

Iowa Farm Outlook

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Pork Profits Fuel Expansion

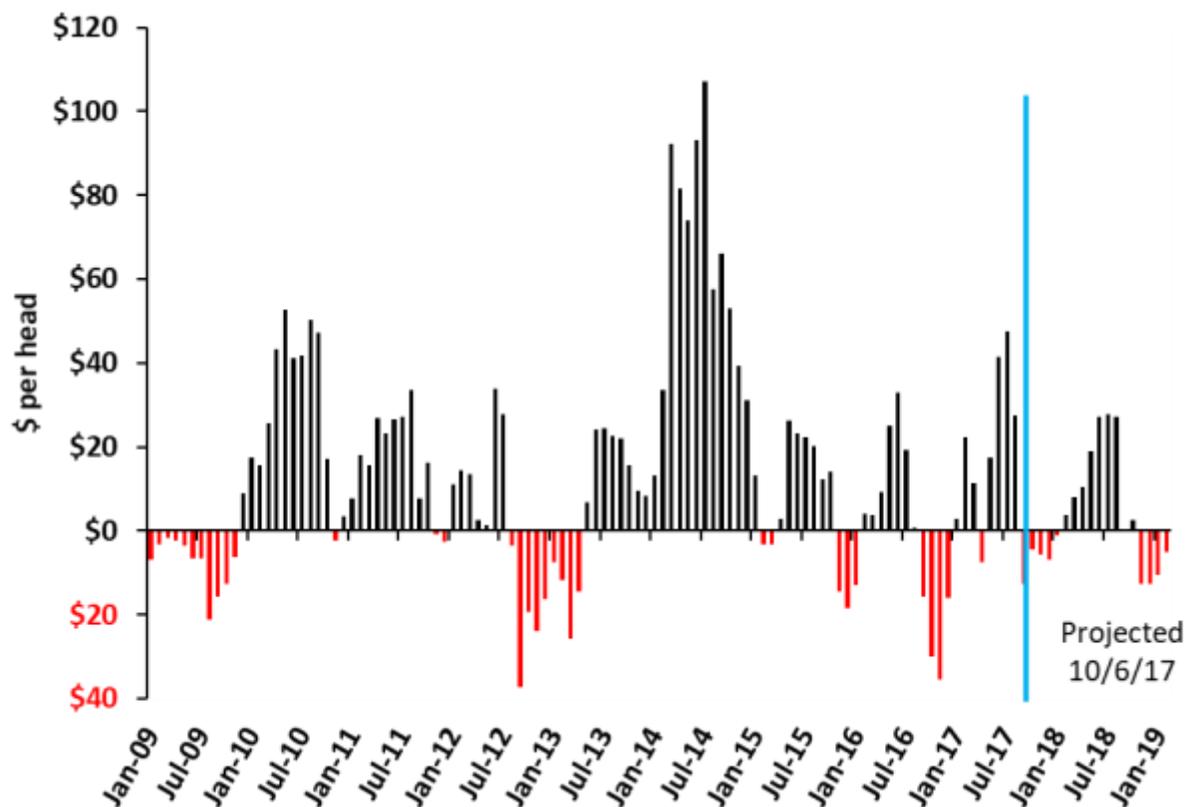
Much has been written about the new pork packing plants in Iowa and Michigan that are now slaughtering hogs and will soon be fully operational. Smaller ones opened in Missouri and Minnesota over the past 12 months. Another plant will open in Iowa next fall, if it stays on schedule, and will be ramped up by early 2019. Some plants have expanded capacities slightly during the past year. Others could, if conditions warrant.

These additions first, and foremost, address the pent up demand for more packing capacity. Market hog inventories have grown almost 25% in the past 15 years with no notable additions to hog slaughter capacity until now. In recent years, fourth quarter hog slaughter has run near, at, or above theoretical capacity. Prices at times collapsed dramatically. Last fall's slaughter versus capacity situation was much worse than is expected this year.

Added capacity also creates room to grow. But profitability, not new packing capacity, drives hog expansion. The two are likely correlated. But correlation does not necessarily imply causation.

Iowa State University's farrow-to-finish estimated returns data—a barometer of profitability— confirms what you probably already know. Pork producers have had a good run of profits (Figure 1).

Figure 1. Estimated and Projected Returns to Farrow to Finish Production, Iowa



Source: Iowa State University Estimated Livestock Returns

Since May 2013, 42 of the past 53 months have shown profits, averaging \$20.87 per head. Profit prospects also matter. First quarter 2018 returns are forecasted at \$4 per head, second quarter at \$19, third quarter at \$18, and fourth quarter at a loss of \$8 per head. The 2018 annual forecasted profit is \$8 per head.

Will the pork industry kill the golden goose by expansion? Probably, at some point. Rational producers will up output to the point that the cost of adding one more unit of output is higher than the price that will be received for that unit. Current and upcoming profit levels will likely entice producers to “bid away” margins through expansion. But the modest growth so far suggests no impending price wreck.

In surveys for the September Hogs and Pigs report, producers reported to USDA larger inventories than one year ago (Table 1). The all hogs and pigs and market hog inventories were record large for the quarter, continuing the trend of the last two quarters. The breeding herd is the largest since 2008. But the rise in numbers and magnitude caused little market reaction as the trade anticipated the growth. The average of analyst’s pre-report estimates went three for three on precisely pegging these headline numbers. Has that ever occurred before?

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
Sept 1 inventory *						
All hogs and pigs	71,786	73,549	102.5	101.7 - 103.3	102.5	0.0
Kept for breeding	6,016	6,087	101.2	100.8 - 101.4	101.2	0.0
Market	65,770	67,462	102.6	101.7 - 103.5	102.6	0.0
Under 50 lbs	21,215	21,568	101.7	101.7 - 103.5	102.4	-0.7
50-119 lbs	19,271	19,626	101.8	100.7 - 104.0	102.6	-0.8
120-179 lbs	13,600	14,129	103.9	101.5 - 103.7	102.9	1.0
180 lbs and over	11,683	12,139	103.9	101.5 - 103.9	102.6	1.3
Sows farrowing **						
Jun - Aug	3,057	3,103	101.5	100.2 - 102.0	101.0	0.5
Sep – Nov ¹	3,046	3,070	100.8	99.7 - 101.0	100.6	0.2
Dec – Feb ^{2,3}	2,986	3,025	101.3	97.8 - 101.2	100.1	1.2
Jun - Aug pigs per litter	10.58	10.65	100.7	100.0 - 101.4	100.8	-0.1
Jun - Aug pig crop *	32,331	33,048	102.2	100.3 - 103.0	101.8	0.4

Full report: <http://usda.mannlib.cornell.edu/usda/current/HogsPigs/HogsPigs-09-28-2017.pdf>

* 1,000 head; **1,000 litters; ¹ intentions for 2017; ² December preceeding year; ³ 2018 intentions. Pre-report estimates available from Urner Barry.

The reasons for growth are not terribly complicated. Costs, relative to prices, drive supply. Fortunately, the very large 2016 U.S. corn and soybean harvests resulted in lower feed prices for the hog industry. Many expect feed prices to remain relatively low for the next couple of years, pending a major weather impact on yields.

The September 1 market inventory of hogs over 120 pounds was up 3.9% from a year ago, implying that between September and roughly mid-November weekly slaughter could set new records, topping 2.6 million head at times. Fall slaughter may encroach upon, but likely not breach, the increased packing capacity.

Both slaughter numbers and weights drive total pork supply. The most commonly quoted weight series is USDA’s Market News Service Weekly Estimated Average Weight of Barrows & Gilts report (NW_LS720). It reports the estimated average weight of barrows and gilts in Iowa, Southern Minnesota and South Dakota direct hog reporting area. The week ending September 30, tallied 855,000 pigs with an average live weight of 281.0 pounds. This is about the same weight on the same week in 2015 and 2016, but 3.4 pounds below the average weight in 2014.

With lower feed prices, and mostly profitable prices, weights have largely steadied, which at first glance, is a bit surprising. Industry chatter suggests some of this is likely due to producers feeding less ractopamine. Producers have also aggressively kept current on sales in light of profitable prices.

A wall of hogs is coming this fall. Keeping slaughter weights down will help in the event that the new packing plants face delays in becoming fully operational.

Time is also big factor in the supply equation. The industry is growing, but at a measured pace. Some natural “governors” appear to be in place. The old hog cycle used to have very large expansions and then shrink dramatically. This measured growth has worked well for producers to help mitigate large price fluctuations. It also works well for packers to plan and invest in added packing capacity.

The breeding herd is still growing. On September 1 it was up 1.2% from last year, and up slightly from the previous quarter. Sow slaughter is 2.5% higher this year compared to last. Some of this is a reflection of more sows available as the inventory is higher. But a review of the cull sow market also suggests strong demand for cull sows.

USDA’s Weekly National Swine report (LM_HG214), shows the 2017 Iowa/Minnesota average for 450-499 pound cull sows is \$46.57/cwt. Over the same period in 2016 the price was \$42.38/cwt. Summer 2017 cull sow prices reached as high as \$74.62/cwt. At this price a 490 pound cull sow earns over \$365, which goes a long ways towards paying the genetic and production costs associated with replacement gilts and likely limits net breeding herd additions.

One generally consistent fundamental of growth in the hog industry has been productivity, namely, pigs saved per litter. It has averaged 1.4% annual growth over the last ten years. However, the annual growth has been lower (irrespective of 2013 and PEDV) in recent years than the late 2000s and early 2010s.

The June-Aug average number of pigs saved per litter was record- high at 10.65. However, this was only 0.7% above the same period a year earlier. While the March-May period seen similar litter size growth, the reasoning for this recent divergence from trend is not clear. Pig crops and subsequent hog marketings could be much larger had pigs per litter been commensurate with productivity gains of years past.

Over time, new production facilities have been constructed or remodeled as the expansion of the U.S. herd continued. But this all takes time and dollars. And for an industry that has experienced periods of dramatic volatility. Producers have, at times, adopted a mind-set that ‘cash is king’. And, while profitability drives expansion, ability to execute is another thing. Construction resources and other factors such as labor, feedstuffs and milling, and transportation can inhibit rapid expansion to occur. It can’t happen overnight.

At the same time, the number of weaned pigs shipped to the U.S. is slowing. Year to date, Canadian feeder pig imports are up only 0.9%. This compares to year over year increases of 10.2% in 2015 and 7.4% in 2016. From July through mid-September 2017 feeder pig imports have been down 6.8% compared to the same period in 2016. Fluctuations in imports help balance inventories in times of deficits and larger supplies.

The hog market is a reasonably good example of what economists call a “competitive market,” where forces of supply and demand interact to determine the price. Even with larger supplies, prices have been profitable because of the prevailing demand situation. Looking forward, the three pillars that will need to continue to bolster demand are exports, domestic consumption at supportive prices, and packer competition. For the last to materialize, the first two must continue.

Pork exports are having a good year. Through August, pork exports are up 9% on a carcass weight basis, led by Mexico up 21% and South Korea up 29%. Export are tracking toward absorbing 22% to 23% of domestic production.

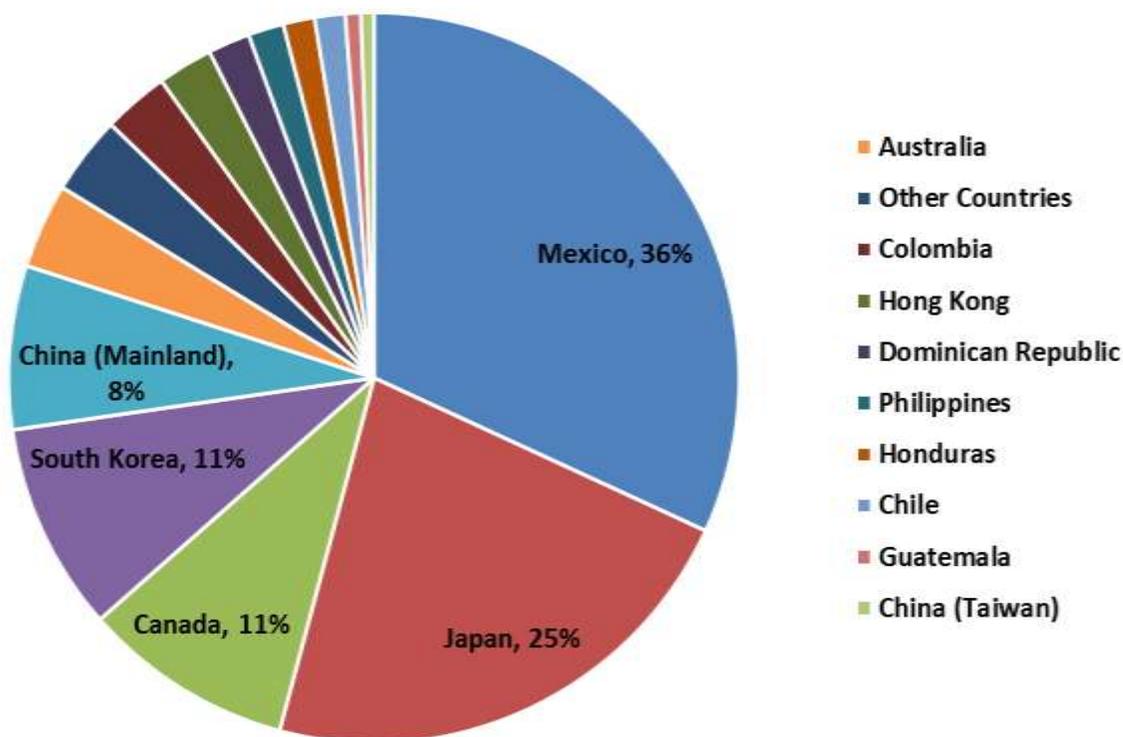
Mexico became the top destination for U.S. pork in 2015 and reminds the industry that NAFTA negotiations are especially important to U.S. agriculture and to the pork industry in particular (Figure 2). International trade agreements have helped greatly in keeping the cost of U.S. pork competitive in foreign ports.

Per capita consumption is simply production (net volume of domestic production, cold storage adjustments, and international trade) divided by population. Strong pork exports have moved much of the higher pork production into markets abroad. This means that the amount of pork available for U.S. consumers is about the same as last year. U.S. per-capita pork consumption is expected to remain steady, thus, the vast majority of production increases must go to export markets.

The steady U.S. per-capita pork consumption has a positive component. If you've been to the supermarket lately, you've noticed higher retail prices on pork. Consumers paying higher prices for the same or slightly larger consumption points to strong demand.

Often rising production and how much more pork is available is the headline. This pork has a market destination and is getting used up. Somewhat lower prices may be needed to clear the market as production rises. But lower prices still could be profitable for producers, depending on cost structure.

Figure 2. U.S. Pork Exports, Carcass Weight Basis, January-August 2017, % of Total



Data Source: USDA-ERS.

Packers don't entirely control weekly hog slaughter; producers do so as well by how many hogs they collectively market. When hogs are plentiful, demand for packer services is high and packer margins get large. When fewer hogs are available, packers bid up to get hogs and their margins decline. The packing industry expansion will almost certainly push margins lower eventually but for now things are still good in the packing sector.

Another factor that can widen margins is the price of pork reflected through the cutout value. Cutout is a calculation representing the approximate value of a carcass based on the prices received for its respective parts.

The cutout price gives an indication of the overall supply and demand situation of the wholesale pork cuts market. Strong prices and margins for packers would be expected to contribute to stronger bids for hogs.

Essentially current inventories are pretty much locked in place already – all that can be done is reaction to pricing opportunities. Long-term, growing demand will be key.

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 29, 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. Market hog inventories indicate fourth quarter 2017 hog slaughter will be up 3.75%. Calendar year 2017 hog slaughter is forecast to be up 3.2%. Slaughter in the first quarter of 2018 is projected up 2.22%, reflecting larger summer farrowings and more pigs per litter. Slaughter in the second quarter of 2018 will come from sows farrowing this fall. With larger farrowings and more pigs per litter expected, second quarter 2018 slaughter is projected 2.30% larger. Third quarter 2018 slaughter is projected 2.34% larger.

Table 2. Commercial Hog Slaughter Projections and Lean Hog Price Forecasts, 2017-18

	Year-over-Year Change In Commercial Hog Slaughter (percent)	ISU Model Price Forecast, Negotiated IA/So MN (\$/cwt)	CME Futures (09/29/17) Adjusted for Negotiated IA/So MN Basis (\$/cwt)
Oct-Dec 2017	3.75	55-59	56.65
Jan-Mar 2018	2.22	62-66	63.53
Apr-Jun 2018	2.30	71-75	72.76
Jul-Sep 2018	2.34	70-74	71.31

Lee Schulz

Building Crops and Stocks

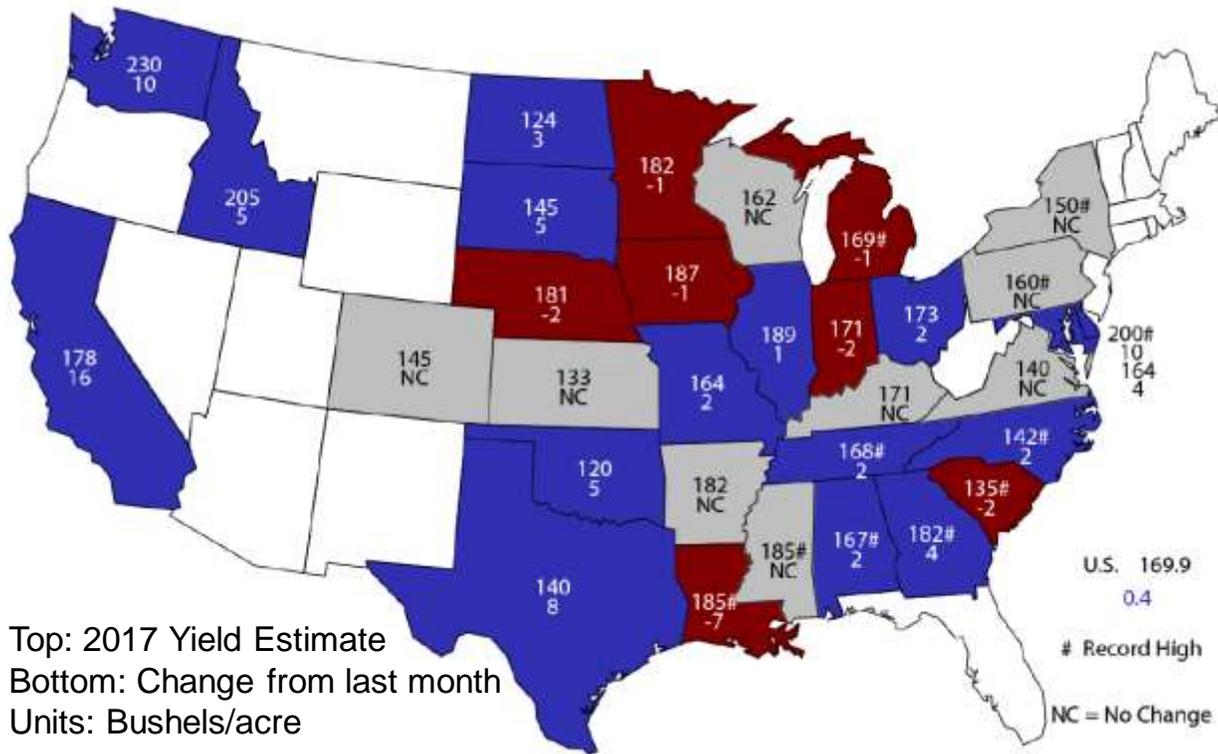
For the month of September, the crop markets basically treaded water. Corn and soybean futures prices didn't move that much as the data underneath them didn't change. Projected production still looks large. Stocks remain large as well. Barring a yield surprise, the markets are back to looking for potential sources for increased demand to soak up production and searching for storylines for lower plantings next year.

Figure 1 shows the September corn yield estimates. The outlook is roughly the same as USDA indicated in August, with a national yield estimate of nearly 170 bushels per acre. The drought in the northern and western Corn Belt took a bite out of production, but the extra bushels from the southern and eastern Corn Belt offset those losses. The U.S. is still on track for the 3rd largest corn crop in history, continuing a string of strong production, with the last 5 corn crops being the 5 largest ever. For Iowa, corn yields are down 16 bushels from last year, but the projected yield of 187 bushels per acre would be the 3rd largest ever, trailing only 2015 and 2016. The drought had its' largest impact in south-central Iowa, where corn yields are projected to be 45 bushels below last year. Meanwhile, east-central Iowa is forecast to have yields roughly on par with last year. It's amazing the difference a few good timely rains can make.

The yield outlook is very similar for soybeans. The national yield is projected at roughly 50 bushels per acre, up a half of a bushel from August. The yield losses in the northern and western areas are offset by gains to the south and east. And given the additional soybean plantings this year, the soybean market is staring at another record crop. Iowa's soybean yield is projected at 57 bushels per acre, down 4.5 bushels from last year. Again,

the largest yield losses are in south-central Iowa, while northeast and east-central Iowa may have a crop slightly better than last year.

Figure 1. Corn yield projection (Source: USDA-NASS).



being held both on and off of the farm, with 1 billion bushels in the I-states (Iowa, Illinois, and Indiana) alone. That much old crop corn sitting at the ready in storage has made basis improvement hard to come by.

Corn usage has been strong over the past year, but it couldn't catch up to the last year's record crop. Even though this year's crop is smaller, corn usage may still not catch up. Feed and ethanol usage are projected to grow slightly, but exports are expected to slide, given increased international competition. Corn supplies for the 2017/18 marketing year will once again start above 16 billion bushels.

Figure 3. Corn stocks (Source: USDA-NASS).

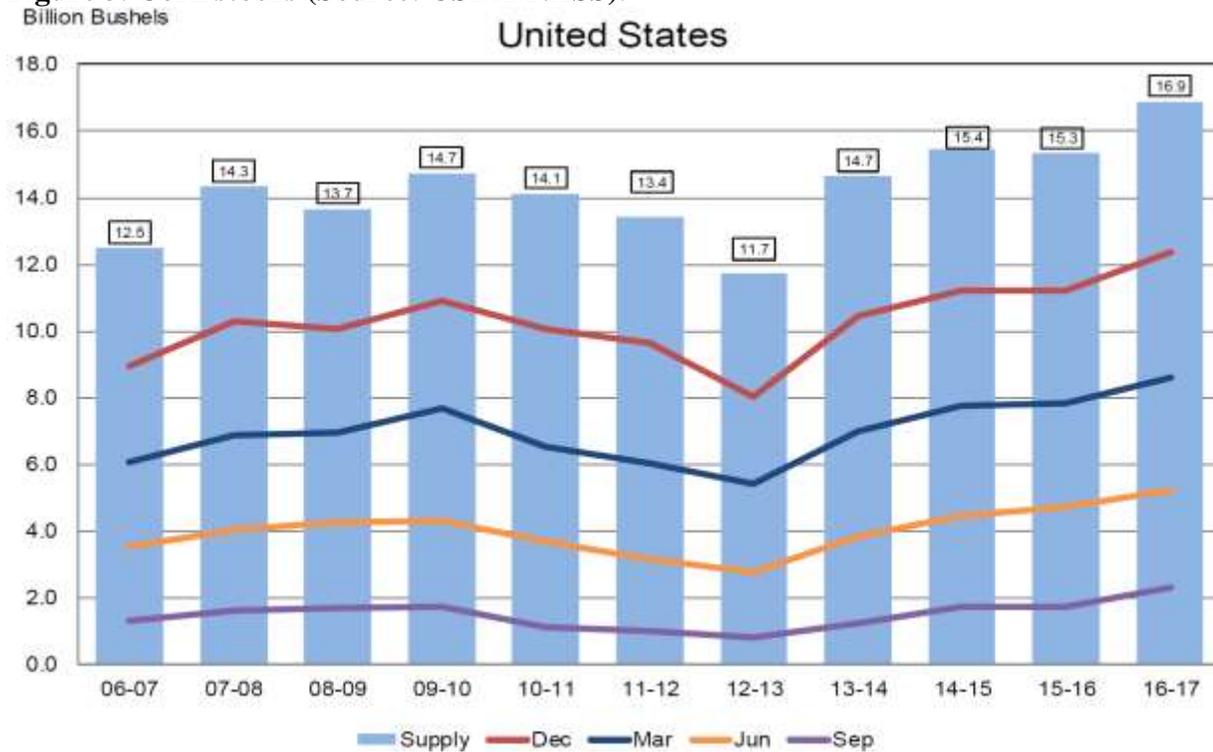
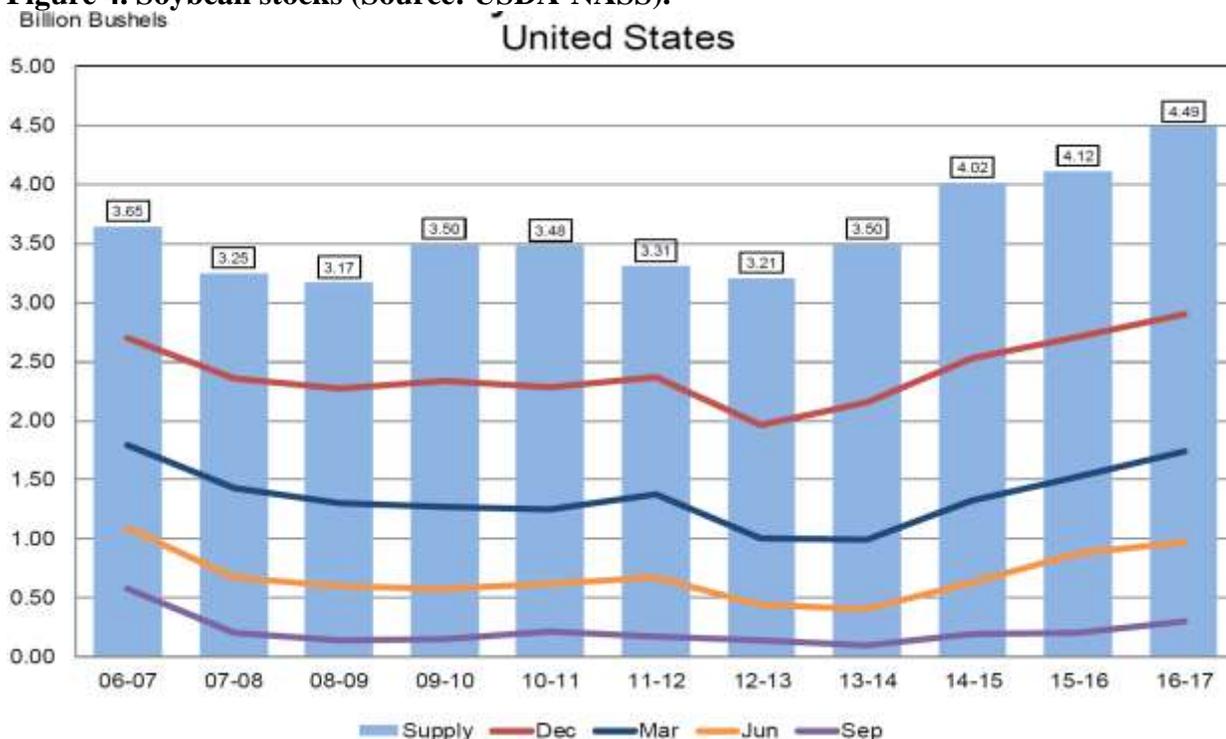


Figure 4. Soybean stocks (Source: USDA-NASS).

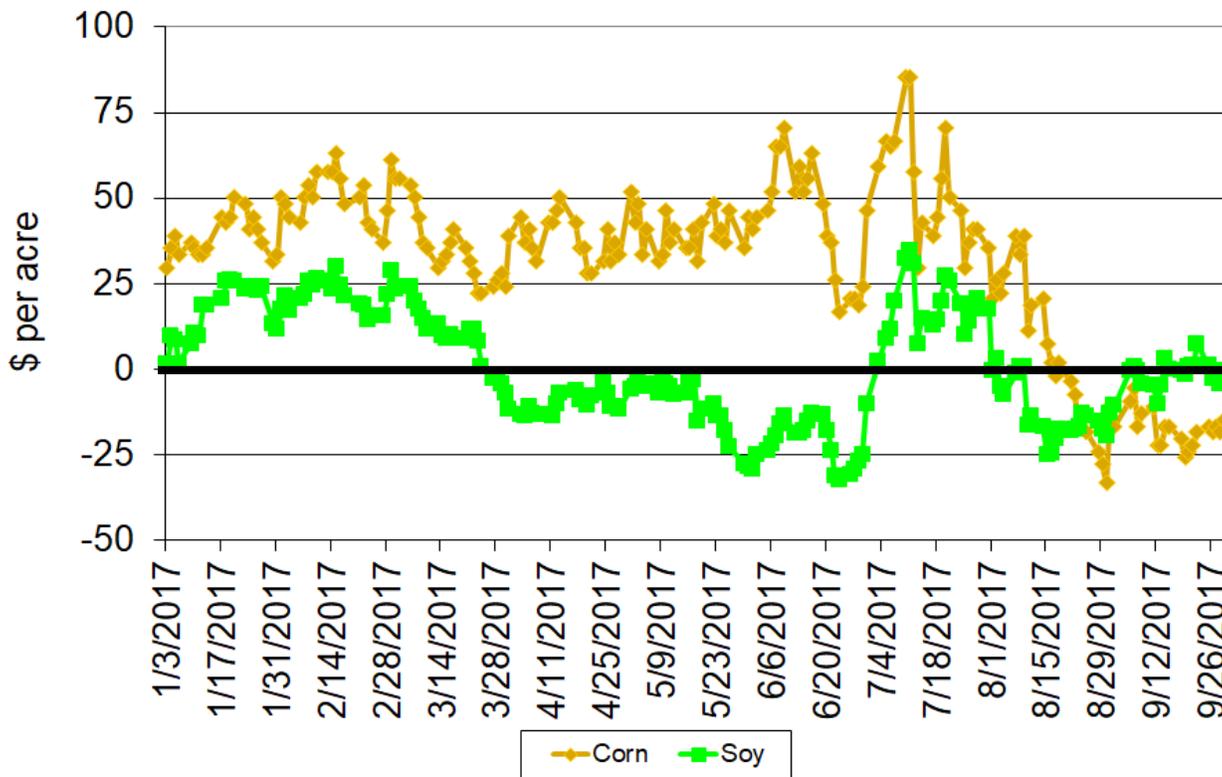


Soybean stocks were estimated at 301 million bushels, up a whopping 53 percent from last year. As with corn, usage was strong, but not strong enough to offset a record crop. Projections for the next year repeat that pattern. Summer soybean usage summed to 665 million bushels, down slightly from last year. On-farm old crop soybean stocks more than doubled. And the 3 I-states hold roughly one-third of the stocks, which is limiting basis improvement.

The outlook for 2017/18 shows another record soybean crop and another strong demand year. While soybean yields are lower, the additional acreage planted this spring is translating into a 4.4 billion bushel crop. Domestic crush and export usage remains in a growth pattern, but supplies continue to exceed usage.

As the margin graph shows, prices have retreated significantly over the summer. The drought conditions provided some price support earlier in the year, but as both private and public yield forecasts have improved approaching harvest, farmers find themselves once again staring at lower price prospects. As I mentioned earlier, the larger stocks have also hampered basis improvement. And that has sizable implications for my margin graph. For the margins you see below, I utilize monthly basis levels, based on average pricing relationships over the past 5 years. Current basis levels are well below those averages. So, actual margins are likely below my estimates.

Figure 5. Projected 2017/18 crop margins.



Current futures prices point to season-average prices in the \$3.60 range for corn and \$9.60 range for soybeans. Meanwhile, USDA forecasts are in the \$3.20 range for corn and \$9.20 range for soybeans. Current cash prices are around \$3 per bushel for corn and \$8.75 per bushel for soybeans. The large discrepancies among the prices are due to the large stocks and, hence, wider basis. Given the size of the ongoing harvest, those basis problems will not be going away very soon.

Both the corn and soybean markets are displaying some carry into next spring. The spread between the December and July corn futures is nearly 30 cents, whereas the spread between November and July soybean futures is over 35 cents. So the markets are covering some of storage costs to move bushels into next year. But

the challenge remains as it has been over the past few years, to capture prices at, and hopefully above, production costs.

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