August 2016 – Crop Market Update
Public Policy Department
Budget & Economic Analysis Team

Could This Big Crop Get Smaller?

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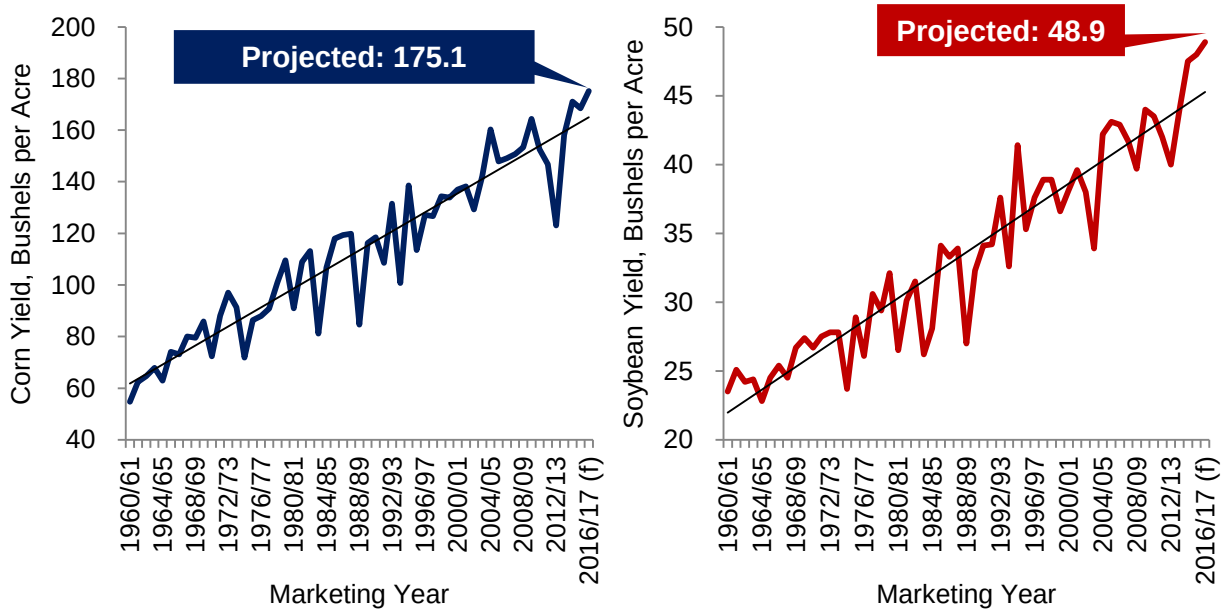
Crop Production

USDA's annual August Crop Production report provides the first survey-based estimate of corn and soybean yields in the U.S. The August 12, 2016 Crop Production report forecast the 2016 U.S. average corn yield at 175.1 bushels per acre (bpa) and total corn production at 15.1 billion bushels. The yield estimate was 4.5 bpa above the average trade guess of 170.6 bpa and was 10.9 bpa above the trend yield forecast of 164.2 bpa.

For soybeans, USDA's report forecast the 2016 U.S. average soybean yield at 48.9 bpa and total soybean production at 4.06 billion bushels. The yield estimate was 1.4 bpa above the average trade guess of 47.5 bpa and was 3.9 bpa above the trend yield forecast of 45 bpa. Not only were the yield and production forecasts for corn and soybeans record highs, they were well above the average trade guesses.

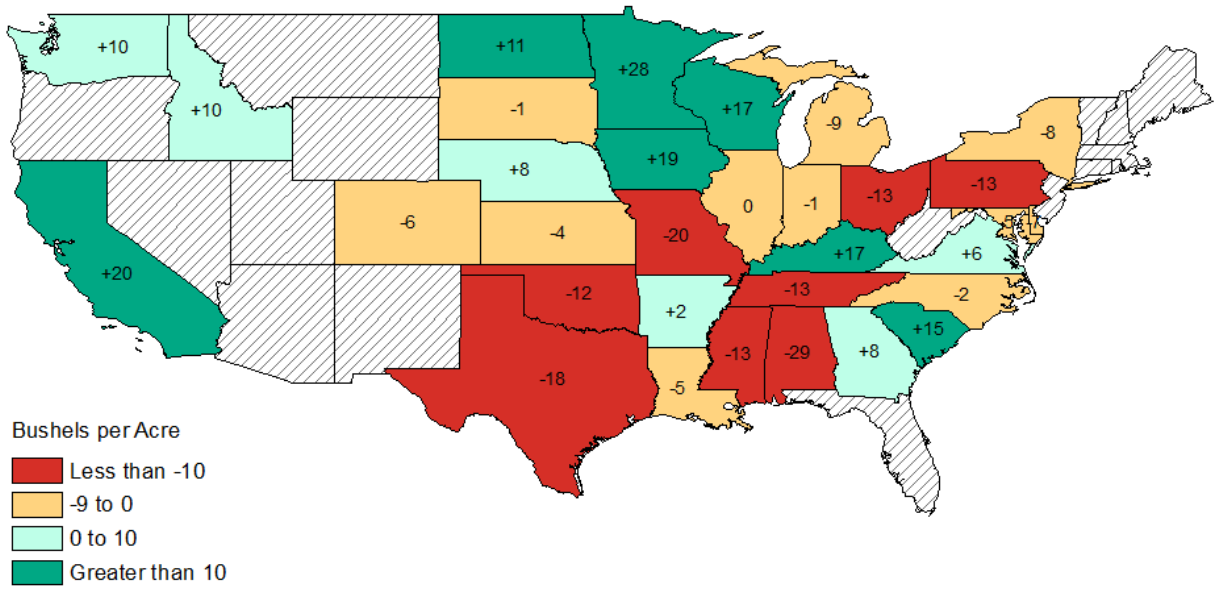
Figure 1. Corn and Soybean Actual and Projected Yields
Source USDA



With projections for a record crop size in 2016/17 the question becomes: does the market buy it? A few factors are worth monitoring. First, USDA's Farm Service Agency (FSA) recently

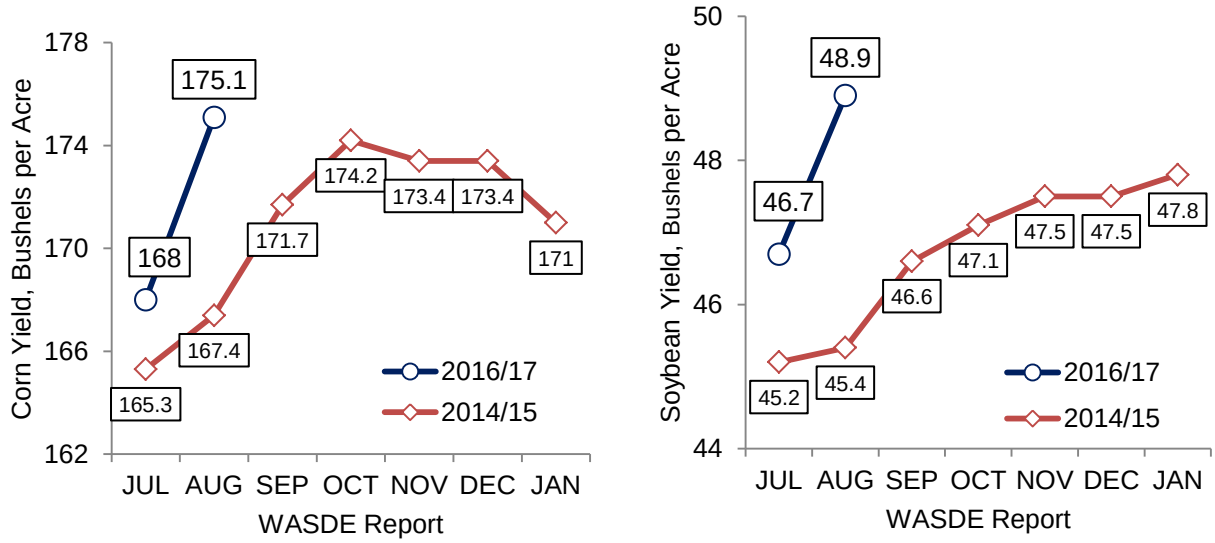
reported planted area of 90.4 and 81.4 million acres of corn and soybeans, respectively. The FSA reported acres are traditionally below NASS estimates and will be revised monthly. Analysts will monitor these acres and the relationship to NASS data to get an early estimate of final planted area. Second, for beans, key August precipitation and temperature data is unknown so there remains more uncertainty on the magnitude of final crop yields. Finally, for corn, favorable crop yields are expected in the Upper Midwest and Western Corn Belt with several states topping their 2014 corn yields (see Figure 2). However, key July precipitation and temperature data is known and USDA's weekly Crop Progress data confirms signs of stress in the Eastern Corn Belt with several states' good-to-excellent ratings well below 2014 levels.

Figure 2. 2016 Projected Corn Yield Minus 2014 Actual Corn Yields
Source: USDA and author's calculations



While Eastern Corn Belt states represent less than 10 percent of total U.S. corn production, stress in these states increases uncertainty on the magnitude of final yield levels. As a result, a repeat of 2014 where final corn yields eventually retreat from their early harvest USDA estimates remains a possibility. Drought conditions in the Northeast Great Lakes region, and anecdotal reports of tip-back issues in corn, lend support to expectations for an eventual reduction in corn yields. It is too early to tell whether soybean yields will remain at these record high levels.

Figure 3. Corn and Soybean Projected Yields for 2014/15 and 2016/17 Marketing Years
Source USDA



Global corn production in 2015/16 is reduced slightly due to reduced expectations for the size of Brazil's second crop. For 2016/17, production is seen higher on the back of increased U.S. and Argentinian production and lower European Union production. Global ending stocks for corn are projected at 220.81 million metric tons. For soybeans, 2015/16 ending stocks are projected to be slightly higher at 73 million metric tons and 2016/17 stocks are increased due to higher U.S. production to 71.24 million metric tons.

Total Use, Ending Stocks, and Prices

Expectations for record corn and soybean crops were partially offset by increases in both domestic and foreign use of old- and new-crop corn and soybeans. Specifically, lower corn and soybean prices are expected to facilitate increased export opportunities. USDA's Foreign Agricultural Service weekly export sales through Aug. 4, 2016 indicate total corn export commitments at 1.953 billion bushels—304 million bushels of this total are yet to be shipped (see chart). This total was above the previous WASDE projection for 1.9 billion bushels exported. As a result, USDA increased projections for corn exports during the 2015/16 and 2016/17 marketing years by 25 and 125 million bushels, respectively. If realized, 2016/17 projected exports of 2.175 billion bushels would be the highest total since the 2007/08 marketing year.

Similarly, weekly export sales through Aug. 4, 2016 indicate total soybean export commitments at 1.937 billion bushels—201 million bushels of this total are outstanding and could be shifted into the next marketing year (see chart). However, the strong export pace—especially in recent weeks—led USDA to increase 2015/16 and 2016/17 soybean exports by 85 and 30 million bushels, respectively. If realized, 2016/17 exports of 1.950 billion bushels would be a record.

Increased exports and higher projected uses in domestic categories such as feed and residual use (generally higher with big crops), crushing and ethanol were not large enough to offset the

increased supplies. As a result, projected new crop ending stocks were increased and price projections for new crop corn and soybeans were lowered to $3.15 and $9.10 per bushel, respectively.

USDA increased the 2016/17 all wheat yield estimate to 52.6 bushels per acre and pushed the crop size to 2.3 billion bushels. The increased crop size was offset by higher foreign and domestic use of wheat, pushing ending stocks lower by 5 million bushels. Despite slightly tighter domestic supplies the marketing year average price for wheat continues to erode, down 10¢ per bushel to $3.70.

Summary

With record corn and soybean crops expected alongside a bumper wheat crop, grain storage may become tight as the pace of harvest accelerates. Storage constraints could push cash prices even lower as grain competes for non-farm storage. Lower prices may facilitate increased consumption in both domestic and foreign channels—helping to draw down stock levels and increase prices from their current projections. Additional positive price movement would materialize if the harvest size is not as good as currently anticipated (fewer acres or lower yields). Downside price risk remains a concern if the size of the crop continues to increase without offsetting gains in total use. From this point it will be important to monitor both the pace of harvest and consumption when forming expectations of new crop prices.

Table 1. U.S. Corn Supply and Use

	2015/16 Aug Proj.	2016/17 July Proj.	2016/17 Aug Proj.
Area Planted (mil. acres)	88.0	94.1	94.1
Area Harvested (mil. acres)	80.7	86.6	86.6
		Bushels	
Yield per Harvested Acre	168.4	168	175.1
		Million Bushels	
Beginning Stocks	1,731	1,701	1,706
Production	13,601	14,540	15,153
Imports	65	40	50
Supply, Total	15,397	16,281	16,909
Feed and Residual	5,200	5,500	5,675
Food, Seed & Industrial	6,567	6,650	6,650
Ethanol & by-products	5,200	5,275	5,275
Domestic, Total	11,767	12,150	12,325
Export	1,925	2,050	2,175
Use, Total	13,692	14,200	14,500
Ending Stocks	1,706	2,081	2,409
Avg. Farm Price	$3.60	$3.10-$3.70	$2.85-$3.45
Stocks-to-Use	12.5%	14.7%	16.6%

Table 2. U.S. Soybean Supply and Use

	2015/16 Aug Proj.	2016/17 July Proj.	2016/17 Aug Proj.
Area Planted (mil. acres)	82.7	83.7	83.7
Area Harvested (mil. acres)	81.8	83.0	83.0
		Bushels	
Yield per Harvested Acre	48.0	46.7	48.9
		Million Bushels	
Beginning Stocks	191	350	255
Production	3,929	3,880	4,060
Imports	25	30	30
Supply, Total	4,145	4,260	4,346
Crushings	1900	1,925	1,940
Seed	1880	1,920	1,950
Export	97	95	95
Residual	12	30	31
Use, Total	3889	3,970	4,016
Ending Stocks	255	290	330
Avg. Farm Price	$8.95	$8.75-$10.25	$8.35-$9.85
Stocks-to-Use	6.6%	7.3%	8.2%

Table 3. U.S. Wheat Supply and Use

	2015/16 Aug Proj.	2016/17 July Proj.	2016/17 Aug Proj.
Area Planted (mil. acres)	54.6	50.8	50.8
Area Harvested (mil. acres)	47.1	44.1	44.1
		Bushels	
Yield per Harvested Acre	43.6	51.3	52.6
		Million Bushels	
Beginning Stocks	752	981	981
Production	2,052	2,261	2,321
Imports	113	120	115
Supply, Total	2,917	3,362	3,417
Food	957	963	968
Seed	68	69	69
Feed and Residual	135	300	330
Domestic, Total	1161	1,332	1,367
Exports	775	925	950
Use, Total	1936	2,257	2,317
Ending Stocks	981	1,105	1,100
Avg. Farm Price ($/bu)	$4.89	$3.40-$4.20	$3.35-$4.05
Stocks-to-Use	50.7%	49.0%	47.5%

Table 4. U.S. Rice Supply and Use

	2015/16 Aug Proj.	2016/17 July Proj.	2016/17 Aug Proj.
Area Planted (mil. acres)	2.61	3.21	3.21
Area Harvested (mil. acres)	2.58	3.19	3.19
		Pounds	
Yield per Harvested Acre	7,470	7,680	7659
		Million Hundredweight	
Beginning Stocks	48.5	40.9	39.4
Production	192.3	245.0	244.3
Imports	24.0	24.0	24.0
Supply, Total	264.9	309.9	307.7
Domestic & Residual	121.0	138.0	138.0
Exports, Total	104.5	115.0	115.0
Rough	36.7	37.0	37.0
Milled (rough equiv.)	67.8	78.0	78.0
Use, Total	225.5	253.0	253.0
Ending Stocks	39.4	56.9	54.7
Avg. Milling Yield (%)	70.00	70.00	70.00
Avg. Farm Price ($/cwt)	$12.30	$11.20-$12.20	$10.40-$11.40
Stocks-to-Use	17.4%	22.5%	21.6%

Table 5. U.S. Cotton Supply and Use

	2015/16 Aug Proj.	2016/17 July Proj.	2016/17 Aug Proj.
Area Planted (mil. acres)	8.58	10.02	10.02
Area Harvested (mil. acres)	8.07	9.30	9.53
Yield per Harvested Acre (lbs.)	766	815	800
		Million. 480 Lb. Bales	
Beginning Stocks	3.70	3.90	3.90
Production	12.89	15.80	15.88
Imports	0.04	0.01	0.01
Supply, Total	16.62	19.71	19.79
Domestic Use	3.50	3.60	3.60
Exports, Total	9.20	11.50	11.50
Use, Total	12.70	15.10	15.10
Unaccounted	0.02	0.01	-0.01
Ending Stocks	3.90	4.60	4.70
Avg. Farm Price	$58	$52-$66	$57-$69
Stocks-to-Use	30.7%	30.5%	31.1%