IOWA STATE UNIVERSITY
Extension and Outreach

Iowa Farm Outlook

Department of Economics
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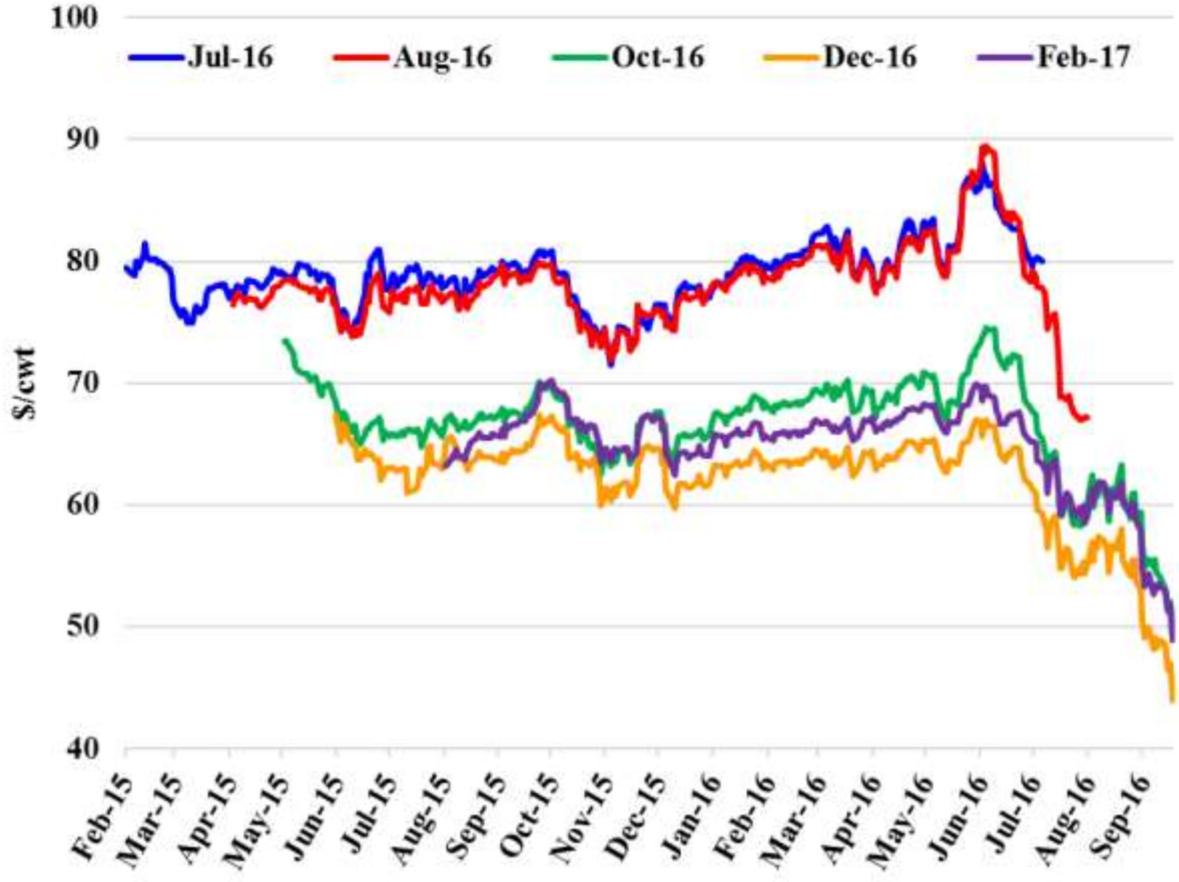
Hogs and Pigs Inventory Topples Expectations

The market adage "buy the rumor, and sell the fact" comes to mind when reviewing the hog complex in 2016.

Hog futures posted strong gains for the first half of the year on expectations that strong export demand from China and Hong Kong would support hog values through the summer months (figure 1). Memories were still fresh of the big surge in exports to China in 2011 which helped underpin hog values that year. Deferred hog contracts also gained support as market participants opted to increase the entire complex. Those that held a bullish view this year, often pointed to the export story as one of the key drivers.

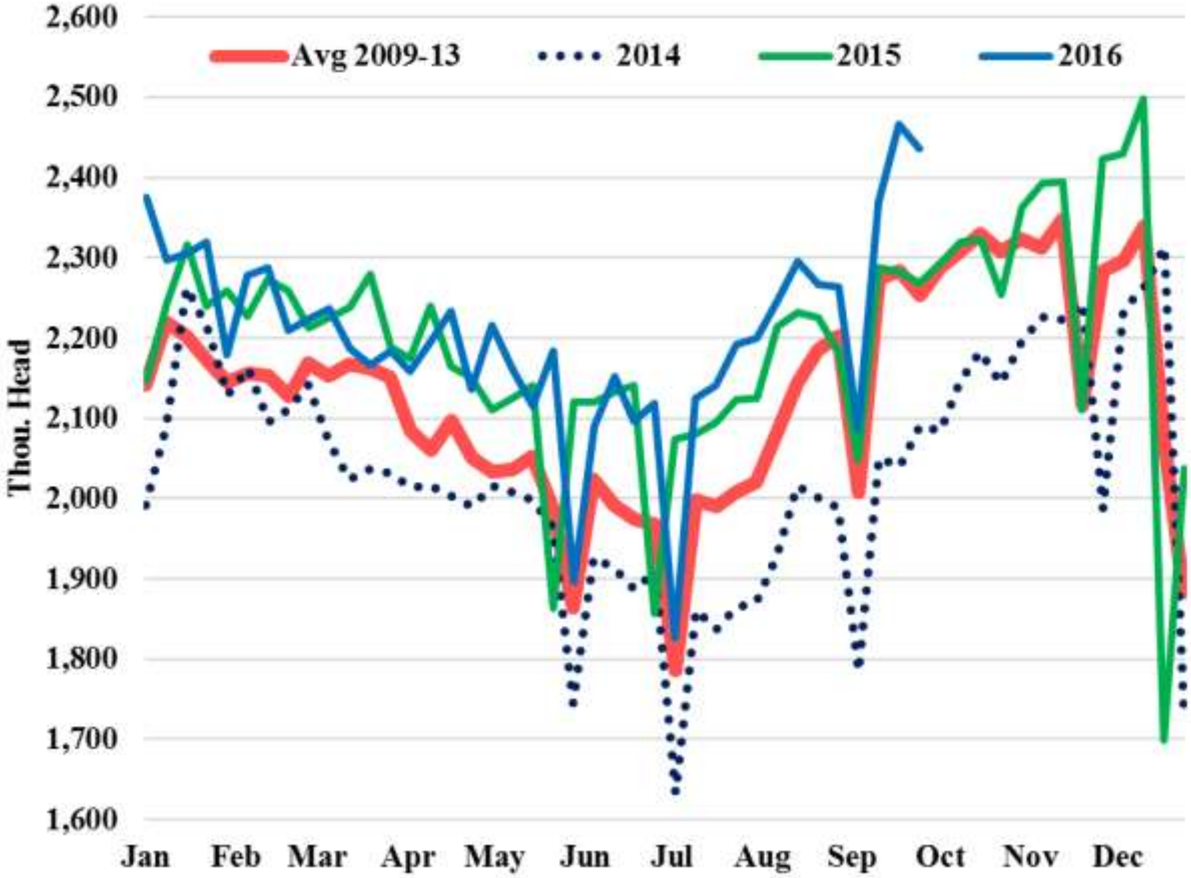
Figure 1. Daily Lean Hog Futures Settlement Prices, as of September 30, 2016



Data source: CME Group, compiled by BarChart.com.

The demand factor is always an important driver but it is important, in my view, to first have a good handle of the supply dynamics. There was no question that U.S. pork supplies would be plentiful in 2016. Adequate slaughter capacity this fall is a major concern. Since mid-July slaughter has been 3.5% over last year (figure 2). This includes the past two weeks at 8.0% and 7.4% above the same period a year ago. The week at plus 8.0% represented the largest weekly slaughter for that time of year and the third largest ever. The selloff in lean hog futures coincided almost directly with the spike in hog slaughter, and brings about worries that supplies on the ground could be bigger than previous inventory counts have suggested.

Figure 2. Hog Slaughter, Federally Inspected, Weekly



Data source: USDA-AMS.

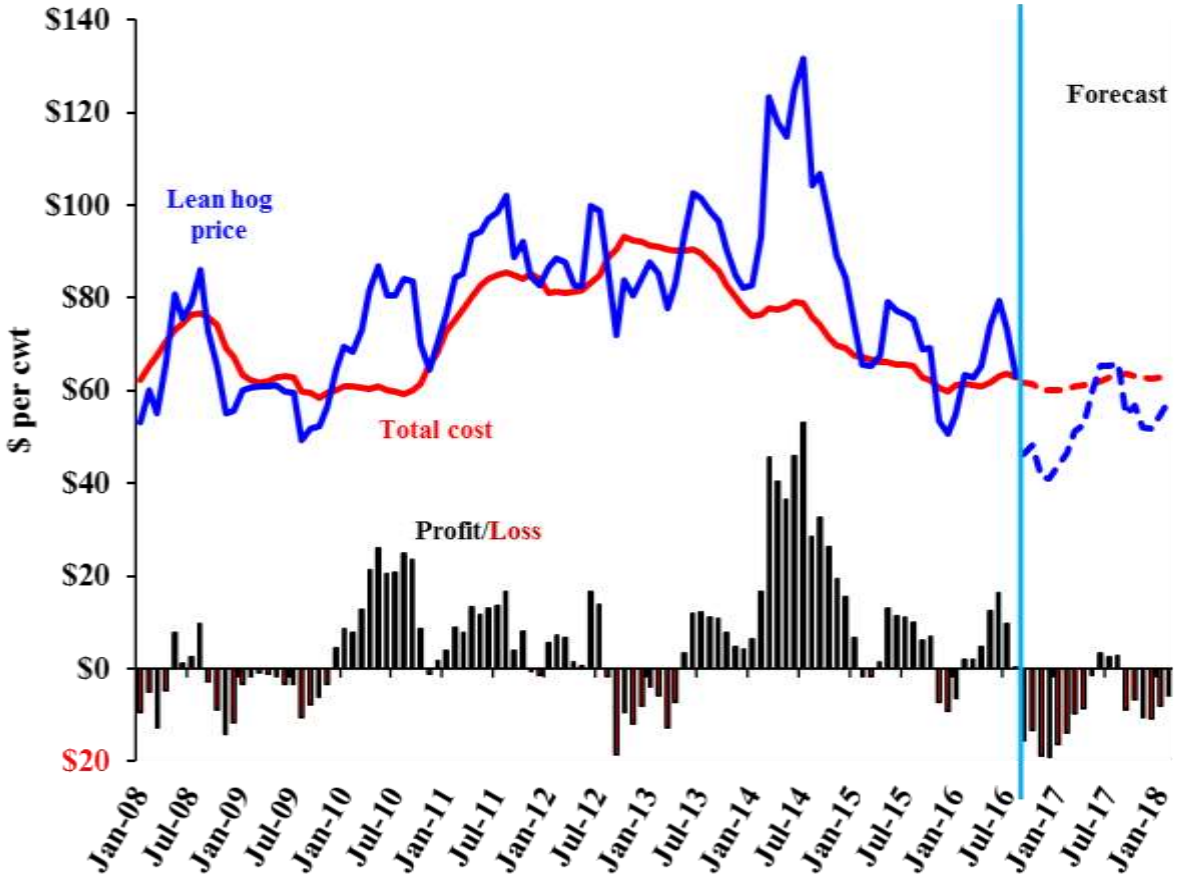
Thanks to stable pork demand, hog prices have not been as low as one might expect given the record level of slaughter. Domestic pork demand has seen gains in 14 of the last 15 quarters, including up 1% in the second quarter of 2017. The greatest threat to domestic pork demand in the year ahead is likely competing meat prices. Total red meat and poultry supplies are expected up 4%—the largest aggregate supply ever. With meat supplies expanding for all proteins, exports will take an increasingly important role.

U.S. pork exports so far this year have been steady but certainly a lot less than market participants were expecting (hoping) for. Total shipments through July, on a carcass weight basis, were 0.4% lower than a year ago. Growth in exports to China continue to support the market but have not been enough so far to count on explosive growth going forward, which would help buoy futures prices. U.S. pork exports to mainland China and Hong Kong in 2016 have been 122% more than a year ago. What this does show is that U.S. producers and packers have made significant progress in expanding the supply of hogs that are not fed Ractopamine so as to increase the volume of pork available for export to China. Exports to other markets, however, have struggled. Shipments to Mexico, Japan, and South Korea are down 6.1%, 12.1%, and 30.3%, respectively, compared to year ago levels.

Most forecasts predict an increase in pork exports in 2016 and again in 2017. Increased product availability (and lower prices) will do their part but a stronger U.S. dollar could upend projections for much larger exports. A stronger U.S. dollar is negative for U.S. meat exports and it tends to impact pork more than other meats since the U.S. exports a larger share of pork than of any other protein.

Pork producer margins are currently caught between the bad news of lower pork prices from supplies out pacing demand and the good news of lower feed prices from another bin-buster corn and soybean crop. Total costs are at the lowest levels since 2010 while hog prices are approaching seven year (2009) lows (figure 3). Lower costs are an impetus for expansion. However, the pork industry has already expanded to the point that prices have been driven down to the cost of production. Prices are forecasted to be below cost of production for 15 of the next 18 months.

Figure 3. Monthly Estimated Returns to Farrow to Finish Production in Iowa



Data source: USDA-AMS.

Hog futures continue to imply a heavy discount for fourth quarter 2016 and into 2017 as market participants price the effect of record number of hogs coming to slaughter. USDA's latest hogs and pigs inventory report, released September 30, does nothing to change this outlook. If anything if feeds the bears in the hog complex.

Before even going through the latest estimates, it's important to point out that larger than expected recent hog slaughter prompted USDA to revise previous hog numbers upward. The December 1, 2015, all hogs and pigs estimate saw a boost of 50,000 head. The March 1, 2016 estimate was increased by 650,000 head. The December-February 2016 pig crop was upped 556,000 head. An extra 40,000 head was added to the June 1, 2016 estimate. Captured in these upward revisions is the continuous underassessment of the number of sows farrowing and pig crop sizes.

From producer surveys USDA tallied the September 1 all hogs and pigs inventory at 70.851 million, record large and up 2.4% compared to last year (table 1). The market hog inventory was pegged at a record large 64.835 million, up 2.6% from a year earlier. The 6.016 million head breeding herd was up 0.5% compared to a year ago and was the largest since December 2008. The combination of more sows farrowing and more pigs per litter has bolstered quarterly pig crops. Each of the last four quarters have been records for pigs per litter and pig crops.

Iowa's inventories of all hogs and pigs and market hogs were both also record large. In Iowa breeding herd expansion remains restrained. The 980,000 head breeding herd was down 2.0% compared to a year ago. This is the third consecutive quarter that the Iowa breeding herd has remained under one million head.

Table 1. USDA Quarterly Hogs and Pigs Report Summary

	United States				Iowa		
	2015	2016	2016 as % of '15		2015	2016	2016 as % of '15
Sep 1 inventory *							
All hogs and pigs	69,185	70,851	102.4		21,500	22,000	102.3
Kept for breeding	5,986	6,016	100.5		1,000	980	98.0
Market	63,200	64,835	102.6		20,500	21,020	102.5
Under 50 lbs	20,741	21,090	101.7		5,440	5,590	102.8
50-119 lbs	18,496	18,851	101.9		6,700	6,830	101.9
120-179 lbs	12,855	13,325	103.7		4,880	5,000	102.5
180 lbs and over	11,108	11,568	104.1		3,480	3,600	103.4
Sows farrowing **							
Jun - Aug	3,017	3,024	100.2		510	500	98.0
Sep - Nov [1]	2,929	2,928	100.0		510	530	103.9
Dec - Feb [2]	2,927	2,925	99.9		500	490	98.0
Jun - Aug pigs per litter	10.39	10.58	101.8		10.80	11.00	101.9
Jun - Aug pig crop *	31,343	31,983	102.0		5,508	5,500	99.9

Full report: http://usda.mannlib.cornell.edu/usda/current/HogsPigs/HogsPigs-09-30-2016.pdf
* 1,000 head; **1,000 litters; [1] 2016 intentions; [2] 2017 intentions.

Lower hog and pig prices have likely raised the red flag on further expansion, at least for now. However, longer-term additional expansion is still possible. Low feed grain price projections for the coming year(s) and the expectation of increased packer competition for slaughter pigs as new packing plants begin coming on-line set the stage for possible growth. Ultimately, how large inventories can and will expand will largely depend on growth in domestic and export pork demand.

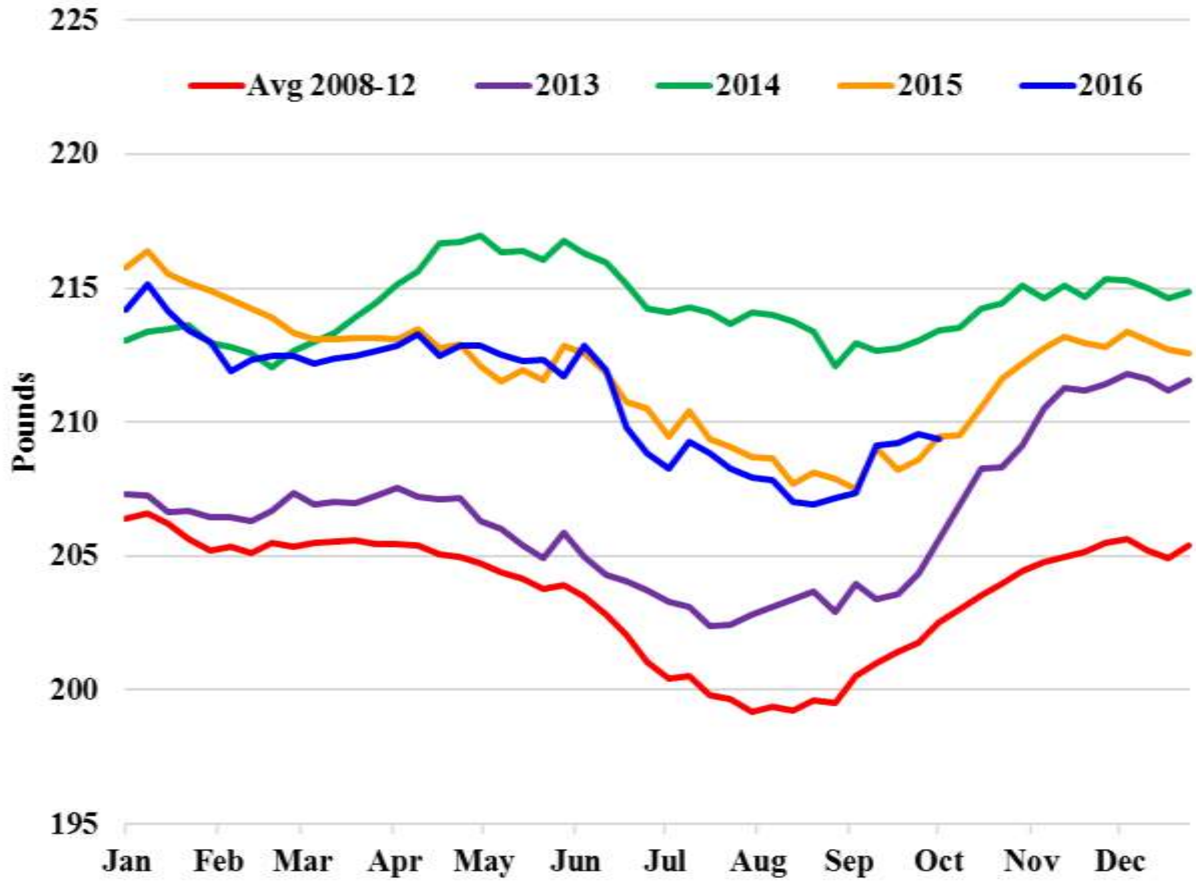
Market hogs weighing over 180 pounds were pegged at 4.1% higher than a year ago. These are the hogs that will be slaughtered from September 1 through mid-October. In September, however, slaughter was 5.3% above a year ago. For this front-end market hog estimate to jive, hogs would have been pulled forward, weights would have decreased, and a decline in early October slaughter numbers would be expected. An increase in slaughter and weights would imply supplies on the ground are bigger than was suggested by this report.

The weight of barrows and gilts marketed by producers is currently running at around 209 pounds per carcass, about the same as it was last year but about 2 pounds higher than what they were in August (figure 4). It is not unusual for hog weights to increase into September but the pace of the increase in recent weeks has exceeded expectations especially if hog marketing were in fact pulled forward.

The next two market hog weight categories will be watched closely given worries about processing capacity availability later this year. Mid-October through mid-November slaughter levels will be determined by the weight group, 120 to 179 pounds. They were pegged at 3.7% over last year. Market hogs weighing 50 to 119 pounds were 1.9% above a year ago and would be slated for mid-November through December marketings. In other words, the peak slaughter time of the year may run 2% to 4% over last year's levels. The other weight group, market hogs under 50 pounds, which determines the January through mid-February slaughter was 1.7% above last year. Weights will be a critical factor in the exact timing and magnitude of these slaughter runs.

Essentially slaughter numbers for this fall and early winter are pretty much locked in place—all market participants can do is react to pricing opportunities.

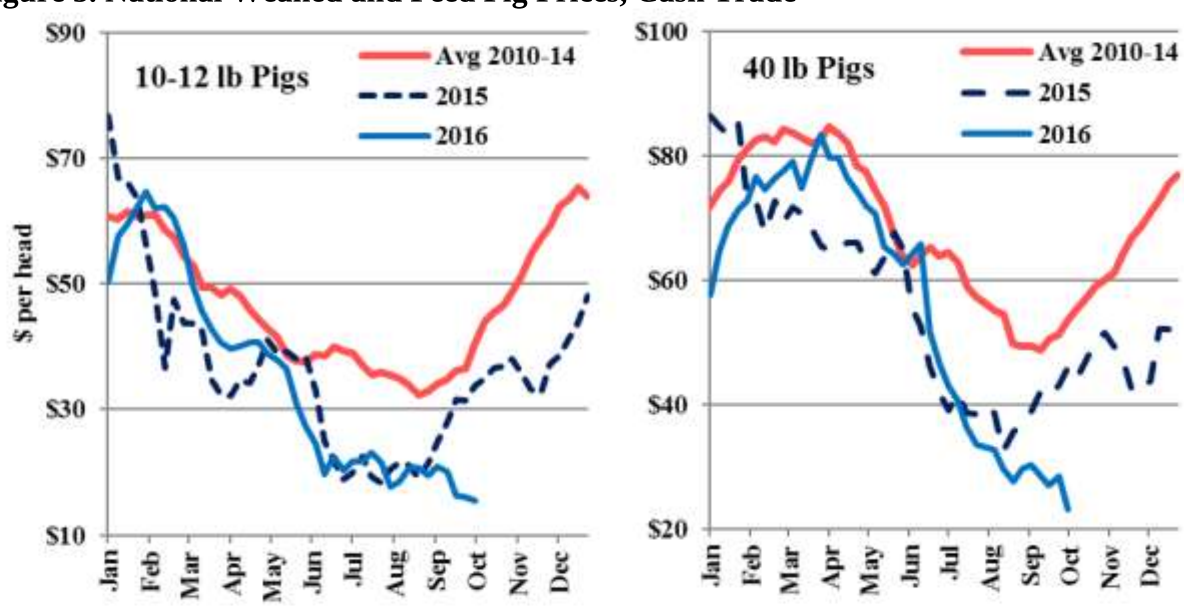
Figure 4. Hog Carcass Weights, Producer Owned, National Prior Day Slaughter Report



Data source: USDA-AMS.

One of the signals to watch for signs of anticipated future profits (or losses) is weaned and feeder pig prices. They relay how the industry is pricing pigs that won't be slaughtered for approximately 130 to 170 days. The National Direct Delivered Report Feeder Pig Report includes pigs that are changing ownership. Weaned and feeder pig prices can be a very good reflection of what purchasers believe the profitability of their production will eventually be. Bidders go after weaned and feeder pigs in times of anticipated profits, driving up their prices and shun them when losses are expected to run deep sending their prices plummeting. The spot or cash market would represent these 'opportunity' finishers.

Figure 5. National Weaned and Feed Pig Prices, Cash Trade



Data source: USDA-AMS.

Historically the cash price begins to decline in the first couple months of the year, with further declines until late summer when they once again begin their yearly climb. This week cash prices averaged $15.46 per head for 10 to 12-pound weaned pigs and $23.22 per head for 40-pound feeder pigs (figure 5). The lowest prices paid for a set of pigs this year. This suggests the market is long on pig numbers, facility space will be somewhat short in the coming months and pig prices will likely carry a heavy discount into 2017. Another reason why producers will be cautious about further expansion in the near-term.

Commercial slaughter and price forecasts

Table 2 contains the Iowa State University price forecasts for the next four quarters and the quarterly average futures prices based on September 30, 2016 settlement prices. The futures price forecasts are adjusted for a historic Iowa/Southern Minnesota basis. The table also contains the projected year over year changes in commercial hog slaughter. Taking the report as is, using pig crop numbers for March-May and June-August and farrowing intentions for September-November and December-February with commensurate pigs saved per litter to project supplies, expect hog slaughter in 2016.Q4 to be up 2.55%, 2017.Q1 slaughter to be up 2.04%, 2017.Q2 slaughter to be up 0.95%, and 2017.Q3 slaughter to be up 0.96% compared to previous year levels.

Table 2. Commercial Hog Slaughter Projections and Lean Hog Price Forecasts, 2016-17

	Year-over-Year Change In Commercial Hog Slaughter (percent)	ISU Model Price Forecast, Negotiated IA/So MN ($/cwt)	CME Futures (9/30/16) Adjusted for Negotiated IA/So MN Basis ($/cwt)
Oct-Dec 2016	3.26	46-50	44.34
Jan-Mar 2017	2.66	52-56	48.61
Apr-Jun 2017	0.95	64-68	60.32
Jul-Sep 2017	0.96	63-67	62.17

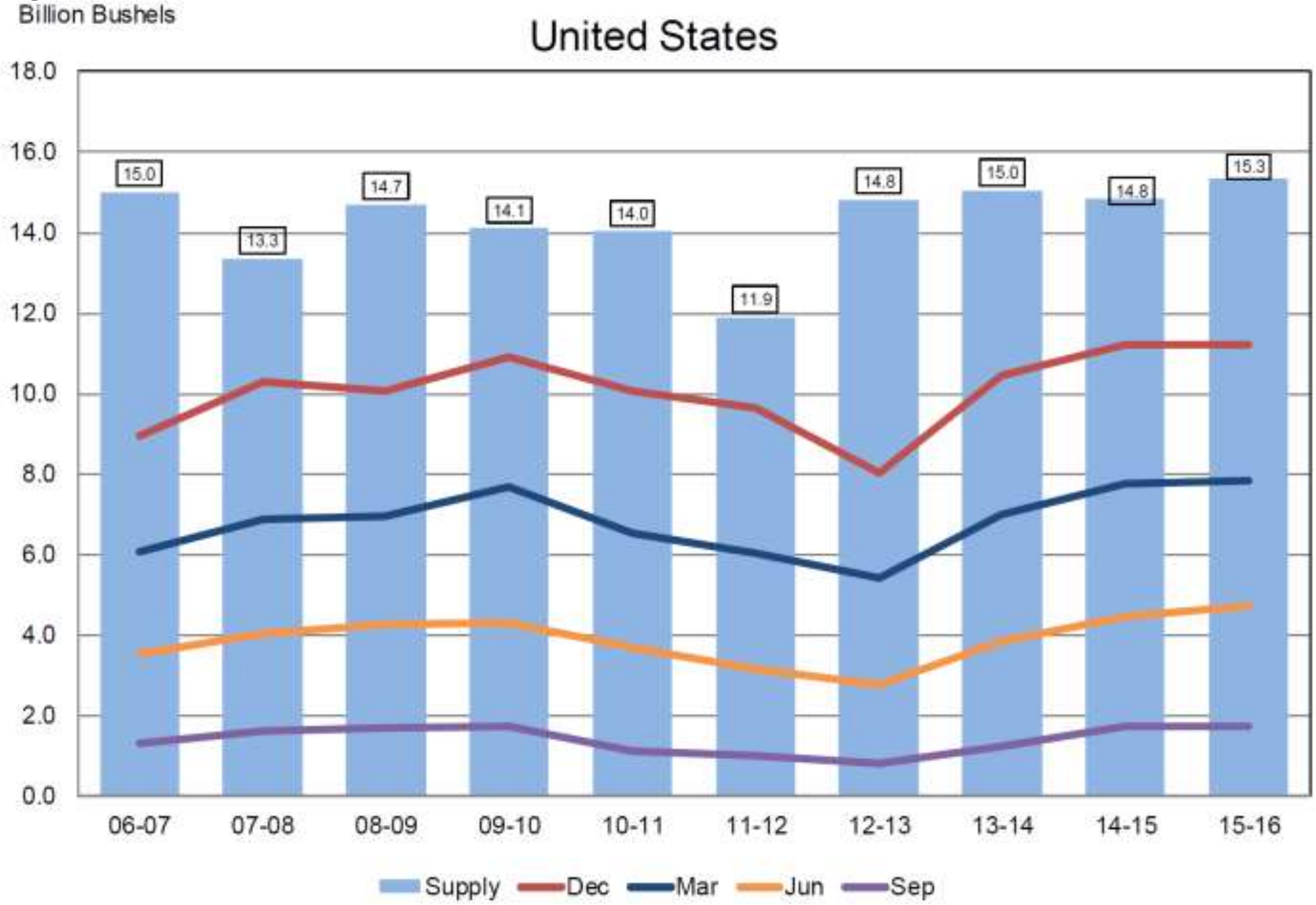
Lee Schulz

Good Demand to Close Out the Marketing Year

While the latest Grain Stocks report showed crop stocks are continuing to build, the growth was small and crop demand remains strong as we enter the harvest season. Harvest in the western Corn Belt has been delayed for both corn and soybeans, but farmers have been able to move through more fields in the eastern Corn Belt. The general pattern I'm hearing from producers is that corn yields are good, but not a record, but soybean yields could definitely exceed record levels. And with plenty of acreage to harvest, production records for both crops will fall. So we'll begin the 2016/17 marketing year with record supplies once again.

Figure 1 shows the flow of corn through the supply chain over the past 10 years. After harvest last year, we began the 2015/16 marketing year with a record 15.3 billion bushels of corn. But over the course of the past 12 months, we used roughly 13.7 billion bushels for feed, ethanol, exports, and other uses. That puts corn usage at record levels as well. Traditionally, corn usage gradually slows as we progress through the marketing year. Feed usage and exports are usually the highest in the six months after harvest, then trail off in the late spring and summer as forage availability offsets corn feeding and South American production enters the international marketplace. This year, corn feed usage and export demand remained strong throughout the summer. Nearly 3 billion bushels of corn disappeared in June-August time period. And corn ending stocks settled out just 7 million bushels above last year's level. But given the current USDA projection for corn production this year, U.S. corn supply will exceed 16.8 billion bushels. So this stronger demand pattern will need to continue or corn stocks could build significantly.

Figure 1. Corn stocks (Source: USDA-NASS).



Soybean supplies and usage follow a similar storyline. We began the marketing year with record supplies of 4.12 billion bushels. Soybean usage counter-seasonally strengthened at the end of the marketing year as crush and export usage surged over the late spring and summer. And ending stocks finished just 6 million bushels above last year's level. With total supplies this year projected at 4.4 billion bushels of soybeans, the market needs soybean demand to hold firm. However, relative to corn, U.S. soybean stocks remain fairly low.

One of the big keys to the large disappearance for both corn and soybeans at the end of the marketing year was exports. The combination of relatively short South American production and concerns about crop quality there as well limited South American export sales and allowed U.S. exports to continue to move at a brisk pace. That accelerated export pace has continued into the new marketing year. Figures 3 and 4 show the export sales changes for the major international markets for corn and soybeans. Corn export sales are up 76% so far this marketing year. That's roughly 300 million bushels ahead. The export surge has broad-based support. As Figure 3 shows, most of the major markets are taking in more U.S. corn. China is the one exception, but their corn trade with us has been small over the past couple of years.

But for soybeans, China remains the dominant market. And that market is back in growth mode. Chinese soybean purchases are up 100 million bushels from last year at this time. We have seen some pullback from the European Union and Japan, but other major markets, such as Mexico, Indonesia, and Taiwan, have picked up the slack. Overall, soybean export sales are up 27% this year. This is good news for the crop markets and will help move some of the massive crop supplies off of the balance sheet.

Figure 2. Soybean stocks (Source: USDA-NASS).

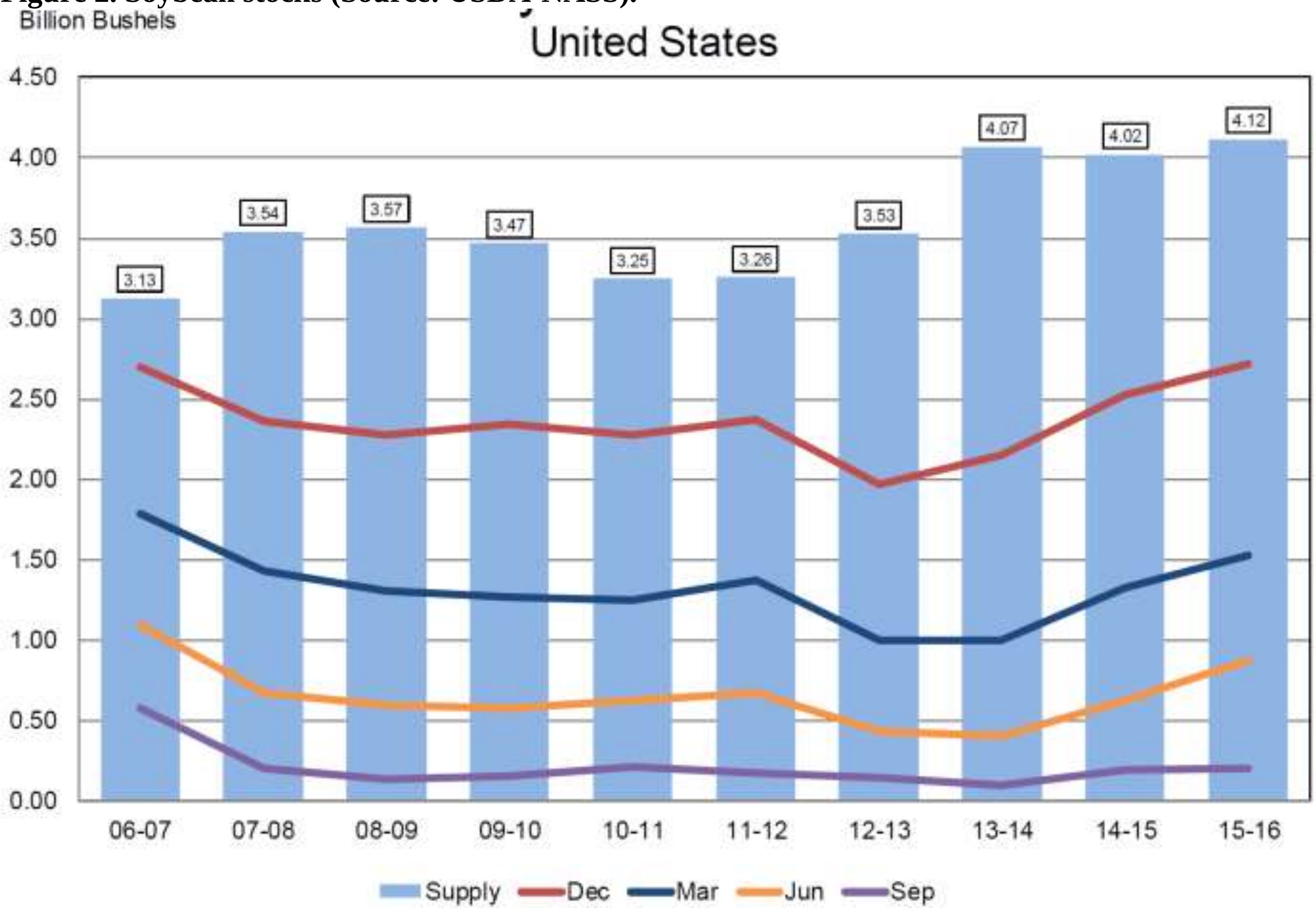


Figure 3. Corn export sales changes (Source: USDA-FAS).

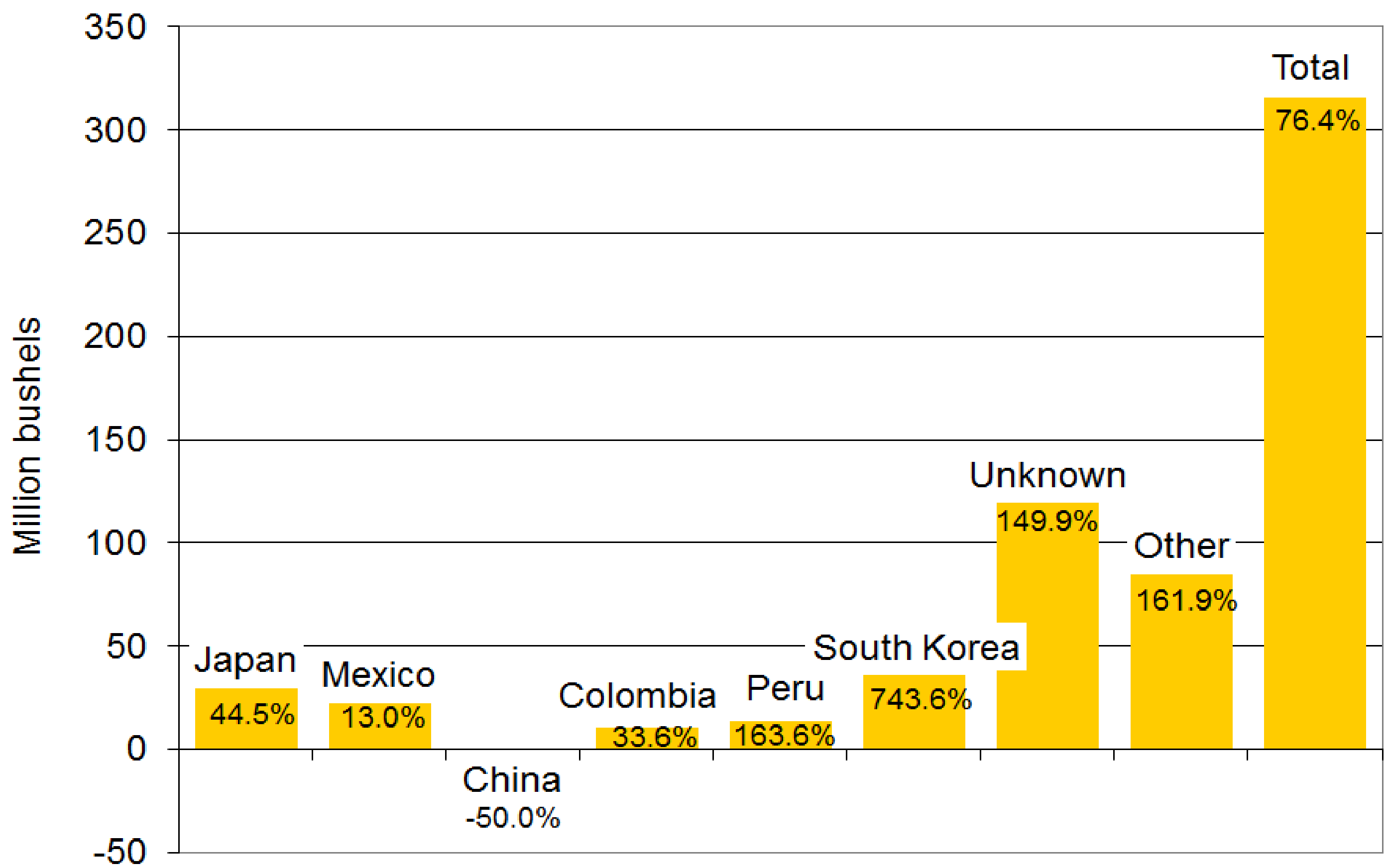
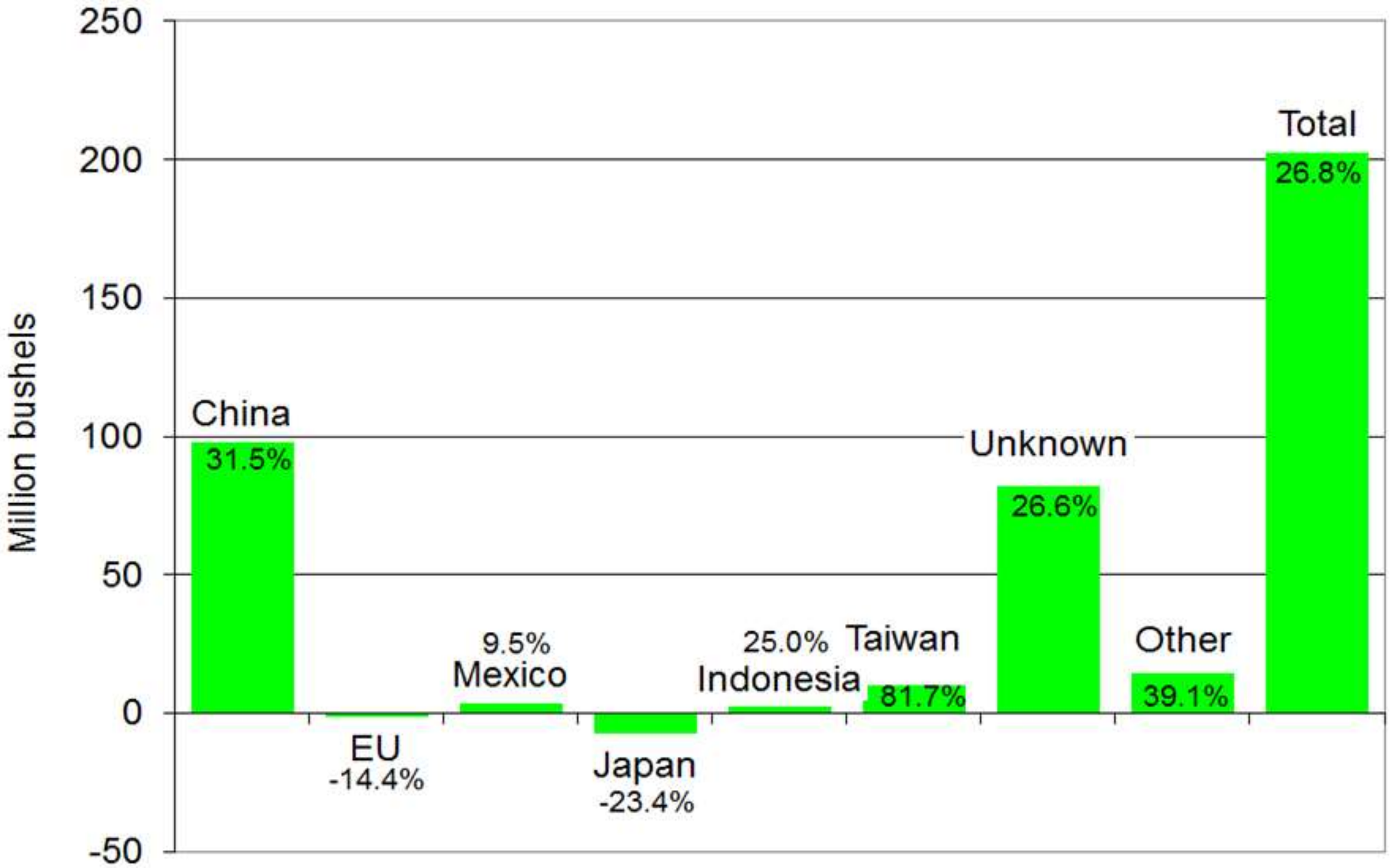


Figure 4. Soybean export sales changes (Source: USDA-FAS).



In summary, over the past marketing year, production equaled usage. And given the large crops last year, that was somewhat unexpected. The question for this marketing year is can that happen again. USDA's current estimates suggest not. The projected record corn and soybean crops are larger than the projected growth in crop usage. So crop prices have fallen. But the futures markets for both crops provide some hope for higher prices in the spring. Figures 5 and 6 show the futures prices for corn and soybeans at the end of September. And the large numbers in the figures are estimates of the season-average cash prices for the 2016/17 and 2017/18 marketing years. Corn futures are providing carry all the way out until harvest time in 2018. That continual stair-step up is being driven by the strong demand for corn from both domestic and international sources and the thought that corn acreage in the U.S. will decline next spring. And while the price recovery is substantial, the projected season-average price for 2017/18 remains below current production costs. While cost estimates are likely to decline for next year's planting, corn production costs will still be in the high $3 range. So corn margins will remain challenging for another year, if not longer.

Soybean futures also have developed some carry as well. But the amount of carry is relatively small and the carry is not sustained between marketing years. With many acreage projections for next year showing even more soybean acres next spring, soybean futures for the 2017 crop retreat back to nearby levels. And season-average price estimates for both the 2016 and 2017 soybean crops hover just over $9 per bushel. With production costs still near $10 per bushel, projected soybean margins are no better than corn's.

So the story remains the same. But crop demand is providing some support and some hope for better returns if supplies fall.

Figure 5. Corn prices (Source: CME Group for futures prices).

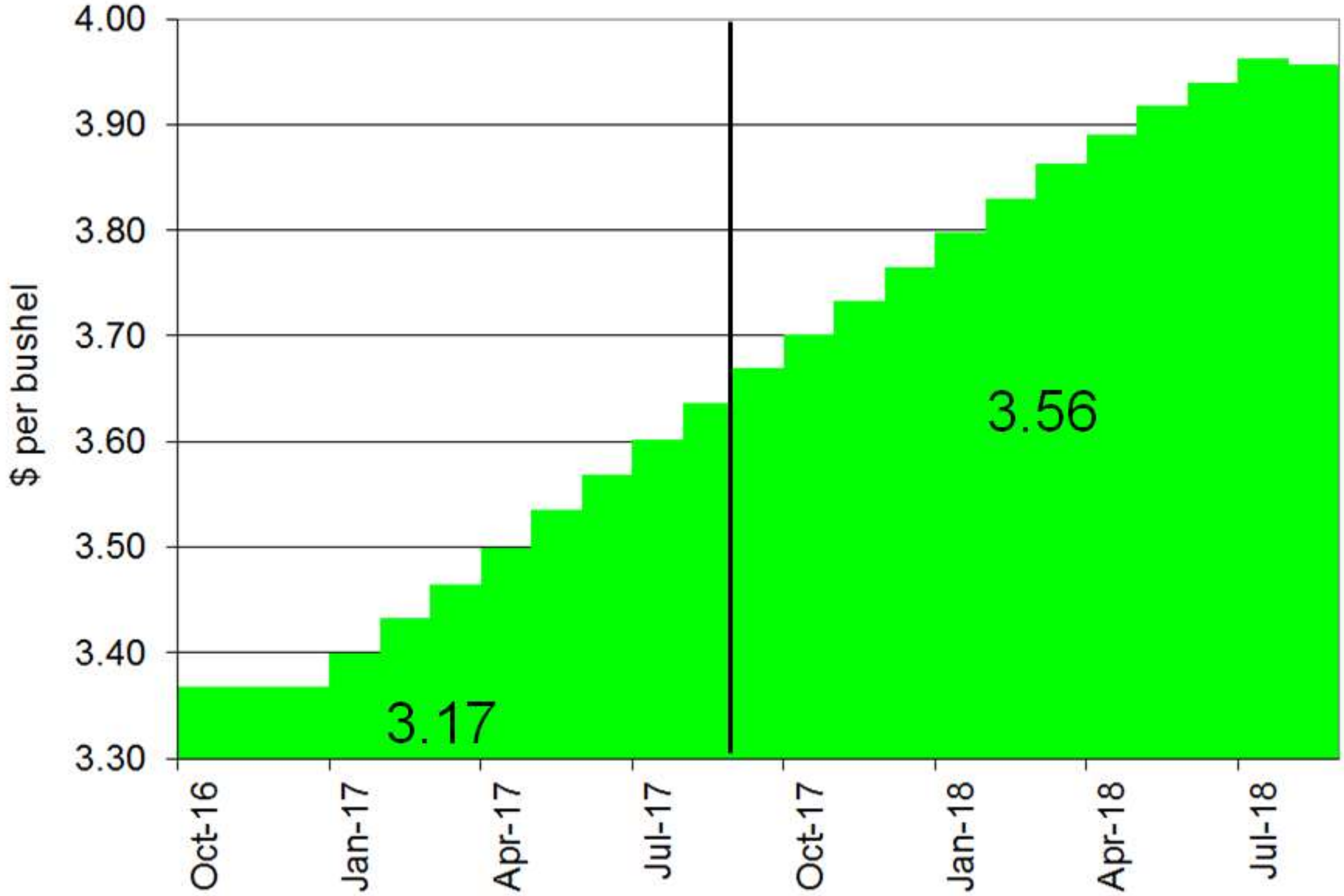
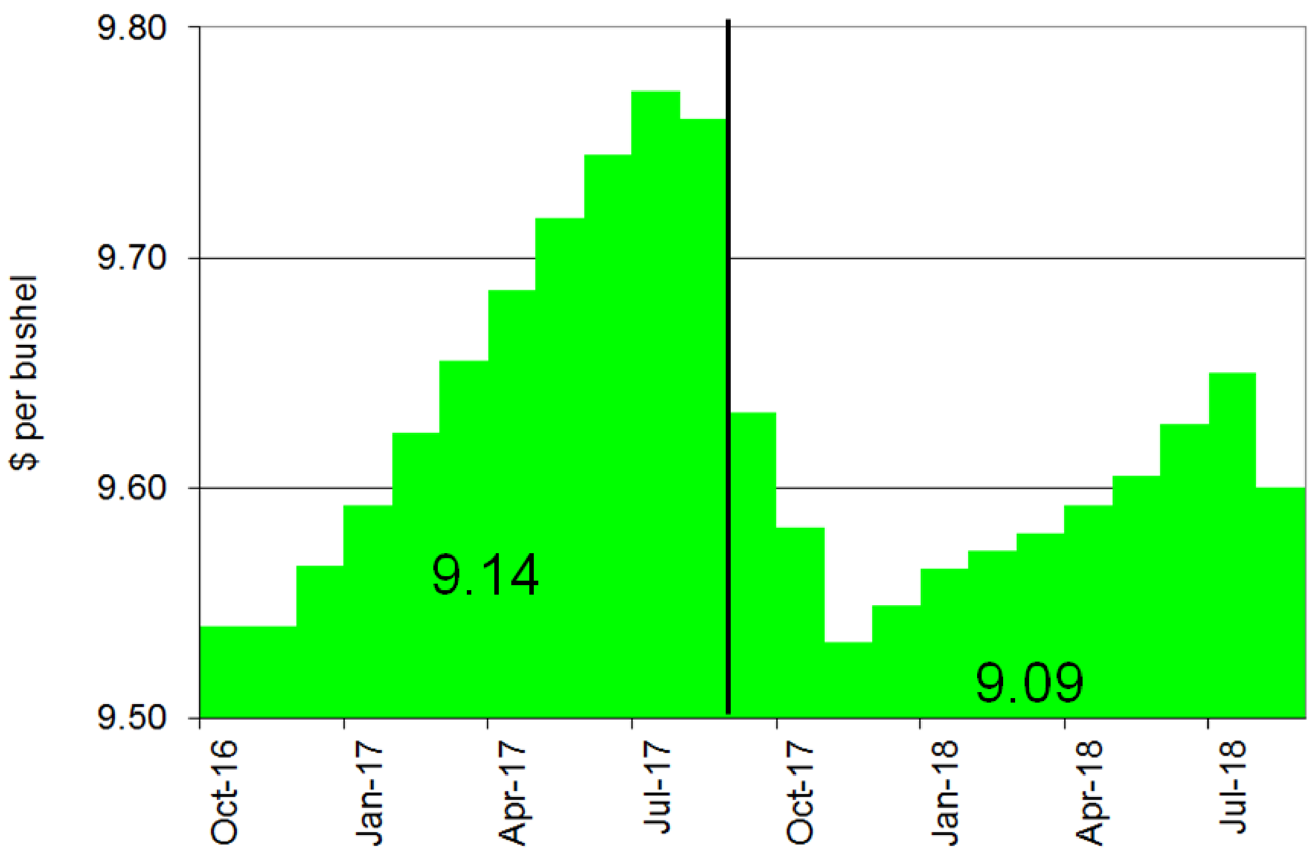


Figure 6. Soybean prices (Source: CME Group for futures prices).



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