The Feed

Farmer Mac's Quarterly Perspective on Agriculture

Winter 2018 | 2019

FARMER MAC

FINANCING RURAL AMERICA

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ABOUT THE FEED

The Feed is a quarterly economic outlook for current events and market conditions within agriculture. The report is broad-based, covers multiple regions and commodities and incorporates data and analysis from numerous sources to present a mosaic of the leading industry information, with a focus on the latest information from the United States Department of Agriculture and their Economic Research Service. There are several regularly included sections like weather and major industry segments, but the authors rotate through other industries and topics as they become relevant in the seasonal agricultural cycle. Where the report adds value to readers is through its unique synthesis of these multiple sources into a single succinct report. Please enjoy.

ABOUT FARMER MAC

Farmer Mac is a vital part of the agricultural credit markets and was created to increase access to and reduce the cost of capital for the benefit of American agricultural and rural communities. As the nation's premier secondary market for agricultural credit, we provide financial solutions to a broad spectrum of the agricultural community, including agricultural lenders, agribusinesses, and other institutions that can benefit from access to flexible, low-cost financing and risk management tools. Farmer Mac's customers benefit from our low cost of funds, low overhead costs, and high operational efficiency. In fact, we are often able to provide the lowest cost of borrowing to agricultural and rural borrowers. For more than a quarter-century, Farmer Mac has been delivering the capital and commitment rural America deserves.

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A MESSAGE FROM CURT COVINGTON

BE THANKFUL FOR FARMERS AND THEIR LENDERS THIS HOLIDAY SEASON

Happy holidays and season's greetings from Farmer Mac! I spend a great deal of time on the road visiting with customers, as well as farmers and ranchers across rural America. And during my many layovers and inevitable flight delays, I try to take advantage of the downtime to keep up with the news. I recently came across an entertaining article from the Seattle Times that claimed a typical Thanksgiving meal of roasted turkey, mashed potatoes, gravy, green bean casserole, sweet potatoes, cranberry sauce, a dinner roll, and a slice of pumpkin pie with a dollop of whipped cream could top 1,800 calories. Personally, based on my waistline at the end of the day, that number is far too conservative! But the meal isn't all about the calories. For me, it's also about this country's men and women who work hard every day to produce the food and fiber that feed and clothe the world. This season, as many of us gather together with friends and family for the ultimate Thanksgiving feast filled with holiday favorites, we are presented with the opportunity to raise awareness of and show appreciation for U.S. food production and the American farmer and rancher.

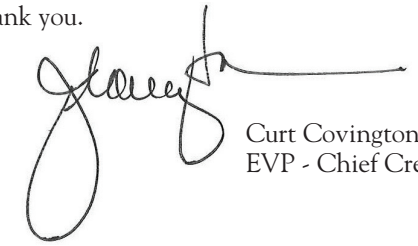
Let's start with the turkey. In 2017, 243 million birds were produced in the U.S., of which roughly 40 percent were raised in Minnesota, North Carolina, and Arkansas. The National Turkey Federation estimates that in 2016, Americans consumed 46 million turkeys at Thanksgiving, totaling roughly 736 million pounds of protein. That's nearly the weight of the Empire State Building.

Mashed potatoes are also a fixture on most Thanksgiving tables. You can thank the dedicated potato growers of Idaho who produce the lion's share of U.S. production at roughly 13 billion pounds in 2017 (20 billion potatoes on average). But, if you prefer sweet potatoes, spend your Thanksgiving in North Carolina, which produces about 60 percent of total U.S. production. And, potatoes, whatever your preference, aren't the same without butter – lots of butter – brought to you by U.S. dairy farmers who produced approximately 1.85 billion pounds in 2017.

Whether you like them or not, most Thanksgiving meals have a vegetable component. The USDA reports that nearly 1.6 million acres of fresh vegetables were planted in the U.S. in 2017, and of that, California accounted for about half. And did you know that Americans consume five million gallons of jellied cranberry sauce every holiday season? Wisconsin has been the top cranberry producer in the U.S. for 24 consecutive years producing more than 60 percent of the nation's crop. The oldest cranberry bed in Wisconsin is 145 years old. Last, but certainly not least, the pumpkin pie. Americans eat about 50 million pumpkin pies on Thanksgiving. In 2017, Illinois remained the largest producer of pumpkins, harvesting about three times as many pumpkin acres as any of the other states in the U.S.

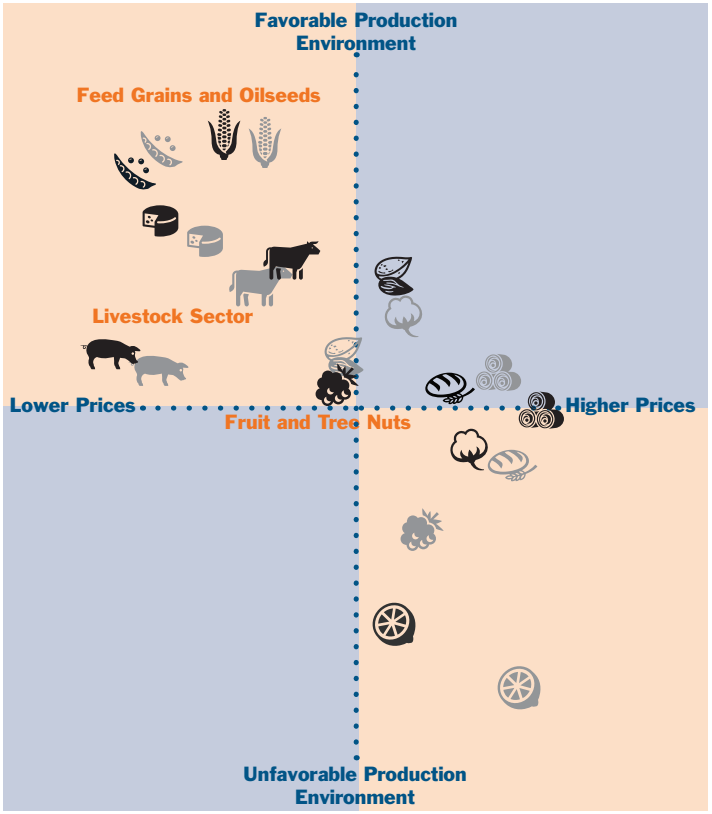
So, as you reach for that second serving of your favorite side dish, let's pause and give thanks to America's farmers and ranchers for growing the safest, the most economical, and the most delicious food in the world.

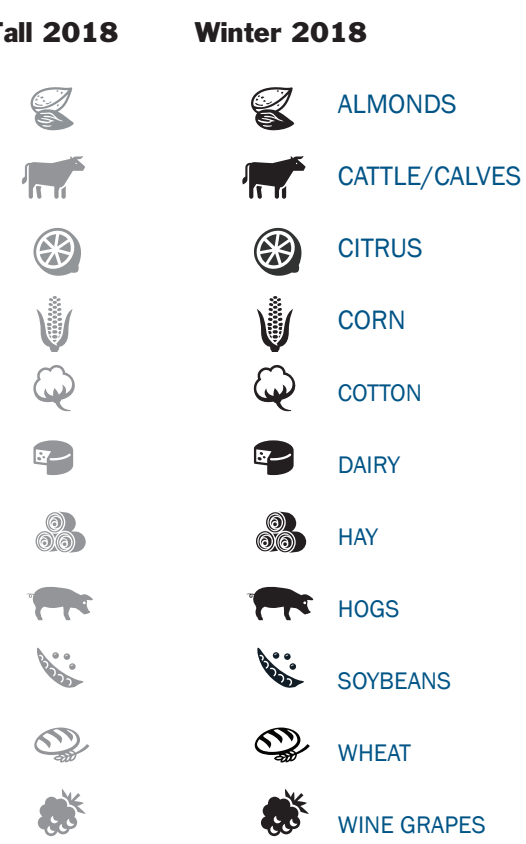
Thank you.



Curt Covington,
EVP - Chief Credit Officer

PRODUCTION AND MARKET PRICE PERCEPTUAL MAP





U.S. SOYBEAN EXPORTS TO CHINA FALL SHARPLY

(resource 1, 2, 3)

By John Newton, PhD. Chief Economist of the American Farm Bureau Federation

Reprinted with permission from the American Farm Bureau Federation

Key Highlights

U.S. soybean exports to China are off by 97% in the first seven weeks of the 2019 marketing year.

Gulf ports are reporting the largest drop in soybean sales, but all ports have limited sales in the 2018-19 marketing year.

Many other markets have been buying U.S. soybeans during this marketing year, but it is difficult to overcome the value of lost exports to China.

USDA's most recent World Agricultural Supply and Demand Estimates projects Chinese beginning stockpiles of soybeans for the 2018/19 marketing year at 865 million bushels--approximately 85 percent of the volume of U.S. soybean shipments to China during all of the 2017/18 marketing year. With large inventories on hand in China, it's no surprise U.S. soybean exports to that country are down to start the 2018/19 marketing year. Way down.

USDA's Federal Grain Inspection Service reveals that through the first ten weeks of the 2018/19 marketing year, 12.5 million bushels of new-crop U.S. soybeans have been shipped to China, down 97 percent from prior-year levels. Through the first ten weeks of the previous marketing year, the U.S. shipped 440 million bushels of soybeans to China, and during that same period in the 2016/17 marketing year the U.S. shipped 448 million bushels.

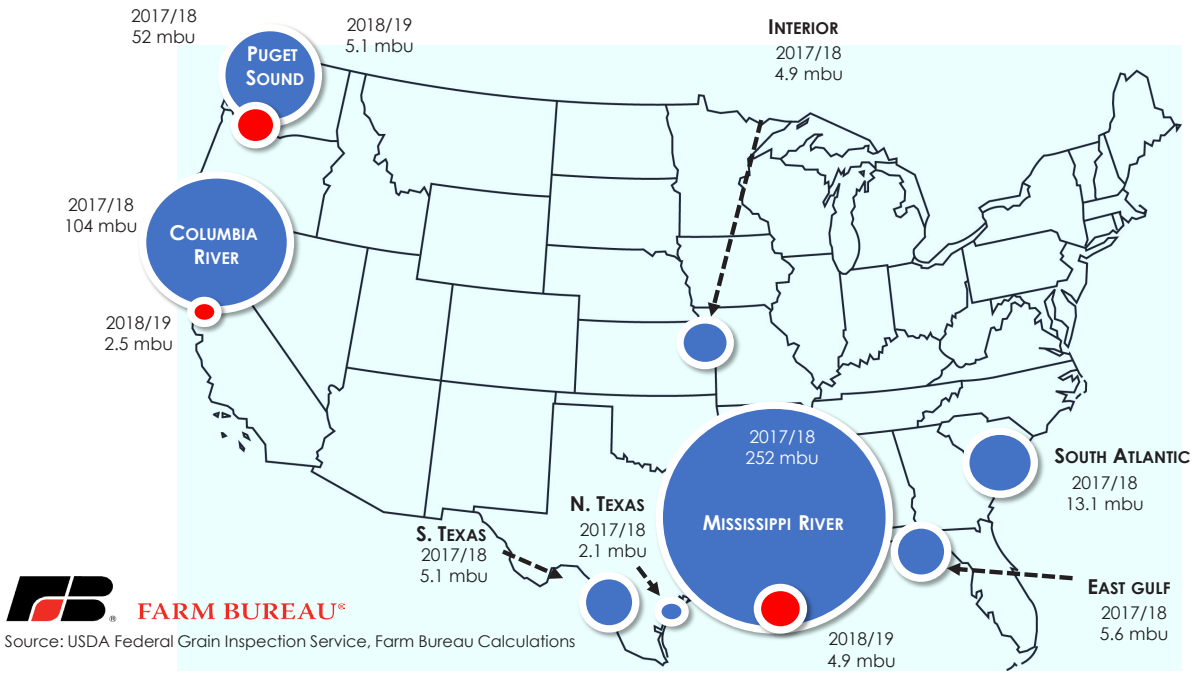
The retaliatory tariffs of 28 percent on U.S.-sourced soybeans have resulted in a sharp decline in China's purchases. Shipments of soybeans to China have fallen by 98 percent along the Mississippi River, 98 percent out of the Columbia River and by 90 percent from the Puget Sound. Shippers in the Interior, North and South Texas, South Atlantic and East Gulf regions have yet to make a soybean shipment to China, Figure 1.

Largely due to the slowdown in Chinese purchases, total soybean exports have also fallen significantly. Through the first ten weeks of the marketing year, soybean exports have totaled 364 million bushels, down 43 percent, or 269 million bushels, from the 633 million bushels shipped during the first ten weeks of the 2017/18 marketing year.

While China has purchased 427 million fewer bushels of soybeans this year than during the same period last year, other trading partners have taken advantage of lower-priced U.S. soybeans and increased their purchases. Currently, the U.S. has shipped soybeans to 43 countries, up from 37 countries last year. Of the 43 countries buying U.S. soybeans, 35 have increased their purchase volumes, representing an increase of 172 million bushels and partially offsets the 445 million-bushel decline in exports to the remaining 14 trading partners.

Through the first ten weeks of the marketing year, Egypt has purchased 27 million bushels of soybeans, while Argentina has purchased 36 million bushels – both up sharply from nearly zero or zero purchases the prior year. Egypt purchases are up nearly 1000 percent. Spain has currently purchased 36 million bushels, an increase of 25 million bushels, or 218 percent, from prior-year levels. One interesting observation is that Taiwan has purchased

Figure 1: Soybean Exports to China by Port for First Ten Weeks of Marketing Years 2018 and 2019



FARM BUREAU®

Source: USDA Federal Grain Inspection Service, Farm Bureau Calculations

nearly 18 million bushels of soybeans, up 80 percent fom prior year levels. Figure 2 shows the year-over-year change in soybean exports through the first ten weeks of the marketing year.

The slowdown in total U.S. soybean exports has had an impact across major U.S. ports. Soybean exports out of the Mississippi River are down 35 percent, or 133 million bushels, from prior-year levels. Exports from the Pacific Northwest along the Columbia River and Puget Sound are down a combined 112 million bushels.

Part of the lower export volume is a function of the slower pace of harvest and the high levels of damage due to late-season rains. Another contributing factor is obviously the 28 percent Chinese retaliatory tariff on soybeans. The combined effect is fewer U.S. soybeans passing through export terminals. With fewer soybeans entering the export market, there are fewer opportunities to blend damaged soybeans and the net impact has led to very large quality discounts for soybean growers currently in the cash market.

As the pace of harvest accelerates there will be more opportunities to blend soybeans and then service the export markets. At what price is the important question. USDA currently projects the marketing year average price at $8.60 per bushel, down 73 cents from the prior year and the lowest price in more than a decade. At that price the U.S. is bound to make more export sales but likely at a slower pace. Whether China reenters the U.S. market remains to be seen. This game of chicken is far from over.

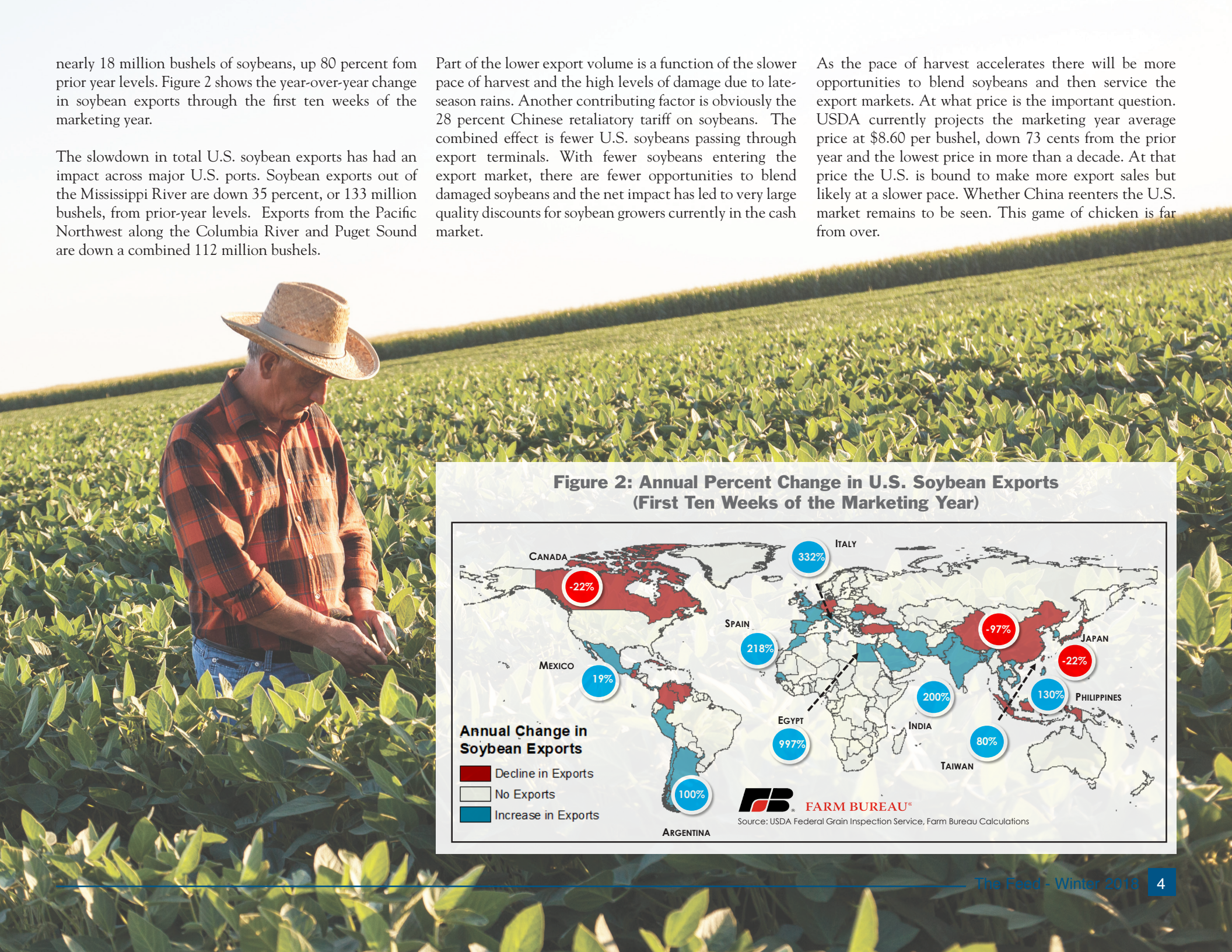


Figure 2: Annual Percent Change in U.S. Soybean Exports (First Ten Weeks of the Marketing Year)

FIRST LOOK AT 2019 FARM FINANCIAL CONDITIONS

(resource 1, 4, 5, 6)

By Mitch Morehart, Owner and Founder of Authoratative Analytics

Key Highlights

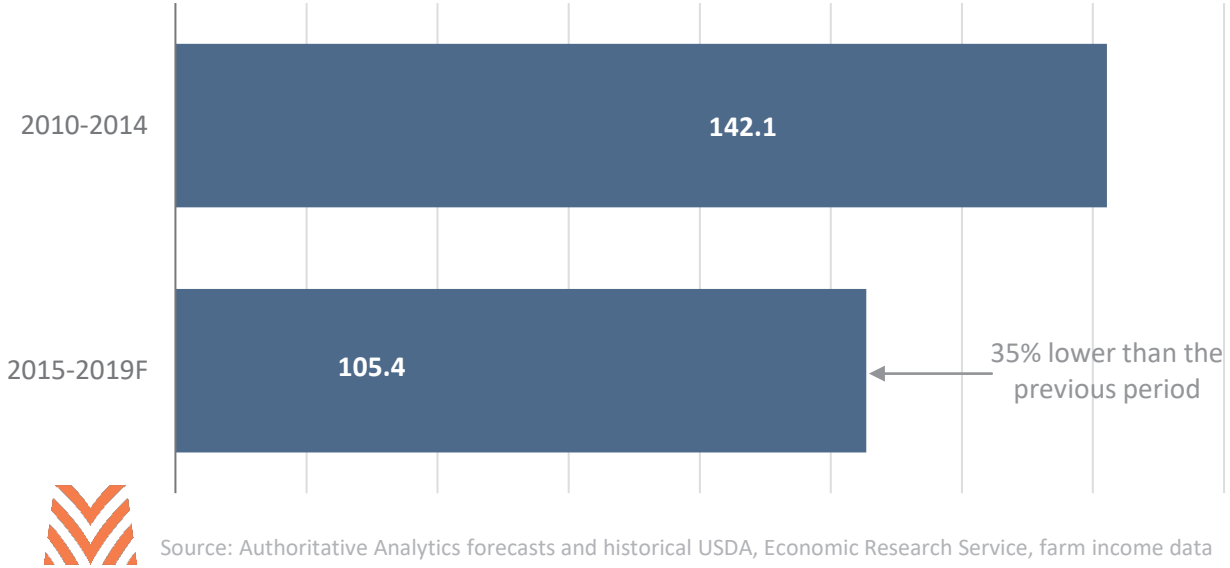
Net cash income is predicted to decline modestly in 2019, but the second round of USDA Market Facilitation Program payments would keep income consistent with 2018's levels.

Continued trade uncertainty is expected to keep commodity receipts consistent with 2018's levels, but an improving macroeconomic environment may push up the cost of some inputs.

A fifth year of a lower profitability environment has increased measures of farm sector leverage and decreased measures of liquidity.

Earlier this year, Authoritative Analytics contributed its estimate of the USDA's then-impending 2017 farm income estimates and an updated forecast of 2018's farm financial conditions to the Summer edition of The Feed. A few months later, the USDA revised its final 2017 farm income estimates in its August estimate release, as Authoritative Analytics projected. With the corn and soybean harvest well underway, Authoritative Analytics' updated 2018 forecast projects 2018 net cash income at $98.4 billion. This is several billion dollars above the USDA's current forecast, primarily due to Authoritative Analytics' inclusion of USDA's Market Facilitation Program (MFP) payments.

Figure 3: Average Inflation-Adjusted Net Cash Income by Period



Source: Authoritative Analytics forecasts and historical USDA, Economic Research Service, farm income data

Authoritative Analytics has also provided its initial 2019 forecasts for the farm economy, giving a first glimpse at the sector's profitability potential in 2019. The Authoritative Analytics projection for 2019 net cash income is $95.8 billion which, if realized, would represent an almost 3 percent decline from the 2018 forecast. After adjusting for inflation, the Authoritative Analytics' 2019 net cash income forecast would be the lowest since 2009. Another year of lower profitability would mark the fifth year that net cash income has been in the current lower range. Inflation-adjusted sector cash earnings over the most recent 5-year period (2015-2019F) would be nearly 35 percent lower than in the 2010-14 period (Figure 3).

REVENUES AND EXPENSES. Lower revenues have been a primary driver of the sector's lower net cash income level. The sector's average gross cash income is forecast to be down more than 24 percent when adjusted for inflation. As commodity cash receipts comprise most of the sector's gross revenues, much of the cause has been relatively low crop and livestock prices. Comparing the projected outcome for the current 5-year period with the previous 5-year averages illustrates this, with inflation-adjusted crop receipts down 15 percent and receipts for animals and animal products down 7 percent.

Although 2019 commodity revenues are likely to remain below the 2010-14 levels, the initial forecast suggests that they will look relatively similar to 2018 levels. Looking specifically at the 2019 forecast, crop receipts would be almost 2 percent higher than the current 2018 forecast. Corn receipts are projected to be up 4 percent on increasing acres as lower soybean prices are expected to impact planting decisions. Conversely, soybean receipts are expected to be slightly lower than in 2018 with declining acres planted and similar pricing. Animal and animal product receipts are projected to be 2 percent higher in 2019, with gains for dairy and cattle outpacing the expected declines in hog and poultry receipts.
Government payments to farmers is another area where

Net Cash Income could fall to

$95.8 billion *in 2019*

(3 percent decline from 2018)

revenues are currently expected to pull back in 2019 to $7.8 billion. The USDA has indicated that a second round of MFP payments is likely in late 2018, but it has not indicated an amount for those payments. Therefore, no additional funds are included in the 2019 forecast at this time, leading to a $4.2 billion year-over-year reduction in payments ($0.5 billion of the announced $4.7 billion in MFP payments are assumed to be paid in 2019). Since a new Farm Bill has not been passed, Authoritative Analytics expects other government program payments to revert to baseline payment levels under a continuation of existing policy.

Authoritative Analytics forecasts crop insurance payments will increase by $1.6 billion in 2019 due to farmers receiving indemnity payments associated with hurricane damage in the fall of 2018 (Hurricanes Florence and Michael). These additional payments are slated for Southeastern states, which experienced the most severe impacts from high winds and rain.

Unfortunately, farmers are not projected to see their expenses decline along with their revenues in 2019. After expenses declined for two consecutive years in 2015 and 2016, the costs of producing the nation's food and fiber have increased by roughly 2 percent each year since. As a result, many producers have seen their profit margins reduced. There have been some savings on energy costs, but the improving macroeconomy could cut into these reductions. Producers will also have to contend with rising interest, seed, and labor costs in 2019.

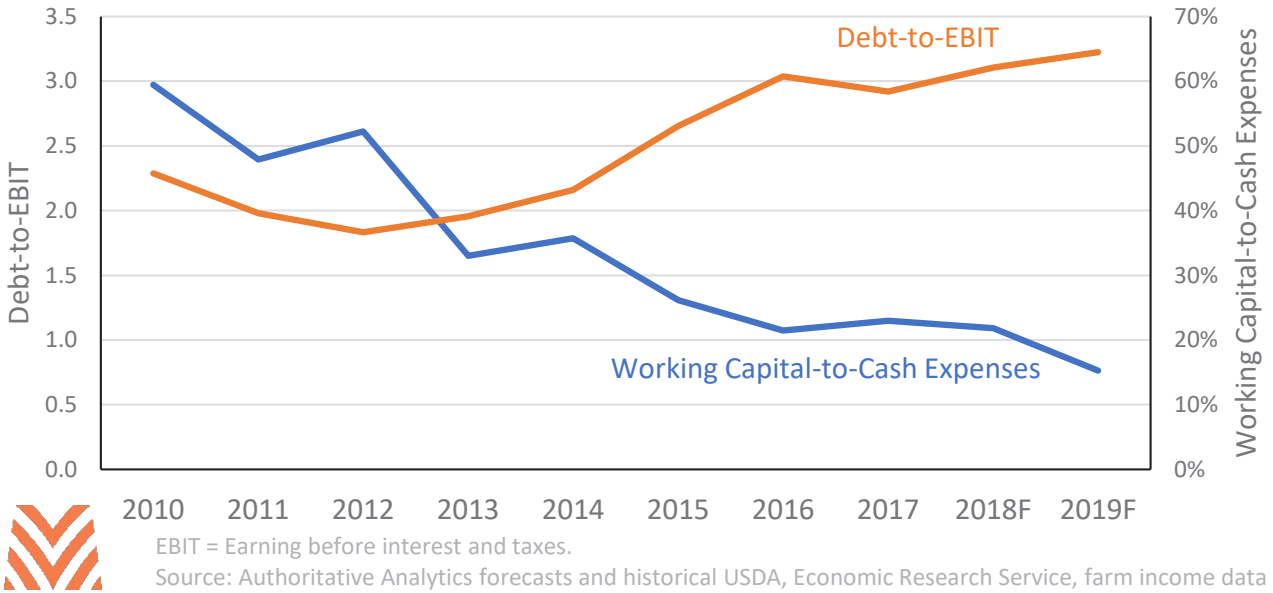
FARM FINANCIAL CONDITIONS. The farm sector's leverage position stands in contrast to the income situation. Despite lower profitability, farm sector asset levels have been resilient. Over the past five years, total assets were on average 6 percent higher than the 2010-2014 period even after adjusting for inflation. Much of this difference has to do with growth in national farm real estate values, which remain above 2010-14 levels, despite sluggish growth over the last few years.

However, some signs of the industry's lower profitability have begun to appear in the sector's balance sheet. After adjusting for inflation, Authoritative Analytics' 2019 projection for farm debt is the highest in over 36 years. At the same time, sustained low levels of farm income and rising interest rates have led farm real estate value growth to slow. Accordingly, debt has also been increasing faster than assets in recent years. This has led the sector's debt-to-asset ratio to rise somewhat, while the amount of debt relative to sector cash flows has increased more markedly, rising to levels last seen in the mid-1980s (Figure 4).

The outlook for continued lower income levels is also expected to continue weighing on the sector's liquidity. The sector's working capital divided by cash expenses has been deteriorating since 2014 and is projected to fall to 15 percent in 2019 (Figure 4). A common heuristic is that a business should have enough cash available in working capital to cover five months of operations expenses; the farm sector could have less than two months of expenses in cash reserves if these forecasts of declining working capital and rising expenses are realized in 2019.

This early look at 2019 requires myriad policy, pricing, and political assumptions. Areas of uncertainty include a second round of MFP payments (which could raise the forecast to 2018 levels), additional clarity on trade relations, and the path of inflation and interest rates.

Figure 4: Farm Sector Leverage and Liquidity



EBIT = Earning before interest and taxes.

Source: Authoritative Analytics forecasts and historical USDA, Economic Research Service, farm income data

NATIONAL AND REGIONAL FARM DEBT TRENDS

(resource 7, 8, 9, 10)

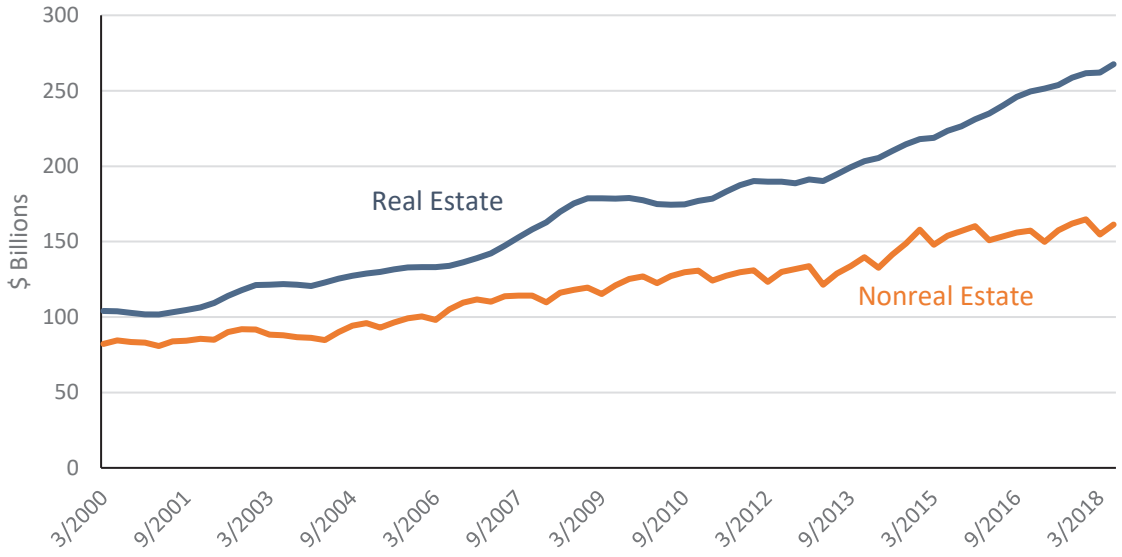
Key Highlights

Real estate farm debt is rising at a faster pace than non-real estate farm debt.

The Farm Credit System and commercial banks are the two primary providers of farm debt capital, with each controlling approximately 40 percent of currently outstanding debt.

Farm debt has increased in all regions over the last 18 months but is growing most quickly in regions with faster farmland value appreciation.

Figure 5: Real and Non-real Estate Debt by Quarter



Source: Authors calculations using data from FDIC and Farm Credit Administration Call Report, Federal Reserve Board of Governors and USDA, Farm Income and Wealth Statistics.

Changing economic conditions, farmer preferences, and the availability of credit have led to changes in the farm debt landscape. Analyzing these changes can provide farmers, industry participants, and policymakers with a better understanding of current farm financial conditions and lending dynamics.

The USDA Economic Research Service's balance sheet estimates are oft-cited sources of data on the farm debt market. However, its figures only include annual data even when input data is available more frequently and excludes the debt and asset amounts associated with farm houses. To provide a timelier look at farm debt market trends, Farmer Mac has compiled quarterly debt market estimates.

NATIONAL OVERVIEW. Debt that is secured by farm real estate and buildings reached $268 billion in June 2018, a 5.4 percent increase over 2017 levels and has been rising steadily (Figure 5). After adjusting for inflation, farm real estate debt has only declined in one quarter out of the last five years (first quarter 2018). Real estate debt tends to rise in conjunction with rising land values, but land debt can also rise during periods of lower farm profitability when producers need additional sources of capital to offset weaker earnings.

Non-real estate debt, typically used for annual agricultural production and secured by other farm assets such as equipment or crop or livestock inventories, has not risen as quickly (Figure 5). Non-real estate debt is up 2.4 percent from 2017 levels, a slower annual percentage change compared to real estate debt. Overall non-real estate borrowing has been relatively flat after adjusting for inflation. Since 2010, farmers have elected to take on real estate debt at a much faster rate (53 percent increase) than non-real estate debt (31 percent increase).

The needs of farmland borrowers are met by a diverse collection of agricultural lender types, including the Farm Credit System (FCS), commercial banks, life insurers, Farmer Mac, and the USDA's Farm Service Agency, as well a variety of other non-bank financial companies and individuals. For real estate lending, the FCS institutions maintained a 45 percent market share in June 2018, up from 43 percent in 2010. Commercial banks are the other large group of farm real estate lenders, taking a 38 percent market share through June 2018. For non-real estate lending, commercial banks are the largest capital provider with a market share of nearly 50 percent. FCS institutions provide roughly 31 percent of production credit, and the balance comes from other sources. Commercial bank market share of non-real estate financing peaked in the early 2000s at nearly 60 percent, and the FCS

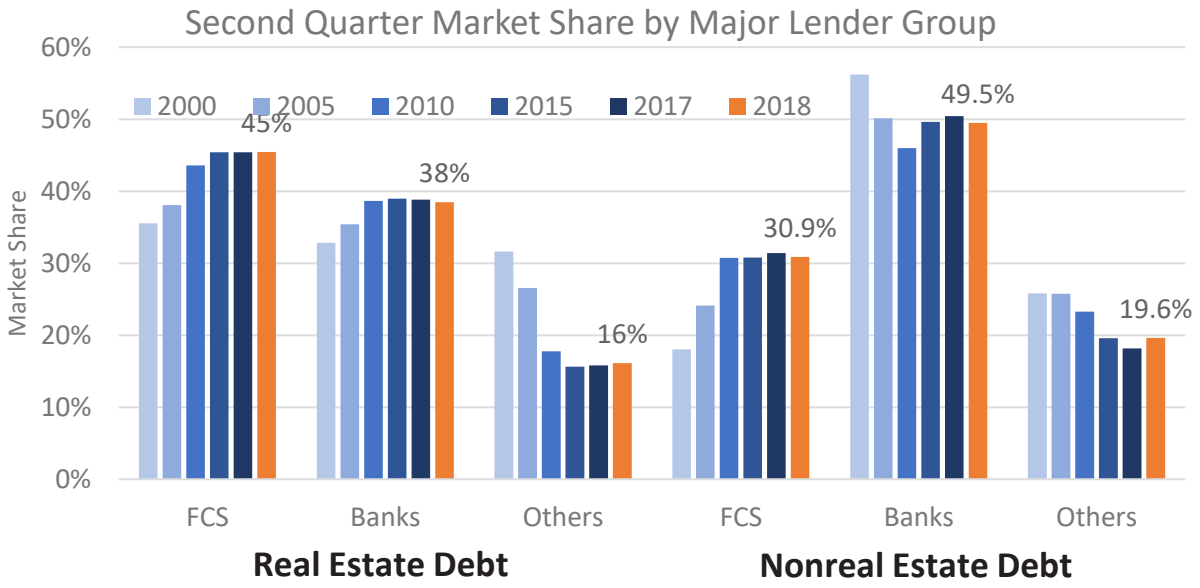
gained considerable ground in the late 2000s, peaking at 33 percent in 2012.

REGIONAL TRENDS. U.S. agriculture covers a diverse range of commodities that are grown in different geographic areas of the country, leading farm debt usage patterns to vary by region. Given the scope of Midwestern agriculture – states in the Midnorth region accounted for 35 percent of the sector's commodity revenues over the last five years – it is unsurprising that farm debt is concentrated in the center of the country. States in this region account for 42 percent of total farm debt outstanding in the second quarter of 2018. However, other regions are also significant debt markets. As shown in Figure 7, the Northeast, Midsouth, and Southwest all account for at least 12 percent of the overall farm debt market and only the Northwest, comprising just five states, accounts for less than 10 percent of overall agricultural debt.

Each of these regions has experienced somewhat different farm debt volume trends. Figure 7 shows the relative change in farm real and non-real estate debt outstanding in each region compared to the first quarter of 2017. The chart clearly illustrates the usual seasonal pattern of operating financing as non-real estate debt outstanding dipped between the end of 2017 and first quarter of 2018. Interestingly, this decline is less prevalent in the Southwest, where production often centers around industries like permanent plantings and dairy that can have more need for year-round non-real estate financing.

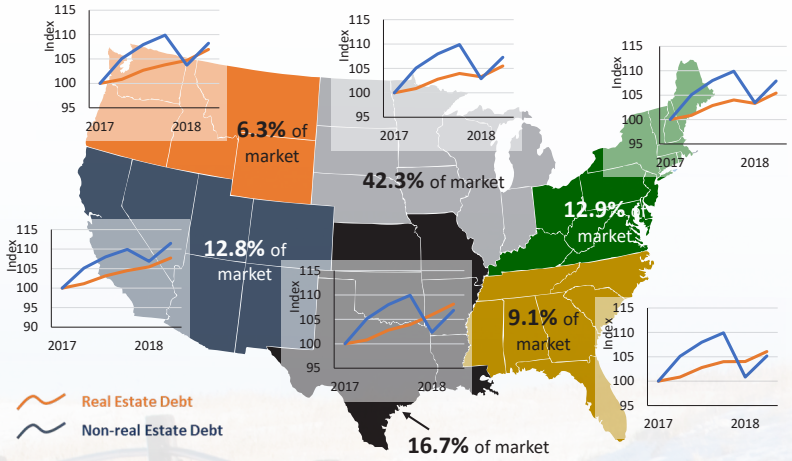
Farm real estate debt has trended higher in each region over the last 18 months. However, some regions have grown more quickly than others. Farm real estate debt has risen between 7 and 8 percent in the Midsouth, Northwest, and Southwest since the start of 2017 and these regions saw the largest annual increase in farmland values according to USDA survey data. On the other hand, growth in farm real estate debt was roughly 5 percent in the Midnorth, Northeast, and Southeast where farm real estate values have risen less quickly.

Figure 6: Farm Real and Non-real Estate Debt Market Share by Lender Group and Quarter



Source: Authors calculations using data from FDIC and Farm Credit Administration Call Report, Federal Reserve Board of Governors and USDA, Farm Income and Wealth Statistics.

Figure 7: Regional Farm Real Estate and Non-real Estate Debt Trends Since 2017

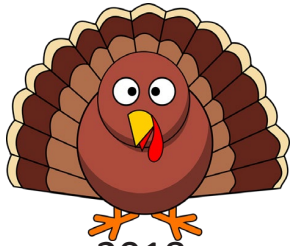


Source: Author calculations using data from FDIC and Farm Credit Administration Call Reports, USDA, Farm Income and Wealth Statistics and NASS, QuickStats.

HAPPY HOLIDAYS FROM THE AUTHORS

2011

Average turkey weight is 18 lbs., up from 15 lbs. in 2011



2018

% of Americans consuming turkey on Thanksgiving

88%

243M

U.S. turkeys produced in 2017

USDA NASS, University of Illinois Extension

Annual U.S. potato production = 44 billion pounds

Potatoes are an integral part of many holiday traditions from Hanukkah to Thanksgiving

115.8

Lbs. of potatoes per person per year

USDA NASS

221 Ft

Guinness World Record Tallest Christmas Tree

Trees sold per year **19.9M**

USDA NASS, GUINNESS

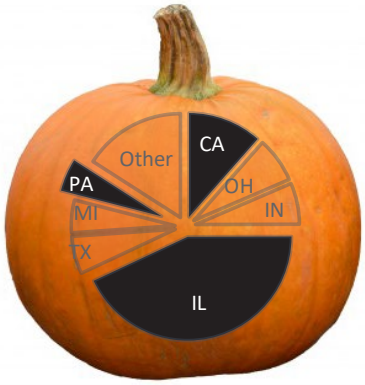
51 Ft

Guinness World Record Longest Candy Cane

USDA NASS, GUINNESS, Delish.com

1.8B

Candy canes consumed during the holidays



USDA NASS, ERS

Pounds of U.S. grown pumpkins per year

2.0B

Over 43% of all U.S. pumpkins are grown in Illinois – smashing good job!

Key Highlights

Weak El Niño conditions have developed over the equatorial region of the Pacific Ocean.

El Niño conditions may strengthen somewhat as we head through the fall and into the winter, influencing weather conditions throughout the country.

Early this fall, weak El Niño sea temperatures developed across the central Pacific Ocean, and this trend is likely to accelerate through the fall and into the early winter. The El Niño pattern, combined with an anomalously-warm pool of water near the Gulf of Alaska, may become the dominant influence on weather conditions throughout the country over the winter. This combination could result in a northern jet stream pattern that forms a ridge along the Northwest coast and that then dives southeastward into the northern Plains. This would promote below-normal precipitation and above-normal temperatures in the Pacific Northwest with colder-than-normal temperatures from the Plains eastward. Meanwhile, the southern branch of the jet stream could become energized and may transport additional moisture throughout the southern tier of the country. Above-normal precipitation would be most likely from Texas to the Southeast. The precipitation outlook in California is a bit uncertain, as the water year outcome is likely to be dependent on which jet stream feature becomes dominant. If the northern jet stream pattern is strong, California will likely experience drier-than-normal conditions. However, if the southern jet stream is dominant, a wetter-than-normal water season is probable.

Figure 8: Drought Monitor Map (USDA, NOAA, University of Nebraska-Lincoln)

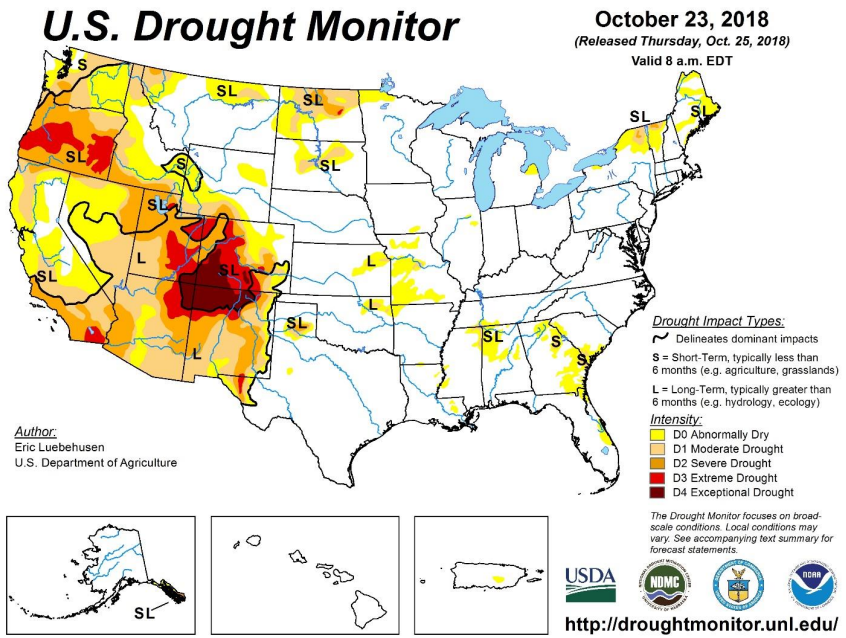
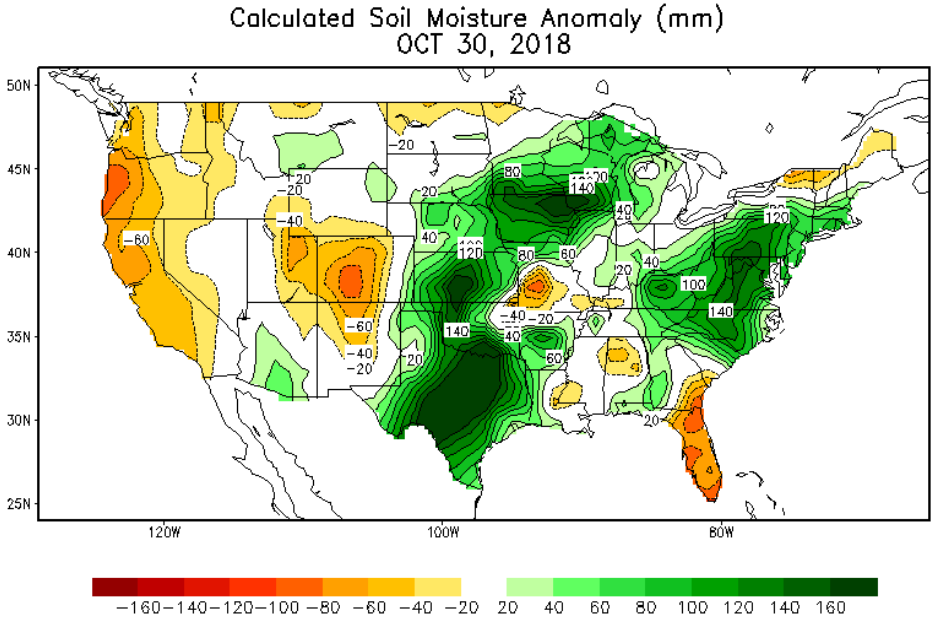


Figure 9: U.S. Soil Moisture Anomaly



CORN AND SOYBEANS
(resource 1, 13, 14, 15, 16, 17)

Key Highlights

Prices for corn have been stable, driven by reduced supplies and strong demand for feed and ethanol.

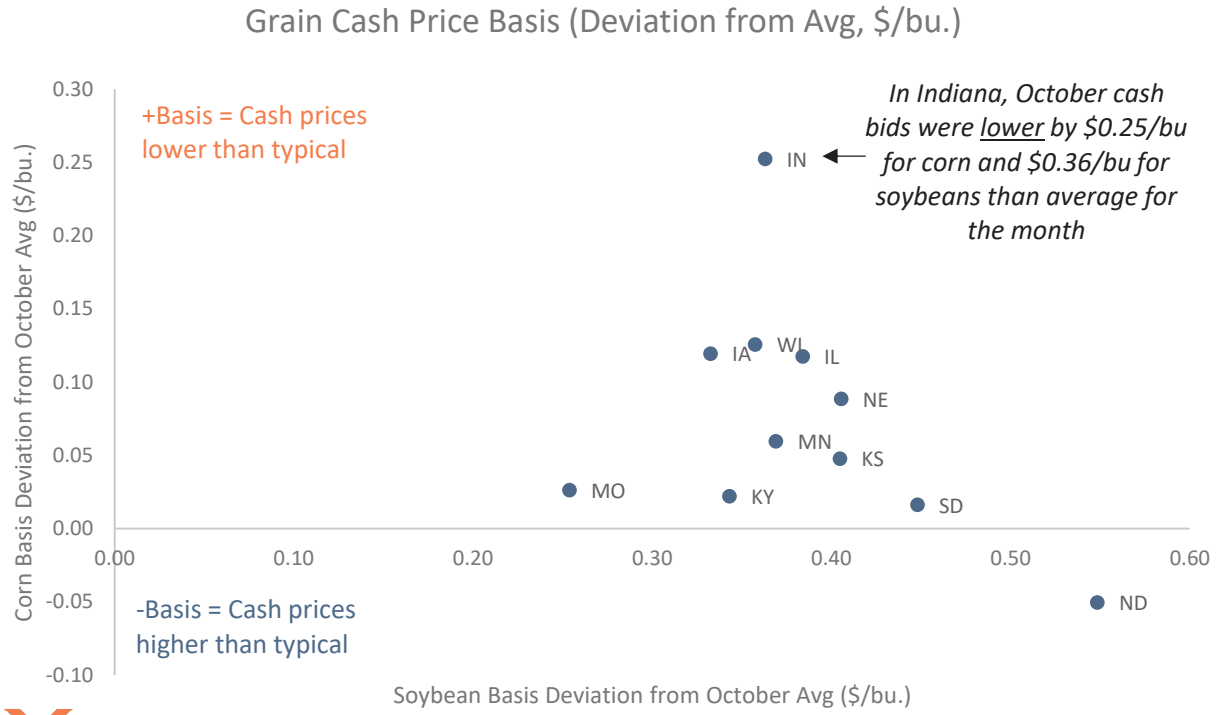
Soybean supplies are at record levels as a result of the bumper crop and reduced export demand.

Cash prices were lower in October for most markets, which is likely a result of grain storage constraints.

CORN. Supply and demand dynamics support steady corn prices into 2018. Supplies are down in 2018, which is the result of lower planted acreage. The USDA estimates the national average corn yield at 180.7 bushels per acre, a new record. Nearly all of the primary Cornbelt states witnessed record yields this fall, despite some challenging wet weather during the harvest. Grain demand continues to rise into 2019. The protein sector continues to expand, and increases in grain-consuming animal units will support feed corn usage. Ethanol production remains robust despite a slowdown in ethanol exports and lower prices. In early October, President Trump expressed a commitment to push year-round regulation for a 15 percent ethanol blend, but a lack of infrastructure equipped to manage additional blends could limit the potential impact of any legislation. Finally, exports are another source of growing demand, as crop disruptions in many global growing regions are increasing the number of international buyers of U.S. corn.

The combined market dynamics for U.S. corn are supportive of cash prices between $3.00 and $3.50 per bushel for the remainder of 2018 and into 2019. Storage is likely to be an issue for growers, as many bins will be full of soybeans from both 2017 and 2018 harvests. Cash corn bid prices in local markets are running slightly below normal for October, indicating the premium many elevators are placing on storage capacity (see Figure 10).

Figure 10: Corn and Soybean October Cash Price Basis Deviation from Average by State



Source: Bloomberg Terminal Cash Grain Bid Historical Data, Author Calculations

SOYBEANS. Market conditions for soybeans remain generally poor as the 2018 harvest comes to an end. September soybean stocks registered their highest levels since 2007, a fact that is complicated by a record 2018 harvest that will pressure both on and off-farm grain storage capacity. A dramatic decline in export demand from China is the root of the excess supply. Between a typical September and December, roughly 20 percent of all U.S. soybean production has been exported to China. The retaliatory tariffs that China placed on soybeans this summer have virtually halted the U.S. soybean export pipeline. Some of the slack in exports has been picked up by other markets in Africa and Europe, but lost Chinese demand will be hard to offset fully. As long as the trade dispute with China lingers, cash soybean prices are likely to remain pressured in the $7.00 to $8.00 per bushel range. All states exhibited lower cash prices relative to futures prices from a typical October. Growers in North and South Dakota have seen a larger basis as much of the soybeans from those states heads through the Pacific Northwest to China.

DAIRY

(resource 1, 15, 18, 19)

Key Highlights

Milk prices shifted lower in 2018.

Lower feed costs have helped to keep state milk-to-feed margins within a standard deviation of average levels.

The not-yet ratified United States-Mexico-Canada Agreement contains several provisions that could benefit the U.S. dairy industry.

Following a rebound in dairy prices and profitability in 2017, U.S. dairy farmers have seen prices and profitability sour in 2018. The USDA's most recent projections indicate 2018's annual average class III and IV milk prices are expected to end up 6 and 8 percent lower than last year, respectively. Dairy farmers also have had to deal with trade disruptions after Canada, China, and Mexico enacted retaliatory tariffs against U.S. dairy products. These markets account for roughly half of dairy exports.

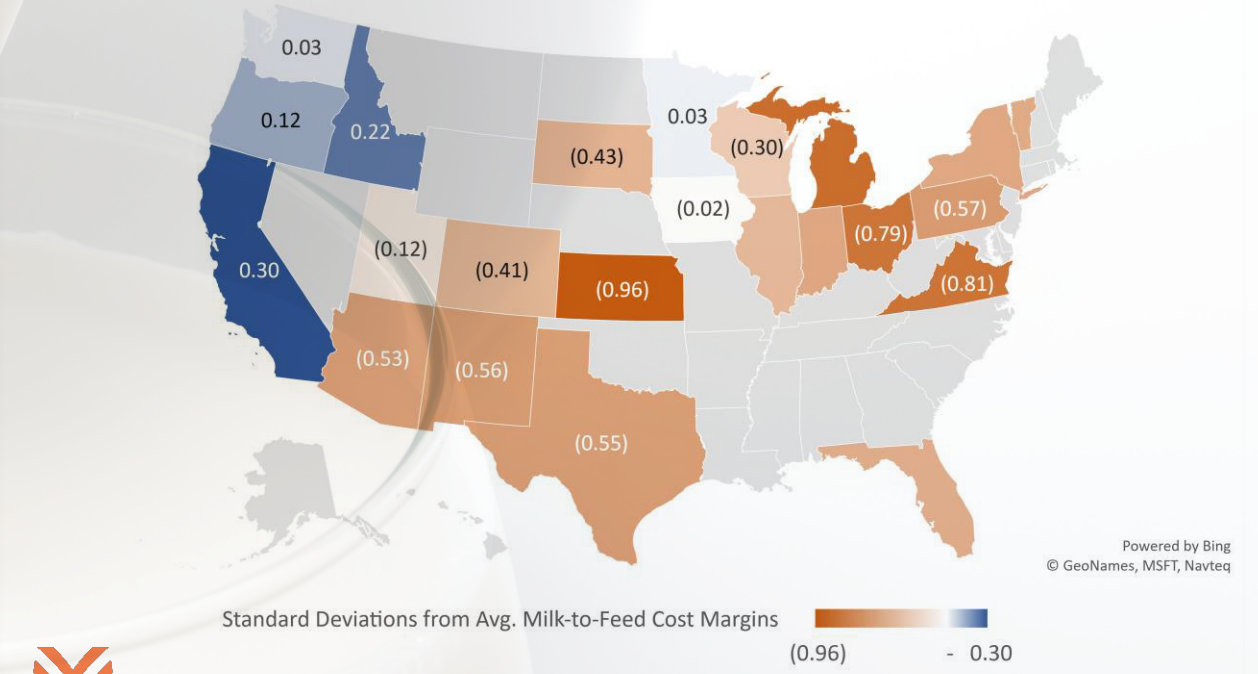
However, dairy farmers have benefitted as feed prices, particularly for soybeans, shifted lower due to ongoing trade uncertainty. While the industry has certainly felt the impact of dampened profitability, the margin between state-level milk prices and estimated feed costs remains in the range of recent historical averages in most states. Figure 11 illustrates how many standard deviations each state's current monthly milk-to-feed cost margin is from the state's average margin since 2008. States shaded in blue like California, Idaho, and Minnesota have margins that are estimated to be above average, but margins are below average in many other dairy-producing states.

On the one hand, states experiencing below average margins are within one standard deviation of their average, indicating that the current profitability environment remains similar to past experiences. Milk-to-feed price margins also generally remain above non-feed operating costs. Still, these compressed margins are meaningful to dairy producers and their families. For example, the difference between current and average margins applied to a 150-cow operation in Wisconsin equates to nearly $30,000 in losses per year.

Luckily, USDA projections suggest higher milk prices in 2019. Despite lower profitability this year, dairy farmers are expected to continue increasing production, largely through yield increases. The USDA estimates that raw milk supplies will rise another 1.5 percent next year. However, strong domestic demand is currently projected to draw down stocks of milk-fat products, and to help support prices of Federal Class III milk between $0.45 and $1.05 per hundredweight above today's levels.

The industry will also benefit if the recently-negotiated United States-Mexico-Canada Agreement is approved by Congress. As part of the agreement, Canada has agreed to provide U.S. producers limited access to its dairy market. Canada is also slated to end its Class 7 pricing tier, and to price several key milk proteins at the U.S. price. These concessions, combined with proposed Canadian export limits, should help U.S. producers compete on an equal footing when seeking to export these products.

Figure 11: State Level Milk-to-Feed Cost Margins Standard Deviations from Average



Source: USDA NASS QuickStats, Author Calculations

HOGS

(resource 1, 15, 18, 20)

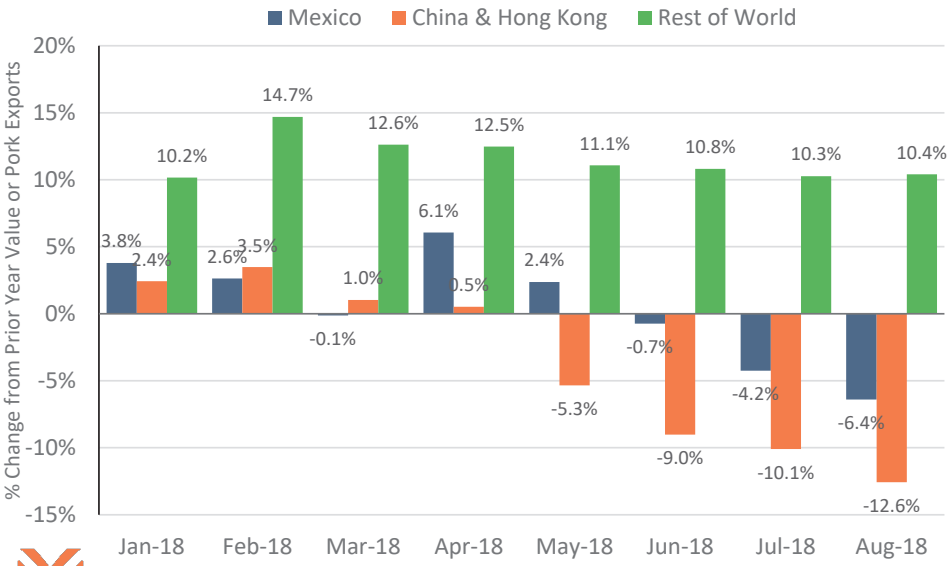
Key Highlights

Rising breeding animal inventories suggest that the industry's supply expansion is likely to continue into 2019, despite the recent downturn in prices.

The combination of rising supply, trade disruptions, and moderate domestic demand growth means that the industry is likely to face profitability headwinds into 2019.

Hog farmers should receive the USDA's Market Facilitation Program payments in the upcoming winter months, which will help offset some of the industry's short-run profitability crunch.

Figure 12: Year-over-Year Percentage Change in the Value of Cumulative Pork Exports



Source: Authors calculations using USDA, Foreign Agricultural Service, GATS data.

After expanding for the last several years, recent USDA data suggest that the U.S. hog complex is likely to remain in expansion mode into 2019. Rising domestic and international demand helped offset the higher supplies throughout 2017, which allowed hog farmers to maintain positive profit margins throughout 2017 and early 2018. However, industry profitability has since been impacted by several factors. Higher feed input costs cut into profitability as grain and soybean prices rallied in early spring. Pork prices have shifted lower in recent months in response to continued supply growth, and trade disruptions have tipped the industry's supply and demand out of equilibrium.

In the USDA's September Hogs and Pigs report, hog inventory, breeding animal inventory, and pig crop data all suggest continued increases in future hog production. The inventory of market hogs in September was up 3 percent over last year, and the number of breeding sows also increased 3 percent. The larger number of breeding animals indicates that hog producers are continuing to respond to additional processing capacity by increasing future production. Accordingly, the USDA's production forecasts show that the industry produced an additional 3.3 percent of pork this year and is expected to generate 5 percent more meat in 2019.

Pork demand has not kept up with the robust increase in supply. The USDA expects that domestic pork demand will continue to grow modestly in 2019. U.S. consumer demand has favored bacon in recent years, while foreign markets have been key to moving fresh and frozen pork cuts through the supply chain. However, China instituted retaliatory tariffs against U.S. pork products beginning in April, while Mexico enacted tariffs in June. Figure 12 shows a comparison of the year-over-year percentage change in cumulative pork exports to China, Mexico, and the rest of the world. This clearly illustrates the immediate impact that China's tariffs have already had on the pace of pork exports. In contrast, export quantities to Mexico have been more resilient, but export prices of key products like hams have shifted lower in response to the tariffs.

The convergence of these supply and demand trends are likely to present headwinds for hog farmers into 2019. Pork prices are expected to fall between $38 and $40 dollars per hundredweight in the first quarter of 2019 and to average just $41.50 for the year. This will likely lead to compressed margins throughout the industry, and for some producers, returns will fail to cover operating costs. In the near term, the USDA projects that hog farmers will receive roughly $290 million in Market Facilitation Program payments over the next several months. This will help offset some of the industry's losses, but the industry will need to rebalance supply and demand by slowing its expansion, increasing domestic demand growth, and/or expanding access to international markets.

COTTON

(resource 1, 15, 21, 22)

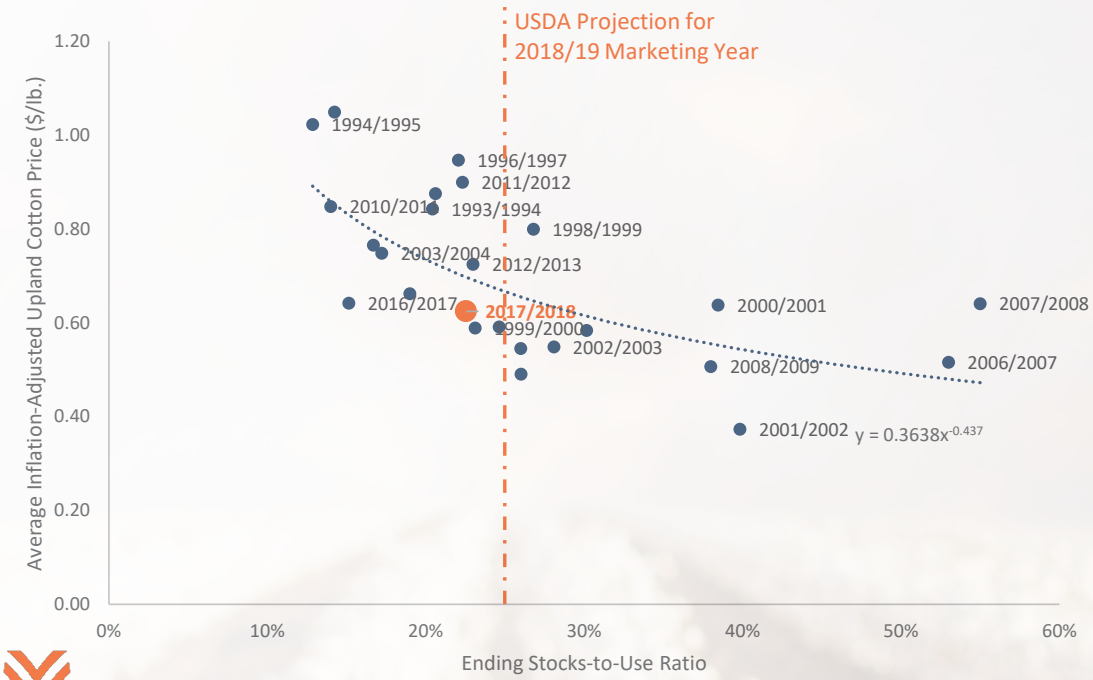
Key Highlights

Global supplies of cotton are down in the 2018-19 marketing year because of weather disruptions to world production.

Export demand for U.S. cotton remains robust, driven by demand increases in Asian markets.

Cash cotton prices paid to U.S. farmers are up between $0.05 and $0.10 per pound in 2018.

Figure 13: Cotton Price and Excess Stocks-to-Use Ratio by Marketing Year



Source: USDA NASS Quickstats

Cotton supplies dropped in 2018 due to a confluence of factors. U.S. production is down on lower planted acreage in 2018 compared to 2017. Drought conditions affected yields in the Southwest region, and Hurricane Michael tore through a highly-concentrated cotton-growing area in Georgia in October. Roughly 28 percent of Georgia's cotton crop (nearly 800 thousand bails of the state's 2.9 million bail crop) is grown in counties that were declared disaster areas by the Federal Emergency Management Agency (FEMA), and the hurricane hit early in the harvest cycle. Reported Georgia cotton crop conditions dropped precipitously in late October, as evidence of the effects of the powerful storm. Globally, cotton production looks to decline in 2019, and China is beginning to deplete their massive stores of cotton. The USDA projects that global ending stocks will fall to their lowest levels since 2012.

Demand for U.S. cotton is up slightly in 2018. Export markets remain the primary channel for U.S. cotton as nearly 80 percent of all domestic cotton production gets exported into foreign markets. Through August 2018, the value of cotton exports was up 15 percent, and the quantity of cotton exports was up 14 percent compared to 2017. Asian markets continue to fuel that growth story, with double-digit growth in exports to Vietnam, Indonesia, Pakistan, and Bangladesh. China continues to be a top market for U.S. cotton, but sales are slowing this marketing year in the face of a Chinese retaliatory tariff of 25 percent on U.S. cotton. U.S. cotton exports could remain elevated if the drought in Australia dramatically reduces world supplies in 2019.

Cotton prices began to rally in mid-2018 because of the tightening of cotton supplies and stable demand. Upland prices received by farmers averaged $0.77 per pound in July, the highest average monthly price since 2014. If the supplies tighten further due to production disruptions, prices could climb to $0.80 per pound and maintain into 2019. Ending stocks-to-use is a good indicator of market price potential: as supplies increase relative to demand, market prices fall (Figure 13). The USDA's projection for 2019 ending stocks-to-use ratio, adjusted for Hurricane Michael damage, implies a marketing year average price between $0.70 and $0.80 per pound. Potential threats to this sustained price rally are a stronger dollar and a drop in mill use in China and India.

POULTRY

(resource 18, 20, 23, 24)

Key Highlights

The U.S. broiler and egg industries remain in expansion mode like other protein commodities, but prices have been stronger than expected thus far in 2018.

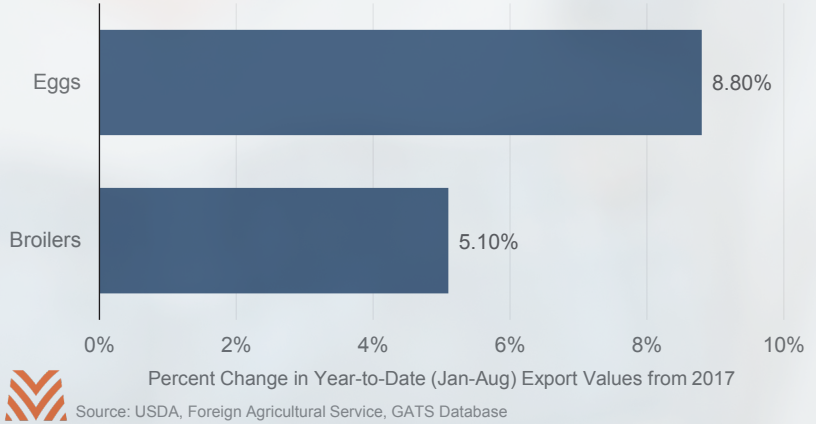
Prices are expected to pull back some in 2019, but they should remain above 2016-17 levels.

The prevalence of production contracts in U.S. broiler production means higher broiler prices but not necessarily higher profitability for broiler operations.

The USDA currently projects 2018 broiler and egg production to increase by 2.2 percent, with increases of 1.9 and 1.5 percent, respectively, expected in 2019. Unlike other protein industries, broiler and egg prices had been able to trend higher earlier this year despite the ongoing production expansion. Over the course of the year, the USDA raised its midpoint 2018 average marketing price for eggs from $1.18 to $1.41 per dozen. In June, weekly broiler prices touched $1.21, just under the record reached in 2014, leading the USDA to raise its midpoint 2018 average marketing price for broilers from $0.91 per pound in January to $1.01 per pound in July. Since then, broiler prices have declined more quickly than seasonal expectations and prices of both commodities are expected to trend moderately lower in 2019 as continued production expansion moves through the supply chain.

The primary driver supporting current prices for each poultry commodity segment has been strong demand. Year-to-date exports of broilers are up 5 percent through August, while egg exports are running nearly 9 percent higher (Figure 14). Domestic demand is also elevated, particularly for broilers, which have become an increasingly popular protein in recent years. Consumers are expected to help clear the additional supply of both commodities in 2019. If the USDA's expectations are realized, U.S. broiler meat consumption will rise 3.7 pounds per capita in 2019 relative to 2016, while U.S. consumers are projected to eat eight additional eggs per year over the same period.

Figure 14: Increased Export Demand for Broilers and Eggs Support Prices



Source: USDA, Foreign Agricultural Service, GATS Database

Each commodity's surprisingly strong 2018 pricing also reflects the fact that 2018's growth in broiler and egg production has been slower than originally expected. The USDA now expects production of both commodities to grow slightly more slowly in 2019 as well. The combination of strong demand and slower than anticipated supply growth should help keep prices above 2016 and 2017 levels, even if they pull back from recent highs.

However, the favorable price outlook does not necessarily mean operators will see an increase in cash flow. Egg producers likely faced higher feed costs in the first part of 2018 as grain and oilseed prices moved higher, and how feed prices evolve in response to ongoing trade uncertainty will impact the industry's profitability moving forward.

Because most broilers are produced under production contracts where an integrator maintains ownership of the birds and pricing risk, broiler growers' income may not have trended higher with prices. Under a production contract, an integrator supplies the birds, feed, and veterinary assistance to a broiler growing operation that supplies housing for the birds, labor, and utilities in exchange for fee income per pound of delivered weight. Receiving fee income helps insulate broiler operations from downward movements in broiler prices or price increases in inputs like feed, but it also means that rising broiler prices or lower feed costs will not lift the typical broiler grower's profitability.

However, low feed prices and high domestic demand has meant broiler integrators have generally enjoyed improved profit margins over the past few years. Industry expansion in response to higher profit margins can lead broiler growers to receive additional birds for placement. Expanding production can also lead integrators to raise production contract fees in geographic areas where they need to attract new growers, and can keep existing growers from retiring. Given these dynamics and other complexities often involved in production contracts, lenders should monitor their local markets to understand how industry trends are impacting the profitability of their broiler customers.

ALMONDS, PISTACHIOS, AND WALNUTS
(resource 15, 25, 26, 27)

Key Highlights

The almond, pistachio, and walnut industries are each projected to have record harvests.

Each industry's exports proved resilient in the 2017-18 marketing year but continued trade disruptions could provide headwinds.

ALMONDS. As California almond growers wind down this year's harvest, signs continue to point to a record crop even if it comes in a bit under the USDA's 2.45 billion pound forecast (Figure 15). The USDA projects a 7 percent increase in bearing almond acreage. While it is still early, initial harvest reports also suggest that the industry has also largely escaped broad impacts from February's freeze with overall number of nuts per tree within a percent of last year's levels. However, there are reports of lower yields in some orchards in northern growing areas, including the Sacramento Valley, where harvest reports of spotty yields dovetail with the USDA's July objective measurement survey, which showed 10 percent fewer nuts per tree compared to last year.

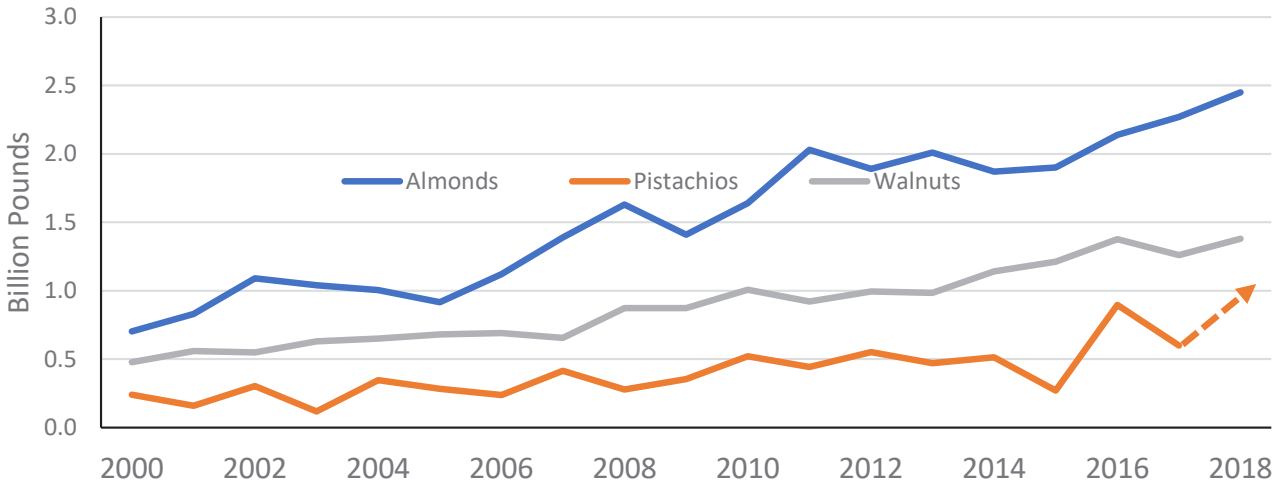
With this large expected crop, the ability to move almonds through the supply chain will be key. Overall, almond demand continues to be strong. The California almond industry shook off mid-marketing year retaliatory tariffs in key markets to ship 2.25 billion pounds of almonds to domestic and international markets in the 2017-18 marketing year – an increase of 7 percent over last year. Early shipment data from the 2018-19 marketing year indicate a slowing export pace, with August through September exports down nearly 15 percent due to lower exports to Northeast Asia, Europe, and the Middle East. But this could just reflect a delay in export timing early in the season. The USDA's Foreign Agricultural Service predicts export volume to increase 2 percent as demand from Europe, Japan, and the Middle East offset tariff-related pullbacks in China, India, and Turkey.

PISTACHIOS. Once the final numbers are tallied, the pistachio industry's 2018 harvest is likely to be the largest on record. Like other California tree nuts, pistachio-bearing acreage continues to trend higher. Pistachios are an alternate bearing crop and 2018 is an on-year (i.e., there is a higher overall yield potential). Reports from the field suggest that pest control practices have resulted in a high-quality crop.

As with other nuts, consumer trends to portable, healthy food products bodes well for domestic demand. But exporters must overcome tariffs in key markets of China and Turkey to move the large harvest internationally.

WALNUTS. Like other California tree nuts, U.S. walnut production is expected to reach a record in 2018. The USDA is currently projecting a 1.38 billion-pound crop that would check in just higher than 2016's harvest. Domestic consumption is expected to rebound, but exports are expected to be flat compared to last year due to retaliatory tariffs levied by China, India, and Turkey. As a result, the USDA currently shows U.S. ending stocks rising 56 percent to just under 200 million pounds, despite a production shortfall in China that may have otherwise presented an opportunity for U.S. growers. If the increasing walnut stockpiles are realized, prices could face downward pressure.

Figure 15: Almond, Pistachio, and Walnut Production by Year



Dashed line for 2018 pistachio production indicates direction, not magnitude.
Source: USDA, National Agricultural Statistics Service and Foreign Agricultural Service.

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