | 10341 | 10533 |
| Carry-out Stocks | 100 | 139 | 161 | 176 | 186 | 193 | 199 | 204 | 209 | 213 |

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption | 54.50 | 52.82 | 52.41 | 52.07 | 51.90 | 51.91 | 51.85 | 51.91 | 52.09 | 52.59 |
| Stocks/Consumpt 1.00 <br> ion | 1.42 | 1.64 | 1.79 | 1.87 | 1.92 | 1.97 | 2.00 | 2.02 | 2.02 | 2.03 |

China - Area Harvested (1000 hectares)

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

China - Yields (metric tons/hectare)

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

China - Production (1000 metric tons)

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

China - Sugar Extraction Rates (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugarbeets | 10.15 | 10.15 | 10.15 | 10.15 | 10.15 | 10.15 | 10.15 | 10.15 | 10.15 | 10.15 |
| Sugarcane | 9.15 | 9.15 | 9.15 | 9.15 | 9.15 | 9.15 | 9.15 | 9.15 | 9.15 | 9.15 |

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

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

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

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

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

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

Cuba - Sugar Extraction Rate (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugarcane | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 | 10.34 |

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption <br> Stocks/Consumpt <br> ion | 61.10 | 61.55 | 62.25 | 62.97 | 63.65 | 64.33 | 65.03 | 65.72 | 66.39 | 67.03 |

Egypt - Area Harvested (1000 hectares)

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

Egypt - Yields (metric tons/hectare)

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

Egypt - Production (1000 metric tons)

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

Egypt - Sugar Extraction Rates (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugar Beets | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 | 12.75 |
| Sugarcane | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 | 8.20 |

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption <br> Stocks/Consumpt 22.19 <br> ion 322.50 | 32.47 | 32.19 | 32.05 | 32.06 | 32.32 | 32.58 | 32.83 | 33.08 | 33.29 | 33.53 |  |

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| A-Quota | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| B-Quota | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| A plus B Quota | 13669 | 13669 | 13669 | 13669 | 13669 | 13669 | 13669 | 13669 | 13669 | 13669 | 13669 |
| Raw Sugar <br> Equivalent | 14626 | 14626 | 14626 | 14626 | 14626 | 14626 | 14626 | 14626 | 14626 | 14626 | 14626 |

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

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


|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugar Beets | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 |

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita | 40.75 | 40.55 | 40.55 | 40.56 | 40.57 | 40.58 | 40.59 | 40.60 | 40.62 | 40.63 |
| Consumption <br> Stocks/Consumpt <br> ion | 19.02 | 18.88 | 18.79 | 18.76 | 18.76 | 18.76 | 18.77 | 18.77 | 18.78 | 18.78 |

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Carry-in Stocks | 9340 | 5640 | 5322 | 5294 | 5329 | 5371 | 5410 | 5449 | 5489 | 5528 |
| Production | 18800 | 19814 | 20428 | 20831 | 21125 | 21462 | 21722 | 22041 | 22342 | 22633 |
| Net Exports | 1000 | -532 | -549 | -550 | -603 | -604 | -684 | -703 | -741 | -788 |
| Exports | 1000 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| \#N/A |  |  |  |  |  |  |  |  |  |  |
| Imports | 0 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| Consumption | 21500 | 20663 | 21005 | 21346 | 21686 | 22027 | 22367 | 22705 | 23043 | 23382 |
| \#N/A |  |  |  |  |  |  |  |  |  |  |
| Carry-out Stocks | 5640 | 5322 | 5294 | 5329 | 5371 | 5410 | 5449 | 5489 | 5528 | 5567 |

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita | 19.10 | 18.10 | 18.14 | 18.18 | 18.22 | 18.26 | 18.30 | 18.34 | 18.38 | 18.42 |
| Consumption |  |  |  |  |  |  |  |  |  |  |
| Stocks/Consumpt <br> ion | 26.23 |  |  |  |  |  |  |  |  |  |

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

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

Indonesia - Sugar Extraction Rate

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sugarcane | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Indonesia - Sugar Supply and Utilization (1000 metric tons, raw value) |  |  |  |  |  |  |  |  |  |  |  |
|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Carry-in Stocks | 1340 | 1260 | 1353 | 1355 | 1354 | 1353 | 1351 | 1349 | 1347 | 1345 | 1343 |
| Production | 1770 | 1767 | 1775 | 1788 | 1805 | 1826 | 1851 | 1877 | 1905 | 1933 | 1963 |
| Net Imports | 1600 | 1797 | 1762 | 1811 | 1859 | 1903 | 1953 | 2003 | 2052 | 2101 | 2152 |
| Exports | 0 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| Imports | 1600 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| Consumption | 3450 | 3471 | 3535 | 3600 | 3666 | 3731 | 3806 | 3882 | 3959 | 4037 | 4117 |
| Carry-out Stocks | 1260 | 1353 | 1355 | 1354 | 1353 | 1351 | 1349 | 1347 | 1345 | 1343 | 1341 |

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

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

Japan - Area Harvested (1000 hectares)

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


| Japan - Yields (metric tons/hectare) |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Sugar Beets | 51.50 | 52.77 | 53.56 | 54.13 | 54.59 | 55.01 | 55.40 | 55.79 | 56.17 | 56.54 | 56.92 |
| Sugarcane | 59.99 | 60.28 | 60.31 | 60.35 | 60.40 | 60.44 | 60.48 | 60.53 | 60.57 | 60.61 | 60.66 |

Japan - Production (1000 metric tons)

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

Japan - Sugar Extraction Rates (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugar Beets | 18.94 | 18.94 | 18.94 | 18.94 | 18.94 | 18.94 | 18.94 | 18.94 | 18.94 | 18.94 |
| Sugarcane | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 | 12.13 |

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

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

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

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

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption <br> Stocks/Consumpt 7.50 <br> ion | 7.21 .50 | 24.28 | 24.08 | 24.01 | 24.09 | 24.32 | 24.55 | 24.77 | 24.96 | 25.13 | 25.26 |

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

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

South Africa - Sugar Extraction Rates (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugarcane | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 | 11.17 |

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

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

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

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

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

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

Former Soviet Union - Sugar Extraction Rates (percent)

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Sugar Beets | 11.56 | 11.56 | 11.56 | 11.56 | 11.56 | 11.56 | 11.56 | 11.56 | 11.56 | 11.56 |

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

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Per Capita <br> Consumption <br> Stocks/Consumpt <br> ion | 31.62 | 38.92 | 39.01 | 39.10 | 39.18 | 39.27 | 39.36 | 39.44 | 39.53 | 39.60 | 39.69 |

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

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

Thailand - Sugar Extraction Rates (percent)

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

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

|  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Carry-in Stocks | 792 | 592 | 668 | 714 | 744 | 766 | 784 | 800 | 816 | 832 | 848 |
| Production | 6800 | 6979 | 7115 | 7239 | 7359 | 7478 | 7598 | 7718 | 7838 | 7959 | 8080 |
| Net Exports | 5100 | 4685 | 4817 | 4921 | 5013 | 5101 | 5185 | 5266 | 5346 | 5425 | 5500 |
| Exports | 5100 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| Imports | 0 | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A | \#N/A |
| Consumption | 1900 | 2218 | 2253 | 2288 | 2323 | 2359 | 2397 | 2435 | 2476 | 2518 | 2563 |
| Carry-out Stocks | 592 | 668 | 714 | 744 | 766 | 784 | 800 | 816 | 832 | 848 | 865 |

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

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

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

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

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

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


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