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Outlook

Economic Research Service | Situation and Outlook Report

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Sugar and Sweeteners Outlook

Ron Lord, coordinator

Andrew Sowell, contributor

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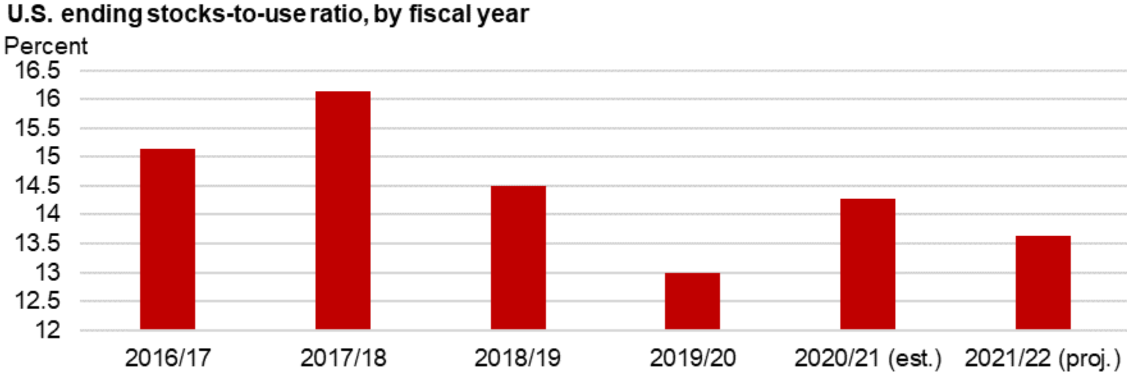
U.S. Sugar Production Relatively Steady; Mexican Output Finalized

U.S. beet sugar production for 2020/21 is adjusted to account for delayed harvesting, resulting in some production shifted from fiscal year 2020/21 into fiscal year 2021/22. The NASS August *Crop Production* report implies national crop year 2021/22 sugarbeet production at 33.710 million tons, slightly above 2020/21. Cane sugar production in Texas is decreased slightly. Imports for fiscal year 2020/21 are increased, with more imports from the Philippines and under the re-export program offsetting a reduction from Mexico. Exports for fiscal year 2020/21 are increased slightly based on pace. The ending stocks-to-use ratio is 14.3 percent for fiscal year 2020/21 and 13.6 percent for fiscal year 2021/22 (figure 1). Mexican production for 2020/21 is finalized at 5.715 million metric tons.

Figure 1
U.S. ending stocks-to-use ratio, by fiscal year



Note: 2020/21 ending stocks-to-use is an estimate and 2021/22 is a projection.
Source: USDA, Economic Research Service.

U.S. Outlook

U.S. Fiscal Year 2021/22 Ending Stocks Raised Slightly

In USDA's August *World Agricultural Supply and Demand Estimates* (*WASDE*) report, U.S. total supplies of sugar for 2021/22 are forecast at 13.937 million short tons, raw value (STRV), up 17,000 STRV from the July *WASDE* figure (table 1). Beginning stocks are lowered by 24,000 STRV, based on lower projected 2020/21 beet sugar production occurring in August-September 2021 and higher exports more than offsetting a small increase in imports. Production for 2021/22 is increased 40,000 STRV, with a small increase beet sugar more than offsetting a marginal reduction to cane sugar. Deliveries for 2020/21 and 2021/22 are unchanged. Exports in 2020/21 are revised upwards, based on the pace to date, but exports for 2021/22 are left unchanged at 35,000 STRV. The ending stocks-to-use ratio for 2021/22 is at 13.6 percent, below the 2020/21 level of 14.3 percent.

Table 1: U.S. sugar: supply and use by fiscal year (October/September), August 2021

Items	2019/20	2020/21			2021/22		
		(forecast) July	(forecast) August	*Monthly change*	(forecast) July	(forecast) August	*Monthly change*
		1,000 short tons, raw value					
Beginning stocks	1,783	1,618	1,618	*0*	1,777	1,753	*-24*
Total production	8,149	9,286	9,234	*-52*	9,008	9,048	*40*
Beet sugar	4,351	5,114	5,063	*-52*	5,033	5,078	*45*
Cane sugar	3,798	4,172	4,171	*0*	3,975	3,970	*-5*
Florida	2,106	2,091	2,089	*-2*	2,015	2,015	*0*
Louisiana	1,566	1,949	1,949	*0*	1,825	1,825	*0*
Texas	126	132	134	*2*	135	130	*-5*
Hawaii	0	0	0	*0*	0	0	*0*
Total imports	4,143	3,138	3,177	*39*	3,136	3,136	*0*
Tariff-rate quota imports	2,152	1,778	1,789	*11*	1,387	1,387	*0*
Other program imports	432	200	245	*45*	250	250	*0*
Non-program imports	1,559	1,161	1,143	*-18*	1,499	1,499	*0*
Mexico	1,376	981	963	*-18*	1,449	1,449	*0*
High-duty	183	180	180	*0*	50	50	*0*
Total supply	14,074	14,042	14,028	*-14*	13,921	13,937	*17*
Total exports	61	35	45	*10*	35	35	*0*
Miscellaneous	74	0	0	*0*	0	0	*0*
Deliveries for domestic use	12,322	12,230	12,230	*0*	12,230	12,230	*0*
Transfer to sugar-containing products							*0*
for exports under re-export program	78	80	80	*0*	80	80	*0*
Transfer to polyhydric alcohol, feed, other alcohol	20	25	25	*0*	25	25	*0*
Commodity Credit Corporation (CCC) sale for ethanol, other	0	0	0	*0*	0	0	
Deliveries for domestic food and beverage use	12,224	12,125	12,125	*0*	12,125	12,125	*0*
Total use	12,457	12,265	12,275	*10*	12,265	12,265	*0*
Ending stocks	1,618	1,777	1,753	*-24*	1,656	1,672	*17*
Private	1,618	1,777	1,753	*-24*	1,656	1,672	*17*
Commodity Credit Corporation (CCC)	0	0	0	*0*	0	0	*0*
Stocks-to-use ratio (percent)	13.00	14.49	14.28	*-0.2*	13.50	13.6	*0.1*

Source: USDA, Economic Research Service, *Sugar and Sweeteners Outlook* .

Beet Sugar Production Outlook Stable Despite Dry Conditions

Beet sugar production in fiscal year 2021/22 is increased this month to 5.078 million STRV (table 2), based on the expectation that processors will delay the beginning of harvest due to dry conditions in the upper Midwest. Some of the sugar that would have been produced in August and September (and thus counted in fiscal year 2020/21) will instead be produced after October 1 and counted in fiscal 2021/22.

The NASS August forecast of the 2021/22 sugarbeet crop is 33.71 million short tons, from 1.134 million acres planted. Sugarbeet yield is forecast at 29.7 short tons per acre, up marginally from the 2020/21 yield of 29.4 short tons. Sugarbeets sliced in the factories are projected at 31.49 million short tons, less than the total crop harvested due to a projected 6.6 percent of shrinkage during storage.

Table 2: Beet sugar production projection calculations, 2020/21 and 2021/22

	2018/19	2019/20	2020/21 July	2020/21 August	2021/22 July	2021/22 August
Sugarbeet production (1,000 short tons) 1/	33,282	28,600	33,618	33,618	33,741	33,710
Sugarbeet shrink (percent)	5.17	5.34	6.42	6.46	6.58	6.60
Sugarbeet sliced (1,000 short tons)	31,561	27,072	31,461	31,448	31,520	31,485
Sugar extraction rate from slice (percent)	14.77	14.14	15.303	15.302	14.697	14.697
Sugar from beets slice (1,000 STRV) 2/	4,660	3,828	4,814	4,812	4,633	4,627
Sugar from molasses (1,000 STRV) 2/	352	341	360	360	360	360
Crop-year sugar production (1,000 STRV) 2/	5,012	4,169	5,174	5,172	4,993	4,987
August-September sugar production (1,000 STRV)	655	582	765	765	665	615
August-September sugar production of subsequent crop (1,000 STRV)	582	765	665	615	665	665
Sugar from imported beets (1,000 STRV) 3/	--	--	40	40	40	40
Fiscal year sugar production (1,000 STRV)	4,939	4,351	5,114	5,063	5,033	5,078

1/ USDA, National Agricultural Statistics Service for historical data.

2/ August-July basis.

3/ Sugar from imported beets split out for projections only, included in total once full crop-year slice is recorded. Sugar from imported beets is incorporated into total production in historical data.

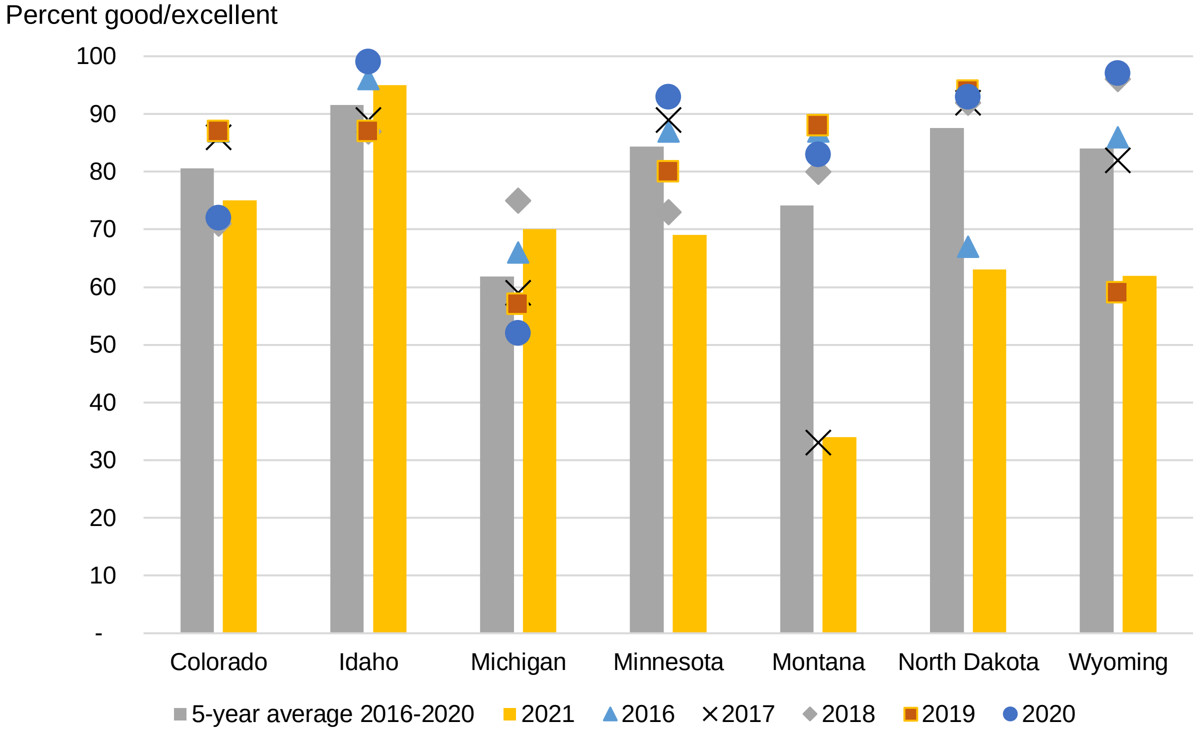
Note: STRV = short tons, raw value.

Source: USDA, Economic Research Service; USDA, World Agricultural Outlook Board; USDA, Farm Service Agency.

The sugarbeet plant's root system grows down to 10 feet or even deeper when the surface moisture is inadequate, making sugarbeets one of the more drought-tolerant field crops. Nonetheless the dry conditions in the Upper Midwest have slowed crop development. The consequent delays to the beginning of harvest reduced the forecast of August-September 2021 beet sugar production by 50,000 STRV (table 2), from 665 thousand STRV to 615 thousand STRV.

NASS sugarbeet crop conditions, as of August 15, 2021, are shown in Figure 2. The combined good and excellent ratings are 69 percent for Minnesota and 63 percent for North Dakota, both well below last year and the 5-year average. These condition ratings have not historically had much predictive value in forecasting beet sugar production, although they are followed carefully by many market analysts.

Figure 2
Sugarbeet conditions in major producing States, as of August 15 1/



1/ Week 31, exact dates vary by year.
Source: USDA, National Agricultural Statistics Service.

U.S. Cane Sugar Production Outlook Little Changed

Texas 2021/22 cane sugar is decreased by 5,000 STRV, based on processors' reporting in the latest *Sweetener Market Data* (*SMD*) publication by USDA's Farm Service Agency (FSA). For 2020/21, the only changes this month are offsetting changes of a decrease in Florida and an increase in Texas of 2,000 STRV, leaving total cane sugar production unchanged at 4,171 thousand STRV.

In the NASS August *Crop Production* report, 2021/22 area harvested for Florida is estimated at 405,000 acres, down from 423,300 last year. Yield is projected at 42.7 tons per acres and sugarcane production at 17.3 million short tons, both down from last year. For Louisiana, the NASS August report shows 2021/22 area harvested increasing slightly to 490,000 acres and yield declining slightly to 32.3 short tons per acre, with a resulting sugarcane crop of 15.8 million short tons, down slightly from 2020/21. The Texas area harvested is forecast at 37 thousand acres, up from 35.9, and yield also up slightly to 32 tons per acre.

The August NASS report contains estimates of total sugarcane area harvested for sugar and seed but does not distinguish between the two until later in the season. Using estimates of the area that will be harvested for sugar—based on processor reports and recent trends and estimates of the recovery rate of sugar from the sugarcane—table 3 shows cane sugar production estimates for Florida, Louisiana, and Texas. For Louisiana, the fiscal year and crop year, and fiscal year production estimates, can differ due to small amounts of production in September in some years.

The crop is Louisiana is facing some stressful conditions due to prolonged effect of the freeze around the time of the Mardi Gras festival and ill-timed rainfall that made it difficult for timely crop management. Much of the sugarcane is growing slower than normal. Many of the stalks have put on weight, but the density of plants is less than optimal. There is still time for the crop to recover and the 2021/22 Louisiana sugar production forecast was unchanged this month, but the conditions will bear watching.

Table 3: U.S. sugarcane and cane sugar production, by State, 2015/16 to 2020/21

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	Annual change
								Percent
Florida								
Sugarcane harvested for sugar (1,000 acres)	398	400	397	397	397	409	390	-4.8
Sugarcane yield (short tons per acre)	42.5	40.3	40.9	41.7	42.8	44.2	42.7	-3.4
Sugarcane production (1,000 short tons)	16,915	16,120	16,237	16,555	16,992	18,078	16,632	-8.0
Recovery rate (percent)	12.8	12.7	12.2	12.1	12.4	11.6	12.1	4.9
Sugar production (1,000 STRV)	2,173	2,055	1,983	2,005	2,106	2,089	2,015	-3.5
Louisiana								
Sugarcane harvested for sugar (1,000 acres)	385	400	414	425	442	462	464	0.5
Sugarcane yield (short tons per acre)	29.6	28.8	32.5	35.3	27.7	32.5	32.3	-0.6
Sugarcane production (1,000 short tons)	11,396	11,520	13,455	15,003	12,243	15,015	14,993	-0.1
Recovery rate (percent)	12.4	14.0	13.9	12.5	12.7	13.0	12.2	-6.5
Crop year sugar production (1,000 STRV) 1/	1,415	1,618	1,865	1,876	1,558	1,975	1,825	-7.6
Fiscal year sugar production (1,000 STRV) 1/	1,428	1,628	1,861	1,907	1,565	1,949	1,825	-6.4
Texas								
Sugarcane harvested for sugar (1,000 acres)	35	38	41	38	32	34	35	3.3
Sugarcane yield (short tons per acre)	31.4	37.0	36.8	36.6	36.2	34.0	32.0	-6.0
Sugarcane production (1,000 short tons)	1,105	1,395	1,490	1,376	1,143	1,139	1,106	-2.9
Recovery rate (percent)	10.3	10.5	10.1	11.3	10.7	11.7	11.0	-5.8
Sugar production (1,000 STRV)	116	140	169	147	126	134	130	-2.6

Note: STRV = short tons, raw value.
1/ Louisiana's harvest and processing of sugarcane begins typically in September, thus the crop year and fiscal year sugar production for this State tend to be slightly different. Fiscal year production is the final value used for official USDA estimates. For Florida and Texas, the crop year is the same as the fiscal year.
Source: USDA, Farm Service Agency; USDA, National Agricultural Statistics Service; USDA, World Agricultural Outlook Board.

USDA's National Agricultural Statistics Service (NASS) reports that Louisiana sugarcane conditions (as of August 15) are 8 percent excellent, 55 percent good, 32 percent fair, 5 percent poor, and 0 percent very poor. These ratings are slightly below last year and the 5-year average (table 4). NASS does not report conditions for Florida or Texas.

Table 4: Crop conditions in Louisiana through August 15, 2021 1/

	2016	2017	2018	2019	2020	5-year average	2021
Excellent	18	16	13	15	30	18	8
Good	52	62	45	44	51	51	55
Fair	27	18	35	33	17	26	32
Poor	2	3	6	7	2	4	5
Very poor	1	1	1	1	0	1	0
Weighted condition index 2/	384	389	363	365	409	382	366

1/ Week 31; exact dates vary by year.

2/ This weighted condition index is generated by multiplying the percentage of crops in excellent condition by 5, percentage good by 4, fair by 3, poor by 2, and very poor by 1.

Source: USDA, Economic Research Service; USDA, National Agricultural Statistics Service.

Imports Up for 2020/21, Unchanged for 2021/22

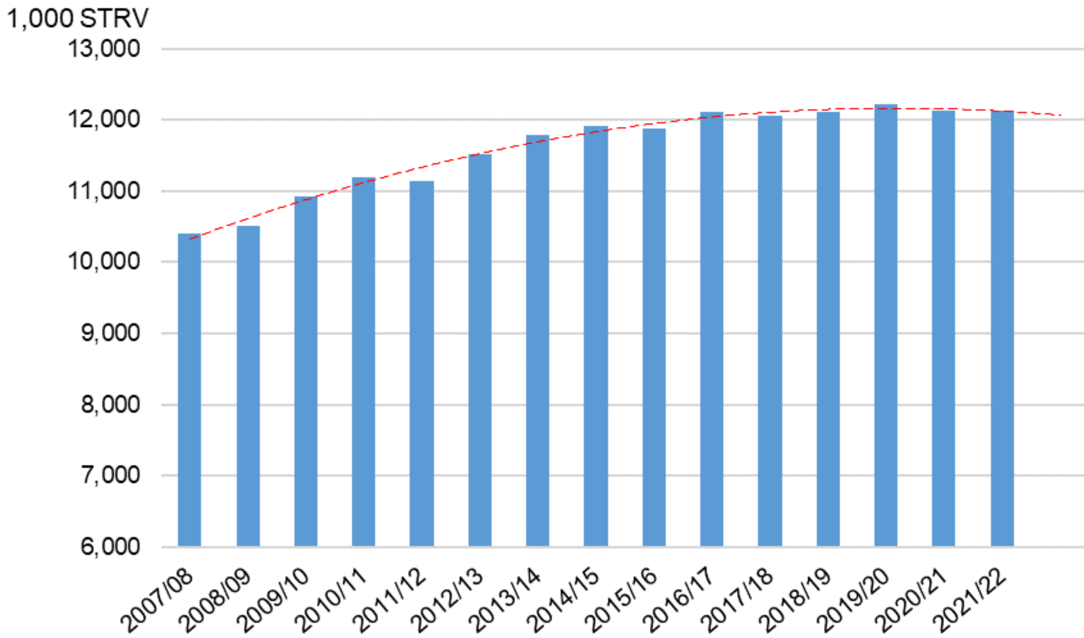
Total imports for 2020/21 are raised 39,000 STRV to 3.177 million STRV. Imports under the U.S. World Trade Organization (WTO) raw sugar tariff-rate quota (TRQ) for 2020/21 are increased by 11,000 STRV from last month due to the Philippines, which is now forecast to ship a larger percentage of its TRQ resulting in a lower quota shortall. Imports in 2020/21 of raw sugar for the Refined Sugar Re-Export Program are increased by 45,000 STRV, based on pace. Imports from Mexico are lowered by 18,000 STRV, due to a lower reported production of sugar below 99.2 polarity, which comprises the majority of Mexico’s 2020/21 export limit provided under the terms of the U.S-Mexico sugar suspension agreement. There are no changes for 2021/22 imports.

Deliveries for Food and Beverage Use Unchanged

Deliveries for food and beverage use (deliveries) in 2021/22 are unchanged from the July estimate and the previous year, continuing the recent trend of relatively flat U.S. sugar use (figure 3).

Deliveries during the period October-June are down 0.9 percent from the same time last year (table 5). Deliveries from reporting companies are up 1.9 percent, with reduced deliveries by cane sugar refiners, but increased deliveries by beet sugar processors. Non-reporter (direct consumption) imports are down 27.4 percent from the same time last year, although higher than the previous three years. The deliveries reported by domestic beet processors and cane refiners has been stagnated and then declined over the past four years, while the amount of direct consumption imports has been more volatile.

Figure 3
U.S. sugar deliveries for food and beverage use, fiscal year, 2007/08 to 2021/22



Note: STRV = short tons raw value
Source: U.S. Department of Agriculture, Economic Research Service.

Table 5: Food and beverage deliveries, 2015/16 to 2020/21, October-June

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Annual change
	1,000 short tons, raw value						*Percent*
Beet sugar processors	3,372	3,962	3,909	3,738	3,314	3,674	10.9
Cane sugar refiners	4,766	4,509	4,496	4,690	4,879	4,670	-4.3
Total reporters	8,138	8,471	8,405	8,428	8,192	8,344	1.9
Non-reporter, direct consumption	546	519	449	543	842	611	-27.4
Total Oct-Jun.	8,685	8,990	8,854	8,971	9,034	8,955	-0.9
Final fiscal year deliveries 1/	11,881	12,102	12,048	12,106	12,224	12,125	-0.8
Residual July-Sept. deliveries	3,196	3,112	3,194	3,135	3,189	3,170	-0.6

1/ For 2020/21, Final fiscal year deliveries is a forecast.
Source: USDA, Farm Service Agency; USDA, World Agricultural Outlook Board.

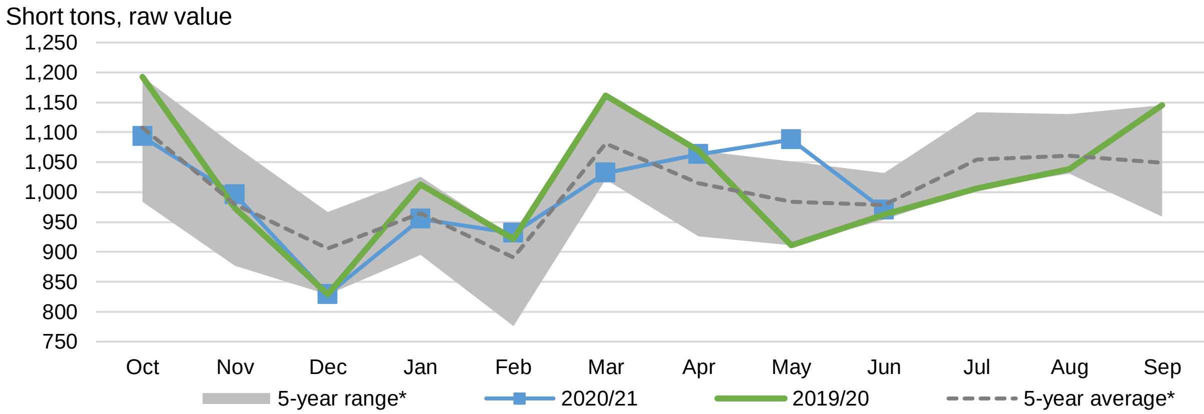
At 8.955 million STRV, October-June deliveries represent 73.9 percent of the projection for the full fiscal year 2020/21 (table 6). Last year, those 9 months accounted for the same portion of the total fiscal year deliveries. Over the past 10 years, October through June deliveries have accounted for between 72.6 and 74.3 percent of the full fiscal-year deliveries, with a weighted average of 73.5 percent. The pace of deliveries through 9 months this year is very close to the average, as were June deliveries (figure 4).

Table 6: Pace of U.S. deliveries, October-June

	1,000 short tons, raw value		
	Oct-Jun	*Fiscal year (FY)*	*Percent of total*
FY11	8,127	11,193	72.6
FY12	8,222	11,141	73.8
FY13	8,452	11,511	73.4
FY14	8,620	11,786	73.1
FY15	8,686	11,921	72.9
FY16	8,685	11,881	73.1
FY17	8,990	12,102	74.3
FY18	8,854	12,048	73.5
FY19	8,971	12,106	74.1
FY20	9,034	12,224	73.9
FY21 (estimate)	8,955	12,125	73.9
10-year average	*8,664*	*11,791*	*73.5*

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

Figure 4
Total U.S. sugar deliveries, monthly, 2015/16-2020/21

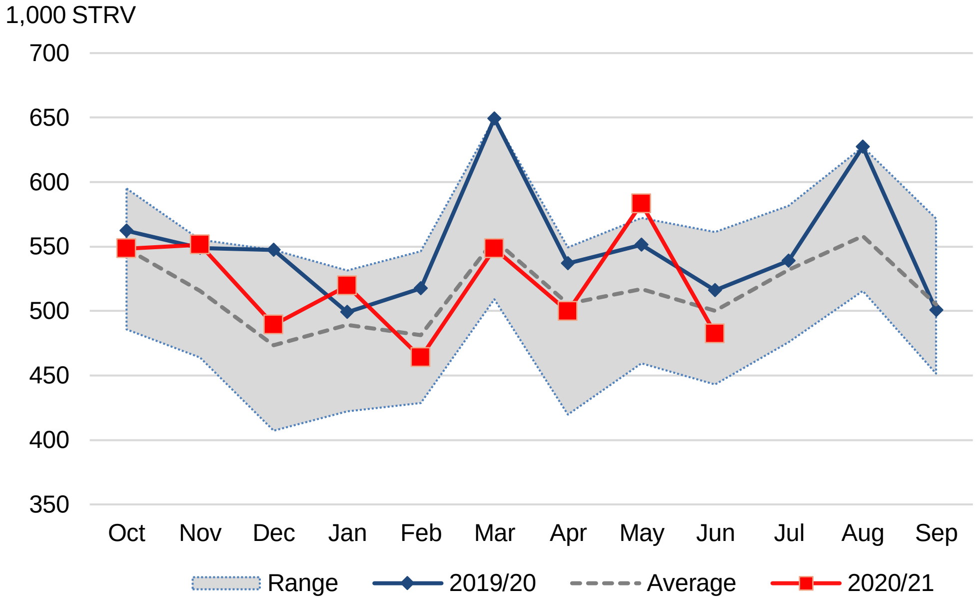


*2015/16 through 2019/20.
Source: USDA, Economic Research Service and USDA, Farm Service Agency.

The amount of raw sugar melted (processed) by cane refiners fell during June, to below both last year and the 10-year average (figure 5). Raw stocks held by refiners (figure 6) decreased slightly in June and are slightly below both last year and the 10-year average. Refined stocks held by cane refiners in June (figure 7) are at the low end of the 10-year range and below the 5-year average. Sugar inventories held by sugarbeet processors are close to the 5-year average and still well above last year's weather-depressed level (figure 8).

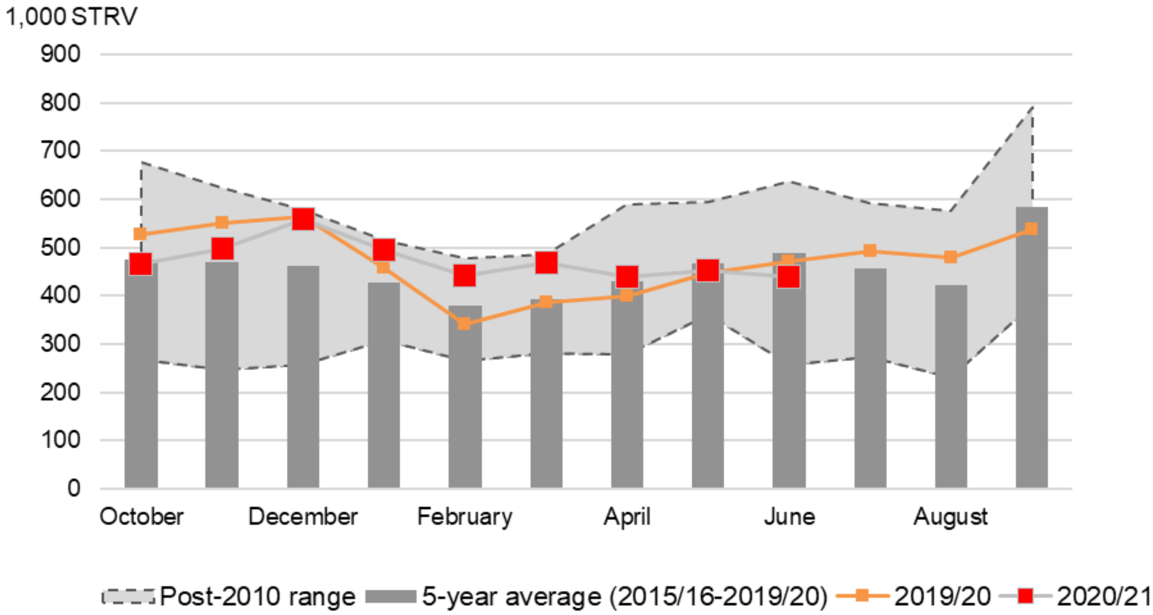
U.S. stocks on June 30 are higher than last year, but well down from 2018/19, a better year for comparison due to the depressed beet sugar crop last year. Beet processors are down by 75,000 STRV, cane refiners are down by 26,000 STRV, and cane processors are down by 48,000 STRV, with total U.S. stocks down 149,000 STRV or 4.4 percent and the lowest level in the past six years with the exception of 2019/20.

Figure 5
Sugarcane refiners' melt, monthly, 2010/11 to 2020/21



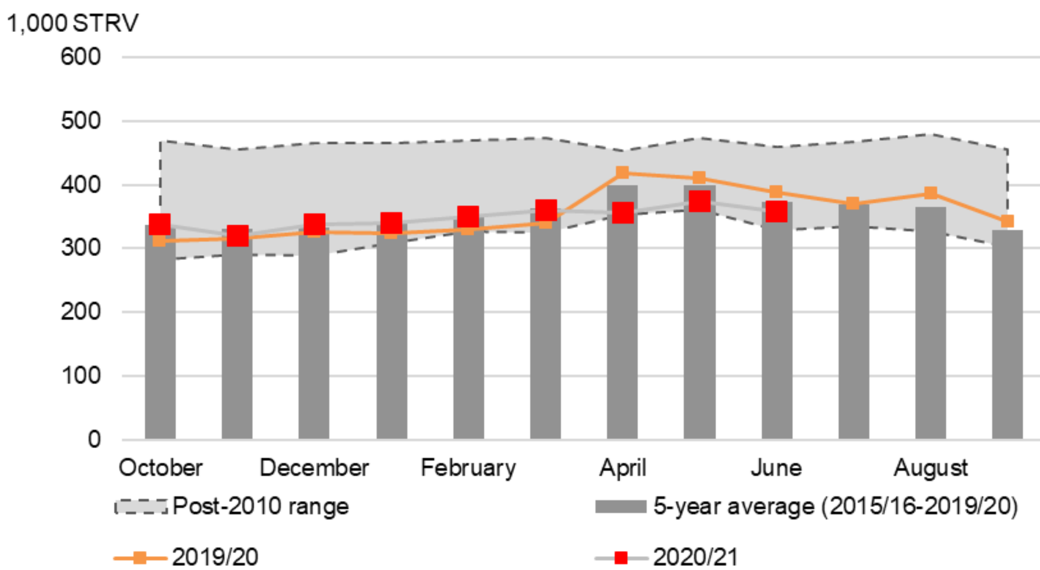
Melt = quantity of raw sugar processed
STRV = short tons, raw value.
Source: USDA, Farm Service Agency.

Figure 6
Sugarcane refiners' raw sugar inventories, monthly, 2015/16 to 2020/21



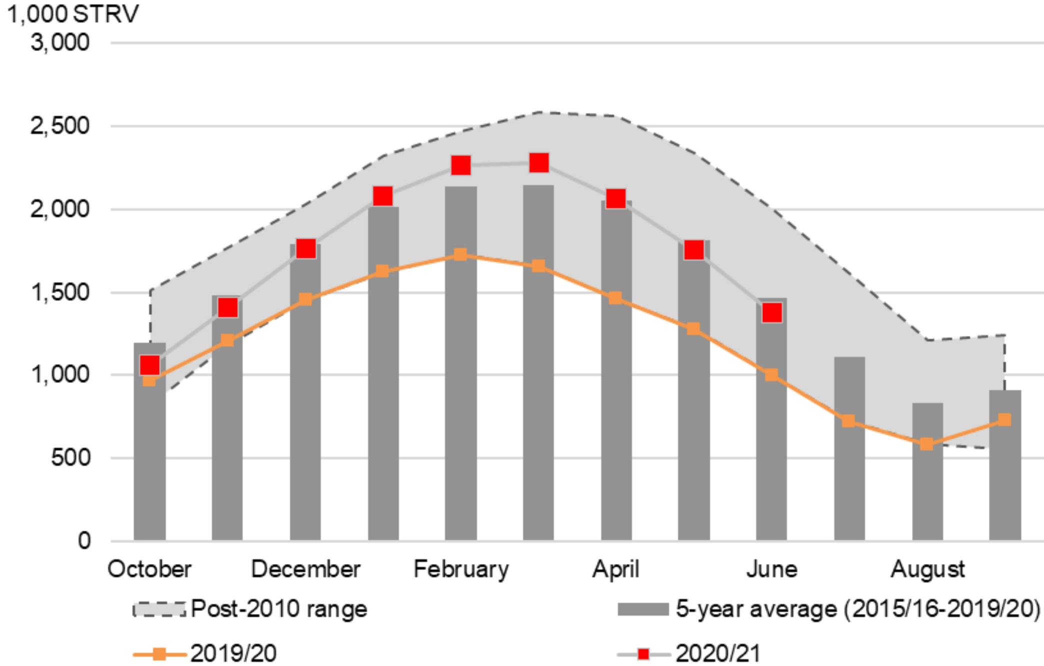
STRV = short tons, raw value.
Source: USDA, Farm Service Agency.

Figure 7
Sugarcane refiners' refined sugar inventories, monthly, 2015/16 to 2020/21



STRV = short tons, raw value.
Source: USDA, Farm Service Agency.

Figure 8
Sugarbeet processors' total sugar inventories, monthly, 2015/16 to 2020/21

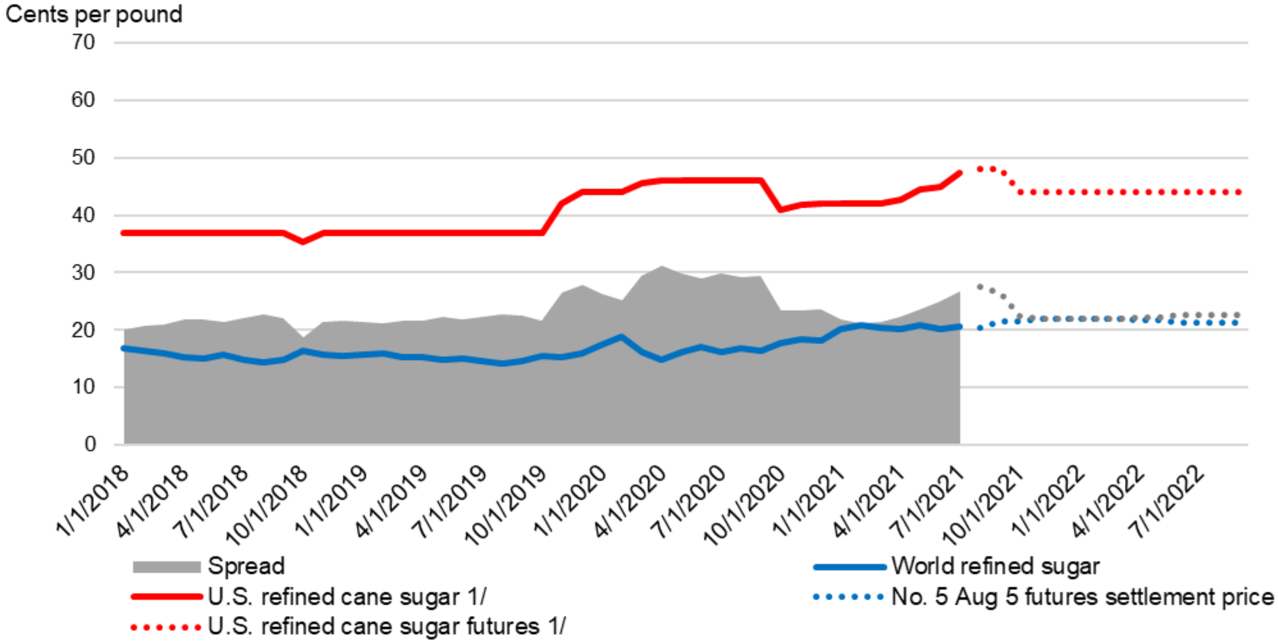


STRV = short tons, raw value.
Source: USDA, Farm Service Agency.

The spread between the U.S. refined cane sugar price (Northeast) and the world refined sugar price rose in July to 26.7 cents per pound (figure 9), up from 24.9 cents in June. The increased spread is the result of U.S. prices rising faster than world sugar prices.

Figure 9

U.S. cane sugar and world refined sugar prices, monthly, January 2018 to September 2022



1/ Northeast refined cane sugar and future price as quoted in *Milling and Baking News*.
Source: USDA, Economic Research Service; USDA, Foreign Agricultural Service.

Mexico Outlook

Production Finalized for 2020/21

The USDA August 2021 *World Agricultural Supply and Demand Estimates* (*WASDE*) publication estimate of Mexico's 2020/21 sugar production is 5.715 million metric tons, actual value (MT), marginally up from last month's estimate (table 7). The Mexican 2020/21 harvest has ended. The forecast for Mexico's 2021/22 sugar production remains at 5.809 million MT. Deliveries are mostly unchanged (discussed in next section in greater detail). Exports for 2020/21 to the United States are reduced by 15,000 MT due to reporting from the U.S. Embassy in Mexico City that a Mexican producer fell short of producing its target level of sugar of less than 99.2 polarity. Mexican exports to the rest of the world are increased by 6,000 MT.

Ending stocks for both 2020/21 and 2021/22 are up marginally to 916,000, roughly equivalent to 2.5 months of domestic consumption. This is the target Mexican authorities use to monitor and manage the domestic sugar program.

As of August 1, 2021, the Mexican government reports the production of low-polarity sugar, below 99.2 degrees, to be at 738,146 MT. Through August 8, Mexico reports that exports of sugar below 99.2 degrees to the United States have totaled 572,162 MT. The target the Mexican authorities have set to meet this current export limit is about 602,000 MT, so Mexico would have to ship an additional 30,000 MT before September 30 to meet this target.

Table 7: Mexico sugar: supply and use by fiscal year (October/September), August 2021

Items	2019/20	2020/21 (forecast) July	2020/21 (forecast) August	2020/21 *Monthly change*	2021/22 (forecast) July	2021/22 (forecast) August	2021/22 *Monthly change*
			1,000 metric tons, actual weight				
Beginning stocks	1,169	858	858	*0*	913	916	*2*
Production	5,278	5,708	5,715	*7*	5,809	5,809	*0*
Imports	77	105	105	*0*	85	85	*0*
Imports for consumption	55	40	40	*0*	20	20	*0*
Imports for sugar-containing product exports, IMMEX 1/, other	23	65	65	*0*	65	65	*0*
Total supply	6,524	6,671	6,678	*7*	6,807	6,810	*2*
Disappearance							
Human consumption	4,101	3,963	3,963	*0*	3,955	3,955	*0*
For sugar-containing product exports (IMMEX)	352	428	442	*14*	428	442	*14*
Other deliveries and end-of-year statistical adjustment	1	0	0	*0*	0	0	*0*
Total	4,455	4,391	4,405	*14*	4,383	4,397	*14*
Exports	1,212	1,366	1,357	*-9*	1,511	1,497	*-14*
Exports to the United States and Puerto Rico	1,177	839	824	*-15*	1,240	1,240	*0*
Exports to other countries	35	527	533	*6*	271	257	*-14*
Total use	5,667	5,757	5,762	*5*	5,894	5,894	*0*
Ending stocks	858	913	916	*2*	913	916	*2*
			1,000 metric tons, raw value				
Beginning stocks	1,239	909	909	*0*	968	970	*2*
Production	5,595	6,050	6,058	*7*	6,158	6,158	*0*
Imports	82	111	111	*0*	90	90	*0*
Imports for consumption	58	42	42	*0*	21	21	*0*
Imports for sugar-containing product exports (IMMEX)	24	69	69	*0*	69	69	*0*
Total supply	6,916	7,071	7,078	*7*	7,216	7,218	*2*
Disappearance							
Human consumption	4,347	4,201	4,201	*0*	4,192	4,192	*0*
For sugar-containing product exports (IMMEX)	373	454	469	*15*	454	469	*15*
Other deliveries and end-of-year statistical adjustment	1	0	0	*0*	0	0	*0*
Total	4,722	4,654	4,669	*15*	4,646	4,661	*15*
Exports	1,285	1,448	1,438	*-10*	1,602	1,587	*-15*
Exports to the United States and Puerto Rico	1,248	890	873	*-16*	1,314	1,314	*0*
Exports to other countries	37	559	565	*6*	287	272	*-15*
Total use	6,007	6,103	6,108	*5*	6,248	6,248	*0*
Ending stocks	909	968	970	*2*	968	970	*2*
Stocks-to-human consumption (percent)	20.9	23.0	23.1	*0.1*	23.1	23.1	*0.1*
Stocks-to-use (percent)	15.1	15.9	15.9	*0.0*	15.5	15.5	*0.0*
High-fructose corn syrup (HFCS) consumption (dry weight)	1,388	1,325	1,325	*0*	1,300	1,300	*0*

1/ IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación.

Sources: USDA, World Agricultural Outlook Board; USDA, Economic Research Service; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Deliveries Mostly Unchanged

The monthly pace of sugar deliveries for domestic consumption in 2020/21 has been consistently slower than in most of the past eight years (figure 10). Deliveries during June were similar to last year. Through 9 months of data, sugar deliveries totaled 2.972 million MT, 75 percent of the full year projection of 3.963 million MT (table 8). Over the last decade, these 9 months have accounted for a weighted average of 78.7 percent of the fiscal-year total. Full-year deliveries are unchanged this month, despite the slow pace to-date.

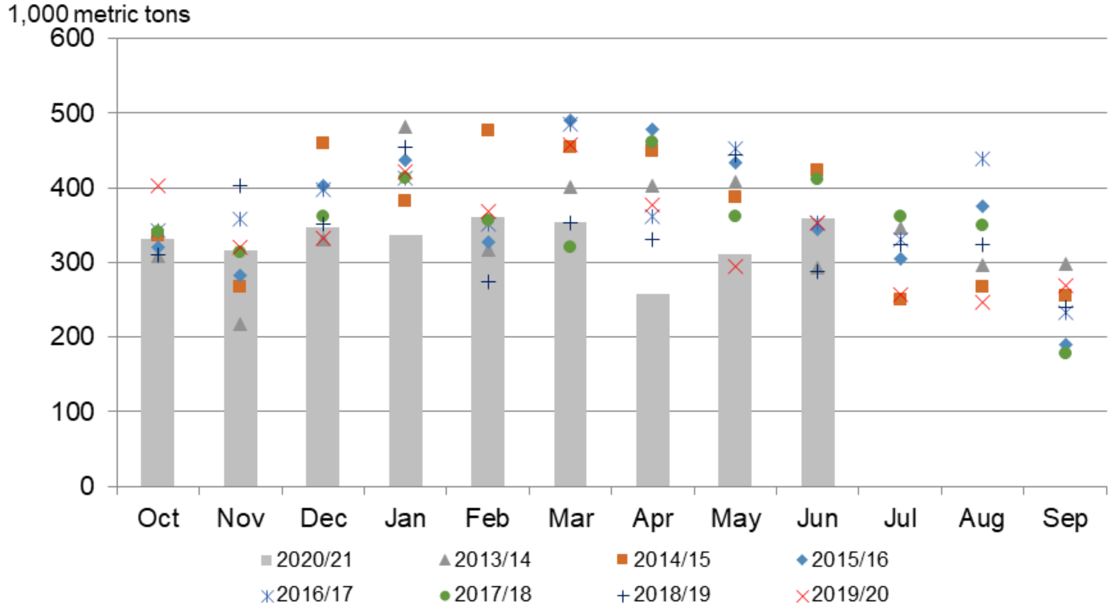
Deliveries of high-fructose corn syrup (HFCS) are projected unchanged this month. Deliveries through 9 months stand at 989,000 MT, dry basis, which represents 74.7 percent of the full-year projection of 1.325 million. Over the last 10 years, deliveries through 9 months of data have represented a weighted average of 74 percent of the deliveries for the full year.

HFCS deliveries through 9 months of data (October through June) tend to be a reliable indicator of the deliveries total for the full-fiscal year, as indicated by an R-squared of 0.99 (figure 12). The R-squared is a statistical measure that represents the proportion of the variance for a dependent variable (here, fiscal year HFCS deliveries) that is explained by an independent variable (here, 9-months of HFCS deliveries) in a regression model. For sugar, a regression yields an R-squared of only 0.86, indicating that pace analysis has less explanatory value in determining the expected sugar deliveries for a fiscal year (figure 11).

Both per capita and total sweetener consumption have trended downward since 2016/17 and this trend is expected to continue in 2021/22 (figure 13). Sugar consumption in 2021/22 remains projected at 3.955 million MT, while HFCS is forecast at 1.3 million MT.

Mexico’s estimated 2020/21 deliveries to the *Industria Manufacturera, Maquiladora, y Servicios de Exportación* (IMMEX) are raised 15,000 MT this month to 442,000 MT, based on pace to date. The IMMEX a program permits manufacturers of sugar-containing products to get either imported or domestic sugar at cheaper prices, so long as the products are exported. Deliveries from domestic sugar sources for IMMEX have been elevated for much of 2020/21 (figure 14). IMMEX trade for 2021/22 is similarly revised higher to match the total for 2020/21.

Figure 10
Mexican sugar deliveries for consumption, monthly, 2013/14 to 2020/21



Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

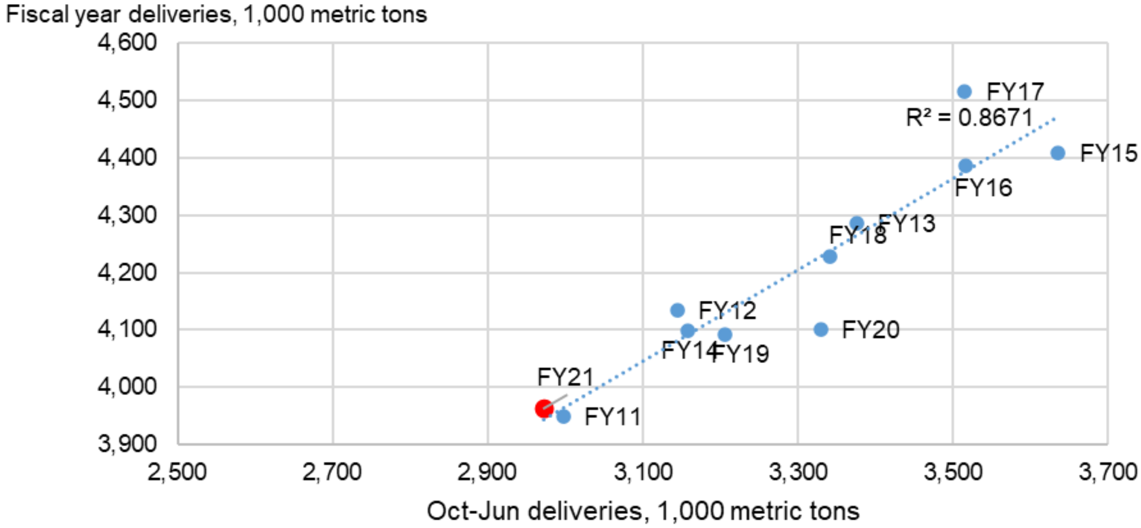
Table 8: Pace of Mexican sweetener deliveries through first 9 months of fiscal year

	Sugar, 1,000 metric tons (MT)			*High-fructose corn syrup, 1,000 MT, dry weight*		
	Oct-June	*Fiscal year*	*Percent of total*	*Oct-June*	*Fiscal year*	*Percent of total*
FY11	2,997	3,950	75.9	1,215	1,635	74.3
FY12	3,144	4,135	76.0	1,279	1,721	74.3
FY13	3,375	4,287	78.7	1,162	1,567	74.2
FY14	3,158	4,098	77.1	1,004	1,372	73.2
FY15	3,635	4,408	82.5	1,065	1,444	73.8
FY16	3,516	4,387	80.1	1,084	1,482	73.1
FY17	3,515	4,515	77.8	1,119	1,522	73.5
FY18	3,340	4,228	79.0	1,182	1,593	74.2
FY19	3,206	4,092	78.3	1,143	1,528	74.8
FY20	3,329	4,101	81.2	1,033	1,388	74.5
FY21	2,972	3,963	75.0	989	1,325	74.7
10-year average	3,322	4,220	78.7	1,129	1,525	74.0

Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Figure 11

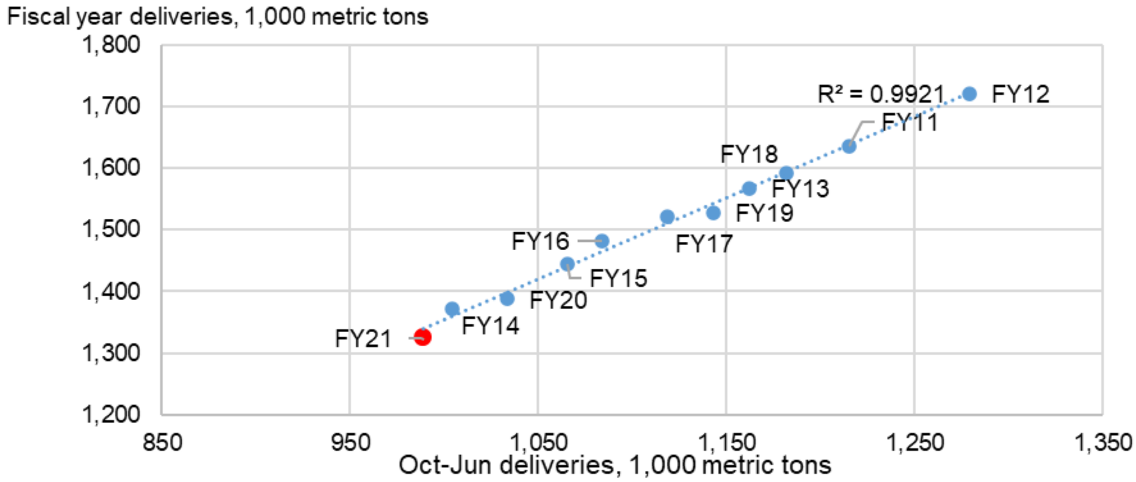
Mexican sugar deliveries, fiscal year relative to first 9 months, 2011–21



Sources: USDA, Economic Research Service; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Figure 12

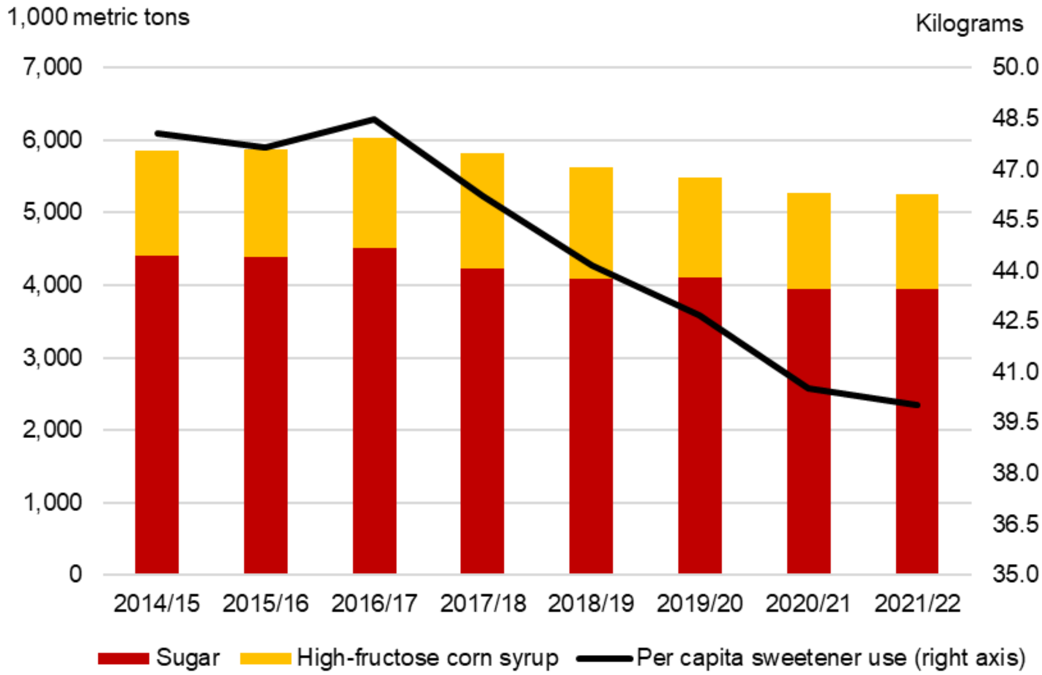
Mexican HFCS deliveries, fiscal year relative to first 9 months, 2011–21



HFCS = high-fructose corn syrup

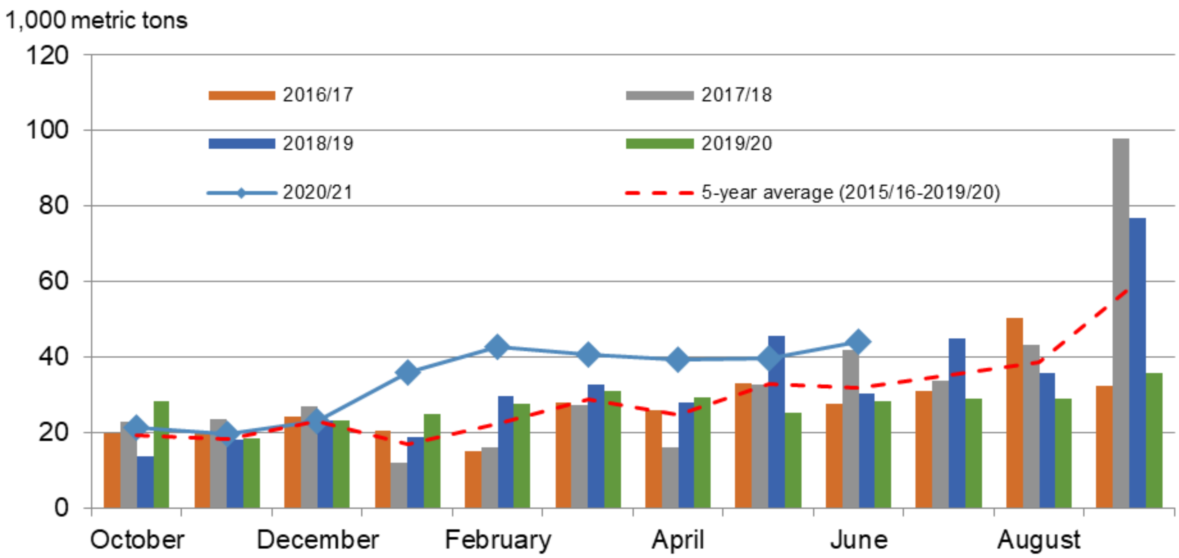
Sources: USDA, Economic Research Service; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Figure 13
Mexican sweetener consumption by year



Source: USDA, World Agricultural Outlook Board.

Figure 14
Mexican domestic IMMEX deliveries, monthly, 2016/17 to 2020/21



Source: National Committee for the Sustainable Development of Sugarcane (CONADESUCA).
IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación.

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