IOWA STATE UNIVERSITY
Extension and Outreach

Iowa Farm Outlook

Department of Economics
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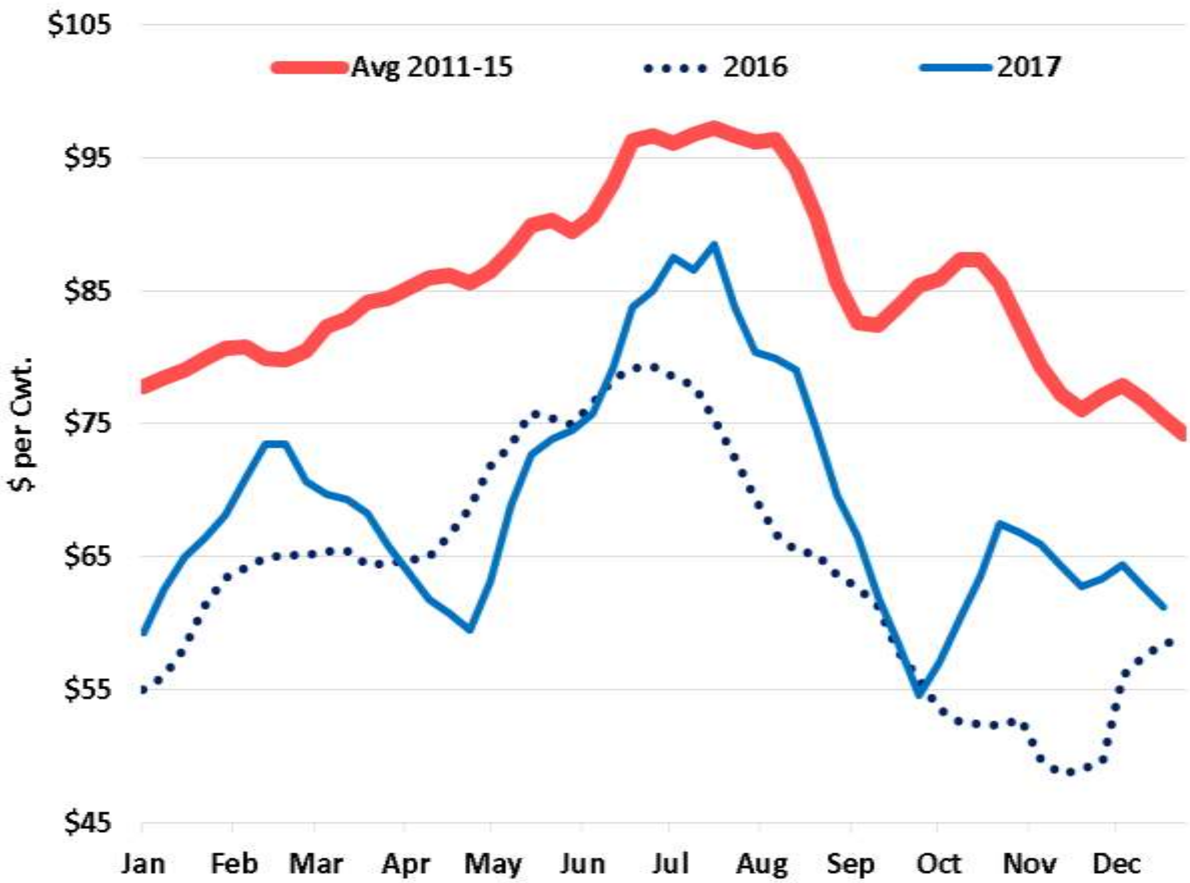
How will hog and pork markets be different in 2018?

A harmonizing set of pork supply and demand conditions converged in 2017 to bring higher than expected prices. Breeding/farrowing operations remained profitable and were big beneficiaries of the fall rally in feeder pig prices. Finishing operations also made money in 2017. Costs were lower compared to 2016 and hog prices were higher. Iowa State University estimates put 2017 farrow to finish returns at the second highest since 2011, only lower than 2014's phenomenal level.

Calendar year 2017 was full of price runs for Iowa/Minnesota barrows and gilts. January and April both seen prices at $59 per cwt with a price surge to $73 in late February (Figure 1). Prices peaked in mid-July at $88 before bottoming in late September at $55. A fall rally took prices to $67 in late October before easing to the low $60s. They averaged $69.35 for the year.

Figure 1. Weekly Barrow and Gilt Prices, Iowa/Minnesota, Weighted Average Base Price for All Producer Sold Purchase Types



Data Source: USDA-AMS

Surging second half demand for feeder pigs from finishers was one of 2017's market surprises. Favorable feed prices and strong lean hog futures prices for 2018 provide the foundation for excellent pig demand and favorable feeder prices.

On an annual basis 2017 feeder pig prices averaged above 2016's. National prices for formula and cash early weaned pigs (10 to 12 pounds) and feeder pigs (40 pounds) averaged $38.40 and $57.09 per head, respectively.

Prices in 2018 should average higher than in 2017. That's positive, considering production is rising. Several factors may have a significant impact on hog and pork markets in 2018 and may change current price expectations. These factors bear close watching in the coming year.

Pork Production

Currently projected costs and lean hog futures prices suggest 2018 profit potential should average about $15 per head for farrow to finish operations, $3.50 per head for farrow to wean operations, and $2 per head for wean to finish operations.

Producers see opportunity to capture profits on more hogs. Virtually every number in USDA's Hogs and Pigs Report based on a December 1 survey of producers was larger than pre-report expectations (Table 1). Not dramatically larger but larger none the less.

Table 1. USDA Quarterly Hogs and Pigs Report Summary for the U.S.

	2016	2017	2017 as % of '16	Pre-Report Range	Pre-Report Estimate	Actual - Estimate
Dec 1 inventory *						
All hogs and pigs	71,545	73,230	102.4	101.3 - 102.6	102.0	0.4
Kept for breeding	6,110	6,179	101.1	100.0 - 101.6	100.8	0.3
Market	65,435	67,051	102.5	101.3 - 102.8	102.1	0.4
Under 50 lbs	20,887	21,447	102.7	101.2 - 102.5	102.0	0.7
50-119 lbs	18,102	18,549	102.5	101.0 - 102.8	101.9	0.6
120-179 lbs	13,786	14,105	102.3	101.5 - 103.0	102.2	0.1
180 lbs and over	12,660	12,949	102.3	100.0 - 104.3	102.4	-0.1
Sows farrowing **						
Jun - Aug	3,057	3,103	101.5			
Sep – Nov	3,046	3,109	102.1	100.6 - 101.3	101.0	1.1
Dec – Feb [1,2]	2,986	3,070	102.8	99.5 - 101.8	101.1	1.7
Mar – May [3]	3,014	3,083	102.3	100.0 - 102.1	101.2	1.1
Sep - Nov pigs per litter	10.63	10.74	101.0	100.5 - 102.0	101.0	0.0
Sep - Nov pig crop *	32,372	33,399	103.2	101.5 - 103.0	102.0	1.2

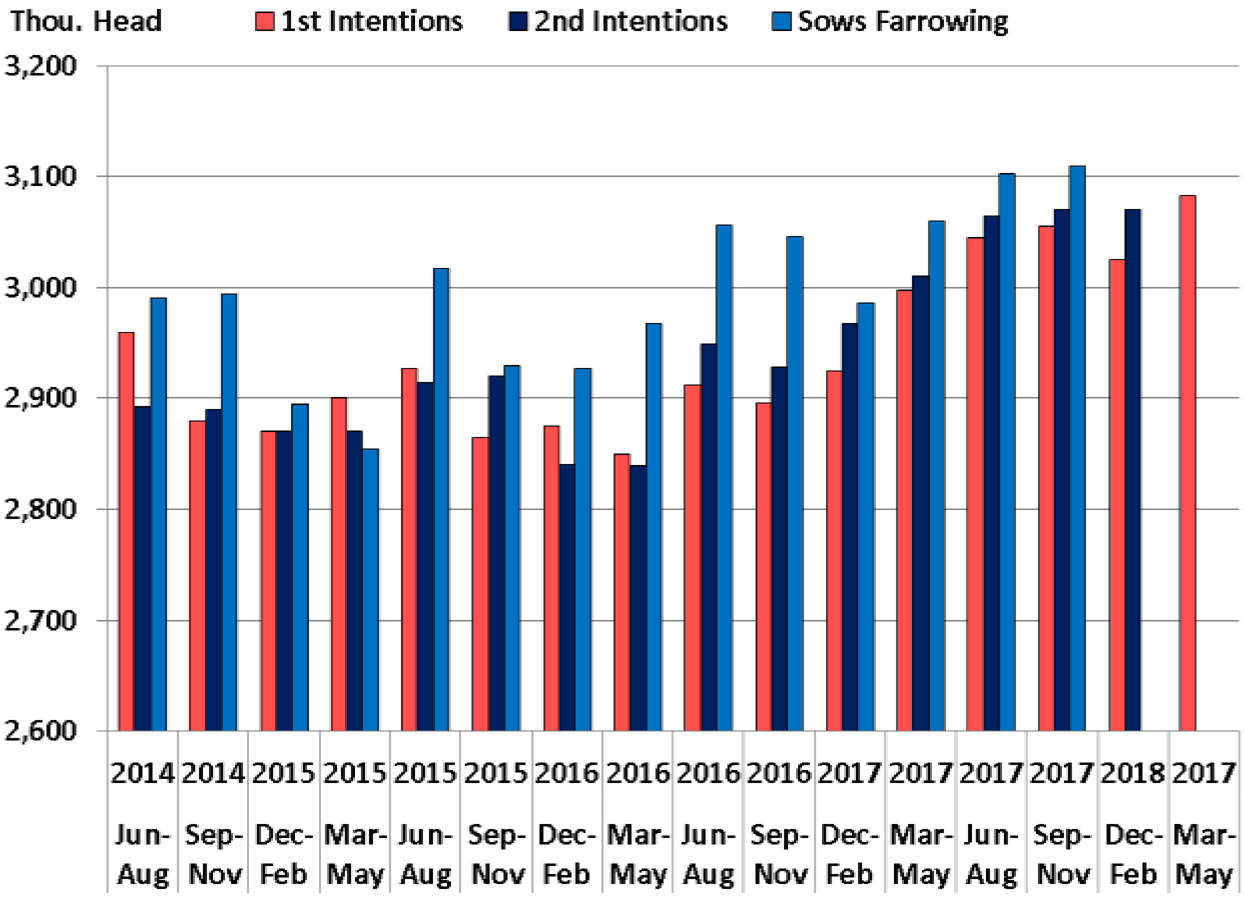
Full report: http://usda.mannlib.cornell.edu/usda/current/HogsPigs/HogsPigs-12-22-2017.pdf

* 1,000 head; **1,000 litters; [1] December preceding year; [2] 2016/17 sows farrowing and 2017/18 farrowing intentions; [3] 2017 sows farrowing and 2018 farrowing intentions. Pre-report estimates available from Urner Barry.

The report showed producers upped the December 1, 2017 breeding herd 1.1% to 6.179 million head from December 1, 2016. It's up 1.0% from the previous quarter. September through November 2017 sows farrowing were estimated to be 3.109 million litters, 2.1% larger than in 2016 and more than one percent larger than expected. The September through November pig crop totaled 33.399 million head, 3.2% larger than one year ago.

The December 2017 through February 2018 farrowing intentions of 3.070 million litters are 2.8% higher than a year earlier, 1.7% larger than expected and 45,000 litters larger than the December through February expectations in the September report (Figure 2). USDA's first estimate for March through May 2018 farrowings is up 2.3% from 2017 and is larger than expected pre-report.

Figure 2. Quarterly U.S. Sows Farrowing and Intentions



Data Source: USDA-NASS

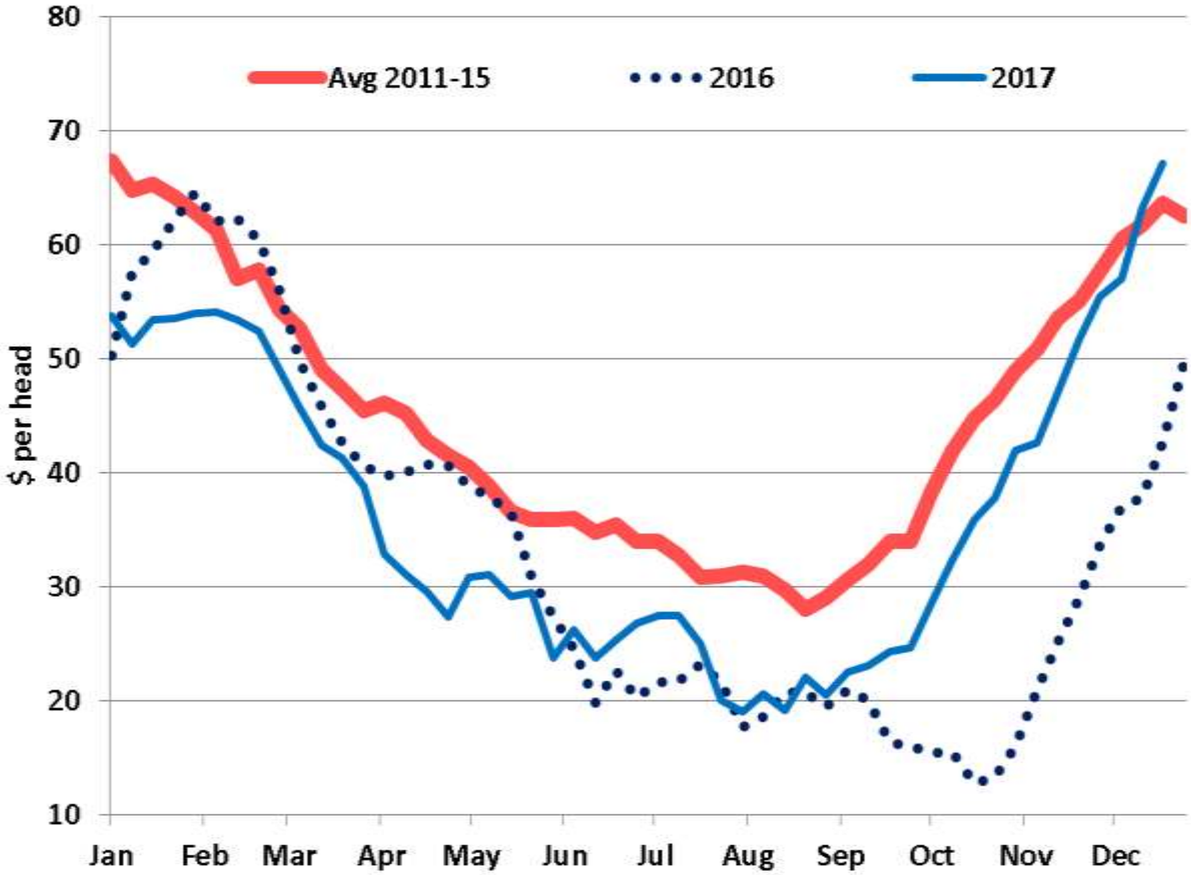
The market says demand is strong for these pig crops. Space is available to house them. Buyers of early weaned and feeder pigs are betting on strong spring and summer 2018 barrow and gilt prices. Every Friday, USDA's Agricultural Marketing Service releases the National Direct Delivered Feeder Pig Report (NW_LS255), a weekly price summary based on farm-to-farm delivery. Prices include both formula and open market (cash) prices. In 2017, cash receipts made up 43% of the early weaned market while feeder pigs are almost exclusively transacted in the cash market.

Bidding is driving up cash prices. For the week ending December 22 cash early weaned pigs averaged $67.17 per head and feeder pigs averaged $77.64 per head. These prices are $17.24 and $22.59, respectively, higher than a year earlier. Only four months earlier cash early weaned prices dipped to $19.11 and feeder pig prices hit $35.54. Open market prices for early weaned pigs are considerably above current formula prices, suggesting sizable competition exists for pigs not already priced by formulas.

Canada is a notable supplier of feeder pigs. Purchasing Canadian pigs includes a currency-exchange risk. However, that is usually borne by the Canadian seller because the price is based on delivered prices relative to all weaned and feeder pigs. With a relatively robust U.S. dollar, the incentive to sell pigs to U.S. producers is strong. Imports of Canadian feeder pig (pigs weighing less than 110 pounds) to the U.S. in 2017 averaged 88,762 head per week, the highest weekly average since 2012. While relatively small compared to the U.S. born pig crop, Canadian imports add to the already record large market hog inventories.

Pork production is expected to rise 3.0% to 3.5% in 2018 on top of the 2.6% rise in 2017. Changes in hog slaughter and carcass weights from current expectations may cause adjustments in pork production levels and timing in 2018, which could impact current price forecasts.

Figure 3. Weakly Early Weaned Pig Prices, National, 10-12 Pounds, Cash Trade



Data Source: USDA-AMS

There is a lot of grain and feedstuffs available for hogs and feed costs for producers are some of the lowest in years. But with growing livestock and poultry numbers, feed inventories and 2018 crop developments will be important market drivers.

Pork Demand and Total Meat Supplies

Rising pork production will combine with higher beef and poultry production for another record total meat supply in 2018. Domestic per capita meat consumption is not expected to be a record, depending critically on continued exports of all meats, but is expected to increase another 1.5% year over year in 2018, on top of the 0.8% hike in 2017. Retail pork prices will likely adjust downward in 2018, which is critical to help the market absorb additional pork in the face of large total meat supplies.

A bit of good news, even with higher production, USDA's Cold Storage report showed as of November 30 pork stocks were down 15.5% from the previous month and down 2.7% from a year ago. Production being up in the field but product in storage being down, reflects the relatively strong pork market, both domestically and internationally.

International Pork Trade

Pork exports had a good year in 2017. Through October, the most current data, pork exports ran up 8.2% on a carcass weight basis. The United States is a low cost, high quality pork producer, with significant production resources, and is a very reliable supplier. These are all important considerations for international buyers. Growth in pork exports is critical to offset a portion of 2018's rise in pork production. Exports absorbed about 22% of domestic production on a carcass weight basis in 2017.

International trade and trade agreements are a political hot potato. From the withdrawal of the United States from the Trans-Pacific Partnership (TPP) to the ongoing debate about the North American Free Trade

Agreement (NAFTA), trade policy is transforming and trade relationships are in a state of flux. The direct impact on current trade patterns as well as potential future pork trade policies is uncertain.

The U.S. Economy/Incomes

The state of the economy directly impacts consumer pork demand. While first half of 2017 consumer demand softened a bit, the situation improved in the third quarter. Consumer incomes are rising at a faster pace, unemployment is at a 17-year low. Consumers feel more wealthy thanks to higher home values and equity markets.

However, the economy is gearing up for higher interest rates and potentially higher inflation moving into 2018. Taxpayers will be waiting to find out how they do under the new tax legislation. In addition to U.S. macroeconomic uncertainty, global market uncertainty will likely persist through 2018.

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 December 22, 2017 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.

Table 2. Commercial Hog Slaughter Projections and Lean Hog Price Forecasts, 2018

	Year-over-Year Change In Commercial Hog Slaughter (percent)	ISU Model Price Forecast, Negotiated IA/So MN ($/cwt)	CME Futures (12/22/17) Adjusted for Negotiated IA/So MN Basis ($/cwt)
Jan-Mar 2018	2.13	66-70	68.49
Apr-Jun 2018	3.17	75-79	76.87
Jul-Sep 2018	3.48	73-77	75.92
Oct-Dec 2018	4.38	59-63	61.36

Lee Schulz

The Challenges for the New Year

The 2017 calendar year contained a few twists and turns for the crop markets. The year started off with slowly rising prices as crop usage churned through the record crops from 2016. Following a spring price dip on acreage estimates and planting progress, a drought through the northern and western Corn Belt provided the storyline for the late spring/early summer weather rally. That rally popped with the sizable mid-season yield estimates for the 2017 crops. And those estimates continued to get bigger as the year went by. As production continued to grow, prices have continued to struggle. So we end the year as we have for the past few years, searching for ways to reach breakeven pricing.

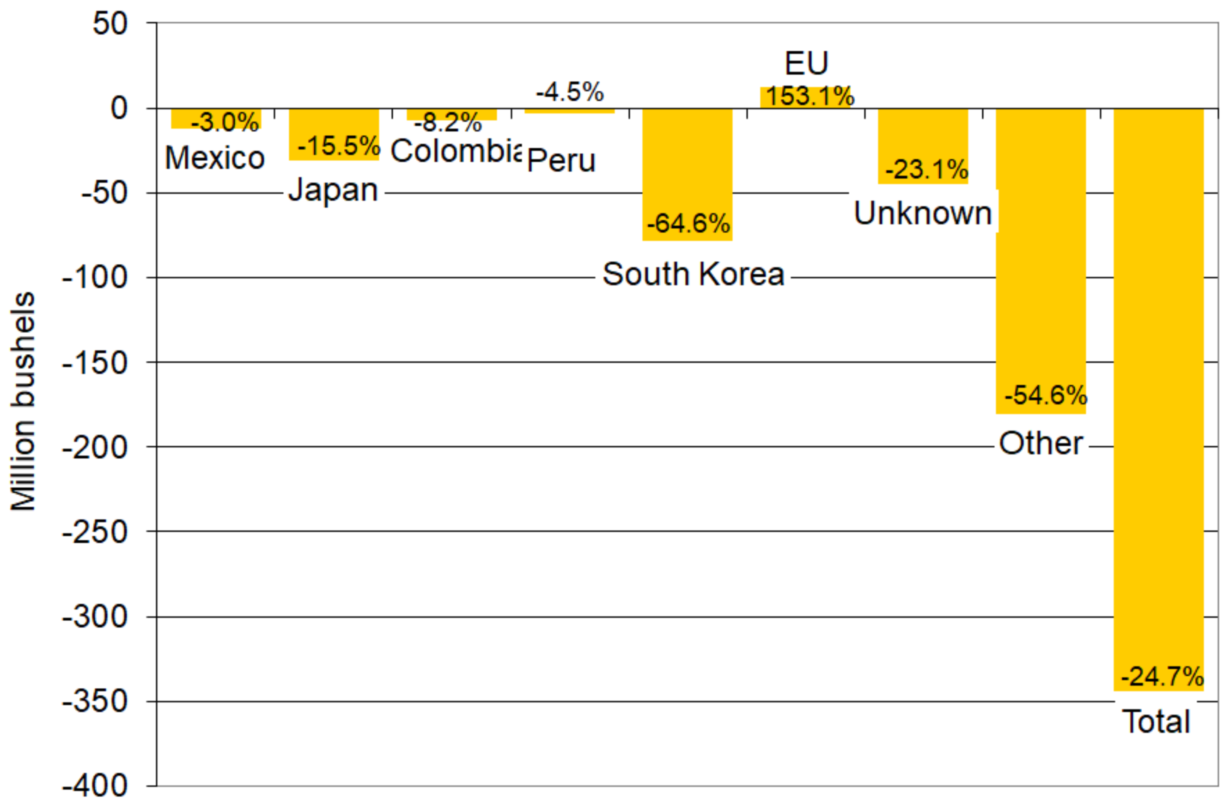
The 2018 calendar year is shaping up to have a similar storyline. Early estimates for planted acreage show potential for increases for corn and, especially, soybeans. The large acreage numbers point to substantial production. However, dry conditions linger in the northern and western Corn Belt, providing the prospect for another seasonal spring weather rally. With ample production from last year stored throughout the nation, corn and soybean supplies will be burdensome for the first half of the year.

Domestic crop demand remains strong. Soybean crushing has increased over the past few years to meet the needs from livestock feeding and biodiesel processing. Feed demand has also kept corn moving through the nation. USDA's projections for 2018 indicate that livestock feed demand should continue to grow throughout the year as all of the major species are expected to expand. Biofuel growth is also expected, as the ethanol industry is set to reach record production in 2017 and challenge that record in 2018.

But while domestic demand is holding firm, international demand has backed off over the last half of 2017. Exports had been the major demand driver for the 2016 crops, with corn reaching its 2nd highest export levels and soybeans setting another record. But thus far, exports for the 2017 crops have been underwhelming at best.

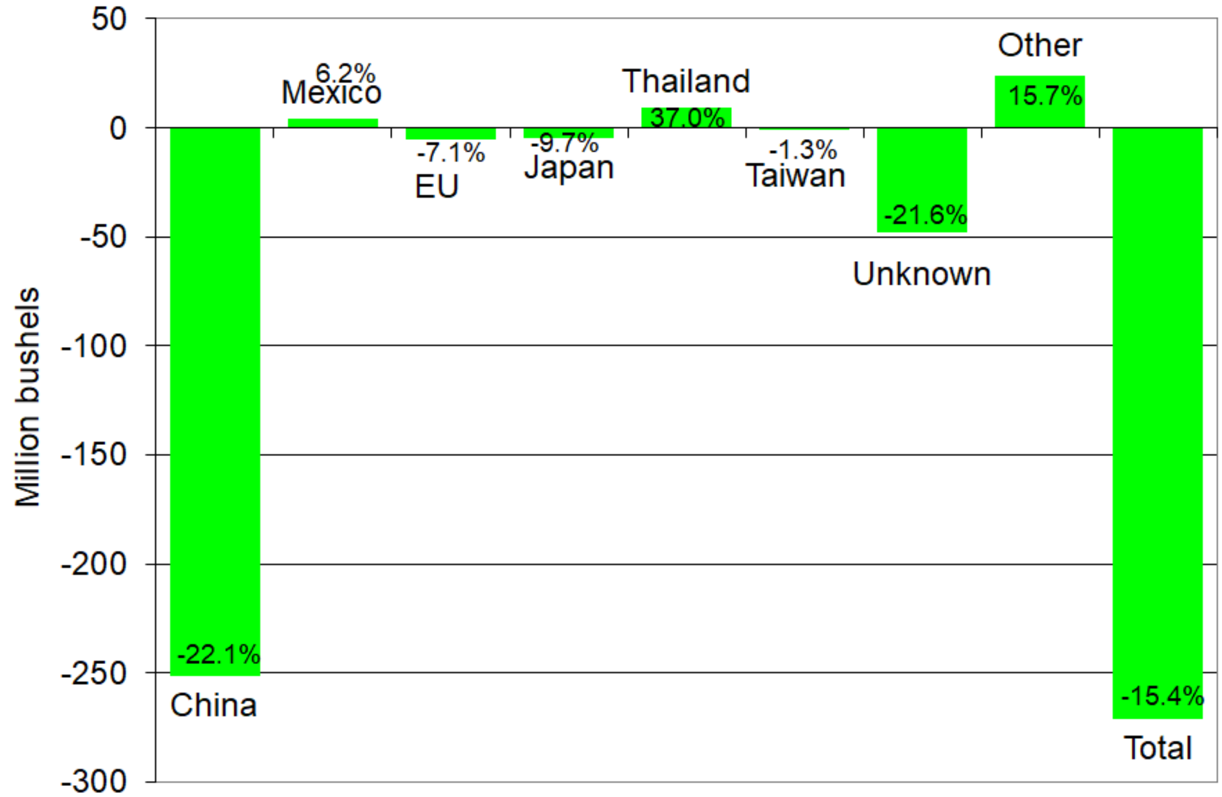
Figures 1 and 2 detail the export pattern shifts between the 2016 and 2017 crops. The countries in the figures are the top 6 export markets for each commodity this year. The percentages listed by the country names show the percent change in exports to that country year-over-year. So, for example, Mexico is our top corn export market and corn exports are down slightly, roughly 10 million bushels or 3 percent from last year. As the corn figure shows, most of the top markets are down this year, with the only exception being the European Union. The largest decline has occurred in South Korea, as their livestock industry has shifted to incorporate cheaper feed wheat into the feed ration. Similar moves are happening in the many other countries around the globe, as evidenced by the 50 percent drop in corn exports to markets outside our top six (labeled "Other" in the figures). Currently, corn exports are running nearly 350 million bushels behind last year's pace. And USDA's projections indicate some additional erosion in the export markets, not only for this marketing year, but the next as well. These projections are based on the significant supplies of corn and feed wheat throughout the world, outside of the U.S. borders. With plenty of competing products to fill the global feed ration, U.S. corn has lost some market share.

Figure 1. Corn export shifts (Source: USDA-FAS).



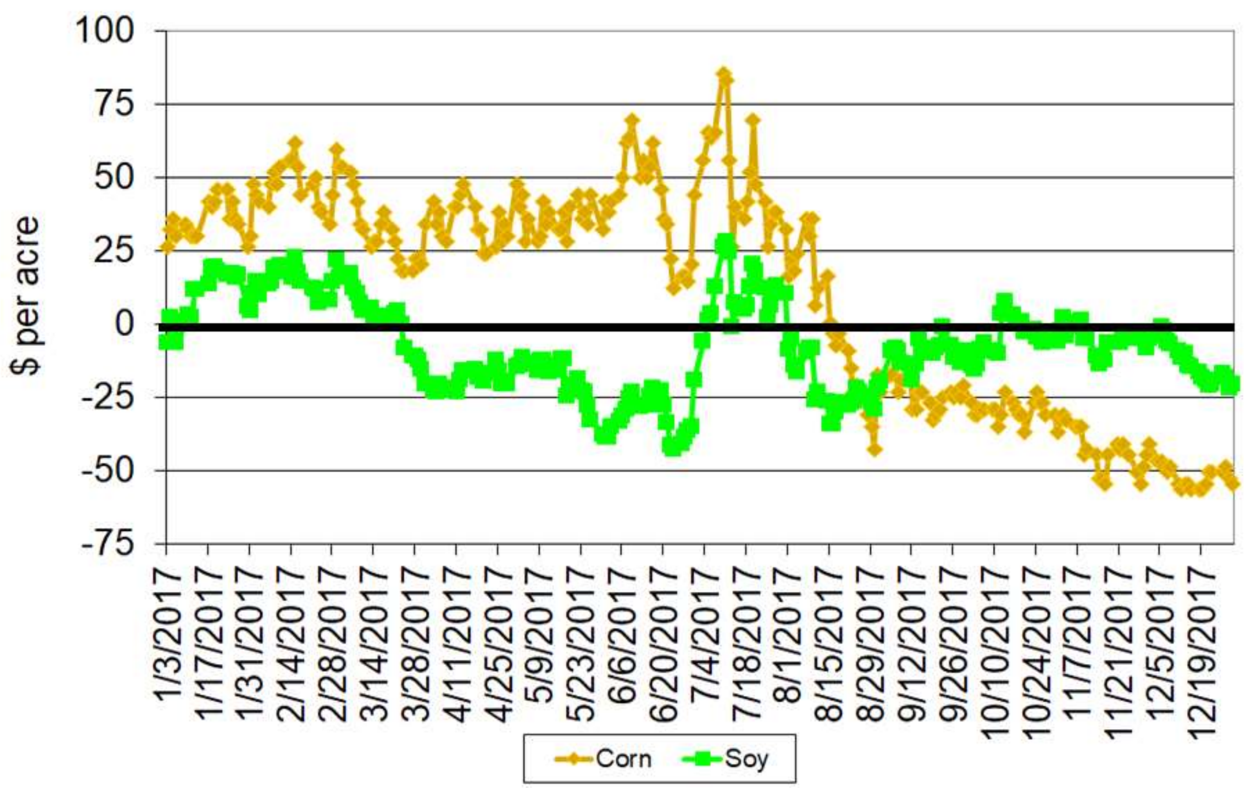
For soybeans, the data show one pattern and the projections indicate another. As Figure 2 shows, soybean exports are also suffering a significant drop currently. Since China represents roughly 60 percent of U.S. soybean exports, the shifts there basically determine the overall pattern. And thus far, the pattern is for fewer beans moving to China. Recent stories from China have alluded to a changing structure in the Chinese market as China is moving to higher quality standards for imported soybeans. Meanwhile, it's a mixed bag in other export markets. Mexico and Thailand have increased soybean purchases, but the European Union, Japan, and Taiwan have cut theirs. So like corn, the soybean market is working under significantly reduced export demand.

Figure 2. Soybean export shifts (Source: USDA-FAS).



However, unlike corn, soybean exports are projected to rebound. USDA still shows exports for the 2017/18 soybean crop to reach record levels, with some additional growth for the 2018/19 crop. For that to happen, the Chinese market must rebound quickly and substantially.

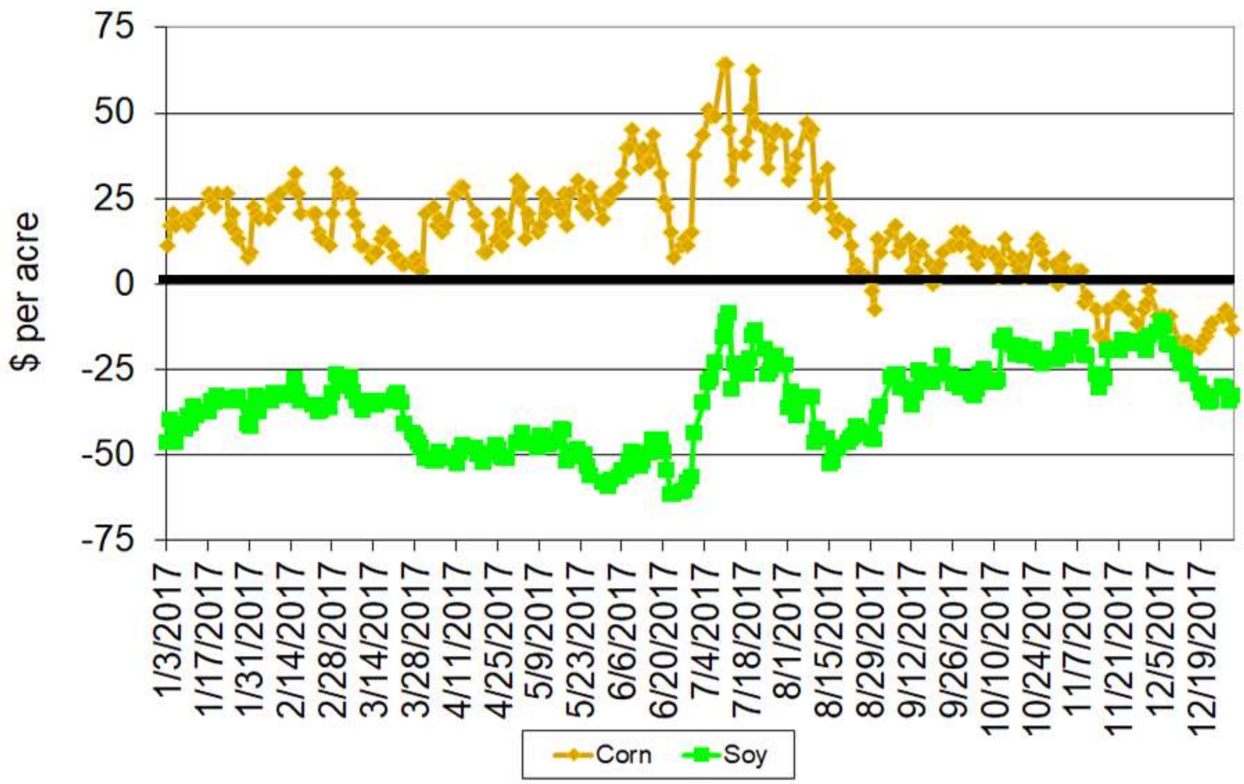
Figure 3. Projected 2017/18 crop margins.



The combination of large supplies and export weakness has reduced crop prices over the fall and winter. Figure 3 displays projected crop margins for the 2017 crops, using futures prices and the average current crop basis across the state. As the graph shows, the 2017 crops continue the run of years where prices are finishing below breakeven. For these projections, I use the estimate production costs from my colleagues at Iowa State University (see [Ag Decision Maker] for the 2017 and 2018 costs, the 2018 costs will be released later in January). Also, I usually use the 5-year average basis to compute cash prices. However, this year, and I expect in 2018 as well, basis levels have not been average. With current basis levels wider than usual due to the large stocks of corn and soybeans, projected margins are running $20-50 per acre under costs. The pattern over the past couple of years has been for some slow improvement over the first couple of months, followed by a slight swoon during planting and then a weather rally in June.

Given that I expect basis issues to remain with us as we work through the large stocks in 2018, I am using the current basis levels to project for the 2018 crops. And like with the 2017 crops, the projections show margins below breakeven. As the 2018 estimated costs are not available yet, I have kept costs the same as in 2017. Hopefully, my colleagues will find some additional cost savings for the coming year. But while the current projected margins are below breakeven, the graphs also show that if the seasonal pricing patterns hold once again, then profitable prices will appear once again with weather rallies this coming spring and summer.

Figure 4. Projected 2018/19 crop margins.



What is somewhat unusual right now is that while corn is leading on projected margins for 2018, soybeans are dominating the chatter going into the 2018 planting window. In talking with many producers throughout the Midwest, they, like USDA, expect a rebound in soybean exports to China. In fact, they expect enough of a rebound that the margin graph will flip again, as it has for the past couple of years. Corn has led the margin projections over the first half of the last couple of years, only to follow behind soybeans as harvest closes in. And going into 2018, a lot of producers are expecting that to happen again.

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