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This Issue

Feature Article

Margin Watch Reports

Dear Ag industry associate:

There has been a lot of discussion lately in agricultural circles about the potential impact on exports if current free trade agreements are renegotiated or terminated. For the pork industry in particular, where a recent expansion in packer capacity has been tied in part to the growth of pork exports, there is concern among both producers and processors about the outlook for forward margins if future trade is adversely affected.

Given all the uncertainty in the pork industry, flexible margin management strategies are a must for hog producers. Our feature article this month, “Managing Uncertainty in Forward Hog Margins,” looks deeper into the factors currently driving forward hog margins and explores how to objectively evaluate the cost of options, which are among the most useful tools for adding flexibility to a margin management strategy.

As the summer winds down and attention turns to the fall harvest season, there remains quite a bit of uncertainty over yields and production for this year’s crops of both corn and soybeans. However, earlier fears of substantial production losses have abated and prices have declined as a result. This has brought mixed results for production margins across the various sectors in the ag markets. Our regular Margin Watch features offer insight about these and other developments affecting projected returns for the crop and livestock sectors.

As always, if you have questions, please feel free to contact me.

Respectfully,

Chip Whalen

Chip Whalen is the managing editor of MarginManager and the vice president of education and research for CIH. He teaches classes on margin management throughout the country and can be reached at cwhalen@cihedging.com.

Upcoming Education Events

Dairy Margin Management Seminar	Margin Management for Lenders
San Diego	Chicago
Oct 18-19	Oct 25-26

Managing Uncertainty in Forward Hog Margins

With two brand new state-of-the-art pork processing plants currently opening and another one slated to open a year from now, many hog producers are no doubt celebrating the prospect of additional slaughter capacity. Hog supplies are up around 3% from last year and pushing against existing shackle space. But in addition to a sense of relief that more – and more efficient – outlets will be available to process their hogs, producers may have some concern about how the additional capacity will impact the price they receive for their hogs and their finishing margins.

More Capacity and More Competition

Seaboard Triumph Foods just opened their new facility in Sioux City, Iowa with a daily processing capacity of 10,000 head. That number could more than double, to 21,000, if an anticipated second shift is added. The Clemens Food Group's new Coldwater, Michigan plant, which likewise just began operations, will process 12,000 head daily when it reaches full capacity and has similar room for second-shift growth. Meanwhile, Prestage Foods has broken ground in Wright County, Iowa near Eagle Grove with their new plant that will be able to process 10,000 head daily. This project is scheduled to be completed in the fall of 2018, and when finished, will likely compete with the Sioux City Seaboard Triumph facility, along with an existing Tyson Foods plant in Storm Lake, for the same supply of hogs.

Unclear Lessons from the Past

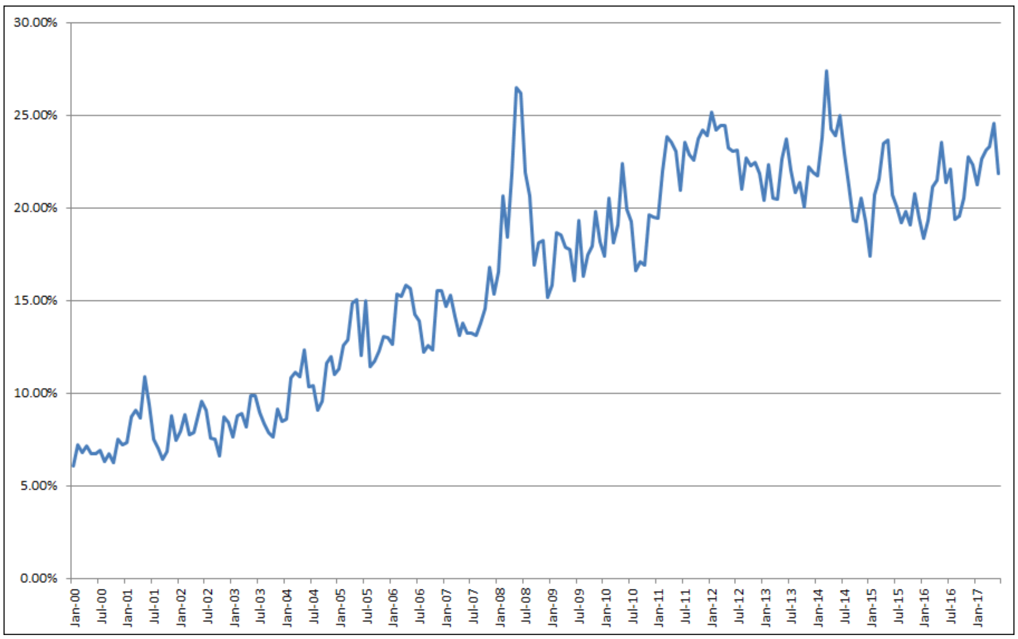
We might assume that the heightened competition among packers to get hogs in their doors would lead to higher hog prices, as packers bid up any supply not already committed to an existing plant. In addition, as those processed hogs become additional pork produced, we might expect increased competition for pork markets to lead to a lower cutout value relative to cash hog prices, and thus lower margins for packers. However, history tells us that expansions don't always produce that result. In fact, after the last major expansion in packer capacity in 2005, packer margins remained relatively stable throughout the following year, then became more volatile (though not much higher) the year after that.

Margins are driven by many factors that are inextricably linked, and expanded processing capacity is just one component of one side of the supply-demand balance that ultimately determines prices. With increases in both packer capacity and competition, what will the net change be for hog prices? Or the cash hog - cutout price differential? The short answer to both is we just don't know.

The X (as in Export) Factor

For the current year, the pork cutout price has held up well relative to cash hog prices, due mostly to exports. Exports now represent from 20% to 24% of total U.S. pork production, up from around 13% back in 2005 (see Figure 1), and 2017 export volume gained 12.4% from January to June. The current packer expansion was driven in part by these export growth trends, as well as expectations that they would continue. However, a large portion of exports is represented by markets that are part of trade agreements whose futures are now in question. And disruptions to these important trade relationships could have a significant impact on overall export demand.

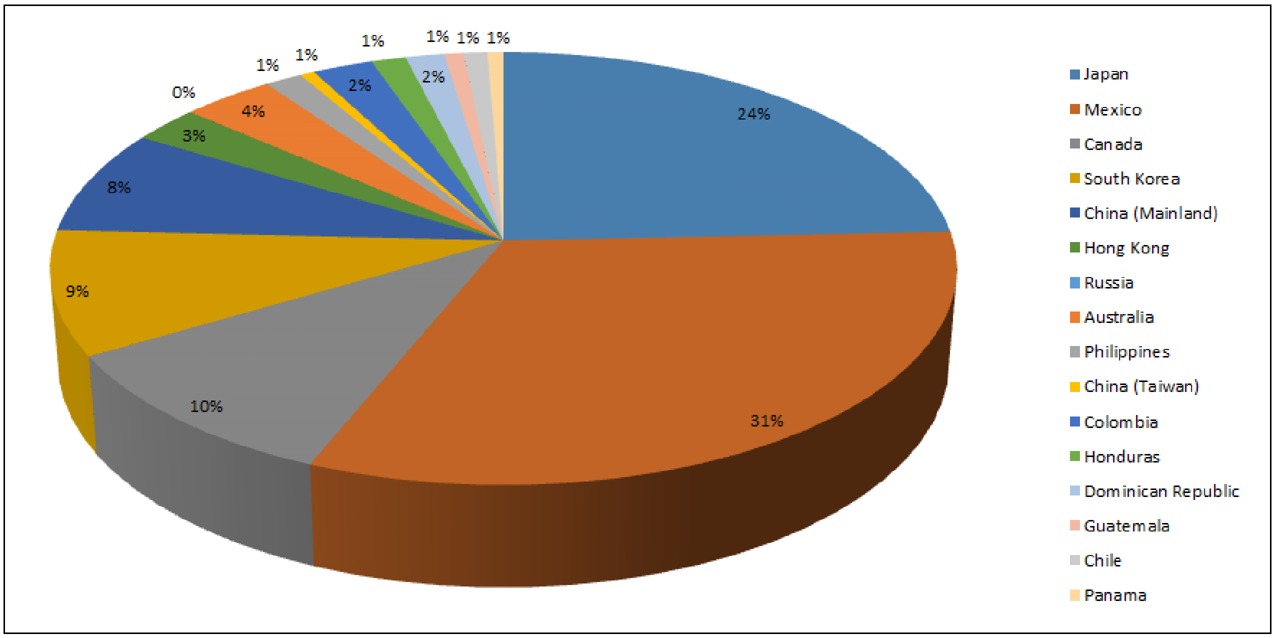
Figure 1: U.S. Monthly Pork Exports as Percent of Total Production
January 2000 - June 2017



For example, the Trump administration's decision to pull out of the Trans Pacific Partnership (TPP) opens the possibility that, unless a bilateral U.S.-Japan trade deal can be worked out, U.S. pork exports to Japan may lose their competitive advantage over EU supplies. As shown in figure 2, Japan is currently the second largest importer of U.S. pork, representing 24% of total volume. Meanwhile, pork shipments and trade with Mexico and Canada, which together represent another 41% of total pork exports, will depend in large part on the outcome from NAFTA renegotiations, which began in August and will continue into 2018.

More recently, the Trump Administration has also threatened to pull out of KORUS, the Korean-U.S. free trade agreement. If that comes to pass, according to an analysis by Iowa State University economist Dermot Hayes, we can expect a decline in live hog prices of 3.8%, or $4.71 per animal, essentially eliminating U.S. pork producers' expected gross margin in 2017, as the European Union,

Figure 2: U.S. Pork Exports by Destination
February 2015 - June 2017



Options Offer Protection and Opportunity

Clearly, there's a risk that hog producers may see their future margins shrink. But at the same time, with many variables at play, there's also the possibility that margins could move in the opposite direction in either the short or long term. That's why it makes sense for producers to not only protect their operations from potential losses, but also to position themselves to take advantage of opportunities that may arise. The way to achieve both of these objectives at the same time is by incorporating options into your margin management approach. While options can be complex, even simple option strategies can offer valuable flexibility, so it's useful to understand how they work.

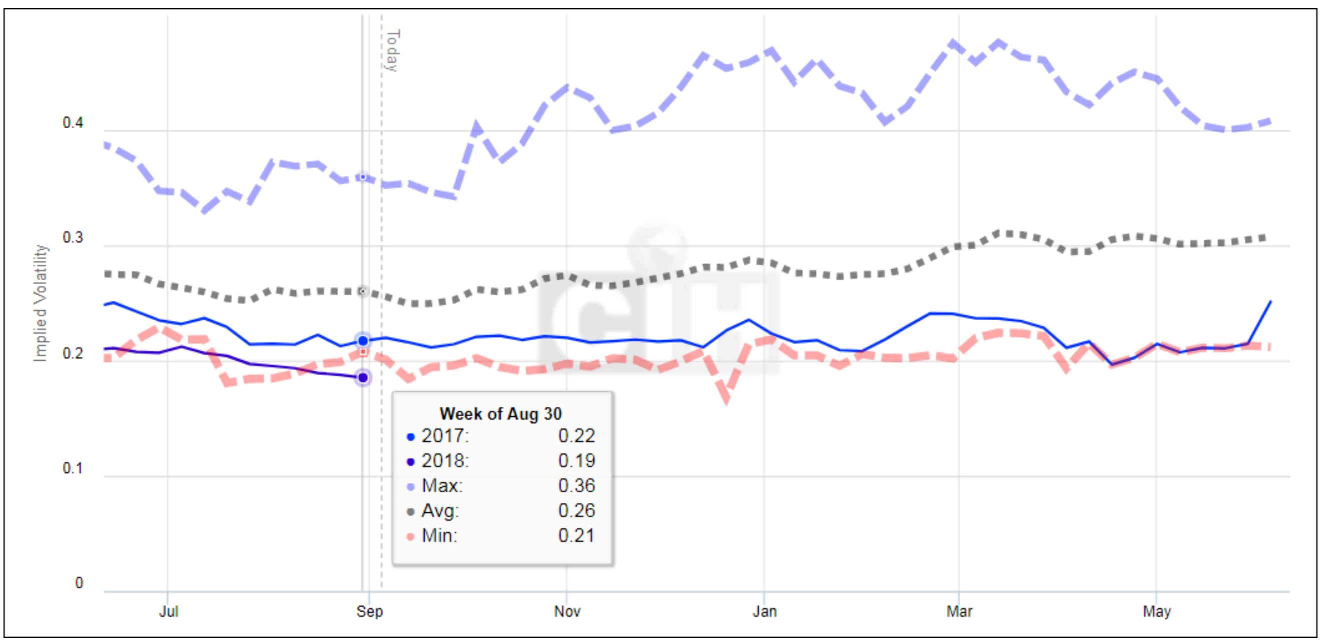
At a fundamental level, options are like an insurance policy. You pay a premium for the protection against an unfavorable price and margin outcome. When you buy an option, you gain the right to protect a price level, but you also retain the ability to take advantage of any price improvements as the market moves over time. That protection comes at a cost, called a premium. But just as you don't buy expensive insurance policies on every asset you own, you should carefully weigh the cost of the option against the value of the benefit or protection it offers.

Make an Objective Cost Comparison

While insurance premiums can be compared dollar for dollar to the cost of the asset, for an option, we can make an objective comparison of the cost of protection by looking at the option's implied volatility. Implied volatility measures a consensus expectation, among buyers and sellers across the globe, for price changes over a period of time. The lower the implied volatility of an option, the lower the expectation for the underlying commodity price to change dramatically – and the lower that option's premium. By the same token, the higher the implied volatility, the more uncertainty is priced into the market and the higher the option's premium.

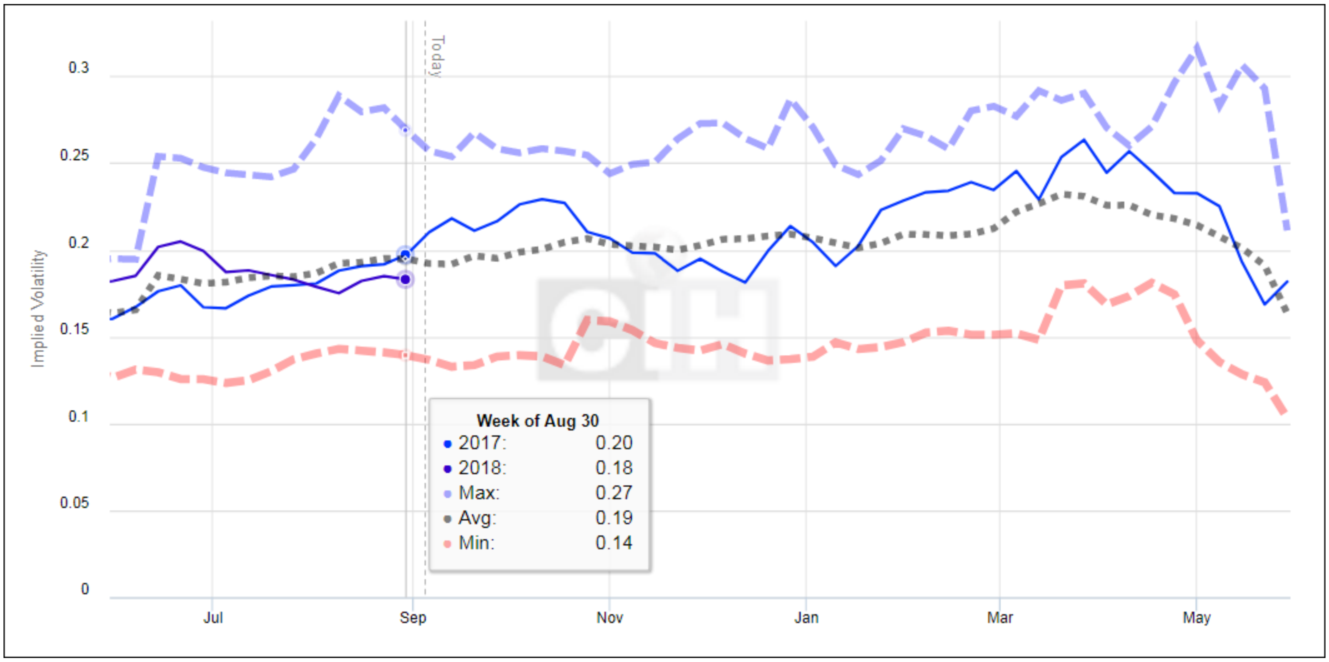
As an example, we can look at implied volatility for July 2018 CBOT corn options. July corn option implied volatility has a historical tendency to hit bottom in mid-to-late September, and gradually move higher into the spring planting season. Yet, as shown in figure 3, the current implied volatility for July 2018 CBOT corn options is just 19%, well below the 15-year average of 26% for this time of year, and only two points above the all-time low of 17% that occurred in late December 2003. That means corn options can be considered cheap relative to the protection they can offer.

**Figure 3: July Corn Options Implied Volatility
2002 - 2017**



In contrast, the implied volatility of hog options for the June contract period, shown in figure 4, is currently at 18%. That figure is not usual for this time of year; the 15-year average is 19%. We can therefore conclude that hog options are not as cheap as corn options, relatively speaking. You'll also note that hog option implied volatility tends to exhibit seasonal tendencies, rising through the fall and winter before declining into spring.

Figure 4: June Hog Options Implied Volatility
2002 - 2017



For hog producers who wish to add flexibility at a reasonable cost, the extremely low current premiums of corn options offers an attractive opportunity, and many producers may be comfortable simply paying the full premium for these options up front, confident that the value of its protection justifies the initial cost. However, when considering the relatively more expensive hog options, a producer may want to consider ways to minimize the cost from the outset. Selling one option while purchasing another is one tactic for offsetting that cost, while still reducing the risk of a negative impact from market swings.

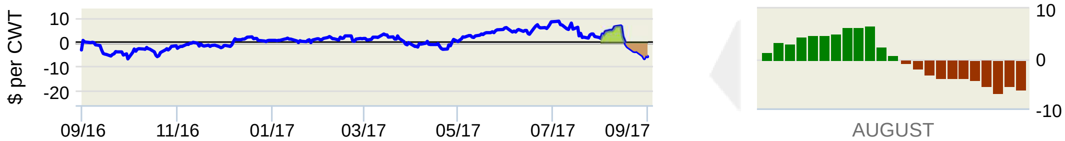
Other factors to weigh when making a strategy selection include how options for different strike prices are priced relative to each other, and how the market is pricing the probability of prices moving in one direction versus the other. Of course, the strategy that is best for you will also depend on your operation's financial situation and your tolerance for risk.

If you'd like more information about how options can help you maintain the flexibility you need to navigate an increasingly uncertain hog margin landscape, please contact us at 1.866.299.9333 or mail@cihedging.com.

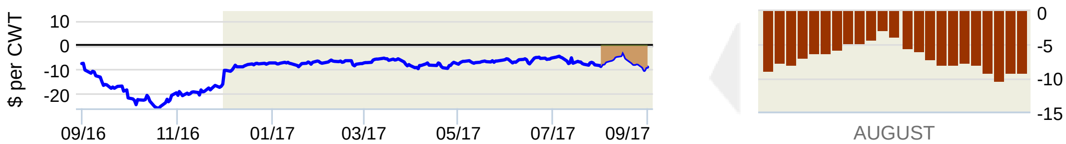
Hog Margin Watch: August

Margins have deteriorated since the middle of August as sharply lower hog prices more than offset a decline in corn, while soybean meal held relatively steady. With the exception of deferred 2018 Q2, hog finishing margins are projected negative and remain in the bottom quartile of the previous decade. Hog prices have come under pressure recently from a significant drop in pork belly prices combined with a seasonal rise in hog slaughter. USDA quoted the pork belly primal at $128/cwt. at the end of August, down $84/cwt., or 40%, for the month. That decline accounted for $13.50/cwt. of the $15/cwt. drop in the composite pork cutout for August. Meanwhile, weekly hog slaughter rates have begun to move higher, with 2.344 million head harvested this past week, which is up from 2.234 million at the end of July. Dressed carcass weights have also started their seasonal ascent, pointing to record pork production coming to market this fall. As a result, it will be imperative for demand strength to hold up in both domestic and export channels, as well as for producers to remain current with marketing their hogs. Corn prices have slumped recently also, as weakness in the cash market coupled with reduced anxiety over the prospect of significant yield loss to the crop this season from uneven weather across the Corn Belt. USDA's August WASDE report continues to cast a bearish pall over the market, and while yields may still be reduced in subsequent reports, there is less expectation for a big decline from baseline trend projections as better-producing areas of the Midwest likely make up for poorer results elsewhere. Following the sharp drop in both hog and corn prices recently, hog producers have been active adjusting existing positions by adding flexibility to hog hedges and strengthening corn hedges.

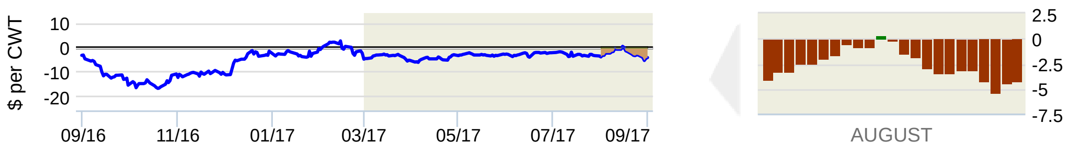
3rd Qtr '17 | 2016 | 2017 | Q3 2017: HIGH **$8.76** LOW **($6.86)** LAST **($6.01)** 10YR PERCENTILE **8.6%**



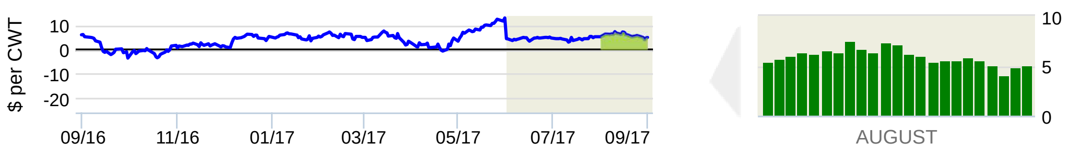
4th Qtr '17 | 2016 | 2017 | Q4 2017: HIGH **($2.63)** LOW **($10.78)** LAST **($9.05)** 10YR PERCENTILE **19.6%**



1st Qtr '18 | 2017 | 2018 | Q1 2018: HIGH **$0.39** LOW **($6.22)** LAST **($4.25)** 10YR PERCENTILE **24.5%**



2nd Qtr '18 | 2017 | 2018 | Q2 2018: HIGH **$7.47** LOW **$3.09** LAST **$5.07** 10YR PERCENTILE **36.0%**

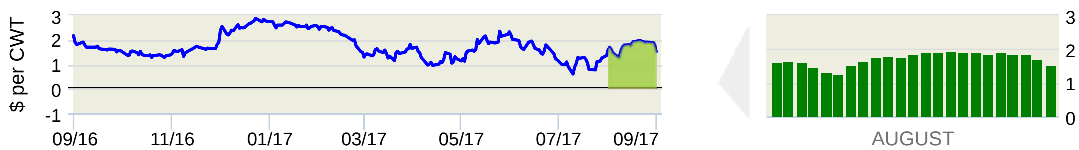


The Hog Margin calculation assumes that 73 lbs of soybean meal and 4.87 bushels of corn are required to produce 100 lean hog lbs. Additional assumed costs include $40 per cwt for other feed and non-feed expenses.

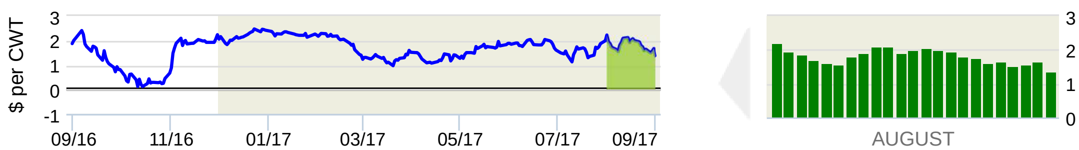
Dairy Margin Watch: August

Dairy margins weakened over the second half of August, as sharply lower milk prices more than offset the savings from a similar decline in corn prices. Margins are still strong from a historical perspective; margins through Q1 of 2018 are at or above the 70th percentile of the previous 10 years, and Q2 2018 margins are over the 80th percentile. Milk prices have come under pressure recently following a sharp drop in cash cheese and butter prices. CME spot butter closed the month of August at $2.58/lb., down 10.25 cents, while block and barrel cheese prices sank 27.75 cents and 17 cents, respectively, to settle at $1.51/lb. and $1.49/lb. USDA reported July all-cheese stocks in Cold Storage at 1.375 billion pounds, up 4.4% from June and up 100 million pounds, or 7.8%, from last year. Meanwhile, July Milk Production of 18.2 billion pounds was up 1.8% from last year, but down 2.2% from June. USDA reported that the U.S. dairy herd declined by 1,000 cows in July to 9.403 million head, which would be the first decline in herd size since September of 2016. There remains concern that large global inventories of milk powder, including 357,467 metric tons in EU intervention storage alone, could weigh on the world market, as stronger milk output is indicated in the Southern Hemisphere ahead of their peak production season. Corn prices sold off recently, and many private forecasters raised their yield and production estimates following the surprise WASDE report from USDA earlier this month. In general, concerns over a significant yield drag have lessened despite uneven weather across the Corn Belt this season. Following recent price action, dairy producers have been active adjusting existing positions to add flexibility to milk hedges and strengthen feed coverage.

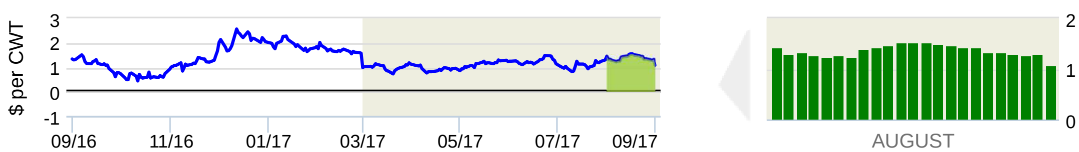
3rd Qtr '17 2016 2017 Q3 2017: HIGH **$2.87** LOW **$0.60** LAST **$1.52** 10YR PERCENTILE **76.5%**



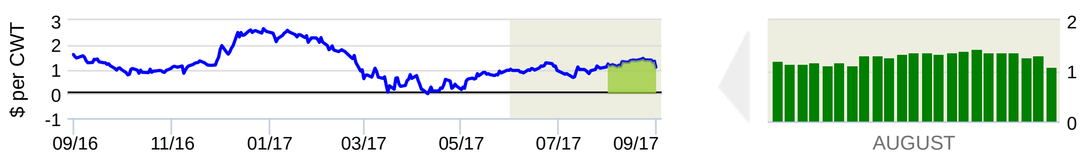
4th Qtr '17 2016 2017 Q4 2017: HIGH **$2.47** LOW **$0.97** LAST **$1.37** 10YR PERCENTILE **69.4%**



1st Qtr '18 2017 2018 Q1 2018: HIGH **$1.55** LOW **$0.73** LAST **$1.07** 10YR PERCENTILE **75.2%**



2nd Qtr '18 2017 2018 Q2 2018: HIGH **$1.44** LOW **$0.66** LAST **$1.07** 10YR PERCENTILE **82.0%**



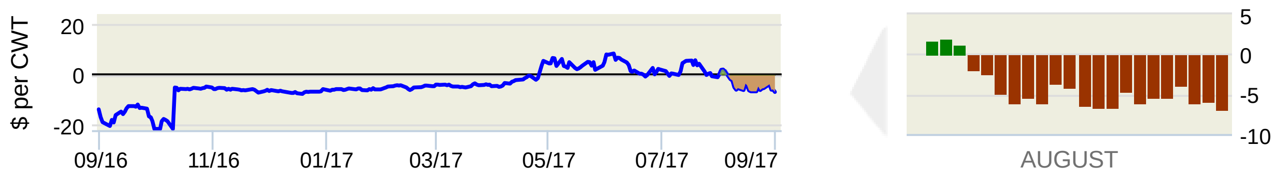
The Dairy Margin calculation assumes, using a feed price correlation model, that for a typical dairy 62.4 lbs of corn (or equivalent) and 7.34 lbs of meal (or equivalent) are required to produce 100 lbs of milk (includes dry cows, excludes heifers not yet fresh). Additional assumed costs include $0.90/cwt for other, non-correlating feeds, $2.65/cwt for corn and meal basis, and $8.00/cwt for non-feed expenses. Milk basis is $0.75/cwt and non-milk revenue is $1.00/cwt.

Beef Margin Watch: August

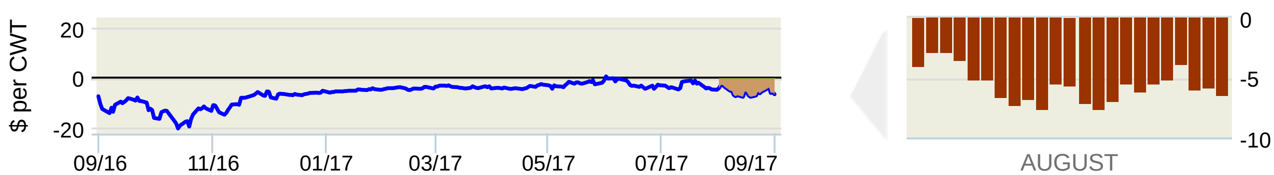
Beef margins have improved slightly since the middle of the month due primarily to a sharp selloff in corn as cattle prices held largely steady. However, cattle finishing margins remain weak and are below breakeven through the first half of 2018. Cattle prices stabilized after a selloff over the first half of August following the monthly Cattle on Feed report and continued strong beef export demand. USDA reported August 1 Cattle on Feed at 10.6 million head, up 4.3% from last year and very close to pre-report market expectations for a 4.5% increase. However, July placements increased only 2.7% from 2016, compared to market expectations for a 6.2% average rise. Cattle marketings by feedlots were up 4.2% from last year when the market was expecting a 4.5% increase. Meanwhile, beef exports for the week ending August 24 totaled 21,432 metric tons, up 56% from last year and the largest weekly export total so far in 2017. For the last four weeks, beef exports have averaged 16,730 metric tons per week, which is up 18.2% from the same period last year. The robust export pace continues to be driven by strong demand from Asian markets, especially to both Japan and Hong Kong, and this should help support the beef market through the fall. Corn prices have dropped sharply in the aftermath of the surprising August WASDE crop report from USDA that estimated yield and production that were both above market expectations. The recent Farm Journal (Pro Farmer) annual crop tour pegged corn yield at 167.1 bushels per acre, with production at 13.953 billion bushels. While those figures are down from the August WASDE, they remain above many recent private estimates. Given the price break in corn, beef producers have been focused on adjustments to existing feed hedges, strengthening coverage to take advantage of weaker prices.

Live Cattle Marketing Periods:

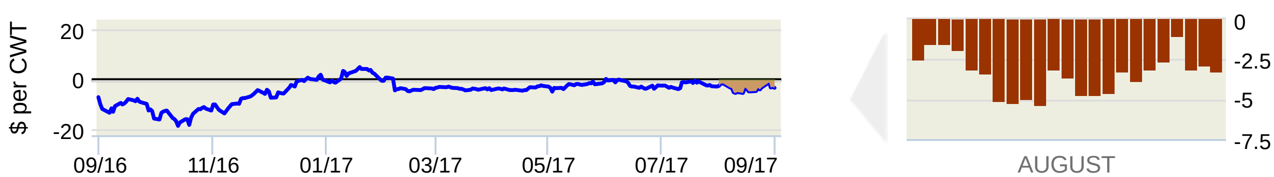
Oct '17 2016 2017 Oct 2017: HIGH **$8.37** LOW **($21.47)** LAST **($6.87)** 10YR PERCENTILE **18.5%**



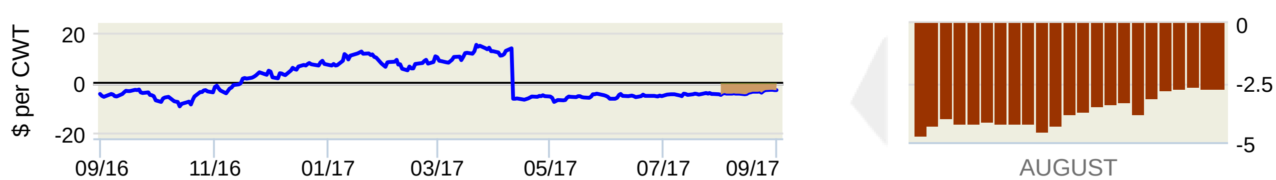
Dec '17 2016 2017 Dec 2017: HIGH **$0.67** LOW **($20.08)** LAST **($6.45)** 10YR PERCENTILE **17.9%**



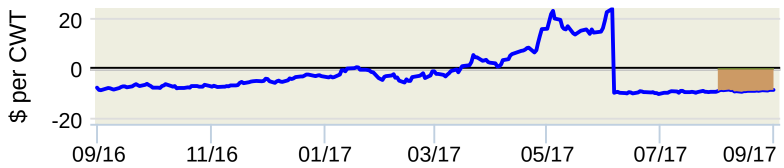
Feb '18 2017 2018 Feb 2018: HIGH **$5.05** LOW **($18.31)** LAST **($3.20)** 10YR PERCENTILE **39.3%**

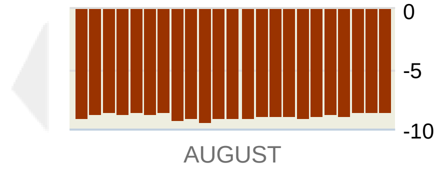


Apr '18 2017 2018 Apr 2018: HIGH **$15.25** LOW **($9.28)** LAST **($2.71)** 10YR PERCENTILE **46.0%**

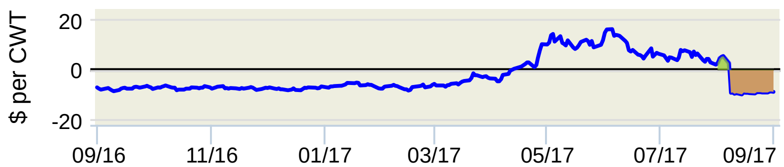


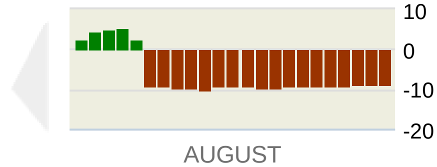
Jun '18 2017 2018 Jun 2018: HIGH **$23.69** LOW **($10.24)** LAST **($8.50)** 10YR PERCENTILE **26.1%**





Aug '18 2017 2018 Aug 2018: HIGH **$16.06** LOW **($9.92)** LAST **($8.86)** 10YR PERCENTILE **20.1%**





The Beef Margin calculation uses Feeder Cattle futures to price inbound animals and assumes each will consume 55 bushels of corn and cost approximately $250 per head (for other feed and non-feed expenses) to gain 550 pounds and reach a market weight of 1,250 pounds.

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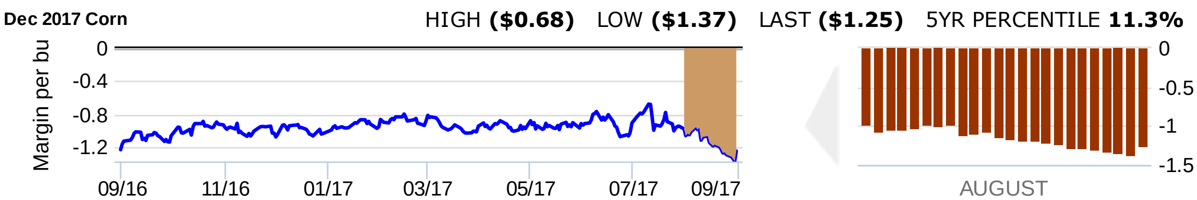
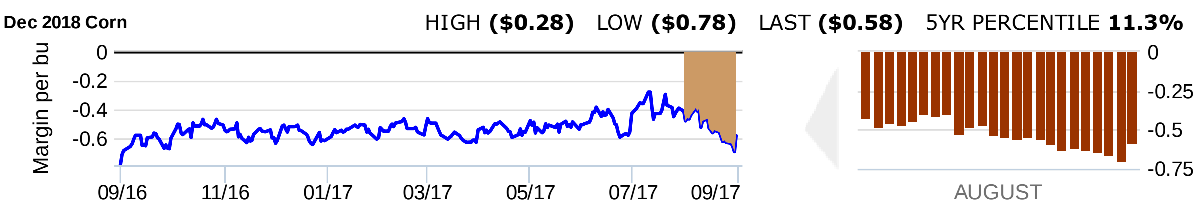
Corn Margin Watch: August

Corn prices and margins continued lower over the past two weeks, as the market became more comfortable with the WASDE yield shocker from the early-August report. Since the release, many market participants have debated the NASS 169.5 bpa national yield projection as too ambitious, pointing to drought conditions that covered nearly 15% of production areas at various times this summer, dragging potential yields lower. Many annual private crop tours, particularly the most renown, Pro Farmer (now known as Farm Journal Midwest Crop Tour) came in better than expected at 167.1, countering yield bears' expectations for low 160's yields. NASS crop scouts are now out surveying the selected fields and taking measurements for an updated yield forecast that will be revealed in the September WASDE report. That revelation will offer either confirmation of the August projection, or throw the above-trend estimate into doubt. Also said to be pressuring the corn market were delayed pricing cash contracts coming due at the end of August; with time running out, waiting was no longer an option, thus sales went forward. On the bright side, re-taking ownership of the corn via call options can be done at historically low implied volatilities. Corn exports sales are nearing the end of the marketing year in robust fashion at just over 100% sold of the USDA expectation of 2,225 million bushels. However, new crop sales are lagging, with just over 14% of next year's lower sales estimate of 1,850 million so far on the books. Given the market environment, our corn producer clients continue to contemplate adjusting into lower delta hedges, as well as take advantage of the historically low relative cost of options.



The estimated yield for the 2017 crop is 182 bushels per acre and the non-land operating cost is $595 per acre. Land cost for 2017 is estimated at $238 per acre [1]. Basis for the 2017 crop is estimated at $-0.25 per bushel.

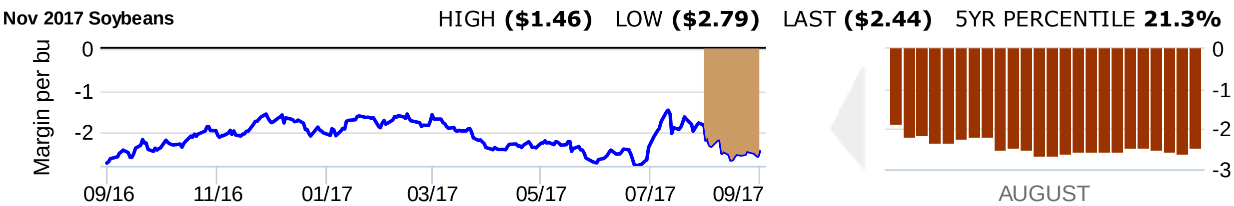


The estimated yield for the 2018 crop is 184 bushels per acre and the estimated operating cost is $547 per acre. Land cost for 2018 is estimated at $228 per acre [1]. Basis for the 2018 crop is estimated at $-0.35 per bushel.

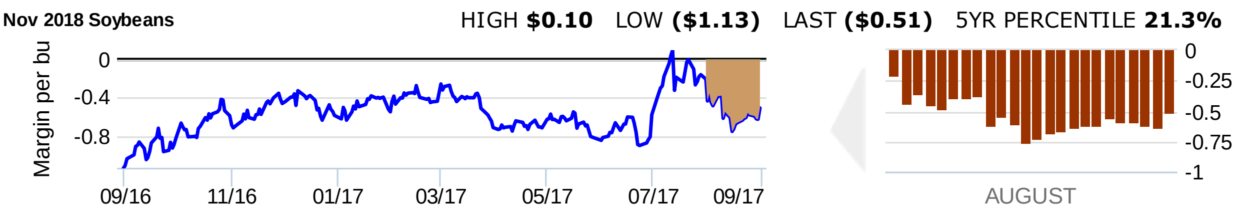
[1] The Corn Margin Watch yield, land and non-land operating cost values are based upon central Illinois low productivity farmland crop estimates in the "Historic Corn, Soybean, Wheat, and Double-crop Soybeans" report published by the Department of Agricultural and Consumer Economics at the University of Illinois.

Soybeans Margin Watch: August

Soybean prices and margins continued the downtrend over the past two weeks following the release of the August WASDSE report. The soybean market is becoming more comfortable with the surprising and robust 49.5 bpa projection. Many annual private crop tours, particularly the most widely watched, Pro Farmer, are in NASS's yield ballpark. The tour (now known as Farm Journal Midwest Crop Tour) came in with national yields higher than expected at 48.4, as drought-stricken areas were not as impacted as many had feared. The NASS crop scouts are now out in the selected fields surveying for pods counts and weights, to be incorporated in the September WASDE report. Then the market will become a little more certain about how much confidence they have in the August surprise yield projections. Soybean export sales are finishing the marketing year at a brisk pace, with 104% of the 2,150 million bushel expectation. However, somewhat worrisome is the pace of new crop sales at just 16% of next year's estimate of 2,225 million. This compares, on an average of the past ten years, to having sales commitments closer to 30% of the expectation. Given the market environment, our soybean producer clients continue to consider adjusting into hedge positions with more flexibility and lower delta.



The estimated yield for the 2017 crop is 52 bushels per acre and the non-land operating cost is $365 per acre. Land cost for 2017 is estimated at $238 per acre [1]. Basis for the 2017 crop is estimated at $-0.3 per bushel.



The estimated yield for the 2018 crop is 53 bushels per acre and the estimated operating cost is $290 per acre. Land cost for 2018 is estimated at $228 per acre [1]. Basis for the 2018 crop is estimated at $-0.4 per bushel.

[1] The Soybeans Margin Watch yield, land and non-land operating cost values are based upon central Illinois low productivity farmland crop estimates in the "Historic Corn, Soybean, Wheat, and Double-crop Soybeans" report published by the Department of Agricultural and Consumer Economics at the University of Illinois.

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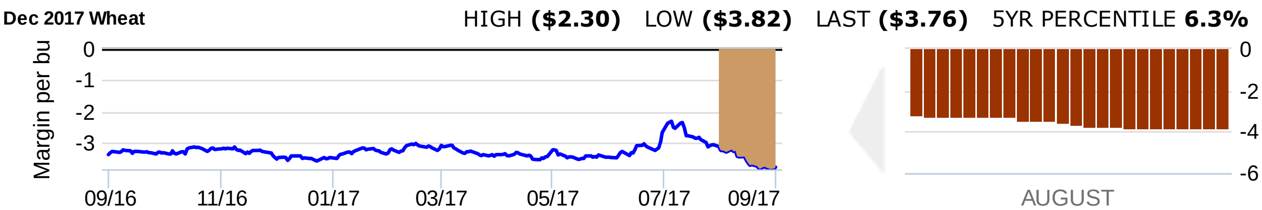
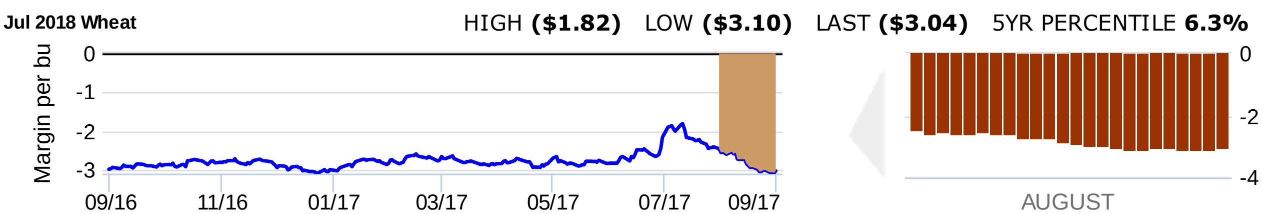
Wheat Margin Watch: August

Wheat prices and margins continued to move lower over the past two weeks. The wheat market has looked past the spring wheat production woes in the U.S. and is now focused on large global supplies. Record Russian production has been well documented, although a few countering fundamentals are offering pushback, perhaps stabilizing the move lower. The drought that impacted the U.S. High Plains has also hit the wheat fields further north, leading Stats Canada to adjust production projections unexpectedly lower to 25.6 million metric tons. That compares to 31.7 last year, and would be the lowest harvest in 6 years. The wheat crop is fully sown in Argentina, but according to the Buenos Aires Grain Exchange, nearly 30% of their wheat fields are suffering from excessive moisture. U.S. wheat exports have held steady so far this marketing year, with sales at 45%, just behind the average pace, and shipments of 27%, just ahead of the average pace needed to meet the USDA expectation of 975 million bushels exported. Given this backdrop, our wheat producer clients continue to consider adjusting hedges into structures with greater flexibility and lower deltas.



The estimated yield for the 2017 crop is 67 bushels per acre and the non-land operating cost is $358 per acre. Land cost for 2017 is estimated at $158 per acre [1]. Basis for the 2017 crop is estimated at $-0.4 per bushel.



The estimated yield for the 2018 crop is 68 bushels per acre and the estimated operating cost is $358 per acre. Land cost for 2018 is estimated at $150 per acre [1]. Basis for the 2018 crop is estimated at $-0.4 per bushel.

[1] The Wheat Margin Watch yield, land and non-land operating cost values are based upon central Illinois low productivity farmland crop estimates in the "Historic Corn, Soybean, Wheat, and Double-crop Soybeans" report published by the Department of Agricultural and Consumer Economics at the University of Illinois.