



Sugar and Sweeteners Outlook



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U.S. Sugar Production Slightly Higher for 2019/20 Based on Sugarbeet Planting Pace

The June *World Agricultural Supply and Demand Estimates* (WASDE) raised U.S. sugar production for 2019/20, as higher beet sugar production outweighed lower cane sugar expectations. Beet sugar production is also raised for 2018/19 due to higher early-season production from higher expected yields from the sugarbeet 2019/20 crop. No changes were made to the forecast use for either 2018/19 or 2019/20.

Mexico sugar production is raised for both 2018/19 and 2019/20. Coming into the final weeks of the Mexico sugarcane harvest campaign, the 2018/19 season is on pace to be well ahead of recent year's totals. With limited growth in domestic markets and constraints on exports to the United States, shipments to the global market are expected to increase significantly from recent years to bring stock levels in line with historical averages.

In the Foreign Agricultural Service's (FAS) initial projections for global sugar markets in 2019/20, world production and consumption are expected to increase at a steady rate. Global supplies are still relatively large in 2018/19 from the record production year of 2017/18. This still weighs on the global market, with major sugar-producing and trading countries continuing to respond to these market conditions. Looking forward to 2019/20, however, global sugar markets are expected to return to more stable conditions.

U.S. Domestic Outlook

Beet Sugar Production Raised for Both 2018/19 and 2019/20 Based on Higher Forecast Yield of Current Crop

Sugar production in the United States for 2019/20 is projected to total 9.138 million short tons, raw value (STRV). This is a 24,000-STRV increase from May's initial projection and would be a 2.1-percent increase from 2018/19 estimates, if realized.

Table 1: U.S. sugar: supply and use, by fiscal year (Oct./Sept.), June 2019

Items	2017/18	2018/19 (estimate)	2019/20 (forecast)	2017/18	2018/19 (estimate)	2019/20 (forecast)
	1,000 Short tons, raw value			1,000 Metric tons, raw value		
Beginning stocks	1,876	2,008	1,526	1,702	1,822	1,384
Total production	9,293	8,948	9,138	8,430	8,117	8,290
Beet sugar	5,279	4,920	5,154	4,789	4,463	4,675
Cane sugar	4,014	4,028	3,985	3,641	3,654	3,615
Florida	1,983	2,005	2,051	1,799	1,819	1,861
Louisiana	1,862	1,875	1,800	1,689	1,701	1,633
Texas	169	148	134	153	134	121
Hawaii	0	0	0	0	0	0
Total imports	3,277	2,875	3,219	2,973	2,608	2,920
Tariff-rate quota imports	1,663	1,538	1,381	1,509	1,395	1,253
Other program imports	326	350	350	296	318	318
Non-program imports	1,287	987	1,488	1,168	895	1,350
Mexico	1,223	897	1,418	1,110	813	1,286
High-duty	64	90	70	58	82	64
Total supply	14,445	13,831	13,883	13,105	12,547	12,594
Total exports	170	35	35	154	32	32
Miscellaneous	82	0	0	75	0	0
Deliveries for domestic use	12,185	12,270	12,320	11,054	11,131	11,177
Transfer to sugar-containing products for exports under re-export program	110	120	120	100	109	109
Transfer to polyhydric alcohol, feed, other alcohol	28	25	25	25	23	23
Commodity Credit Corporation (CCC) sale for ethanol, other	0	0	0	0	0	0
Deliveries for domestic food and beverage use	12,048	12,125	12,175	10,930	11,000	11,045
Total use	12,438	12,305	12,355	11,283	11,163	11,208
Ending stocks	2,008	1,526	1,528	1,822	1,384	1,386
Private	2,008	1,526	1,528	1,822	1,384	1,386
Commodity Credit Corporation (CCC)	0	0	0	0	0	0
Stocks-to-use ratio	16.14	12.40	12.37	16.14	12.40	12.37

Source: USDA, Economic Research Service, Sugar and Sweetener Outlook.

Beet sugar production is projected to total 5.154 million STRV for 2019/20—a 40,000 STRV increase from the previous month due to a higher sugarbeet yield than previously expected. Beet sugar production for 2018/19 is also raised from the May estimate, totaling 4.920 million STRV—or 10,000 STRV higher.

Table 2: Beet sugar production projection calculation, 2018/19 and 2019/20

	2014/15	2015/16	2016/17	2017/18	2018/19	2018/19	2019/20	2019/20
					May	June	May	June
Sugarbeet production (1,000 short tons) 1/	31,285	35,371	36,881	35,325	33,145	33,145	33,556	33,916
Sugarbeet shrink 2/	5.4%	6.5%	8.3%	7.3%	5.0%	5.0%	6.5%	6.5%
Sugarbeet sliced (1,000 short tons)	29,595	33,066	33,834	32,742	31,488	31,488	31,375	31,712
Sugar extraction rate from slice	14.6%	14.6%	13.7%	15.2%	14.8%	14.8%	14.6%	14.6%
Sugar from beets slice (1,000 STRV)	4,325	4,820	4,643	4,970	4,663	4,663	4,575	4,624
Sugar from molasses (1,000 STRV) 2/	341	380	352	368	368	368	368	368
Crop-year sugar production (1,000 STRV) 3/	4,667	5,201	4,995	5,338	5,031	5,031	4,943	4,992
August-September sugar production (1,000 STRV)	461	688	606	715	655	655	502	511
August-September sugar production forecast (1,000 STRV)	688	606	715	655	502	511	633	633
Sugar from imported beets (1,000 STRV) 4/	--	--	--	--	33	33	40	40
Fiscal year sugar production (1,000 STRV)	4,893	5,119	5,103	5,279	4,910	4,920	5,114	5,154

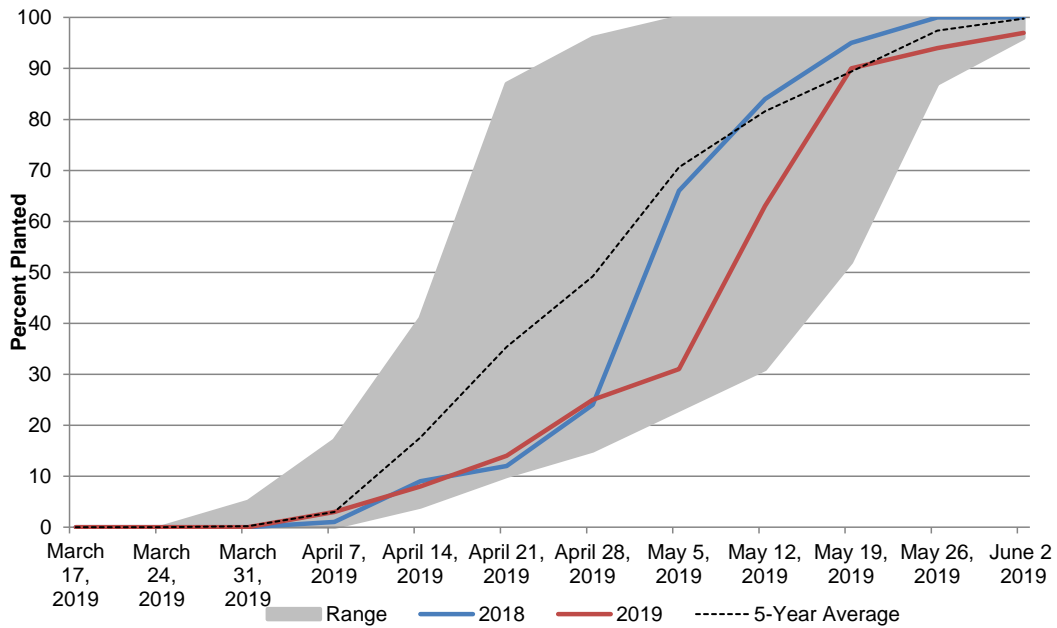
Notes: 1/ USDA, National Agricultural Statistics Service. 2/ Projections based on processor forecasts published by USDA, Farm Service Agency. 3/ August-July basis. 4/ Sugar from imported beets split out for projections only, included in total once full crop-year slice is recorded. They are incorporated into total production in historical data.

Source: USDA, Economic Research Service and World Agricultural Outlook Board.

Challenging planting conditions have been persistent throughout the Eastern sugarbeet-growing States, in particular Minnesota, North Dakota, and Michigan. Total planting in the United States lagged behind the previous year's pace and the 5-year average pace for nearly the entire planting season—particularly during critical planting period from the 3rd Sunday in April (week ending April 21, 2019) through the 3rd Sunday in May (week ending May 19, 2019).

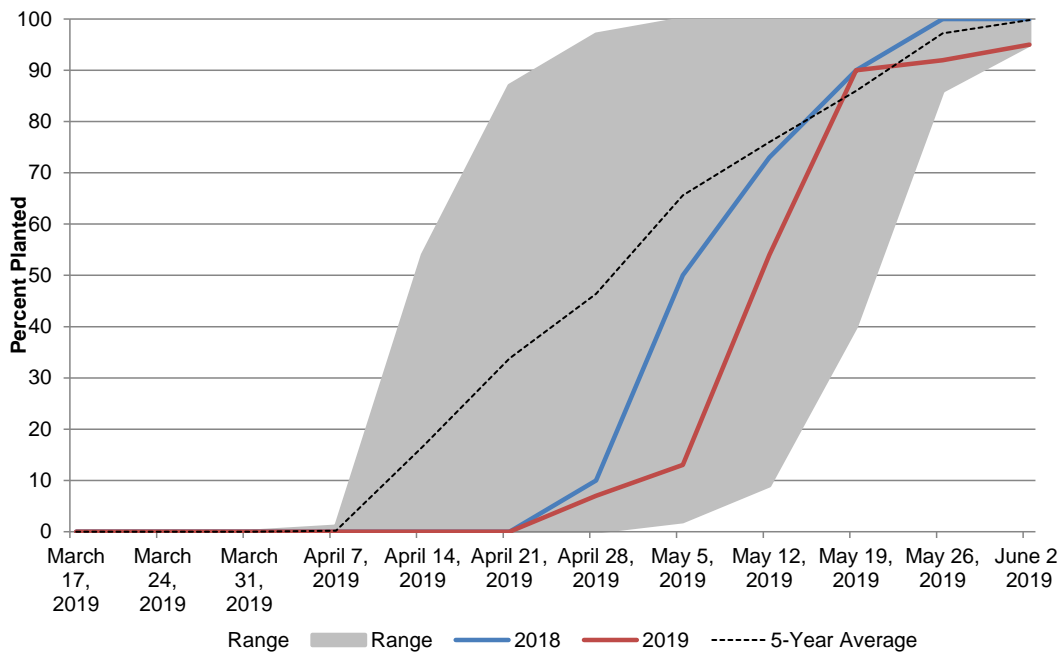
Western growing regions that predominantly use irrigated water management systems largely went through the planting season at a normal pace—most notably in Idaho, the second-largest sugarbeet-producing State in the country. The Eastern regions of the Upper Midwest and Great Lakes were forced to delay planting longer than usual and planted much of their crop in a tight window later in the season. Planting in Minnesota and North Dakota was delayed, including in the important Red River Valley growing region, but was able to make strong progress by Week 20. Michigan's planting pace remained well behind the average pace through the duration of the season, however.

Figure 1
United States total sugarbeet planting progress, 2000 to 2019



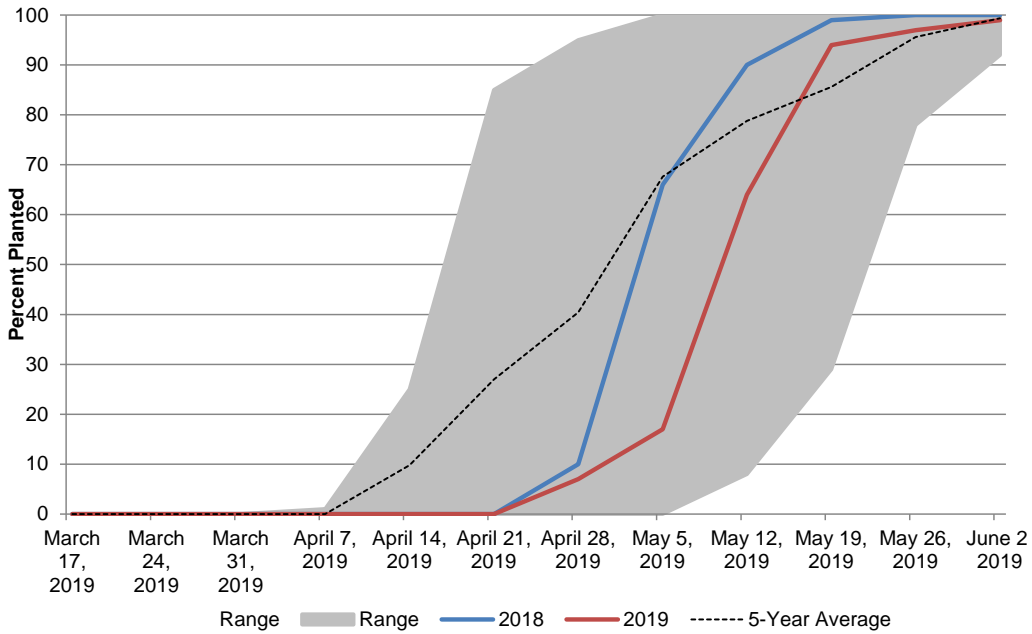
Source: USDA, National Agricultural Statistics Service.

Figure 2
Minnesota sugarbeet planting progress, 2000 to 2019



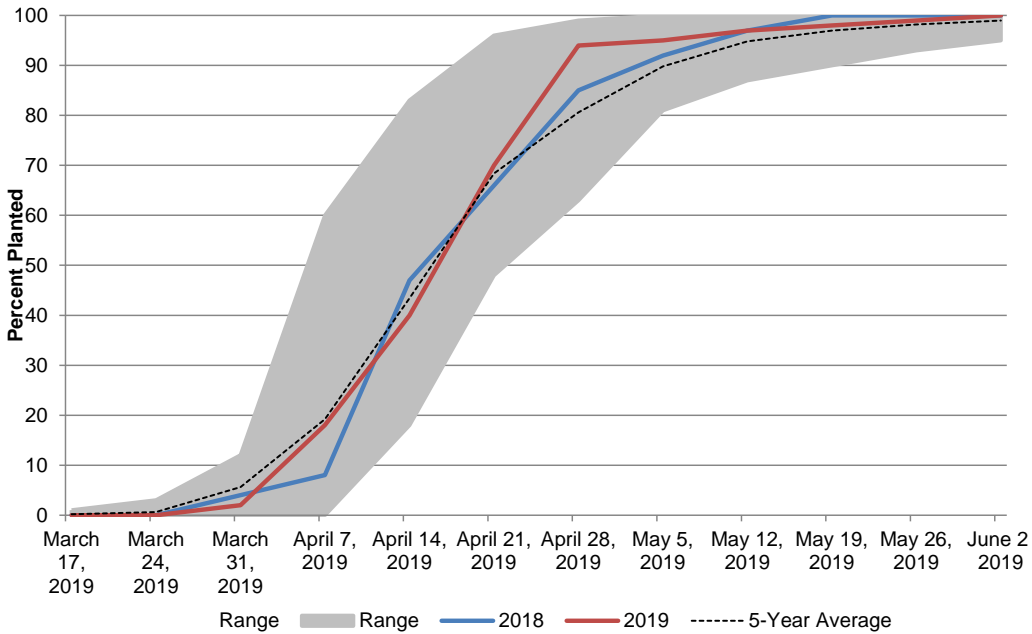
Source: USDA, National Agricultural Statistics Service.

Figure 3
North Dakota sugarbeet planting progress, 2000 to 2019



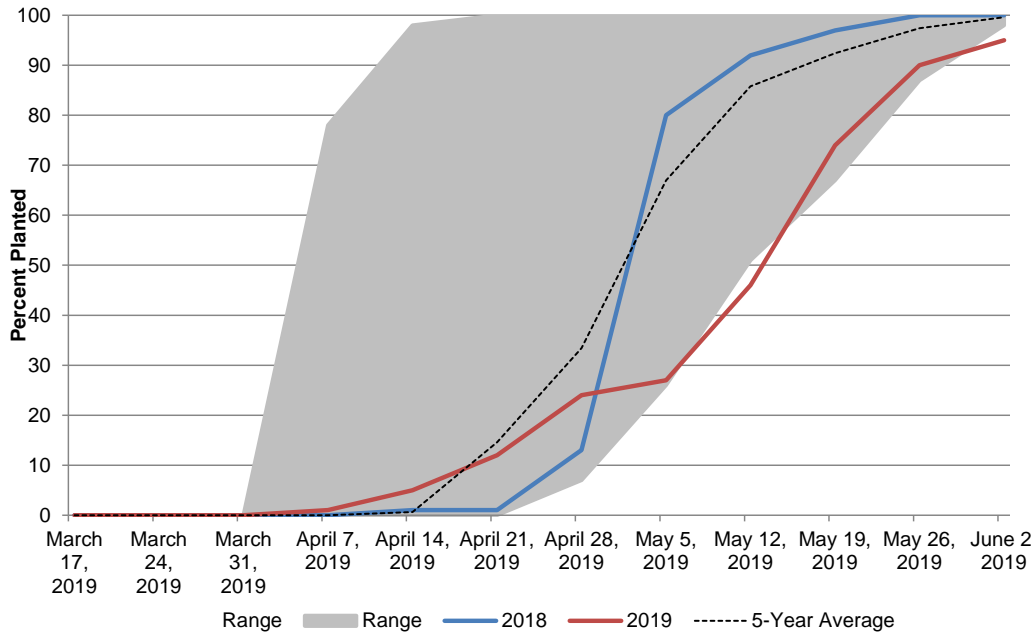
Source: USDA, National Agricultural Statistics Service.

Figure 3
Idaho sugarbeet planting progress, 2000 to 2019



Source: USDA, National Agricultural Statistics Service.

Figure 3
Michigan sugarbeet planting progress, 2000 to 2019



Source: USDA, National Agricultural Statistics Service.

Cold, wet conditions have led to a slow pace of planting, planting delays, and replanting in the Upper Midwest and Great Lakes regions. While some of these impacts may be mitigated by increased acreage and good moisture levels for established sugarbeets, relationships between data on sugarbeet planting and production are factored into the current forecasts.

The June WASDE forecasts reflect that sugarbeet growers were expected to plant 1.120 million acres of sugarbeets—a slight 0.6-percent increase from the previous year’s plantings. These levels were established by the National Agricultural Statistics Service’s (NASS) March *Prospective Plantings* report. The data are based on intentions before poor weather conditions could have been considered or accounted for. Reports from sugarbeet processors, particularly in the affected Eastern regions, are that some acres have been very late to be planted, may not be planted with sugarbeets, or may be prevented from planting at all. This is offset, however, with reports of replanted acres, acres coming into sugarbeets from other delayed crops, and sugarbeet cooperatives adjusting members’ planting allotments to account for affected acres and the potential for lower yields. The next significant update for this report is the NASS *Acreage* report on June 30, which will provide a survey-based update on planted acres of sugarbeets and the first forecast for harvested area. Prior to the *Acreage* report, it is assumed that the ratio between planted and harvested area remains consistent with the past 5 years.

Yield forecasts for the current crop are estimated at 30.8 short tons per acre for the June projection. This is slightly higher than the previous month's projection of 30.5 percent and accounts for the changes in the outlook for beet sugar production in this month's WASDE. The previous month's yield forecast was based on the planting progress through the 1st Sunday of May, which was the latest available data at the time of the May WASDE publication.

The first NASS forecasts for the sugarbeet crop's yield are not due until August. In the meantime, an adjusted trend-yield is used to project 2019/20 beet sugar production. The trend is adjusted for planting progress, as strong statistical evidence shows that yields are related to planting. In order to determine the best forecast yield, regression models for several weeks of planting were done. The regression models looked at sugarbeet crop years starting in 2000 through 2018. Yield is estimated based on a time trend to capture technological and management advancements; an adjustment beginning in 2008 to take into account the introduction of new management tools, including varieties of seed that utilize biotechnology; and the weighted planting progress for Minnesota, North Dakota, Idaho, and Michigan at various weeks as reported by NASS. The exception is that one model does not control for planting progress and simply forecasts based on time trends.

Table 3: Sugarbeet yield regression parameters, controlling planting progress

Observations:	19							
Model	Not controlled		1st Sunday of May		2nd Sunday of May		3rd Sunday of May	
R-square	0.808		0.870		0.885		0.855	
<i>Parameter</i>	<i>Coefficient 1/</i>							
Intercept	20.4	***	17.8	***	16.2	***	14.3	***
Time trend	0.596	***	0.514	***	0.505	***	0.529	***
4-State planting progress	--		0.036	***	0.052	***	0.066	**
Post-2008	-0.077		1.269		1.275		0.981	

Notes: Modeled data estimates from 2000 to 2018 sugarbeet crops. Planting progress from USDA National Agricultural Statistics Service's weekly Crop Progress report.

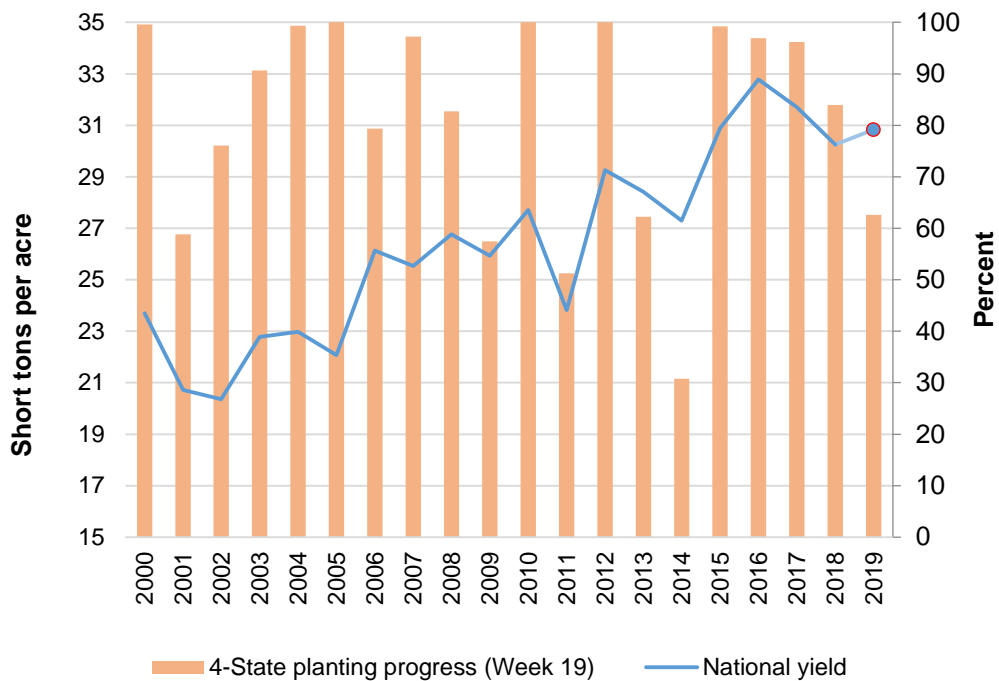
*1/ * = Significant at the 90% level, ** = Significant at the 95% level, *** = Significant at the 99% level.*

Source: USDA, Economic Research Service and Interagency Commodity Estimates Committee.

The first model, which does not control for planting progress, has an R-square parameter of 0.808. This can be interpreted to mean that about 81 percent of the variation seen in yields can be accounted for by time trend variables. While not a poor result, the models controlling for planting progress account for an additional 6 to 8 percent of the variation in a crop's yield. The remaining unaccounted for variations are attributed to other factors, including growing conditions during the summer and harvest conditions in the autumn that cannot be accurately anticipated at this time.

The regressions indicate that the planting progress for the 2nd Sunday of May seems to have the strongest explanatory power of final yield results. By 3rd Sunday of May, the R-squared begins to decline, likely due in part to the fact that there is less variation in historical planting progress. In other words, both good and poorly performing crops have been mostly planted by late May. The forecast of 30.8 tons per acre is based on the 4-State weighted average planting progress of 63 percent for May 12, 2019.

Figure 6
Yields and planting progress, sugarbeets, 2000 to 2019



Source: USDA, National Agricultural Statistics Service.

Early-season beet sugar production is production that predominantly comes from the 2019/20 sugarbeet crop that is harvested and produced before the beginning of the October 1 fiscal year—and is therefore accounted for in 2018/19 production. The amount of production that comes from this portion of the harvest is typically dictated by the overall performance and size of the sugarbeet crop, as well as planting progress, which can determine how long the sugarbeet crop has to develop and mature by the time early harvest in late-August and September occurs. Additionally, in recent years, early-season production has become a management tool for utilizing existing processing capacities as sugarbeet production has become larger.

The forecast for early-season planting at this time of the year is typically done through statistical modeling, using national yields as a measure of overall production and planting progress in North Dakota and Minnesota (which account for the majority of early-season production) as a metric of the overall availability of mature sugarbeets. As with yields, several models were run with various planting progress weeks to determine the best indicator.

Table 4: Early-season production regression parameters, controlling planting progress

Model	1st Sunday of May	2nd Sunday of May	3rd Sunday of May
Observations:	19		
R-square	0.639	0.596	0.551
<i>Parameter</i>	<i>Coefficient 1/</i>		
Intercept	-357.6 *	-365.7 *	-432.9 *
National yield	27.4 ***	27.6 ***	29.4 ***
2-State planting progress	1.709 **	1.514	1.518

Notes: Modeled data estimates from 2000 to 2018 sugarbeet crops. Planting progress from USDA National Agricultural Statistics Service's weekly Crop Progress report.

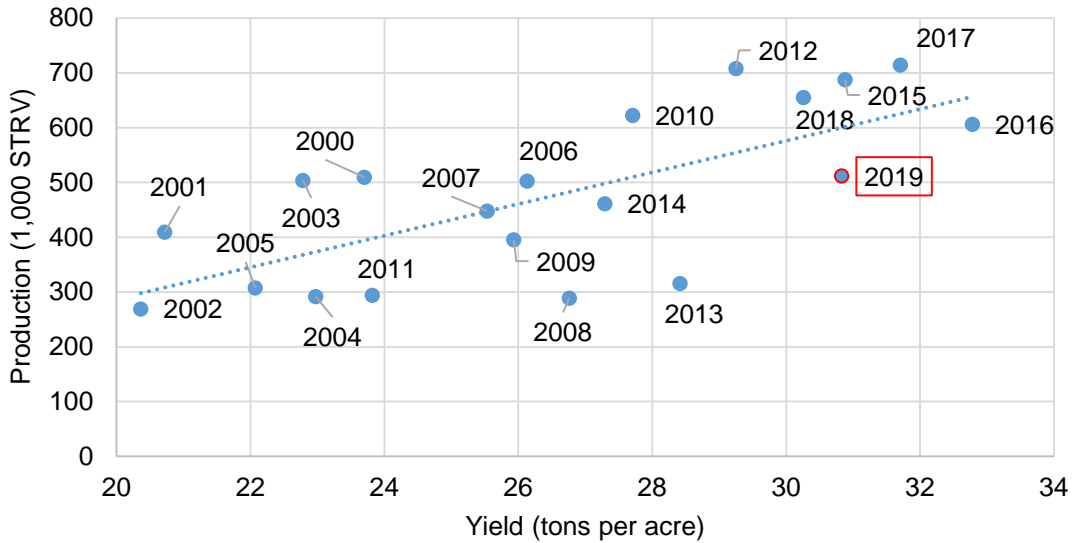
*1/ * = Significant at the 90% level, ** = Significant at the 95% level, *** = Significant at the 99% level.*

Source: USDA, Economic Research Service and Interagency Commodity Estimates Committee.

The R-squares of the models are lower than the yield regressions, indicating that there is more unexplained variation in these early-season production models than in the yield models. The estimating models do show enough explanatory power to be useful tools in forecasting future harvesting and management conditions. The results of the model show that 1st Sunday of May is the best indicator. Models using the successive weeks capture less of the variability. Once again, the practical interpretation would be that the planting pace information provided after early May does not provide any more useful statistical information—and in fact provides less precision than indicators from earlier weeks.

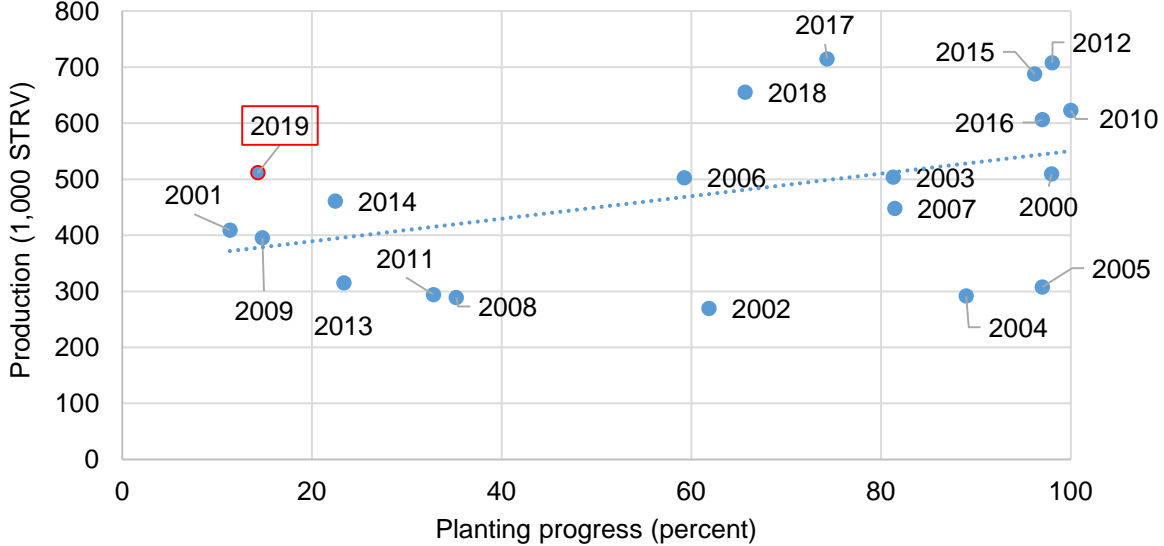
Using the 1st Sunday of May model, along with the updated national yield forecast, early-season production is expected to be 511,000 STRV. This is a slight increase from the May estimate. This would be considerably lower than recent years. Since 2015/16, early-season production has exceeded 600,000 STRV every year. Given the lower planting progress and the current yield expectations, the current estimate is not an outlier. This component of beet sugar production will be dynamic throughout the summer, however. The forecast for early-season production will be updated as additional data and information regarding the current crop's development, yield, and production become available over the next several months.

Figure 7:
Early-season production versus national yield



Source: USDA, Economic Research Service.

Figure 8:
Early-season production versus Minnesota and North Dakota planting progress (1st Sunday of May)



Source: USDA, Economic Research Service.

Cane Sugar Production Lowered Slightly for Both 2018/19 and 2019/20

Cane sugar production in 2019/20 is projected at 3.985 million STRV—a 16,000-STRV reduction from the previous month’s figure. If realized, this would be a 1.1-percent decline from the revised 2018/19 estimate. The 2019/20 reduction is due to less production expected from

Texas, which is projected to produce 134,000 STRV. The change is in response to processors' reporting in the region, where growers had fewer plantings of new cane than previously expected due to weather. Cane sugar production in Florida and Louisiana are projected at 2.051 million and 1.800 million STRV, respectively—both unchanged from the May report.

Cane sugar production in 2018/19 is estimated to be 4.028 million STRV, a slight, 9,000-STRV reduction from the previous month. The reduction is based on lower production in Florida, based on updated reports from processors as they wrapped up the harvest season in May. Florida cane sugar production for 2018/19 is estimated at 2.005 million STRV. Although a reduction from the previous estimate, it still represents a 1.1-percent increase from the previous year.

High-Duty Imports Raised for 2018/19, Total Imports Unchanged for 2019/20

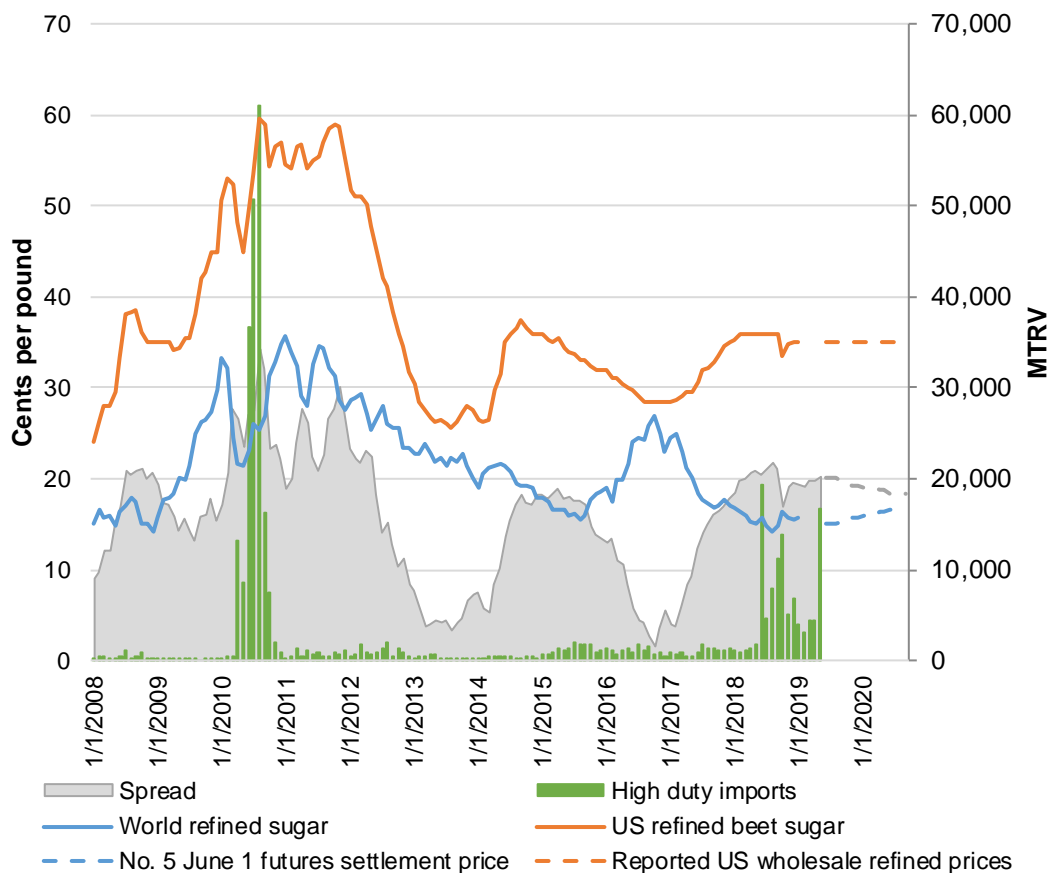
Total imports in 2019/20 remain unchanged from the May report, totaling 3.219 million STRV. Quota under imports are projected to be 1.381 million STRV. This total only reflects minimum quota commitments for the WTO raw, refined, and specialty sugar TRQs—including a 99,000 STRV expected shortfall for the raw sugar TRQ and established volumes based on free-trade agreements (FTAs). There have been no announcements regarding additional volumes under the Specialty Sugar TRQ. As a result, the current projections do not reflect any imports from that component of trade.

Projected imports from Mexico in 2019/20 are unchanged at 1.418 million STRV. This is based on the calculated U.S. Needs from the May WASDE projections, assuming that the additional Specialty Sugar volumes for 2019/20 are comparable to 2018/19 levels. The U.S. Needs calculation is defined by the Suspension Agreements that were signed in December 2014 and amended in June 2017. According to the agreements, the first official Department of Commerce (USDOC) calculation of U.S. Needs and the Export Limit for 2019/20 will take place subsequent to the July 2019 WASDE report. Updated expectations of Mexico's processors export actions will likely occur in the July WASDE.

Estimated imports for 2018/19 are 2.874 million STRV—a 20,000-STRV increase from the previous month. The only change in the import outlook is for imports under high-tier tariffs. Imports at the high-duty levels are estimated to total 90,000 STRV. The increase in the estimate is based on pace-to-date entries. According to the USDA, Foreign Agricultural Service

(FAS), an estimated 64,000 STRV of high-duty sugar has entered the United States through May.

Figure 9
U.S. and World refined sugar prices, monthly, January 2008 to September 2020



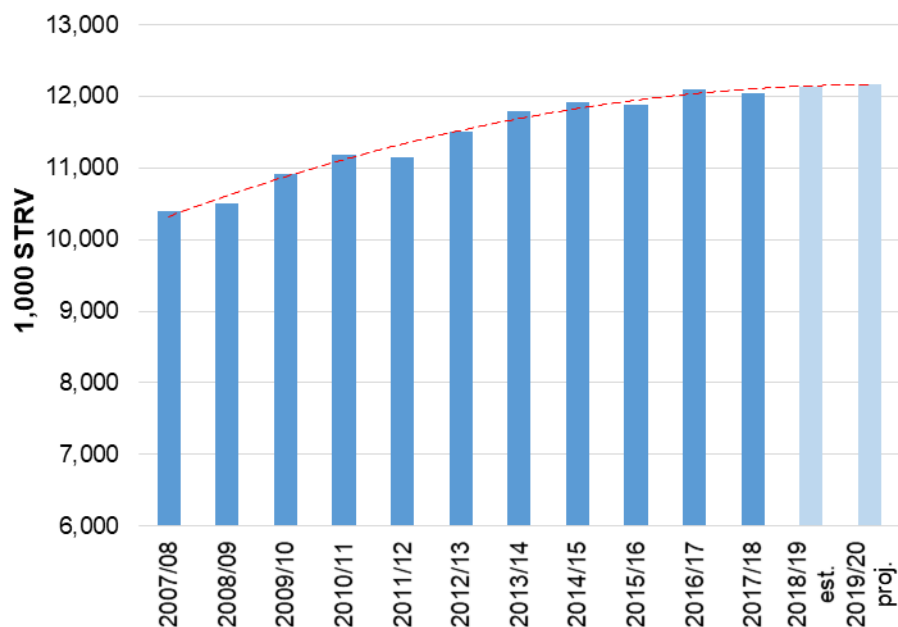
Source: USDA, Economic Research Service.

Domestic Deliveries Unchanged for Both 2018/19 and 2019/20

Domestic deliveries for food and beverage use for 2018/19 remain unchanged from the previous month, estimated at 12.125 million STRV. For 2019/20, food and beverage deliveries are projected to total 12.175 million STRV. These figures would represent a 0.6-percent and 0.4-percent annual increase, respectively. The forecasts reflect the recent trend in the United

States of deliveries continuing to increase annually, but at a decreasing rate compared to the growth in the U.S. market subsequent to its integration with the Mexico sweetener market in 2008 through the terms of NAFTA.

Figure 10
**U.S. sugar deliveries for food and beverage use, fiscal year,
 2007/08 to 2019/20**



Source: U.S. Department of Agriculture, Economic Research Service.

There are various market indicators providing mixed signals regarding the trajectory of food and beverage deliveries in the short-term, however. According to USDA, Farm Service Agency (FSA) data through April, deliveries for food and beverage use have totaled 7.041 million STRV—a 2.6-percent increase from the same period the previous year. Much of the increase, however, is attributed to higher imports for direct consumption by entities that are not reporters under the U.S. sugar program. Direct consumption imports through April are 42.6-percent above the prior year; although the levels are more in line with levels in earlier years, prior to the amended terms of the Suspension Agreements. Overall, this component of use represents a relatively small, but volatile, portion of overall deliveries. The current outlook does not foresee direct consumption imports maintaining this strong pace for the duration of the year, although some annual growth is expected.

Table 5: Food and beverage deliveries, 2014/15 to 2018/19, October through April

	2014/15	2015/16	2016/17	2017/18	2018/19	Annual change
	<i>1,000 STRV</i>					<i>Percent</i>
Beet sugar processors	2,744	2,548	3,032	3,060	2,886	-5.7
Cane sugar refiners	3,525	3,692	3,473	3,426	3,622	5.7
Total reporters	6,269	6,240	6,505	6,486	6,508	0.3
Non-reporter, direct consumption	319	498	455	374	533	42.6
Total deliveries	6,588	6,738	6,960	6,860	7,041	2.6
Final fiscal year deliveries 1/	11,921	11,881	12,102	12,048	12,125	0.6

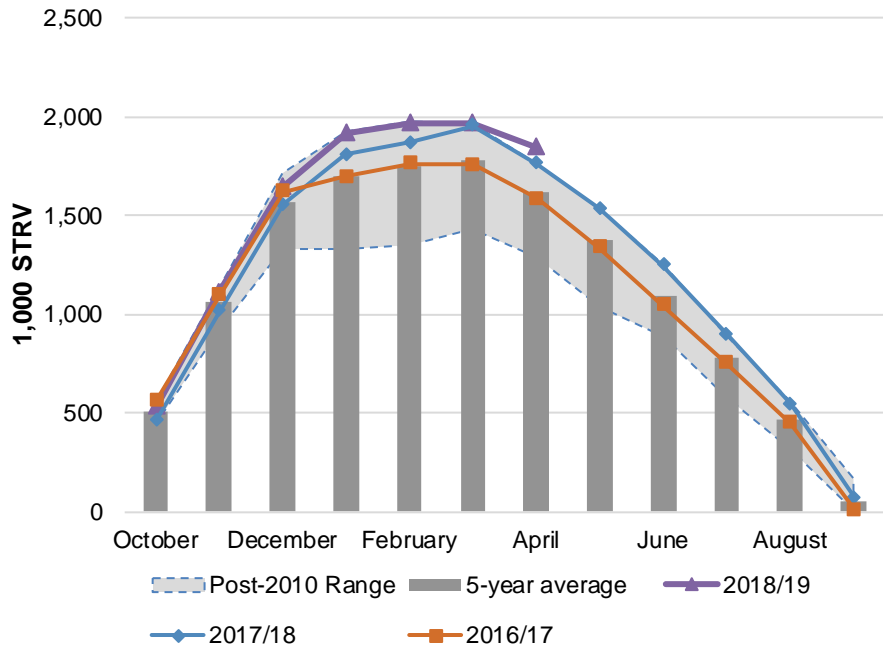
1/ Latest WASDE estimate for 2018/19.

Source: USDA, Farm Production and Conservation Business Center.

Deliveries by U.S. sugar program reporters—domestic beet sugar processors and cane sugar refineries—have reported delivering 0.3 percent more sugar through April compared with the previous year. Although a relatively small increase, strong deliveries in the month of April for both sectors pushed this pace into positive territory for the first time since the first month of the fiscal year. Trends have been distinct for each of the reporting sectors, however.

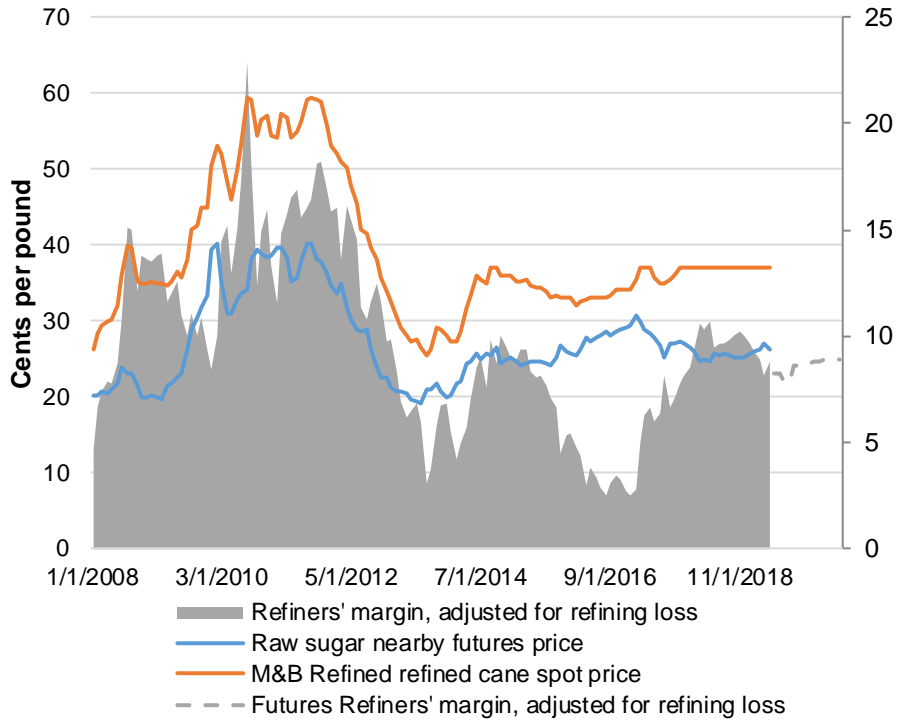
The cane sugar refining sector has delivered 3.622 million STRV through April, an increase of 5.7 percent. This comes after several years of lower deliveries largely attributed to constrained raw sugar supplies, beginning toward the end of 2016/17. The cane sector has refilled pipelines in recent months, aided by strong domestic production of raw cane sugar, and the sector has resumed a pace of deliveries that is consistent with trends through the end of 2015/16. Cane sugar processors were holding 1.842 million STRV in inventories at the end of April—the largest volume in the post-2010 period—largely aided by the successive strong harvests in Louisiana the past few years. There are likely to be additional costs incurred, however, in transporting available domestic raw sugar supplies in the Gulf region to available refining capacities located on the Atlantic Coast. Along with raw sugar expected to come from imports and healthy margins implied from spot refined sugar prices and futures market prices for U.S. raw sugar, the recovered pace of cane refiner deliveries is expected to continue for the remainder of the year.

Figure 11
Sugarcane processors' inventories, monthly, 2016/17 to 2018/19



Source: USDA, Farm Service Agency.

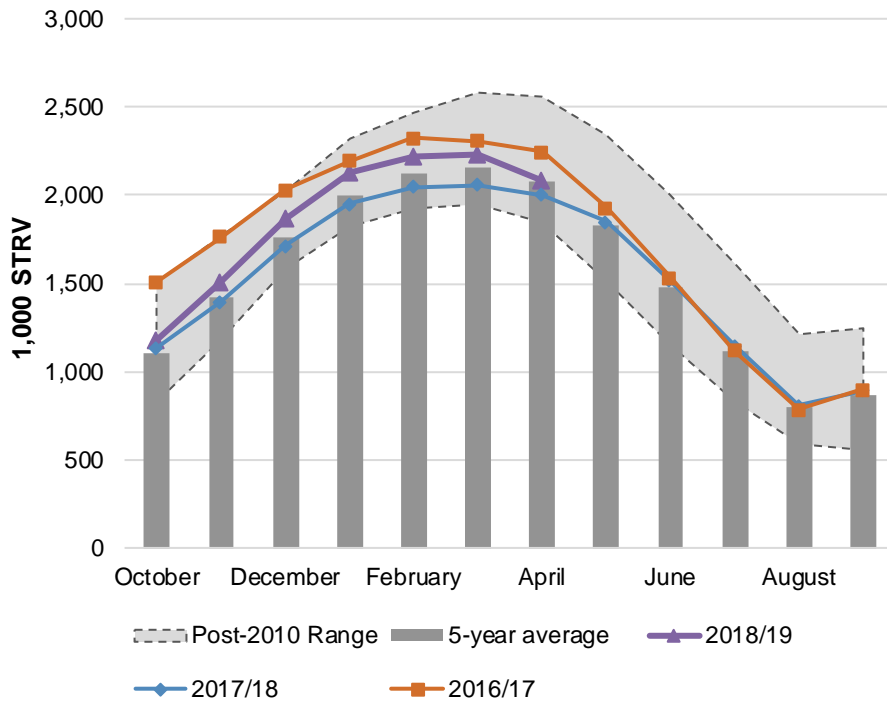
Figure 12
U.S. refiner margins, monthly, January 2008 to June 2020



Source: U.S. Department of Agriculture, Economic Research Service.

Beet sugar processors have delivered 2.886 million STRV for food and beverage purposes through April, a 5.7-percent reduction from the previous year. Processors are coming from 2 record-setting years in terms of deliveries. The pace-to-date reduction demonstrates that the pace hasn't been as strong in 2018/19, although it is still higher than historical averages of the past 10 years. Inventories held by the beet processors show that levels have been at or only slightly above historical levels, indicating that the pace of deliveries has been enough so far for a smooth and functioning national market.

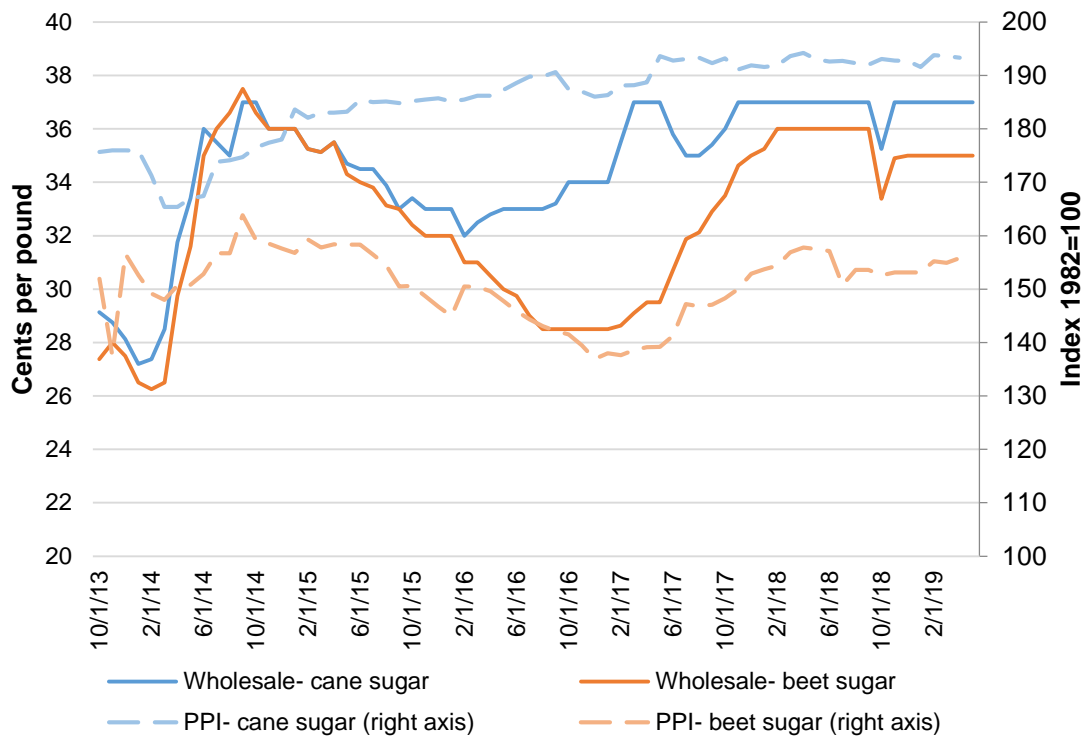
Figure 13
Sugarbeet processors' total sugar inventories, monthly, 2016/17 to 2018/19



Source: USDA, Farm Service Agency.

Refined sugar prices have remained firm in recent months. Monthly average spot prices have shown that both refined cane sugar and beet sugar prices have not changed since December 2018. The Bureau of Labor Services' Producer Price Index (PPI) also shows that refined sugar price levels have remained stable. The PPI is a useful metric because it reports actual transactions of sugar, rather than a quoted spot price that does not always reflect terms of long-term contracts and marketing arrangements. Thus far, the price levels seem to be consistent with the market picture provided by the beet and cane sectors' inventory trends.

Figure 14
 Refined sugar prices, wholesale and Producer Price Indices, monthly



Source: USDA, Economic Research Service.

Mexico Outlook

Large Sugarcane Harvest Leads to Raised Sugar Production Forecasts for 2018/19 and 2019/20

Mexico total supplies for 2018/19 are raised 199,000 metric tons, actual value (MT), based on higher than previously forecast production. Total supplies for 2018/19 are estimated at 7.864 million MT—an 8.7-percent increase from the previous year.

Table 6: Mexico sugar supply and use, 2017/18 - 2018/19 and projected 2019/20, June 2019

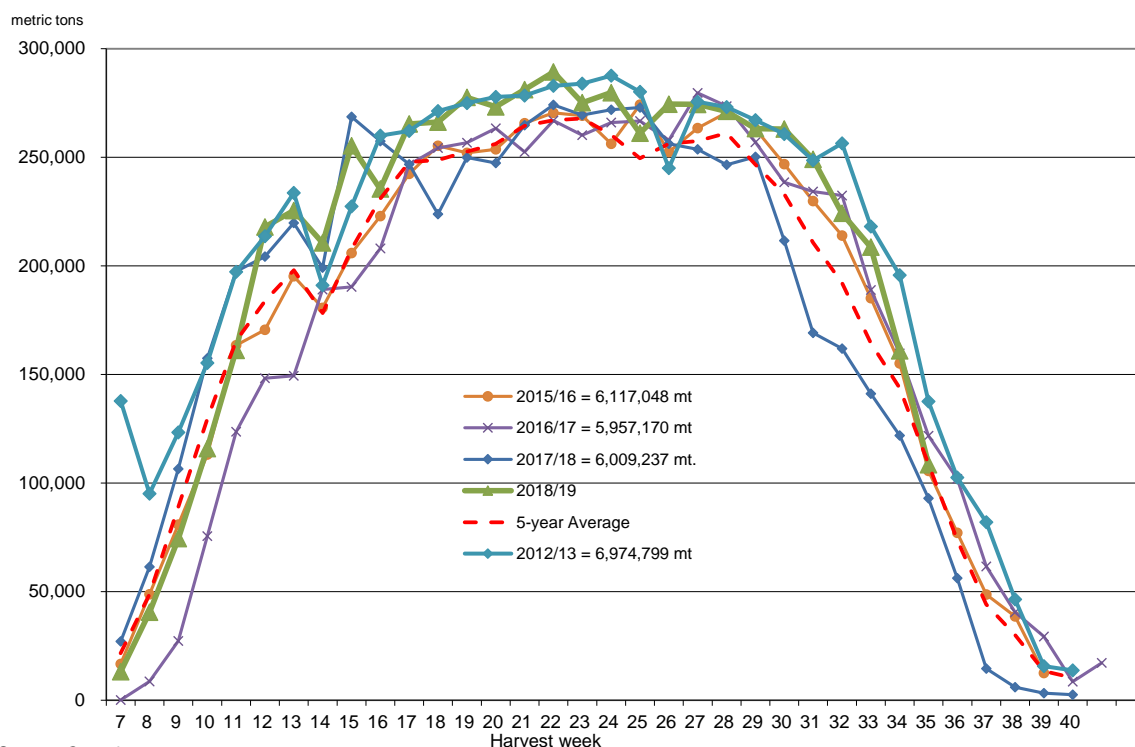
Items	2017/18	2018/19 (estimate)	2019/20 (forecast)
	1,000 metric tons, actual weight		
Beginning stocks	1,002	1,395	995
Production	6,010	6,400	6,183
Imports	220	70	70
Imports for consumption	132	20	20
Imports for sugar-containing product exports, IMMEX 1/, other	88	50	50
Total supply	7,232	7,864	7,248
Disappearance			
Human consumption	4,228	4,236	4,297
For sugar-containing product exports (IMMEX)	482	480	480
Other deliveries and end-of-year statistical adjustment	29	0	0
Total	4,739	4,716	4,777
Exports	1,099	2,153	1,476
Exports to the United States & Puerto Rico	1,047	767	1,213
Exports to other countries	52	1,386	263
Total use	5,838	6,869	6,253
Ending stocks	1,395	995	995
	1,000 metric tons, raw value		
Beginning stocks	1,062	1,478	1,055
Production	6,370	6,784	6,554
Imports	234	74	74
Imports for consumption	140	21	21
Imports for sugar-containing product exports (IMMEX)	93	53	53
Total supply	7,666	8,336	7,683
Disappearance			
Human consumption	4,482	4,490	4,554
For sugar-containing product exports (IMMEX)	510	509	509
Other deliveries and end-of-year statistical adjustment	31	0	0
Total	5,023	4,999	5,063
Exports	1,165	2,282	1,565
Exports to the United States & Puerto Rico	1,110	813	1,286
Exports to other countries	55	1,469	279
Total use	6,188	7,281	6,628
Ending stocks	1,478	1,055	1,055
Stocks-to-human consumption (percent)	33.0	23.5	23.2
Stocks-to-use (percent)	23.9	14.5	15.9
High-fructose corn syrup (HFCS) consumption (dry weight)	1,593	1,520	1,520

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

Source: USDA, *World Agricultural Supply and Demand Estimates* and Economic Research Service, Sugar and Sweeteners Outlook; Conadesuca.

Production for 2018/19 is estimated at 6.400 million MT. The Mexico sugarcane harvest has been winding down during May and will likely reach its final weeks in late June or early July. This year's harvest has continued to be very strong, with high sugarcane yields and harvested area. Through June 1, Mexico growers have harvested 785,000 hectares—3.1 percent more than the same period the previous year and on track to be record-large. Sugar production had reached 6.318 million MT through this same period, which already significantly exceeds annual output from the past 5 years. Based on the current weekly reports, the current crop is likely to be the second-largest in Mexico behind the 2012/13 season that produced 6.975 million MT.

Figure 15
Mexico sugar production, by week of harvest, 2015/16-2018/19



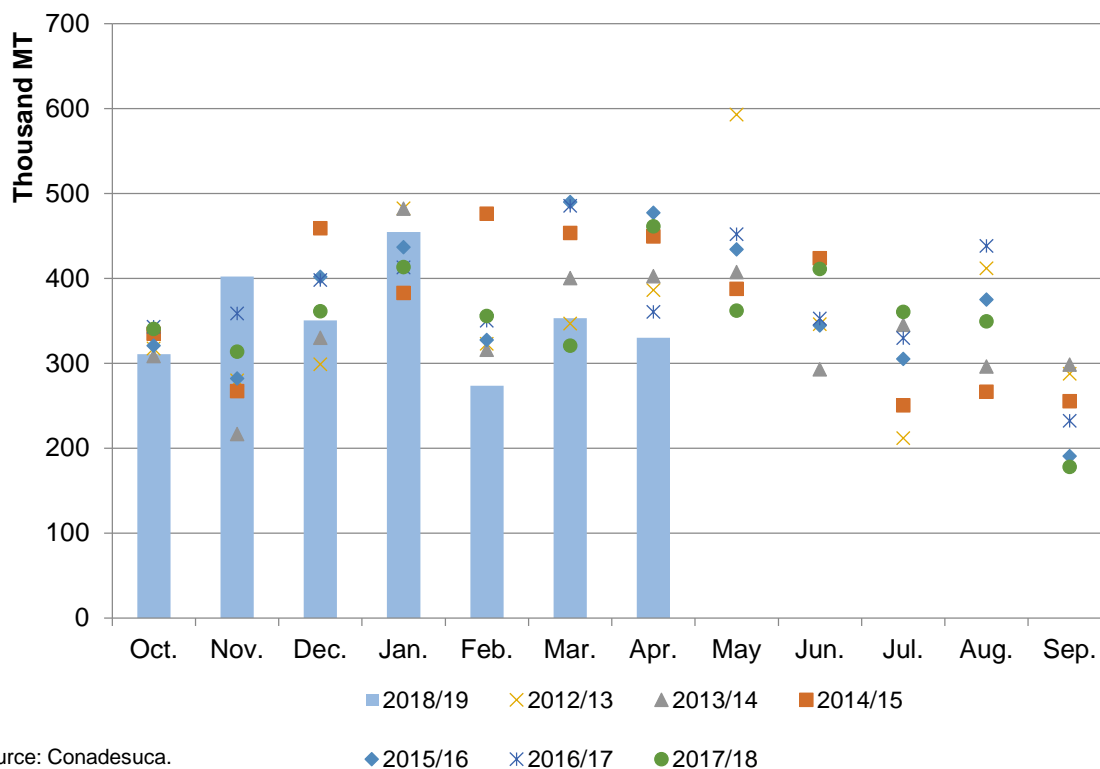
Source: Conadesuca.

Sugar production for 2019/20 is projected to be 6.183 million MT, an 83,000-MT increase from the May projection. The updated figure is based on area comparable to that harvested in the 2018/19 crop, along with yields and sugar recovery rates in line with recent averages. With no changes to projected imports or beginning stocks, the raised production forecast also increases total supplies to 7.248 million MT—which would be a 7.8-percent decrease from the current 2018/19 estimate.

Deliveries Projected To Have Slow Growth

Domestic deliveries for human consumption forecasts for both 2018/19 and 2019/20 are unchanged from the May report, totaling 4.236 million and 4.296 million MT, respectively. Conadesuca shows a continuing trend of relatively light monthly deliveries since February.

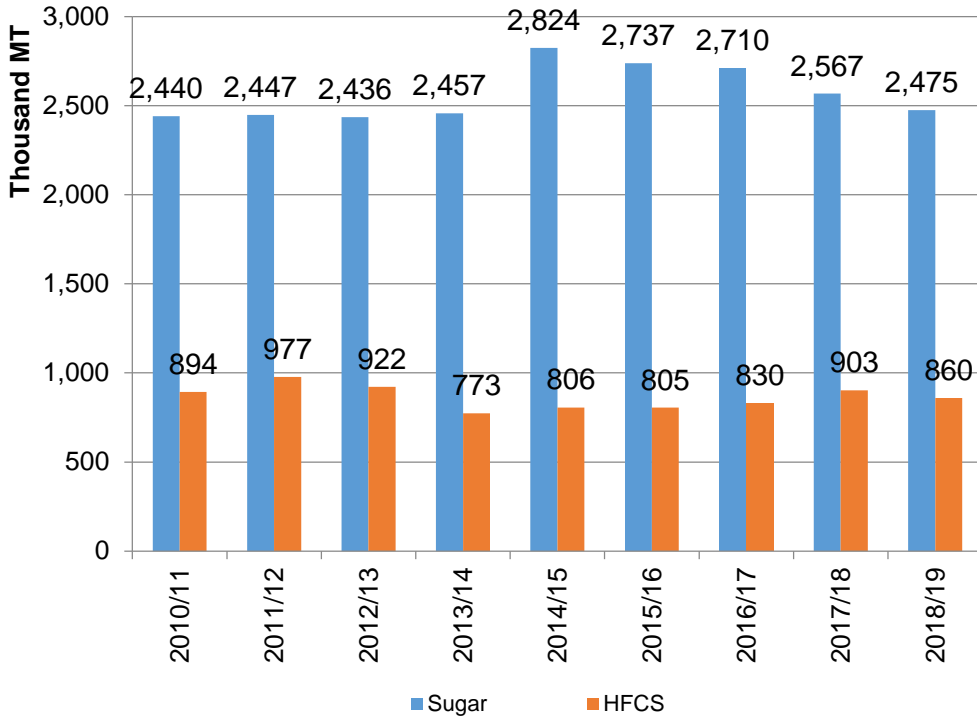
Figure 16
Mexican sugar consumption October to December, monthly



Source: Conadesuca.

Through April, domestic sugar deliveries have been 3.6-percent lower than the previous year, while deliveries of high-fructose corn syrup (HFCS) are also down by 4.8 percent. While some of the trends in sugar illustrate substitution between sugar and HFCS based on availability and price competitiveness, the trend also seems to illustrate a longer term decline in sweetener deliveries beginning in 2014/15. Domestic analysts point to domestic consumer preferences and a heightened attention to dietary behaviors as they relate to sweetener intake, according to FAS's post's reporting. Reports are that local food and beverage manufacturers are reformulating products to adjust to these heightened concerns.

Figure 17
Mexican sweetener consumption October to March, 2010/11 to 2018/19

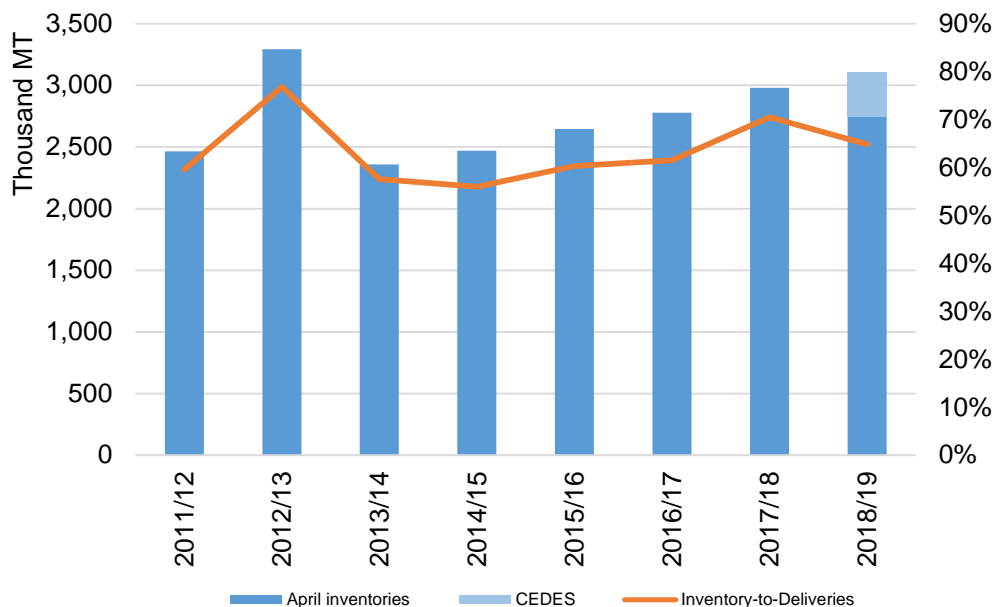


Source: Conadesuca.

Large Exports in 2018/19 and 2019/20 Forecast To Aid in Clearing Stocks

Large production and flattening domestic demand have resulted in growing inventories. Inventory levels have steadily grown over the last 5 years, since the last period of high stocks due to an abnormally productive sugarcane harvest in 2012/13. Some of the growth in inventories is accounted for by an increasing infrastructure for population growth. In adjusting April inventories in relation to total domestic deliveries for human consumption, however, it is clear that inventory growth has outpaced growth in deliveries.

Figure 18
Mexican sweetener consumption through April, fiscal year deliveries



Source: Conadesuca.

For 2018/19, reported April inventories were 2.747 million MT—a 7.9 percent decline from a year earlier. Part of this decline, however, is due to the CEDES certificate program, which is designed to facilitate exports to the global market. According to Conadesuca, through April, 419,000 MT of sugar is currently part of the certificate program—taking it out of the domestic market’s accounting. When factoring CEDES volumes, the trends in inventories appear to be consistent with the longer term trend.

Exports are projected to play an important role in returning the Mexico sugar supply and use balances and bringing stock levels back in line with historical levels. Exports are estimated to be 2.153 million MT, a 199,000-MT increase from the May estimate. Exports to the United States are estimated at 767,000, unchanged from the May estimate and consistent with the Export Limit announced by the USDOC subsequent to the March 2019 WASDE. The remaining 1.386 million MT are expected to be shipped to non-U.S. destinations. This amount would result in ending stocks of 995,000 MT, which equates to a 2 ½ month supply of domestic deliveries (both for human consumption and the IMMEX program) that has long been the target of Conadesuca and domestic policymakers.

The expected shipments to non-U.S. sources would be an unprecedented amount for Mexico. The CEDES program is expected to play an important role in organizing the marketing and

logistics for these shipments. Shipments under the CEDES program are designed to be exported by the end of the calendar year, meaning that some of these estimated exports may fall into 2019/20. Any adjustments to future balance sheets will not be made until there is more data on the pace and expectations of exports during the summer, when most of Mexico sugar exports are shipped.

Exports for 2019/20 are projected to be 1.476 million MT, an 83,000-MT increase from the previous month. Exports to the United States are projected to be 1.213 million MT, unchanged from the May projection and based on the U.S. Needs calculation from the previous month. July is the first month of an official U.S. Needs and Export Limit calculation by USDOC. Exports to non-U.S. destinations are projected at 263,000 MT. Similar to the estimate for 2018/19, these shipments are expected to be at a level that keeps Mexico's ending stocks at their historical levels.

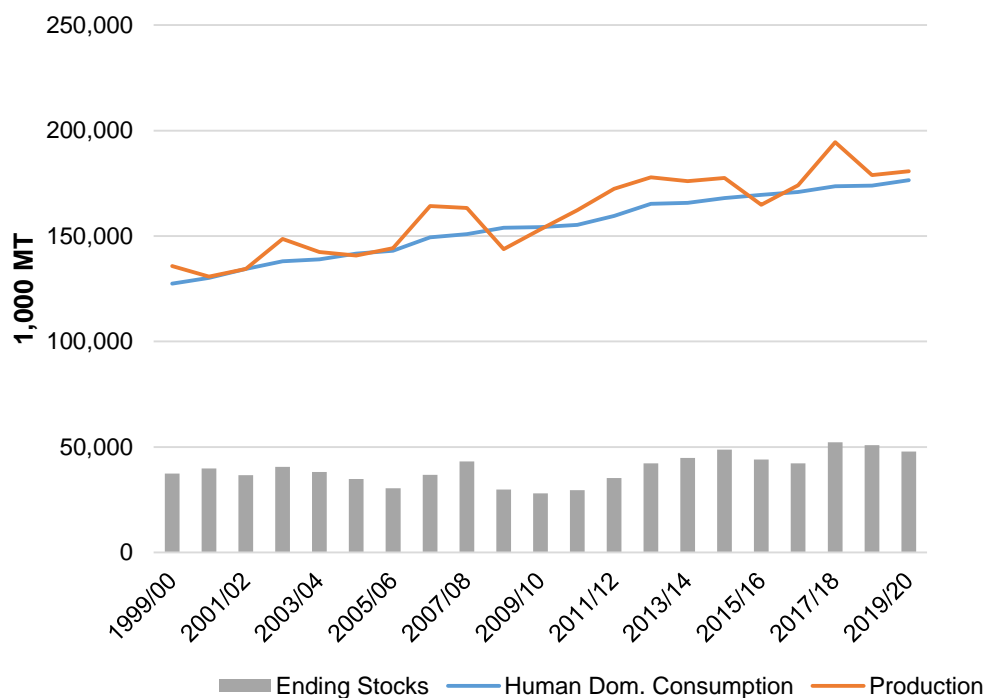
Special Article: Global Sugar Markets

World Sugar Production, Use Increase at Modest Pace, but Ending Stocks Remain Relatively Large due to Large Carryin

On May 23, 2019, the USDA, Foreign Agricultural Service (FAS) released its first projections for the 2019/20 global sugar market in *Sugar: World Markets and Trade*. The report and projections are primarily based on information and analysis provided by FAS posts and attaches located around the world through their Global Agricultural Information Network (GAIN) system.

The global sugar market in 2019/20 is projected to be relatively stable compared with previous years, with steady growth in both production and domestic consumption. World sugar production for 2019/20 is projected to total 180.7 million metric tons, raw value (MTRV), a 1.0-percent increase from the revised estimate for 2018/19. The resumption of growth comes after the record-setting production spike in 2017/18, which has kept ample supplies available in the global market and downward pressure on world futures market prices over the past several years. The production increase in 2017/18 was mainly due to strong production in India. India's subsequent Government policy actions to manage the market impacts its domestic market by facilitating exports that have been a key factor in the global market in recent months, which participants have had to accommodate through extreme—and sometimes unprecedented—operational responses.

Figure 19
**World sugar production, human consumption, and production surplus,
 1999/00 to 2019/20**



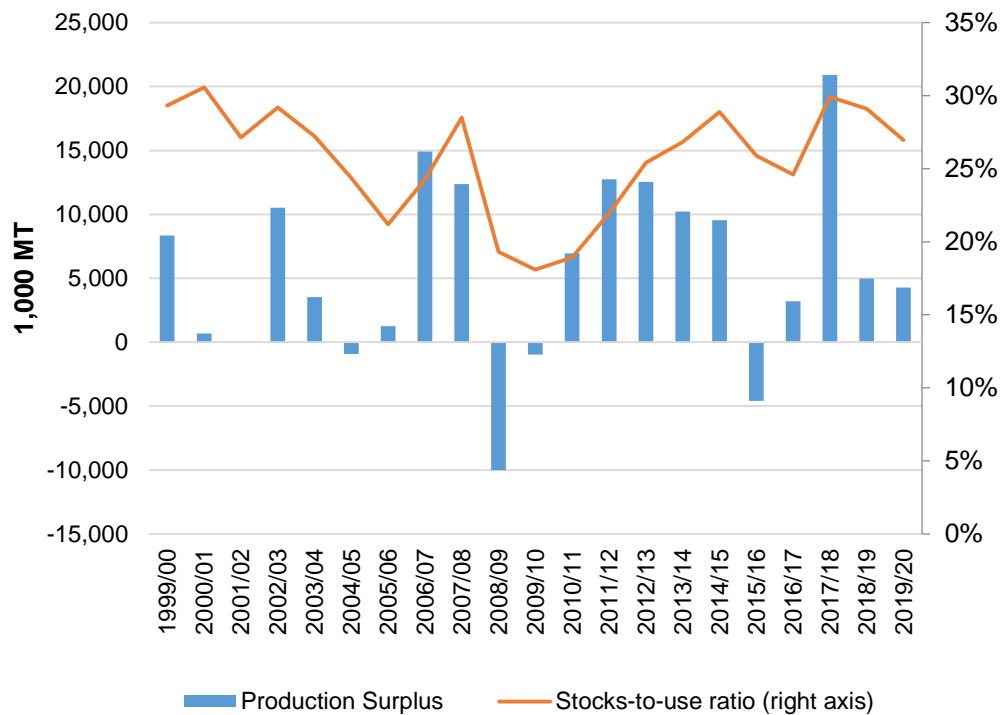
Source: USDA, Foreign Agricultural Service.

Projected consumption is projected to increase 1.4 percent in 2019/20, totaling 176.4 million MTRV. This continues the long-term trend of steady growth in global consumption over the past several decades. As a result of expected consumption outpacing production in 2019/20, global ending stocks of sugar are projected to fall 6.0 percent. Ending stocks are still expected to be relatively high by historical standards, but to continue moving closer to levels seen prior to the supply shock of 2017/18.

The production surplus (total production with use for human consumption subtracted) shows that production levels are much more balanced compared with recent years, based on expected consumption levels. Large inventories continue to affect the market, however. The stocks-to-use ratio for 2019/20 is projected to be 27.0 percent, down only slightly from the revised estimate of 29.1 percent for 2018/19. This metric is usually a good indicator for world price levels. Average prices for raw and refined sugar on the world futures market continued to fall in calendar year 2018—22 percent for raw sugar and 21 percent for refined. Prices in both markets have recovered from their recent lows over the past several months, and current price levels in the futures market do not currently indicate any large movements in price levels

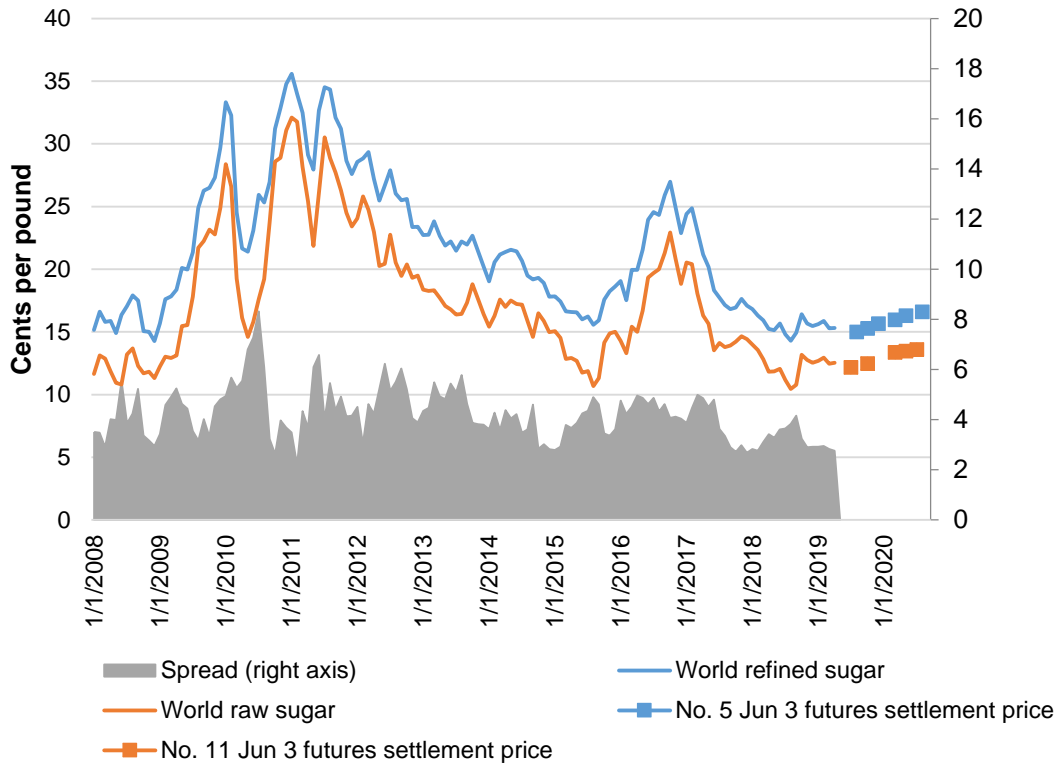
through the 2019/20 marketing year. Prices should continue their slow and steady recovery through 2019/20.

Figure 20
**World sugar production, human consumption, and production surplus,
 1999/00 to 2019/20**



Source: USDA, Foreign Agricultural Service.

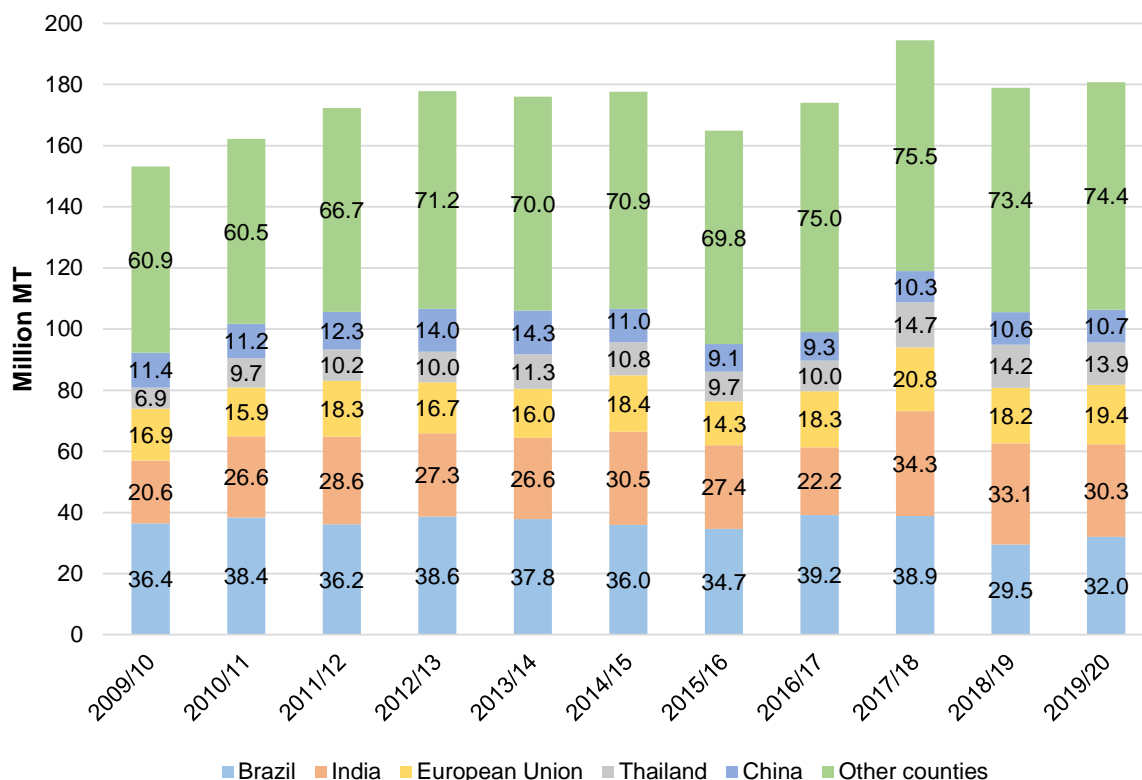
Figure 21
World raw and refined sugar prices, monthly, January 2008 to July 2020



Source: USDA, Economic Research Service.

Brazil is projected to retake the position of top producer in the world for 2019/20, at 32.0 million MTRV—an 8.5-percent increase from 2018/19. Brazil’s sugarcane producers reduced their sugar production by substantially shifting toward ethanol in order to take advantage of the relatively better returns from the domestic fuel market. India is projected to return as the second-largest sugar producer for 2019/20, after being the largest producer the previous year. At 30.3 million MTRV projected for 2019/20, production levels are still expected to be large by historical standards, but smaller than the two previous record-setting crops. The European Union is once again projected to be the world’s third-largest sugar producer, as sugar producers continue to adjust to the 2017/18 deregulation of country-specific production allocations.

Figure 22
World sugar production 2009/10 to 2019/20



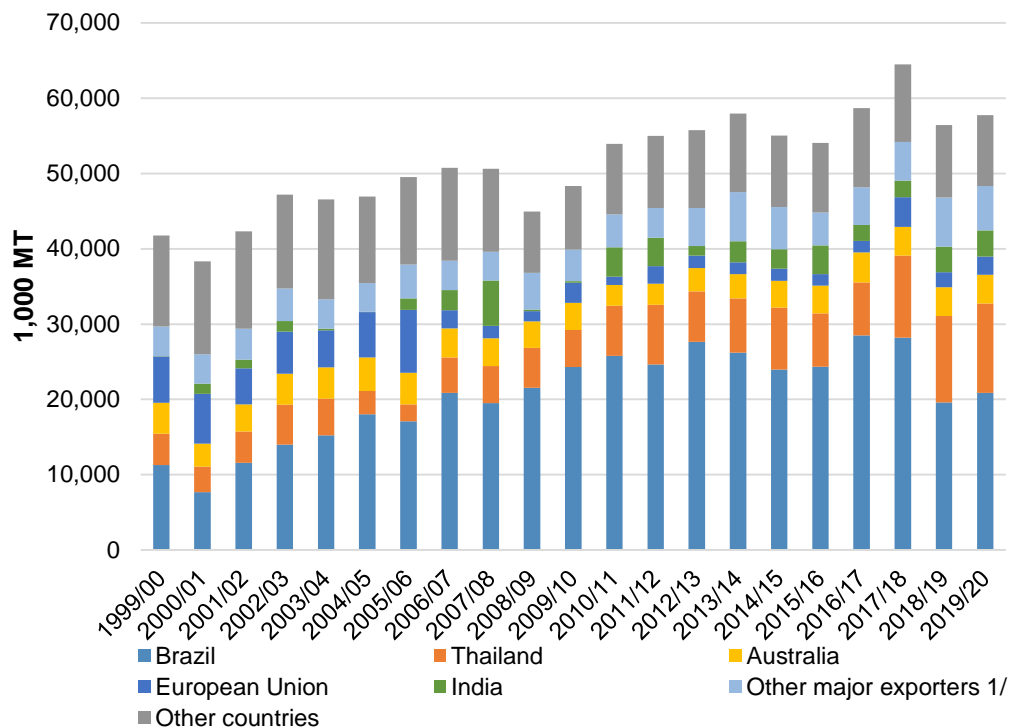
Source: USDA, Foreign Agricultural Service.

Trade is projected to resume its growth in 2019/20, after a steep drop between 2017/18 and 2018/19. Total world exports for 2019/20 are projected to total 57.7 million MTRV, a 2.3-percent increase from the current 2018/19 estimate. While significantly less than the record-setting 64.5 million MTRV exported in 2017/18, the annual increase is above the 10-year average annual growth rate of 1.8 percent.

Brazil is expected to remain the largest and most influential exporter on the global market, with exports projected at 20.9 million MTRV for 2019/20. The projection is a 6.3-percent increase from the previous year's estimate—although Brazil significantly reduced its exports in 2018/19 due to low global prices and reduced import demand. Brazil is expected to account for 36 percent of global exports in 2019/20—still the dominant player in global trade, but with a significantly smaller share than in the period beginning in 2008/09, when its market share ranged between 44 and 50 percent. As Brazil's market share has fallen, other countries have stepped into the void. Most notably, Thailand is projected to export 11.9 million MTRV—or more than 20 percent of global trade. While Brazil's presence in the world market has fallen in

recent years, increases from other countries have allowed global trade of sugar to maintain its long-term growth trend.

Figure 23
World sugar exports 1999/00 to 2019/20

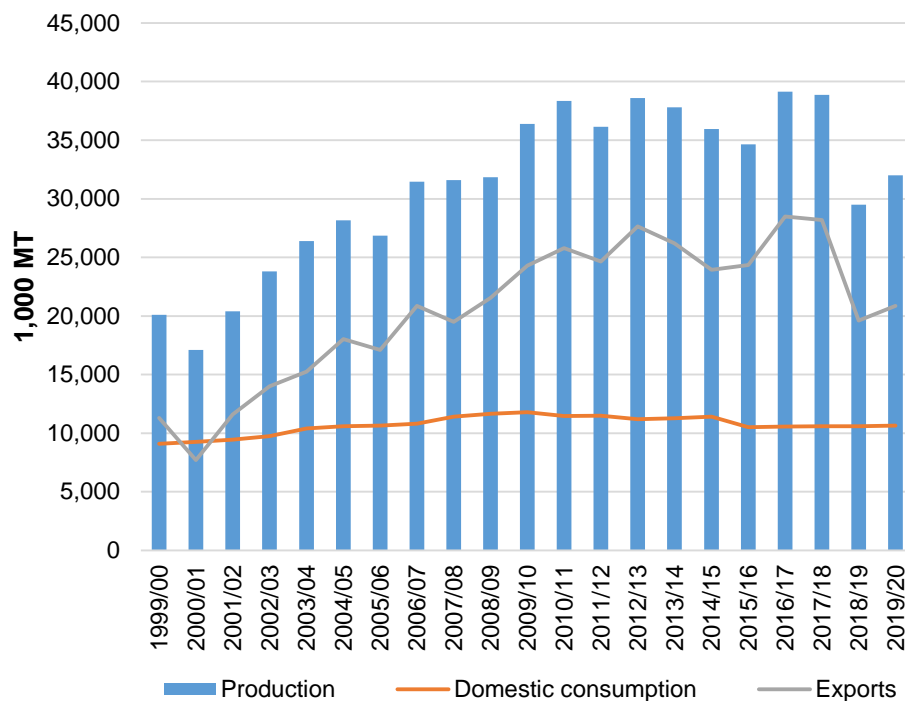


1/ Includes: Guatemala, Mexico, Ukraine, Colombia, and South Africa.
Source: USDA, Foreign Agricultural Service.

Brazil Sugarcane Producers Shift Heavily to Ethanol Production and Domestic Fuel Markets

Brazil is projected to increase its sugar production by 8.4 percent in 2019/20, totaling 32.0 million MTRV. This is still a considerable drop from the production levels recorded since 2007/08, however. With relatively stable domestic consumption levels, the reduction in production has resulted in fewer exports than the country has typically shipped—both for the 2018/19 estimate and the 2019/20 projection.

Figure 24
Brazil sugar production, exports, and domestic consumption 1999/00 to 2019/20

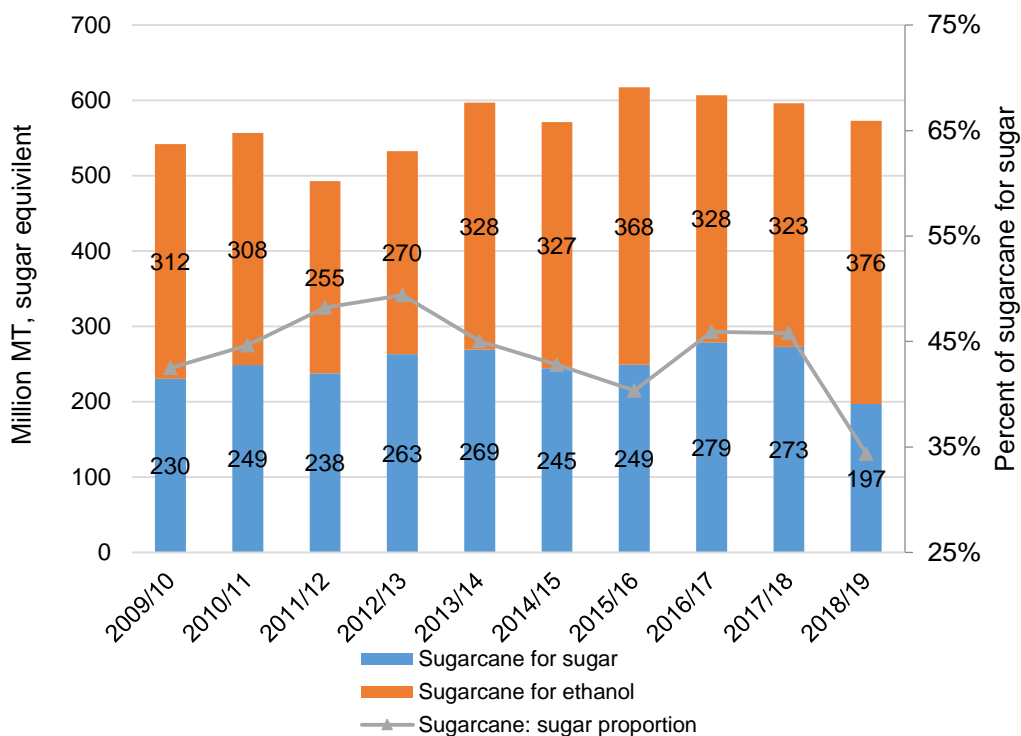


Source: USDA, Foreign Agricultural Service.

The reduction in sugar production is not due to less sugarcane production, however. Despite an estimated 24.1-percent reduction in sugar production in 2018/19, Brazil's UNICA reported just a 3.9-percent reduction in crushed sugarcane for the crop year in the Center-South region—which accounts for about 85 to 90 percent of harvested area. Sugarcane harvested area is expected to dip 1.0 percent for 2019/20 according to the USDA's Foreign Agricultural Service (FAS) attaché in Brazil, but improved yields are expected to offset this. Sugarcane production in 2019/20 is projected to increase 1.1 percent.

The ethanol sector is the largest use market for Brazil's sugarcane producers. Producers have been responding to better returns for ethanol production marketed to the domestic fuel market than sugar production marketed to the global market. In 2018/19, only 34 percent of the sugarcane harvested was used for sugar production—a record-low proportion, previously considered unfeasible given processing capacities of ethanol facilities in the country.

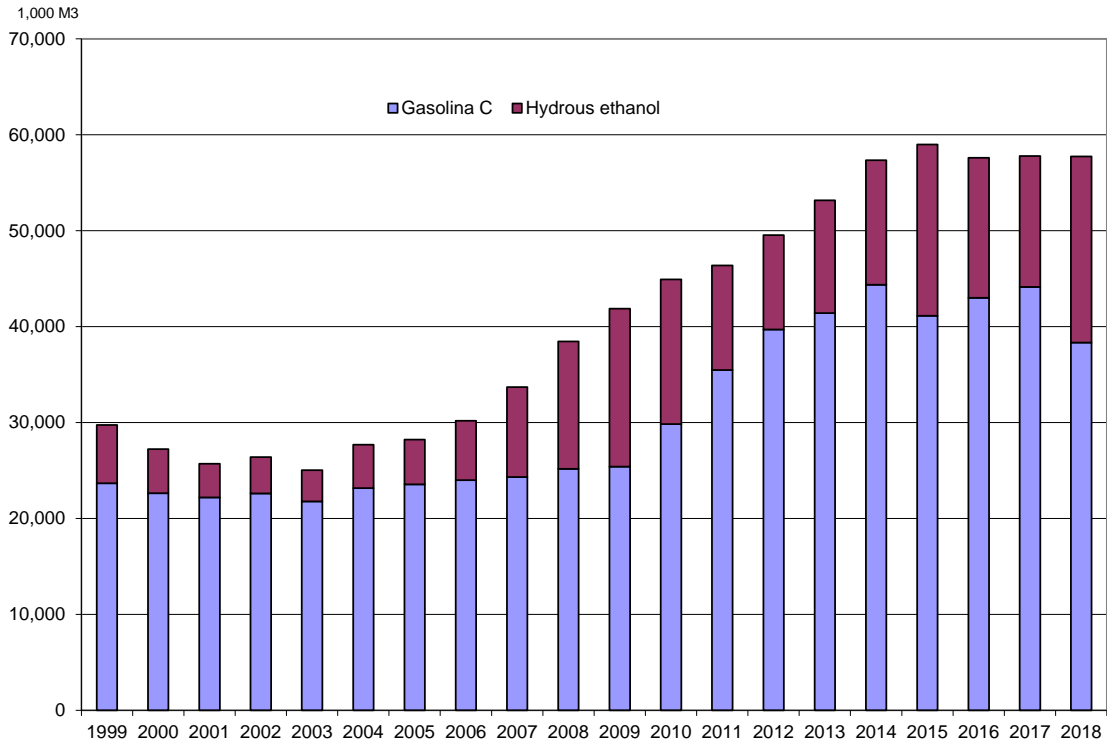
Figure 25
Brazil Center-South sugarcane production and use, April-to-March marketing year



Source: Brazilian Sugarcane Industry Association (UNICA).

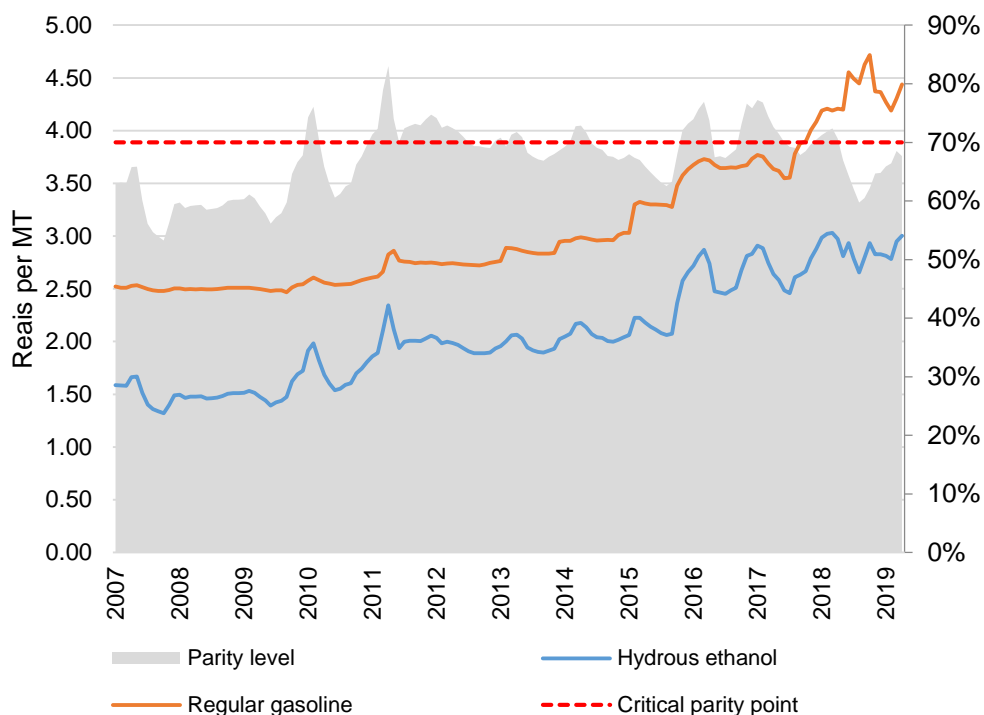
The growth in ethanol production has been matched by increasing volumes of ethanol sales. Brazil's total vehicle fuel market has plateaued since 2015, after strong growth between 2000 and 2015 that allowed for growth in both gasoline (which include a mandated proportion of anhydrous ethanol content) and hydrous ethanol in the country's primarily-flex fuel vehicle (FFV) personal car fleet. Hydrous ethanol sales have increased its market share of total fuel sales, particularly in 2018. This has been feasible due to competitive pricing against rising gasoline prices, particularly in the Sao Paulo and Center-South fuel markets that have close proximity to sugarcane ethanol processing facilities.

Figure 26
Combined sales of hydrous ethanol and gasoline C in Brazil, 1999-2018.



Source: Agencia Nacional do Petroleo, Gas Natural e Biocombustiveis.

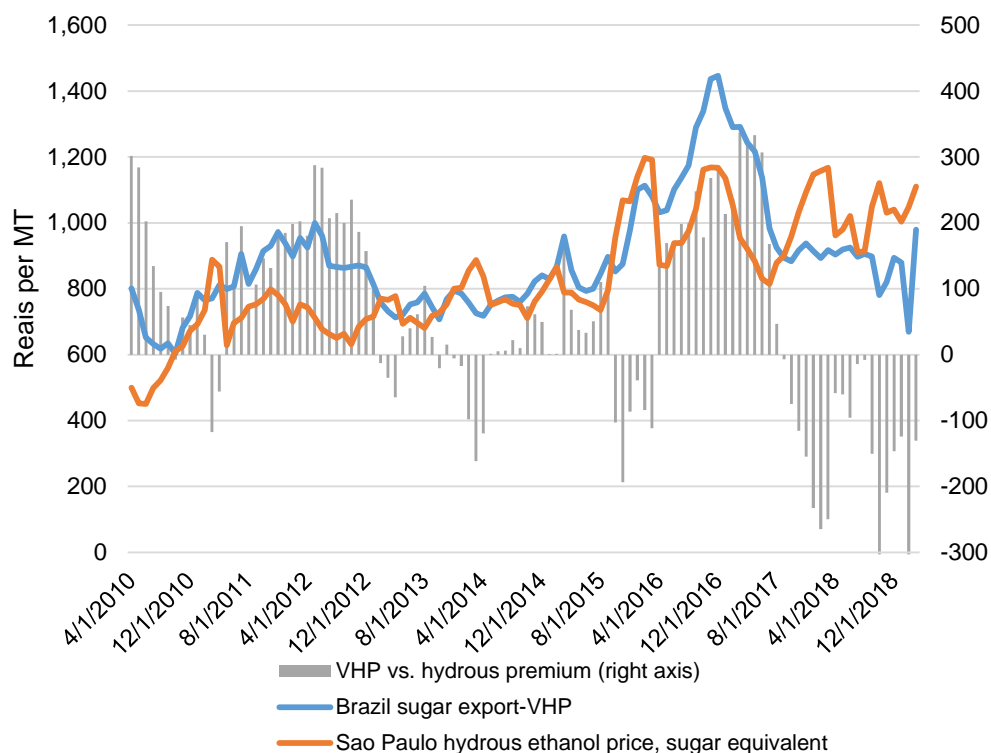
Figure 27
Sao Paulo vehicle fuel prices, state average, monthly, January 2007 to April 2019



Source: Agencia Nacional do Petroleo, Gas Natural e Biocombustiveis.

Brazil sugarcane producers have experienced a market that favors ethanol production since 2017, coinciding with declining world sugar prices. Brazil's Very High Polarity (VHP) sugar pricing—the standard market for Brazilian sugar exports—has seen some periods of improvements in recent months. Returns have been volatile, however. The VHP price is quoted in U.S. dollars—the standard for global future's contracts—and so exchange rates also play an important role in Brazilian producers' management decisions. For producers to return to a production mix of sugar and ethanol more consistent with historical levels, Brazilian currency markets and global sugar prices would have to return to levels that make sugar exports relatively more attractive than marketing to the domestic fuel market.

Figure 28
Brazil sugar export and domestic ethanol prices, 2010/11 to 2018/19



Source: Brazilian Ministry of Agriculture.

India Government Policy Still Affecting Domestic Market, Leading to Large Stocks and Exports

Production of sugar in India is expected to decrease in 2019/20 from 33.1 to 30.3 million MTRV. This will be the second consecutive yearly decrease. The main drivers of this decline are lower sugarcane production than initially expected paired with a reduction in the sugar recovery rate. According to FAS reporting, there was very little new cane planting in the major growing regions of Karnataka and Maharashtra due to acute water scarcity from poor and untimely rainfall in 2018/19. In addition, a surplus sugar season, rising cost of production, lower international prices, and rising inventory have all affected profits and cash flow. This in turn has made it difficult for sugar mills to make timely payments to suppliers and thus accrued arrears in payments to cane growers have grown to high levels. Beginning stocks soared in 2019/20 to their highest levels on record at 17.6 million MTRV.

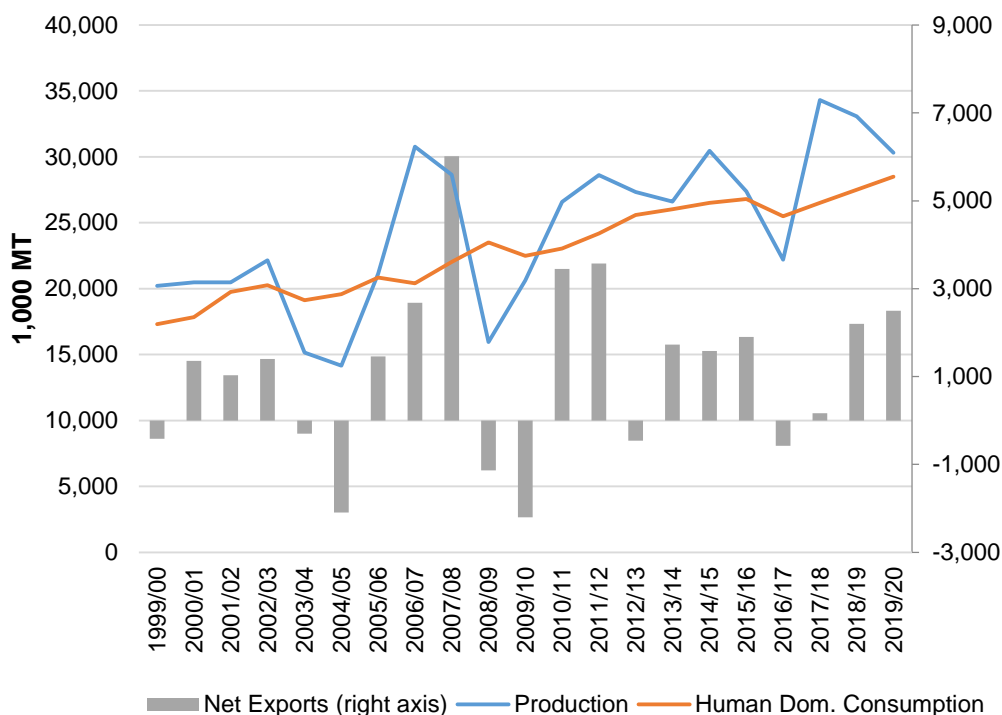
The Fair and Remunerative Price (FRP), a governmentally mandated price for the sugarcane received by farmers from the mills (replacing the old Statutory Minimum Price of sugar cane),

was increased 8 percent in 2018/19 over the prior year. The RFP allows for premiums to be paid for higher extraction rates should a farmer's crop be of higher quality. With the recent elections now over, political pressure for the RFP may influence future policies less. As of July 2018, the arrears (mills debt to growers) were between \$2.16 billion and \$3.4 billion depending on the prices promised (FRP or State Advised Price).

Local sugar prices rose 11.4 percent from a bottom in April through September 2018 and have since remained relatively flat, according to the FAS's most recent annual sugar GAIN Report, while the glut of supply was drawn down. This was in part associated with Government policy to support prices through the sale of sugar byproducts (such as ethanol) to improve cash flows and settle cane arrears, and to make ethanol available for the ethanol blending program (EBP). Until mid-September 2018, Indian sugar was quoted at more than a 30-percent premium over world futures sugar prices. Additionally, there is a direct Government subsidy to the farmers via the mills. In June 2018, the Government of India (GOI) announced the creation of a 3 million MTRV strategic reserve, removing some of the slackness in the market. The GOI also increased the ethanol price, improving the cash flow of mills from the ethanol sector. Finally, the GOI is subsidizing the export expenses of producers through Minimum Indicative Export Quota and direct financial assistance to the mills. A fifth incentive during this time frame was the high crude oil prices coupled with a very attractive Government-administered purchase price for ethanol supply to the Oil Marketing Companies; however, more recently oil prices have been moderating. In April 2019 a new minimum selling price for white sugar from mills was mandated, which was up from Indian Rupees (INR) 29/kg to INR 31/Kg.

In 2019/20 there are expected to be only small amounts of sugar imports into the Indian market at 1.0 million MTRV, or 0.2 million MTRV more than in 2018/19, as the large production and stocks suffice for the country's consumption. This trend is expected to continue into the near future, as well. In fact, exports are expected to rebound from 3.4 million MTRV to 3.5 million MTRV, or roughly 12 percent of the total supply. Domestic consumption is projected to increase 1.0 million MTRV from 27.5 in the prior year to 28.5 million MTRV in 2019/20. These market moves result in an expected ending stocks of 16.9 million MTRV, fractionally down from the previous year's 17.6 million MTRV. This represents about 7 months of consumption, in contrast to the typical minimum ending stock levels of 3 months.

Figure 29
India sugar production, exports, and domestic consumption 1999/00 to 2019/20

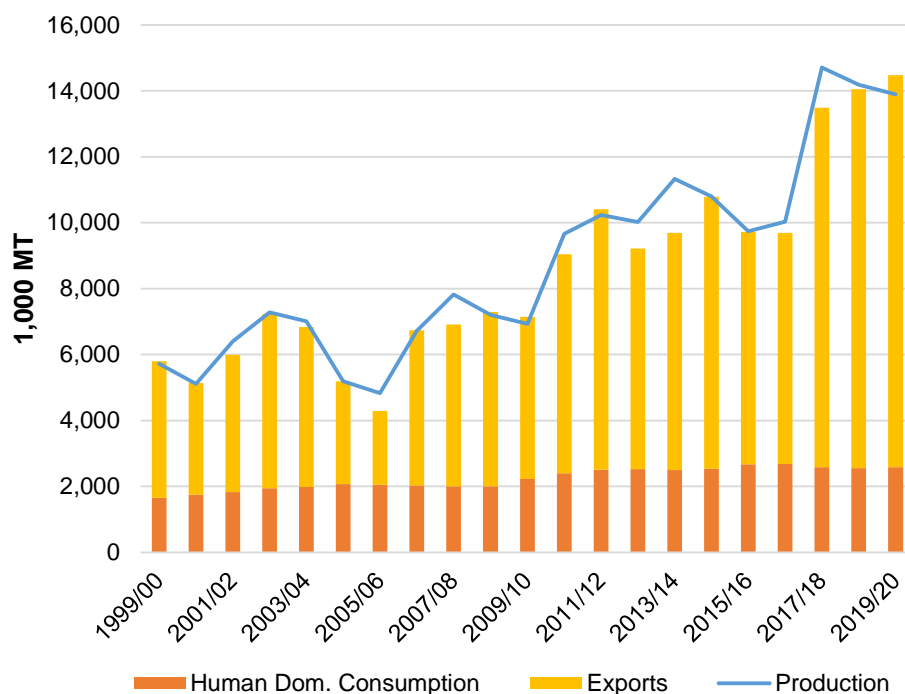


Source: USDA, Foreign Agricultural Service.

Thailand Exports Continue To Grow, Responding to Regional Demand Growth

Thailand is expected to continue its recent trend of decreasing production, according to projections for 2019/20 at 13.9 million MTRV, down from 14.1 in 2018/19. These decreases are driven by lower yields and area. Total supply is marginally down year over year at 20.9 million MTRV. This decrease is due to the reduction in production, though partially offset by slightly larger beginning stocks totaling 7.0 million MTRV. As with India, all production in Thailand comes from cane. Sugarcane competes with other crops such as rice, corn, and cassava for planted area, influencing for the lower sugar production forecast for 2019/20.

Figure 30
Thailand sugar production, exports, and domestic consumption 1999/00 to 2019/20



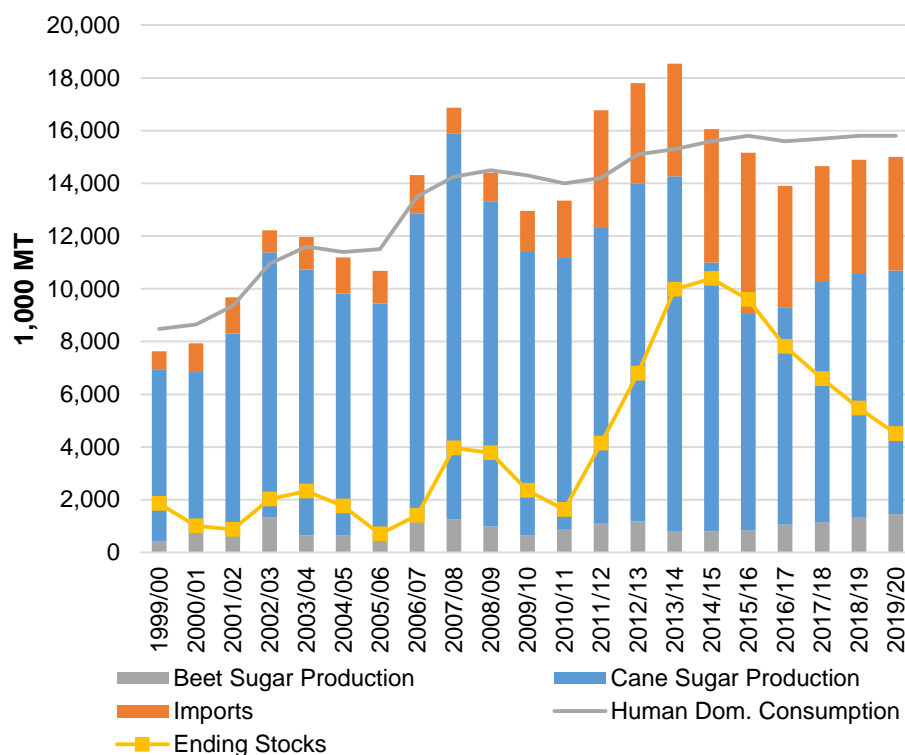
Source: USDA, Foreign Agricultural Service.

Thailand's sugar use is dominated by exports, with 11.9 million MTRV expected to leave the country for other markets in 2019/20, slightly down by 0.15 million MTRV from the prior year. This decrease was in part driven by competitive market pricing on the world market. At the same time, domestic consumption is expected to pick up for the first time since 2016/17, anticipated to be 2.58 million MTRV. Thailand's ending stocks are expected to be marginally down from 2018/19 at 6.4 million MTRV in 2019/20. Future policy implementation of a sugar tax is expected to shift demand, according to FAS GAIN reports. The tax imposed on non-alcoholic beverages will triple in 2021. The reduced demand for sugar from beverage manufacturers is expected to be modest as the proportion of high-sugar beverage production has been reduced dramatically to around one-third of total beverage production during 2017-2019 when the new sugar tax was implemented. Meanwhile, the demand for sugar from households' direct sugar consumption and food-processing manufacturers will likely continue to increase by 3-4 percent, in line with the growing economy, which is expected to more than offset the reduced sugar demand from beverage production

China Stocks Draw Down To Satisfy Domestic Demand

The sugar market in China for 2019/20 is projected to continue trends of increased domestic production and fewer imports and to rely on drawing down inventories to satisfy steady consumption. Cane sugar production in China is expected to be 9.3 million MTRV in 2019/20, matching the prior year's production estimate. The Government continues to support prices in certain areas by subsidizing input costs, targeting the adoption of improved cane varieties, mechanization, and fertilization. Constraints on expanded sugarcane area include: continued urbanization (farm land converted for industrial use and real estate development); competition from other agricultural products (in particular, fruit and vegetable production to meet increasing middle class demand); rising labor costs and labor shortages; and a lack of mechanization (due to predominantly hilly sugarcane-producing areas). Beet sugar production is projected to be 1.5 million MTRV in 2019/20, up from 1.4 million MTRV in 2018/19. The 2018/19 harvest was completed in November 2018. The production level in 2018/19 was 0.2 million MTRV above 2017/18 production, mostly due to favorable growing conditions and expanding area. While sugar cane production growth has largely stopped, beet sugar production continues to expand for a number of reasons: adoption of high-performing beet varieties, high level of mechanization, and continued demand from new mills. In total, Chinese sugar production in 2019/20 is projected at 10.7 million MTRV, a 0.1 million MTRV increase over 2018/19 production.

Figure 31
China sugar production, exports, and domestic consumption 1999/00 to 2019/20



Source: USDA, Foreign Agricultural Service.

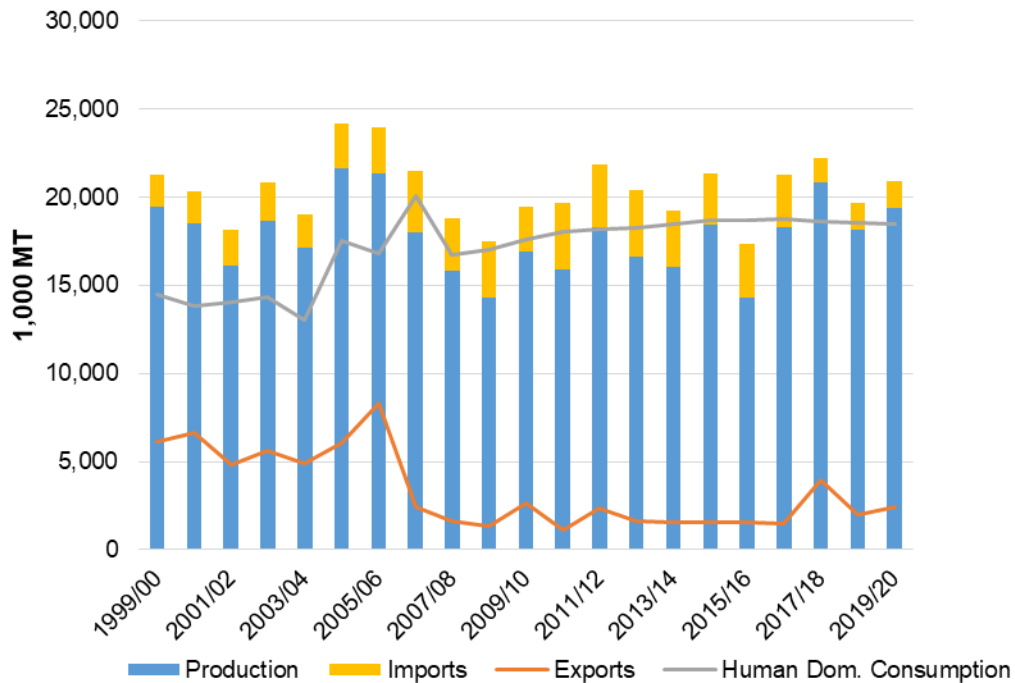
Imports in 2019/20 are flat after being down for the last three consecutive seasons. Imports are expected to total 4.3 million MTRV in 2019/20. Total supply is projected lower in 2019/20, down from 21.5 million MTRV to 20.5 million MTRV in 2019/20. Exports account for less than 1 percent of total supply in 2019/20 at 0.17 million metric tons. Consumption is expected flat year over year at 15.8 million MTRV in 2019/20, despite a growing urban population and relatively low sugar prices. Some of the lack of growth can also be attributed to relatively-lower cost corn sweeteners being substituted for sugar in certain products. Chinese ending stocks in 2018/19 are projected to be 4.5 million MTRV, down from last year's ending stocks of 5.5 million MTRV, and to continue this trend of smaller stocks, which began in 2014/15. China's importance and influence on world sugar markets lies in its potential to be a large importer when purchasing sugar from the international market is a good value or when it is needed to buttress domestic supplies—as it did between 2011/12 and 2016/17. While that is not currently projected to occur in 2019/20, it is an important factor that would impact world sugar prices if the situation changed.

European Union Continues Market Transition Into New Production Policy Regime

In 2019/20, sugar markets in the European Union are entering their third year since a country-specific sugar production quota regime was abolished—which removed the limits on domestic sugar production from sugarbeets and grain-based sweeteners such as HFCS. The policy change, combined with weather-related shocks during 2018/19, has created a significant transition in the market. The outlook for 2019/20 appears to be more stable, however, as the region continues to adjust to the new market conditions.

Sugar production in 2018/19 is projected to increase 6.9 percent from 2017/18, totaling 19.4 million MTRV. Sugar production in 2018/19 is now estimated at 18.2 million MTRV, as much of the 2018/19 European sugarbeet crop was affected by a drought, reducing overall production. Sugarbeet area continues to be focused in France and Germany, accounting for more than two-thirds of the continent's expected 1.285 million hectares; although each country is expecting less harvested area in 2019/20. Poland is the third-largest producer by area in the EU and is expected to continue growing, with area expected to increase 2.5 percent to 245,000 hectares.

Figure 32
European Union sugar production, exports, and domestic consumption
1999/00 to 2019/20



Note: Data reflect the totals for 15-Member State European Union through 2003/04 and 25-Member State European Union through 2005/06.
 Source: USDA, Foreign Agricultural Service.

Sugar consumption for food and beverages is projected to slightly decline in 2019/20 by 0.3 percent, totaling 18.5 million MTRV. This continues the trend of a longer term flattening of sugar consumption in the European Union, largely driven by consumer preferences and broad trends of foods with less sugar. Food processors in the market have reportedly responded by changing formulations of products. Additionally, demographic trends on the continent have contributed to the lowered growth in consumption, as the aging population reduces the demand for sugar.

Sugar trade for 2019/20 is projected to stabilize relative to recent years. The implementation of the new sugar production policies in 2017/18 resulted in a surge in domestic production, as production shifted to the more productive Member States. This, combined with only small growth in domestic use, led to high inventories and a spike in exports—leading to the first significant net export year in the European Union since 2005/06. For 2018/19, the reduced production levels meant that export levels were nearly cut in half. The EU is still estimated to be a net exporter for 2018/19, but not to the same degree. Exports are expected to recover in 2019/20, increasing 20 percent from the previous year, but still lower than 2017/18 levels.

Imports in 2019/20—which are predominantly in the form of raw sugar through quota programs—are expected to remain flat, projected at 1.5 million MTRV. Ending stocks in 2019/20 are projected to be 1.073 million MTRV, which would be a 2.4-percent increase from the previous year, but remain relatively low by historical levels.

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Data

Tables from the *Sugar and Sweeteners Yearbook* are available in the Sugar and Sweeteners Topics at <http://www.ers.usda.gov/topics/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/>
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