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Dear Ag Industry Associate,

To most readers, it will come as little surprise that commodity markets have been depressed. We certainly have seen that with margin contraction in all of the sectors we work with, both on the crop and livestock side. A recent article in the Wall Street Journal has been getting a lot of attention in commodity circles by highlighting that Lean Hog futures have been the best performing “asset class” so far in 2016. What the article failed to point out was that the 17% gain year-to-date from when they measured it followed a 20% drop late last year, with prices still below that level from the fall. All the same, commodity prices have certainly been under a great deal of pressure along with financial markets, and grains are no exception. Corn in particular has marked new contract lows recently, and a topic resurfaced that we covered in a previous Margin Manager article.

The issue of how to handle managing the price of corn when you both grow it and feed it to your livestock operation has become a renewed concern with prices now trading below the cost of production. While we covered this issue previously, the feature article this month takes another look at the topic to address some of these questions. Considerations that an integrated feeding operation may want to explore such as whether the price of corn is above or below the cost of production along with whether or not the feeding margin is positive or negative factor into margin management decisions. Carefully weighing out these considerations can definitely inform a more comprehensive margin management plan. As always, we also review the current forward margins for the crop, hog, dairy and beef cattle industries, and how our clients are managing these volatile markets to help secure their future profitability.

Sincerely,

Chip Whalen
Managing Editor

Managing Editor, Chip Whalen is the Vice President of Education and Research for CIH, a leader in Margin Management. He teaches margin seminars throughout the country and can be reached at cwhalen@cihedging.com

Upcoming Margin Seminars

**Margin Management Lenders
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**Dairy Margin Management
Chicago, Illinois**

**June 22-23, 2016
(866) 299-9333**

“What if I Grow My Own Corn?” - Revisited

Two years ago in the summer of 2014, we featured an article in Margin Manager on the topic of how livestock operations like dairies, cattle and hog finishers handle the management of their corn costs in a margin management plan when they grow their own feed. Many remember that period as one of moderating prices with corn coming off of significantly higher values following the drought of 2012 and the ensuing summer of 2013 with limited supplies and record-high basis levels in several cash markets. During that period of high prices, a feeding operation that controlled their own corn production had a distinct advantage over those that did not and were required to purchase their feed needs. Some of these operations would account for their feed inputs at the cost of production for growing the corn, which at the time was well below the replacement value in the open market. Today, the situation is much different with these same operations finding that their cost of corn production exceeds the price in the market at which they could buy the feed if they did not grow their own crops.

This has raised the question again on what is a sensible approach to handling corn as an input cost in a margin management plan when you both produce and feed the crop to your livestock operation. One thing we highlighted in the previous article was that there are essentially two separate businesses – a crop operation on the one hand and a livestock operation on the other. As a result, you might elect to handle the two businesses as separate entities and manage their risks independent of one another. Under this approach, you would manage the corn on the crop side to maximize its sale value while separately managing the corn as an input for your livestock operation by trying to minimize its cost. Obviously these two goals are opposed to one another and could potentially lead to offsetting positions in the market. Many of the livestock operations we work with are integrated in that both the crop production and livestock production enterprises have the same beneficial ownership. Moreover, as the previous article pointed out, the corn will never leave the farm as it is grown specifically to supply the needs of the livestock operation.

For these entities, it is important to acknowledge that the farm produces two assets from two separate operations, both of which are exposed to depreciation from lower prices in a declining market. I remember when I first started working in the industry 20 years ago, farmers that raised hogs would explain that their livestock was basically “value-added corn.” Hog production was obviously much different in the mid-1990’s than it is today with much larger, sophisticated operations now that are highly specialized and focused on specific aspects of production. In the past, farmers might have gotten into and out of hog production as margins to produce pigs made it attractive to add value to their corn production on the farm, and then “walk their corn off the farm” as the saying went. What they were basically trying to tell me was that there were certain times (in strong hog margin periods) when it made more sense to sell their corn production as hogs and other times (in weak hog margin periods) when it was better to sell their corn as corn and simply not raise hogs.

Today, it is not quite as simple as most hog operations in addition to being larger and highly specialized have huge investments in their buildings, equipment and other overhead that does not allow them to be “part-time” producers. They have to manage their assets efficiently to remain competitive and preserve margins. With respect to the management of their corn and livestock, it therefore becomes necessary to explore the relationship between these two assets in order to determine how best to protect the risk of depreciation from

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falling prices. One way to think about it is to consider a matrix of potential scenarios that they could be experiencing in the marketplace. Given that they are producing both corn and livestock, it is prudent to evaluate the profitability for each enterprise as an initial starting point in the process. First, is the price of corn above or below the cost of production? In other words, is the margin positive or negative with respect to the crop operation? Second, is the feeding margin positive or negative when considering the price of corn in relation to the value of the livestock or milk being produced. In this way, one of four possible scenarios could be the case.

First, it may be that both the corn price is above the cost of production such that the crop margin is positive at the same time that the livestock margin for feeding the corn is also positive. This would be the best-case scenario as far as both operations are concerned. Second, it could be that the corn price is above the cost of production such that the crop margin is positive, but the feeding margin is negative. Conversely, it might so happen that the corn price is below the cost of production so that the crop margin is negative; however, the feeding margin is positive for the livestock operation. Finally, it may be that both margins are negative at the same time. This obviously would be the worst-case scenario. The following grid displays each of the four possible scenarios:

Margin	Corn	Livestock
Positive	(+)	(+)
Negative	(-)	(-)

Coming back to the question of how to manage the corn price under each of these scenarios, let's consider them separately. In the best-case scenario where both margins are positive, this likely corresponds to a situation where the best value for the corn is through the sale of the milk or livestock. By establishing a margin for the feeding operation, the value of the corn is protected through this sale. In the second scenario where the crop margin is positive but the feeding margin is negative, it would be better to protect the value of the corn while waiting for a better margin opportunity on the livestock. This might correspond to a situation of high prices where establishing flexible protection on the corn through an option strategy that places a floor under the market might work well. In the third scenario where the crop margin is negative but the livestock margin is positive, protecting the price of corn by establishing a margin for the feeding operation may again be best approach. This might be a situation similar to the present environment where prices are historically lower. The main difference then between having both margins positive or having the scenario where the feeding margin is positive and the crop margin is negative would be the lost opportunity of not participating in stronger feeding margins because the price of corn is below the cost of production. In the final scenario where both margins are negative, the choice will not be so obvious. Because both operations are losing money but both assets remain at risk to further depreciation, least cost strategies to protect each value should probably be considered to mitigate further losses.

There are certainly other nuances that go along with each of these possible outcomes. For example, while both margins may be positive it could be the case that the crop margin is stronger than the feeding margin, or vice versa. Here, some discretion is needed to determine the best possible approach. In a very high priced

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environment for both the corn and livestock or milk, leaving more flexibility on the input side might make sense to allow for improvement if prices begin moving lower. Conversely, in a low-priced environment, leaving more flexibility on the revenue side might be wise to allow for improvement should prices start moving higher. Specific strategies to protect the corn and livestock or milk prices will also be influenced by other considerations such as the cost of options with respect to time value and implied volatility, as well as seasonality.

Regardless of the strategies employed, there are certain risks this type of entity will always face. First, as previously mentioned, the corn will never actually leave the farm. Because of this, it probably does not make sense to protect the value of the corn by setting a fixed sale price. Just as you would not sell the corn to your neighbor or local elevator, protecting the value by selling futures would not be wise. Even though the corn price might represent a good return to the crop operation, if it is capped at a fixed level and the market continues moving higher, both operations are worse off as the livestock margin contracts with higher feed costs at the same time that the crop operation loses out on the opportunity to participate in higher prices. At the other end of the spectrum, there will always be risk below the cost of production if you grow your own corn. If corn prices decline below the cost of producing it, the crop operation is losing money at the same time that the livestock operation faces the opportunity cost of not being able to participate in cheaper feed prices. As a result, options will likely be used most of the time to protect the price of corn, and the specific strategies employed will be a function of many different factors.

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MARGIN MANAGEMENT FOR LENDERS - Apr 20-21

DAIRY MARGIN MANAGEMENT - June 22-23 (Tahoe)

Hog Margin Watch: February



Margins improved since the middle of February on a combination of slightly higher hog prices and lower feed costs as both corn and soybean meal sunk to fresh contract lows. Hog finishing margins remain positive and above average through Q3, while negative and below average in Q4 through early 2017 marketing periods. Hog prices were relatively steady over the past two weeks with little feature in the market. Hog slaughter weights continue to decline seasonally and year-to-date pork production is running 1.3% below 2015. USDA monthly Cold Storage data showed frozen pork stocks of 637 million pounds at the end of January which was up 6.9% from a year ago and 8.2% above the five-year average. While this might be construed as somewhat bearish, most of the increase stemmed from higher stocks of ribs which may be a hedge against increased demand as we move into spring and grilling season gets under way. Feed prices meanwhile moved lower as both corn and soybean meal made fresh contract lows since the middle of the month. USDA's annual Outlook Forum estimates were construed as mostly neutral with figures largely in line with CBO projections back in November. Corn plantings are expected to increase slightly this spring due to lower costs for fuel and fertilizer, with normal yields projecting record high corn stocks this coming fall. Soybean planted area is expected to decline slightly with lower prices discouraging production. Harvest progress is advancing in Argentina and Brazil with private analysts raising their forecasts for corn and soybean production in both countries, which is also weighing on the market. Our clients continue to focus on making adjustments to existing positions, strengthening hog and feed hedges to take advantage of improved margins recently.



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.

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Dairy margins continued to deteriorate over the second half of February despite weaker feed prices as renewed pressure on the milk market more than offset that savings on the input side. Projected margins are now negative through Q3 and just barely positive in Q4 where they are only average from a historical perspective. Milk prices continue to be pressured by large dairy product stocks and strong production in the EU. USDA's recent Cold Storage report showed monthly cheese stocks for January at 1.18 billion pounds, up 2.8% from December and 12.8% higher than a year ago. Cheese stocks have not been this high since the mid-1980's and there are growing expectations for record high stocks to be realized in the near-term. January butter stocks of 196 million pounds were also up sharply from last year, reflecting a 32% gain over January, 2015. Meanwhile, milk production continues to expand in Europe. EU-28 December collections totaled 27.4 billion pounds, up 4.9% from 2014. Total production for 2015 of 334.3 billion pounds was up 2.2% from 2014 and 16.8% higher than 2013 with Ireland and the Netherlands leading the production increase. On a positive note, feed costs declined with both corn and soybean meal moving to fresh contract lows over the past two weeks. USDA held their annual Outlook Forum which projected slightly higher corn plantings this season at the expense of soybeans. Figures were generally in line with CBO projections back in November. Harvest progress is advancing in Argentina and Brazil, with private forecasters increasing their corn and soybean crop estimates for both countries. With renewed margin pressure, our clients have been making strategic adjustments to existing positions. Securing equity and adding flexibility to milk hedges has been a particular focus.



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.

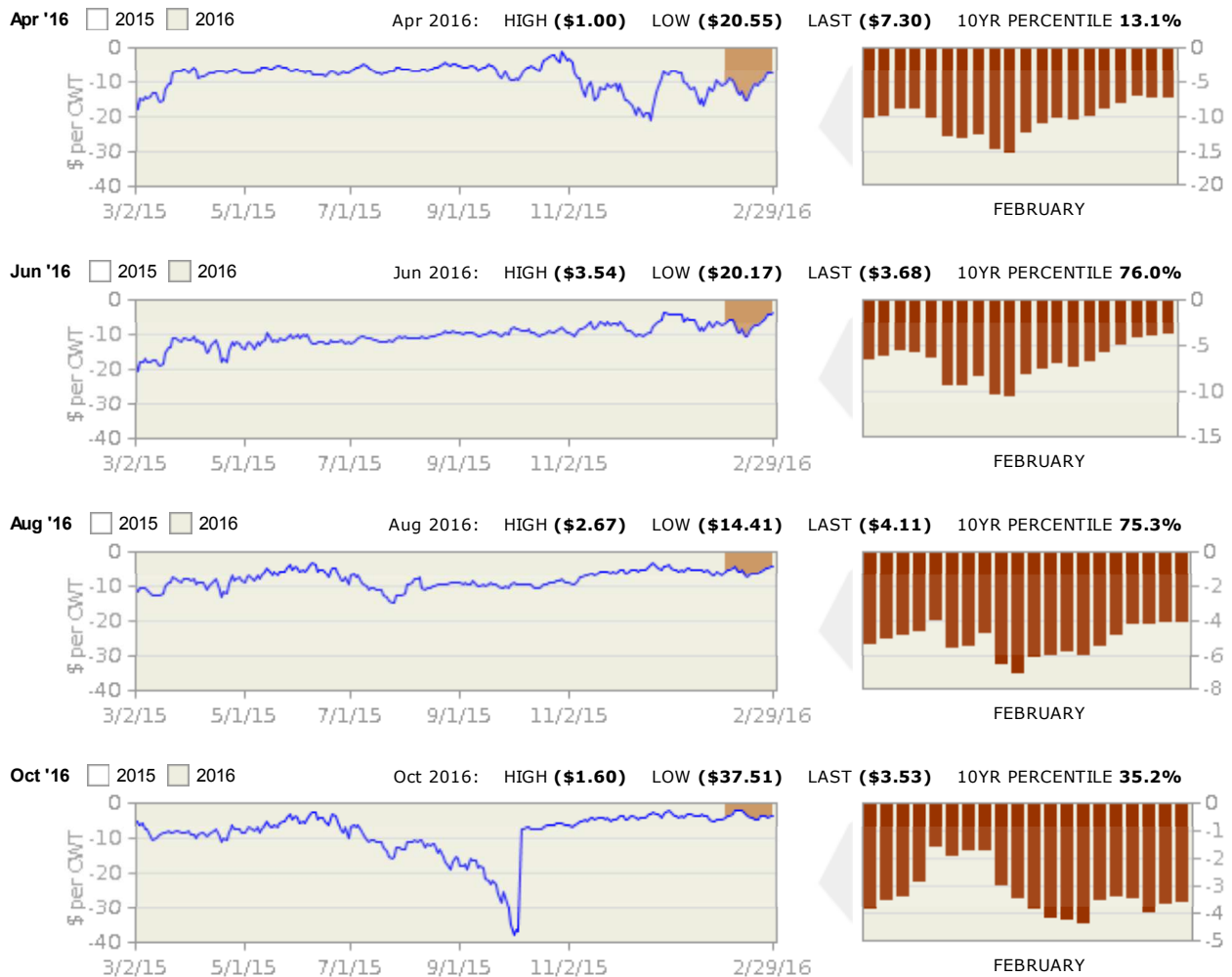
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Beef Margin Watch: February



Beef margins improved since the middle of February on a combination of higher cattle prices and lower feed costs. Even against deferred placements, fat cattle prices advanced more than feeder costs to improve forward crushes. While beef finishing margins remain negative for all marketing periods, they are starting to get closer to breakeven levels and offering better opportunities than we have seen in quite some time. Cattle prices may be drawing support from expectations of a seasonal rise in beef cutout values as we head into spring. USDA's January Cattle on Feed report was considered neutral, with the figures largely in line with trade expectations. The number of cattle on feed was essentially the same as last year with January marketings at 97.8% of 2015. Placements were down 0.6% from 2015 with the heavy-weight category showing the largest increase in placements although lighter weight categories showed an increase as well in a diverging trend from recent months. USDA's latest Cold Storage report showed end of January frozen beef stocks at 518.5 million pounds, up 5.4% from last year and 10.2% higher than the five-year average. Meanwhile, corn prices moved to fresh contract lows over the past two weeks as harvest progress increases across Brazil and Argentina, with private forecasters raising their production estimates for both countries. USDA held their annual Outlook Forum which projected corn plantings this spring down slightly from last year due to lower costs for fuel and fertilizer. Overall, the estimates were considered neutral with figures largely in line with CBO projections back in November. Our clients continue to monitor forward crushes for new margin protection while evaluating adjustments to existing positions. Adding delta to both cattle and corn hedges has been a focus recently with the improved margins allowing positions to be strengthened in both markets.

Live Cattle Marketing Periods:





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 prices and margins were again lower for the past two week period. The corn market received fresh information from the USDA's Annual Agricultural Outlook Forum in the form of projections of 2016/17 supply and demand for corn, soybeans and wheat as well as product estimates. These projections will form the baseline of the new crop balance sheets to be first released within the May 2016 WASDE report. The data will be reinforced and updated to include farmers' 2016 planting intentions, the initial survey based report for the new crop year, which will be released on March 31. Until then the projections for corn planted acres are estimated to be 90.0 million acres, an increase of 2.0 million acres from last year. Yields are initially set at 168.0 bpa, off 0.4 bpa from 2015/16, and according to the USDA assume normal trend growth under seasonal growing conditions. Projections of corn ending stocks are bumping up against the 2.000 billion bushel mark at 1.977 billion bushels and if realized would be the highest corn stocks since the 2004/05 crop season. Ethanol production has stayed strong pushing ethanol stocks to record levels, at just over 23 million barrels. Export inspections have not shown the same vigor and the shipment pace continues to trail the recently lowered USDA export expectation of 1,650 million bushels. In fact corn shipments are running over 10% behind the pace needed to reach the new estimate and need to make up 180 million bushels over the balance of the marketing year. South American weather has been cooperative, enhancing corn production progress in both Argentina and Brazil. Our consultants are working with clients to consider setting a plan in place prior to the heightened period of uncertainty as we move into the unknowns of planting intentions later this month.



The estimated yield for the 2016 crop is 175 bushels per acre and the non-land operating cost is \$400 per acre. Land cost for 2016 is estimated at \$250 per acre¹. Basis for the 2016 crop is estimated at \$-0.05 per bushel.



The estimated yield for the 2017 crop is 175 bushels per acre and the estimated operating cost is \$400 per acre. Land cost for 2017 is estimated at \$250 per acre¹. Basis for the 2017 crop is estimated at \$-0.25 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.

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Soybeans Margin Watch: February



Soybean prices and margins were lower the past two weeks. The soybean market received new data from the USDA's Annual Agricultural Outlook Forum where supply and demand projections are made for the 2016/17 soybean, corn and wheat crops. The projections form the basis of the new crop balance sheets which will not be released until the May WASDE is revealed. The projections will also incorporate data from the March 31 Prospective Planting Report, which is the initial survey of farmers' corn, wheat and soybean planting plans. Right now the projections for soybean acres are estimated to be 82.5 million acres, 200 hundred thousand less than last year; however the estimate was almost 800 thousand acres less than pre-outlook expectations and almost 2 million acres less than some higher private estimates. Soybean yield estimates call for 46.7 bpa, a 1.3 bpa drop from last year's record levels. With the slightly lower planted acreage and lower yield estimates the ending stocks projection was 440 million bushels, 10 million bushels less than 2015/16 and 75 million bushels less than the pre-outlook expectations. Export inspections of soybeans continue to run ahead of the pace needed to meet the current USDA estimate of 1,690 million bushels. Soybean shipments are running almost 10% ahead of pace which equates to a 154 million bushel cushion at this point in the marketing year. Certainly as harvest picks up in South America, U.S. origin soybean shipments should begin to dissipate, as is the norm. The soybean harvest in Brazil is advancing and is estimated to be just over 30% complete; the current Brazilian weather outlook may however temporarily slow the soybean harvest with added moisture on the way. Our consultants are working with clients to actively set a plan in place to get ahead of the uncertainty on the horizon of the planting intentions later this month.



The estimated yield for the 2016 crop is 50 bushels per acre and the non-land operating cost is \$325 per acre. Land cost for 2016 is estimated at \$175 per acre¹. Basis for the 2016 crop is estimated at \$-0.2 per bushel.



The estimated yield for the 2017 crop is 50 bushels per acre and the estimated operating cost is \$325 per acre. Land cost for 2017 is estimated at \$175 per acre¹. Basis for the 2017 crop is estimated at \$-0.3 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: February



Wheat prices and margins once again slipped lower the past couple of weeks. The USDA held their Annual Agricultural Outlook Forum and released projections of supply and demand for 2016/17 new crop wheat, corn, and soybean crops. The projections will form the basis of the new crop balance sheets to be revealed within the May WASDE report. Additionally the wheat outlook projections take into account the data from the January Winter Wheat Seedings Report. The projection of all wheat planted acres stands at 51.0 million acres, 3.6 million less than last year, largely on the 2.9 million fewer acres of winter wheat seedings revealed in the January report. This estimate will be further solidified after the Prospective Planting Report on March 31. Somewhat offsetting the drop in planted acres are increased all wheat yields of 45.9 bpa, up from 43.6 bpa last year. Ending stocks of wheat are projected to be 989 million bushels versus 966 million bushels in 2015/16 and less than some pre-outlook forecasts of one billion plus bushels. Robust global supplies continue to pressure U.S. origin wheat exports which remain almost 7% behind the shipment pace needed to meet the USDA annual wheat export expectation. The record amounts of global stocks were further enhanced this period by reports from France of wheat stocks at levels not seen in almost twenty years. Our consultants are working with clients to set a game plan in place before the planting intentions report in late March, when uncertainty could certainly stir the lethargic grain market.



The estimated yield for the 2016 crop is 70 bushels per acre and the non-land operating cost is \$300 per acre. Land cost for 2016 is estimated at \$125 per acre¹. Basis for the 2016 crop is estimated at \$-0.25 per bushel.



The estimated yield for the 2017 crop is 70 bushels per acre and the estimated operating cost is \$300 per acre. Land cost for 2017 is estimated at \$125 per acre¹. Basis for the 2017 crop is estimated at \$-0.35 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.

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