

Electronic Outlook Report from the Economic Research Service

www.ers.usda.gov

Sugar and Sweeteners Outlook

Stephen Haley, coordinator
shaley@ers.usda.gov

NAFTA Sugar February 2012

The *Comite Nacional Para El Desarrollo Sustentable de la Cana de Azucar* (CNDSCA) in Mexico recently published revised supply and use data for 2010/11 and the Secretariat of the Economy (*Economia*) released full marketing year data for sugar exports and imports. The U.S. Department of Agriculture (USDA) revised its Mexico supply and balance estimates as a consequence.

Based on an audit of all sugar mills, the CNDSCA estimates 2010/11 ending stocks at 687,363 metric tons (mt), a 9.5-percent reduction from the previous estimate. These 2010/11 ending stocks become the beginning stocks estimate for 2011/12. *Economia* reports 2010/11 sugar imports at 289,159 mt and 2010/11 sugar exports at 1,469,379 mt. Based on the new data, the USDA estimates total sugar deliveries for consumption, IMMEX re-export program, and miscellaneous at 4.415 million mt.

The USDA projects sugar production in Mexico for 2011/12 at 5.0 million mt, unchanged from last month. The USDA increased its projection of imports over last month by 34,000 mt to 344,000 mt. At this point in the forecasting cycle, USDA, basing its projection of Mexican sweetener consumption on the same per capita level as the previous year, projects it at 50.158 kilograms. The USDA did not change its estimate of 2011/12 HFCS consumption from 1.635 million mt, dry weight (up from 1.610 million last year). Total human consumption of sugar is therefore projected at 4.132 million mt. Historical optimal ending stock levels of 22 percent of sugar consumption are assumed for 2011/12, implying ending stocks of 909,000 mt. The USDA did not change its 2011/12 projection of sugar for IMMEX, projected at 283,000 mt.

Exports are forecast residually to balance total use with total supply. The projection this month is 707,000 mt, a decrease of 185,000 mt from last month. The implication for the

Contents

Summary
Mexico Sugar HFCS
U. S. Sugar
U.S. Sugar Prices
Long Term Projections
Contacts and Links

Websites

[WASDE](#)
[Sugar Briefing Room](#)

The next release is
March 14, 2012

Approved by the World

United States is that imports from Mexico are reduced by 219,000 short tons, raw value (STRV) to 814,000 STRV for fiscal year (FY) 2012.

The USDA projects FY 2012 U.S. sugar production at 8.0 million STRV. This amount is comprised of 4.525 million STRV of beet sugar and 3.475 million STRV of cane sugar. The cane sugar projection is increased from last month by 130,000 STRV due to improved production prospects reported by cane sugar processors in Florida.

The Foreign Agricultural Service (FAS) revised estimates of U.S. sugar imports for FY 2011 and projections for FY 2012 based on corrected data from the U.S. Customs Service. FAS also modified its forecast of imports under the Dominican Republic-Central American Free Trade Agreement (DR/CAFTA) and its forecast of imports occurring under the sugar re-export import program. Taken together, reduced imports expected from Mexico are more than additional TRQ and re-export program imports -- total expected FY 2012 imports are decreased by 44,000 STRV.

Based on pace-to-date, the USDA increased its forecast of sugar exports by 50,000 STRV to 250,000 STRV and its forecast of deliveries under the sugar-containing products re-export program by 30,000 STRV to 180,000 STRV. Deliveries for human consumption were revised downward by 250,000 STRV to 10.975 million STRV.

Ending stocks are projected as the difference between total supply and total use. The projection for FY 2012 is 876,860 STRV, implying an ending stocks-to-use ratio of 7.66 percent.

Mexico Sugar and High Fructose Corn Syrup

The U.S. Department of Agriculture (USDA) projects sugar production in Mexico for 2011/12 at 5.0 million metric tons (mt), unchanged from last month. The *Comite Nacional Para El Desarrollo Sustentable de la Cana de Azucar* (CNDSCA) in Mexico revised its official estimate of 2011/12 production in January. Table 1 contains details of assumptions behind the USDA and the original and revised CNDSCA projections.

As outlined last month, the USDA uses interim production statistics and their average relationship to final end-of-season values from the recent past to derive its projection of sugarcane yield and sucrose recovery. The USDA uses the same area projected by CNDSCA, and this allows a projection of sugarcane and sugar production. Because the USDA projection method is stochastic, it places a statistical confidence interval around the parameter estimates (although these are not shown in the table). The CNDSCA, on the other hand, bases its estimates on the aggregation of individual factory estimates provided by most, if not all, sugar mills in operation.

In its revision, the CNDSCA reduced its area for sugarcane by a small 1,365 hectares to 716,890 hectares. All projected sugarcane yield amounts are close to each other. The CNDSCA revised its estimate of sucrose recovery downward from 11.63 percent to 11.15 percent, much closer to the USDA projection of 10.89 percent. The resulting implication for sugar production is a 4.5-percent reduction to 5.1 million mt.

Figure 1 shows interim cumulative sucrose recovery rates for 2011/12 and earlier harvest seasons. As can be seen, the 2011/12 recovery rate path is very close to the 2009/10 recovery path. The final recovery rate for 2009/10 was 11.13 percent, close to the revised CNDSCA estimate. In a recent USDA projection update based on production through February 4 (not shown in the table because it did not differ materially from the January projection), the final recovery is projected at 10.911 percent with a standard deviation of 0.264. The CNDSCA estimate falls within a standard deviation of the USDA projection, meaning that their difference is statistically insignificant from zero.

Table 1 -- Comparison of Mexico sugar and sugarcane forecasts by CNDSCA and USDA

Source	Area harvested (Hectares)	Sugarcane yield (tons/hectare)	Sugarcane (tons)	Sugar (tons)	Sucrose recovery (percent)
CNDSCA (Nov., 2011)	718,255	63.95	45,929,813	5,339,462	11.63
CNDSCA (Jan., 2012)	716,890	63.81	45,747,744	5,098,901	11.15
USDA (Jan., 2012)	718,255	63.92	45,913,140	5,001,646 2/	10.89

1/ CNDSCA = *Comite Nacional Para El Desarrollo Sustentable de la Cana de Azucar*.

2/ Rounded to 5,000,000 in the January 2012 World Agricultural Supply and Demand Estimates.

Figure 1

Intra-seasonal, cumulative sugar recovery rates in Mexico, recent crop years

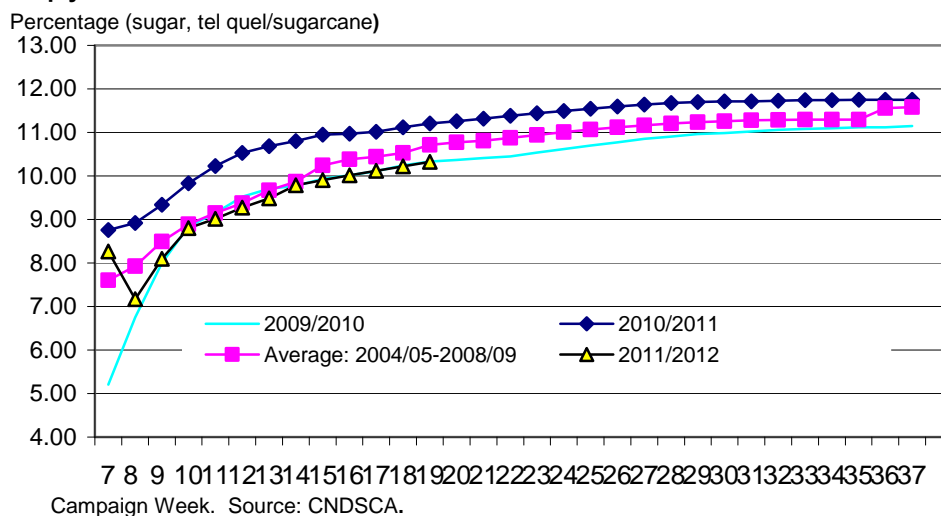


Figure 2 shows 2011/12 regional sugar production through the end of January compared with corresponding production levels in 2010/11. Overall, 2011/12 production at 1.606 million mt is 11.7 percent less than 2010/11 production through the same date. Production in the Northeast is 29.6 percent less and is 13.4 percent less in the Gulf region, an area mostly comprising the State of Veracruz. Production levels in the other areas are much closer to last year's levels.

2010/11 Sugar Balance Changes from New Data Revisions

The CNDSCA recently published revised supply and use data for 2010/11 and the Secretariat of the Economy (*Economia*) released full marketing year data for sugar exports and imports. The USDA revised its supply and balance estimates as a consequence. Table 2 reports the new account balance elements, along with historical supply and use back to 1999/2000.

Based on an audit of all sugar mills, the CNDSCA estimates 2010/11 ending stocks at 687,363 mt, a 9.5-percent reduction from the previous estimate. These 2010/11 ending stocks become the beginning stocks estimate for 2011/12.

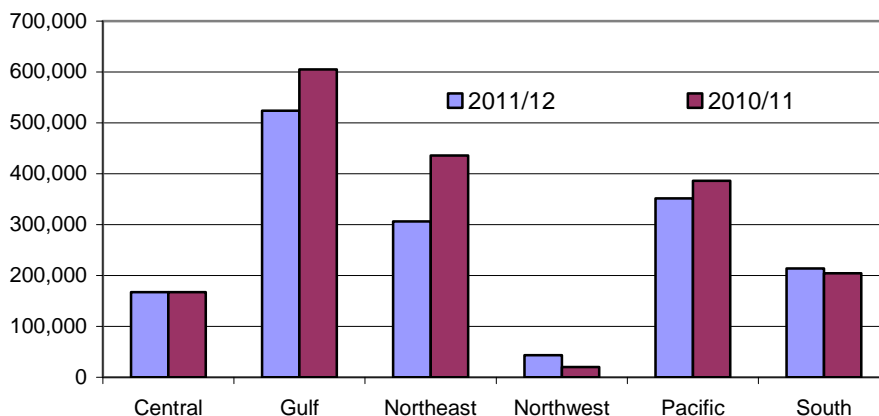
Economia reports 2010/11 sugar imports at 289,159 mt, with 164,316 mt imported from the United States and 124,843 mt imported from third countries. CNDSCA estimates that 10,000 mt of the sugar imported from the United States was for consumption. In an earlier-released accounting of Mexico's sugar-containing product re-export program (IMMEX), CNDSCA estimated that third party imports to the program were 4,558 mt. This implies that 120,285 mt of third party imports were for consumption. CNDSCA estimates that 3,963,843 mt of domestic sugar production was delivered for domestic production. Adding the three supply sources for consumption indicates total sugar consumption at 4,094,128 mt. CNDSCA also reports high-fructose corn syrup (HFCS) consumption at 1,610,072 mt, dry basis. Total sweetener consumption is, therefore, 5,704,200 mt, or 50.158 kilograms per capita.

Economia reports 2010/11 sugar exports at 1,469,379 mt. Subtracting this amount and also the ending stock level from a sugar supply of 6,390,584 mt (sum of beginning stocks -- 917,925 mt, production -- 5,183,500 mt, and imports), total sugar deliveries equal 4,233,842 mt. The difference between this amount and deliveries for consumption equals 139,714 mt. Accepting at present the earlier CNDSCA estimate of sugar deliveries to IMMEX of 319,800 mt, a miscellaneous use category that balances total use with total supply is estimated at a negative 180,086 mt.

Figure 2

**Regional sugar production in Mexico through Jan. 28:
2011/12 compared with 2010/11**

Metric tons, tel quel



Source: CNDSCA.

Implications for IMMEX Program Accounting

It is likely that the CNDSCA will re-estimate its IMMEX balances. Based on its 2010/11 sugar supply and use reporting, sugar mills in Mexico delivered 103,331 mt to food and beverage IMMEX- program manufacturers for their use in producing products for export (mainly to the United States). From earlier discussion, imported sugar going to these manufacturers is estimated at 158,874 mt (154,316 mt from the United States and 4,558 from other countries). Summing produces an estimate of 2010/11 IMMEX sugar of 262,205 mt. This amount is 57,595 less than the current CNDSCA estimate.

Implications for 2011/12 Sugar Supply and Use

Beginning stocks projection for 2011/12 decreased as discussed above, and 2011/12 production remains forecast at 5.0 million mt. The USDA increased its projection of imports over last month by 34,000 mt to 344,000 mt. This increase stems from an expected increase in U.S. sugar exports (based on pace to date) of 50,000 short tons, raw value. It is expected that 80 percent of the increase will be exported to Mexico. Conversion into tel quel metric tons produces the 34,000 mt increase. Total forecast supply equals 6.031 million, a reduction compared with 2010/11 of 359,221 mt.

At this point in the forecasting cycle, USDA bases its projection of Mexican sweetener consumption on the same per capita level as the previous year – 50.158 kilograms (discussed above). The USDA did not change its estimate of 2011/12 HFCS consumption from 1.635 million mt, dry weight (up from 1.610 million last year). Total human consumption of sugar is therefore projected at 4.132 million mt. Historical optimal ending stock levels of 22 percent of sugar consumption are assumed for 2011/12, implying ending stocks of 909,000 mt. The USDA did not change its 2011/12 projection of sugar for IMMEX, projected at 283,000 mt.

Exports are forecast residually to balance total use with total supply. The projection this month is 707,000 mt, a decrease of 185,000 mt from last month.

According to press reports, the Government of Mexico is evaluating the need for additional sugar import quotas this year. The amount commonly reported is 400,000 mt. However, the status of this amount is vague. It has been referred to as an “umbrella” quota that would not necessarily be approved for actual imports. Its purpose would be to

act as preventative measure against sharp price increases that could arise if exports to the United States, other countries, or IMMEX are above “acceptable” levels.

Table 2 -- Mexico: sugar production and supply, and sugar and HFCS utilization (sugar - metric tons, raw value).

Fiscal Year (Oct/Sept)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 1/	2012 1/
1,000 metric tons, raw value													
Beginning Stocks	941	1,063	1,548	1,172	1,194	1,237	1,965	1,294	1,718	1,975	624	973	729
Production	4,979	5,220	5,169	5,229	5,330	6,149	5,604	5,633	5,852	5,260	5,115	5,495	5,300
Imports	37	43	52	63	327	268	240	474	226	160	861	307	365
Supply	5,957	6,326	6,769	6,464	6,851	7,654	7,809	7,401	7,796	7,395	6,600	6,774	6,393
Disappearance													
Human consumption	4,445	4,481	5,004	5,097	5,380	5,279	5,326	5,133	5,090	5,065	4,615	4,340	4,380
Other Cons.	131	142	180	135	220	282	323	390	414	475	302	339	300
Miscellaneous									-360	-136	-27	-191	
Total	4,576	4,623	5,184	5,232	5,600	5,561	5,649	5,523	5,144	5,404	4,890	4,488	4,680
Exports	318	155	413	38	14	128	866	160	677	1,367	737	1,558	750
Total Use	4,894	4,778	5,597	5,270	5,614	5,689	6,515	5,683	5,821	6,771	5,627	6,045	5,430
Ending Stocks	1,063	1,548	1,172	1,194	1,237	1,965	1,294	1,718	1,975	624	973	729	964
1,000 metric tons, tel quel/actual weight													
Beginning Stocks	888	1,003	1,460	1,106	1,126	1,167	1,854	1,221	1,621	1,863	589	918	687
Production	4,697	4,925	4,876	4,933	5,028	5,801	5,287	5,314	5,521	4,962	4,825	5,184	5,000
Imports	35	41	49	59	308	253	226	447	213	151	812	289	344
Supply	5,620	5,968	6,386	6,098	6,463	7,221	7,367	6,983	7,355	6,976	6,226	6,391	6,031
Disappearance													
Human consumption	4,193	4,227	4,721	4,808	5,075	4,980	5,025	4,843	4,802	4,778	4,354	4,094	4,132
Other Cons.	124	134	170	127	208	266	305	368	391	448	285	320	283
Miscellaneous									-340	-128	-25	-180	
Total	4,317	4,361	4,891	4,936	5,283	5,246	5,329	5,211	4,853	5,098	4,613	4,234	4,415
Exports	300	146	390	36	13	120	817	151	639	1,290	695	1,469	707
Total Use	4,617	4,508	5,280	4,972	5,296	5,367	6,146	5,362	5,492	6,388	5,308	5,703	5,122
Ending Stocks	1,003	1,460	1,106	1,126	1,167	1,854	1,221	1,621	1,863	589	918	687	909
Stocks-to-Human Cons.	23.9	34.5	23.4	23.4	23.0	37.2	24.3	33.5	38.8	12.3	21.1	16.8	22.0
Stocks-to-Use	21.7	32.4	20.9	22.7	22.0	34.6	19.9	30.2	33.9	9.2	17.3	12.1	17.7
HFCS Cons. (dry weight)	580	600	263	130	135	355	667	698	782	653	1,418	1,610	1,635

Source: USDA, FAS, PSD database (historical data); USDA, WASDE (forecast data).

1/ Forecast.

U.S. Sugar

The USDA projects fiscal year (FY) 2012 U.S. sugar production at 8.0 million short tons, raw value (STRV). This amount is comprised of 4.525 million STRV of beet sugar and 3.475 million STRV of cane sugar. The cane sugar projection is increased from last month by 130,000 STRV due to improved production prospects reported by cane sugar processors in Florida. They now expect a crop of 1.730 million STRV. The National Agricultural Statistics Service (NASS) reports an additional 1,000 acres of area to be harvested for sugarcane in Florida (total equal to 379,000 acres) and also increased its sugarcane yield forecast by 0.5 tons to 35.5 tons per acre. Sucrose recovery is expected to be 13.08 percent and sugar per acre is calculated at 4.64 tons. Both of these forecasts, if realized, would be the highest since FY 2004.

The Foreign Agricultural Service (FAS) revised estimates of U.S. sugar imports for FY 2011 and projections for FY 2012 based on corrected data from the U.S. Customs Service. FY 2011 imports occurring under the 2011 raw sugar tariff-rate quota (TRQ) were increased by 28,431 STRV due to an additional shipment from Argentina not originally reported by Customs in September. As permitted under certain waivers, an additional 57,706 STRV of FY 2011 TRQ sugar entered from Brazil, Colombia, and Peru in October and November. Although part of the FY 2011 raw sugar TRQ, they are recorded as entered in FY 2012.

FAS increased its forecast of FY 2012 sugar imports occurring under the Dominion Republic-Central American Free Trade Agreement (DR/CAFTA) by 18,236 STRV. The DR/CAFTA TRQ is a calendar year TRQ and FAS expects more of this sugar to enter the United States before the end of September 2012. Based on pace-to-date, FAS also increased its forecast of imports occurring under the sugar re-export import program by 100,000 STRV. The new FY 2012 total is 450,000 STRV.

As detailed in the previous chapter on Mexico, 2011/12 exports are expected to be less than forecast last month. The implication for the United States is that imports from Mexico are reduced by 219,000 STRV to 814,000 STRV for FY 2012. Taken together, reduced imports expected from Mexico are more than additional TRQ and re-export program imports; total expected FY 2012 imports are decreased by 44,000 STRV.

Based on pace-to-date, the USDA increased its forecast of sugar exports by 50,000 STRV to 250,000 STRV and also the forecast of deliveries under the sugar-containing products re-export program by 30,000 STRV to 180,000 STRV. Deliveries for human consumption were revised downward by 250,000 STRV to 10.975 million STRV. The previous forecast of 11.225 million STRV was based on the strong deliveries in FY 2011. Data from USDA's *Sweetener Market Data* (SMD) for the first 3 months of FY 2012 point to deliveries lower than those in the previous year.

Ending stocks are projected as the difference between total supply and total use. The projection for FY 2012 is 876,860 STRV, implying an ending stocks-to-use ratio of 7.66 percent. This ratio is low by historical standards. As a rule, USDA's Interagency Commodities Estimation Committee (ICEC) for sugar does not forecast changes to the sugar TRQ until officially announced by the Secretary of Agriculture.

Table 3 -- USDA estimate of sugar imports in FY 2011

	Metric tons, raw value	Short tons, raw value
Raw sugar TRQ	1,520,892	1,676,497
Less shortfall attributable to Mexico 1/	0	0
Less other shortfall (not including waivers)	-83,330	-91,856
Plus FY 2010 TRQ entries in October 2010	32,971	36,344
Less FY 2011 TRQ entries in September 2010	-37,007	-40,793
Less FY 2011 TRQ entries in October 2011	-79,906	-88,081
Plus FY 2012 TRQ entries in September 2011	20,062	22,115
Total raw sugar TRQ	1,373,682	1,514,225
Refined sugar TRQ		
Allocation to Canada	35,300	38,912
FY 2011 Canada sugar to enter in FY 2012	-25,575	-28,192
Allocation to Mexico	0	0
Less Mexican shortfall 1/	0	0
Global	118,168	130,258
FY 2011 Global to enter in FY 2012	-111,078	-122,443
Specialty		
Base	1,656	1,825
Additional	77,111	85,000
August increase	9,072	10,000
Total refined sugar TRQ	104,654	115,361
CAFTA/DR TRQ		
Entries in Oct.-Dec. 2010	4,411	4,862
Entries in Jan.-Sep. 2011	78,735	86,790
Total entries in FY 2011	83,146	91,653
Other:		
Singapore, Bahrain, Jordan	20	22
Less shortfall	-4	-4
Peru	2,000	2,205
Less shortfall	-2,000	-2,205
Total estimate TRQ entries	1,561,498	1,721,257
Mexico	1,546,909	1,705,175
Re-export program imports	255,338	281,462
Sugar syrups, high-tier	17,088	18,836
Total projected imports	3,380,833	3,726,730

1/ Total entries from Mexico, quota and non-quota, reflected below.

Source: FAS, USDA.

Table 4 -- USDA estimate of sugar imports in FY 2012

	Metric tons, raw value	Short tons, raw value
Raw sugar TRQ	1,117,195	1,231,497
Less shortfall attributable to Mexico 1/ Less other shortfall	-120,000	-132,277
Plus FY 2011 TRQ entries in Oct. and Nov. 2011 Less FY 2012 TRQ entries in September 2011	79,906 -20,062	88,081 -22,115
Total raw sugar TRQ	1,057,039	1,165,186
Refined sugar TRQ		
Allocation to Canada FY 2011 Canada sugar to enter FY 2012	12,050 17,535	13,283 19,329
Allocation to Mexico Less Mexican shortfall 1/		
Global FY 2011 Global sugar to enter FY 2012	8,294 111,078	9,143 122,443
Specialty Base Additional	1,656 90,718	1,825 100,000
Total refined sugar TRQ	241,331	266,022
CAFTA/DR TRQ - calendar 2012	116,820	128,772
CAFTA/DR FY 2011, likely to enter in FY 2012 CAFTA/DR FY 2012, forecast to enter in FY 2013 Other: Singapore, Bahrain, Jordan Peru	31,543 -15,000 21 2,000	34,770 -16,535 23 2,205
Total estimate TRQ entries	1,433,754	1,580,444
Mexico	738,448	814,000
Re-export program imports	408,233	450,000
Sugar syrups, high-tier	4,536	5,000
Total projected imports	2,584,972	2,849,444

1/ Total entries from Mexico, quota and non-quota, reflected below.

Source: FAS, USDA.

Table 5 -- U.S. sugar: supply and use, by fiscal year 1/

Items	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
1,000 short tons, raw value												
Beginning stocks 2/	2,216	2,180	1,528	1,670	1,897	1,332	1,698	1,799	1,664	1,534	1,498	1,472
Total production 3/, 4/	8,769	7,900	8,426	8,649	7,876	7,399	8,445	8,152	7,531	7,963	7,831	8,000
Beet sugar	4,680	3,915	4,462	4,692	4,611	4,444	5,008	4,721	4,214	4,575	4,659	4,525
Cane sugar	4,089	3,985	3,964	3,957	3,265	2,955	3,438	3,431	3,317	3,387	3,172	3,475
Florida	2,057	1,980	2,129	2,154	1,693	1,367	1,719	1,645	1,577	1,646	1,433	1,760
Louisiana	1,585	1,580	1,367	1,377	1,157	1,190	1,320	1,446	1,397	1,469	1,411	1,400
Texas	206	174	191	175	158	175	177	158	152	112	146	145
Hawaii	241	251	276	251	258	223	222	182	192	161	182	170
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0
Total imports	1,590	1,535	1,730	1,750	2,100	3,443	2,080	2,620	3,082	3,320	3,727	2,849
Tariff-rate quota imports 5/	1,277	1,158	1,210	1,226	1,408	2,588	1,624	1,354	1,370	1,854	1,721	1,580
Other Program Imports	238	296	488	464	500	349	390	565	308	448	281	450
Non-program imports	76	81	32	60	192	506	66	701	1,404	1,017	1,724	819
Mexico 6/							60	694	1,402	807	1,705	814
Total Supply	12,575	11,615	11,684	12,070	11,873	12,174	12,223	12,571	12,277	12,817	13,056	12,322
Total exports 3/	141	137	142	288	259	203	422	203	136	211	248	250
Quota-exempt for reexport	141	137	142	288	259	203	422	203	136	211	248	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
Miscellaneous	123	-24	161	23	94	-67	-132	0	0	-45	-2	0
CCC disposal, for domestic non-food use	10	0	0	0	0	0	0	0	0	0	0	0
Refining loss adjustment	0	0	0	0	0	0	0	0	0	0	0	0
Statistical adjustment 7/	113	-24	161	23	94	-67	-132	0	0	-45	-2	0
Deliveries for domestic use	10,132	9,974	9,711	9,862	10,188	10,340	10,135	10,704	10,607	11,152	11,337	11,195
Transfer to sugar-cont. products												
for exports under reexport program	98	156	183	142	121	106	169	141	120	201	196	180
Transfer to polyhydric alcohol, feed	33	33	24	41	48	51	53	61	46	35	31	40
Deliveries for domestic food and beverage use 8/	10,000	9,785	9,504	9,678	10,019	10,184	9,913	10,501	10,441	10,917	11,109	10,975
Total Use	10,396	10,087	10,014	10,172	10,542	10,476	10,424	10,907	10,743	11,319	11,583	11,445
Ending stocks 2/	2,180	1,528	1,670	1,897	1,332	1,698	1,799	1,664	1,534	1,498	1,472	877
Privately owned	1,395	1,316										
CCC	784	212										
Stocks-to-use ratio	20.97	15.15	16.68	18.65	12.63	16.21	17.25	15.26	14.28	13.24	12.71	7.66

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 (SMD), 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.

6/ Starting in 2007/08, total includes imports under Mexico's WTO TRQ allocation for raw and refined sugar.

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

8/ For FY 2008-09, combines SMD deliveries for domestic human use, SMD miscellaneous uses, and the difference between SMD imports and WASDE imports.

NOTE: Numbers may not add due to rounding.

Table 6 -- U.S. sugar: supply and use (including Puerto Rico), fiscal years, metric tons^{1/}

Items	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
1,000 metric tons, raw value												
Beginning stocks 2/	2,010	1,977	1,386	1,515	1,721	1,208	1,540	1,632	1,510	1,392	1,359	1,336
Total production 3/, 4/	7,955	7,167	7,644	7,846	7,145	6,712	7,662	7,396	6,832	7,224	7,104	7,258
Beet sugar	4,245	3,552	4,048	4,257	4,183	4,032	4,543	4,283	3,823	4,151	4,227	4,105
Cane sugar	3,710	3,615	3,596	3,590	2,962	2,681	3,119	3,113	3,010	3,073	2,877	3,152
Florida	1,866	1,796	1,932	1,954	1,536	1,241	1,559	1,492	1,431	1,493	1,300	1,597
Louisiana	1,438	1,433	1,240	1,249	1,049	1,079	1,198	1,312	1,267	1,332	1,280	1,270
Texas	187	158	173	159	143	159	161	143	138	101	132	132
Hawaii	219	227	251	228	234	202	201	165	174	146	165	154
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0
Total imports	1,443	1,393	1,570	1,588	1,905	3,124	1,887	2,377	2,796	3,012	3,381	2,585
Tariff-rate quota imports 5/	1,158	1,051	1,098	1,113	1,277	2,348	1,473	1,228	1,243	1,682	1,562	1,434
Other Program Imports	216	269	443	421	454	317	354	513	279	407	255	408
Non-program imports	69	73	29	54	174	459	60	636	1,274	923	1,564	743
Mexico 6/	0	0	0	0	0	0	54	630	1,272	732	1,547	738
Total Supply	11,408	10,537	10,599	10,950	10,771	11,044	11,088	11,404	11,138	11,627	11,844	11,178
Total exports 3/	128	125	129	261	235	184	383	184	123	191	225	227
Quota-exempt for reexport	128	125	129	261	235	184	383	184	123	191	225	227
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
Miscellaneous	112	-22	146	20	85	-61	-120	0	0	-41	-2	0
CCC disposal, for domestic non-food use	0	0	0	0	0	0	0	0	0	0	0	0
Refining loss adjustment	0	0	0	0	0	0	0	0	0	0	0	0
Statistical adjustment 7/	112	-22	146	20	85	-61	-120	0	0	-41	-2	0
Deliveries for domestic use	9,191	9,048	8,810	8,947	9,243	9,381	9,194	9,710	9,623	10,117	10,285	10,156
Transfer to sugar-cont. products												
for exports under reexport program	89	141	166	129	110	96	153	128	109	183	178	163
Transfer to polyhydric alcohol, feed	30	30	22	38	44	46	48	56	42	31	28	36
Deliveries for domestic food and beverage use 8/	9,072	8,877	8,622	8,780	9,089	9,239	8,993	9,527	9,472	9,903	10,078	9,956
Total Use	9,431	9,151	9,084	9,228	9,563	9,504	9,457	9,895	9,746	10,268	10,508	10,383
Ending stocks 2/	1,977	1,386	1,515	1,721	1,208	1,540	1,632	1,510	1,392	1,359	1,336	795
Privately owned	1,266	1,194	0	0	0	0	0	0	0	0	0	0
CCC	711	192	0	0	0	0	0	0	0	0	0	0
Stocks-to-use ratio	20.97	15.15	16.68	18.65	12.63	16.21	17.25	15.26	14.28	13.24	12.71	7.66

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 (SMD), 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.

6/ Starting in 2007/08, total includes imports under Mexico's WTO TRQ allocation for raw and refined sugar.

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

8/ For FY 2008-09, combines SMD deliveries for domestic human use, SMD miscellaneous uses, and the difference between SMD imports and WASDE imports.

NOTE: Numbers may not add due to rounding.

U.S. Sugar and Sugar-Containing Product Prices

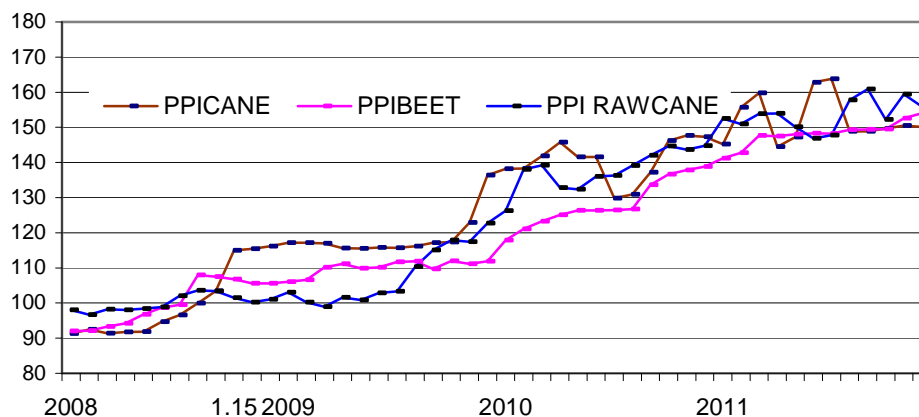
U.S. sugar prices remained at historically high levels throughout 2011. Refined beet sugar prices in the Midwest averaged 56.22 cents/pound (lb), 5.6 percent greater than the corresponding 2010 average and 47.6 percent higher than the 2009 average (table 7). Likewise, the U.S. raw sugar prices (nearby No.16 futures price) averaged 38.12 cents/lb, 6.0 percent greater than the 2010 price and 52.9 percent greater than the 2009 price. Much of the rise in domestic sugar prices was linked to the rise of world sugar prices above U.S. support prices, starting in the summer of 2009. The demand for imported sugar has kept the margin between domestic and world prices at more than 10 cents/lb in both 2010 and 2011. This rise in demand for imported sugar is attributable to a lower proportion of consumer demand being supplied by domestic production: 72 percent over 2008/09-2010/11 against 83 percent over 1999/00-2007/08.

Producer price indexes (PPIs) for refined cane and beet sugar show similar year-over-year increases and are important because they reflect the return that sugar producers realize more closely than widely-quoted product prices. The 2011 refined cane sugar PPI is 8.3 percent higher than its 2010 level and 28.3 percent high than its 2009 level. The 2011 refined beet sugar PPI is 15.4 percent higher than its 2010 level and 34.4 percent high than its 2009 level.

Figure 3 shows the PPI growth path since 2008. Refined sugar PPIs jumped precipitately in 2008: beet sugar in August from 131.2 to 142.4 or 8.5 percent and refined cane sugar in October from 144.2 to 160.4, or 11.2 percent. Both events were largely attributable to the expectation of a below-average sugarbeet crop for the 2008/09 marketing year. With world raw sugar prices averaging between 11.50 and 14.0 cents/lb, there was only a short-lived rise in the raw sugar price and no effect on the raw sugar PPI, meaning that the primary effect was on the domestic refining margin.

Figure 3
Producer price indexes for raw cane sugar, refined cane sugar, and refined beet sugar, 2008-11.

Average (2008) = 100



Source: BLS.

Table 7 -- U.S. sugar prices and indexes, 2008-2011

Item/Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	Fiscal
<u>Refined beet sugar price, Midwest, from Milling and Baking News</u>														
2008	24.13	26.40	28.00	28.00	29.60	33.25	38.00	38.40	38.50	36.20	35.00	35.00	32.54	29.86
2009	35.00	35.00	35.00	34.25	34.40	35.50	35.40	38.00	42.00	42.60	45.00	45.00	38.10	35.90
2010	50.50	53.00	52.25	48.20	45.00	50.00	53.40	59.50	59.00	54.40	56.50	57.00	53.23	50.29
2011	54.50	54.00	56.50	56.80	54.00	55.00	55.40	57.00	58.60	59.00	58.75	55.1	56.22	55.81
2012	51.75													
<u>U.S. raw sugar price, nearby futures, No. 16 contract, Intercontinental Exchange</u>														
2008	20.24	20.21	20.65	20.54	20.83	21.80	23.76	23.15	23.10	21.46	19.83	20.00	21.30	21.27
2009	20.15	19.83	19.75	21.58	21.64	22.47	23.02	26.18	28.91	30.48	31.86	33.30	24.93	22.07
2010	39.36	40.13	35.11	30.86	30.89	32.73	33.66	34.24	38.17	39.30	38.84	38.35	35.97	34.23
2011	38.46	39.69	39.65	38.32	35.04	35.65	37.93	40.16	40.15	38.19	37.92	36.32	38.12	38.46
2012	34.69													
<u>World raw sugar price, nearby futures, No. 11 contract, Intercontinental Exchange</u>														
2008	11.66	13.13	12.88	11.85	10.93	10.80	13.21	13.68	12.29	11.70	11.83	11.32	12.11	11.73
2009	12.24	13.01	12.93	13.13	15.47	15.54	17.82	21.72	22.25	23.16	22.77	24.90	17.91	14.91
2010	28.38	26.60	19.26	16.12	14.60	15.81	17.62	19.22	23.72	28.58	28.90	31.09	22.49	21.01
2011	32.09	31.77	28.15	25.43	21.85	26.07	30.51	28.87	27.71	26.30	24.52	23.42	27.22	28.42
2012	24.05													
<u>Unit import value, refined sugar imported from Mexico, U.S. Census Bureau</u>														
2008	23.10	22.84	21.16	20.11	22.61	22.29	22.62	21.79	22.00	23.02	24.11	25.24	22.57	22.51
2009	25.73	24.62	24.72	24.56	24.40	25.48	25.94	25.04	26.44	23.60	25.16	30.58	25.52	24.94
2010	31.60	28.10	31.97	29.90	32.53	37.65	42.15	42.15	39.15	39.78	40.78	43.47	36.60	32.88
2011	37.36	40.21	38.06	39.75	40.35	40.97	40.70	38.62	41.18	41.85	43.94	NA	NA	40.10
<u>U.S. retail refined sugar price, Bureau of Labor Statistics</u>														
2008	51.90	51.30	50.40	51.70	52.10	52.50	52.50	53.50	56.30	56.50	52.80	53.40	52.91	52.07
2009	56.90	56.90	57.10	56.80	56.10	56.20	55.60	55.60	58.00	57.90	57.70	59.60	57.03	55.99
2010	61.30	63.40	63.60	63.70	63.50	62.30	62.20	60.40	63.00	62.20	64.40	64.30	62.86	61.55
2011	65.20	66.00	66.40	66.40	67.50	68.40	68.90	70.10	70.20	70.40	69.80	70.3	68.30	66.67
<u>Refined beet sugar and byproducts, June 1982=100, Bureau of Labor Statistics 1/</u>														
2008	121.3	121.5	123.0	124.2	127.6	130.1	131.2	142.4	141.8	140.8	139.2	139.3	131.9	129.2
2009	139.8	140.6	145.2	146.6	144.9	145.2	147.3	147.5	144.6	147.7	146.6	147.5	145.3	143.4
2010	155.5	159.6	162.5	164.9	166.6	166.6	166.8	167.1	176.2	180.2	181.7	183.1	169.2	160.6
2011	186.2	188.2	194.7	194.5	195.2	195.6	195.4	196.9	197.0	197.1	201.2	203.1	195.4	190.7
<u>Refined cane sugar and byproducts, June 1982=100, Bureau of Labor Statistics 1/</u>														
2008	127.4	129.0	127.5	128.0	128.1	132.1	134.7	139.4	144.2	160.4	161.0	162.0	139.5	131.3
2009	163.4	163.4	163.2	161.3	161.1	161.5	161.4	162.0	163.4	163.7	171.4	190.2	165.5	162.0
2010	192.7	192.9	197.9	203.3	197.5	197.4	181.1	182.6	191.4	204.0	206.0	205.5	196.0	188.5
2011	202.5	217.2	222.9	201.5	205.3	227.1	228.4	207.6	207.6	208.8	209.9	209.4	212.4	211.3
<u>Raw cane sugar and other cane mill products and byproducts, June 1982=100, Bureau of Labor Statistics 1/</u>														
2008	124.0	122.3	124.2	124.0	124.5	125.0	129.1	131.0	130.8	128.4	126.8	127.8	126.5	125.7
2009	130.3	126.8	125.1	128.5	127.6	130.1	130.7	139.6	145.5	149.1	148.5	155.2	136.4	130.6
2010	159.7	174.6	176.1	168.0	167.4	172.0	172.4	176.0	179.7	183.0	181.7	183.1	174.5	166.6
2011	192.9	190.9	194.6	194.7	189.9	185.8	186.9	199.6	203.5	192.5	201.7	197.2	194.2	190.6
<u>Corn sweeteners (liquids and solids), incl. glucose, dextrose, and HFCS, June 1985=100, Bureau of Labor Statistics 1/</u>														
2008	207.1	207.8	207.9	207.9	207.9	209.2	209.2	209.4	209.2	209.3	210.6	210.1	208.8	200.5
2009	221.1	220.5	220.6	218.8	218.8	218.7	216.8	216.7	216.9	216.8	216.8	216.8	218.3	216.6
2010	205.4	202.1	197.4	188.9	189.2	189.3	189.3	186.6	187.3	187.9	188.0	187.1	191.5	198.8
2011	201.1	204.2	204.6	205.5	205.7	206.3	208.0	209.1	208.3	209.9	210.6	209.8	206.9	201.3

1/ Last 4 months of 2011 are preliminary -- indexes are subject to revision 4 months after original publishing.

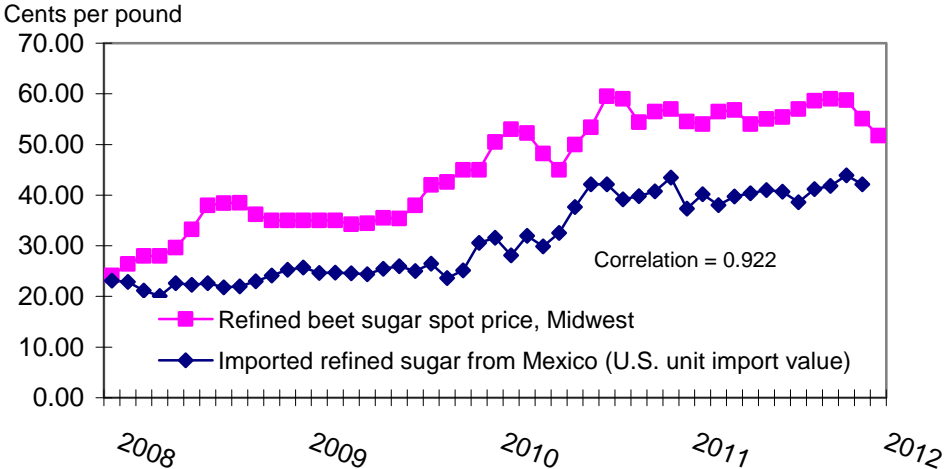
The raw sugar PPI began its rise in August 2009, at the same time that world raw sugar prices—and consequently domestic raw sugar prices—started their ascent. The refined sugar PPI responded in November 2009 and the beet sugar PPI began increasing in January 2010. Growth has continued for all the sugar PPIs, with some leveling in evidence in the second half of 2011. The average sugar PPI values for 2011 are between 48 and 54 percent higher than corresponding levels in 2008.

Figure 4 shows the relationship between the refined beet sugar price and the unit import value of sugar imported from Mexico. The series move together, although separated—the correlation between them is 0.922 over the period 2008-11. The gap between these prices averaged about 10.0 cents in 2008, 12.6 cents in 2009, 16.6 cents in 2010, and 15.8 cents in 2011. As a proportion of the refined beet sugar price, the monthly unit import value has averaged about 69.8 percent of the beet price, with a standard deviation of 0.078. The year-to-year variation is not statistically significant.¹

Consumer Prices

Consumer price indexes (CPIs) for most food products rose more in 2011 than their yearly average increases since 2000. Table 8, in the righthand column, shows that the food CPI increased 3.74 percent in 2011 compared with the average yearly food CPI increase of 2.83 percent. The other columns show CPI data for sugar and various sugar-containing products since 2000. For all products shown, CPI increases in 2011 exceeded their respective average increases since 2000. The sugar and artificial sweeteners CPI increased 5.3 percent in 2011, exceeding its average rate of increase of 3.41 percent. In contrast, the candy and chewing gum CPI, the most sugar-intensive of all the other products shown, increased only 2.64 percent, not much more than the average 2.50 percent since 2000.

Figure 4
U.S. refined beet sugar price and unit import value of refined sugar from Mexico



Source: Milling and Baking News, U.S. Census Bureau.

¹Additional analysis based on co-integration econometrics suggests that the beet price and the unit import value are related over the longer run at an equilibrium ratio equal to 0.7245. Given the period ratio average of 0.698, an implication would be that imported refined sugar from Mexico has been undervalued with respect to U.S. refined beet sugar. This result may offer at least a partial explanation of why imported Mexican sugar has gained market share against U.S. refined sugar.

Table 8 --U.S. Consumer Price Index for sugar, selected sweetener-containing products, and food

Year	Sugar and sweets	Sugar and artificial sweeteners	Sugar-containing product: candy and chewing gum	Sugar-containing product: cereals and bakery products	Sugar-containing product: beverages, non-alcoholic	Sugar-containing product: canned fruits	Sugar-containing product: ice cream and related products	Sugar-containing products weighted by share of sugar deliveries
Calendar year 2000 = 100								
2000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2001	101.1	102.3	100.5	102.9	101.0	102.0	105.5	102.4
2002	103.3	104.4	102.3	105.2	101.0	104.4	109.0	104.6
2003	105.2	106.3	103.9	107.7	101.5	106.4	106.8	106.2
2004	106.0	107.1	104.4	109.4	101.9	106.6	108.5	107.4
2005	107.3	108.7	105.5	111.0	104.8	110.8	108.1	108.9
2006	111.4	119.5	108.1	113.0	107.0	113.7	109.1	111.1
2007	114.8	121.8	111.8	118.0	111.3	117.1	111.6	115.2
2008	121.2	124.3	118.7	130.0	116.1	126.8	117.3	124.5
2009	127.9	130.0	125.4	134.1	118.3	133.6	119.6	129.1
2010	130.7	136.8	127.6	133.0	117.3	131.9	118.7	128.6
2011	135.0	144.1	131.0	138.2	121.0	136.6	127.2	133.6
Year-over-year CPI percentage increases								
2001	1.13%	2.32%	0.48%	2.92%	1.02%	1.96%	5.51%	2.36%
2002	2.12%	2.07%	1.82%	2.17%	0.00%	2.39%	3.29%	2.17%
2003	1.89%	1.75%	1.51%	2.42%	0.43%	1.88%	-2.01%	1.52%
2004	0.74%	0.82%	0.56%	1.58%	0.43%	0.26%	1.60%	1.18%
2005	1.23%	1.50%	1.01%	1.46%	2.85%	3.86%	-0.39%	1.40%
2006	3.81%	9.93%	2.47%	1.82%	2.08%	2.62%	0.96%	1.97%
2007	3.07%	1.94%	3.45%	4.37%	4.09%	3.06%	2.28%	3.75%
2008	5.55%	2.05%	6.11%	10.24%	4.31%	8.27%	5.12%	8.05%
2009	5.55%	4.56%	5.68%	3.15%	1.87%	5.36%	2.00%	3.70%
2010	2.19%	5.25%	1.77%	-0.84%	-0.88%	-1.26%	-0.82%	-0.36%
2011	3.27%	5.29%	2.64%	3.94%	3.21%	3.52%	7.21%	3.88%
Period averages	2.78%	3.41%	2.50%	3.02%	1.76%	2.90%	2.25%	2.69%

Source: Bureau of Labor Statistics, published indexes re-indexed for calendar year 2000 = 100.

The 2011 CPI increases for ice cream and related products, at 7.21 percent, and for sugar and artificial sweeteners, at 5.29 percent, exceed the 2011 food CPI increase. The CPI increases for cereal and baking products, nonalcoholic beverages, and canned fruits are all close to the food CPI increase. The lowest increase, lower than the food CPI increase, is for candy and chewing gum. The sugar and sweets CPI, a composite of the sugar/artificial sweeteners and candy/chewing gum CPIs, increased 3.27 percent in 2011, above its average but lower than the 2011 food CPI increase.

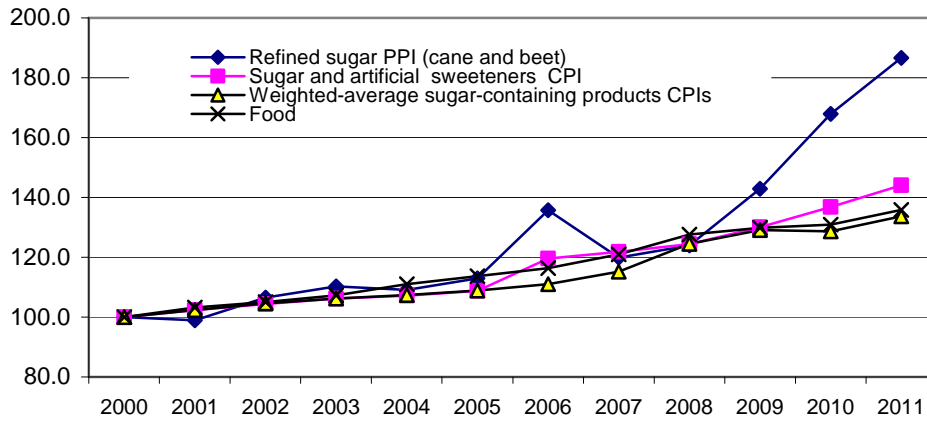
Figure 5 joins the refined sugar PPI (a weighted-average of the refined beet and cane sugar PPIs) and the CPIs for sugar and artificial sweeteners and food, along with a sugar-containing product composite CPI (next-to-last column, table 8) for the period 2000 through 2011. All indexes increased moderately through 2005. Supply disruptions and loss of refining capacity in 2005-2006 caused the refined sugar PPI to increase, with a smaller passthrough effect on refined sugar consumer prices. The refined sugar PPI returned to trend in 2007 and the increase in the refined sugar CPI moderated. During this time, there was little or no immediate effect on the sugar-containing product or food CPIs. However, the sugar-containing product CPI grew about 8 percent in 2008, 2 years after the large increase in refined sugar PPI. Since then, its growth has more nearly matched that of the food CPI through 2011.

The sustained increases in the refined sugar PPIs since 2008 have been accompanied by smaller increases in the refined sugar CPIs, the same pattern seen earlier. It does not seem that the sugar-containing product CPI has been much affected by the large refined sugar PPI increase, even when looking at a 2-year lag. It is possible that the downturn in overall economic activity has limited any sugar price passthrough effect.

Figure 5

Price indexes for refined sugar production, household consumption, and sugar-weighted average of sugar-containing product consumption

Year 2000 = 100



Source: BLS; USDA, FSA, Sweetener Market Data.

Sugar Long Term Projections through Fiscal Year 2022

The three primary determinants of U.S. sugar supply and use over the long-term projections period are the sugar and energy provisions of the Food, Conservation, and Energy Act of 2008 (“2008 Farm Act”), reliance on sugar imports from Mexico and other countries to maintain balance in the U.S. sugar market, and assumed levels of world sugar prices close to, or above, U.S. raw sugar loan rates.

Sugar and Energy Provisions of the Food, Conservation, and Energy Act of 2008

The 2008 Farm Act made marketing allotments permanent at a level to be not less than 85 percent of estimated sugar deliveries for human consumption. The 2008 Act sets the raw sugar loan rate at 18.75 cents/pound (lb) in fiscal year (FY) 2012. The refined beet sugar loan rate is specified to equal 128.5 percent of the raw cane sugar loan rate. The 2008 Act introduced the Feedstock Flexibility Program, which requires the diversion of sugar from food use to ethanol producers at the beginning of September, if needed, to keep sugar prices above levels at which sugar processors might otherwise forfeit sugar under loan to the Commodity Credit Corporation (CCC). The 2008 Farm Act states that the raw and refined sugar tariff-rated quota (TRQs) be established at the beginning of the marketing year at the minimum levels required to comply with international trade agreements approved by the U.S. Congress, with an exception for imported specialty sugar. During the first half of the fiscal year (October 1 - March 31), the 2008 Farm Act states that the sugar TRQ must be increased above the minimum levels by the Secretary of Agriculture if a sugar shortage occurs due to an emergency situation such as a natural disaster, war, or similar event. The 2008 Farm Act states that after April 1, the sugar TRQ can be increased by the Secretary to provide an adequate supply, but only to a level that does not threaten sugar forfeitures to the CCC.

U.S. sugar supply and use over the long-term projections period (FY 2013-2022) are specified to resemble events and policy choices made in FY 2008-11. Specifically, U.S. producers do not expand area to keep pace with increases in domestic demand, and U.S. policymakers aim for an ending year stocks-to-use ratio of 14.5 percent (table A-1). Although U.S. policymakers have been conservative in making increases in the sugar TRQs above initially mandated levels, it is assumed that additional sugar to meet the 14.5 percent stocks-to-use goals comes equally from U.S. TRQ increases and imports from Mexico. Mexico is assumed to import sugar from the world market late in the fiscal year to assure sufficient supplies for meeting domestic consumption requirements. Historically, optimum ending-fiscal year stocks in Mexico have been at about 22.0 percent of total-year deliveries for human consumption.

Growth in U.S. beet and cane sugar production is modest. Beet sugar production in FY 2022 is projected at 5.20 million STRV, about 8.4 percent higher than in FY 2013. Cane sugar production is projected at 3.54 million STRV, about 4.7 percent higher than in FY 2013. Producers focus on margins between domestic prices and unit costs rather than competing against Mexican imports with increased acreage and investment in processing capacity. Production averages out to only 70.9 percent of domestic consumption, far below the 85-percent minimum allotment level. The annual excess of marketing allotments over production averages 1.68 million STRV. Most growth in sugar consumption is fueled by increased sugar imports from Mexico.

Over the projection period, sweetener availability (the sum of refined sugar, sugar in imported products, and HFCS) is assumed at 121.4 pounds per capita. Sugar in imported products—constituting 6.1 percent of sweetener demand in FY 2011—grows at 1 percent per year. It is assumed that the long-term decline in HFCS use ends in FY 2013. Sugar gains market share only if the margin between refined sugar prices and the cost of producing HFCS is narrow. Sugar deliveries for human use average 11.97 million STRV over the projections period. Annual growth is just under 1 percent a year.

Expected Economic Effects of the 2008 Act

The base scenario described in this chapter is the U.S. Department of Agriculture’s long-term sugar supply and use projections for February 2012. One of the chief uses of the long-term projections is to estimate Federal Government budget expense from U.S. sugar program operations. There are no sugar loan forfeitures and there are no CCC

purchases of sugar for ethanol because raw cane and refined beet sugar prices are above the minimum prices to avoid forfeiture for the entire projections period.

Reliance on Sugar Imports from Mexico and Other Countries

The sugar provisions of the North American Free Trade Agreement (NAFTA) removed all duties and quantitative restrictions on sweetener trade between Mexico and the United States as of January 1, 2008. For FY 2008-11, annual sugar exports from Mexico to the United States averaged over 1.15 million short tons, raw value (STRV), constituting about 10.7 percent of U.S. sugar consumption. Large initial sugar stocks in Mexico made exports cost-competitive against higher priced U.S. and TRQ sugar, and more importantly, facilitated the continuing shift away from the use of high fructose corn sweetener (HFCS) by U.S. food and beverage manufacturers.

In Mexico, certain conditions are likely to hold to keep Mexican sugar exports an important source of U.S. sugar supply. First, beverage and food manufacturers in Mexico continue to substitute lower cost HFCS (mostly imported from the United States) for currently more expensive domestic sugar. Second, remunerative prices in Mexico favor modest expansion of sugarcane area and increased sugar production. Third, the Mexican Government has shown willingness to import sugar from third-nations to replenish low sugar supplies caused by large exports to the U.S. market during the marketing year. Mexican sugar processors thereby minimize risk by selling into the U.S. market at certain high prices instead of holding inventory for later sale into the Mexican market at uncertain returns.

It is assumed that soft drink and other beverage manufacturers in Mexico continue their strong demand for HFCS over the projections period. Average HFCS demand (including demand by food manufacturers) over FY 2013-22 is 2.08 million metric tons, dry weight (table A-2). Mexican sugar consumption is at a low of 4.40 million metric tons, raw value (MTRV), in FY 2013, expanding in proportion to population and real income growth to 4.95 million MTRV in FY 2022. Average consumption for the projections period is 4.70 million MTRV.

There is sustained price-induced growth in Mexican sugar production in the first half of the projections period—production is at its highest in 2015/16 at 6.53 million MTRV. This growth incorporates lagged effects of land and processing investments made with historically high Mexican prices. Growth trails off later in the projections period as prices plateau and production costs increase. Production in 2021/22 is projected at 6.18 million MTRV. For the entire period, the average is 6.22 million MTRV.

Exports from Mexico to the United States average 1.64 million MTRV, and they constitute about 15.0 percent of U.S. domestic sugar consumption. Sugar imports into Mexico average about 309,489 MTRV, with about 58 percent of this amount coming from the United States as part of the U.S. Refined Sugar Re-Export Program. (These imports are used in a Mexican Government sugar-containing product re-export program. The imports do not directly affect Mexican sugar exports to the United States.) Remaining imports are assumed to come from third countries to keep the Mexican ending stocks-to-consumption ratio at 22 percent.

World Sugar Prices Close To or Above U.S. Raw Sugar Loan Rates

World sugar prices are expected to remain above historical levels of the period before 2009. From 1989-2008, world raw sugar prices averaged about 10.0 cents/lb. The average for 2009-11 has been about 22.5 cents/lb. Over the projections period, Brazil is expected to remain the dominant world sugar exporter. Higher world energy prices will put upward pressure on Brazilian sugar to retain its competitiveness with Brazilian ethanol derived from sugarcane. Furthermore, unless there is a large but unexpected devaluation of the Brazilian real, higher dollar costs of producing sugar in Brazil will require higher world sugar prices to guarantee enough supply to meet world sugar consumption demand. Under these conditions, the Organization for Economic Cooperation and Development (OECD) and the Food and Agriculture Organization (FAO) jointly project raw sugar prices to average 19.3 cents/lb over the projections period, with a low price of 16.6 cents/lb in 2012/13 and a high of 23.9 cents/lb in 2015/16. Price volatility comes from cyclical world production, especially from India. Prices in the latter half of the projection period are forecast to be less volatile and average about 18.5 cents/lb, close to the U.S. raw sugar loan rate.

With world raw sugar prices close to the U.S. raw sugar loan rate, U.S. raw sugar price levels are directly influenced by changes in world sugar prices. Because this relationship is relatively recent in origin, econometric estimation of the relationship does not yet provide the past level of confidence between the third-quarter U.S. raw sugar price and the ending stocks-to-use ratio. Nonetheless, it is hypothesized and specified that the margin between world and U.S. raw sugar prices reflects the economic scarcity value of sugar in the U.S. market. The margin is an inverse function of the ending stocks-to-use ratio. The domestic refining margin (i.e., the difference between refined beet sugar prices and raw cane prices) is a function of the out-year ratio of beet sugar production to cane sugar production, capacity use of cane sugar refining, and the ending stocks-to-use ratio.

The average U.S. raw sugar price over the projection period is 29.58 cents/lb, with a high of 34.17 cents/lb in FY 2016 and a low of 26.89 cents/lb in FY 2013. The margin between U.S. and world raw sugar prices averages 10.32 cents/lb. (The corresponding 10 quarterly margins between the fourth quarter of 2009 and the fourth quarter of 2011 averaged 11.75 cents/lb.) The U.S. refining margin is projected to average 6.99 cents/lb over the period, implying a refined beet sugar average price of 36.57 cents/lb.

Projected sugarbeet prices for FY 2013-22 average \$52.60/ton—17.5 percent above the average for FY 2002-11 (fig. A-1). The high price is \$55.92/ton in FY 2013, and the low is \$49.92/ton in FY 2014. Projected sugarcane prices for FY 2013-22 average \$38.61/ton—24.8 percent above the average for FY 2002-11. The high price is \$41.32/ton in FY 2016, and the low is \$37.05/ton in FY 2014.

Table A-1 -- U.S. sugar supply and use, projected to 2021/22

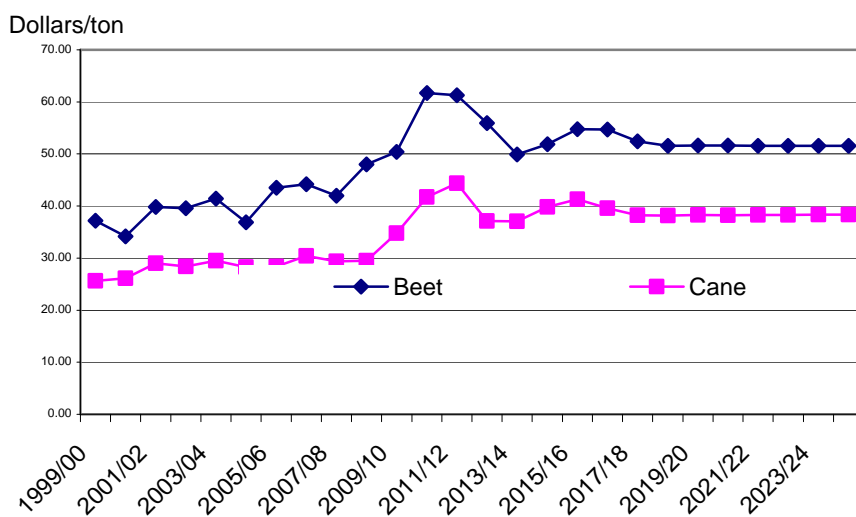
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
	1,000 short tons, raw value													
Beginning Stocks	1,799	1,664	1,534	1,498	1,487	1,212	1,698	1,731	1,772	1,778	1,780	1,794	1,818	1,834
Production	8,152	7,531	7,963	7,836	7,885	8,170	8,214	8,284	8,437	8,554	8,594	8,595	8,626	8,680
Beet Sugar	4,721	4,214	4,575	4,663	4,525	4,793	4,851	4,902	5,018	5,103	5,130	5,118	5,129	5,162
Cane Sugar	3,431	3,317	3,387	3,174	3,360	3,377	3,362	3,382	3,419	3,450	3,464	3,478	3,497	3,517
Florida	1,645	1,577	1,646	1,433	1,630	1,640	1,649	1,659	1,668	1,678	1,687	1,697	1,706	1,716
Louisiana	1,446	1,397	1,469	1,413	1,400	1,404	1,374	1,385	1,408	1,422	1,421	1,423	1,431	1,440
Texas	158	152	112	146	160	163	170	174	179	186	192	194	195	198
Hawaii	182	192	161	182	170	170	170	164	164	164	164	164	164	164
Total Imports	2,620	3,083	3,319	3,698	3,455	4,025	3,756	3,980	3,830	3,725	3,794	3,965	4,040	4,075
TRQ	1,354	1,370	1,854	1,693	1,520	1,878	1,730	1,720	1,497	1,491	1,666	1,823	1,896	1,953
Mexico	694	1,402	807	1,705	1,581	1,792	1,671	1,905	1,978	1,879	1,773	1,787	1,789	1,767
Over-quota	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Program	565	308	450	281	350	350	350	350	350	350	350	350	350	350
Sugar syrups	7	2	207	19	5	5	5	5	5	5	5	5	5	5
Total Supply	12,571	12,278	12,816	13,033	12,827	13,408	13,668	13,995	14,039	14,057	14,168	14,354	14,483	14,589
Exports	203	136	211	248	200	200	200	200	200	200	200	200	200	200
Total deliveries	10,703	10,607	11,152	11,310	11,415	11,510	11,737	12,023	12,061	12,076	12,174	12,337	12,449	12,542
Deliveries for food and beverage	10,501	10,441	10,917	11,082	11,225	11,320	11,547	11,833	11,871	11,886	11,984	12,147	12,259	12,352
Reexport Products	141	120	201	196	150	150	150	150	150	150	150	150	150	150
Polyhydric	25	18	20	15	20	20	20	20	20	20	20	20	20	20
Feed	37	28	14	16	20	20	20	20	20	20	20	20	20	20
Total use	10,907	10,743	11,318	11,546	11,615	11,710	11,937	12,223	12,261	12,276	12,374	12,537	12,649	12,742
Ethanol	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending stocks	1,664	1,534	1,498	1,487	1,212	1,698	1,731	1,772	1,778	1,780	1,794	1,818	1,834	1,848
Private	1,664	1,534	1,498	1,487	1,212	1,698	1,731	1,772	1,778	1,780	1,794	1,818	1,834	1,848
Blocked	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total ending stocks-to-use	15.26	14.28	13.24	12.88	10.44	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50
	Cents/pound													
Raw Sugar Price	23.34	26.04	35.36	39.41	38.20	26.89	27.70	32.03	34.17	30.79	28.76	28.86	28.95	28.83
Refined beet sugar spot price	38.30	38.47	57.30	57.00	55.48	33.38	34.35	39.60	42.16	37.97	35.53	35.68	35.79	35.63
OECD/FAO world raw price projection					23.11	16.57	17.38	21.72	23.85	20.47	18.44	18.54	18.64	18.51
	Dollars/ton													
Sugarbeet price	42.00	48.00	50.40	61.70	61.28	55.92	49.92	51.86	54.78	54.70	52.45	51.53	51.63	51.63
Sugarcane price	29.39	29.50	34.81	41.70	44.40	37.10	37.05	39.80	41.32	39.59	38.22	38.19	38.29	38.25

Source: USDA, ERS, Sugar and Sweetener Team.

Table A-2 -- Mexico sugar supply and use, projected to 2021/22

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Raw equivalent - 1,000 metric tons														
Beginning Stocks	1,718	1,975	624	973	805	935	968	983	1,000	1,014	1,029	1,042	1,055	1,068
Area: 1,000 hectares	683	663	648	671	679	692	696	726	756	748	725	717	714	711
Sugar Yield (metric ton/hectare)	8,568	7,937	7,899	8,193	8,325	8,413	8,479	8,535	8,639	8,719	8,724	8,729	8,751	8,770
Sugar Production	5,852	5,260	5,115	5,495	5,650	5,820	5,899	6,197	6,533	6,518	6,327	6,259	6,252	6,232
Imports	226	160	861	336	476	420	284	272	68	58	214	354	418	470
Supply	7,796	7,395	6,600	6,803	6,931	7,175	7,151	7,453	7,600	7,590	7,570	7,655	7,725	7,769
Disappearance	5,144	5,404	4,890	4,441	4,552	4,582	4,651	4,725	4,792	4,857	4,919	4,978	5,034	5,087
Consumption	5,090	5,065	4,615	4,187	4,252	4,400	4,470	4,543	4,610	4,675	4,737	4,797	4,853	4,906
Other Disappearance	54	339	275	254	300	181	181	181	181	181	181	181	181	181
Exports	677	1,367	737	1,557	1,444	1,626	1,516	1,728	1,794	1,705	1,609	1,621	1,623	1,603
Ending Stocks	1,975	624	973	805	935	968	983	1,000	1,014	1,029	1,042	1,055	1,068	1,079
Stocks-to-Consumption (proportion)	0.388	0.123	0.211	0.192	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220	0.220
High Fructose Corn Syrup (dry weight)	782	653	1,418	1,635	1,635	1,708	1,781	1,854	1,934	2,019	2,108	2,202	2,300	2,404

Figure A-1
Projected sugarcrop prices



Source: USDA, ERS, Sugar and Sweetener Team.



United States Department of Agriculture



Moving Agriculture Forward

USDA – Growing, Innovating, and Celebrating 150 Years

February 23-24, 2012

Crystal Gateway Marriott Hotel • Arlington, Virginia

Early Registration \$375 until January 23, 2012

\$425 after January 23

To register, go to:

www.usda.gov/oce/forum

— more than 80 speakers —

Program at a Glance is available online

Contacts and Links

Contact Information

Stephen Haley, (202) 694-5247, shaley@ers.usda.gov (coordinator)
Erma J. McCray, (202) 694-5306, ejmccray@ers.usda.gov (web publishing)

Subscription Information

Subscribe to ERS' e-mail notification service at <http://www.ers.usda.gov/updates/> to receive timely notification of newsletter availability. Printed copies can be purchased from the USDA Order Desk by calling 1-800-363-2068 (specify the issue number).

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

Sugar and Sweeteners Outlook <http://www.ers.usda.gov/Publications/SSS/WASDE> <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documented=1194>
Sugar Briefing Room, <http://www.ers.usda.gov/briefing/Sugar/>

E-mail Notification

Readers of ERS outlook reports have two ways they can receive an e-mail notice about release of reports and associated data.

- Receive timely notification (soon after the report is posted on the web) via USDA's Economics, Statistics and Market Information System (which is housed at Cornell University's Mann Library). Go to <http://usda.mannlib.cornell.edu/MannUsda/aboutEmailService.do> and follow the instructions to receive e-mail notices about ERS, Agricultural Marketing Service, National Agricultural Statistics Service, and World Agricultural Outlook Board products.
- Receive weekly notification (on Friday afternoon) via the ERS website. Go to <http://www.ers.usda.gov/Updates/> and follow the instructions to receive notices about ERS outlook reports, *Amber Waves* magazine, and other reports and data products on specific topics. ERS also offers RSS (really simple syndication) feeds for all ERS products. Go to <http://www.ers.usda.gov/rss/> to get started.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and, where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.