IOWA STATE UNIVERSITY
Extension and Outreach

Iowa Farm Outlook

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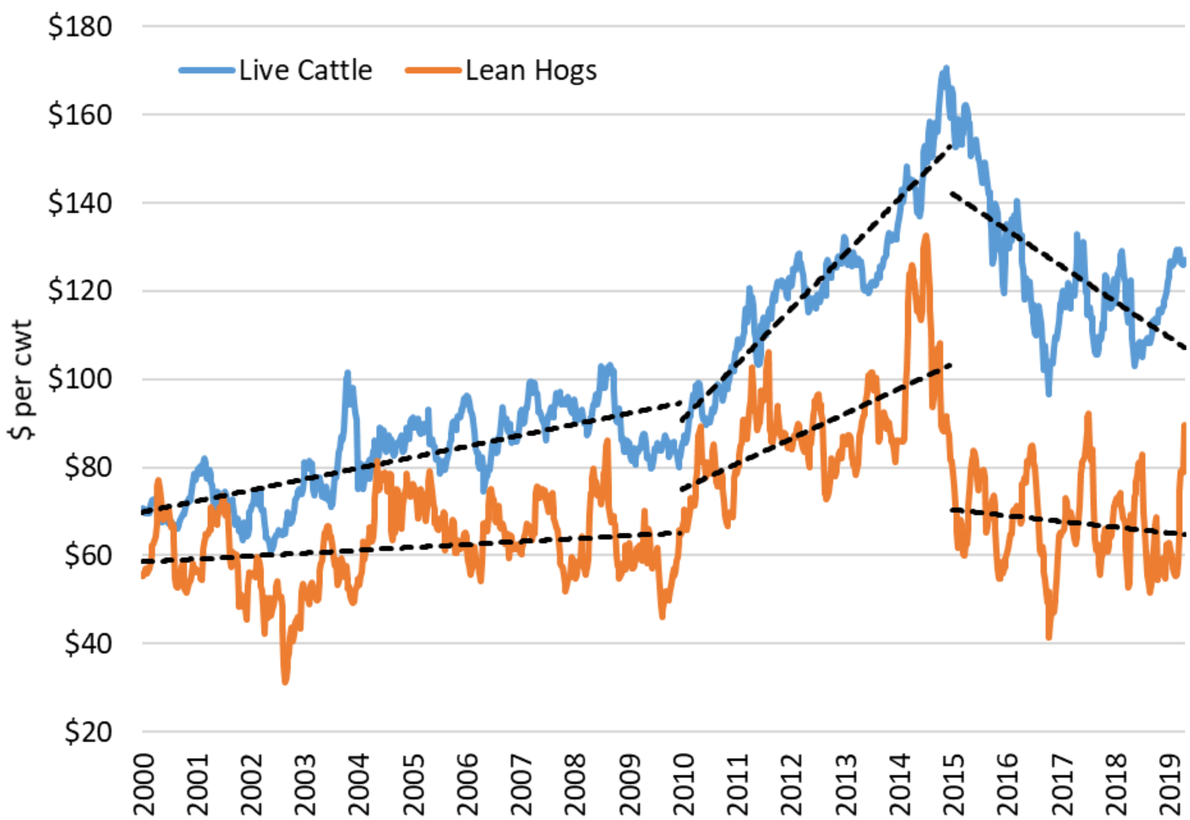
Fed Cattle Prices Undervalued to Hog Prices

"Live cattle futures ended mixed, with nearby and deferred contracts lifted by spillover support from rallying hogs." This has been a common phrase in recent market commentary.

Historically, the cattle market and hog market show a strong correlation in price trends. Not all the time, but enough to see an obvious relationship. Understanding the normal historical levels for the price difference, or ratio, between the two markets can shed light on the current value of each price.

Linear trend lines show that live cattle and lean hog futures prices have similarly increased or decreased over three distinct periods in the last two decades (Figure 1). From 2000 through 2009, live cattle prices increased 30%. During that same time period, lean hog prices increased 11%. From 2010 through 2014 cattle prices increased 52% and then decreased 28% from 2015 to currently. Similarly, hog prices increased 32% and then decreased 8% over these two periods.

Figure 1. Weekly CME Nearby Futures Price

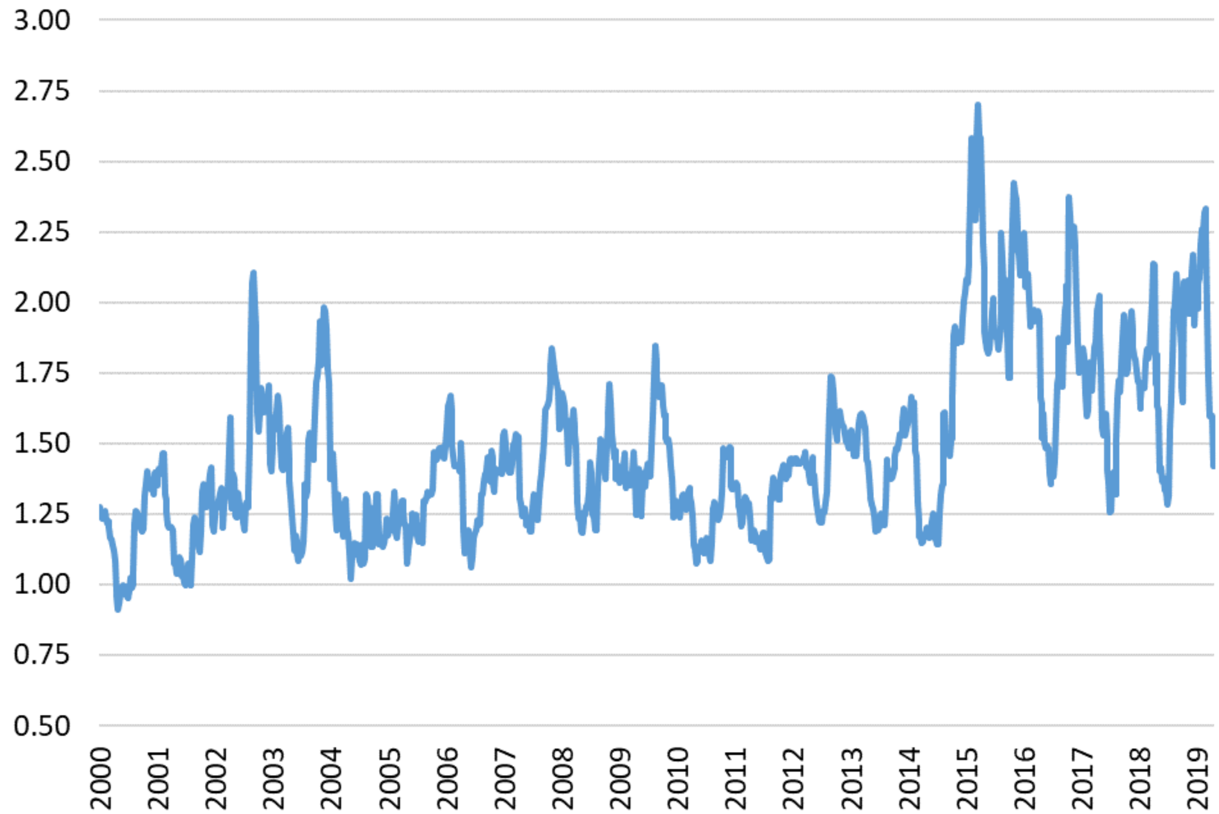


To further explore the relationship among live cattle and lean hog futures prices, correlation coefficients show the prices are correlated. Correlation coefficients were 0.42, 0.61, and 0.29 for the 2000-2009, 2010-2014, and 2015-current periods, respectively. A value of 0.29 for the 2015-current period shows there is a positive relationship, but it is relatively weak especially with respect to past historical correlations of the price series.

A correlation can only indicate the presence or absence of a relationship, not the nature of the relationship. Correlation is not causation. There is always the possibility that a third variable (and forth, fifth, sixth, etc.) influenced price movements. The increasingly complex, uncertain, and dynamic economic environment has certainly added to price volatility for all livestock markets, and during some periods, more so for some markets than others.

Even with weakened correlation between cattle and hog markets recently, is there anything we can glean from the current live cattle/lean hog price ratio that might forecast future price movements? Since 2015, it appears that the live cattle price is too expensive once it is over double the price of lean hogs. Note the weekly nearby futures price of the cattle/hog ratio and you only see 23 instances where the ratio ran to 2.25:1 or higher (where cattle has a premium of 125% or greater over hogs) (Figure 2). It was only a matter of time until the trend made a major reversal and the ratio collapsed. On the flip side, a ratio of 1.5:1 or lower (where cattle has a premium of less than 50% over the hogs) has been unsustainable.

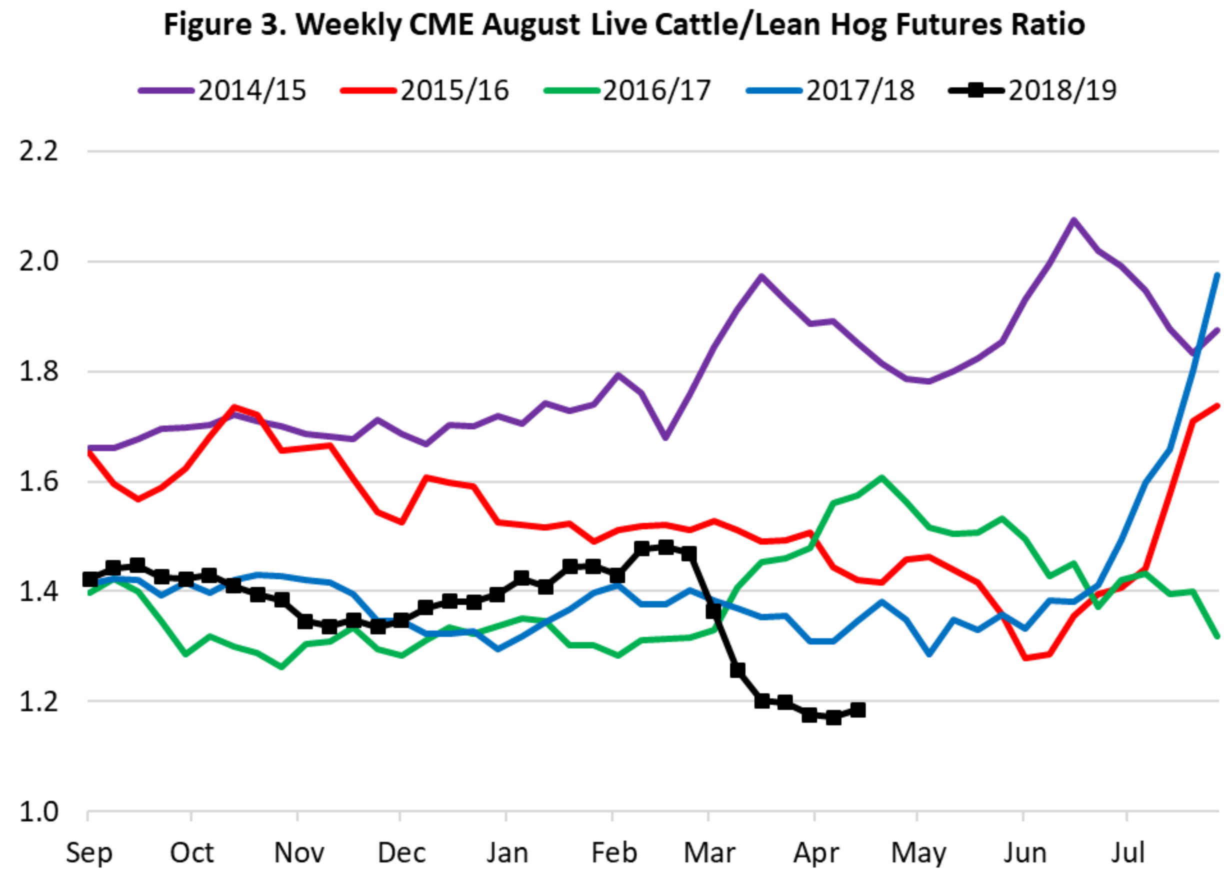
Figure 2. Weekly CME Live Cattle/Lean Hog Futures



For the week ending April 26, the cattle/hog price ratio was 1.43:1. The ratio has been this low on only 23 occasions in the last five years. Therefore, we could be expecting an eventual reversion to the mean, which has been 1.88 over the last five years, or at least resistance from a further narrowing of the spread.

Cattle and hog prices typically head in opposite directions in the summer months. In most years, cattle prices peak in March, April, or May and move to a low in July, August, or September. There is a normal tendency for market hog prices to show seasonal strength during late spring and summer. This year has a slightly different look as fed cattle price inflation while lean hog price escalation has been tremendous. On March 6, 2019 the April lean hog futures contract settled at $57.075. In the span of 15 trading days, prices surged to $81.325 on March 27 before expiring at $79.300 on April 12. Corresponding April live cattle futures in March were $128.900 and $126.250. The April live cattle futures contract expired at $123.750 on April 29. Short-term deferred contracts for both lean hogs and live cattle showed a similar pattern but at elevated levels for hogs and diminished levels for cattle.

With an eye on the August futures live cattle/lean hog ratio, the ratio has recently bottomed out below 1.2:1 (cattle has only a premium of less than 20% over hogs) (Figure 3). This is the lowest August futures contract ratio in April, or any time for that matter, in recent history. History indicates that the August futures contract ratio usually trades in the 1.33 to 1.80 range. Where it is currently at, the ratio has a ways to go to be in that range.



On a historical basis, the cattle/hog ratio is currently telling us that live cattle futures are undervalued relative to lean hog futures. This could mean that hogs are too expensive or cattle are too cheap. While past performance is not a guarantee of the future, analysis of the cattle/hog ratio points to an increase in the ratio and a rebalancing of live cattle and lean hog prices. If this will be a multi -week, -month or even -year process is unknown and it could be that cattle prices increase or hog prices decrease. Regardless, live cattle futures prices are attractive through August, with respective to suggesting above breakeven feedlot margins, and lean hog prices could be one factor, among a bevy of factors affecting the fed cattle market that could add support to both near-term and deferred marketing periods.

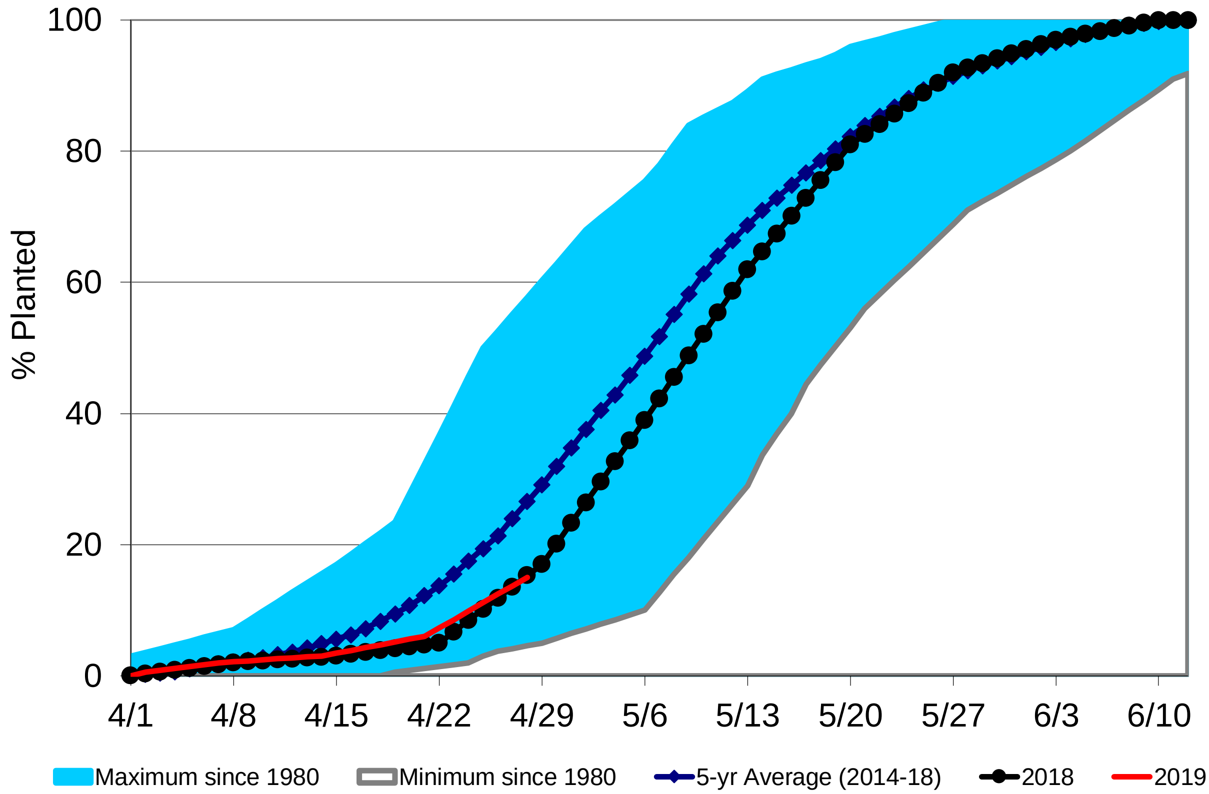
Lee Schulz

Shrinking Markets

The month of April was a rough one for the crop markets. Beginning with the Prospective Plantings and Grain Stocks reports, most of the news affecting the crop markets has been negative. Weather conditions have flooded some fields, spoiled some grain in the bins, and delayed planting of this year's crops. Trade agreement talks have progressed, but not to the point where the outline of any such agreement could be released. Export sales have lagged. Crop usage for biofuels have slowed. Traders are left to wonder which is shrinking faster, supply or demand.

On the supply side, there has been a lot of chatter about the delays in fieldwork and planting. Flooding continues all along the Mississippi and Missouri Rivers. While some interior areas of the Corn Belt did see a drier April, river and soil moisture levels remain high. The Crop Progress reports provide a weekly snapshot of crop conditions. And those snapshots have pointed to a planting year very similar to last year. As Figures 1 and 2 show, the national planting rates are running eerily similar to 2018. For both 2018 and 2019, corn planting is substantially behind the 5-year average pace. In 2018, corn planting did not catch back up to the 5-year average until deep into May. Whether we can catch back up in 2019 is an open question, but one that does not look promising, with storm systems projected to cycle through the Midwest on a very consistent basis over the next couple of weeks. And the percent planted is similar between this year and last, the geographic spread is significantly different. Last year, the delays were consecrated on the boundaries of the Corn Belt, with more sizable delays in the Great Plains and eastern Corn Belt. This year, the delays are more pronounced in the center of the Corn Belt, with Illinois and Indiana facing some of the largest delays.

Figure 1. U.S. corn planting progress (Source: USDA-NASS).

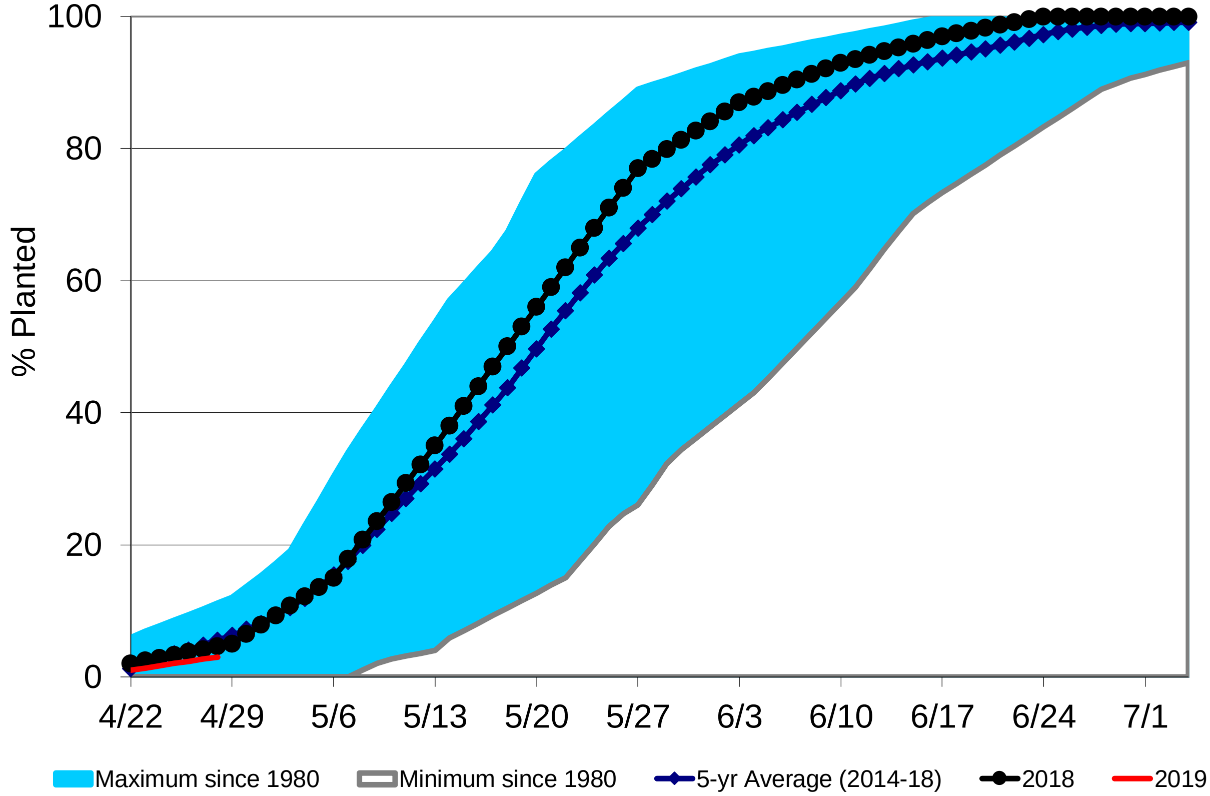


While soybean planting is still in its early stages, the weather delays are building here as well. Last year's soybean crop got off to a slightly early start, even with the delays to corn planting and the shift of some acres from corn to soybeans. So far this year, corn and soybean plantings have both faced weather challenges. Soybean planting in the Delta States is running well behind normal. Meanwhile, soybean seeds have barely moved in the north.

So the market is left to wonder whether the delays in planting will significantly impact production. Last year's delays did not slow down the production juggernaut. The 2018 crop year continued the string of strong production years, with the 2nd highest corn and soybean yields ever recorded. Could we have a similar scenario this year? Or will the tardiness in planting pull down those potential yields? Market reaction to the planting delays thus far seems to be mild at best for corn, with a stronger negative response for soybeans, as soybeans may face an influx of area if corn cannot be planted.

But crop usage is also playing a part in the markets' response. The Grain Stocks report showed a definite slowdown in corn and soybean disappearance over the winter months. Crop export sales and biofuel production levels through the spring suggest that the sluggish disappearance continues today. Based on data from the Energy Information Administration, corn usage for ethanol has declined an average of roughly 2.5 million bushels per week, comparing last year to this year.

Figure 2. U.S. soybean planting progress (Source: USDA-NASS).



However, the largest shifts have happened in the export outlets. Corn started out the 2019 calendar year with very strong export sales. At the first of the year, sales were up 17% year-over-year. But this then, sales have fallen off. As Figure 3 displays, currently, corn export sales are now nearly 10% below last year's level. The major declines, in terms of bushels, have been in sales to "unknown destinations" and to our smaller markets (outside of our top 6 export markets). But in comparing the data from January to now, there has also been a significant pullback in our major markets, especially in eastern Asia (Japan, South Korea, and Taiwan). In January, sales to Japan were up 70 million bushels, South Korea was up 50 million, and Taiwan was 40 million bushels higher. Currently, sales to Japan are only up 45 million and sales to South Korea and Taiwan are more than 10% below last year's levels. What had been a strength in the market a few months ago is now a weakness.

Meanwhile, soybean exports remain challenged as the Chinese tariffs hold in place. The purchases China has made over the past few months have helped keep the usage gap from getting wider, but they haven't been big enough to close the gap either. At the first of the year, the soybean sales deficit to China was approximately 750 million bushels. Today, the deficit is around 550 million. While other countries and regions helped fill in part of the gap this fall and winter, that support has leveled off since then. Overall, soybean export sales are still over 300 million bushels behind last year's pace. And with no public framework available on a U.S.-China trade deal, the question will be whether this gap can be closed over the coming crop year.

Crop pricing patterns were rather stagnant in early April. But price movements have picked up since then. Corn has captured a small rebound, driven by the planting delays, while soybeans has fallen on the prospect of more acres. But the weather conditions over the next three weeks will really shape the crop outlooks. As Figures 1 and 2 show, the vast majority of the nation's corn and soybean crops is planted in May, with action in corn early in the month and soybeans dominating the latter half. The longer the delays in planting this year translate into the longer the price recovery for corn, but it comes at the expense of soybeans. Neither crop is in the strongest usage position, as the export sales data indicates. But the corn market is in the relatively better position on usage. So the soybean market is wrestling with the potential for larger than desired supplies and smaller than expected usage, a double team producers hate to face. Current futures point to 2019/2020 seasonaverage prices in the $3.80 range for corn and $8.60 range for soybeans, putting corn in position to cover costs, but soybeans will likely fall short.

Figure 3. Corn export sales (Source: USDA-FAS).

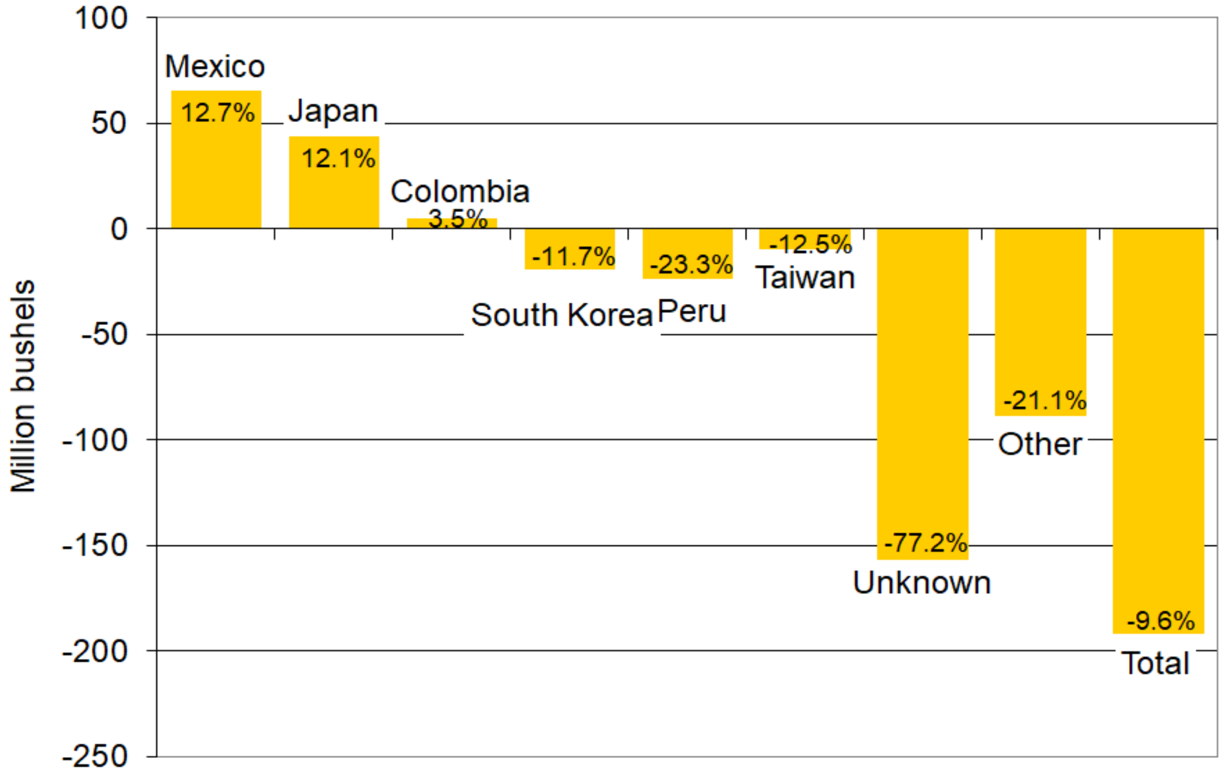
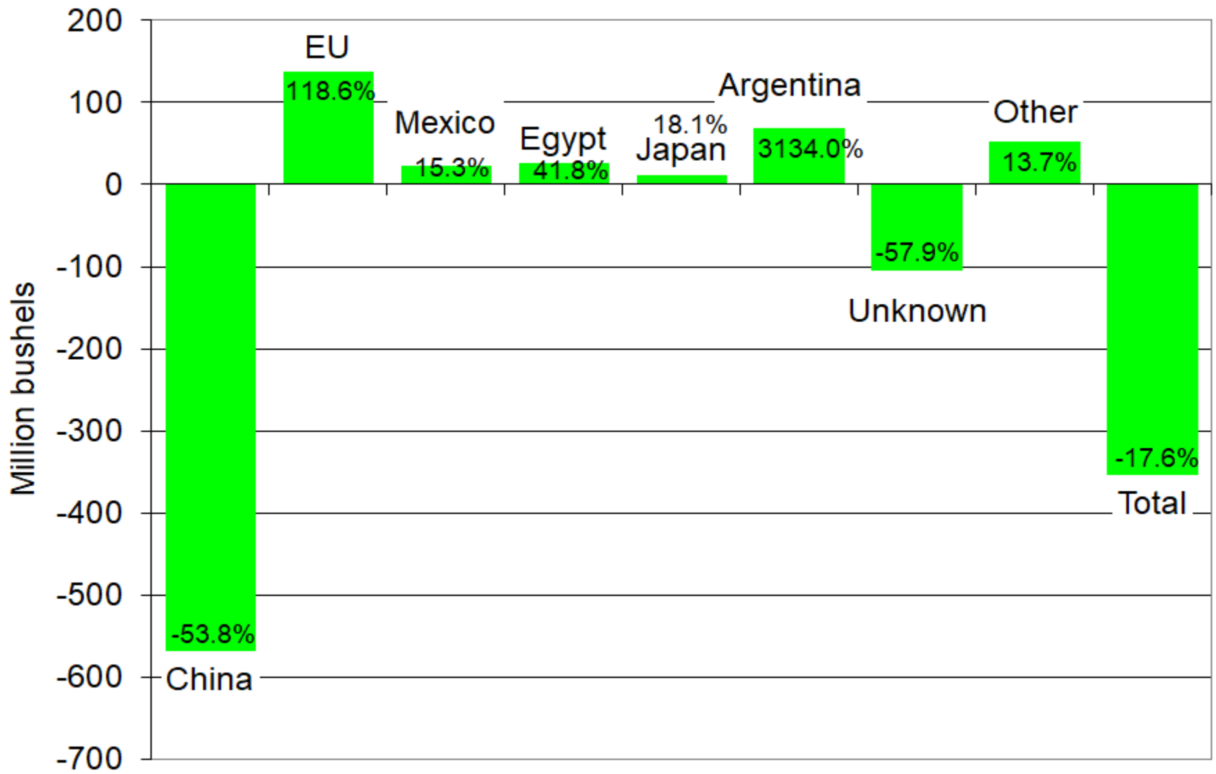


Figure 4. Soybean export sales (Source: USDA-FAS).



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