IOWA STATE UNIVERSITY
Extension and Outreach

Iowa Farm Outlook

Department of Economics
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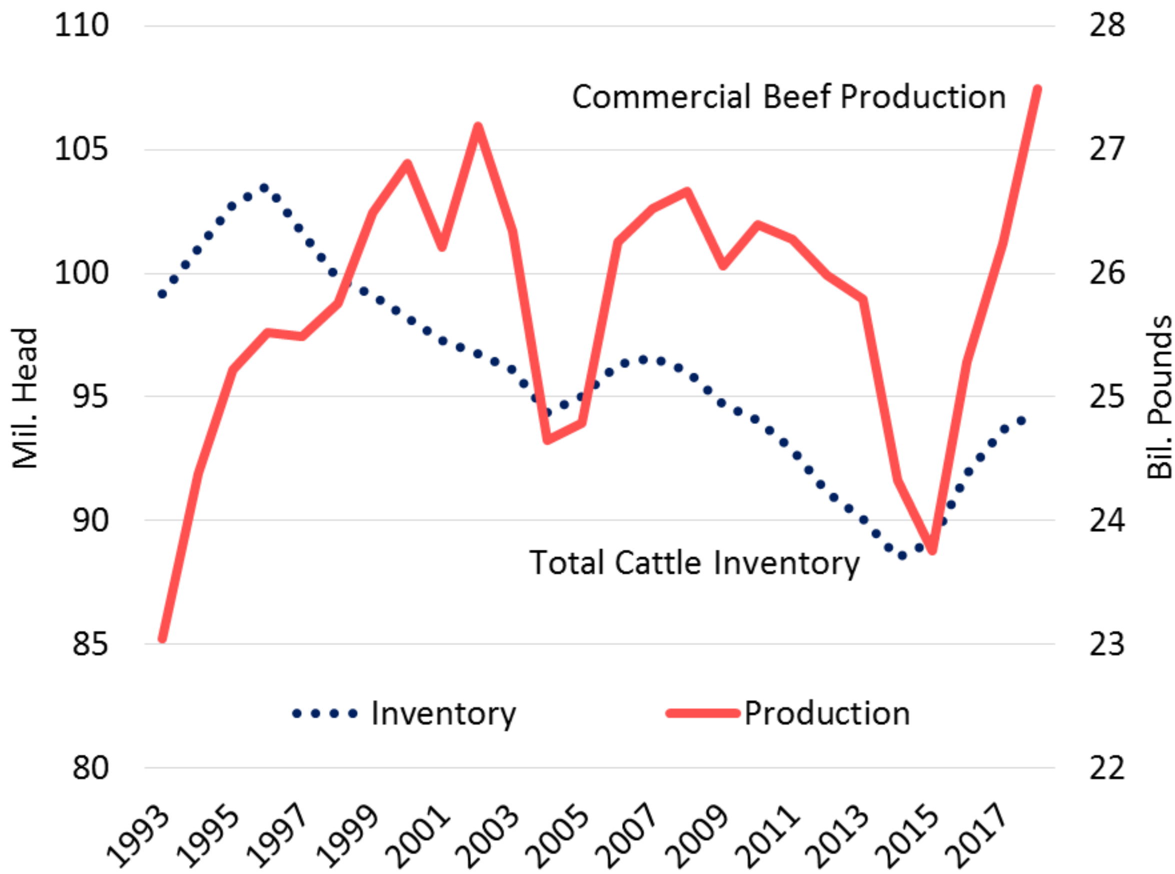
More Beef Expansion Ahead

The numbers in USDA's recently released annual Cattle inventory report confirm that beef herd expansion continued in 2017, albeit at a slower pace than in 2016. Beef herd expansions often last for four to six years. The current expansion began in 2014 and could continue for another year or so. If it does, beef production in this cycle likely would not peak until early in the next decade.

Fewer cows are needed to hit a given beef production target, as each cow results in an increasing amount of beef production. Smaller herd sizes than experienced in past cattle cycles is likely needed without substantial beef demand growth. How large inventories can and will expand largely depends on growth in domestic and export beef demand.

Figure 1. U.S. Beef Production vs. Cattle Inventory, Inventory on January 1



Data Source: USDA-NASS.

Reported inventories are critical to understanding fundamental cattle market supply trends. Cattle counts also provide insight into demand for inputs such as feedstuffs. U.S. feed and residual corn use is projected to be 5.55 billion bushels, the largest since 2007/08. Not coincidentally, that was the last peak in the cattle inventory. Nationally, 2017/18 corn marketing year prices are projected to average $3.05 to $3.55 per bushel. Conventional wisdom suggests, all else equal, corn prices would be much lower without the strong feed demand.

As of January 1, 2018, the U.S. inventory of all cattle and calves was up 0.7% at 94.4 million head (Table 1). The beef cow inventory was up 1.6% to 31.7 million head. Beef replacement heifers were down 3.7% to 6.1 million head. Dairy cows were up a slight 0.6% to 9.4 million head and dairy replacement heifers were up 0.6% to 4.8 million head. The feedlot inventory for all feedlots was up 7.2% to 14.0 million head.

Table 1. Cattle Inventory by Class and Calf Crop

	United States			Iowa		
January 1 inventory *	2017	2018	2018 as % of 2017	2017	2018	2018 as % of 2017
Cattle and calves	93,704.6	94,399.0	100.7	3,900	4,000	102.6
Cows and heifers that calved	40,559.2	41,122.6	101.4	1,180	1,190	100.8
Beef cows	31,213.2	31,723.0	101.6	965	970	100.5
Milk cows	9,346.0	9,399.6	100.6	215	220	102.3
Heifers 500 pounds and over	20,132.0	20,244.8	100.6	860	830	96.5
For beef cow replacement	6,368.2	6,131.2	96.3	185	165	89.2
For milk cow replacement	4,754.0	4,781.3	100.6	135	135	100.0
Other heifers	9,009.8	9,332.2	103.6	540	530	98.1
Steers 500 pounds and over	16,383.5	16,352.2	99.8	1,310	1,390	106.1
Bulls 500 pounds and over	2,243.6	2,252.2	100.4	70	70	100.0
Calves under 500 pounds	14,386.3	14,427.2	100.3	480	520	108.3
Feeder cattle outside feedlots	26,712.6	26,105.2	97.7	1,170	1,180	100.9
Cattle on feed	13,067.0	14,006.4	107.2	1,160	1,260	108.6
Calf crop **	35,092.7	35,808.2	102.0	1,090	1,090	100.0

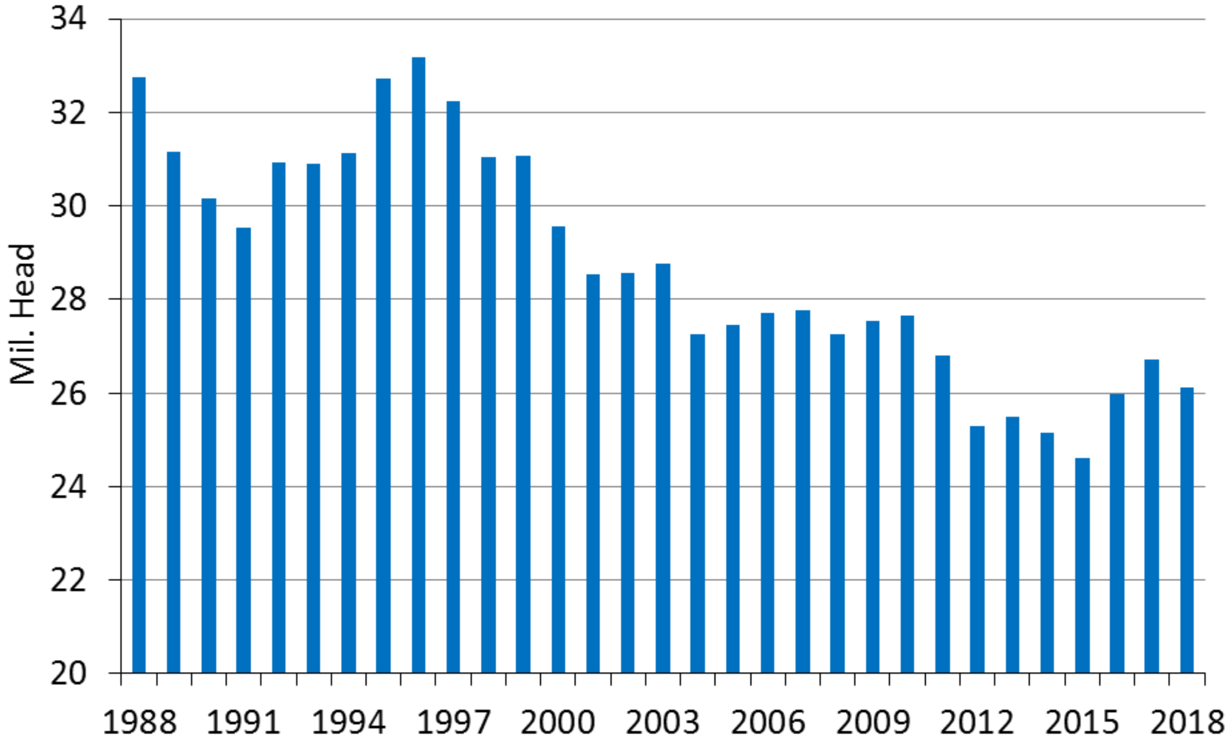
* 1,000 head, ** 2016 and 2017. Data Source: USDA-NASS. Full report: http://usda.mannlib.cornell.edu/usda/current/Catt/Catt-01-31-2018.pdf.

The 2017 calf crop was up 2% to 35.8 million head. A bit surprisingly, USDA revised the 2017 calf crop downward by 491,800 head from July's preliminary estimate. Nonetheless, 2017 saw the third consecutive larger calf crop. More calves boost pipeline supplies and eventually hike cattle slaughter.

Feeder cattle stampede into feedlots

A headline grabber in the report was an estimated year-over-year decline of 607,400 head of feeder cattle outside of feedlots (Figure 2). Using the inventory categories for steers and other heifers over 500 pounds plus calves under 500 pounds and subtracting cattle already in feedlots, leaves a January 1 estimated feeder supply of 26.1 million head, down 2.3% from January 1, 2017.

Figure 2. January 1 Feeder Cattle Supplies, Residual, Outside Feedlots, U.S.



Data Source: USDA-NASS. Livestock Marketing Information Center.

Feeder supply can drop when cattle numbers are still rising. The total inventory of steers, other heifers, and calves was up 0.8%. But large feedlot placements in 2017 pulled the January 1, 2018 feedlot inventory up 7.2% year-over-year, meaning that more 2017 crop calves are already in feedlots. Monthly cattle on feed data provide confirmation. Placements of cattle 600 to 699 pounds were up 11.9% year-over-year in 2017 and placements of cattle weighing less than 600 pounds were up 15.9%.

If realized, the smaller feeder supply could be a catalyst that could spur shorter-term advances in feeder prices, and help support deferred fed cattle prices on the presumption that feedlot placements in 2018 will be smaller than previously expected, leading to lower than expected fed beef production later in 2018. This would also well position the market to deal with the still rising cattle numbers.

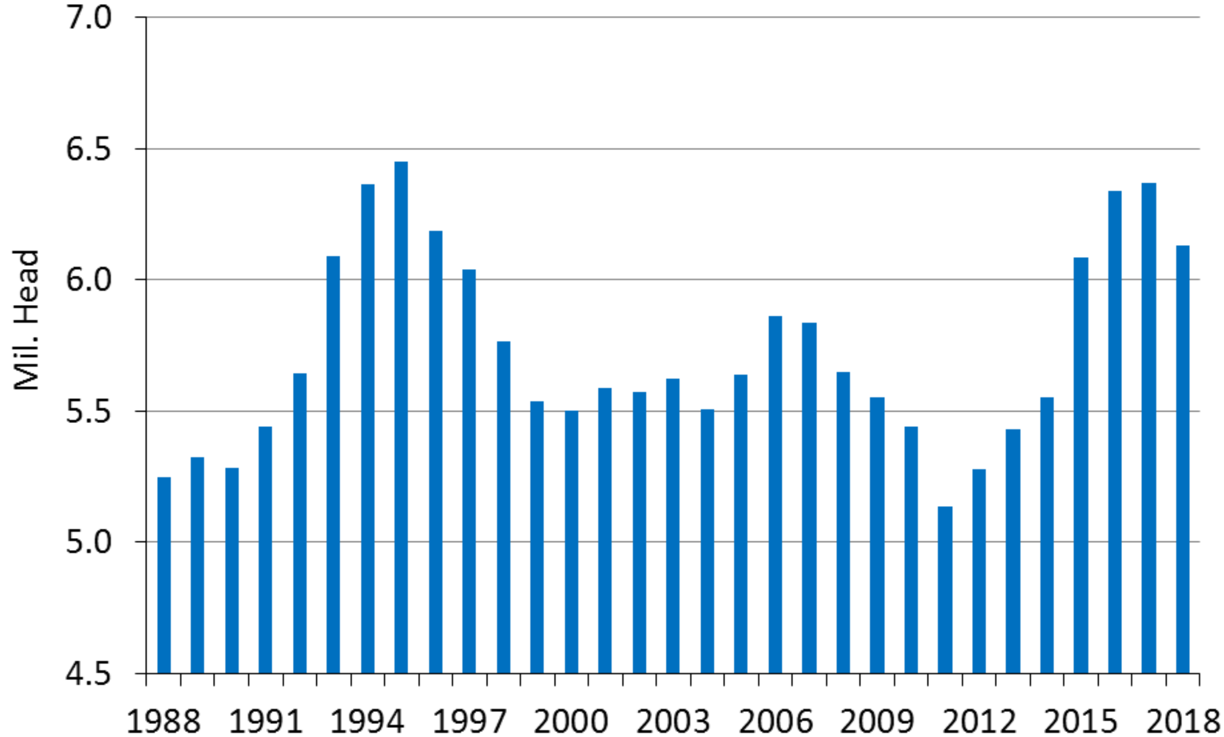
Despite a 237,000 head drop in heifers held for beef cow replacements to 6.1 million head, cow-calf producers are still holding historically large numbers of replacement heifers (Figure 3). Except for the last two years, you must go back to 1996 to see this many heifers for beef cow replacement. Of the total beef replacement heifers, 3.8 million are expected to calve in 2018. This is the third highest number since this data became available in 2001.

Replacements remain large in absolute number and as a percentage of the beef cow herd. Ample replacements and the larger January 1, 2018 cow herd leave room for the 2018 calf crop to expand, suggesting further growth in total cattle inventory into 2019.

The question is whether producers are adjusting their intentions. Producers can easily divert open replacement heifers into feeder markets if their expectations change. Such a shift could easily boost feeder cattle supply and derail further expansion.

Regardless of how large feeder supplies end up being, aggressive feedlot placements and marketings were key factors to the strong 2017 market performance and will be again in 2018.

Figure 3. Heifers Held for Beef Cow Replacements, January 1, U.S.



Data Source: USDA-NASS. Livestock Marketing Information Center.

Eye-catching Iowa numbers

Iowa producers have expanded the beef cow herd to 970,000 head; that's 5,000 cows more than a year ago and the largest state beef cow herd since 2007. Growth rate is well below the pace of the last two years. Plus, producers are holding fewer heifers as herd replacements. The 10.8% drop in Iowa replacements could suggest herd expansion is over. It may well be. But the absolute numbers suggest that a limited amount of additional beef herd expansion is possible in 2018.

The January 1 replacement inventory was 17% of the beef cow herd. This is down from record levels the past three years, but it is still higher than the average level of 14.5% for the 25 years prior to the beginning of herd expansion in Iowa in 2015. Market conditions will determine how much, if any, expansion occurs in Iowa in 2018.

With three years of lower milk prices few factors support growth in the dairy cow herd. In Iowa, however, dairy cow numbers were up 2.3%, but dairy heifers being held to enter the herd were flat with year ago levels. Iowa's 220,000 dairy cows are the most since 1999. Producers are likely hanging on to cows for cash flow purposes and keeping barns full to spread debt loads and fixed costs across more cows and milk.

Demand for feeder cattle has supported higher prices for the latest calf crop marketing year. Relatively low feeding costs gave producers the opportunity to send more pounds to market by feeding calves after weaning. The January 1 numbers confirm many Iowa producers were backgrounding in 2017. After adjusting feeder supplies to reflect only weaned animals outside of feedlots, the estimated Iowa backgrounding supply is up 1.1% year over year.

Lee Schulz

Looking for a Boost in Demand

Since New Years the crop markets have been on a nice run of steadily climbing prices. Nearby corn futures have added 25 cents per bushel, while nearby soybean futures have increased by 90 cents per bushel. Some of this price run can be attributed to weather concerns around the globe. Argentina's crops have suffered from limited moisture and higher temperatures. Brazil's issues, while not nearly as extreme, have been the opposite, with a little bit too much water as they make the transition to the second crops of the growing season. Those weather concerns also reach to the United States, as drought conditions grip much of winter wheat country.

However, crop usage has also been on the rise, supporting the price swing. Feed demand continues to build with the general expansion of the livestock sector. Meat export growth for beef, pork, and poultry has set the push for another year of larger herds and flocks. And every additional animal translates into growth in feed demand.

Some of that feed demand is being met by ethanol co-products (distillers grains and corn gluten feeds). Like the livestock sector, the ethanol sector is on track for another year of growth. New ethanol production capacity has come online over the past year. Consumer usage of ethanol continues to grow as E-15 fuel becomes more widespread across the country. Ethanol exports remain on a upward trajectory as well. Global demand for transportation fuels has been building for the past few years, and biofuels are capturing an increasing share of that demand.

When looking at the two biggest sources of domestic crop usage, the growth pattern is clear. But in both cases, the growth is being pushed by international demand. Global meat and energy demand has been on the rise for some time now. That growth has strengthened meat and energy prices over the past year. Now the crop sector is looking for that same growth from international markets. And so far this year, the story is mixed.

Throughout the 2017 marketing year that started Sept. 1, 2017, corn export pace has run well behind what the market experienced in 2016. Corn exports in the 2016 marketing year were the 2nd highest on record. International shipments this marketing year have ranged from 200-350 million bushels behind. But since January 1st, corn exports have increased and are closing the gap from 2016. Last week's export report puts corn just 150 million bushels behind last year. And with the weather issues for the South American crops, US corn exports should continue to gain ground.

While most of our major corn export markets are down for the current year, we have seen some additional exports to our largest market, Mexico. The NAFTA renegotiations are nearing their targeted deadline, but a final agreement will likely take longer than originally hoped. Despite the trade agreement uncertainty, corn trade between the US and Mexico has continued relatively unaffected. The largest expansion in corn exports has come from the European Union and from unknown destinations. Given the growth in global meat demand, the European Union is also experiencing a surge in feed usage. That has supported more corn shipments from the US to the EU. The corn bookings to unknown destinations are also likely driven by livestock expansion. Several countries, including Mexico, Japan, and China, make purchases and list them as unknown destinations to book expected feed needs ahead of time. As the shipment date approaches, the destination is revealed or the sale is canceled.

So while the corn market is enjoying a rebound in exports over the past two months, soybean exports have not found the same level of support. Over the past several years, exports were the major driving factor for soybean usage. In fact, for the past four years, soybean exports set new records each year. But the 2017 marketing year will likely break that streak. Soybean export pace has lagged behind last year over the entire year thus far. And the gap has grown to over 250 million bushels. Current USDA projections indicate that the gap will shrink, but exports will fall just short of last year's level.

Figure 1. Corn export pace (Source: USDA-FAS).

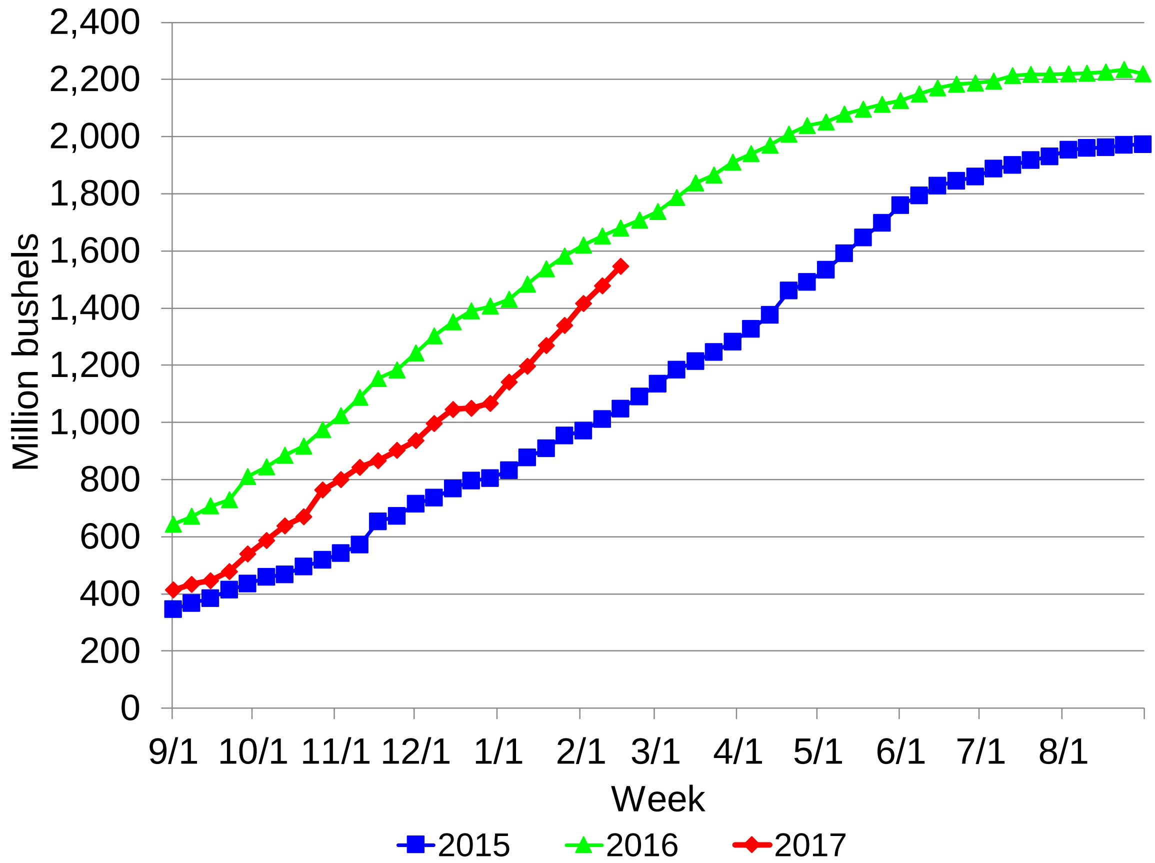


Figure 2. Corn export shifts (Source: USDA-FAS).

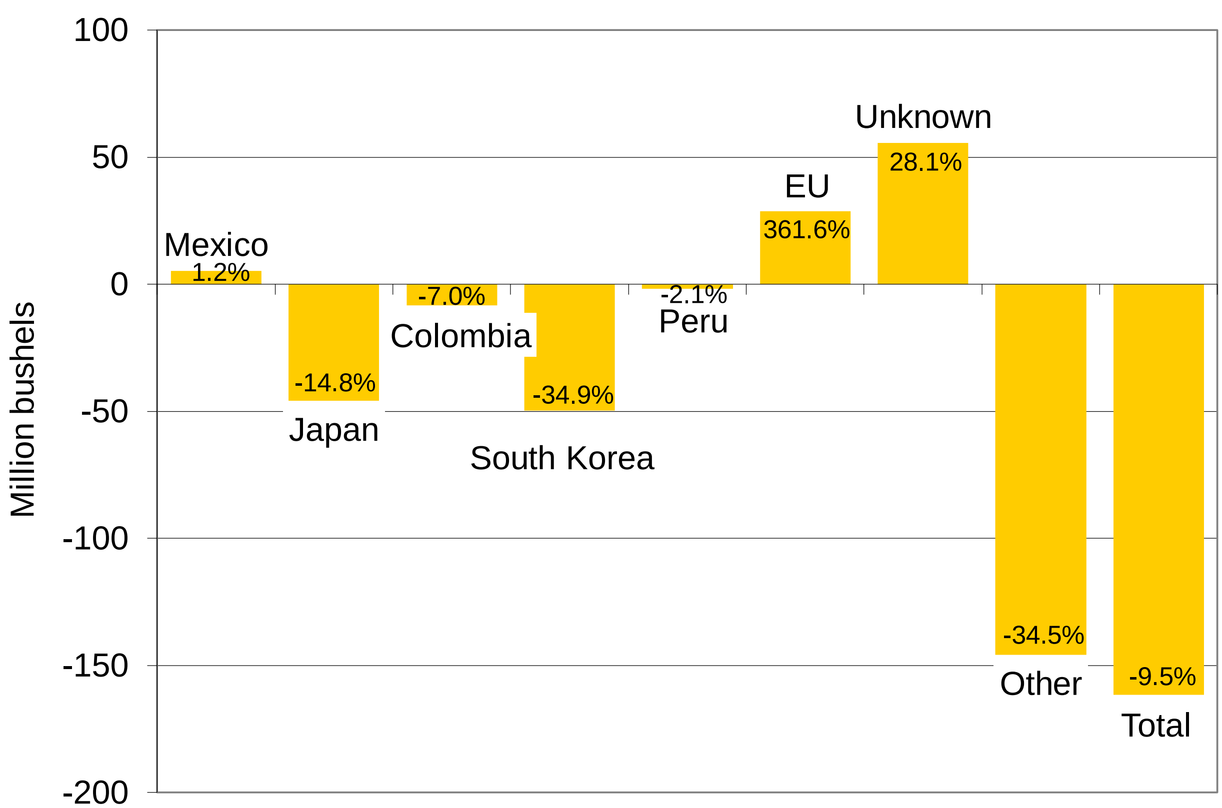
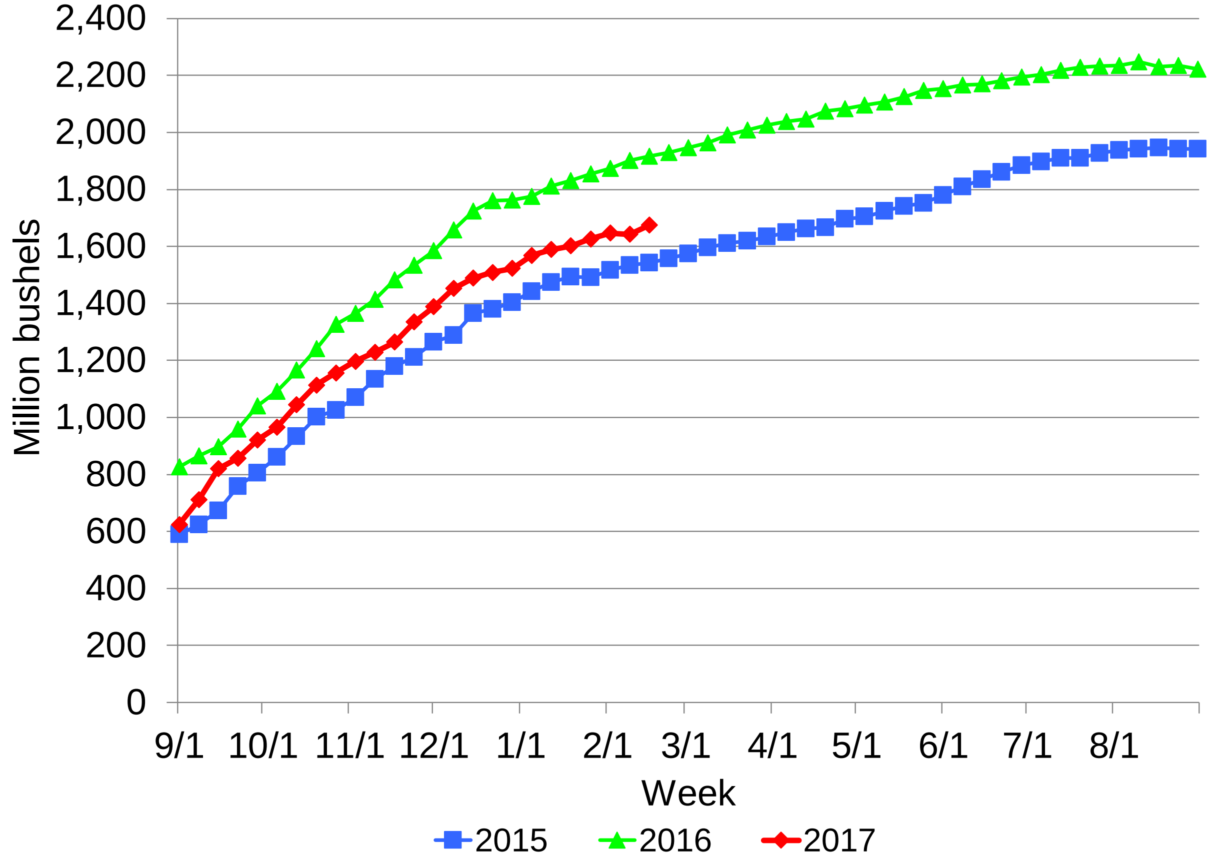


Figure 3. Soybean export pace (Source: USDA-FAS).

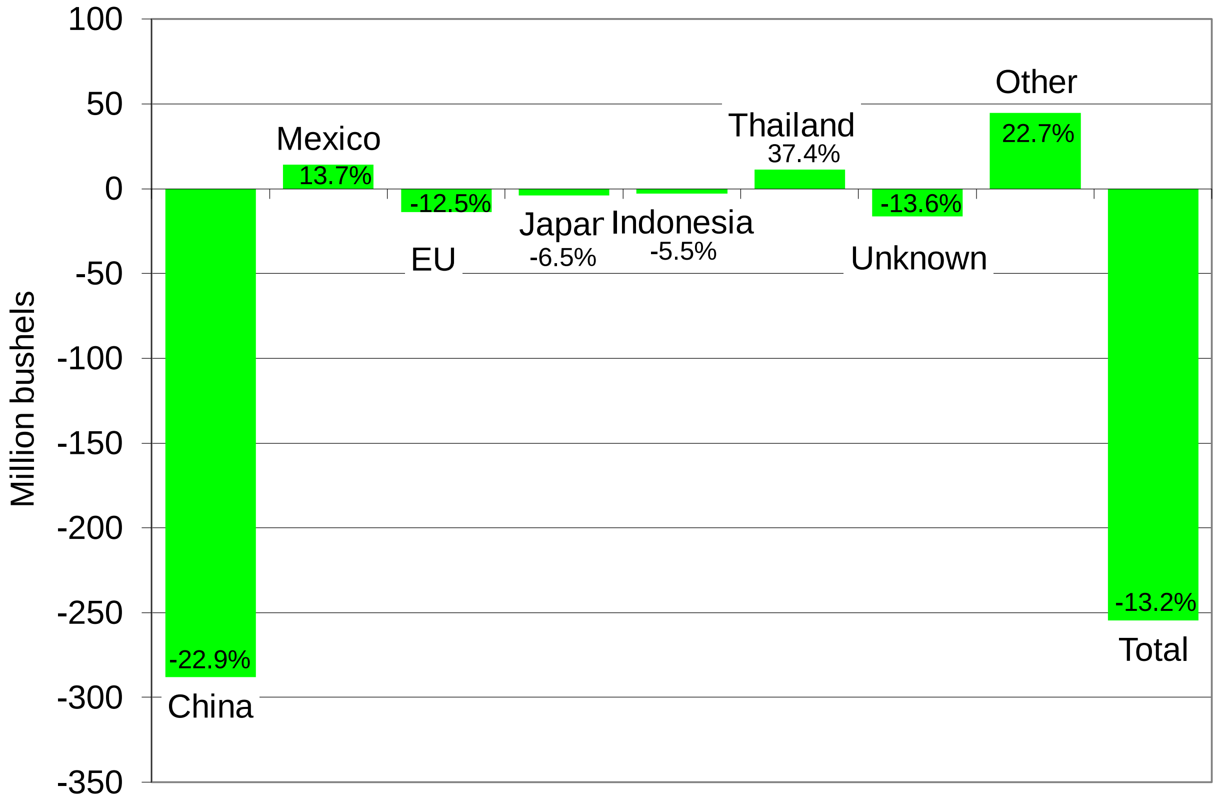


And the slide in overall soybean exports can basically be explained by China. China remains the largest buyer of US soybeans, but their purchases have slowed down this marketing year. There are several reasons why China has pulled back in the soybean market, but the two largest are the weakening margins in soybean crushing in China and the availability of lower-cost Brazilian soybeans. On balance, soybean demand from other countries is higher, with Mexico and Thailand leading the charge. The soybean market is also receiving support from increased exports to Pakistan, Turkey, and Vietnam. But in the end, due to China's sheer size in the market, wherever China goes, the soybean market follows. China still accounts for roughly 60% of our soybean exports and the change in Chinese imports of soybeans this year is greater than the total bushels of soybeans we ship to Mexico, the EU, and Japan combined.

Looking across all of the crop demand sectors, the pattern and size of exports will be the key factor for demand growth in 2018. Meat exports are driving feed usage. Ethanol exports are boosting corn usage for biofuels. And livestock expansion worldwide should lead to expanded crop exports. Corn is already showing some signs of that shift, but soybeans are still lagging. International trade is the critical demand area for US agriculture going forward. Domestic usage is already running at a record pace, so demand increases will need to come from outside our borders.

At a time when tariffs are being proposed and the term "trade war" is being bantered across the popular press, US agriculture needs trade policy to settle and trade flows to continue. If that happens, the futures markets are already showing better prices for the months ahead. However, if trade policy does trigger retaliation, then 2018 is set up to be another year where prices will sink below production costs, margins will disappear, and positive cash flows will be hard to come by.

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



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