

Iowa Farm Outlook

Department of Economics
Ames, Iowa

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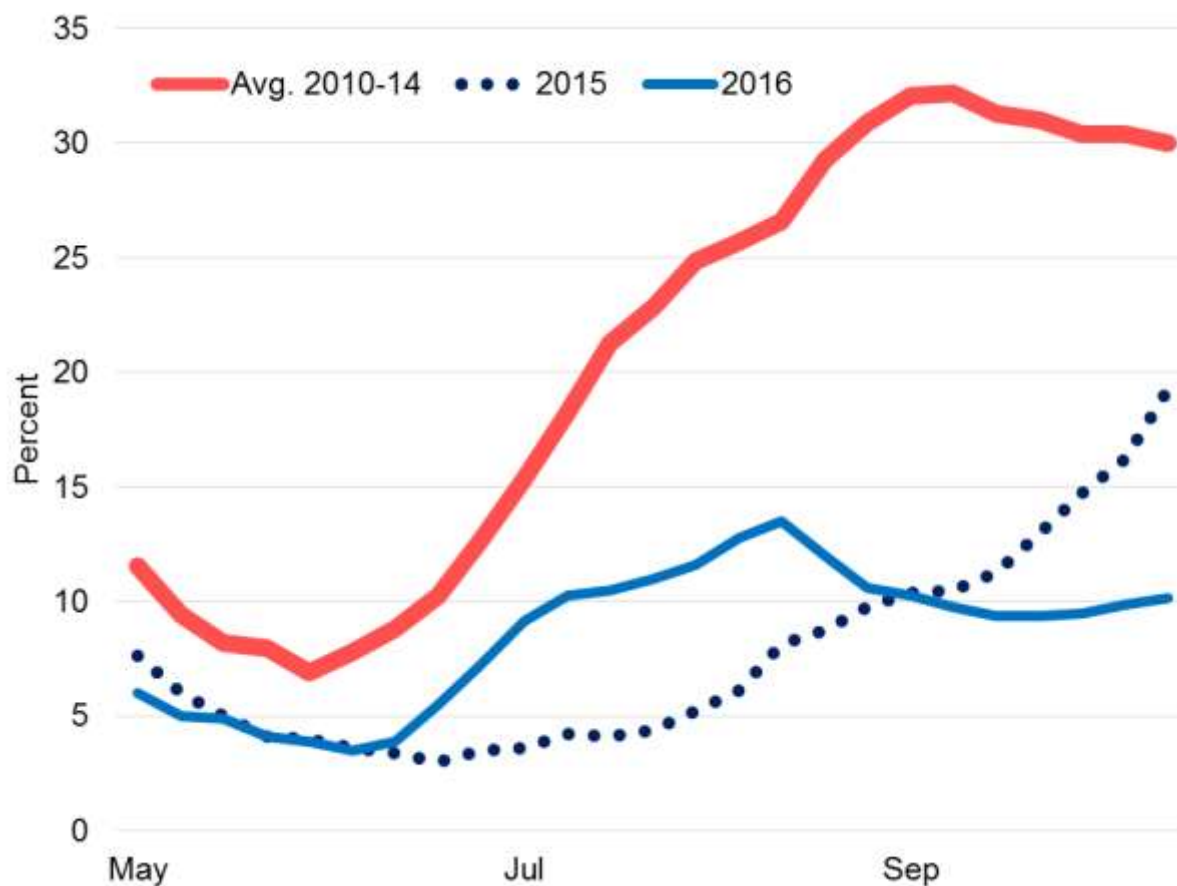
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Pasture and Range Conditions and Prices: A Year in Review

This year the U.S. has enjoyed favorable pasture and range conditions. Conditions are measured by the percentage of a state's total pasture and rangeland rated as very poor, poor, fair, good, or excellent. These values are reported weekly by USDA's National Agricultural Statistics Report in the monthly Crop Progress Report from May through October each year. The total of very poor and poor percentages are the measurements typically monitored and compared on a year-to-year basis.

Looking at the U.S. as a whole, the percentage of pasture and rangeland rated in very poor and poor condition was reported at 23% as of October 30, 2016, compared to 27% last year and 34% for the five-year average. Since September the Corn Belt region (IL, IN, IA, MI, MN, MO, OH, WI) has experienced significantly smaller percentages of very poor and poor pasture acres compared to 2015 and the five-year average (figure 1). Iowa conditions are sitting at 10% of pasture categorized as very poor and poor with 60% rated good to excellent.

Figure 1. Cornbelt Region Range and Pasture Condition, % Poor and Very Poor, Weekly



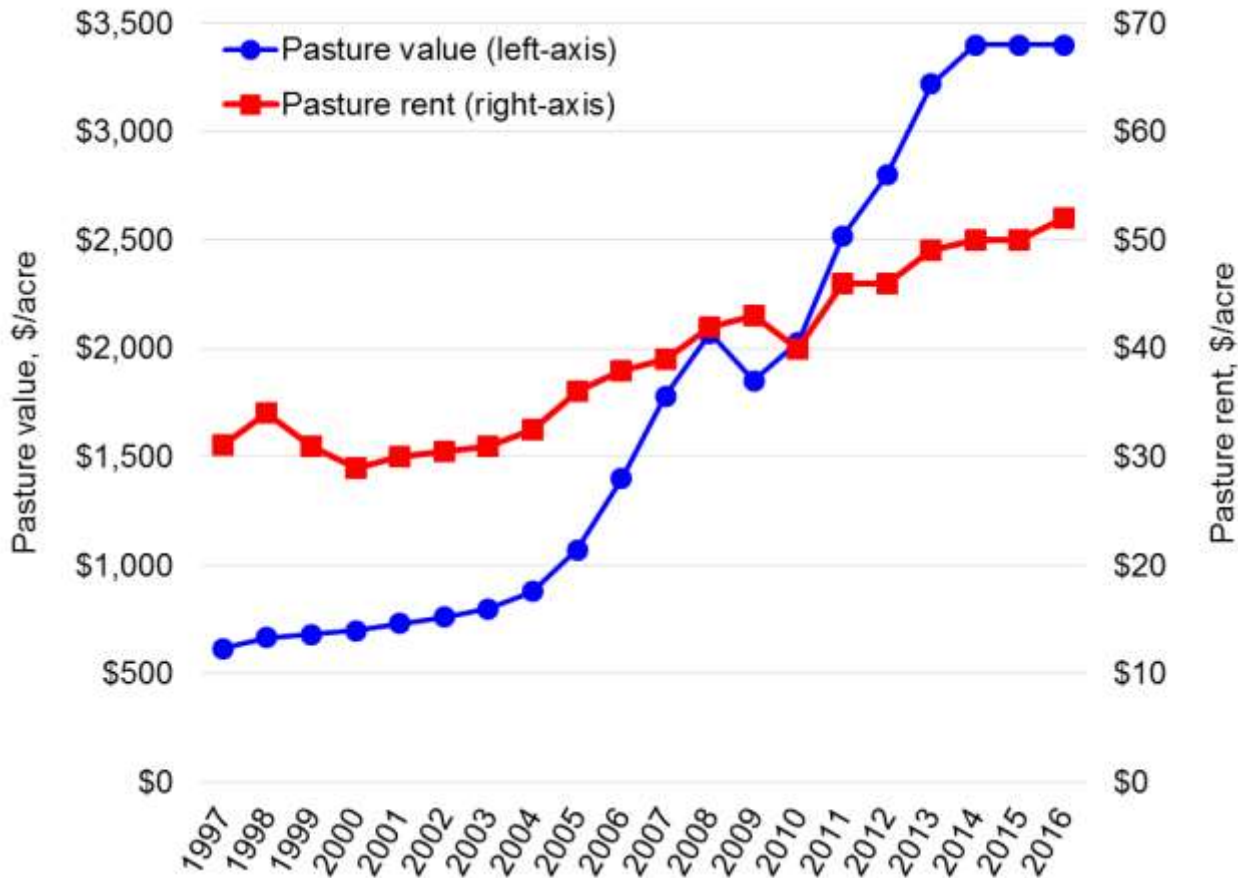
Data Source: USDA-NASS. Updated October 30, 2016.

Pasture and range conditions bode well for continued beef cattle herd expansion. However, recent deterioration in calf and yearling prices could easily lead to further reduction in heifer retention and beef cow slaughter increases.

Record pasture sales values and rents

Each August USDA's National Agricultural Statistic Service publishes U.S. and state estimates of farm land values and cash rental rates. The estimates are based on the June Area Survey. For 2016, the average rental rate for Iowa pastures was \$52 per acre (figure 2). This is a new record, up \$2 from last year and up \$14 from 10 years ago. The average sales value of Iowa pastureland was \$3,400 per acre. This maintains the record high of the last 2 years and is up \$2,000 from 10 years ago.

Figure 2: Average Pastureland Value and Rent - Iowa



Data Source: USDA-NASS. Updated August 5, 2016.

Beginning with the September 2016 release, USDA publishes bi-annual county level cash rent estimates of cropland and pasture. These rental rates do not include land rented for a share of the calf-crop, on a fee per head, per pound of gain, by animal unit month, rented free of charge, or land that includes buildings such as barns.

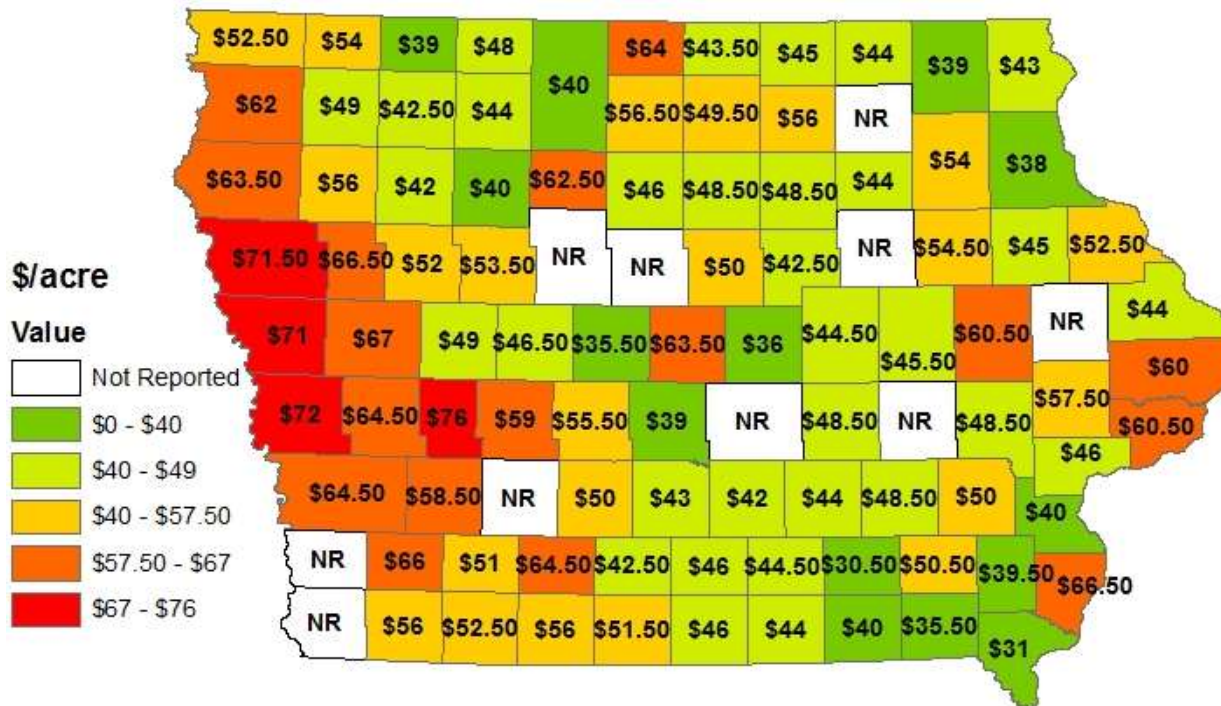
On average, counties in Iowa's west central crop reporting district had the highest pasture rental rates (figure 3). Southeast counties had the lowest rental rates. In 2016, Audubon county had the highest at \$76.00 per acre. Wapello county was the lowest at \$30.50 per acre.

While these estimates can be used as a reference point for determining an appropriate cash rental rate for a particular pasture several factors may justify a higher or lower than average rent. These include, but are not limited to:

- Pasture size and quality
- Grazing value (including diversity of forage species and fertility)
- Proximity to home farm
- Accessibility of pasture
- Fence and water system requirements and characteristics

- Longevity of the lease
- Pasture maintenance costs and landlord's share of expenses
- Other services performed by the landlord and tenant

Figure 3. 2016 Iowa Pasture Cash Rent by County, \$/acre



Data Source: USDA-NASS. Updated September 9, 2016.

Cash flow vs. wealth accumulation

Producers in the cattle business are also usually in the land business. This is particularly true for cow-calf operations. Cows spend much of the year on pasture and stocking rates can require several acres per cow. Given current pasture values and a stocking rate of say, 1.8 to 2.0 acres per cow, a typical Iowa cow-calf operation would have a land investment per cow in the \$6,120 to \$6,800 range.

Land typically accounts for a significant portion of the investment in a cow-calf operation. As such, changes in land value often have a greater impact on the overall financial condition than profits from selling cattle. Cattle prices provide the cash flow for living expenses. Land values provide the wealth for the estate.

Pasture prices vs. cattle prices

One might wonder which has risen faster during the past decade, cattle prices or pasture prices. Over the last 10 years, Iowa fed steer prices rose by 48%, steer calf and feeder steer prices both climbed 39%. Rental rates for Iowa pastures are up 37%, while market value of Iowa pastureland zoomed 143%.

So why has the sale value of pastureland risen much faster than cattle prices, while the rental rate for pasture advanced more slowly than cattle prices? One key factor is the record crop prices in recent years, notwithstanding the last couple of years. Crop earnings have driven cropland value up 158% over the last decade and pulled pasture value up with it. Second, falling interest rates have buoyed all land prices. In the second quarter of 2016, the farm real estate loan rate reported by the Federal Reserve Bank of Chicago was 4.57%. A decade ago, it was 69% higher at 7.72%. Lower interest rates make buying land more attractive. Low interest rates do relatively little to boost rental rates or cattle prices.

Cattle producers contemplating buying land should keep several things in mind. History says that the period after a big jump in land prices is not a good time to buy. Years of price declines, or modest gains, often follow land price spikes.

USDA shows record corn and soybean harvests this fall and a lower season-average price than last year. Cropland prices will likely continue to fall from their 2014 peak.

If cropland prices continue to fall, pasture prices will surely face pressure as well. The decline in cattle prices, 28% in calf and feeder cattle and 14% in fed cattle over the last year, will also apply downward pressure.

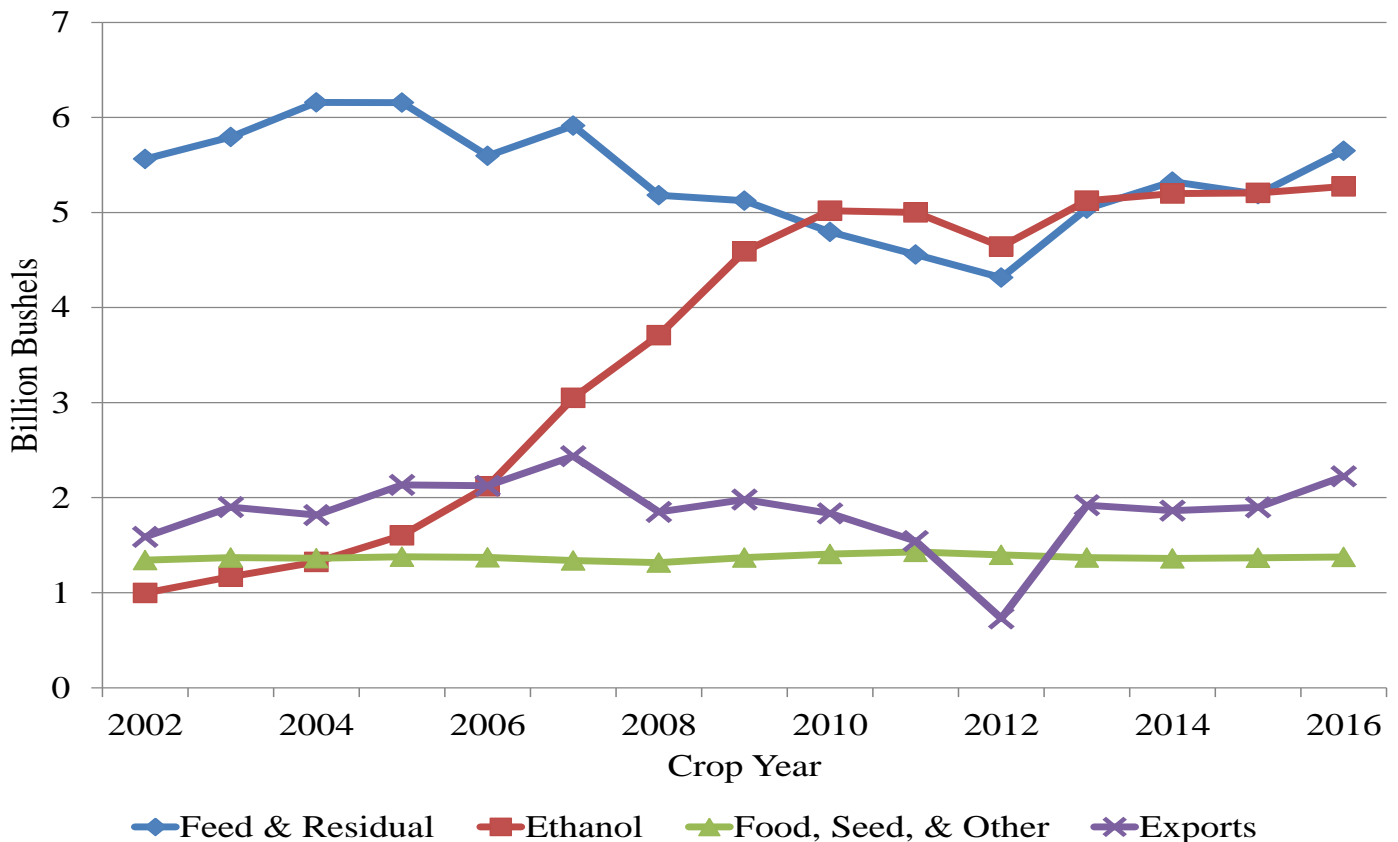
Lee Schulz

Strong Demand and Few Extra Bushels Help

From a national perspective, the crop harvest is on a normal pace. The last report in October showed 75 percent of the corn crop was out of the fields and 87 percent of the soybean crop was as well. Harvest has proceeded a little slower than normal for Iowa and states to the north and west, but that has been offset by a little quicker harvest in other parts of the country. And the projections for record crops continue to hold, as stock piles are emerging throughout the countryside.

But just as we have seen a tremendous surge in corn and soybean production over the past several years, we have also seen crop usage soar. Over the past 12 years, corn and soybean usage has increased by roughly 50 percent. That growth nearly matches the trend in crop production. And it is that growth that offers the opportunities for higher prices in the future. Figure 1 details the changes in corn usage since 2002. Corn usage can be summarized in four major categories: feed and residual, exports, ethanol, and food, seed, and other uses. Food, seed, and other uses is the most stable usage category as corn sweetener and seed use has utilized roughly 1.37 billion bushels per year since 2002. The graph starts in 2002 as that was the first year corn usage for ethanol was specifically broken out.

Figure 1. Corn usage (Source: USDA-WAOB).

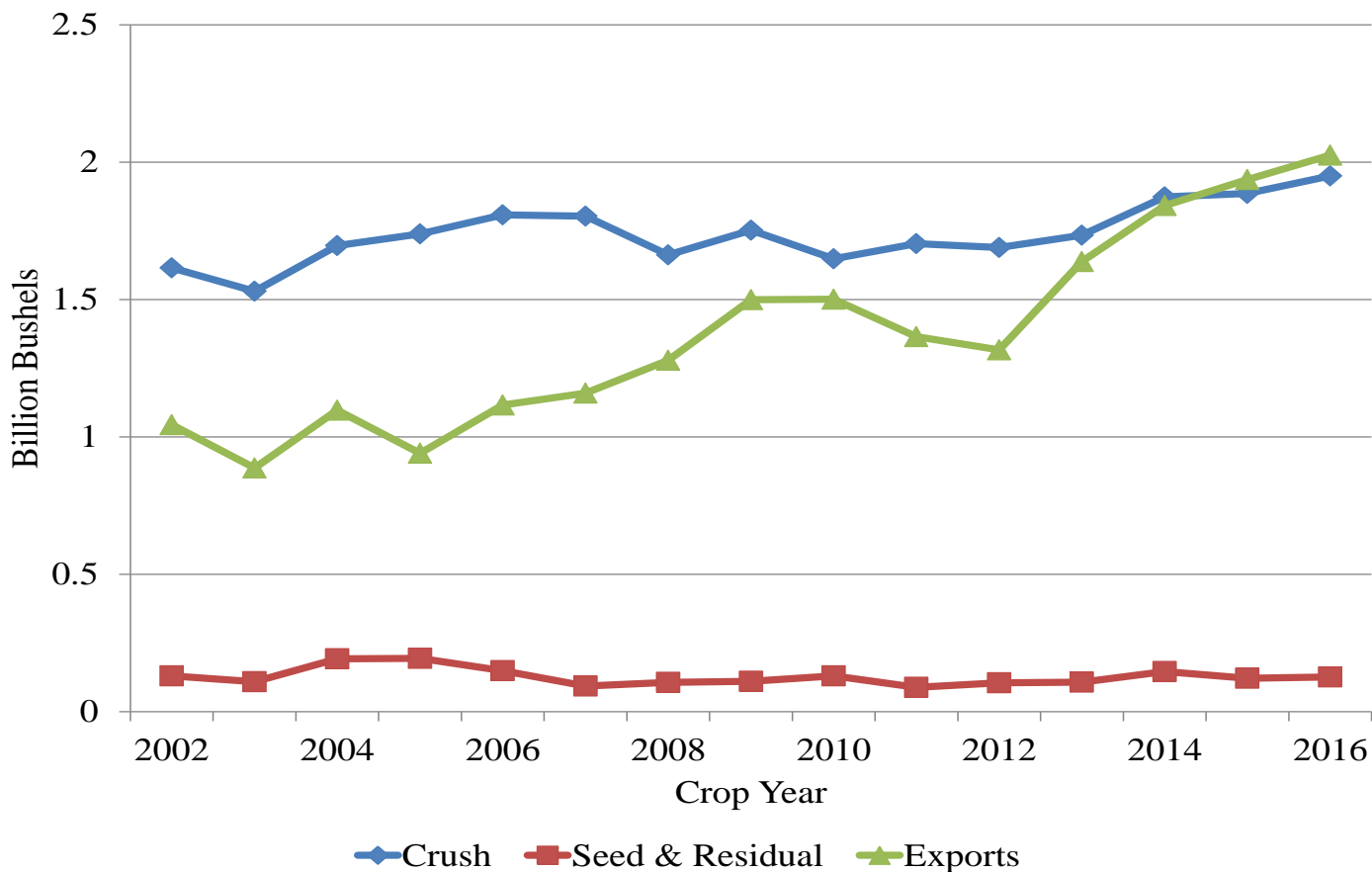


As the graph shows, the early to mid 2000's were dominated by livestock feed demand. Corn use for feed and residual hovered around 6 billion bushels. From 2002 to 2005, corn use grew for most of the major categories, feed, exports, and ethanol. Exports and ethanol continued to build after 2005, but feed and residual use began its long decline then. That decline was the result of several factors, including reductions in animal numbers and the availability of alternative feeds. One of those alternative feeds is distillers grains, a co-product of ethanol process. So much of the fall in direct corn feed use was offset by the indirect corn feed use via ethanol and distillers grains. And as the figure displays, from 2006 to 2010, the vast majority of corn usage growth was for ethanol and distillers grains. Exports reached their peak with the 2007 corn crop. After that, the corn market was scrambling to keep pace with ethanol.

The drought of 2012 and the resulting record high prices put the brakes on the ethanol industry and brought the feed and export uses to their lowest levels over the entire period. But since then, both corn production and usage have rebounded significantly. Corn feed and residual use has increased by over 1 billion bushels over the past five years. Exports have risen by nearly 1.5 billion bushels. And corn usage for ethanol has maintained a slow, but steady, march higher. Combined, corn usage has never been higher.

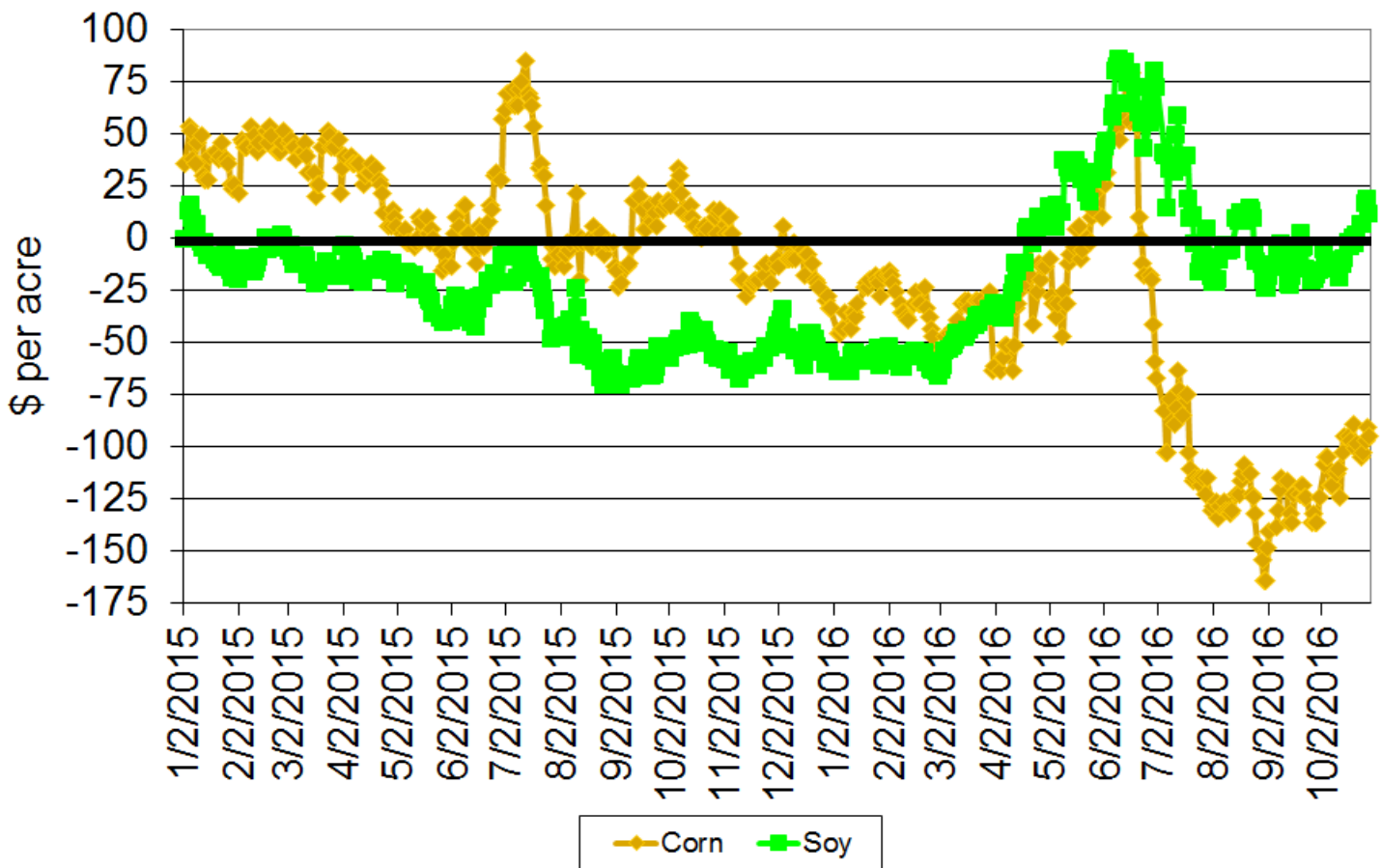
Soybean usage can basically be summarized by where they're used. Either the soybeans are shipped to international markets or used domestically, crushed for the meal and oil or as seed for the next year's crop. And in either case, soybean use has definitely trended higher. Back in 2002, domestic use dominated the soybean market. Now, roughly half of the soybean crop is exported directly, with even more of the crop being exported after crushing. Crush demand has grown, on average, 24 million bushels per year since 2002. That growth has been shaped by the changes in the livestock industry, the expansion of biodiesel production in the U.S., and export demand for soybean meal and oil. Over that same period, soybean export demand has increased by 70 million bushels per year. China represents a significant portion of that export surge.

Figure 2. Soybean usage (Source: USDA-WAOB).



The strength in crop usage has provided some protection against significant price erosion. While prices are low, they have not dropped as sizably as one would expect given the record large supplies. In fact, comparing cash prices now versus a year ago, corn prices are only down 35-40 cents, while soybean prices are actually \$1 higher. Crop margins have also been helped by the extra bushels raised this year. The bushels above trend help in two ways. First, more bushels grown translate into more bushels to sell and more revenue. Second, more bushels grown implies more bushels to spread over costs, lowering costs per bushel. Based on some rough average calculations, the extra bushels above trend in 2016 added about \$60 per acre to crop margins for both corn and soybeans. That was enough to bring soybeans to breakeven levels (using ISU production costs) and lift corn partway back to breakeven, turning triple-digit losses to double-digit ones. Figure 3 shows the projected crop margins over the course of the past couple of years, given what we now know about 2016 yields. As the graph shows, those who took advantage of the marketing opportunities last spring and early summer captured some good returns.

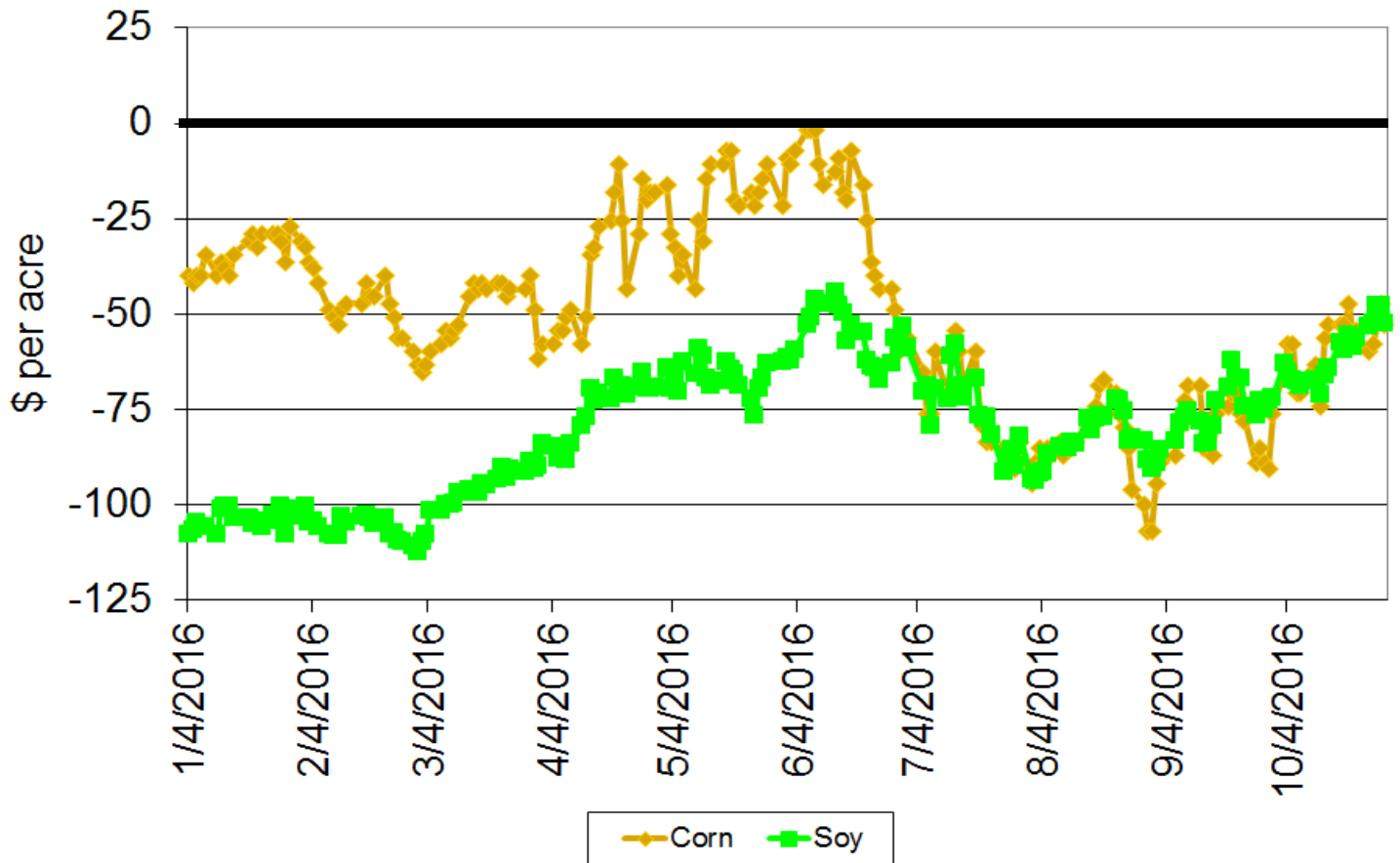
Figure 3. 2016/17 projected crop margins.



But as Figure 4 shows, we will need a similar rally for next year's crops to approach breakeven again. The usage thus far, from the livestock, export, and biofuel industries, suggests demand will continue to grow over the 12-18 months. That demand, combined with hints of any weather issues as we approach planting next year, would create the factors needed to drive that rally. However, with each passing year of record production and building stocks, the price rallies will likely be shorter and smaller, until those weather issues become true weather problems. As the margins in Figure 4 show, both corn and soybeans are projected below breakeven for 2017. The markets have already factored in more acres shifting into soybeans for the coming year, some of which are coming from corn, but wheat and other crops will provide new soybean area as well.

So the crop margin picture is better than it was last year. The current crops are providing better margins than last year. Projected margins on the next year's crops are still below breakeven, but closer to breakeven than they were at this time last year. Cost control and timely marketing will still be key to reaching profitability. But as the events of this past year show, it can be done.

Figure 4. 2017/18 projected crop margins.



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