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# Sugar and Sweeteners Outlook

**Stephen Haley**  
**David Kelch**

## USDA Projects Greater Sugar Production in FY 2008 than FY 2007

The U.S. Department of Agriculture (USDA) projects fiscal year (FY) 2008 production at 8.516 million short tons, raw value (STRV). This projection exceeds FY 2007 production of 8.445 million STRV by 70,470 STRV. Cane sugar production in FY 2008 is projected at 3.697 million STRV, an increase of 259,060 (7.5 percent) over last year. All cane-sugar-producing States are expecting higher production than last year: Louisiana, 169,850 STRV (12.9 percent); Florida, 52,000 STRV (3.0 percent); Texas, 20,710 STRV (11.7 percent); and Hawaii, 16,500 STRV (7.4 percent). Beet sugar production in FY 2008 is projected at 4.819 million STRV, a decrease of 188,600 STRV (3.8 percent), compared with record FY 2007 production of 5.008 million STRV. Although the National Agricultural Statistics Service (NASS) estimates a 6.3-percent decrease in sugar beet production this crop year, national beet sugar per acre is projected by USDA at 3.865 STRV, which if realized, would constitute a record.

The USDA projects FY 2008 sugar imports at 2.241 million STRV. The raw sugar tariff-rate quota (TRQ) was established at the minimum level required by the World Trade Organization (WTO)—1.231 million STRV, with TRQ shortfall projected at 100,000 STRV. The refined sugar TRQ was established at 94,251 STRV. The specialty sugar portion of this TRQ, mostly organic sugar, was established at 71,825 STRV. Sugar in imported syrups is projected at 5,000 STRV, and sugar imported under the re-export and polyhydric programs is projected at 425,000 STRV. Imports under the Dominican Republic and Central American Free Trade Agreement (DR/CAFTA) are forecast at 113,405 STRV. FY 2008 marks the first year of DR/CAFTA imports from Costa Rica, projected at 14,815 STRV.

Imports from Mexico, including high-tier tariff (through December 2007) and duty free beginning in January 2008, are projected at 475,000 STRV. These import projections contain considerable uncertainty. The 2007/08 harvest is off to a slow start amid labor unrest, and there is no consensus on how much high fructose corn syrup (HFCS) will be used in Mexico in 2008. Low sugar prices relative to last year may prove a disincentive to switch to HFCS. On the other hand, if USDA projections about Mexican sweetener supply and use prove to be accurate, exports as forecast would still leave an ending-year

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stocks-to-consumption ratio in Mexico of 29.3 percent, about 6.2 percentage points higher than the ratio for an average of “normal” years since 1997/98.<sup>1</sup> Achieving an ending stocks-to-use of 23.1 percent this year would require additional exports of 375,000 STRV (all else constant).

Deliveries for U.S. food and beverage use for FY 2008 are projected at 10.100 million STRV. Other FY 2008 deliveries are projected at 170,000 STRV. Sugar exports, occurring mostly under the Refined Sugar Re-export Program, are projected at 250,000 STRV. Projected FY 2008 ending stocks (the difference between projected supply and use) are 2.005 million STRV, implying a high ending-year stocks-to-use ratio of 19.0 percent.

The nearby No.14 New York raw sugar contract price is averaging 20.37 cents per pound (lb) through the first half of January 2008. This average is at approximately the minimum price to avoid forfeitures. The low end of the range of the Midwest refined beet sugar price is listed by *Milling and Baking News* at 24.50 cents/lb, the same level since November. The minimum price to avoid forfeiture of refined beet sugar in the Midwest is calculated to be 24.28 cents/lb.

On September 27, 2007, the USDA announced the distribution of the Overall Allotment Quota (OAQ) of 8.450 million STRV among sugar beet processors (4.593 million STRV), sugarcane processors (3.787 million STRV), and imports (70,000 STRV). This latter distribution was due to an earlier determination that sugarcane processors would be unable to fill 70,000 STRV of their initial allotment. With the reassignment to imports, the import trigger for OAQ suspension is 1.602 million STRV (the statutory 1.532 million STRV plus the 70,000 STRV). Total imports less those imports projected under USDA’s re-export and polyhydric programs are calculated at 1.816 million STRV.

<sup>1</sup> The calculation is for the October/September years of 1998 through 2007, excluding those years with stocks-to-consumption above 30 percent: 2001, 2005, and 2007.

## U.S. Sugar

On January 11, 2008, the U.S. Department of Agriculture (USDA) released its latest supply and use projections for FY 2008 in the *World Agricultural Supply and Demand Estimates* (WASDE) report.

### Production

The USDA's production estimates and projections are based primarily on information provided by sugar beet processors and sugarcane millers to the Farm Service Agency (FSA). Processors and millers project FY 2008 sugar production at 8.516 million short tons, raw value (STRV), a decrease of about 70,470 STRV from FY 2007. Beet sugar is forecast at 4.819 million STRV (188,600 STRV, or 3.8 percent, lower than in FY 2007), and cane sugar is forecast at 3.697 million STRV (259,060 STRV, or 7.5 percent, higher than in FY 2007).

### Beet Sugar Production

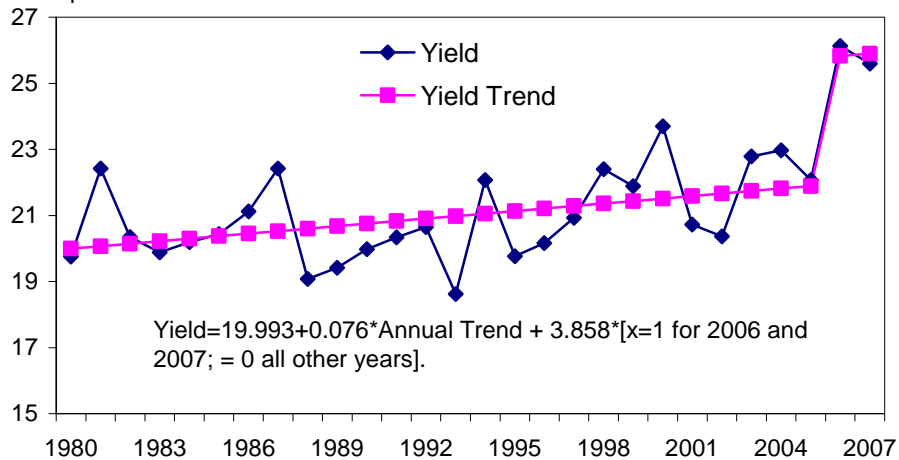
The National Agricultural Statistics Service (NASS) estimates sugar beet area harvested for FY 2008 at 1.247 million acres, a decrease of 4.3 percent compared with FY 2007. The largest area reductions are estimated in the Great Plains (Colorado, Montana, Nebraska, Wyoming, and western North Dakota) at 18.2 percent and in the Far West (California, Idaho, Oregon, and Washington) at 10.6 percent. Area reductions in the Great Lakes (Michigan) are estimated at 3.2 percent, while area in the Upper Midwest (Minnesota and eastern North Dakota) is estimated higher at 1.1 percent.

NASS estimates sugar beet production at 31.912 million tons for a calculated yield of 25.6 tons per acre, a level exceeded only by last year's record 26.1 tons. Figure 1

Figure 1

#### U.S. sugar beet yield, actual and trend, crop years 1980-2007

Tons per acre



Source: USDA, NASS, *Crop Production* (yield); and ERS, Sugar and Sweetener Team (trend).

shows national sugar beet yields since 1980 and also shows yield trend. The yields for crop years 2006/07 and 2007/08 are higher than the trend through 2005/06 by an average of 3.86 tons per acre. This increase in trend will likely continue as the sugar beet sector is planning to shift to glyphosate tolerant beets. This shift will accelerate improved yields as built-in weed control features not only reduce chemical costs but reduces competition between the sugar beet and weeds for water and sunlight.

Table 1 shows in the last column an efficiency measure of the U.S. beet sugar industry from the 1992/93 crop year through 2006/07 (the 2007/08 figures are projections). The measure is the ratio of the September/August crop year sugar recovery (fourth column) to the NASS estimate of sucrose content (fifth column). The higher the rate, the higher the extraction of sucrose contained in the beet crop. The average rate for the period has been 0.874. An Economic Research Service (ERS) regression model suggests that the efficiency measure is a negative function of the size of the sugar beet crop (elasticity coefficient = -0.111) and a positive function of the recovery rate (elasticity coefficient = 0.549). There is no trend in the measure over time. The model explains 90 percent of the observed variation in the efficiency measure from 1992/93 to 2006/07. Assuming the parameter values in the table for 2007/08, the model would predict an efficiency level of 0.873 (just about the historical average). This efficiency level implies a sucrose level for the 2007/08 crop of 17.31 percent. The average rate for the historical period is calculated at 17.09 percent.

Table 1--U.S. sugar beet crop, beet sugar production, sucrose content, and recovery

Sept./Aug. crop year	Sugar beet production -- tons --	Crop year (Sep/Aug) beet sugar production	Crop year beet recovery rate --- percent ---	Sucrose content of beets	Recovery efficiency --- ratio ---
1992/93	29,143	4,478	15.36	17.28	0.889
1993/94	26,249	3,965	15.10	17.13	0.882
1994/95	31,853	4,577	14.37	16.65	0.863
1995/96	28,065	3,944	14.05	16.29	0.863
1996/97	26,680	4,042	15.15	17.14	0.884
1997/98	29,886	4,272	14.29	16.94	0.844
1998/99	32,499	4,410	13.57	16.70	0.813
1999/00	33,420	4,931	14.75	17.15	0.860
2000/01	32,541	4,766	14.65	17.27	0.848
2001/02	25,764	4,019	15.60	17.15	0.909
2002/03	27,707	4,220	15.23	16.92	0.900
2003/04	30,710	4,912	15.99	17.73	0.902
2004/05	30,021	4,576	15.24	17.36	0.878
2005/06	27,433	4,299	15.67	17.15	0.914
2006/07	34,064	5,057	14.85	17.45	0.851
2007/08 (projected) 1/	31,912	4,819	15.10	17.31	0.873

1/ Projected based on beet processors' forecast of sugar production in Jan. 2008 WASDE and NASS sugar beet forecast (Jan. 2008 *Crop Production Summary*)

Source: USDA, NASS, *Crop Production* and FSA, *Sweetener Market Data*.

Beet processors project that beet sugar production for FY 2008 will be 4.819 million STRV, implying a sugar yield of 3.865 STRV (table 2). Table 2 compares the processors' forecast with two forecasts from ERS. ERS forecasts sugar yield as either a function of trend and sugar beet yield (case 1) or a function of trend, sugar beet yield, and sucrose level (case 2) (table 2). Case 1 analysis shows a forecast for sugar yield of 3.893 STRV per acre, a level very close to that of the processors. A difficulty with applying case 2 is that the national sucrose level is not published by NASS until the July after the harvest. However, using the implied sucrose level from table 1 (17.31 percent) shows a sugar yield of 3.876 STRV per acre, again close to the processors' forecast.

### ***Cane Sugar Production***

Florida cane sugar millers project FY 2008 sugar production at 1.771 million STRV. NASS estimates Florida sugarcane acreage harvested for sugar at 378,000 acres, a decrease of 4,000 acres from last year and much lower than several years ago (fig. 2). NASS estimates sugarcane for sugar yield at 36.8 tons and sugarcane for sugar production at 13.910 million tons, only 1.7 percent higher than last year. Calculated sugar yield is forecast at 4.68 STRV, 4 percent higher than last year (fig. 3) but below trend by 2.7 percent (fig. 4). Dry growing conditions have limited production prospects.

FY 2008 sugar production in Louisiana is projected at 1.490 million STRV. NASS estimates Louisiana sugarcane acreage harvested for sugar at 390,000 acres, a decrease of 15,000 acres from last year and, like Florida, considerably below levels from several years ago (fig. 2). NASS estimates sugarcane yield at 30.0 tons, the highest level since FY 2000 (fig. 3). Sugarcane for sugar is estimated at 11.7 million tons, about 5.8 percent more than last year. Sugar yield is calculated at 3.82 STRV, well above last year by 17.2 percent (fig. 3) and trend by 4.1 percent (fig. 4).

Texas FY 2008 sugar production is projected at 198,100 STRV, up 11.7 percent from FY 2007. NASS estimates area harvested for sugar at 43,500 acres, an increase of 4,300 acres over last year, and it estimates sugarcane for sugar at 1.784 million tons, about 10.5 percent more than produced in FY 2007.

Hawaiian cane sugar millers project FY 2008 sugar production at 238,075 STRV. Because Hawaiian production follows the calendar year, the bulk of the projected harvest season takes place in 2008, and no NASS sugarcane forecasts or estimates are available.

### ***Trade***

#### ***Imports***

On August 10, 2007, the USDA established the FY 2008 raw sugar tariff-rate quota (TRQ) at 1,231,497 STRV (or, 1,117,195 metric tons, raw value (MTRV)), the U.S. minimum access commitment level under the World Trade Organization (WTO). As was done in FY 2007, the USDA announced that raw sugar TRQ imports would sugar TRQ level was lower than that in previous years so that shipping patterns

Table 2--Comparison of regression-based forecasts of beet sugar per acre for FY 2008 with processors' November 2007 forecast

Item name	Explanatory variables			Performance measures			Forecasts for FY 2008		
	Constant	Trend 1/	Sugarbeet yield	Sucrose level 2/	Adj. R2	Standard error	Durbin-Watson	Sugar per acre (STRV/acre)	Sugar production 3/ (1,000 STRV)
Case I : $\alpha_0 + \alpha_1 \text{Trend} + \alpha_2 \text{Sugarbeet yield}$									
Coefficient	-	0.025	0.115	-	0.921	0.103	2.065	3.893	4,855
Std. Dev.	-	0.003	0.003	-	-	-	-	-	-
T-Statistic	-	9.388	36.888	-	-	-	-	-	-
Case II : $\alpha_0 + \alpha_1 \text{Trend} + \alpha_2 \text{Sugarbeet yield} + \alpha_3 \text{Sucrose level}$									
Coefficient	-	0.025	0.087	0.041	0.953	0.076	1.923	3.876	4,833
Std. Dev.	-	0.002	0.009	0.013	-	-	-	-	-
T-Statistic	-	13.636	9.530	3.170	-	-	-	-	-
Case III - Processors' forecast									
	-	-	-	-	-	-	-	3.865	4,819

1/ Trend(FY 2008) = 38.

2/ forecast sucrose from table 1 = 17.31 percent.

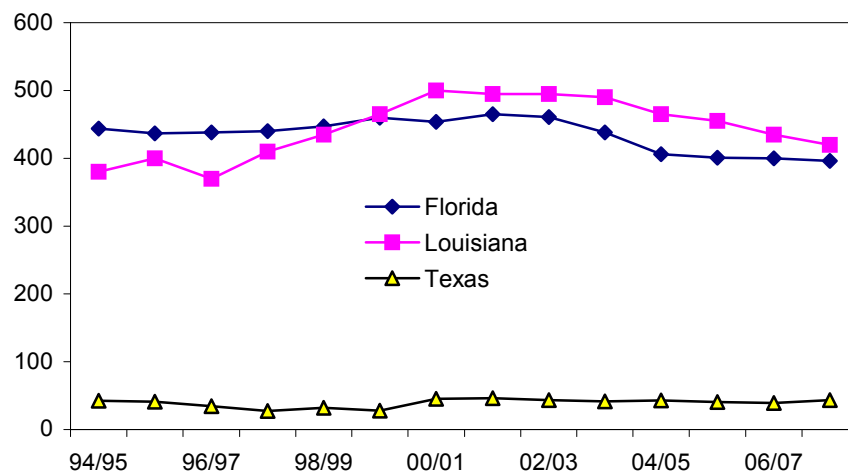
3/ Acreage harvested = 1.247 million acres (Source: USDA,NASS,Jan. 2008 *Crop Production*).

Sources: ERS (Sugar and Sweetener Team) for Case I and II ; USDA, WASDE for Case III.

Figure 2

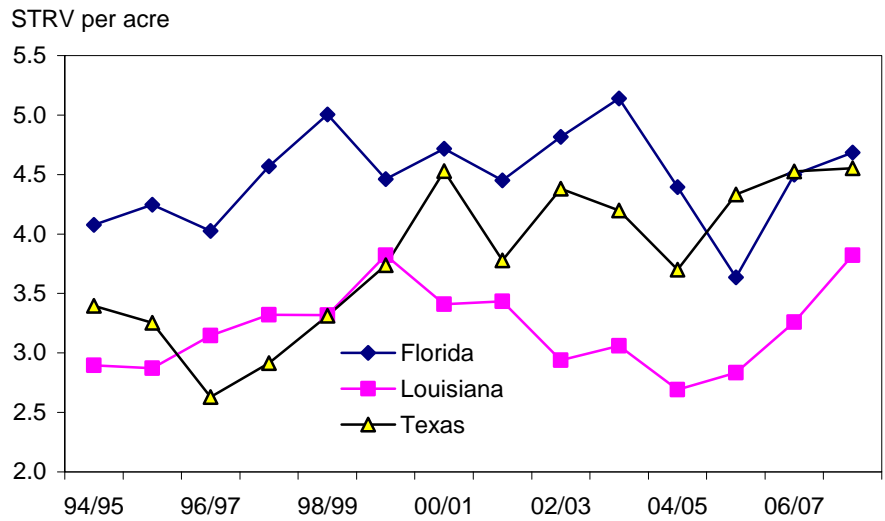
**Sugarcane area harvested, U.S. mainland regions, 1994/95-2007/08**

1,000 acres



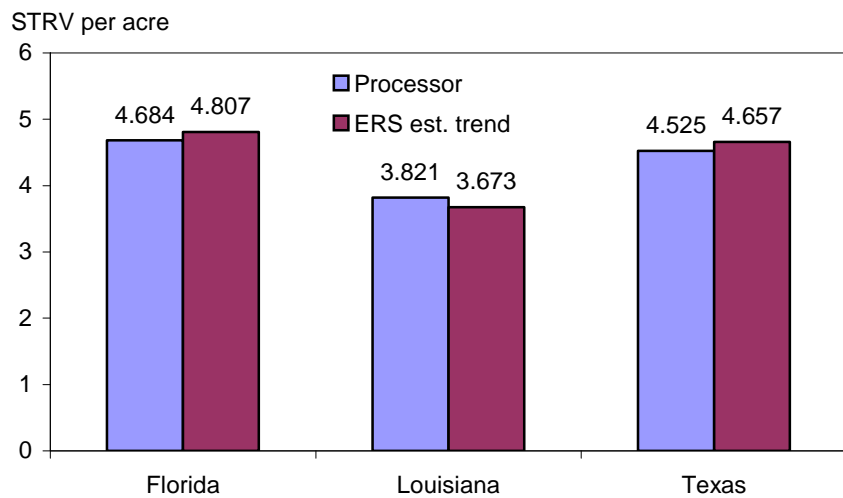
Source: *Sweetener Market Data*, FSA; *Crop Production*, NASS.

Figure 3  
**Cane sugar yields, U.S. mainland regions, 1994/95-2007/08**



Source: Sweetener Market Data, FSA; Crop Production, NASS.

Figure 4  
**Cane sugar yield, U.S. mainland regions, FY 2008, estimated vs. trend**



Source: USDA, FSA, SMD; NASS, Crop Production; ERS, Sugar and Sweetener Group (trend).

were not needed. (In contrast, shipping patterns were not needed in FY 2007 because the United States was expected to have strong demand for imported sugar at the beginning of the fiscal year.)

The USDA established the FY 2008 refined sugar TRQ at 94,251 STRV (or, 85,503 MTRV), for which the sucrose content, by weight, in the dry state, must have a polarimeter reading of 99.5 degrees or more. The TRQ includes the U.S. minimum-access commitment under the WTO (24,251 STRV) and an additional specialty sugar amount of 70,000 STRV to accommodate a rapidly expanding organic food sector. Included within the WTO refined sugar TRQ is a minimum specialty sugar TRQ of 1,825 STRV.

On September 28, 2007, Presidential Proclamation No. 8180 created a single duty-free TRQ for Mexican sugar in order to provide an accelerated schedule of duty elimination under the terms of general note 12 to the Harmonized Tariff Schedule (HTS). The increased limit, covering both raw and refined sugar, was effective October 1 through December 31, 2007, and was set at 177,954 MTRV. Since January 1, 2008, sugar from Mexico enters duty free under the North American Free Trade Agreement (NAFTA) and is not subject to quota restrictions.

The USDA projects that TRQ imports in FY 2008 will equal 1.336 million STRV (table 3). Raw sugar TRQ shortfall is projected at 100,000 STRV, implying raw sugar TRQ entries of 1.131 million STRV. Refined TRQ imports are projected at 90,994 STRV. Sugar imports under the Dominican Republic and Central Free Trade Agreement (DR/CAFTA) are projected at 113,405 STRV.

Table 3 import accounting contains two items of note. First, originally in August 2007, the U.S. Trade Representative (USTR) allocated to Mexico 8,001 STRV under the raw sugar TRQ and 3,256 STRV under the refined sugar TRQ. These allocations were subsequently included in the Mexico sugar TRQ announced at the end of September. To avoid double-counting, the USDA included the amount of these original allocations in shortfall to arrive at the projected 100,000 STRV previously described. Second, all sugar imports from Mexico, whether established by quota or high-tier tariff entries for October-December 2007 or duty-free for January-September 2008, are accounted for in a single projection of 475,000 STRV. This single projection means that the total TRQ projection of 1.336 million STRV does not include amounts from the Mexican sugar TRQ previously described.

Other program sugar imports outside the sugar TRQ for FY 2008 are projected to total 425,000 STRV. Other USDA import programs include the Refined Sugar Re-export Program, the Sugar-Containing Products Program, and the Polyhydric Alcohol Program. Sugar from imported syrups is projected at 5,000 STRV. Projected total imports, including TRQ sugar, sugar from Mexico, and all else, are the sum of the components, or 2.241 million STRV.

Raw sugar TRQ imports through December 2007 equaled 329,208 MTRV, or 29.6 percent of the total, an amount 2 percent above the entries for the same period in 2006 (table 4). In 2006, many speculated that, without shipping patterns, excessive first-quarter imports might depress sugar prices. Analysis of U.S. raw sugar prices (nearby No. 14 ICE U.S. contract) shows that FY 2007 first-quarter (October-December) prices were low, both from the perspective of first-quarter prices in FY 2002-05 and with respect to prices later in the fiscal year (fig. 5).



Table 3--USDA estimate of sugar imports in FY 2008

	Metric tons, raw value	Short tons, raw value
<b>Raw sugar TRQ</b>	1,117,195	1,231,497
Less shortfall	-90,719	-100,000
<b>Total raw sugar TRQ</b>	<b>1,026,476</b>	<b>1,131,497</b>
<b>Refined sugar TRQ</b>		
Allocation to Canada	10,300	11,354
Global	7,090	7,815
Specialty		
Base	1,656	1,825
Additional	63,503	70,000
Specialty total	65,159	71,825
<b>Total refined sugar TRQ</b>	<b>82,549</b>	<b>90,994</b>
<b>CAFTA/DR TRQ</b>	<b>102,880</b>	<b>113,405</b>
<b>Total estimate TRQ entries</b>	<b>1,211,905</b>	<b>1,335,896</b>
<b>Mexico</b>	<b>430,917</b>	<b>475,000</b>
<b>Re-export program imports</b>	<b>385,557</b>	<b>425,000</b>
<b>Sugar syrups, high-tier</b>	<b>4,536</b>	<b>5,000</b>
<b>Total projected imports</b>	<b>2,032,915</b>	<b>2,240,896</b>

1/ Mexico allocated 7,258 MTRV (8,000 STRV) under raw cane TRQ.

Source: Foreign Agricultural Service, USDA.

Table 4-U.S. raw sugar tariff-rate quota, allocations, quantities entered through December, fiscal years 2008 and 2007, and effect of no shipping patterns

Countries	FY2008 allocation	Quantity entered 12/31/2007	Portion of FY2008 allocation filled	FY2007 allocation	Quantity entered 12/29/2006	Portion of FY2007 allocation filled	Normal shipping patterns	FY2008 "excess"	FY2007 "excess"
	<i>metric tons raw value (MTRV)</i>		<i>percent</i>	<i>metric tons raw value (MTRV)</i>		<i>percent</i>		<i>metric tons raw value (MTRV)</i>	
Argentina	45,281	704	1.6%	55,112	26,591	48.2%	50.0%	0	0
Australia	87,402	62,700	71.7%	106,378	26,125	24.6%	50.0%	18,999	0
Barbados	7,371	0	0.0%	8,972	0	0.0%	--	--	--
Belize	11,583	0	0.0%	14,098	0	0.0%	--	--	--
Bolivia	8,424	8,424	100.0%	10,253	10,209	99.6%	--	--	--
Brazil	152,691	97,875	64.1%	185,841	39,848	21.4%	25.0%	59,702	0
Colombia	25,273	918	3.6%	30,760	23,995	78.0%	--	--	--
Congo	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Cote D'Ivoire	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Costa Rica	15,796	0	0.0%	19,225	0	0.0%	--	--	--
Dominican Republic	185,335	20,819	11.2%	225,573	1,103	0.5%	25.0%	0	0
Ecuador	11,583	12	0.1%	14,098	0	0.0%	--	--	--
El Salvador	27,379	0	0.0%	33,323	24,314	73.0%	--	--	--
Fiji	9,477	9,477	100.0%	11,535	11,535	100.0%	--	--	--
Gabon	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Guatemala	50,546	0	0.0%	61,520	16,958	27.6%	50.0%	0	0
Guyana	12,636	23	0.2%	15,380	2,092	13.6%	--	--	--
Haiti	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Honduras	10,530	0	0.0%	12,817	0	0.0%	--	--	--
India	8,424	0	0.0%	10,253	0	0.0%	--	--	--
Jamaica	11,583	0	0.0%	14,098	0	0.0%	--	--	--
Madagascar	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Malawi	10,530	704	6.7%	12,817	507	4.0%	--	--	--
Mauritius	12,636	124	1.0%	15,380	0	0.0%	--	--	--
Mozambique	13,690	0	0.0%	16,662	16,662	100.0%	--	--	--
Nicaragua	22,538	6,417	28.5%	26,915	9,490	35.3%	--	--	--
Panama	30,538	16,665	54.6%	37,168	19,631	52.8%	--	--	--
Papua New Guinea	7,258	0	0.0%	7,258	7,222	99.5%	--	--	--
Paraguay	7,258	21	0.3%	7,258	39	0.5%	--	--	--
Peru	43,175	43,175	100.0%	52,548	22,460	42.7%	50.0%	21,588	0
Philippines	142,160	8,119	5.7%	173,025	0	0.0%	25.0%	0	0
South Africa	24,220	23,902	98.7%	29,478	28,460	96.5%	--	--	--
St. Kitts & Nevis	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Swaziland	16,849	16,493	97.9%	20,507	20,507	100.0%	--	--	--
Taiwan	12,636	0	0.0%	15,380	0	0.0%	--	--	--
Thailand	14,743	0	0.0%	17,943	0	0.0%	--	--	--
Trinidad-Tobago	7,371	0	0.0%	8,972	0	0.0%	--	--	--
Uruguay	7,258	0	0.0%	7,258	0	0.0%	--	--	--
Zimbabwe	12,636	12,636	100.0%	15,380	15,286	99.4%	--	--	--
Rounding	1	0	0.0%	1	0	0.0%	--	--	--
Total Raw Cane TRQ	1,110,359	329,208	29.6%	1,336,734	323,034	24.2%	--	100,288	0
		228,919							
Mexico	177,954	51,546	29.0%	252,954	0	0.0%	--	--	--
Refined Global	7,090	7,090	100.0%	7,090	7,090	100.0%	--	--	--
Refined Canada	10,300	6,871	66.7%	10,300	7,733	75.1%	--	--	--
Refined Specialty	65,159	24,200	37.1%	72,944	36,656	50.3%	--	--	--
Total Refined TRQ	82,549	38,161	46.2%	90,334	51,479	57.0%	--	--	--
CAFTA TRQs (Calendar Year 2007)									
El Salvador	24,480	24,480	100.0%	24,000	24,000	100.0%	--	--	--
Nicaragua	22,440	22,439	100.0%	22,000	21,968	99.9%	--	--	--
Honduras	8,160	8,160	100.0%	8,000	8,000	100.0%	--	--	--
Guatemala	32,640	32,640	100.0%	32,000	31,916	99.7%	--	--	--
Total CAFTA	87,720	87,719	100.0%	86,000	85,884	99.9%	--	--	--
All TRQ Sugar	1,458,582	506,635	34.7%	1,766,022	460,397	26.1%	--	--	--

Sources: USTR (allocations), U.S. Customs Service (quantity entered).

Updated 1/2/2008

Table 5--Estimated sugar in U.S. product imports and exports, FY 1993-2006

Fiscal Year	Flavored sugar	Sugar confectionery	Cocoa and cocoa preparations	Cereal and bakers preparations	Bread, pastry, cakes, etc.	Misc. edible preparations	Carbonated soft drinks	Total sugar in imported products	Total sugar in exported products	Net sugar inflow in products
<i>1,000 short tons</i>										
FY1993	0	103,461	62,179	6,476	29,086	70,897	16,582	288,680	213,577	75,103
FY1994	0	109,049	69,103	5,423	39,403	25,528	22,793	271,300	249,557	21,743
FY1995	456	133,784	68,571	5,501	43,248	54,029	25,413	331,002	290,570	40,432
FY1996	354	141,272	69,334	7,807	47,101	66,464	31,007	363,339	351,219	12,120
FY1997	144	158,468	90,479	11,984	61,443	68,376	38,482	429,376	384,105	45,271
FY1998	2,048	179,690	99,282	18,627	70,896	84,716	39,532	494,790	374,931	119,859
FY1999	4,396	209,205	103,952	19,993	83,893	111,400	46,275	579,114	382,139	196,975
FY2000	3,635	229,935	128,841	20,006	96,742	122,082	56,554	657,794	425,769	232,025
FY2001	2,245	255,812	147,808	18,578	110,087	120,892	63,585	719,008	474,884	244,124
FY2002	2,938	280,750	188,916	19,210	118,626	141,362	69,539	821,341	452,898	368,443
FY2003	2,067	345,438	207,826	22,678	130,672	146,215	81,566	936,463	496,069	440,394
FY2004	5,270	389,995	215,342	25,706	138,282	178,896	92,542	1,046,032	537,711	508,321
FY2005	34,856	400,598	227,877	25,953	142,631	189,485	105,133	1,126,533	575,237	551,296
FY2006	99,802	404,883	264,992	25,085	145,661	192,231	124,242	1,256,896	577,597	679,298
FY2007	32,206	411,909	282,468	25,258	155,567	189,848	128,299	1,225,555	571,200	654,355

Sources: Sugar and Sweetener Group, ERS analysis of trade data from U.S. Census Bureau.

However, according to analysis reported in the January 2007 *Sugar and Sweetener Outlook* and shown in table 4, no TRQ imports exceeded what they would have been with shipping patterns.<sup>1</sup> October-December 2006 imports were 24.2 percent of a raw sugar TRQ that was set 226,375 MTRV higher in FY 2007 than in FY 2008. Table 4 shows that, in contrast to FY 2007, the absence of shipping patterns in FY 2008 has affected imports, allowing them to be 100,288 MTRV higher than they would have been with shipping patterns. (This comparison is also illustrated in figure 6.) Imports from the following three countries were higher than they would have been with shipping patterns: Australia by 18,999 MTRV; Brazil by 59,702 MTRV; and Peru by 21,588 MTRV.

**Exports**

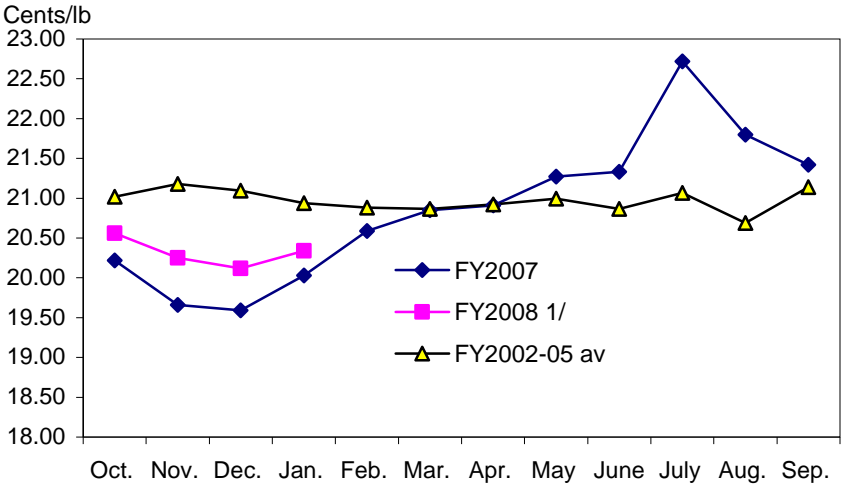
The USDA projects FY 2008 sugar exports at 250,000 STRV, and estimates FY 2007 sugar exports at 435,000 STRV. These exports mostly occur under the Refined Sugar Re-export Program. The unusual aspect of FY 2007 was the high proportion of beet sugar exports. According to FSA’s *Sweetener Market Data*, beet sugar exports constituted 44.4 percent of total exports, while constituting only 14.3 percent of the total in FY 2005 and 12.5 percent in FY 2006. The size of FY 2007 beet sugar exports (187,150 STRV) was several multiples of exports in either FY 2005 (37,035 STRV) or FY 2006 (25,420 STRV).

According to U.S. Census Foreign Trade Export data, 82.9 percent of FY 2007 refined sugar exports have gone to Mexico. Figure 7 shows the increasing importance of Mexico as an export destination, especially since FY 2004. The sugar is primarily used in Mexico’s Sugar-Containing Products Re-export Program (IMMEX). The USDA requires that beet sugar exported which receives the benefit of the re-export program also be counted against domestic marketing allotments,

<sup>1</sup> Analysis by the ERS Sugar and Sweetener Group showed the following relationship between the October-December raw sugar price (Q4price) and the end-of-December stocks-to-use ratio (STKSTOUSE) covering the period 1983-2006:  $Q4Price = 43.208 * STKSTOUSE - 0.193 - 2.145 * D1985 - 3.353 * D1999 - 1.290 * D2006 + [AR(1) = 0.512]$ .

Statistical properties are good, with adjusted R<sup>2</sup>=0.866, Durbin-Watson=1.917 after a correction for first-order serial correlation (the AR(1) coefficient), and statistically significant coefficients. Observations for certain years, including 1985, 1999, and 2006, did not fit the predictions of the equation. Note that this idea holds for 2006: The equation would have predicted a fourth-quarter calendar-year price 1.209 cents higher than what was observed. The effect of TRQ imports during October-December 2006 are included in the stocks level. Although this idea is speculative, stocks held by entities not reporting to USDA may have caused the ending calendar-year stocks-to-use ratio to be understated.

Figure 5  
**U.S. raw sugar prices, monthly**

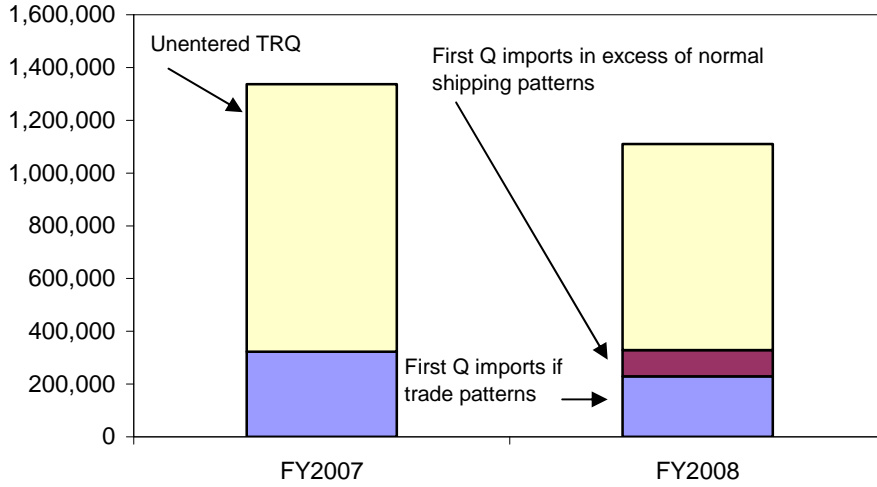


1/ Through 1/15/2008. Source: ICE Futures U.S.

Figure 6

**Raw sugar TRQ imports, FY2007 and FY2008, allocated and amount entered in first quarter**

Metric tons, raw value

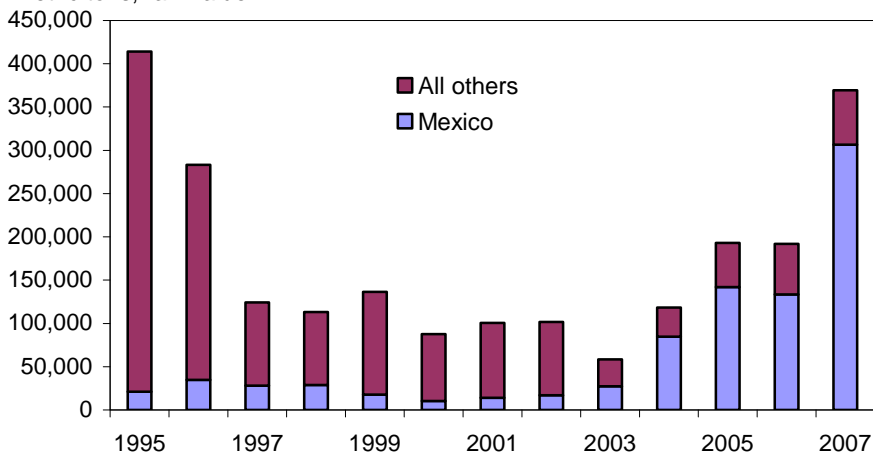


Sources: USDA, FAS; and U.S. Customs Service.

Figure 7

**U.S. refined sugar exports, fiscal year, to Mexico and all other countries, 1995-2007**

Metric tons, raw value



Source: U.S. Census Bureau.

which prevents circumvention of the allotment program. At some point, which could be many months later, a sale in the domestic market of an equal amount of cane sugar will occur as an offset to the beet sugar exported, but there is no way to track that import and sale because cane refiners are not subject to allotments.

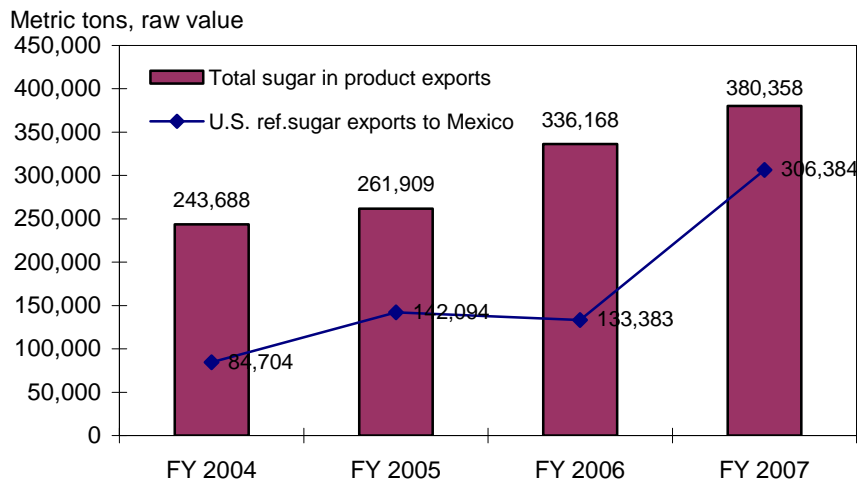
Figure 8 shows estimates of sugar in products exported from Mexico to all destinations since FY 2004, along with corresponding U.S. refined sugar exports.<sup>2</sup> In FY 2007, the ratio of U.S. refined sugar exports to sugar in exported Mexican products was estimated by the ERS Sugar and Sweetener Group at 81 percent. This percentage is considerably higher than that of FY 2004 at 35 percent, FY 2005 at 54 percent, and FY 2006 at 40 percent.

**Imports and Exports of Sugar-Containing Products**

Sugar in imported products in FY 2007 is estimated at 1.226 million tons, a 2.5-percent decrease from FY 2006 (table 5). The overall decrease is largely attributable to a drop in imports of flavored sugar. Most of this product has been imported from Mexico, where decreases in the NAFTA high-tier sugar tariff have made this product a less attractive alternative to sugar. Sugar contained in other product export categories, with the exception of miscellaneous edible preparations, have increased. Netting out flavored sugar imports, sugar in imported products grew a modest 3.1 percent from FY 2006 (1.157 million tons) to FY 2007 (1.193 million tons). Since FY 1995, growth in sugar confectionery, the largest sugar-containing product category, has averaged 9.8 percent; the growth in FY 2007 amounted to only 1.7 percent. The largest growth, 6.8 percent, occurred in bread, pastry, and cakes, followed closely by cocoa and cocoa preparations at 6.6 percent.

<sup>2</sup> See tables 32 through 39 for levels and destinations of Mexican sugar-containing product exports for FY 2004-07. The estimated sugar in these products is close to FAS-estimated levels of sugar deliveries to Mexico's IMMEX program: FY 2004, 220,000 MTRV (111 percent); FY 2005, 282,000 MTRV (93 percent); FY 2006, 323,000 MTRV (104 percent); and FY 2007, 390,000 MTRV (98 percent).

Figure 8  
**Sugar in exported Mexican products and imports of refined sugar from the United States**



Sources: Sugar and Sweetener Group analysis of data from Secretary of the Economy (Mexico product exports data), U.S. Census Bureau (U.S. exports to Mexico).

Sugar in exported products has been level the last 3 years, in the area of 575,000 tons. The net inflow of sugar in products is calculated at 654,360 tons, a decrease from last year of about 25,000 tons.

### ***Sugar Deliveries***

Deliveries for food and beverage use for FY 2007 are estimated at 9.913 million STRV (table 6). Other deliveries (sugar-containing product re-exports, polyhydric alcohol, and livestock uses) are estimated at 221,250 STRV. Deliveries for food and beverage use for FY 2008 are projected at 10.100 million STRV. Although the forecast appears to be 2.0 percent higher than the FY 2007 level, actual deliveries in FY 2007 were probably closer to 10.090 million STRV. Direct consumption imports at the end of FY 2006 were recorded as deliveries when they entered U.S. customs territory. Analysis by the ERS Sugar and Sweetener Group suggests that 185,000 STRV of these imports that entered at the end of FY 2006 were not delivered to end users until FY 2007. Other FY 2008 deliveries are projected at 200,000 STRV, including 150,000 STRV for the Sugar-Containing Products Re-export Program. Projected FY 2008 ending stocks are 2.005 million STRV, implying an ending-year stocks-to-use ratio of 19.0 percent.

### ***ERS End User Delivery Model***

Table 7 shows results from ERS econometric models of sugar deliveries to industrial and nonindustrial sugar end users.<sup>3</sup> These models provide estimated coefficients on trend and seasonal components of end user demand for sugar. The models include adjustments for periods that cannot be adequately explained by trends or seasonal factors. These models can be used to project forward the demand for sugar by industrial and nonindustrial end users.

Table 7 provides statistical indicators for various aspects of both equations. The model for industrial end user deliveries accounts for 81.6 percent of the observed monthly variance for deliveries since October 1991. The model for nonindustrial end user deliveries accounts for 86.9 percent of the observed monthly variance. Both equations show strong seasonal components to sugar demand with strongly statistically significant coefficients on the month variables.

Table 8 shows what the models imply about expected deliveries in FY 2008. The first column shows estimates for industrial end user deliveries and the second for nonindustrial end users. The first two observations corresponding to October 2007 through November 2007 are actual deliveries from USDA's *Sweetener Market Data*. The remaining data come from the equations. After subtracting out estimated nonfood deliveries and then summing, FY 2008 food and beverage deliveries from domestic processors/refiners are estimated at 9.396 million tons, or 10.054 million STRV. This projection includes deliveries for re-export products, which must be subtracted from the total—150,000 STRV for FY 2008.

To arrive at projection, one adds in an estimate/projection for direct sugar imports. The table entry for direct imports is set equal to the sum of the refined sugar TRQ and an estimate for a combination of Mexican duty-free and high-tier tariff refined sugar, or 94,251 STRV plus 50,000 STRV, or 144,251 STRV. The resulting projection is 10.048 million STRV, which is below the USDA projection in the

<sup>3</sup> Products manufactured by industrial sugar end users include bakery and cereal products, confectionery, ice cream and dairy products, beverages, canned, bottled and frozen foods, and nonfood products. Nonindustrial sugar end users include wholesale and retail grocers; hotels, restaurants, and institutions; government entities; and others.

Table 6--Estimated U.S. sugar deliveries and sugar in traded sugar-containing products 1/

Fiscal year	Oct-Dec	Jan-Mar	Apr-June	July-Sept	FY Total
1,000 short tons, raw value (STRV)					
Domestic sugar deliveries for food and beverage use					
1995	2,260	2,105	2,311	2,542	9,218
1996	2,379	2,191	2,355	2,519	9,445
1997	2,430	2,143	2,401	2,591	9,565
1998	2,443	2,233	2,428	2,568	9,672
1999	2,458	2,208	2,553	2,655	9,873
2000	2,580	2,318	2,484	2,611	9,993
2001	2,564	2,370	2,486	2,580	10,000
2002	2,474	2,227	2,439	2,645	9,785
2003	2,497	2,183	2,360	2,464	9,504
2004	2,504	2,286	2,368	2,520	9,678
2005	2,547	2,335	2,471	2,666	10,019
2006	2,571	2,436	2,487	2,690	10,184
2007	2,389	2,307	2,535	2,682	9,913
Estimated sugar in imported sugar-containing products					
1995	79	83	92	100	354
1996	99	85	95	110	389
1997	112	100	119	128	459
1998	125	115	138	151	529
1999	140	140	163	177	620
2000	173	162	177	191	704
2001	185	174	195	216	769
2002	215	192	223	250	879
2003	236	226	256	284	1,002
2004	266	251	288	315	1,119
2005	291	277	298	340	1,205
2006	322	313	358	352	1,345
2007	334	304	321	352	1,311
Estimated sugar in exported sugar-containing products					
1995	68	74	78	91	311
1996	97	85	90	103	376
1997	103	98	102	108	411
1998	109	91	98	103	401
1999	106	96	99	109	409
2000	116	104	107	128	456
2001	134	115	129	130	508
2002	130	112	118	125	485
2003	138	123	130	140	531
2004	150	137	140	148	575
2005	152	142	160	161	616
2006	175	143	150	150	618
2007	157	145	151	158	611
Estimated sugar in USDA sugar-containing product re-export program					
1995	28	18	18	39	103
1996	21	20	30	32	104
1997	22	68	22	45	157
1998	21	24	32	46	123
1999	44	58	35	32	169
2000	21	21	22	22	86
2001	18	21	29	30	98
2002	40	39	35	42	156
2003	43	44	49	47	183
2004	35	28	40	39	142
2005	28	24	37	33	121
2006	25	25	23	32	106
2007	31	43	55	40	169
Estimated sugar deliveries for domestic consumption (adjusted for trade in sugar-containing products)					
1995	2,299	2,132	2,343	2,590	9,364
1996	2,402	2,211	2,390	2,558	9,561
1997	2,461	2,213	2,439	2,656	9,770
1998	2,480	2,281	2,500	2,662	9,923
1999	2,536	2,311	2,651	2,755	10,253
2000	2,658	2,396	2,576	2,697	10,328
2001	2,632	2,450	2,580	2,697	10,359
2002	2,599	2,346	2,580	2,811	10,335
2003	2,637	2,330	2,534	2,656	10,158
2004	2,655	2,428	2,555	2,726	10,364
2005	2,714	2,493	2,646	2,877	10,730
2006	2,743	2,630	2,719	2,924	11,016
2007	2,597	2,509	2,760	2,916	10,782

Sources: *Sweetener Market Data*, FSA, USDA (deliveries data); Sugar and Sweetener Group, ERS (sugar in traded products).

1/ includes Puerto Rico.



Table 7--Economic Research Service forecasting model: domestic sugar deliveries to industrial and nonindustrial end users

Econometric specification: Sugar deliveries to end user = c(1) + c(2)\*Annual growth trend (TT) + Σ c(i)\*Month index (i), for i = 3 to 14 + Σ c(j)\* Indexes for outlier periods (D, followed by period interval)

Dependent Variable: Sugar deliveries to industrial end users, short tons, actual weight

Dependent Variable: Sugar deliveries to non-industrial end users, short tons, actual weight

Sample(adjusted): 1992:01 2008:02 (fiscal year)

Sample(adjusted): 1992:01 2008:02 (fiscal year)

Included observations: 192 after adjusting endpoints

Included observations: 192 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Variable	Coefficient	Std. Error	t-Statistic
Constant	452,063	4,501	100.447	Constant	348,187	3,590	96.975
D199201TO199308 1/	-31,686	5,597	-5.661	D200312	151,390	16,315	9.279
D199712TO200111	32,308	3,343	9.663	D200412	92,755	16,336	5.678
D200401	-139,866	20,035	-6.981	D200612TO200703	-50,717	8,534	-5.943
D200605TO200701	-22,022	6,847	-3.217	Yearly trend (TT)	2,655	261	10.157
Yearly trend (TT)	1,659	391	4.244	NOV	-17,905	4,982	-3.594
OCT.	-11,917	5,751	-2.072	DEC	-45,931	4,982	-9.220
NOV.	-69,803	5,640	-12.376	JAN	-116,354	5,020	-23.180
DEC.	-107,596	5,640	-19.077	FEB	-108,557	5,020	-21.627
JAN.	-65,437	5,616	-11.652	MAR	-52,178	5,020	-10.395
FEB.	-73,046	5,616	-13.007	APR	-78,273	5,020	-15.594
MAR.	-18,550	5,616	-3.303	MAY	-68,491	5,020	-13.645
APR.	-46,444	5,616	-8.270	JUN	-35,870	5,020	-7.146
MAY	-28,453	5,616	-5.066	JUL	-43,488	5,020	-8.664
JUL.	-35,710	5,602	-6.374	AUG	-24,621	5,020	-4.905
				D200712	-44,707	16,425	-2.722
R-squared	0.830	Mean dependent var	430,480	R-squared	0.880	Mean dependent var	321,431
Adjusted R-squared	0.816	S.D. dependent var	44,974	Adjusted R-squared	0.869	S.D. dependent var	44,228
S.E. of regression	19,296	Akaike info criterion	22.649	S.E. of regression	15,988	Akaike info criterion	22.277
Sum squared resid	6.52E+10	Schwarz criterion	22.905	Sum squared resid	4.50E+10	Schwarz criterion	22.548
Log likelihood	-2,137	F-statistic	60.836	Log likelihood	-2,123	F-statistic	85.712
Durbin-Watson stat	1.995	Prob(F-statistic)	0.000	Durbin-Watson stat	2.121	Prob(F-statistic)	0.000

1/ Outlier period 199201to199308 covers 1st month of fiscal year (FY) 1992 (October 1992) to 8th month of FY 1993 (May 1993)

Sources: Analysis by Sugar and Sweetener Group, Market and Trade Economics Division, Economic Research Service of sugar delivery data from *Sweetener Market Data*, FSA, USDA.

Table 8--Economic Research Service forecasting of end user sugar deliveries, fiscal years 2007 and 2008

	Monthly forecasts 1/					Annual forecasts				
	Industrial end users	Nonindustrial end users	Total	Polyhydric & livestock	Total human consumption	Annual food development	Annual human use development	Direct imports to non reporters	Product re-exports	Forecast deliveries
	short tons, actual value					A = Σ monthly delv.	B = 1.07*A	short ton, raw value		E = B+C-D
2007/08 - Oct.	482,012	339,697	821,709	4,705	817,004					
	460,929	365,099	826,028	4,371	821,657					
	374,671	345,980	720,651	3,765	716,886					
Jan.	415,454	275,699	691,153	3,765	687,387					
	409,550	283,496	693,046	3,765	689,280					
	464,047	339,875	803,922	3,765	800,157					
Apr.	436,152	313,780	749,932	3,765	746,167					
	454,143	323,562	777,705	3,765	773,939					
	483,086	356,183	839,269	3,765	835,504					
July	446,959	348,565	795,524	3,765	791,759					
	483,086	367,432	850,518	3,765	846,753					
	483,086	390,079	873,165	3,765	869,400	9,395,893	10,053,605	144,251	150,000	10,047,856

1/ Actual data through November 2007 from *Sweetener Market Data*, FSA, USDA; forecast data are shaded.

Source: Analysis by Sugar and Sweetener Group, Market and Trade Economics Division, Economic Research Service.

WASDE. However, a stochastic version of this model produces a standard deviation of 85,759 STRV for food and beverage deliveries, which implies a 95-percent confidence interval for deliveries between 9.938 million and 10.158 million STRV. The WASDE projection fits well within this range.

### ***Overall Allotment Quantity***

On August 10, 2007, the USDA announced the FY 2008 overall allotment quantity (OAQ) at 8.450 million STRV. On September 27, 2007, the USDA announced the distribution of the OAQ among sugar beet processors (4.593 million STRV), sugarcane processors (3.787 million STRV), and imports (70,000 STRV). This latter distribution was due to an earlier determination that sugarcane processors would be unable to fill 70,000 STRV of their initial allotment.

The 2002 Farm Act specifies that the Secretary of Agriculture's authority to operate sugar marketing allotments is suspended if USDA estimates that sugar import levels for human consumption (not including the re-export programs) will exceed 1.532 million STRV such that the imports would lead to a reduction of the OAQ. The marketing allotments would remain suspended until such time that imports have been restricted, eliminated, or otherwise reduced to or below the 1.532 million STRV level.

Table 9 shows import calculations for FY 2008 marketing allotments, along with a comparison to FY 2007, with projections from the January 2008 WASDE. According to the calculations, projected imports exceed the 1.532 million STRV suspension trigger by 214,000 STRV. Nonetheless, these projections contain considerable uncertainty. The USDA projection of 475,000 STRV relies on Mexico producing 5.830 million MTRV of sugar. This level is 197,000 MTRV more than last year and would represent the second highest level attained in Mexico. This

Table 9--Trigger for suspension of OAQ in FY 2007 and FY 2008

	FY 2007	FY 2008
Imports Under Quota (Less FTA's)	1,527	1,223
DR/CAFTAQuota	97	113
Colombia and Peru FTA	0	0
Non-program imports, including Mexico	66	480
Imports for re-export and polyhydric alcohol programs	390	425
Total Imports (A)	2,080	2,241
Less:		
Deliveries for sugar-containing products and polyhydric alcohol	-195	-175
Exports for refined sugar re-export program	-422	-250
OAQ reassignments to imports	-454	-70
Total (B)	-1,071	-495
Net imports that count against the suspension trigger (C = A - B)	1,009	1,746
OAQ suspension trigger (D)	1,532	1,532
Available import cushion before trigger is breached (E = D - C)	523	-214

Source: USDA, FSA dairy and Sweeteners Analysis Branch.

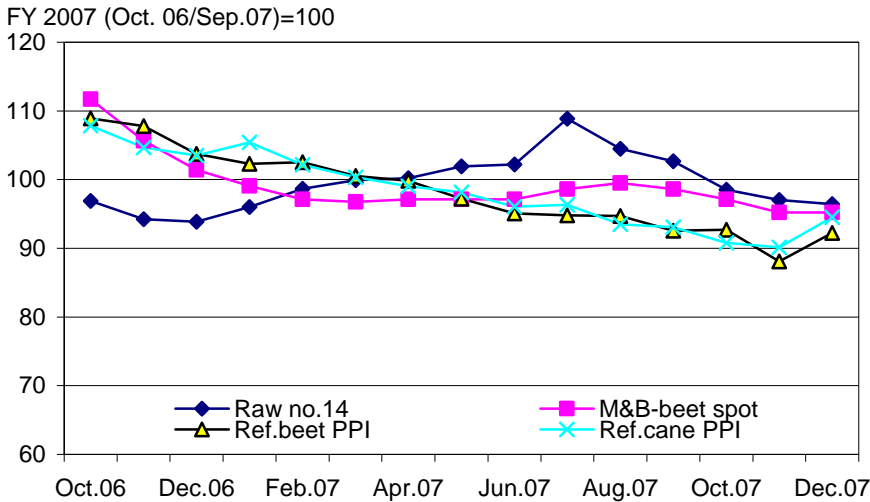
harvest season was slow to start because of labor force disruptions in the sugar industry, and these disruptions could well continue into the season, causing production to be lower. Although Mexico showed last year that harvesting in the latter half of the season can make up for a slow start, weather risks in June with the onset of the rainy season could be a limiting factor. Also, the import projection relies on an increase in the use of high fructose corn syrup (HFCS) in Mexico's beverage industry. Low Mexican standar sugar prices, as well as increased corn costs of producing HFCS, may limit the increase.

**Prices**

The nearby No.14 New York raw sugar contract price is averaging 20.37 cents per pound (lb) through the first half of January 2008. This average is close to the minimum price to avoid forfeitures (although no forfeitures would be expected until the end of May or later). The low end of the range of the Midwest refined beet sugar price is listed by *Milling and Baking News* at 24 cents per pound as of January 11. The minimum price to avoid forfeiture of refined beet sugar in the Midwest is calculated to be 24.28 cents/lb.

Figure 9 shows sugar price movements since the start of FY 2007 through December 2007. Prices include the nearby No.14 contract raw sugar price, *Milling and Baking News* low end of the range of the Midwest spot price for refined beet sugar, and Producer Price Indexes (PPIs) from the Bureau of Labor Statistics for refined beet sugar and for refined cane sugar. In the figure, the series have been indexed relative to FY 2007; that is, the average value for each price series for the 12 months of FY 2007 equals 100.0. Except for the raw cane price, all series have been in decline since October 2006. The decrease was rapid for the beet sugar spot price but leveled off and started to decrease again in August 2007. The refined sugar PPIs have been in almost constant decline during the entire period. The raw sugar price recovered last year from low levels in the first quarter of FY 2007 but has been in decline since July 2007.

Figure 9  
**Relative U.S. sugar prices, Oct. 2006-Dec. 2007**



Sources: NYBOT; *Milling and Baking News*, BLS.

### *Production*

In the Production, Supply, and Distribution (PSD) database, the USDA projects Mexican 2007/08 production at 5.830 million metric tons, raw value (MTRV). This projection assumes about the same area harvested as last year and normal weather conditions. However, harvesting progress has lagged considerably behind past seasons: Through January 19, 2008, only 1,007,154 metric tons (mt) of sugar had been produced, down 7.7 percent compared with the same period last year. (Last year's harvest was slow to gain momentum, as well.) Recovery through January 19 is calculated at 10.44 percent, which is above last year's same-period recovery of 10.18 percent. Although it is still early in a season that can last until June, the pace of harvesting progress needs to quicken if the production forecast (projected to be the second highest on record) is to be met.

A problem with harvesting this season has been the level of labor unrest in the sugar industry. On December 12, 2007, after a month of negotiations amid labor unrest that was delaying the start of the harvest, the Federal Government announced an agreement to determine the reference price of standard sugar and the price to pay for sugarcane for both the 2006/07 and 2007/08 harvests. The reference price of standard sugar for 2006/07 was increased to \$6,356.45 pesos per mt (U.S. \$579.96 per mt), a 6-percent increase compared with 2005/06 prices. (Usually about 57 percent of a reference price is paid to growers for their sugarcane.) Sugarcane producers had been requesting an 8.24-percent increase in price, while the sugar mill industry was only offering a 3.25-percent increase. For 2007/08, the Federal Government determined that the reference price of standard sugar will be \$5,996.13 pesos per mt (US\$ 547.09 per mt).

Many mills, citing falling sugar prices in Mexico (table 10, fig. 10), have protested that they have insufficient funds to pay the growers according to the terms of the government agreement. Some firms may try to appeal the government's reference pricing decision, with growers demanding timely payment and threatening harvest delays if not paid. Nonetheless, according to reports, the 13 government-owned mills have reached an agreement to pay their growers by the end of March. In an industry short of cash, sales made to simultaneously finance the harvest and pay the growers may result in further Mexican sugar price declines, making it harder for all firms to make required payments.

### *Deliveries of Sugar and High Fructose Corn Syrup*

The November 2007 PSD database shows sugar deliveries for human consumption at 5.210 million MTRV for FY 2007 and projected deliveries for FY 2008 at 5.150 million MTRV. Although high fructose corn syrup is not part of the PSD database, in November, the USDA was estimating FY 2007 deliveries of HFCS at 750,000 mt, dry weight basis, and was projecting deliveries in FY 2008 at 850,000 mt (table 11). Since November, the Interagency Commodity Estimates Committee (ICEC) for sugar has unofficially modified the Mexican PSD given more recent information and analysis of data. The ICEC projects FY 2007 sugar deliveries for human consumption at 5.406 million MTRV, an increase of 196,000 MTRV over the November estimate. Part of the increase is attributable to less HFCS consumption, now estimated at 703,000 mt, dry basis. The ICEC projects FY 2008 deliveries for

human consumption at 5.350 million MTRV, an increase of 200,000 MTRV over November. Consumption of HFCS, however, is still projected at 850,000 mt, dry weight.

### **Trade**

Trade data released by the Mexican Government's Secretary of Economy (SE) show sugar imports for FY 2007 (October 2006 through September 2007) at 502,966 mt, or 533,446 MTRV, with most coming from the United States, followed by Colombia and Guatemala (table 12). Sugar imports are about 69,000 MTRV more than estimated in the November 2007 PSD database. (No revisions have been made by the sugar ICEC because these data have only just recently been made available.) Most of the sugar entering from the United States is through the USDA's Refined Sugar Re-export Program.

Sugar exports reported by the SE for FY 2007 are estimated at 251,213 mt, or 266,437 MTRV. More than 98 percent of this sugar was shipped to the United States.<sup>5</sup> Tables 32 through 39 in the appendix show Mexican exports of products that contain sugar. Figure 11 shows estimates made by ERS's Sugar and Sweetener Group of total Mexican exports of sugar, including the sugar in products, since FY 2004. As can be seen, most sugar, except in FY 2006, has been in products imported from Mexico.

Mexican sugar exports for FY 2008 are projected at 440,000 MTRV, and exports of sugar in products (IMMEX program) are projected at 370,000 MTRV. These export projections contain a considerable amount of uncertainty. As previously mentioned, the harvest is off to a slow start, and low sugar prices relative to last year may prove a disincentive to switch from sugar to HFCS. On the other hand, if USDA projections about Mexican sweetener supply and use prove to be accurate, exports as forecast would still leave an ending-year stocks-to-consumption ratio in Mexico of 29.3 percent, about 6.2 percentage points higher than the ratio for an average of "normal" years since 1997/98 (excludes fiscal years 2001, 2005, and 2007 with ending-year stocks-to-consumption ratios above 30 percent-see figure 12). Achieving an ending stocks-to-use of 23.1 percent this year would require additional exports of 375,000 STRV (all else constant).

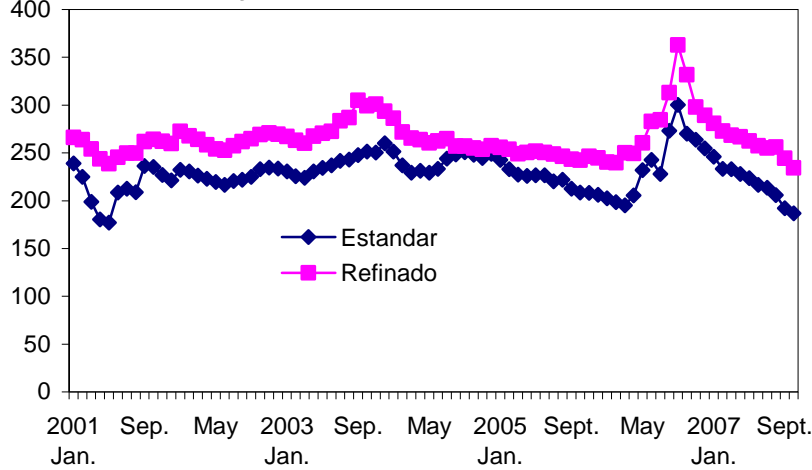
Sugar imports are projected at 200,000 MTRV. Most of these imports are expected to come from the United States under the refined sugar re-export program.

<sup>5</sup> Sugar exports in the table include flavored sugar under HS 1701.91.10. Although Mexico includes flavored sugar exports in total sugar exports, the United States does not classify it as sugar. This product enters the United States under corresponding Harmonized Tariff Schedule codes 1701.91.4800 and 1701.91.5800. These products do not qualify as sugar under the North American Free Trade Agreement and are considered to be sugar-containing products (SCPs). As sugar-containing products, they are exempt from tariffs and quantitative restrictions that applied to sugar imports from Mexico before 2008. The SE data source shows flavored sugar exports at 45,070 mt.

Figure 10

**Real sugar prices in Mexico, estandar and refinado, 2000-2007**

Real 2000 pesos/50kg

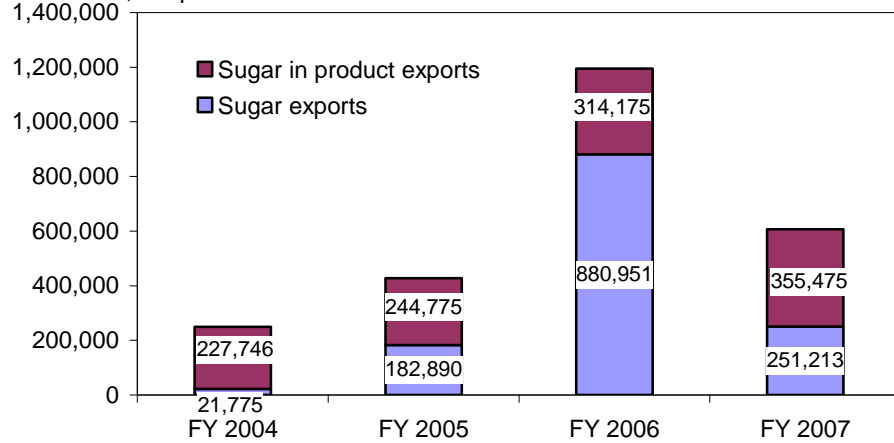


Source: COAAZUCAR; converted to real terms by Sugar and Sweetener Group, ERS.

Figure 11

**Sugar exported from Mexico, including sugar in products, to all destinations, FY 2004-2007**

Metric tons, tel quel

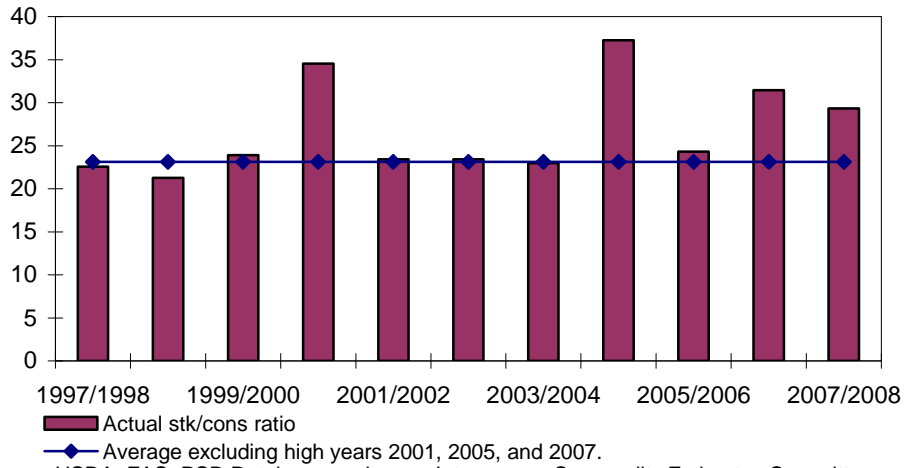


Source: Secretary of Economy, and Sugar and Sweetener Group, MTED, ERS (calculation of sugar in products).

Figure 12

**Sugar in Mexico, ending year stocks to consumption ratio,  
Oct./Sept. 1997/98-2007/08**

Percent



Sources: USDA, FAS, PSD Database, and sugar Interagency Commodity Estimates Committee.

Table 10--Bulk sugar prices in Mexico, 2001-2007

<u>Estandar sugar</u>														
Nominal pesos per 50 kg 1/														
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Calendar	Fiscal
2001	248.89	234.25	208.67	189.46	185.45	218.39	222.00	219.07	249.51	249.34	240.23	233.55	224.90	225.60
2002	245.76	244.46	243.44	242.14	240.83	239.15	244.95	248.15	253.40	262.31	266.23	268.39	249.93	243.78
2003	268.50	266.46	265.01	270.04	273.14	278.50	285.05	287.64	294.90	302.40	303.75	319.10	284.54	273.85
2004	309.70	296.25	291.25	298.25	297.25	302.95	317.85	326.20	331.00	329.60	326.05	329.85	313.02	308.00
2005	322.70	312.00	306.00	306.00	305.25	304.10	297.25	300.00	289.00	284.10	283.50	282.50	299.37	310.65
2006	280.40	275.60	273.00	292.50	334.40	353.69	333.00	401.40	440.75	395.85	386.25	374.35	345.10	319.57
2007	361.40	344.95	347.10	341.00	332.30	323.00	321.00	306.50	288.12	280.40	272.12	292.00	317.49	343.49
Real 2000 pesos per 50 kg														
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Calendar	Fiscal
2001	239.04	224.96	198.79	180.34	176.92	208.53	212.44	208.82	236.28	235.45	226.80	221.21	214.13	216.75
2002	232.16	230.78	226.27	222.92	219.68	216.46	220.50	222.04	224.84	232.90	234.77	233.63	226.41	224.92
2003	230.61	225.60	223.77	230.67	234.29	236.88	241.79	242.88	247.86	251.43	250.47	260.23	239.71	234.64
2004	251.54	236.92	229.38	231.45	229.22	233.43	243.92	248.38	250.64	247.88	244.67	249.04	241.37	243.09
2005	242.80	233.10	227.17	226.06	226.75	226.65	220.25	221.88	212.64	208.61	208.12	206.31	221.69	231.57
2006	202.63	198.62	195.00	205.52	232.00	242.77	228.05	273.25	300.16	270.17	263.92	254.76	238.90	225.09
2007	246.15	233.36	232.92	228.09	223.64	216.49	213.63	206.00	192.13	186.76				231.77
<u>Refinado sugar</u>														
Nominal pesos per 50 kg 1/														
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Calendar	Fiscal
2001	276.98	274.56	266.54	256.03	250.26	256.90	260.85	261.87	276.33	279.72	277.48	274.21	267.64	263.04
2002	288.40	283.56	284.03	280.56	278.54	279.34	285.98	292.64	298.51	303.09	306.90	309.50	290.92	283.58
2003	310.81	310.73	308.13	313.20	315.26	320.36	334.24	339.84	363.00	360.00	365.00	360.00	333.38	319.59
2004	352.50	340.00	337.20	340.00	337.50	340.60	345.00	337.40	339.50	339.25	338.20	341.00	340.68	346.23
2005	340.00	339.50	335.60	339.00	338.80	335.75	335.75	333.00	330.75	330.00	335.60	335.10	335.74	337.22
2006	332.80	332.75	350.00	355.00	375.60	412.00	415.25	459.70	532.63	486.20	435.75	424.75	409.37	380.54
2007	412.55	403.50	400.25	398.80	389.94	384.16	383.13	380.84	366.40	351.73	331.99	333.16	378.04	405.52
Real 2000 pesos per 50 kg														
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Calendar	Fiscal
2001	266.02	263.67	253.92	243.70	238.75	245.30	249.62	249.61	261.68	264.14	261.97	259.72	254.84	252.57
2002	272.44	267.69	263.99	258.29	254.07	252.84	257.43	261.85	264.87	269.10	270.63	269.41	263.55	261.61
2003	266.95	263.09	260.18	267.53	270.42	272.48	283.52	286.95	305.09	299.33	300.98	293.59	280.84	273.78
2004	286.31	271.91	265.57	263.85	260.26	262.44	264.75	256.91	257.08	255.13	253.79	257.46	262.96	273.58
2005	255.81	253.64	249.15	250.44	251.67	250.24	248.78	246.28	243.36	242.31	246.37	244.72	248.56	251.31
2006	240.50	239.80	250.00	249.44	260.58	282.79	284.38	312.93	362.71	331.83	297.75	289.06	283.48	268.04
2007	280.99	272.97	268.59	266.76	262.43	257.48	254.98	255.96	244.33	234.27				273.59

1/ D.F.- Central de Abasto de Iztapalapa, D.F.

Source: Servicio Nacional de Informacion de Mercados SNIIM-ECONOMICA



Table 11--USDA estimate/forecast of sugar production and supply, and sugar and HFCS utilization in Mexico

	2006/07		2007/08	
	PSD - Nov. 2007 1/	ICEC - Jan. 2008 2/	PSD - Nov. 2007	ICEC - Jan. 2008
	<i>1,000 metric tons, raw value</i>			
Beginning stocks	1,294	1,294	1,656	1,700
Production	5,633	5,633	5,830	5,830
Imports	464	464	200	200
Supply	7,391	7,391	7,686	7,730
Human consumption	5,210	5,406	5,150	5,350
Other cons.	390	390	370	370
Total	5,600	5,796	5,520	5,720
Exports	135	135	440	440
Statistical adjustment	0	-240	0	0
Total use	5,735	5,691	5,960	6,160
Ending stocks	1,656	1,700	1,726	1,570
Stocks-to-human cons.	31.8	31.4	33.5	29.3
HFCS cons. (dry weight)	750	703	850	850

1/ PSD = Production, Supply, and Distribution (PSD)

2/ ICEC = Interagency Commodity Estimates Committee (ICEC)

Source: PSD Database, Foreign Agricultural Service (FAS), USDA; and sugar ICEC, USDA.

Table 12--Imports of sugar into Mexico, by source, fiscal years 2004-2007

Country	FY 2004	FY 2005	FY 2006	FY 2007
		<i>Metric tons, tel quel</i>		
Total imports	314,632	254,052	226,426	502,966
United States	128,613	151,756	224,025	354,957
Colombia	22,952	527	134	63,770
Guatemala	84,417	78,225	2,044	32,398
Brazil	78,498	0	0	16,746
Nicaragua	0	0	0	12,238
Canada	40	23	10	11,700
Costa Rica	0	23,457	0	5,145
Australia	0	0	55	4,371
El Salvador	0	0	0	1,000
Argentina	0	0	0	504
All others	111	64	159	137

Source: Secretary of Economy, Government of Mexico, HS 1701.

Table 13--Exports of sugar from Mexico, by destination, fiscal years 2004-2007

Country	FY 2004	FY 2005	FY 2006	FY 2007
		<i>Metric tons, tel quel</i>		
Total exports	21,775	182,890	880,951	251,213
United States 1/ Puerto Rico (U.S.)	17,356	173,961	865,070	246,515
Taiwan	0	0	13,445	4,658
Korea, South	0	0	0	14
Dominican Republic	22	0	20	10
Costa Rica	0	0	0	5
Belize	4	0	0	3
Cuba	0	0	2	3
Peru	0	0	0	3
Germany	0	0	0	1
All others	0	0	0	1
	4,392	8,929	2,413	1

Source: Secretary of Economy, Government of Mexico, HS 1701.

1/ The United States records HS 1701.91.01, flavored sugar, as a sugar-containing product. Mexican exports to all destinations were: FY 2004: 7,622 mt; FY 2005: 36,210 mt; FY 2006: 63,177 mt; FY 2007: 45,076 mt.

## *Mexican Sugar and HFCS Long-Term Projections Through 2020*

The USDA prepares long-term sugar projections for both the United States and Mexico in the fall for publication prior to the Outlook conference in February of the following year. First-year projections (2007/08 October/September marketing year) are the same as those published by the USDA's Foreign Agricultural Service (FAS) in November 2007. Production for 2007/08 is forecast at 5.830 million metric tons, raw value (MTRV), and consumption for food and beverages is forecast at 5.150 million MTRV. Exports are forecast at 440,000 MTRV, and almost all exported sugar is expected to be shipped to the United States. Consumption of high fructose corn syrup (HFCS) in 2007/08 is projected at 850,000 metric tons (mt), dry weight. It is assumed that the beverage industry consumes about 83 percent, or 709,000 mt, of that amount. HFCS is estimated to make up over 40 percent of combined sugar and HFCS sweeteners demanded by the Mexican beverage industry.

The USDA bases its projections of Mexican sweetener consumption on analysis of trends in the consumption of sweetener-containing products and in deliveries of sugar for distribution to households and other users. Consumption growth in sweetener-containing products is a function of population growth and real per capita income in Mexico. Assumptions on population and income growth are shown in the top panel of table 14. The lower panel shows projections of sweeteners used by Mexican beverage and food manufacturers, as well as deliveries to other distributors. Sweetener-containing products are an increasing function of population and real per capita gross domestic product. Analysis suggests that, as real per capita income increases, the proportion of total sweetener deliveries to beverage and food manufacturers increases, which results in fairly constant deliveries to distributors over the projections period. Mexican per capita sweetener consumption, already high compared with that of other developing economies, is about 51 kilograms (kg) in 2008 and grows to 51.8 kg at the end of the projections period.

Table 15 gives an overview of the Mexican component of the long-term projections model used for analysis. Sugar production comes from processing sugarcane grown in various regions in Mexico. Regional sugarcane area is a function of economic returns over production costs. The sugarcane returns derive from the price of sugar in Mexico. Trend growth in sugarcane processing productivity is assumed to continue through the projections period. As described above, sweetener consumption is a function of population and real income. HFCS substitutes for sugar primarily in beverage uses. The substitution is either based on pricing relationships between *estandar* sugar and HFCS or exogenously set by assumed proportions of HFCS used in the beverage industry. Ending-year sugar stocks are determined by an inverse relation between the domestic sugar price and the ratio of sugar stocks to sugar consumption. The difference between total sugar supply and the sum of sugar deliveries and ending stocks determines the amount of sugar available for export.

Sugar prices in Mexico and the United States are a function of ending stock ratios. In Mexico, the ratio is ending stocks as a proportion of human consumption; and in the United States, the ratio is ending stocks as a proportion of total use. If sugar prices are higher in the United States than in Mexico, more sugar from Mexican stocks is exported to the United States (table 16). Less sugar in Mexico implies a Mexican price increase, and more sugar in the United States implies, all else

constant, a lower U.S. sugar price. The export flow achieves equilibrium when the U.S. raw sugar price and the Mexican *estandar* price differ by the cost of transporting Mexican sugar to the United States and other marketing expenses. In the case where U.S. prices are initially below the sum of the *estandar* price and marketing costs, exports from Mexico to the United States decrease.

Effective on January 1, 2008, all duties and quantitative restraints on sugar and HFCS trade between the two countries were removed. The USDA projects that use of HFCS by Mexico's beverage industry will likely increase beyond current levels, which implies a higher exportable surplus of sugar from Mexico. The long-term projections process recognizes that several outcomes based on the level of HFCS use in Mexico are possible. In all, three cases are considered: one assuming low use—HFCS use in beverage industry equaling 30 percent of total use; one assuming a higher share of 75 percent; and the last assuming a very high use of 90 percent.

Long-term projections for Mexican sugar and HFCS corresponding to each of the three cases are shown in table 17, and a summary of average values are shown in table 18. These projections assume that the U.S. sugar program as defined in the 2002 Farm Act provides price support through the entire projections period. The projections assume that the Mexican beverage industry adapts its bottling facilities to HFCS use during 2009-11, and that 90 percent of the industry can fully substitute between sugar and HFCS after 2011.

Results show that there are no differences in *estandar* prices between the 75-percent and 90-percent HFCS share versions. This result stems from price support afforded by the U.S. sugar program. Annual sugar production totals in both cases are the same. In the 30-percent version, *estandar* prices average about 4.5 percent higher than in the higher share versions, and annual production averages about 1.8 percent higher.

The largest differences among the scenarios are in projected sugar exports. With increasing consumption of HFCS assumed, domestic demand in Mexico for sugar is lower and downward price inflexibility contributes to sustained sugar production. The low-share version indicates average exports at 697,000 MTRV. This projection is about 60 percent higher than the 440,000 MTRV export level expected in the current marketing year 2007/08. The 75-percent version shows projected annual exports at 1.649 million MTRV, or nearly 1 million MTRV higher, and the 90-percent version has annual exports at 1.906 million MTRV.

Table 14--ERS long term sweeteners projections model: Mexico, assumptions, sweetener deliveries to end users, 2006-2020.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Population (millions)	107.450	108.701	109.955	111.212	112.469	113.724	114.975	116.221	117.459	118.689	119.909	121.117	122.312	123.491	124.654
Per capita Gross Domestic Product (real 2000 \$)	6,194	6,329	6,482	6,646	6,815	6,989	7,169	7,355	7,546	7,744	7,949	8,161	8,380	8,608	8,843
	1,000 metric tons, refined value equivalent														
<b>Beverage deliveries</b>	1,423	1,483	1,549	1,602	1,633	1,663	1,694	1,725	1,756	1,788	1,820	1,852	1,885	1,918	1,951
<b>Industrial food deliveries</b>	1,081	1,124	1,168	1,192	1,230	1,265	1,300	1,337	1,375	1,414	1,454	1,495	1,537	1,581	1,626
Bakery & Cereal	678	700	721	735	753	772	792	812	833	854	875	897	919	942	965
Confectionery	223	234	240	243	249	255	262	268	275	282	289	296	304	311	319
Dairy	85	89	98	102	109	111	113	115	117	119	121	123	125	127	129
Processed Foods	96	102	109	112	119	126	133	142	150	159	169	179	189	201	213
<b>Non-industrial deliveries</b>	2,659	2,681	2,928	2,862	2,887	2,889	2,890	2,890	2,891	2,890	2,889	2,888	2,886	2,883	2,880
<b>Total sweetener deliveries</b>	5,163	5,289	5,645	5,656	5,751	5,817	5,884	5,952	6,022	6,092	6,163	6,235	6,308	6,382	6,457
<b>Total sweetener deliveries, per capita (kg.)</b>	48.1	48.7	51.3	50.9	51.1	51.1	51.2	51.2	51.3	51.3	51.4	51.5	51.6	51.7	51.8

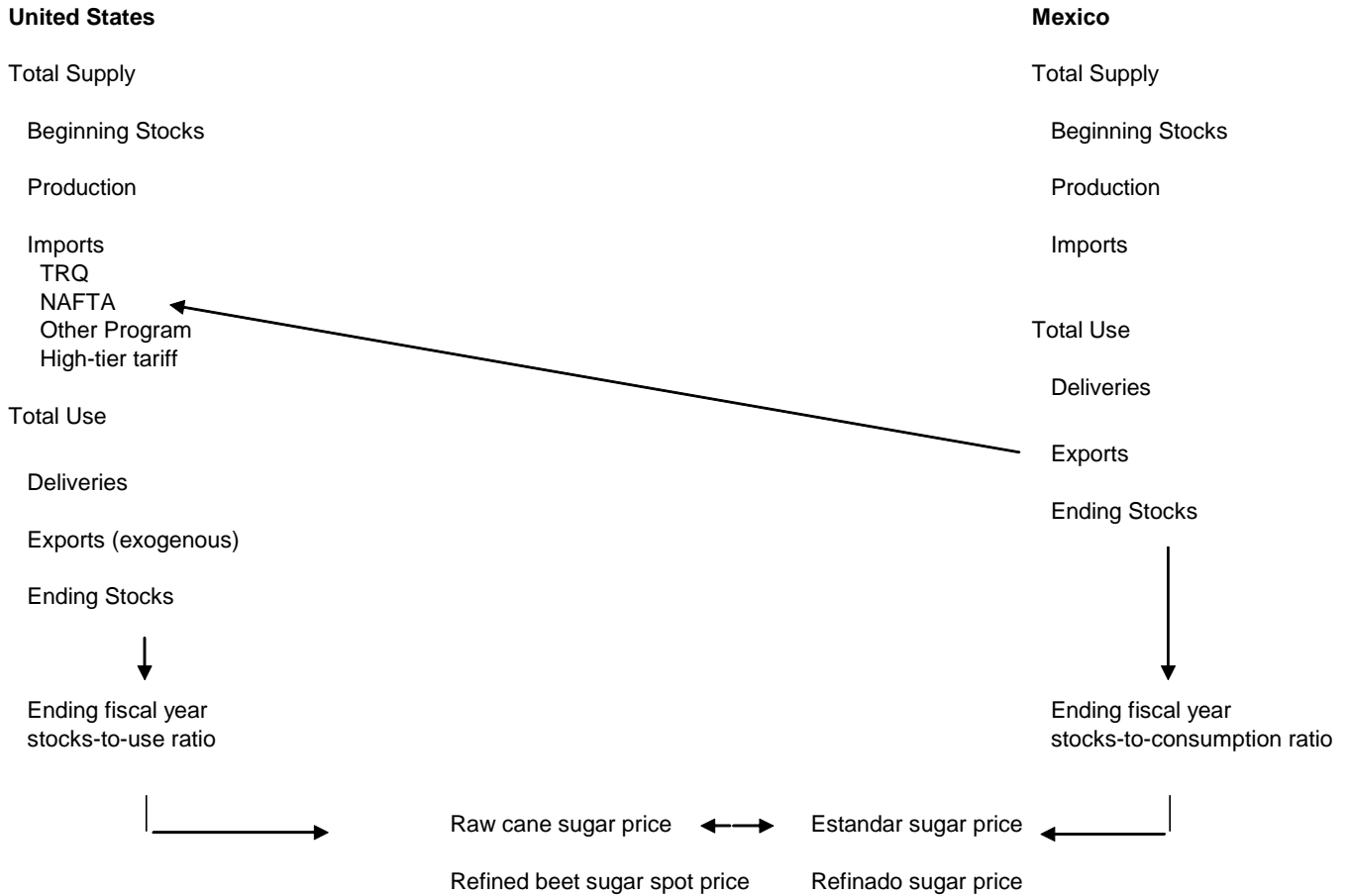
Source: Sugar and Sweetener Group, Market Trade and Economic Division, Economic Research Service.

Table 15--ERS long term sweetener projections model -- factors affecting Mexican sugar supply and utilization

Beginning Stocks	+ Production	+ Imports	= Net exports	+ Deliveries	+ Ending Stocks
-- Processor/Refiner Owned	Sugar processed from:	-- Imports for IMMEX sugar-containing product exports (exog.)	-- dependent on Mexico exportable sugar surplus:	-- Deliveries for	-- Processor/Refiner Owned
	-- Sugarcane	-- High-Tier Tariff Imports	* HFCS use in Mexico; and	human food and	
	> function of lagged regional sugarcane prices, which are derived from cane sugar price	if price = world price + tariff + marketing costs	* linkage of U.S. raw and Mexican standar sugar prices	> Growth in per capita sweetener consumption by end use as function of real GDP growth	
	> production dependent on available processing capacity			>Substitution of HFCS for domestic sugar as function of price ratios, or fixed shares	
	> processing capacity dependent on product returns covering minimum average variable costs in short run and average total costs over medium run.			-- Other deliveries: sugar to Mexico IMMEX program.	

Source: Sugar and Sweetener Team, Market Trade and Economic Division, Economic Research Service.

Table 16--ERS long term sweeteners projections model, simplified sugar sector representation



Source: Sugar and Sweetener Team, Market Trade and Economic Division, Economic Research Service.

Table 17--Alternative long term Mexico sugar and high fructose corn syrup (HFCS) projections.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>1,000 metric tons, raw value</i>															
Version 1: HFCS sweetener share in beverage industry = 30 percent															
Beginning Stocks	1,965	1,294	1,656	1,726	1,605	1,319	921	688	546	485	483	522	582	656	670
Sugar Production	5,604	5,633	5,830	6,020	6,087	6,130	6,277	6,402	6,541	6,671	6,784	6,878	6,956	7,021	7,085
Imports	240	464	200	0	0	0	0	0	0	0	0	0	0	0	0
Supply	7,809	7,391	7,686	7,746	7,692	7,449	7,198	7,089	7,087	7,156	7,267	7,399	7,538	7,677	7,755
Disappearance	5,649	5,600	5,520	5,870	5,874	5,846	5,815	5,878	5,941	6,006	6,071	6,136	6,203	6,270	6,338
Consumption	5,326	5,210	5,150	5,870	5,874	5,846	5,815	5,878	5,941	6,006	6,071	6,136	6,203	6,270	6,338
Other Disappearance	323	390	370	0	0	0	0	0	0	0	0	0	0	0	0
Exports	866	135	440	271	499	682	696	665	661	667	675	681	679	737	809
Ending Stocks	1,294	1,656	1,726	1,605	1,319	921	688	546	485	483	522	582	656	670	608
Stocks-to-Consumption	0.243	0.318	0.335	0.273	0.225	0.158	0.118	0.093	0.082	0.080	0.086	0.095	0.106	0.107	0.096
High Fructose Corn Syrup	650	650	850	331	395	489	587	598	610	622	635	647	660	672	685
Estandar sugar price (cents/lb)	26.66	28.50	19.37	19.62	19.80	20.29	20.65	20.92	20.96	20.77	20.42	20.01	19.59	19.36	19.36
Version 2: HFCS sweetener share in beverage industry = 75 percent															
Beginning Stocks	1,965	1,294	1,656	1,726	1,662	1,469	1,274	1,108	1,003	909	824	747	677	613	555
Sugar Production	5,604	5,633	5,830	6,020	6,077	6,105	6,223	6,315	6,417	6,518	6,617	6,716	6,816	6,917	7,016
Imports	240	464	200	0	0	0	0	0	0	0	0	0	0	0	0
Supply	7,809	7,391	7,686	7,746	7,738	7,573	7,498	7,422	7,420	7,427	7,441	7,463	7,492	7,530	7,572
Disappearance	5,649	5,600	5,520	5,353	5,240	5,061	4,873	4,917	4,962	5,007	5,052	5,098	5,144	5,191	5,238
Consumption	5,326	5,210	5,150	5,353	5,240	5,061	4,873	4,917	4,962	5,007	5,052	5,098	5,144	5,191	5,238
Other Disappearance	323	390	370	0	0	0	0	0	0	0	0	0	0	0	0
Exports	866	135	440	731	1,029	1,238	1,517	1,501	1,549	1,597	1,642	1,688	1,735	1,783	1,830
Ending Stocks	1,294	1,656	1,726	1,662	1,469	1,274	1,108	1,003	909	824	747	677	613	555	503
Stocks-to-Consumption	0.243	0.318	0.335	0.310	0.280	0.252	0.227	0.204	0.183	0.165	0.148	0.133	0.119	0.107	0.096
High Fructose Corn Syrup	650	650	850	814	987	1,223	1,467	1,496	1,526	1,556	1,586	1,617	1,649	1,681	1,713
Estandar sugar price (cents/lb)	26.66	28.50	19.37	19.38	19.38	19.37	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36
Version 3: HFCS sweetener share in beverage industry = 90 percent															
Beginning Stocks	1,965	1,294	1,656	1,726	1,662	1,409	1,208	1,036	938	850	769	697	631	571	517
Sugar Production	5,604	5,633	5,830	6,020	6,077	6,105	6,223	6,315	6,417	6,518	6,617	6,716	6,816	6,917	7,016
Imports	240	464	200	0	0	0	0	0	0	0	0	0	0	0	0
Supply	7,809	7,391	7,686	7,746	7,738	7,514	7,432	7,351	7,355	7,368	7,387	7,412	7,447	7,488	7,533
Disappearance	5,649	5,600	5,520	5,353	5,029	4,799	4,560	4,597	4,635	4,674	4,713	4,752	4,791	4,831	4,872
Consumption	5,326	5,210	5,150	5,353	5,029	4,799	4,560	4,597	4,635	4,674	4,713	4,752	4,791	4,831	4,872
Other Disappearance	323	390	370	0	0	0	0	0	0	0	0	0	0	0	0
Exports	866	135	440	731	1,300	1,507	1,836	1,815	1,870	1,925	1,977	2,030	2,084	2,139	2,194
Ending Stocks	1,294	1,656	1,726	1,662	1,409	1,208	1,036	938	850	769	697	631	571	517	468
Stocks-to-Consumption	0.243	0.318	0.335	0.310	0.280	0.252	0.227	0.204	0.183	0.165	0.148	0.133	0.119	0.107	0.096
High Fructose Corn Syrup	650	650	850	814	1,184	1,467	1,760	1,795	1,831	1,867	1,904	1,941	1,979	2,017	2,056
Estandar sugar price (cents/lb)	26.66	28.50	19.37	19.38	19.38	19.37	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36	19.36

Source: ERS long term sweetener projections model.

Table 18--Average of alternative long term Mexico sugar and high fructose corn syrup (HFCS) projections, 2012-2020 1/

	HFCS sweetener share in beverage industry:		
	30 percent	75 percent	90 percent
	----- 1,000 metric tons, raw value -----		
Beginning Stocks	617	857	802
Sugar Production	6,735	6,617	6,617
Imports	0	0	0
Supply	7,352	7,474	7,419
Disappearance	6,073	5,054	4,714
Consumption	6,073	5,054	4,714
Other Disappearance	0	0	0
Exports	697	1,649	1,986
Ending Stocks	582	771	720
High fructose corn syrup consumption	635	1,588	1,906
Estandar sugar price (cents/lb)	20.23	19.36	19.36

1/ Scenario assumes that Mexican beverage industry can fully substitute between sugar and HFCS in 2012. Period 2009-2011 represents a phase-in period of adapting factories for use of HFCS.

Source: ERS long term sweetener projections model.



### *EU Adjusts Sugar Reform, but Exports Continue in Short Term*

Reform of the European Union (EU) sugar regime in 2005 (see box, “Basic Essentials of the 2005 Sugar Reform”) did not produce the results expected by the EU Commission. Surpluses continued to mount, and expensive export subsidies (for example, 169,000 metric tons (mt) at 417.51 euros in August 2007) were required to rid warehouses of excess sugar supplies, while some of the excess beet production went into ethanol. In October 2007, a new restructuring scheme was introduced to add incentives to the quota restructuring with important restrictive details involving payments to growers and processors that had plagued the initial reform. Subsequently, over 1.5 million mt were renounced for the 2008/09 marketing year in response to the new incentives, over 800,000 mt higher than the previous year.

Implementation of the sugar reform began in July 2006 and will be completely phased in by 2009. Many high-cost factories and growers were expected to renounce their quotas and accept what the EU Commission considered a lucrative “restructuring” of sugar production through quota buyout. However, the rate of renounced quota in the restructuring was significantly overestimated, as only 2.2 million mt were voluntarily removed through restructuring in the first 2 marketing years, while 1.1 million mt of quota were picked up by C sugar-producing countries as allowed by the reform. The EU Commission reduced the sugar quota by 2 million mt for the 2007/08 marketing year to cope with overproduction.

Surplus production is expected to reach 4.5 million mt in the 2007/08 marketing year, despite a projected 10-percent decline in beet production for 2007/08 (15.8 million mt compared with 17.4 million mt in 2006/07). A reduction of 6 million mt in EU production is expected over the 4-year implementation period that ends in 2009. If quota were renounced at the desired rate, it would make the EU a net importer of around 4 million mt, with consumption projected at 17 million mt for the EU-25 and production around 12-13 million mt as projected by the EU Commission. However, the EU Commission’s forecast was questionable. The sugar policy was very complex and much was unknown about growers’ and processors’ costs and quota allocation and price arrangements between processors and growers. In addition, the ability of developing countries with preferential treatment to supply imports at the lower EU price was in question.

An excellent 2006 study by Bureau and Gohin of the EU sugar reform concluded that quota rents would be eroded significantly. However, production would not decline as much as the EU Commission anticipated because profit margins would be sufficient for most farmers to remain in production as costs were low enough to allow production with the EU price still significantly above the world price. In addition, the authors concluded that C sugar production (production above quota to be sold at world prices) was a factor in overproduction, partly because growers were anticipating a reform of the type introduced and would continue to produce even at a loss in order to receive anticipated future compensation. The coming reform was well known before the official proposal, and overproduction of C sugar was evident in the 3 years preceding the reform, indicating a buildup of production that would be eligible for compensation. The study indicated that a

deeper sugar reform would be necessary because the Commission overestimated quota renunciation because costs were overestimated across the EU and producers most likely anticipated a better compensation package with higher production.

### ***Basic Essentials of the 2005 Sugar Reform***

- Refined sugar price reduced by 36 percent from €31.9 to €4.4 per mt over a 4-year phase-in period beginning in 2006/07, while the minimum sugar beet price is reduced by 39.5 percent to €26.3/mt and phased in over the same period.
- Sugar production quotas are not cut but are expected to be reduced through a voluntary 4-year restructuring program where quota can be sold and retired at €730/mt for 2006/07 and 2007/08, €625/mt for 2008/09, and €520/mt for 2009/10.
- The restructuring is financed by quota levies on producers and processors who do not sell quota and is expected to reach €7.8 billion. The first year's levy is equal to €26.4/mt, second year €73.8/mt, and third year €13.0/mt.
- Compensation for the price cut averages 64.2 percent, which will be included in the Single Farm Payment.
- A super levy will be applied to over-quota production like the dairy program and is effectively prohibitive.
- Merging of A and B quota into a single production quota and abolition of C sugar.
- Former C-sugar-producing countries will be able to buy an additional amount of 1.1 million mt of quota at €730/mt.
- Sugar for the chemical and pharmaceutical industries and for the production of bioethanol will be excluded from production quotas.
- An increase in the isoglucose quota of 300,000 mt for the existing producer companies phased in over 3 years at 100,000 mt each year.
- Extra isoglucose quota may be purchased in Italy (60,000 mt), Sweden (35,000 mt), and Lithuania (8,000 mt) at the restructuring aid price.

### ***Restructuring Scheme Enhanced and Targeted***

In the new reform scheme, growers can now apply directly to Brussels for a buyout of quota as long as the amount does not exceed 10 percent of the factory's supply. In addition, the factory is guaranteed to keep at least 90 percent of the quota buyout funds. National governments had intervened to divert buyout funds to growers that made the restructuring unattractive to the factories that distribute the quota. Factories that renounce quota in the 2008/09 marketing year will also be reimbursed for the 2007/08 levy (€73.8/mt) paid if quota was not renounced. Growers that renounce quota for 2008/09 will receive an extra €37.50/mt payment, which is retroactive for growers that renounced quota in 2006/07 and 2007/08 if they received a lesser amount for renouncing quota.

Some effects seem to have taken place in addition to the recent increase in quota renunciation as large Irish, Italian, and Belgian sugar factories closed in 2007 and growers have had to renounce quota as no factories were economically located near them. Also, some large EU sugar companies have acquired sugar facilities in Africa and Israel to take advantage of preferential tariffs in anticipation of lower production in the EU. If further closings and renunciation of quota are not forthcoming in the next 2 years, then the EU will invoke permanent and uncompensated quota cuts in 2010 if the EU sugar market is not in balance.

In the first year of the reform, lower prices in the market were not felt by the growers as previous contracts fixed the price. Lower prices as set out in the reform are expected to be felt by the growers in the coming seasons and the added incentive to sell quota should be more attractive to the high-cost producers. Nevertheless, it remains to be seen whether the EU Commission production estimates of production decline will be sufficient to reach the goal of 12.2 million mt by 2010.

### ***The ACP Dilemma***

The EU will discontinue the Sugar Protocol that has governed trade with 77 African, Caribbean, and Pacific (ACP) countries for 32 years. As of October 2009, the preferential trade agreements that favored sugar exports of 18 of the ACP countries to the EU will be terminated in order to conform to World Trade Organization (WTO) rules. ACP countries will be offered duty-free access for raw sugar and sugar beets to EU sugar markets with the same access conditions that have been granted to non-ACP countries but at prices 39.5 percent lower than previously received due to the EU sugar reform.

The EU is attempting to conclude economic partnership agreements (EPAs) with these 77 ACP countries which is designed to mollify those countries that benefited from preferential access at high EU prices. However, the EPAs are broad in scope and have many economic development and trade goals and negotiations have been difficult. With respect to sugar, the EPAs are complicated by the EBA (Everything but Arms) agreement that reduces tariffs on raw sugar to zero beginning in 2010 for the least developed countries (LDCs), some of which are ACP countries. It remains to be seen whether EBA countries can fill the anticipated reduction in EU sugar production over time as most of the EBA countries are relatively high-cost producers.

On December 20, 2007, the Council of the EU formally adopted a market access regulation to grant duty and quota-free access to the EU market to ACP countries beginning on January 1, 2008, with transition periods for sugar and rice if EPAs are agreed and signed. The EPAs will likely assist some of the ACP countries in shipping raw sugar to the EU at reduced tariffs, which will be phased in to zero, but how much raw sugar will be exported to the EU remains to be seen. Political agreement within the EU Council had already been reached on this regulation on December 10, 2007. It applies to those ACP countries that concluded negotiations on either a full EPA or an interim agreement as of January 1, 2008. However, not all countries or regions of the ACP had agreed to sign an EPA, but interim agreements have been signed and all EPAs are expected to be finalized by the end of 2008; thus, details are not yet available.

### ***EU Commission Determined To Make EU Sugar More Competitive***

The EU Commission is determined to reduce EU production of high-cost sugar and move production within the EU to the more efficient producers. This approach is consistent with the EU Commission's approach over the last few years in re-orienting the common agricultural policy (CAP) to a more market-directed economy that is less costly to consumers and taxpayers. Whether or not the EU is able to balance its domestic market through internal reduction of production with imports from the EBA and EPA countries is unknown, but the Commission seems determined to reduce the EU sugar quota by 6 million mt (to 12.2 million mt) by 2010 even if inefficient EU beet farmers remain in production.

The Commission threat of a permanent uncompensated quota cut in 2010 is believable because of the direction of its past reforms and budget limitations. Most sugar experts in the EU agree that the EU will be a net importer within a few years but are uncertain about how much EU production will be renounced or how much sugar will be exported into the EU through the EBA and EPA arrangements for sugar. The EU may be able to eliminate all EU sugar export subsidies by 2013 with the new reform, a pledge that the EU has made for all food and agricultural commodities, although most analysts agree that a successful conclusion of the Doha Round may be a necessary condition to ensure that outcome.

### ***References***

Alexandre Gohin and Jean Christophe Bureau. "Modelling the EU Sugar Supply to Access Sectoral Policy Reforms," *European Review of Agricultural Economics*, Vol. 33, No. 2, pp. 223-247, June 2006.

## Processor Production Forecast Accuracy

The USDA requires accurate, unbiased sugar production forecasts for making the Department's monthly market forecast used to manage the domestic sugar program. Sugar production forecasts from sugar beet and sugarcane processors are compiled by the Farm Service Agency (FSA) for publication in the World Agricultural Outlook Board's *World Agriculture Supply and Demand Estimates* (WASDE) for sugar. Domestic sugar demand is met by domestic sugar beet and sugarcane sugar production, limited foreign access granted under trade agreements, and unlimited Mexican access under the North American Free Trade Agreement. Foreign access exceeding minimum requirements under trade agreements is granted only when minimum foreign access, domestic sugar production, and expected Mexican sugar imports are insufficient to meet market demand.

### ***Background***

The Farm Security and Rural Investment Act of 2002 (2002 farm bill) brought back the domestic marketing allotment program, which restricts domestic sugar marketing's to balance the market. Marketing allotments were incorporated into the 2002 farm bill to return the sugar program to a "no cost" program. In years when domestic supply and foreign access exceed demand, domestic marketing allotments are set below stock clearing levels.

The Federal Agriculture Improvement and Reform Act of 1996 (1996 farm bill) allowed domestic sugar beet and sugarcane processors to market sugar without restriction. High grain prices in the 1990s encouraged farmers to reduce sugar crop acreage, resulting in a short domestic sugar market, which required increased sugar imports. As grain prices fell, sugarcane acreage expanded, domestic sugar production increased, and the oversupplied domestic market forfeited over 1 million tons of sugar to the Commodity Credit Corporation (CCC) in fiscal year (FY) 2000.

The USDA, as required in both the 1996 and 2002 farm bills, collects monthly sugar production forecasts from each processor for the current fiscal year and, in May through September, for next fiscal year, resulting in 17 forecasts of production for any given fiscal year. These data are certified to be accurate at the time of submission by each company.

The sugarcane growing areas in Louisiana and Florida have survived several weather incidents since the 2002 farm bill was implemented, starting in September 26, 2002, when Tropical Storm Isadore made landfall in Louisiana, followed by Hurricane Lili 7 days later. The affects of these weather events promulgated the Agricultural Assistance Act of 2003, where the CCC provided compensation to sugarcane processors for economic losses. In late summer 2004, four hurricanes made landfall in Florida, bringing damage to citrus, vegetable, and sugarcane crops. In response, the Emergency Supplemental Appropriations for Hurricane Disasters

Assistance Act of 2005 provided compensation to Florida sugarcane processors for their losses. On August 25, 2005, Hurricane Katrina crossed southern Florida before entering the Gulf of Mexico, turning north, and, on August 29, making landfall in Louisiana. Less than a month later, Hurricane Rita crossed over Texas and entered Louisiana sugarcane growing areas. Finally, on October 24, 2005, Hurricane Wilma crossed the Florida sugarcane growing area before entering the Gulf of Mexico. These three massive weather events lead to compensation to Louisiana sugarcane processors under the 2005 Louisiana Sugarcane Hurricane Disaster Assistance Program for economic losses.

Weather incidents such as these can have lasting effects on sugarcane crops. Sugarcane, which is planted by laying cane stalks lengthwise, is a ratoon crop, where new growth emerges from each joint for multiple years. Weather incidents that damage the ratoon will, in theory, affect future yields from those ratoons until they are replanted. Typically, sugarcane growers replant 20 percent of the crop each year, completing a full rotation every 5 years.

### ***Methodology***

We calculated forecast error by subtracting actual production from production forecasts. Fiscal years 1997 through 2002 are classified as “before the 2002 farm bill,” while fiscal years 2003 through 2006 are classified as “after the 2002 farm bill.” The monthly average forecast error for each classification is graphed to show the difference in forecast accuracy before and after the 2002 farm bill. Actual forecast error (State production forecast less State actual production) is graphed in the State-by-State analysis of sugarcane processors.

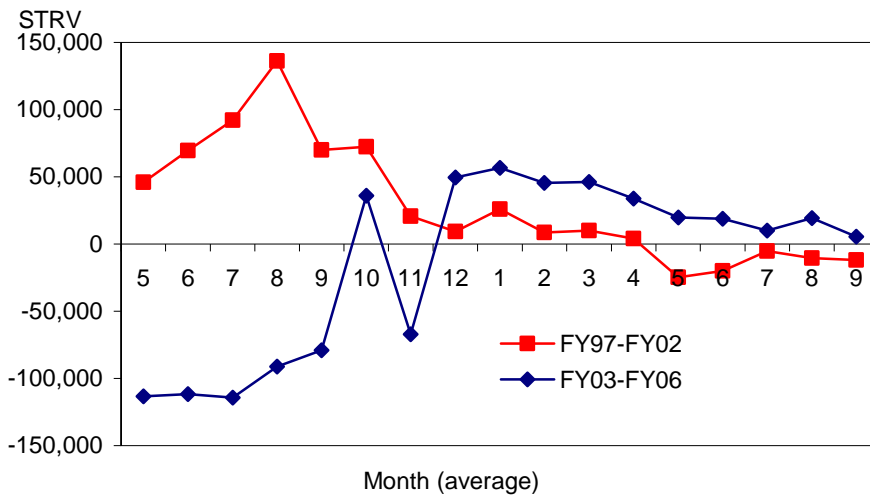
### ***Analysis***

#### **Sugar Beet Processors**

Production forecasts by sugar beet processors were less accurate after the 2002 farm bill and upwardly biased in the December through September period (fig. A-1). Both before and after the 2002 farm bill, December through September forecasts were twice as accurate as May through November forecasts, where the forecast error was greater than 10 percent of annual production. Despite being upwardly biased, the forecast error was less than 5 percent of annual production in the December through September period—an acceptable range.

Figure A-1

**Aggregated beet processor production forecast error before and after the 2002 Farm Bill**



**Sugarcane Processors**

Forecasts by sugarcane processors were significantly more accurate before the 2002 farm bill than after. The bias in their estimates was reversed and large after the 2002 farm bill (fig. A-2). To further investigate, we partitioned the sugarcane processing sector by State, comparing the State's aggregated actual end-of-fiscal-year production to State aggregated processor forecasts. Table A-1 shows each State's total production used in the State-by-State analysis.

Figure A-2

**Aggregated sugarcane processor production forecast accuracy before and after the 2002 Farm Bill**

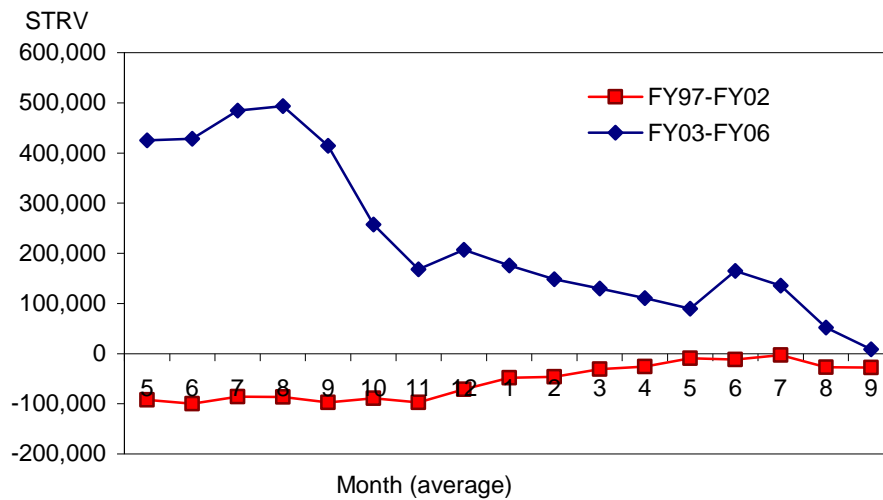


Table A-1--Actual sugar production from sugarcane

FY	Short tons, raw value			
	Louisiana	Florida	Texas	Hawaii
1997	1,059,287	1,679,179	91,666	340,273
1998	1,265,559	1,923,381	79,596	349,923
1999	1,324,593	2,127,159	106,715	383,744
2000	1,683,189	1,965,648	105,135	317,615
2001	1,585,091	2,056,660	206,091	241,388
2002	1,579,931	1,980,281	173,764	250,571
2003	1,367,158	2,129,146	190,985	276,306
2004	1,377,065	2,153,983	175,053	250,912
2005	1,156,773	1,692,602	157,954	257,886
2006	1,190,333	1,367,408	175,474	222,645

**State by State Analysis**

Texas & Hawaii

Forecasts by Texas and Hawaii sugarcane processors were unbiased and accurate. Although production forecast data from Texas processors fluctuate (fig. A-3), processor errors are minimal, representing less than 2 percent of actual annual production. Forecast accuracy by Hawaii sugarcane processors was nearly unchanged before and after the 2002 farm bill, with few exceptions (fig. A-4). Further investigation into Hawaii’s data revealed that three data points deviated from the established forecasting pattern and were likely erroneous. Consequently, these outlying data were not published in WASDE or used for making sugar program decisions.



Figure A-3

**Texas sugarcane processor production forecast error before and after the 2002 Farm Bill**

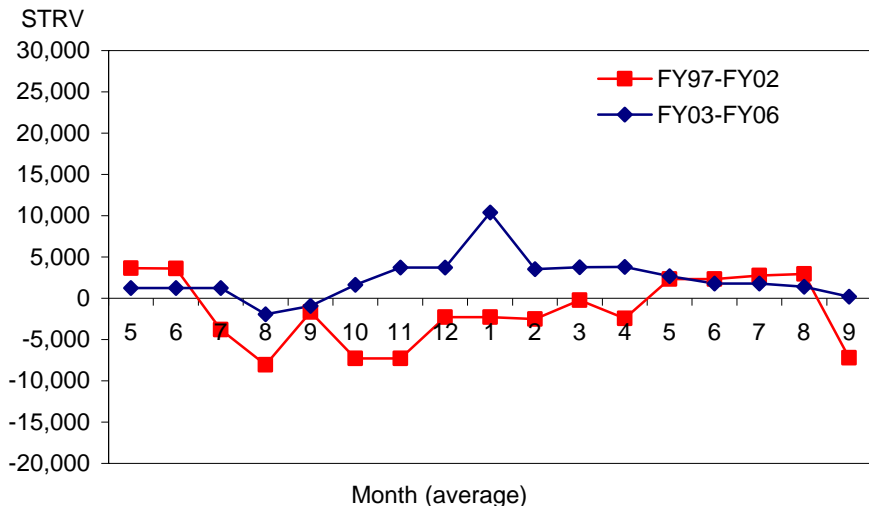
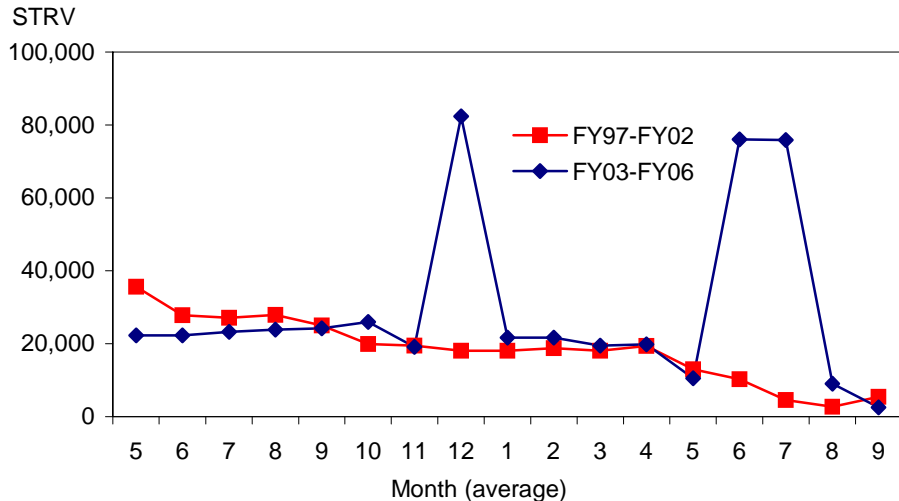


Figure A-4

**Aggregated Hawaii sugarcane processor production forecast error before and after the 2002 Farm Bill**



Louisiana

Production forecasts by Louisiana sugarcane processors were downwardly biased before and upwardly biased after the 2002 farm bill (fig. A-5). Also, average processor forecast error after the 2002 farm bill was three times that observed before the 2002 farm bill, jumping from less than 3 percent of actual production to

greater than 11 percent. FY 2003 production forecasts decreased as Tropical Storm Isadore and Hurricane Lili made landfall in Louisiana; however, processors did not expect a future crop yield impact, as sugar production forecasts remained upwardly biased in FY 2004 (fig. A-6). Louisiana processors may have expected sugar production to continue at pre-2002 farm bill levels—the 3-year average before the 2002 farm bill was 1.616 million short tons, raw value (STRV)—but underlying crop statistics show that sugarcane yield and the sugar recovery rate decreased in FY 2003 and only the recovery rate increased in FY 2004 (figs. A-7 and A-8).

FY 2005 and FY 2006 sugar production forecasts continued to be upwardly biased, over 400,000 STRV and 200,000 STRV, respectively (fig. A-9). Disastrous hurricanes in FY 2005 nearly destroyed New Orleans and closed two Louisiana cane sugar refineries. As hurricanes hit Louisiana, FY 2005 production forecasts reflected the expected crop damage and were decreased. However, FY 2006 production forecasts continued to be biased upward (fig. A-9). Additionally, sugarcane yield (fig. A-7) and the recovery rate (fig. A-8), decreased in FY 2005, and only the recovery rate showed improvement in FY 2006.

Louisiana processors were habitually, upwardly biased in forecasting September sugar production. September production (averaging 31,000 STRV after the 2002 farm bill) is the first grinding of the new crop and is highly uncertain, yet Louisiana processors expected above average production. Because Louisiana’s grinding season ends in late December or early January, data in figures 6 and 9, for January through September, reflect Louisiana processors’ September forecast error and averaged over 100,000 STRV in FY 2004, FY 2005, and FY 2006. As a result, the WASDE committee estimates a reasonable expectation for Louisiana sugar production in September, when publishing sugarcane processor production forecasts.

Figure A-5  
**Aggregated Louisiana sugarcane processor production forecast error before and after the 2002 Farm Bill**

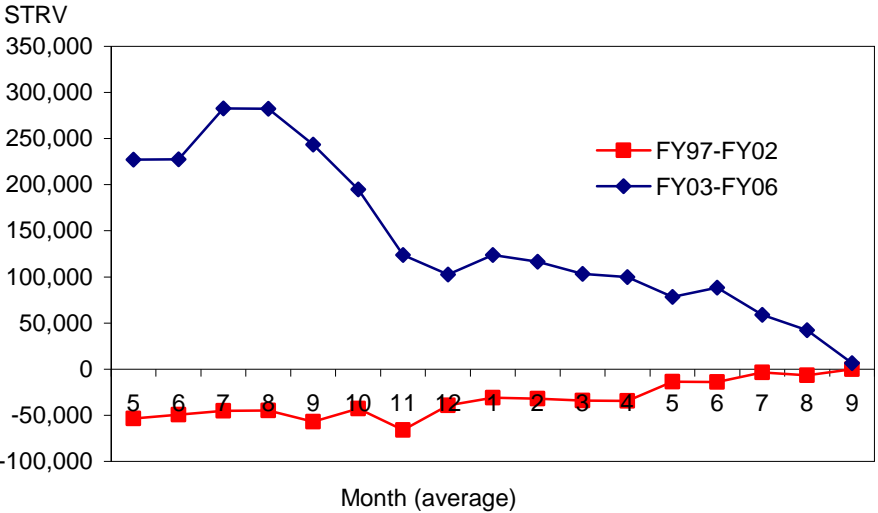


Figure A-6

**Louisiana sugarcane production forecast error, FY 2003 and FY 2004**

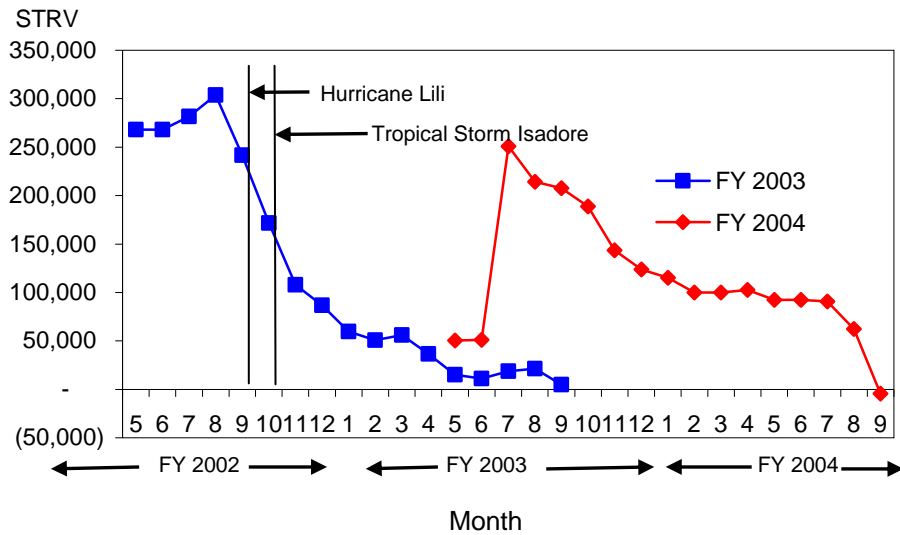


Figure A-7

**Louisiana - Sugarcane yield**

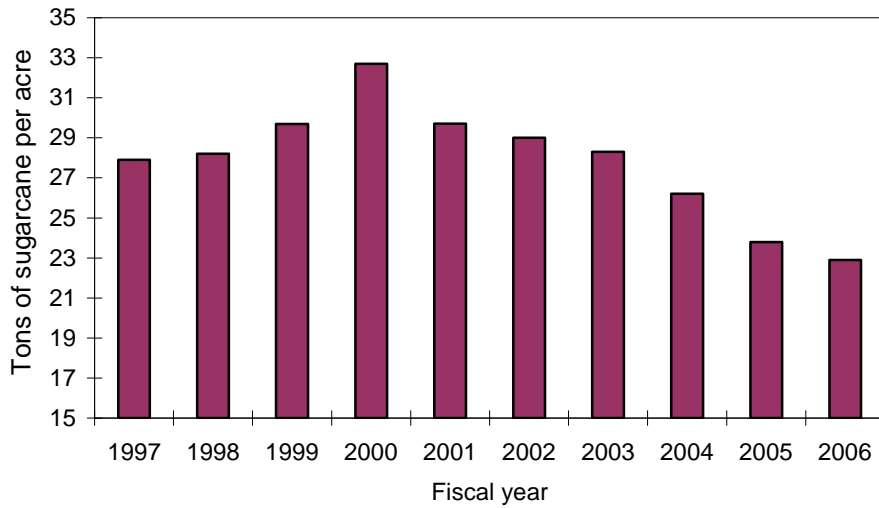


Figure A-8

**Louisiana sugar recovery rate**

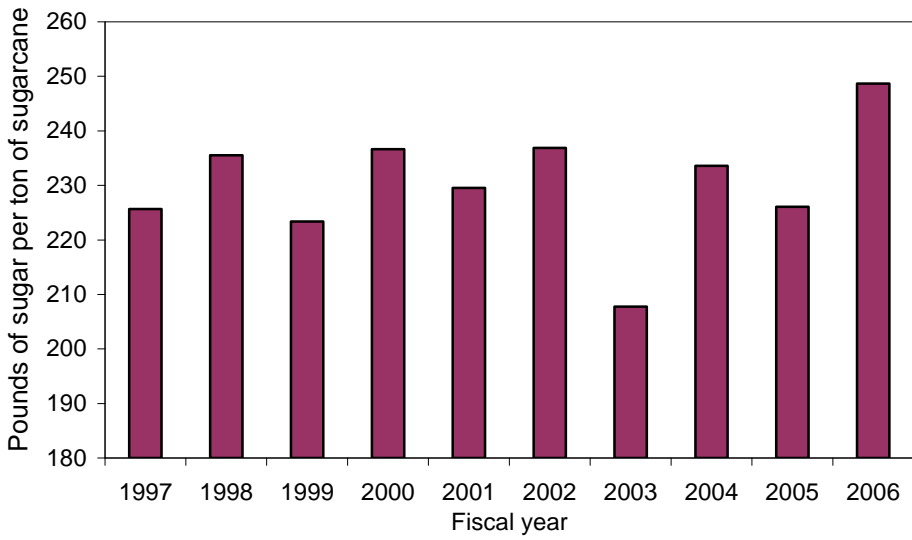
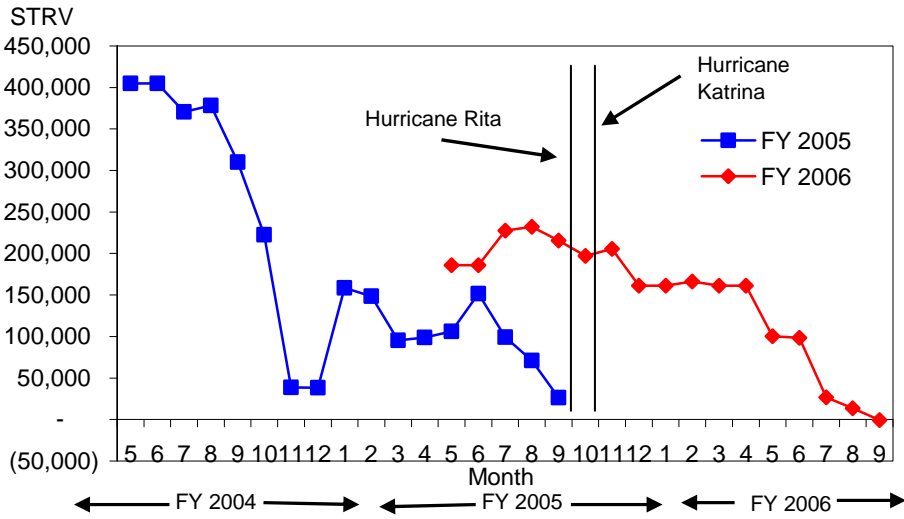


Figure A-9

**Louisiana sugar production forecasts error, FY 2005 and FY 2006**



Florida

Post-2002 farm bill production forecasts from Florida processors were biased and less accurate due to unexpected weather events in FY 2005 and FY 2006 (fig. 11). Since the 2002 farm bill, the forecast accuracy of Florida processors consistently improves as the fiscal year begins, starting in October (fig. 10). Sugarcane yield and the sugar recovery rate both decreased as a result of unexpected weather-related crop damage (figs. 12 and 13), causing initial production forecasts to be upwardly biased (fig. 11).

Figure A-10

**Aggregate Florida sugarcane processor production forecast error before and after the 2002 Farm Bill**

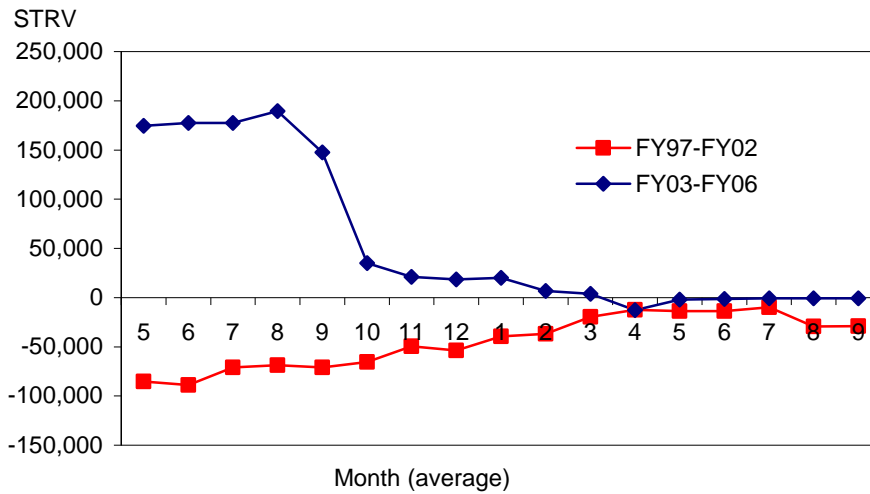


Figure A-11

**Aggregated Florida sugarcane processor forecast error after the 2002 Farm Bill**

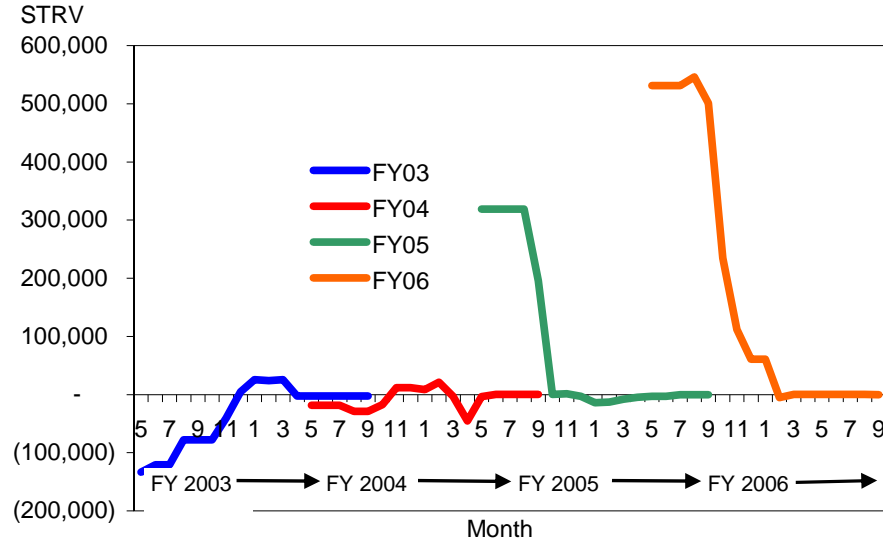


Figure A-12

**Florida sugarcane yield**

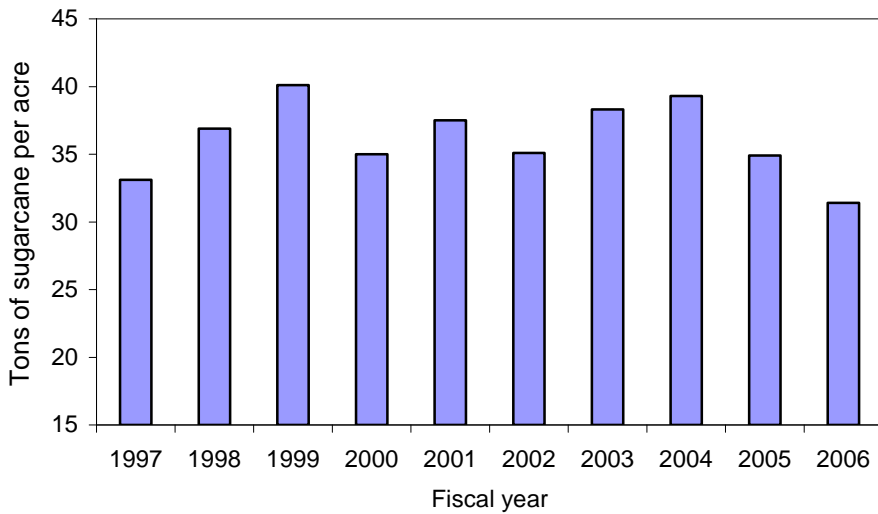
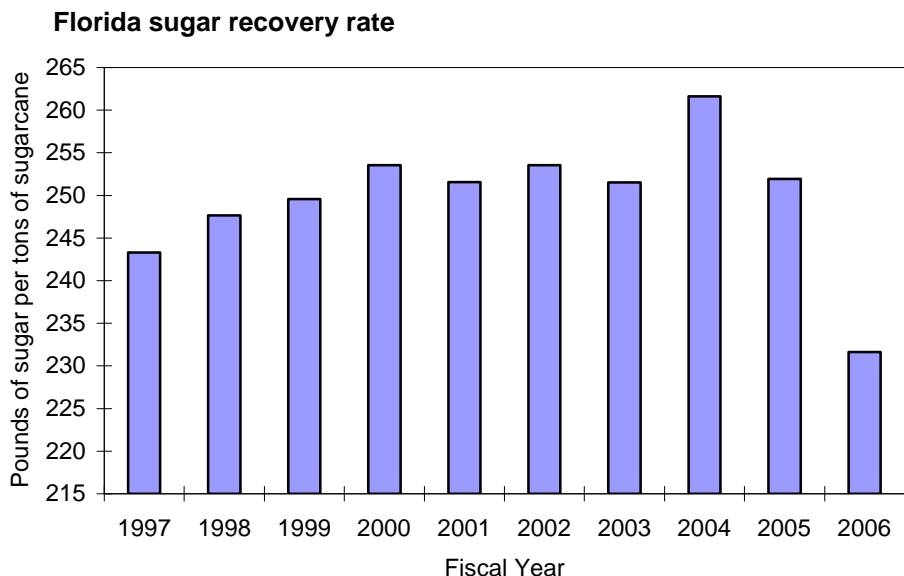


Figure A-13



**Conclusion**

Forecast bias by Louisiana sugarcane processors after the 2002 farm bill could not be completely explained, while forecast bias by Florida sugarcane processors could be explained by unexpected weather events. Texas and Hawaii sugarcane processors were accurate and unbiased in estimating sugar production. Sugar beet processor production forecasts were less accurate and upwardly biased after the 2002 farm bill; however, the forecast error represented less than 5 percent of annual beet sugar production.

Louisiana’s inexplicably high September sugar production forecasts may be the most significant contributing factor, although weather events, split shipping, strategic behavior, and variety changes were also considered. Louisiana processors consistently expected September sugar production to exceed average, and even historic, levels. Reaching a high of 79,000 STRV in FY 2003, Louisiana September sugar production averaged 31,000 STRV since the 2002 farm bill. The September forecast error inexplicably exceeded 150,000 STRV, nearly twice the historic record for September sugar production, in FY 2005 and FY 2006 and exceeded 100,000 STRV in FY 2004. As a result, the USDA estimates a reasonable expectation for September sugar production, rather than the reported September forecast, to calculate Louisiana’s total fiscal year sugar production forecast, for publication in the *WASDE*.

Weather events do not appear to be the cause of Louisiana processor forecast error, as forecasts in FY 2003, a bad hurricane year, were more accurate and less biased than in the other 2002 farm bill years. The phenomenon of “split shipping,” where sugarcane growers deliver sugarcane to more than one mill, in theory, may cause mills to double count expected cane supplies and therefore contribute to upwardly biased sugar production forecasts. However, split shipping was a business strategy

employed before the 2002 farm bill and, therefore, would have been present in pre-2002 farm bill data. Strategic behavior, where processors artificially inflate domestic sugar supplies for strategic sugar program purposes may be influencing their estimates. Variety performance does not appear to be the cause of significant forecast error, as Louisiana sugarcane yield trended down since FY 2000 (fig. 7) and forecasts did not reflect an observance of changes in the sugar recovery rate.

Florida processors accurately estimated FY 2003 and FY 2004 production (fig. 11) but were upwardly biased in FY 2005 and FY 2006. Comparing aggregated processor production forecasts for FY 2005 and FY 2006 to the average of the three previous fiscal year's sugar production (FY 2002 to FY 2004), the data suggests that Florida processors expected sugar production to continue at these recent levels. Florida processor forecasts expected sugarcane yield and/or the sugar recovery rate to stay flat through FY 2005 and FY 2006, when, in fact, both statistics decreased as a result of unexpected weather events. The drop in sugarcane yield and the sugar recovery rate resulted in upwardly biased (initial) sugar production forecasts.

For further information contact Steven E. Cornell, an Agricultural Economist with the U.S. Department of Agriculture, Farm Service Agency, Economic and Policy Analysis Staff, (202) 720-6833 or [steve.cornell@wdc.usda.gov](mailto:steve.cornell@wdc.usda.gov)





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### Contact Information

Stephen Haley, (202) 694-5247, [shaley@ers.usda.gov](mailto:shaley@ers.usda.gov)

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### Data

Tables from the *Sugar and Sweeteners Yearbook* are available in the Sugar and Sweeteners Briefing Room at <http://www.ers.usda.gov/briefing/sugar/>. They contain the latest data and historical information on the production, use, prices, imports, and exports of sugar and sweeteners.

### Related Websites

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Table 19--World refined sugar price, monthly, quarterly, and by calendar and fiscal year 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
Cents per pound																				
1991	13.39	13.40	13.86	12.90	12.99	13.94	14.73	14.40	13.09	13.03	12.71	12.46	:	13.55	13.28	14.07	12.73	:	13.41	13.71
1992	12.18	11.92	12.19	12.54	12.89	13.41	13.41	12.96	12.29	11.94	11.68	11.26	:	12.10	12.95	12.89	11.63	:	12.39	12.67
1993	11.60	11.97	13.05	13.38	13.39	12.64	12.20	13.05	12.90	13.23	13.15	12.97	:	12.21	13.14	12.72	13.12	:	12.79	12.42
1994	13.14	14.11	15.46	14.92	15.77	16.05	15.54	15.62	15.42	15.46	17.77	18.65	:	14.24	15.58	15.53	17.29	:	15.66	14.62
1995	18.75	18.17	17.45	16.31	17.05	19.16	20.27	20.01	16.58	17.29	17.64	17.21	:	18.12	17.51	18.95	17.38	:	17.99	17.97
1996	17.36	17.90	18.14	18.02	17.79	18.00	16.99	16.81	15.74	14.87	14.09	13.95	:	17.80	17.94	16.51	14.30	:	16.64	17.41
1997	13.87	13.98	14.05	14.19	14.61	14.93	15.07	15.66	14.51	13.58	13.81	13.64	:	13.97	14.58	15.08	13.68	:	14.33	14.48
1998	13.52	12.78	12.23	11.63	12.00	11.80	11.65	11.62	10.05	10.00	10.78	10.97	:	12.84	11.81	11.11	10.58	:	11.59	12.36
1999	10.99	10.50	9.85	8.79	9.13	9.93	9.47	9.04	8.28	7.85	7.73	7.61	:	10.45	9.28	8.93	7.73	:	9.10	9.81
2000	7.70	7.67	7.83	8.66	9.06	10.63	11.38	11.29	11.74	11.76	11.02	10.95	:	7.73	9.45	11.47	11.24	:	9.97	9.10
2001	11.27	10.65	10.26	10.61	11.71	12.68	12.60	12.08	10.66	10.19	11.27	11.52	:	10.73	11.67	11.78	10.99	:	11.29	11.35
2002	11.88	10.80	10.81	10.09	10.28	10.02	10.23	10.33	9.68	9.72	10.16	10.25	:	11.16	10.13	10.08	10.04	:	10.35	10.59
2003	10.64	11.10	10.51	10.14	9.95	9.66	9.84	9.74	8.95	8.39	8.67	9.23	:	10.75	9.92	9.51	8.76	:	9.74	10.06
2004	9.16	9.54	10.59	11.19	10.78	10.73	11.81	11.80	11.12	11.21	11.27	11.23	:	9.76	10.90	11.58	11.24	:	10.87	10.25
2005	11.63	12.09	12.02	11.76	11.75	12.61	14.70	14.81	14.60	14.18	13.10	15.00	:	11.91	12.04	14.70	14.09	:	13.19	12.47
2006	16.92	19.99	20.45	21.35	21.81	20.93	20.95	18.16	17.32	17.92	16.41	15.86	:	19.12	21.36	18.81	16.73	:	19.01	18.35
2007	15.13	14.92	15.59	14.21	14.94	14.36	14.13	12.87	12.54	12.56	13.00	13.78	:	15.21	14.50	13.18	13.11	:	14.00	14.91

1/ Contract No. 5, London Daily Price, for refined sugar, f.o.b. Europe, spot, through June 2006. Starting in July 2006, spot price replaced by average of nearest futures month for which an entire month of prices is available.

Source: London International Financial Futures and Options Exchange. (LIFFE).

Table 20--World raw sugar price, monthly, quarterly, and by calendar and fiscal year 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
Cents per pound																				
1991	8.88	8.57	9.22	8.55	7.88	9.37	10.26	9.45	9.39	9.10	8.79	9.03	:	8.89	8.60	9.70	8.97	:	9.04	9.26
1992	8.43	8.06	8.22	9.53	9.62	10.52	10.30	9.78	9.28	8.66	8.54	8.15	:	8.24	9.89	9.79	8.45	:	9.09	9.22
1993	8.27	8.61	10.75	11.30	11.87	10.35	9.60	9.30	9.52	10.27	10.10	10.47	:	9.21	11.17	9.47	10.28	:	10.03	9.58
1994	10.29	10.80	11.71	11.10	11.79	12.04	11.73	12.05	12.62	12.75	13.88	14.76	:	10.93	11.64	12.13	13.80	:	12.13	11.25
1995	14.87	14.43	14.58	13.63	13.49	13.99	13.46	13.75	12.72	11.94	11.96	12.40	:	14.63	13.70	13.31	12.10	:	13.44	13.86
1996	12.57	12.97	13.07	12.43	11.94	12.54	12.83	12.33	11.87	11.65	11.29	11.38	:	12.87	12.30	12.34	11.44	:	12.24	12.40
1997	11.13	11.06	11.17	11.50	11.54	12.02	12.13	12.54	12.65	12.86	13.19	12.90	:	11.12	11.69	12.44	12.98	:	12.06	11.67
1998	11.71	11.06	10.66	10.27	10.17	9.33	9.70	9.50	8.21	8.24	8.73	8.59	:	11.14	9.92	9.14	8.52	:	9.68	10.80
1999	8.40	7.05	6.11	5.44	5.83	6.67	6.11	6.39	6.98	6.90	6.54	6.00	:	7.19	5.98	6.49	6.48	:	6.54	7.05
2000	5.64	5.51	5.54	6.48	7.33	8.72	10.18	11.14	10.35	10.96	10.02	10.23	:	5.56	7.51	10.56	10.40	:	8.51	7.53
2001	10.63	10.26	9.64	9.27	9.96	9.80	9.48	8.77	8.60	7.15	7.80	8.02	:	10.18	9.68	8.95	7.66	:	9.12	9.80
2002	7.96	6.81	7.27	7.12	7.33	7.07	8.02	7.86	8.54	8.84	8.87	8.81	:	7.35	7.17	8.14	8.84	:	7.88	7.58
2003	8.56	9.14	8.50	7.92	7.41	6.85	7.18	7.30	6.70	6.74	6.83	6.95	:	8.73	7.39	7.06	6.84	:	7.51	8.01
2004	6.42	7.01	8.23	8.21	8.08	8.41	9.19	8.99	9.10	9.84	9.65	10.19	:	7.22	8.23	9.09	9.89	:	8.61	7.85
2005	10.33	10.51	10.57	10.19	10.23	10.45	10.89	11.09	11.59	12.40	12.86	15.09	:	10.47	10.29	11.19	13.45	:	11.35	10.46
2006	17.27	18.93	18.01	18.21	17.83	16.19	16.61	13.58	12.42	12.09	12.38	12.47	:	18.07	17.41	14.20	12.31	:	15.50	15.78
2007	11.85	11.63	11.44	10.85	10.78	11.05	12.18	11.66	11.61	11.86	11.83	12.47	:	11.64	10.89	11.82	12.05	:	11.60	11.67

1/ Contract No. 11-f.o.b. stowed Caribbean port, including Brazil, bulk spot price, plus freight to Far East.

Source: New York Board of Trade (www.nybot.com)

Table 21--U.S. raw sugar price, duty fee paid, New York, monthly, quarterly, and by calendar and fiscal year 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
Cents per pound																				
1991	21.86	21.42	21.46	21.23	21.29	21.42	21.25	21.83	22.06	21.76	21.75	21.50	:	21.58	21.31	21.71	21.67	:	21.57	21.89
1992	21.38	21.56	21.36	21.38	21.04	20.92	21.10	21.34	21.55	21.61	21.39	21.11	:	21.43	21.11	21.33	21.37	:	21.31	21.39
1993	20.76	21.16	21.56	21.76	21.36	21.42	21.89	21.85	21.97	21.80	21.87	22.00	:	21.16	21.51	21.90	21.89	:	21.62	21.49
1994	22.00	21.95	21.95	22.08	22.18	22.44	22.72	21.84	21.78	21.58	21.57	22.35	:	21.97	22.23	22.11	21.83	:	22.04	22.05
1995	22.65	22.69	22.46	22.76	23.10	23.09	24.47	23.18	23.21	22.67	22.60	22.63	:	22.60	22.98	23.62	22.63	:	22.96	22.76
1996	22.39	22.68	22.57	22.71	22.62	22.48	21.80	22.51	22.38	22.37	22.12	22.14	:	22.55	22.60	22.23	22.21	:	22.40	22.50
1997	21.88	22.07	21.81	21.79	21.70	21.62	22.04	22.21	22.30	22.27	21.90	21.93	:	21.92	21.70	22.18	22.03	:	21.96	22.00
1998	21.85	21.79	21.74	22.14	22.31	22.42	22.66	22.19	21.92	21.67	21.83	22.19	:	21.79	22.29	22.26	21.90	:	22.06	22.09
1999	22.41	22.38	22.55	22.57	22.65	22.61	22.61	21.24	20.10	19.50	17.45	17.87	:	22.45	22.61	21.32	18.27	:	21.16	22.07
2000	17.70	17.24	18.46	19.43	19.12	19.31	17.64	18.12	18.97	21.15	21.39	20.56	:	17.80	19.29	18.24	21.03	:	19.09	18.40
2001	20.81	21.18	21.40	21.51	21.19	21.04	20.64	21.10	20.87	20.90	21.19	21.43	:	21.13	21.25	20.87	21.17	:	21.11	21.07
2002	21.03	20.69	19.92	19.73	19.52	19.93	20.86	20.91	21.65	21.94	22.22	22.03	:	20.55	19.73	21.14	22.06	:	20.87	20.65
2003	21.62	21.91	22.14	21.87	21.80	21.62	21.32	21.26	21.34	20.92	20.91	20.37	:	21.89	21.76	21.31	20.73	:	21.42	21.76
2004	20.54	20.57	20.86	20.88	20.69	20.03	20.14	20.10	20.47	20.31	20.40	20.55	:	20.66	20.53	20.24	20.42	:	20.46	20.54
2005	20.57	20.36	20.54	21.21	21.96	21.89	21.94	20.49	21.10	21.71	21.83	21.74	:	20.49	21.69	21.18	21.76	:	21.28	20.94
2006	23.61	24.05	23.10	23.56	23.48	23.32	22.44	21.38	21.27	20.22	19.66	19.59	:	23.59	23.45	21.70	19.82	:	22.14	22.62
2007	20.03	20.59	20.85	20.91	21.27	21.33	22.72	21.80	21.42	20.56	20.25	20.12	:	20.49	21.17	21.98	20.31	:	20.99	20.87

1/ Contract No. 14, duty fee paid New York. Average of nearest futures month for which an entire month of prices will be available. For example, April 2001's price

average of 21.51 cents is the average of closes for the July 2001 futures during the month of April since there was not a full month of May 2001 futures in

April (the May 2001 futures expired April 10th, July 2001 became the nearest futures, so July 2001 was used for the entire month of April).

Source: New York Board of Trade ([www.nybot.com](http://www.nybot.com))

Table 22--U.S. wholesale refined beet sugar price, Midwest markets, monthly, quarterly, and by calendar and fiscal year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
Cents per pound																				
1991	26.88	26.50	26.50	26.13	26.00	25.75	25.50	25.50	25.00	24.94	24.60	24.50	:	26.63	25.96	25.33	24.68	:	25.65	26.57
1992	25.40	26.50	26.50	26.50	26.40	26.00	25.00	25.00	25.00	24.90	24.13	23.90	:	26.13	26.30	25.00	24.31	:	25.44	25.53
1993	23.25	23.00	23.00	23.50	23.50	23.50	25.50	27.75	27.50	27.50	27.25	26.50	:	23.08	23.50	26.92	27.08	:	25.15	24.45
1994	25.75	25.50	25.50	24.50	24.75	25.25	25.00	25.00	24.70	25.00	25.38	25.50	:	25.58	24.83	24.90	25.29	:	25.15	25.60
1995	25.50	25.50	25.50	25.50	25.13	25.10	24.75	24.75	25.50	25.75	28.13	28.85	:	25.50	25.24	25.00	27.58	:	25.83	25.26
1996	28.69	29.00	29.50	29.50	29.70	29.50	29.50	29.00	29.00	29.00	29.00	29.00	:	29.06	29.57	29.17	29.00	:	29.20	28.84
1997	29.00	29.00	28.13	28.00	28.00	27.50	27.00	26.65	26.38	24.90	25.00	25.50	:	28.71	27.83	26.68	25.13	:	27.09	28.06
1998	25.50	25.50	25.50	25.50	26.00	26.00	26.00	26.00	26.50	26.90	27.00	27.00	:	25.50	25.83	26.17	26.97	:	26.12	25.66
1999	27.20	27.13	27.00	27.00	27.00	27.00	27.00	27.00	27.00	26.00	26.00	25.20	:	27.11	27.00	27.00	25.73	:	26.71	27.02
2000	23.38	22.25	21.50	21.00	19.75	19.00	19.00	19.00	20.70	21.25	21.00	21.80	:	22.38	19.92	19.57	21.35	:	20.80	21.90
2001	23.13	22.75	22.00	20.50	21.38	21.90	22.50	22.50	24.63	25.75	26.20	26.50	:	22.63	21.26	23.21	26.15	:	23.31	22.11
2002	26.75	26.00	25.95	24.63	24.50	24.00	24.00	25.40	26.25	26.75	27.40	27.88	:	26.23	24.38	25.22	27.34	:	25.79	25.49
2003	27.80	26.50	27.13	27.63	28.00	28.00	27.63	25.50	24.00	24.70	23.94	23.63	:	27.14	27.88	25.71	24.09	:	26.21	27.02
2004	23.70	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.38	23.20	:	23.57	23.50	23.50	23.36	:	23.48	23.66
2005	23.50	23.50	23.25	23.80	24.75	25.88	26.00	26.75	40.10	40.00	40.00	36.90	:	23.42	24.81	30.95	38.97	:	29.54	25.63
2006	34.50	36.50	37.10	36.38	35.00	35.00	35.00	34.50	31.20	28.75	27.19	26.10	:	36.03	35.46	33.57	27.35	:	33.10	36.01
2007	25.50	25.00	24.90	25.00	25.00	25.00	25.38	25.60	25.38	25.00	24.50	24.50	:	25.13	25.00	25.45	24.67	:	25.06	25.73

Source: Milling & Baking News. Simple average of the lower end of the range of quotations for days in that month. Quotations are weekly.

Table 23--U.S. retail refined sugar price, monthly, quarterly, and by calendar and fiscal year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	1st Q.	2nd Q.	3rd Q.	4th Q.	Calendar	Fiscal
Cents per pound																		
1991	43.40	43.00	43.40	43.30	43.10	43.20	43.50	42.80	42.20	42.00	41.90	41.80	43.27	43.20	42.83	41.90	42.80	43.08
1992	42.50	42.40	41.90	41.70	41.70	41.50	41.50	41.10	41.00	41.20	41.20	40.60	42.27	41.63	41.20	41.00	41.53	41.75
1993	41.20	41.00	40.60	40.80	40.80	40.30	40.20	40.60	40.40	40.50	40.30	39.80	40.93	40.63	40.40	40.20	40.54	40.74
1994	40.70	40.50	40.10	39.90	40.10	39.70	40.00	39.70	40.30	40.20	39.50	39.20	40.43	39.90	40.00	39.63	39.99	40.13
1995	39.70	39.90	39.80	39.40	39.70	39.50	39.70	39.60	39.80	40.40	40.70	39.80	39.80	39.53	39.70	40.30	39.83	39.67
1996	40.50	40.30	40.60	40.40	41.50	41.80	42.40	42.80	42.60	43.20	42.60	42.80	40.47	41.23	42.60	42.87	41.79	41.15
1997	43.40	42.90	43.10	43.50	43.40	43.60	43.30	43.60	43.60	43.00	42.90	42.80	43.13	43.50	43.50	42.90	43.26	43.25
1998	43.00	42.90	43.30	43.10	42.80	43.10	43.20	43.60	43.20	42.30	42.50	42.70	43.07	43.00	43.33	42.50	42.98	43.08
1999	43.60	43.00	43.70	43.20	43.60	43.10	43.20	43.10	43.70	43.80	42.60	42.60	43.43	43.30	43.33	43.00	43.27	43.14
2000	43.70	43.20	42.90	41.40	42.40	42.80	42.50	42.40	42.40	42.50	41.30	41.40	43.27	42.20	42.43	41.73	42.41	42.73
2001	42.80	43.50	43.70	42.90	43.80	43.50	44.30	43.30	44.20	44.00	42.50	42.50	43.33	43.40	43.93	43.00	43.42	43.10
2002	44.10	43.70	42.60	44.40	42.70	43.00	43.30	43.30	43.70	42.40	41.90	42.10	43.47	43.37	43.43	42.13	43.10	43.32
2003	43.00	42.70	42.70	42.70	43.10	42.90	43.10	43.50	42.60	42.50	41.10	42.20	42.80	42.90	43.07	41.93	42.68	42.73
2004	42.90	42.60	42.60	42.70	42.50	42.50	42.90	42.60	42.60	42.60	42.20	43.00	42.70	42.57	42.70	42.60	42.64	42.48
2005	43.70	43.50	43.30	43.60	42.70	42.80	42.40	43.20	43.70	44.20	44.50	44.90	43.50	43.03	43.10	44.53	43.54	43.06
2006	46.10	46.80	47.10	48.00	49.90	50.40	50.50	51.60	51.50	51.20	51.30	50.60	46.67	49.43	51.20	51.03	49.58	47.96
2007	51.90	51.40	51.80	50.80	51.30	52.10	52.20	51.80	51.80	51.30	51.00	50.30	51.70	51.40	51.93	50.87	51.48	51.52

Source: Bureau of Labor Statistics.

Table 24--U.S. producer price index for corn sweeteners and sugar, monthly

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Corn sweeteners (liquids and solids), incl.glucose, dextrose, and HFCS, June 1985=100 1/													
2000	98.9	98.0	97.8	98.0	97.9	97.9	97.8	98.0	98.0	97.6	99.2	100.3	98.3
2001	111.3	111.6	111.6	111.5	111.9	111.3	111.3	111.3	112.2	112.3	113.9	114.0	112.0
2002	116.5	120.1	119.7	119.8	117.4	119.6	121.2	121.0	127.4	127.9	125.9	126.5	121.9
2003	130.0	131.4	131.3	131.3	131.5	131.9	--	132.2	131.9	130.6	130.9	130.7	131.3
2004	131.9	132.0	131.9	131.7	131.6	131.7	131.8	131.5	131.6	131.5	131.6	131.6	131.7
2005	133.1	133.3	133.5	133.1	133.1	133.1	133.2	132.9	133.2	137.2	133.1	133.2	133.5
2006	144.5	144.8	145.1	153.4	151.1	151.2	151.2	150.9	150.9	150.9	151.1	151.0	149.7
2007 2/	175.5	176.8	176.8	176.8	176.9	177.1	176.8	176.8	176.2	176.9	177.1	176.6	176.7
Raw cane sugar and other can mill products and byproducts, June 1982=100 1/													
2000	92.7	89.4	95.1	97.4	97.0	99.5	92.7	90.7	95.9	106.1	106.9	103.4	97.2
2001	106.3	107.6	107.6	108.6	107.8	106.1	107.7	107.4	107.1	107.4	108.2	109.8	107.6
2002	109.2	107.0	103.8	103.4	101.4	102.7	106.7	106.9	111.2	111.6	113.9	112.7	107.5
2003	108.8	111.3	113.5	111.6	112.1	111.1	109.8	109.8	108.0	106.8	107.4	105.2	109.6
2004	104.7	104.5	106.4	105.6	105.8	102.7	104.6	103.3	107.1	104.2	104.2	106.5	105.0
2005	106.5	105.6	120.0	121.4	122.9	124.5	125.0	127.2	123.3	125.0	126.4	126.3	121.2
2006	129.5	133.2	129.9	132.9	134.6	135.4	134.2	132.0	132.1	127.5	124.4	123.0	130.7
2007 2/	123.9	125.4	125.9	125.9	127.0	127.2	129.0	127.4	127.9	126.5	124.1	122.8	126.1
Refined beet sugar and byproducts, June 1982=100 1/													
2000	105.4	101.5	100.3	99.1	98.3	98.3	97.7	96.2	95.5	94.7	95.0	94.0	98.0
2001	97.5	97.6	97.8	98.0	99.4	99.5	99.5	100.9	102.0	103.3	105.0	106.8	100.6
2002	108.5	109.8	110.5	111.2	111.1	110.9	111.3	111.3	114.2	114.3	116.1	117.9	112.3
2003	118.7	118.8	119.1	119.5	119.2	119.4	119.3	119.4	113.7	116.6	116.4	116.2	118.0
2004	116.1	116.3	116.4	116.8	116.3	116.6	116.6	116.7	116.9	115.5	115.8	116.1	116.4
2005	116.3	117.8	115.9	116.5	117.3	118.6	118.5	118.4	118.2	122.6	136.0	141.5	121.5
2006	141.9	147.4	148.8	149.0	148.6	149.2	152.0	151.2	146.2	145.0	143.5	138.1	146.7
2007 2/	136.2	136.5	133.8	132.9	129.4	126.6	126.2	126.1	123.2	123.4	117.3	122.8	127.9
Refined cane sugar and byproducts, June 1982=100 1/													
2000	124.7	121.8	121.7	119.8	120.4	119.8	120.5	119.2	117.5	113.9	113.2	114.4	118.9
2001	112.8	117.5	116.2	114.6	115.1	115.3	115.6	116.6	115.5	115.2	115.2	116.3	115.5
2002	117.4	117.9	121.0	122.3	119.7	121.2	121.3	120.8	120.8	121.0	119.5	120.1	120.2
2003	119.1	122.3	122.8	122.9	122.9	123.5	123.8	124.5	125.5	124.3	122.3	123.4	123.1
2004	120.5	120.4	121.6	121.6	123.0	124.3	123.3	123.5	123.1	123.6	122.5	121.6	122.4
2005	122.8	121.9	121.5	121.4	122.6	123.7	122.4	124.4	125.3	130.4	133.6	140.8	125.9
2006	142.8	146.2	155.5	156.9	155.5	150.7	156.4	153.1	152.3	148.2	143.9	142.3	150.3
2007 2/	144.9	140.4	137.9	136.1	134.9	132.0	132.4	128.5	127.9	124.8	123.9	129.9	132.8

1/ Based on a sample of domestic producers. 2/ Preliminary, all indexes are subject to revision four months after original publishing.

Source: Bureau of Labor Statistics.



Table 25--U.S. Consumer Price Index for sugar and selected sweetener-containing products 1/

Year and month	Sugar and sweets	Sugar and artificial sweeteners	Flour and prepared flour mixes	Cereals and bakery products	Breakfast cereal	White bread	Cakes, cupcakes, and cookies	Other bakery products
	2/	3/	4/	5/	6/	7/	8/	9/
1982-84=100								
2000	154.0	137.1	160.2	188.3	198.0	199.1	187.9	191.5
2001	155.7	140.3	164.3	193.8	199.7	208.3	192.0	199.1
2002	159.0	143.2	171.0	198.0	203.0	213.4	196.7	203.0
2003	162.0	145.7	178.4	202.8	204.3	218.6	202.8	207.3
2004	163.2	146.9	177.8	206.0	203.5	223.8	206.4	211.8
2005	165.2	149.1	179.6	209.0	203.6	232.1	209.8	211.4
2006	171.5	163.9	182.2	212.8	199.9	238.0	214.2	215.5
2007	176.8	167.1	191.6	222.1	205.0	258.0	221.7	220.5
2006								
Jan.	169.3	157.6	181.8	210.6	200.3	234.4	212.9	213.9
Feb.	167.3	159.7	180.0	210.3	195.3	232.7	213.8	215.5
Mar.	170.1	160.6	182.5	210.9	196.9	234.5	212.9	214.3
Apr.	171.0	161.6	177.4	210.9	200.7	236.8	212.7	211.2
May	171.3	164.4	184.0	211.9	200.6	234.8	213.9	214.6
June	171.9	165.7	184.3	212.8	201.9	234.7	213.9	217.2
July	173.3	166.5	185.2	214.6	201.2	238.0	214.7	219.7
Aug.	173.5	167.9	187.5	214.6	201.9	239.7	214.6	219.2
Sep.	172.1	167.2	184.3	213.6	198.4	238.7	213.9	217.9
Oct.	172.5	166.7	182.9	214.6	198.9	242.4	214.3	218.1
Nov.	172.7	166.0	179.2	214.5	200.5	244.5	217.0	211.7
Dec.	172.4	163.3	177.0	214.8	202.3	244.6	216.1	212.4
2007								
Jan.	175.2	167.4	189.9	216.3	197.5	249.2	215.8	219.3
Feb.	174.3	168.0	189.0	219.0	204.1	250.4	219.0	218.9
Mar.	174.6	168.3	189.2	218.5	201.7	247.5	219.8	217.5
Apr.	175.9	166.7	189.6	220.5	204.2	255.4	220.6	218.1
May	175.5	167.7	191.1	220.9	204.6	254.8	219.1	219.3
June	176.7	168.0	192.8	222.6	206.3	257.1	219.6	224.3
July	178.2	169.1	194.2	223.3	205.6	259.0	221.6	223.1
Aug.	178.3	168.3	195.7	224.0	205.7	259.9	221.4	226.3
Sep.	178.2	168.4	194.9	223.4	206.2	258.2	222.7	223.9
Oct.	177.2	167.0	191.8	224.7	207.3	267.5	224.3	220.4
Nov.	178.6	163.4	190.8	225.7	209.3	264.6	228.3	217.2
Dec.	178.6	162.5	190.0	226.5	207.8	272.2	228.7	217.5

--Continued

Table 25--U.S. consumer price index for sugar and selected sweetener-containing products 1/

Year and month	Non alcoholic beverages	Carbonated drinks	Noncarbonated juices and drinks	Canned fruits	Candy and chewing gum	Ice cream and related products	Food
	10/	11/	12/	13/	14/	15/	16/
1982-84=100							
2000	137.8	123.4	104.2	106.9	103.8	164.4	167.8
2001	139.2	125.4	106.0	109.0	104.3	173.4	173.1
2002	139.2	125.6	106.4	111.6	106.2	179.1	176.2
2003	139.8	125.6	106.5	113.7	107.8	175.5	180.0
2004	140.4	127.9	105.7	114.0	108.4	178.3	186.2
2005	144.4	131.9	106.5	118.4	109.5	177.6	190.7
2006	147.4	134.2	109.5	121.5	112.2	179.3	195.2
2007	153.4	140.1	112.9	125.2	116.1	183.4	202.9
2006							
Jan.	147.2	135.7	108.4	121.0	111.5	182.0	194.1
Feb.	147.3	134.7	108.5	120.3	109.3	179.3	194.0
Mar.	148.0	134.9	109.2	121.7	112.1	178.8	194.0
Apr.	146.3	132.3	109.4	118.8	112.8	178.9	193.7
May	146.6	132.9	109.4	122.2	111.4	177.0	194.2
June	146.6	133.9	109.2	123.2	112.1	178.3	194.5
July	146.3	132.6	110.1	123.1	113.7	176.8	195.0
Aug.	146.9	134.2	108.8	122.4	113.1	174.9	195.5
Sep.	147.5	134.4	110.0	122.6	111.8	180.3	196.2
Oct.	148.3	135.6	110.2	120.4	112.5	180.9	197.1
Nov.	148.9	135.6	109.9	119.4	113.0	181.8	196.8
Dec.	148.5	133.6	110.7	122.3	113.1	182.0	197.0
2007							
Jan.	151.1	137.8	112.1	122.9	114.5	185.5	198.8
Feb.	151.7	138.0	112.1	124.4	113.5	181.6	200.0
Mar.	153.9	141.4	113.4	123.3	113.9	183.6	200.4
Apr.	151.8	138.9	111.0	123.8	115.5	180.0	200.8
May	152.9	139.3	113.1	125.6	114.8	179.5	201.8
June	153.1	139.5	113.0	126.7	115.6	181.3	202.4
July	153.4	140.8	112.3	127.8	117.1	180.2	203.1
Aug.	154.8	141.5	113.4	126.8	117.4	181.8	203.9
Sep.	155.0	142.7	113.4	125.9	117.1	184.4	204.9
Oct.	155.5	142.7	113.7	126.6	116.3	186.1	205.8
Nov.	154.3	140.7	113.7	123.4	118.6	188.0	206.3
Dec.	153.6	138.2	114.0	125.7	118.6	188.5	206.7

1/ All-urban, unadjusted, U.S. city average. 2/ Series:SEFR, Base: 1982-84=100. 3/ Series: SEFR01, Base: 1982-84=100.

4/ Series: SEFA01, Base: 1982-84=100; 5/ Series: SAF111, Base: 1982-84=100. 6/ Series: SEFA02, Base: 1982-84=100.

7/ Series: SS02011, Base: 1982-84=100. 8/ Series: SEFB03, Base: 1982-84=100. 9/ Series: SEFB04, Base: 1982-84=100.

10/ Series: SAF114, Base: 1982-84=100. 11/ Series: SEFN01, Base: 1982-84=100. 12/ Series: SEFN03, Base: Dec. 1997=100.

13/ Series: SS13031, Base: Dec. 1997=100. 14/ Series: SEFR02, Base: Dec. 1997=100. 15/ Series: SEFJ03, Base: 1982-84=100.

16/ Series: SAF1, Base: 1982-84=100.

Source: Bureau of Labor Statistics.



Table 26--U.S. cane and beet sugar deliveries, monthly, quarterly, and by fiscal and calendar year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Fiscal	Calendar
	1,000 short tons, raw value																			
Reexported in products:																				
1992	8	6	5	6	10	9	6	8	8	10	8	7	:	19	26	23	26	:	86	93
1993	10	4	9	7	7	12	14	22	20	8	8	7	:	23	26	57	24	:	132	129
1994	7	7	7	9	15	15	10	17	17	12	11	5	:	20	39	44	28	:	127	131
1995	3	7	7	8	4	7	15	18	5	6	8	7	:	18	18	39	21	:	103	96
1996	5	5	10	14	8	8	8	13	11	9	7	6	:	20	30	32	22	:	104	104
1997	32	30	6	6	7	10	12	16	17	7	6	8	:	68	22	45	21	:	157	156
1998	6	9	9	12	10	10	14	15	16	18	15	11	:	24	32	46	44	:	123	146
1999	26	19	12	14	11	10	15	10	7	9	5	7	:	58	35	32	21	:	169	145
2000	7	7	7	7	8	7	6	11	5	6	6	7	:	21	22	22	18	:	86	84
2001	8	5	8	9	10	10	11	11	8	10	16	13	:	21	29	30	40	:	98	120
2002	15	13	11	12	12	11	12	14	15	17	12	14	:	39	35	42	43	:	156	158
2003	16	13	14	14	15	20	19	15	13	16	10	9	:	44	49	47	35	:	183	175
2004	9	10	9	10	18	11	12	15	13	10	9	9	:	28	40	39	28	:	142	135
2005	7	8	9	11	9	17	11	11	11	6	14	6	:	24	37	33	25	:	121	118
2006	6	10	9	10	6	7	7	10	15	11	8	12	:	25	23	32	31	:	106	111
2007	18	11	14	17	22	16	16	13	11	8	12		:	43	55	40		:	169	
Polyhydric alcohol and livestock feed use:																				
1992	1	1	1	2	1	1	2	2	2	2	1	1	:	4	4	5	4	:	17	17
1993	2	2	1	1	1	1	1	1	1	1	1	1	:	5	4	3	2	:	15	14
1994	1	1	1	1	1	1	1	1	1	1	1	1	:	4	3	4	4	:	13	14
1995	1	1	2	1	2	2	2	2	2	2	1	1	:	4	5	4	4	:	17	17
1996	1	1	2	1	2	2	2	2	2	2	1	1	:	4	5	5	5	:	18	18
1997	1	1	1	2	2	2	2	2	3	2	1	2	:	4	6	6	5	:	21	21
1998	1	1	2	2	2	1	2	2	2	2	2	2	:	4	5	5	6	:	20	21
1999	1	2	2	2	2	2	2	2	2	2	2	3	:	5	6	6	8	:	24	26
2000	3	3	3	3	2	2	3	2	3	2	3	2	:	9	8	7	7	:	32	30
2001	3	3	3	3	4	3	3	4	10	4	3	2	:	8	10	17	9	:	42	44
2002	3	2	2	2	3	4	4	2	2	2	1	1	:	7	8	8	5	:	33	28
2003	2	2	2	2	2	2	2	2	3	2	3	3	:	6	7	7	7	:	24	27
2004	3	3	4	4	4	3	4	4	4	4	3	4	:	9	11	13	10	:	41	44
2005	4	4	4	4	4	5	4	4	5	4	4	5	:	12	13	13	13	:	48	51
2006	5	4	5	4	4	4	4	4	4	5	4	4	:	13	12	12	12	:	50	49
2007	4	5	5	4	5	4	4	5	5	5	5		:	14	14	13		:	53	
Total U.S. sugar deliveries 1/:																				
1992	640	637	731	728	671	809	771	792	856	840	745	718	:	2,007	2,208	2,418	2,303	:	8,875	8,937
1993	630	635	801	697	693	812	797	838	857	792	763	748	:	2,067	2,201	2,492	2,303	:	9,063	9,063
1994	657	682	806	675	758	873	787	856	936	804	767	720	:	2,145	2,307	2,579	2,291	:	9,334	9,322
1995	655	653	820	703	786	846	772	914	899	861	823	721	:	2,127	2,334	2,585	2,405	:	9,337	9,451
1996	676	724	815	785	800	806	822	838	896	901	824	731	:	2,215	2,390	2,557	2,457	:	9,567	9,619
1997	712	699	804	766	810	854	827	867	948	924	785	760	:	2,215	2,429	2,641	2,469	:	9,742	9,755
1998	701	718	843	787	784	894	843	843	933	912	823	773	:	2,261	2,465	2,619	2,508	:	9,815	9,854
1999	704	725	842	814	875	906	850	928	915	958	883	767	:	2,271	2,594	2,693	2,609	:	10,066	10,167
2000	713	755	880	776	855	881	813	954	875	981	871	737	:	2,348	2,513	2,641	2,589	:	10,111	10,091
2001	792	726	882	800	851	874	849	932	847	936	869	718	:	2,399	2,524	2,628	2,524	:	10,140	10,075
2002	761	710	801	786	848	849	860	874	960	946	874	724	:	2,272	2,483	2,694	2,544	:	9,973	9,994
2003	707	701	825	788	764	863	823	873	823	914	849	783	:	2,233	2,415	2,519	2,546	:	9,711	9,713
2004	718	775	832	782	773	864	833	912	827	980	866	739	:	2,324	2,419	2,572	2,586	:	9,861	9,901
2005	748	744	879	808	824	889	820	912	979	960	846	803	:	2,370	2,521	2,711	2,609	:	10,188	10,212
2006	850	709	914	768	835	919	865	984	886	903	818	710	:	2,474	2,522	2,734	2,432	:	10,339	10,162
2007	776	731	857	858	889	857	862	984	888	914	902		:	2,364	2,604	2,735		:		

Totals may not add due to rounding.

Note: This table commenced in October 1991 when USDA began reporting monthly production data. Puerto Rico data were added beginning October 1993.

1/ Fiscal year totals prior to 1994 differ from supply and use (table ) since WASDE includes Puerto Rico.

Source: *Sweetener Market Data*, Farm Service Agency, USDA.

Table 27--U.S. sugar: supply and use, by fiscal year 1/

Items	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08 Projection Jan-08
1,000 short tons, raw value												
Beginning stocks 2	1,492	1,488	1,679	1,639	2,216	2,180	1,528	1,670	1,897	1,332	1,698	1,799
Total production 3,4	7,204	8,021	8,366	9,050	8,769	7,900	8,426	8,649	7,876	7,399	8,445	8,516
Beet sugar	4,013	4,389	4,421	4,974	4,680	3,915	4,462	4,692	4,611	4,444	5,008	4,819
Cane sugar	3,191	3,632	3,945	4,076	4,089	3,985	3,964	3,957	3,265	2,955	3,438	3,697
Florida	1,679	1,924	2,127	1,966	2,057	1,980	2,129	2,154	1,693	1,367	1,719	1,771
Louisiana	1,054	1,262	1,325	1,683	1,585	1,580	1,367	1,377	1,157	1,190	1,320	1,490
Texas	91	80	107	105	206	174	191	175	158	175	177	198
Hawaii	340	350	384	318	241	251	276	251	258	223	222	238
Puerto Rico	27	16	3	4	0	0	0	0	0	0	0	0
Total imports	2,774	2,163	1,823	1,636	1,590	1,535	1,730	1,750	2,100	3,443	2,080	2,241
Tariff-rate quota imports 5	2,277	1,729	1,256	1,124	1,277	1,158	1,210	1,226	1,408	2,588	1,624	1,336
Other Program Imports	493	349	386	388	238	296	488	464	500	349	390	425
Non-program imports	4	85	181	124	76	81	32	60	192	506	66	480
Mexico 6											60	475
Total Supply	11,471	11,672	11,868	12,325	12,575	11,615	11,684	12,070	11,873	12,174	12,223	12,555
Total exports 3	211	179	230	124	141	137	142	288	259	203	422	250
Quota-exempt for reexport	211	179	230	124	141	137	142	288	259	203	422	250
Other exports	0	0	0	0	0	0	0	0	0	0	0	0
CCC disposal, for export	0	0	0	0	0	0	0	0	0	0	0	0
Statistical difference 7	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	30	-1	-67	-126	123	-24	161	23	94	-67	-132	0
CCC disposal, for domestic non-food use	0	0	0	0	10	0	0	0	0	0	0	0
Refining loss adjustment	0	0	0	0	0	0	0	0	0	0	0	0
Statistical adjustment 8	30	-1	-67	-126	113	-24	161	23	94	-67	-132	0
Deliveries for domestic use	9,742	9,815	10,066	10,111	10,132	9,974	9,711	9,862	10,188	10,340	10,135	10,300
Transfer to sugar-cont. products for exports under reexport program	157	123	169	86	98	156	183	142	121	106	169	150
Transfer to polyhydric alcohol, feed	21	20	24	32	33	33	24	41	48	51	53	50
Deliveries for domestic food and beverage use	9,564	9,672	9,873	9,993	10,000	9,785	9,504	9,678	10,019	10,184	9,913	10,100
Total Use	9,983	9,992	10,238	10,090	10,396	10,087	10,014	10,172	10,542	10,476	10,424	10,550
Ending stocks /3	1,488	1,679	1,639	2,216	2,180	1,528	1,670	1,897	1,332	1,698	1,799	2,005
Privately owned	1,488	1,679	1,639	1,919	1,395	1,316						
CCC	0	0	0	297	784	212						
Percent												
Stocks-to-use ratio	14.91	16.81	16.01	21.96	20.97	15.15	16.68	18.65	12.63	16.21	17.25	19.01

NOTE: Numbers may not add due to rounding.

1/ Fiscal year beginning October 1. 2/ Stocks in hands of primary distributors and CCC. 3/ Historical data are from FSA (formerly ASCS), Sweetener Market Data, and NASS, Sugar Market Statistics prior to 1992. 4/ Production reflects processors' projections compiled by the Farm Service Agency.

5/ Actual arrivals under the tariff-rate quota (TRQ) with late entries, early entries, and (TRQ) overfills assigned to the fiscal year in which they actually arrived.

The 2006/07 available TRQ assumes shortfall of 325,000 tons. 6/ Does not include Mexico TRQ imports. 7/ Receipts compiled by NASS and FSA Customs data.

8/ Calculated as a residual. Largely consists of invisible stocks change.

Table 28--Net cost of corn starch to U.S. wet-millers, Midwest markets

Period	Corn byproducts				Byproduct credits			Net cost			
	Yellow dent corn 1/	Corn oil	Corn gluten feed	Corn gluten meal	Corn oil	Corn gluten feed	Corn gluten meal	Total byproduct	Corn starch	Corn sweetener	
	Dollars per bu.	Cents per lb.	Dollars per short ton	----Cents per bushel----			Dollars per bu.	Dollars per bu.	--Cents per lb.--		
1994	2.40	27.22	89.59	262.50	42.19	60.47	34.78	1.37	1.03	3.26	3.08
1995	2.70	26.67	88.34	244.02	41.33	59.63	32.33	1.33	1.37	4.34	4.10
1996	3.82	24.52	116.25	332.40	38.00	78.47	44.04	1.61	2.22	7.04	6.65
1997	2.67	24.87	83.99	345.22	38.55	56.69	45.74	1.41	1.26	4.00	3.78
1998	2.23	29.90	64.86	260.54	46.34	43.78	34.52	1.25	0.98	3.12	2.95
1999	1.92	23.59	58.77	231.88	36.56	39.67	30.72	1.07	0.85	2.68	2.54
2000	1.88	14.66	51.71	237.63	22.72	34.90	31.49	0.89	0.98	3.13	2.95
2001	1.90	15.75	62.46	253.98	24.41	42.16	33.65	1.00	0.90	2.86	2.70
2002	2.17	20.78	60.33	243.72	32.21	40.72	32.29	1.05	1.12	3.55	3.36
2003	2.29	28.65	72.15	251.36	44.40	48.70	33.31	1.26	1.02	3.25	3.07
2004	2.39	27.59	72.01	308.44	42.76	48.61	40.87	1.32	1.07	3.39	3.20
2005	1.90	28.42	51.33	288.09	44.04	34.65	38.17	1.17	0.73	2.33	2.20
2006	2.41	25.06	59.87	264.89	38.84	40.41	35.10	1.14	1.27	4.02	3.80
2005											
Jan.	1.86	27.41	53.63	245.63	42.49	36.20	32.55	1.11	0.75	2.37	2.24
Feb.	1.86	27.58	51.38	232.50	42.75	34.68	30.81	1.08	0.78	2.47	2.33
Mar.	1.97	28.08	51.90	240.50	43.52	35.03	31.87	1.10	0.87	2.75	2.60
I	1.90	27.69	52.30	239.54	42.92	35.30	31.74	1.10	0.80	2.53	2.39
Apr.	1.94	29.29	51.75	246.25	45.40	34.93	32.63	1.13	0.81	2.57	2.43
May	1.93	30.65	52.80	274.60	47.51	35.64	36.38	1.20	0.73	2.33	2.20
June	2.02	30.73	50.63	322.13	47.63	34.18	42.68	1.24	0.78	2.46	2.33
II	1.96	30.22	51.73	280.99	46.85	34.92	37.23	1.19	0.77	2.46	2.32
July	2.20	30.01	50.38	334.25	46.52	34.01	44.29	1.25	0.95	3.02	2.86
Aug.	1.98	28.83	51.90	327.70	44.69	35.03	43.42	1.23	0.75	2.38	2.25
Sept.	1.75	27.75	47.13	294.75	43.01	31.81	39.05	1.14	0.61	1.94	1.83
III	1.98	28.86	49.80	318.90	44.74	33.62	42.25	1.21	0.77	2.45	2.31
Oct.	1.67	27.50	51.75	300.00	42.63	34.93	39.75	1.17	0.50	1.58	1.49
Nov.	1.75	27.08	50.10	319.00	41.97	33.82	42.27	1.18	0.57	1.81	1.71
Dec.	1.89	26.08	52.63	319.75	40.42	35.53	42.37	1.18	0.71	2.24	2.12
IV	1.77	26.89	51.49	312.92	41.67	34.76	41.46	1.18	0.59	1.88	1.77
2006											
Jan.	1.98	25.22	55.75	303.75	39.09	37.63	40.25	1.17	0.81	2.57	2.43
Feb.	2.07	23.65	57.75	259.38	36.66	38.98	34.37	1.10	0.97	3.08	2.91
Mar.	2.04	22.61	61.63	263.75	35.05	41.60	34.95	1.12	0.92	2.93	2.77
I	2.03	23.83	58.38	275.63	36.93	39.40	36.52	1.13	0.90	2.86	2.70
Apr.	2.18	23.19	57.88	250.63	35.94	39.07	33.21	1.08	1.10	3.49	3.29
May	2.22	25.25	60.38	251.70	39.14	40.76	33.35	1.13	1.09	3.45	3.26
June	2.15	25.70	58.25	250.00	39.84	39.32	33.13	1.12	1.03	3.26	3.08
II	2.18	24.71	58.84	250.78	38.31	39.71	33.23	1.11	1.07	3.40	3.21
July	2.22	25.75	56.13	240.00	39.91	37.89	31.80	1.10	1.12	3.57	3.37
Aug.	2.07	25.42	56.00	229.25	39.40	37.80	30.38	1.08	0.99	3.16	2.98
Sept.	2.21	24.71	55.90	237.50	38.30	37.73	31.47	1.08	1.13	3.60	3.40
III	2.17	25.29	56.01	235.58	39.20	37.81	31.21	1.08	1.08	3.44	3.25
Oct.	2.82	24.70	60.20	272.20	38.29	40.64	36.07	1.15	1.67	5.30	5.01
Nov.	3.43	26.47	68.63	306.25	41.03	46.33	40.58	1.28	2.15	6.83	6.45
Dec.	3.53	28.05	69.88	314.31	43.48	47.17	41.65	1.32	2.21	7.01	6.62
IV	3.26	26.41	66.24	297.59	40.93	44.71	39.43	1.25	2.01	6.38	6.03
2007											
Jan.	3.66	28.05	92.00	333.00	43.48	62.10	44.12	1.50	2.16	6.87	6.49
Feb.	3.90	28.66	85.38	346.88	44.42	57.63	45.96	1.48	2.42	7.68	7.26
Mar.	3.76	29.08	84.94	361.50	45.07	57.33	47.90	1.50	2.26	7.16	6.77
I	3.77	28.60	87.44	347.13	44.32	59.02	45.99	1.49	2.28	7.24	6.84
Apr.	3.36	29.93	72.82	363.33	46.39	49.15	48.14	1.44	1.92	6.11	5.77
May	3.52	31.56	59.50	344.00	48.92	40.16	45.58	1.35	2.17	6.90	6.52
June	3.68	34.71	62.25	352.75	53.80	42.02	46.74	1.43	2.25	7.16	6.76
II	3.52	32.07	64.86	353.36	49.70	43.78	46.82	1.40	2.12	6.72	6.35
July	3.03	37.25	66.40	398.50	57.74	44.82	52.80	1.55	1.48	4.69	4.43
Aug.	3.08	39.61	75.00	404.38	61.40	50.63	53.58	1.66	1.42	4.52	4.27
Sept.	3.15	43.61	85.50	414.38	67.60	57.71	54.91	1.80	1.35	4.28	4.04
III	3.09	40.16	75.63	405.75	62.24	51.05	53.76	1.67	1.42	4.50	4.25
Oct.	3.28	52.50	105.00	472.50	81.38	70.88	62.61	2.15	1.13	3.59	3.39
Nov.	3.66	56.32	129.38	495.63	87.30	87.33	65.67	2.40	1.26	3.99	3.77

1/ Reported prices are Illinois points. These corn values represent country elevator producer bid prices and do not reflect the additional costs of handling and transporting the corn to Midwest processing plants.

Sources: USDA, Agricultural Marketing Service, Economic Research Service, USDA, byproduct credits and net cost calculations.

Table 29--U.S. use of field corn, by crop year 1/

Description	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08 2/
HFCS	473	492	513	530	540	530	541	532	530	521	529	510	500
Glucose syrup and dextrose	227	233	229	219	222	218	217	219	228	222	229	239	235
Total corn sweetener	700	725	742	749	761	748	758	751	758	743	758	749	735
Corn starch	226	238	246	240	251	247	246	256	272	278	275	272	270
Wet milling excluding alcohol	926	963	988	989	1,013	995	1,003	1,007	1,030	1,021	1,033	1,021	1,005
Alcohol													
Fuel	396	429	481	526	566	628	714	996	1,168	1,323	1,603	2,117	3,200
Beverage	125	130	133	127	130	130	131	131	132	133	135	136	135
Total	521	559	614	653	696	758	845	1,127	1,300	1,456	1,738	2,253	3,335
Total	1,447	1,522	1,602	1,642	1,709	1,753	1,848	2,133	2,329	2,477	2,771	3,274	4,340
U.S. corn crop	7,374	9,233	9,207	9,759	9,431	9,915	9,503	8,967	10,089	11,807	11,114	10,535	13,074
Corn sweetener share	9.49	7.85	8.06	7.67	8.07	7.54	7.97	8.38	7.51	6.29	6.82	7.11	5.62
Wet milling excluding alcohol share	12.56	10.43	10.73	10.13	10.74	10.04	10.56	11.23	10.21	8.64	9.30	9.69	7.69
Alcohol share	7.07	6.05	6.67	6.69	7.38	7.64	8.89	12.56	12.88	12.33	15.64	21.39	25.50
Total	19.62	16.48	17.40	16.83	18.12	17.68	19.45	23.79	23.09	20.97	24.93	31.08	33.19

1/ September/August crop year. 2/ Forecast.

Source: Economic Research Service, USDA.

Table 30--U.S. total estimated deliveries of caloric sweeteners for domestic food and beverage use, by calendar year 1/

Calendar year	Sugar 2/		Corn Sweeteners			Honey	Other edible syrups	Total caloric sweeteners 3/	Net sugar in imported products (SCP)	Total caloric sweeteners incl.SCP	High intensity sweeteners 4/ (sucrose equivalence)	Total sweeteners	
	Raw value	Refined basis	HFCS	Glucose syrup	Dextrose								Total
1,000 short tons, dry basis													
1992	8,826	8,249	6,652	1,943	461	9,056	126	53	17,483	18	17,501	2,908	20,409
1993	8,886	8,305	7,086	2,050	481	9,617	135	56	18,112	17	18,129	3,032	21,161
1994	9,072	8,478	7,398	2,093	502	9,993	126	54	18,651	172	18,823	3,157	21,980
1995	9,258	8,652	7,676	2,176	528	10,380	120	57	19,209	242	19,452	3,550	23,002
1996	9,400	8,785	7,788	2,216	537	10,541	131	57	19,514	255	19,769	3,695	23,464
1997	9,481	8,861	8,240	2,364	511	11,116	129	58	20,163	213	20,376	3,689	24,065
1998	9,594	8,966	8,552	2,358	502	11,411	130	59	20,566	249	20,815	3,782	24,597
1999	9,912	9,264	8,897	2,281	488	11,666	147	60	21,138	366	21,504	3,877	25,381
2000	9,901	9,253	8,845	2,230	476	11,551	157	61	21,022	434	21,456	3,917	25,373
2001	9,839	9,195	8,920	2,205	469	11,595	134	61	20,986	490	21,476	4,059	25,534
2002	9,746	9,109	9,045	2,224	473	11,741	153	62	21,065	477	21,542	4,193	25,735
2003	9,479	8,859	8,849	2,209	449	11,507	146	63	20,575	606	21,181	4,284	25,465
2004	9,678	9,045	8,779	2,292	487	11,558	130	64	20,797	757	21,554	4,381	25,934
2005	10,001	9,346	8,756	2,261	481	11,497	155	66	21,065	811	21,876	4,414	26,290
2006	9,975	9,323	8,702	2,053	463	11,219	167	66	20,774	894	21,668	4,467	26,135

1/ Per capita deliveries of sweeteners by U.S. processors and refiners and direct-consumption imports to food manufacturers, retailers, and other end users represent the per capita supply of caloric sweeteners. The data exclude deliveries to manufacturers of alcoholic beverages. Actual human intake of caloric sweeteners is lower because of uneaten food, spoilage, and other losses. See Table 51 of the Sugar and Sweeteners Yearbook series for estimated intake of sugar.

2/ Based on U.S. sugar deliveries for domestic food and beverage use.

3/ Total includes sugar, refined basis.

4/ SRI Consulting's Chemical Economics Handbook Marketing Research Report "High-Intensity Sweeteners", published in May 2007

Source: Sugar and Sweeteners Team, Market and Trade Economics Division, Economic Research Service, USDA.



Table 31--U.S. per capita caloric sweeteners estimated deliveries for domestic food and beverage use, by calendar year 1/ 2/

Calendar year	U.S. population 3/ (July 1) Millions	Refined sugar 4/	HFCS	Corn sweeteners			Pure honey	Edible syrups	Total caloric sweeteners	SCP	Total caloric sweeteners incl.SCP	High Intensity Sweeteners 5/ (sucrose equivalence)	Total sweeteners, including high intensity swt.
				Glucose syrup	Dextrose	Total							
				Pounds, dry basis									
1992	256.9	64.2	51.8	15.1	3.6	70.5	1.0	0.4	136.1	0.1	136.3	22.6	158.9
1993	260.3	63.8	54.5	15.8	3.7	73.9	1.0	0.4	139.2	0.1	139.3	23.3	162.6
1994	263.4	64.4	56.2	15.9	3.8	75.9	1.0	0.4	141.6	1.3	142.9	24.0	166.9
1995	266.6	64.9	57.6	16.3	4.0	77.9	0.9	0.4	144.1	1.8	145.9	26.6	172.6
1996	269.7	65.1	57.8	16.4	4.0	78.2	1.0	0.4	144.7	1.9	146.6	27.4	174.0
1997	273.0	64.9	60.4	17.3	3.7	81.4	0.9	0.4	147.7	1.6	149.3	27.0	176.3
1998	276.1	64.9	61.9	17.1	3.6	82.7	0.9	0.4	149.0	1.8	150.8	27.4	178.2
1999	279.3	66.3	63.7	16.3	3.5	83.5	1.1	0.4	151.4	2.6	154.0	27.8	181.7
2000	282.3	65.5	62.7	15.8	3.4	81.8	1.1	0.4	148.9	3.1	152.0	27.7	179.7
2001	285.0	64.5	62.6	15.5	3.3	81.4	0.9	0.4	147.3	3.4	150.7	28.5	179.2
2002	287.7	63.3	62.9	15.5	3.3	81.6	1.1	0.4	146.5	3.3	149.8	29.2	178.9
2003	290.3	61.0	61.0	15.2	3.1	79.3	1.0	0.4	141.7	4.2	145.9	29.5	175.4
2004	293.0	61.7	59.9	15.6	3.3	78.9	0.9	0.4	141.9	5.2	147.1	29.9	177.0
2005	295.7	63.2	59.2	15.3	3.3	77.8	1.1	0.4	142.5	5.5	147.9	29.8	177.8
2006	298.4	62.5	58.3	13.8	3.1	75.2	1.1	0.4	139.2	6.0	145.2	29.9	175.1

1/ Per capita deliveries of sweeteners by U.S. processors and refiners and direct-consumption imports to food manufacturers, retailers, and other end users represent the supply of caloric sweeteners. The data exclude deliveries to manufacturers of alcoholic beverages. Actual human intake of caloric sweeteners is lower because of uneaten food, spoilage, and other losses. See Table 51 of the Sugar and Sweeteners Yearbook series for estimated intake of sugar.

2/ Totals may not add due to rounding. 3/ Source: U.S. Bureau of Census. 4/ Based on U.S. sugar deliveries for domestic food and beverage use.

5/ SRI Consulting's Chemical Economics Handbook Marketing Research Report "High-Intensity Sweeteners", published in May 2007

Source: Sugar and Sweeteners Team, Market and Trade Economics Division, Economic Research Service, USDA.

Table 32--Exports of sugar confectionery from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	212,940	231,438	257,471	259,750
United States	195,150	217,580	238,354	241,043
Guatemala	2,315	2,129	3,379	3,398
Honduras	1,257	1,215	1,181	1,983
Costa Rica	1,956	1,718	2,493	1,899
Spain	303	104	90	1,746
Dominican Republic	213	602	1,763	1,517
El Salvador	1,285	1,224	1,533	1,507
Canada	4,842	1,177	1,023	1,044
Nicaragua	974	663	425	893
Puerto Rico (U.S.)	599	732	1,000	526
All others	4,046	4,294	6,230	4,194

Source: Secretary of Economy, Government of Mexico, HS 1704.

Table 33--Exports of sweetened cocoa powder from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	14,380	12,795	53,734	80,602
United States	13,718	12,197	53,129	79,929
Honduras	262	232	268	235
Nicaragua	192	188	188	221
Australia	0	0	0	55
Belize	58	56	56	54
Dominican Republic	59	20	47	46
Guatemala	17	13	6	26
El Salvador	0	0	0	21
Panama	8	0	18	8
Cuba	66	74	22	0
All others	0	17	0	5

Source: Secretary of Economy, Government of Mexico, HS 180610.

Table 34--Exports of other chocolate and cocoa products from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	37,505	39,104	46,030	60,554
United States	35,770	36,917	42,610	56,398
Honduras	189	164	164	217
Nicaragua	203	96	162	131
Australia	26	64	36	24
Belize	1	1	10	24
Dominican Republic	7	4	32	84
Guatemala	376	375	633	492
El Salvador	139	162	321	283
Panama	25	3	14	51
Cuba	46	93	94	44
All others	723	1,225	1,953	2,807

Source: Secretary of Economy, Government of Mexico, HS 1806 less HS180610.

Table 35--Exports of cereal product from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	18,573	19,556	26,631	47,134
United States	9,674	10,603	15,207	31,821
Venezuela	460	567	502	3,163
Guatemala	1,403	1,563	2,056	2,331
Dominican Republic	926	1,338	1,712	1,394
Costa Rica	309	651	1,262	1,394
Puerto Rico (U.S.)	2,554	1,732	1,685	1,336
Canada	62	109	299	1,165
Colombia	866	551	721	1,045
Panama	206	364	510	632
El Salvador	228	317	568	537

Source: Secretary of Economy, Government of Mexico, HS 1904.10.

Table 36--Exports of bread, pastry, cakes from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	141,859	154,059	177,051	203,412
United States	131,891	146,001	165,551	187,238
Guatemala	2,232	1,587	2,618	3,036
Dominican Republic	1,078	829	1,425	2,729
Venezuela	1,141	1,322	1,306	1,857
Canada	12	7	27	1,585
Honduras	750	583	933	1,388
Panama	1,089	1,086	1,105	1,250
El Salvador	557	302	649	935
Belize	644	727	812	885
Costa Rica	454	472	718	853
All others	2,010	1,142	1,905	1,658

Source: Secretary of Economy, Government of Mexico, HS 1905.

Table 37--Exports of other misc. food from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	67,861	83,478	84,426	101,929
United States	57,861	71,599	70,429	87,364
Venezuela	1,992	2,114	2,842	2,644
Guatemala	846	1,050	1,035	1,729
Japan	1,253	1,234	1,295	967
El Salvador	432	711	825	965
Colombia	707	777	1,041	932
Canada	297	458	611	788
United Kingdom	218	311	599	672
Honduras	449	498	510	655
Netherlands	52	808	1,003	644
All others	3,753	3,919	4,236	4,569

Source: Secretary of Economy, Government of Mexico, HS 2103.

Table 38--Exports of ice cream and edible ice from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>Metric tons</i>				
Total exports	3,243	2,434	3,990	1,250
United States	2,448	1,556	3,053	307
Cuba	127	230	209	378
Guatemala	252	182	222	213
Dominican Republic	137	132	153	120
El Salvador	88	98	101	82
Honduras	88	80	107	60
Trinidad & Tobago	13	5	11	30
Ecuador	0	0	96	22
Puerto Rico (U.S.)	0	0	17	18
Chile	10	0	11	8
All others	79	152	9	12

Source: Secretary of Economy, Government of Mexico, HS 2105.

Table 39--Exports of sweetened water and beverages from Mexico, by destination, fiscal years 2004-07

Country	FY 2004	FY 2005	FY 2006	FY 2007
<i>1,000 liters</i>				
Total exports	264,535	286,883	356,206	350,397
United States	256,822	281,785	345,720	336,255
Guatemala	2,641	1,994	6,584	10,063
Cuba	1,723	1,436	2,067	2,008
Belize	966	1,008	1,058	1,097
El Salvador	314	294	314	697
Honduras	2	157	44	132
Dominican Republic	0	0	0	51
China	0	0	0	40
Aruba	0	0	0	14
Canada	0	0	11	10
All others	2,067	210	409	31

Source: Secretary of Economy, Government of Mexico, HS 220610