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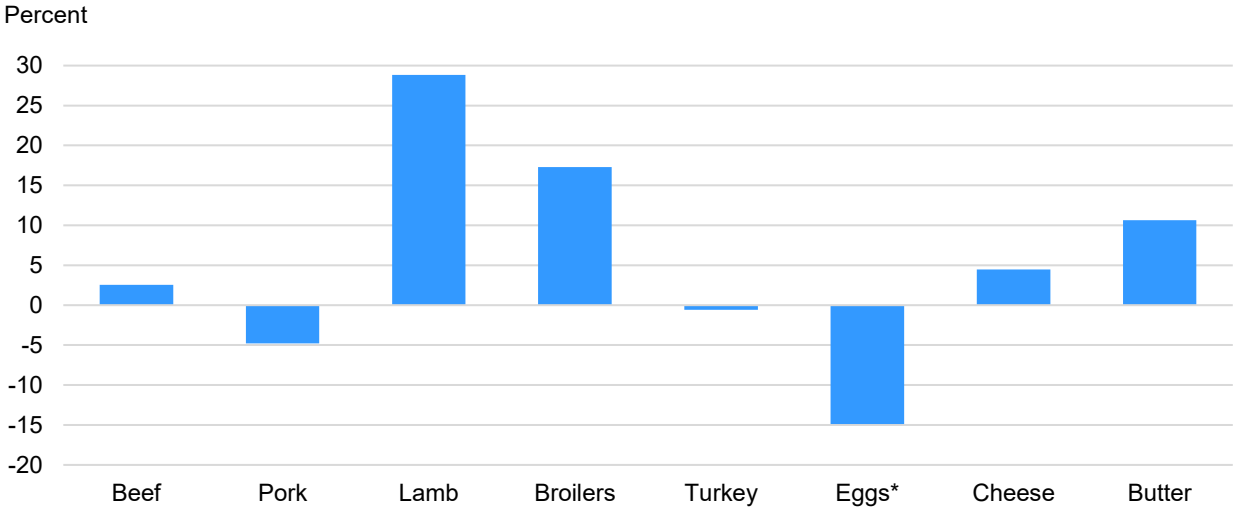
Livestock, Dairy, and Poultry Outlook

Lamb, Broiler and Butter Cold Stocks Show Largest Gains, While Egg and Pork Stocks Decrease

Kim Ha

Latest data for September ending stocks indicate that third-quarter cold and dried-egg storage for U.S. animal protein commodities changed compared to 2017 as follows: beef (up almost 3 percent), pork (down nearly 5 percent), lamb (up almost 29 percent), broilers (up more than 17 percent), turkey (down less than 1 percent), eggs[1] (down nearly 15 percent), cheese[2] (up more than 4 percent), and butter (up almost 11 percent). As can be seen from the chart below, most commodities decreased stocks or increased them only marginally, while lamb, broilers, and butter increased substantially. Increased lamb production and strong imports have outpaced demand, resulting in an accumulation of stocks. The significant increase in broiler inventories reflects a combination of seasonal patterns and weaker-than-expected demand. Relatively weak growth in domestic use of butter has contributed to the accumulation of butter stocks. Conversely, egg stock levels decreased substantially, driven by a significant decrease in dried stocks. Despite expanding pork production, strong domestic and international demand has kept pork inventories current.

Percentage change in U.S. ending stocks of red meat, dairy and poultry (third-quarter 2018/2017)



Note: *Includes frozen eggs and dried eggs.
Source: U.S. Dept. of Agriculture, Economic Research Service calculations using data from U.S. Dept. of Agriculture, National Agricultural Statistics Service and Agricultural Marketing Service.

[1] Includes frozen eggs and dried eggs.
[2] Does not include processed cheese or cottage cheese.

Beef/Cattle: Beef production forecasts for 2018 and 2019 were reduced fractionally on lighter expected fed cattle slaughter. However, the price forecast for fed steers for fourth-quarter 2018 and first-quarter 2019 was raised on recent price data. Beef exports continue at a record pace, and the 2018 and 2019 export forecasts were raised on continued strong overseas demand. However, the 2018 and 2019 beef import forecasts were lowered on lower expected supplies in Australia

Dairy: USDA National Agricultural Statistics Service made significant revisions to estimates of the U.S. milking herd size for July and August and reported that milk cows declined from August to September. As a result, milk production forecasts have been lowered for 2018 and 2019 due to lower expected cow numbers. However, stronger growth in milk per cow is expected to partially offset the smaller expected dairy herd. With lower expected cheese and butter prices, the 2018 fourth-quarter all-milk price forecast has been lowered to $17.05-$17.35 per cwt, 60 cents lower than last month's forecast at the midpoint of the range. The all-milk price forecast for 2018 has been lowered to $16.20-$16.30 per cwt, 15 cents lower than last month's forecast at the midpoint. The all-milk price forecast for 2019 was lowered 15 cents at the midpoint to $16.70-$17.60 per cwt.

Pork/Hogs: Fourth-quarter pork production is expected to be record high at more than 7 billion pounds, 3.5 percent greater than a year ago. Fourth-quarter hog price forecasts reflect heavy supplies at $40-$42 per cwt, almost 9 percent lower than the price for the same period last year. Pork exports finished the third quarter at 1.295 billion pounds, more than 5 percent above a year ago. Mexico remains the largest foreign destination for U.S. pork, although shipments to Mexico in both September and for the third quarter were, respectively, 10.3 percent and 5.6 percent lower than for the same periods in 2017.

Poultry/Eggs: Broiler production projections were revised down on declining placements of broiler chicks in recent weeks, while prices were increased slightly based on a recent price uptick. Broiler stocks were also increased in response to a large bump in third-quarter ending stocks. No revisions were made to egg production, trade, or price projections. The 2018 turkey production forecast is lowered by 24 million pounds to 5.875 billion pounds, 2 percent below 2017. Turkey production for 2019 is reduced 80 million pounds to 5.905 billion pounds, a half-percent increase over the 2018 forecast.

Beef/Cattle

Russell Knight and Lekhnath Chalise

Beef Production Adjusted Marginally Lower in 2018 and 2019

The forecast for 2018 beef production was lowered by 30 million pounds to 26.9 billion pounds. The mild revision is based on numbers at the closeout of the third quarter, along with fourth-quarter expectations of slightly fewer steers and heifers to be slaughtered and fewer bulls in the slaughter mix. However, despite an adjustment to lower the steer and heifer slaughter in the fourth quarter and an extra weekday available in the quarter to slaughter cattle, the steer and heifer slaughter rate per weekday in the fourth quarter is expected to remain above levels for the same period last year.

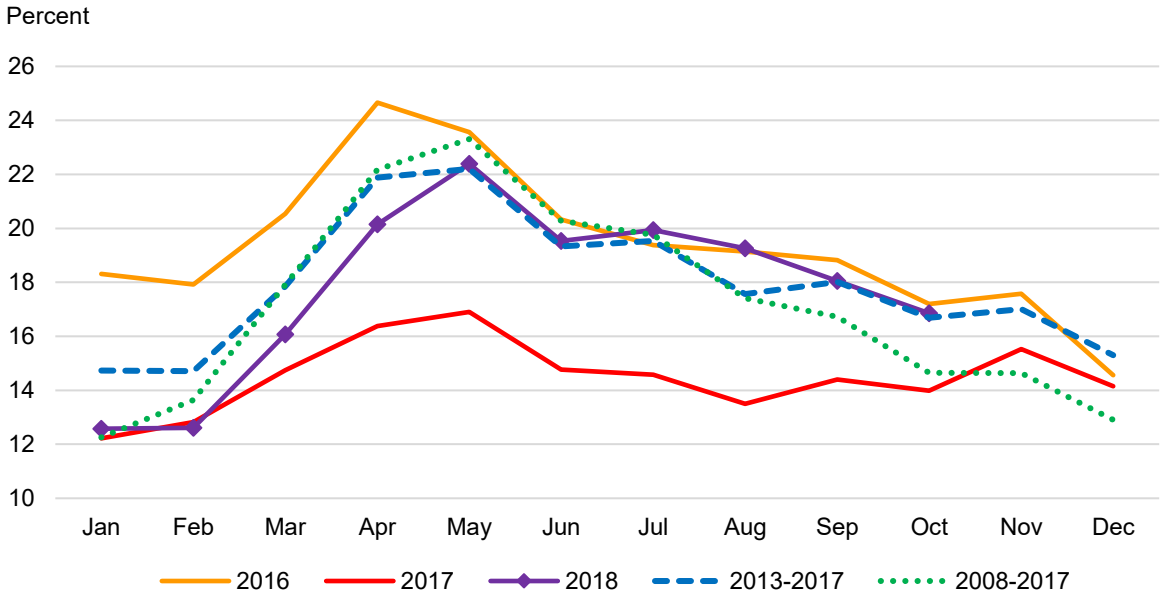
The 2019 beef production forecast was lowered by 100 million pounds to 27.8 billion pounds. The adjustment reflects fewer-than-expected cattle placed in feedlots in third-quarter 2018, thereby reducing the expected number of fed cattle marketed and slaughtered in early 2019. According to the latest National Agricultural Statistics Service (NASS) *Cattle on Feed* report, in September there were 4.7 percent fewer cattle placed in feedlots, but 3.6 percent fewer cattle marketed than last year. As a result, there remained 5.4 percent more cattle on feed than a year ago, which supports the expectation of strong marketings in first-half 2019.

Cattle Available Outside Feedlots Fractionally Higher

The ERS webpage *Livestock & Meat Domestic Data* has a table titled “Feeder Cattle Supplies Outside Feedlots.” The table estimates the number of cattle available to place into feedlots on October 1 at 30.1 million head, only 0.06 percent larger than this time last year. This suggests that about the same number of cattle are available to be placed into feedlots as were placed a year ago. Winter forage seems to be in better condition than last year, which could provide a home for these calves to stock over the winter. While this may be a positive sign for feeder calf prices in the coming months, limiting factors are the record numbers of cattle already on feed[3] at the beginning of October and expectations of higher feed prices. In addition, cattle are staying on feed longer than last year (see chart below). The higher number of cattle already in feedlots may limit the competition from feedlots for ownership of these calves, and higher feed prices may limit feedlot management’s willingness to pay higher prices for calves.

[3] Since reporting began in 1996.

Percent of cattle on feed over 150 days



Source: U.S. Dept. of Agriculture, Agricultural Marketing Service.

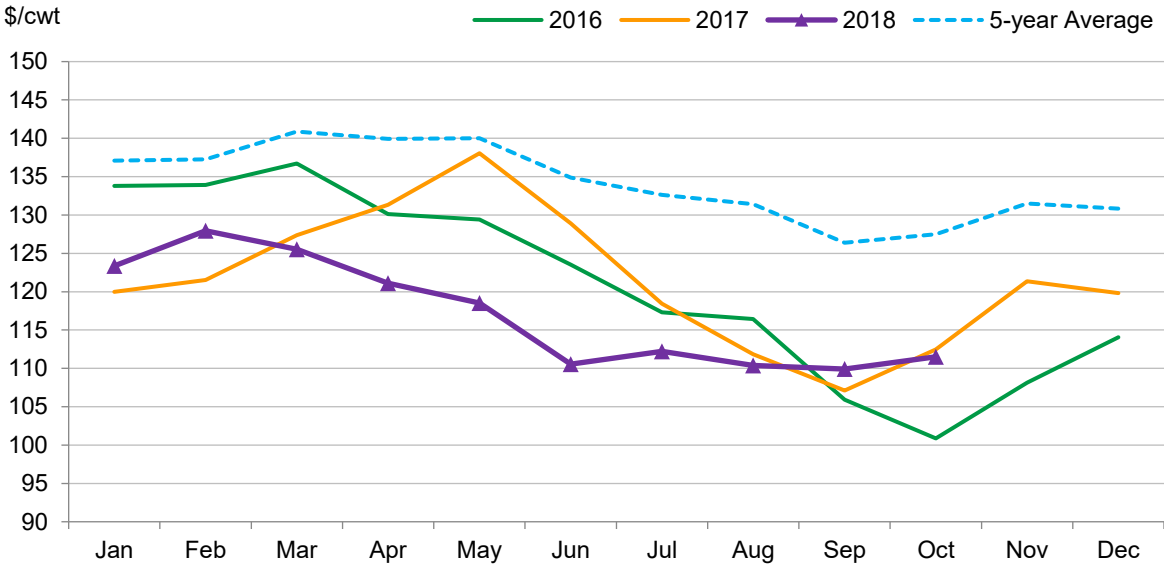
During October, Oklahoma City National Stockyards reported the highest monthly average price in 2018 for 750- to 800-pound feeder steers. Typically, feeder calf prices are higher in the second half of the year, but they tend to reach their peak in midsummer. Since weekly prices peaked on October 1 at $159.71 per hundredweight (cwt), they have fallen more than 9 percent to $145.29 per cwt on November 12. The forecast for fourth-quarter 2018 feeder steer prices is unchanged from last month at $151-$155/cwt. However, the 2019 annual price forecast was lowered to $140-$151/cwt on slightly higher anticipated feed costs and continued large feedlot numbers.

Beef Demand Resilient in Second-Half 2018

Since early August, wholesale choice beef cutout prices have avoided the seasonal third-quarter slump of the past 2 years and have stayed well above year-earlier levels. In fact, the weekly beef cutout price for the week ending November 9 has climbed to within June price levels despite higher year-over-year beef production for third-quarter 2018 and higher expected production in fourth-quarter 2018.

As depicted in the chart below, fed steer prices have also avoided a seasonal dip in the third quarter; this year's seasonal dip was almost nonexistent and prices have remained fairly flat since June, staying in a range of $109.90/cwt to 112.20/cwt with an average of $110.91/cwt. As cattle on feed numbers built up in the first half of the year, the higher year-over-year percent of cattle on feed over 150 days likely reflected feedlot operations' resistance to accepting low prices in the face of poor returns. Although the percentage of cattle on feed over 150 days has declined seasonally, it remains within historic norms.

Prices for 5-area fed steers stagnate in second-half 2018



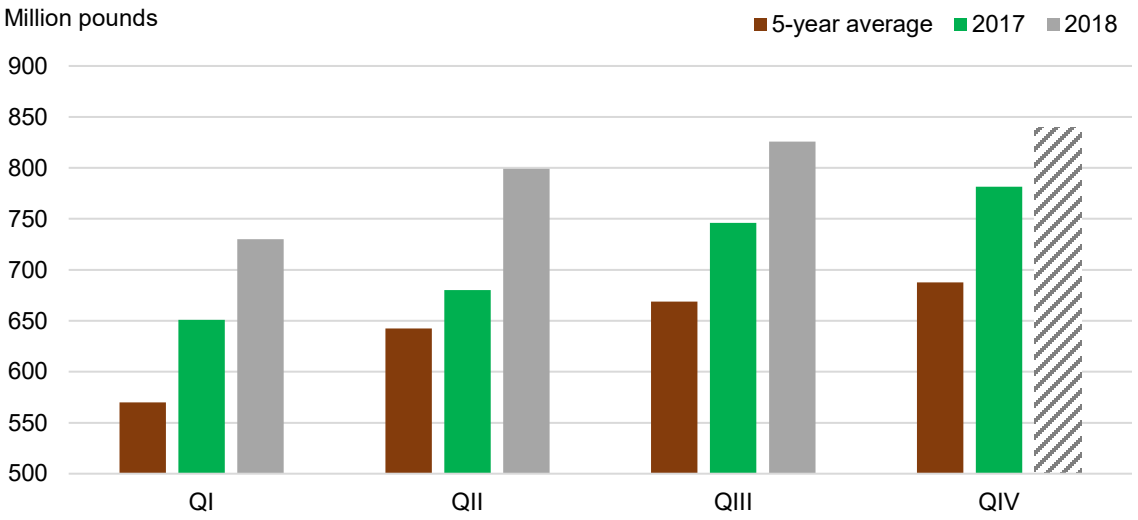
Source: U.S. Dept. of Agriculture, Agricultural Marketing Service.

From last month, the forecast for fourth-quarter 2018 price for fed steers in the 5-area marketing region was raised to $112-$116/cwt. In addition, the first-quarter 2019 fed steer price forecast was raised to $118-$126/cwt.

September Closes Out Record Third-Quarter Beef Exports

U.S. beef exports increased in September 2018 by 16 million pounds from 2017 to 259 million pounds (+6.6 percent), which capped off record third-quarter exports at 826 million pounds. Among major destinations, increases during September were to South Korea, Taiwan, Mexico, Hong Kong, and Vietnam and declines were to Canada and Japan. Exports to Hong Kong increased in September after 5 consecutive months of below year-earlier levels. Year-over-year exports have increased to markets outside major destinations as well. In third-quarter 2018, volume increases were mostly to key Asian markets due to continued demand strength: South Korea (+56 million pounds), Japan (+14 million pounds), and Taiwan (+13 million pounds). Cumulative 2018 beef exports are 13 percent higher than year-earlier levels (see chart below). Greater U.S. beef supplies, a relatively weaker dollar against key Asian trading partners during the first-half of the year, and strong demand in overseas markets have driven the competitiveness of U.S. beef so far in 2018.

Higher exports in each quarter 2018



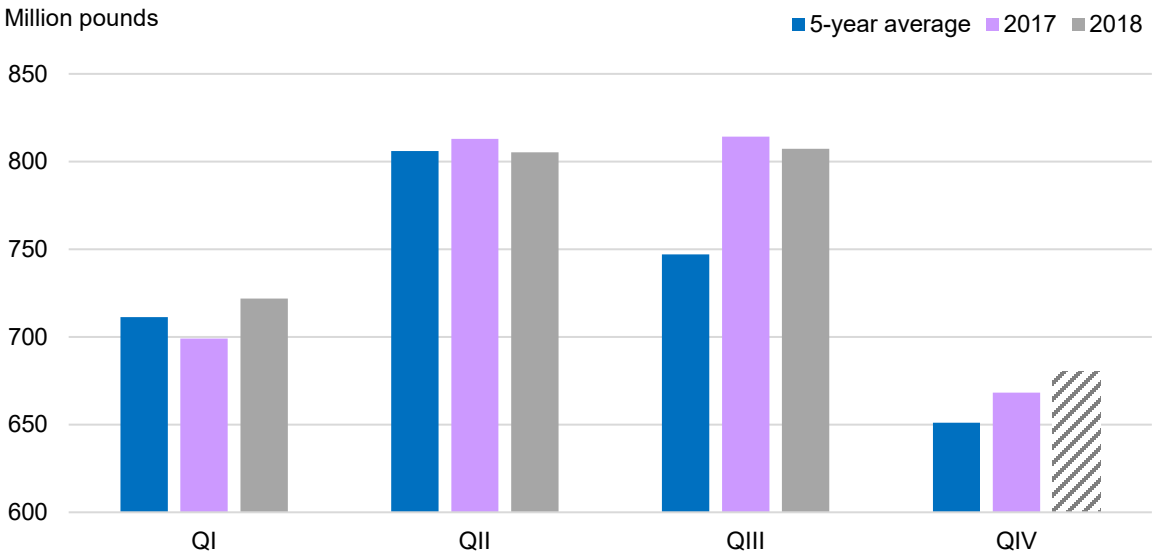
Source: U.S. Dept. of Agriculture, Economic Research Service.
Note: Fourth-quarter 2018 is a forecast.

The fourth-quarter 2018 export forecast was revised upward by 15 million pounds to 835 million pounds. This adjustment was based on the USDA Foreign Agriculture Service's October weekly export sales estimates that are higher than year-earlier levels as well as a seasonally higher fourth-quarter trend. As a result, the 2018 annual forecast is expected to reach 3.190 billion pounds. The 2019 export forecast was adjusted upward by 20 million pounds in the second half for an annual total of 3.265 billion pounds.

Third-Quarter 2018 Beef Imports below Year Earlier Levels

Beef imports in September 2018 were up almost 4 percent from year-earlier levels to 239 million pounds, with third-quarter imports totaling 807 million pounds, fractionally down from the same quarter last year. Among major suppliers, higher year-over-year imports in September from Brazil, Canada, and Nicaragua more than offset the declines from Australia, New Zealand, Mexico, and Uruguay. As lean beef prices in the United States are weaker due to an increased supply of domestic fresh lean, Australia is likely to push more shipments to Asian markets due to price competiveness. However, higher first-quarter 2018 imports fully offset the declines in the second and third quarters (see chart below), lifting the year-to-date import volume fractionally above year-earlier levels.

Beef imports below 2017 levels in the middle of the year



Source: U.S. Dept. of Agriculture, Economic Research Service.
Note: Fourth-quarter 2018 is a forecast.

Based on the pace of imports implied by the third-quarter import data, the 2018 forecast was lowered slightly from the previous month's forecast to 3.014 billion pounds. Based on the slowing pace of late-2018 imports and expected tighter exportable supplies available from Oceania during 2019, the 2019 import forecast was revised downward by 40 million pounds to 3.060 billion pounds.

Cattle Exports Forecast Higher

U.S. cattle exports in September 2018 totaled 26,235 head, more than doubling from September 2017. Year-over-year higher exports in each month in 2018 have pushed year-to-date exports up 50.8 percent to 147,805 head. Increasing feeder cattle demand in Canada, along with higher feeder cattle prices compared to the United States, are likely to sustain U.S. cattle shipments to Canada. Based on the current pace of Canadian demand and anticipation of sustained demand through next year, U.S. cattle exports in 2018 and 2019 were revised upward by 20,000 head in each year to 210,000 and 215,000 head, respectively.

Cattle imports in September 2018 were 117,718 head, up 16,725 head year-over-year. Year-to-date September 2018 imports were 4.2 percent above year-earlier levels to 1.329 million head. The previous month's annual forecast is unchanged at 1.885 million head. The cattle import forecast for 2019 is also unchanged from the previous month's forecast at 1.960 million head.

Dairy

Jerry Cessna and Jonathan Law

Recent Developments in Dairy Markets

From the week ending September 29 to the week ending November 3, price directions were mixed for the wholesale dairy products reported in the USDA *National Dairy Products Sales Report* (NDPSR). The butter price fell by 2.5 cents per pound over the period. Nonfat dry milk and dry whey prices increased by 1.3 and 5.7 cents per pound, respectively. Prices for 40-pound blocks and 500-pound barrels of cheddar cheese fell by 6.3 and 18.3 cents per pound, respectively.

Dairy wholesale product prices (dollars per pound)

	For the week ending		
	Sept. 29	Nov. 3	Change
Butter	2.2874	2.2626	-0.0248
Cheddar cheese			
40-pound blocks	1.6786	1.6153	-0.0633
500-pound barrels [1]	1.5259	1.3434	-0.1825
Nonfat dry milk	0.8689	0.8820	0.0131
Dry whey	0.4120	0.4691	0.0571

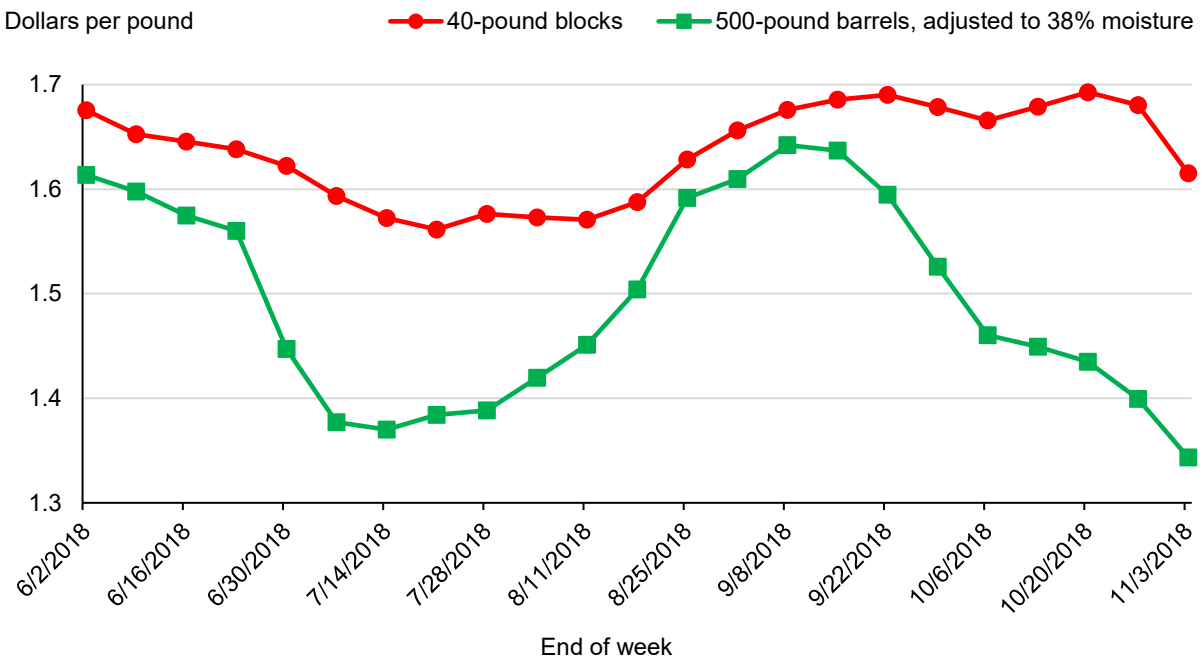
[1] Adjusted to 38-percent moisture.

Source: USDA, Agricultural Marketing Service, *National Dairy Products Sales Report*.

The gap between prices for cheddar cheese 40-pound blocks and 500-pound barrels has been very large in recent weeks. The gap reached a record 22.98 cents per pound for the week ending October 13, surpassing the previous record of 21.65 cents for the week ending July 7, 2018. It continued to grow, reaching a record 28.12 cents per pound for the week ending October 27 before declining slightly to 27.19 cents for the week ending November 3. A wide block-barrel spread contributes to considerable uncertainty in cheese markets.[4] For the trading week ending November 9, the spread for cheese traded on the Chicago Mercantile Exchange (CME) was much narrower, with blocks and barrels averaging $1.4220 and $1.3180 per pound, respectively. CME cheese prices usually lead NDPSR prices by 1 to 2 weeks.

[4] While supply and use data are available for American-type cheeses (cheddar, Colby, Monterey, and Jack combined), there are no supply and use data readily available specifically for 40-pound blocks or 500-pound barrels of cheddar cheese, making any analysis of the price spread difficult. While both 40-pound blocks and 500-pound barrels can be used to produce processed cheese, barrels tend to be used for processed cheese more often than blocks.

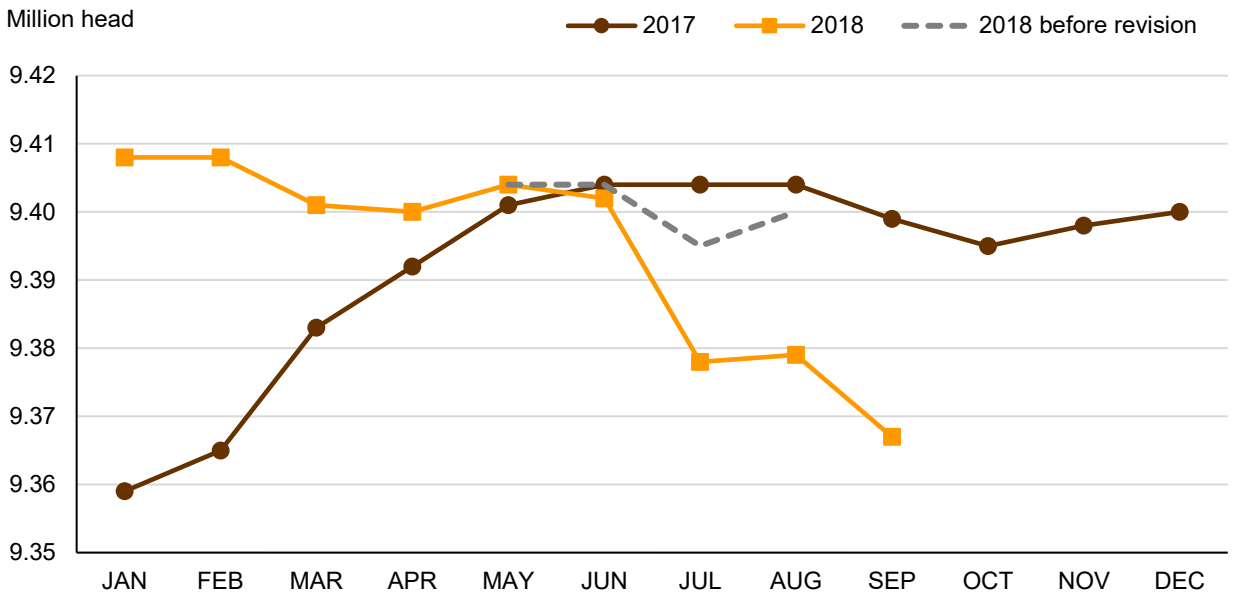
Weekly cheddar cheese prices, National Dairy Products Sales Report



Source: USDA, Agricultural Marketing Service.

USDA National Agricultural Statistics Service (NASS) estimated that U.S. milk production in September totaled 17.376 billion pounds, 1.3 percent above September 2017. NASS made significant revisions to milk cow numbers, with downward revisions of 2,000, 17,000, and 21,000 head for June, July, and August, respectively. NASS estimates that cow numbers fell to an average of 9.367 million head in September, 12,000 less than August and 32,000 less than September 2017. Milk per cow in September was 1,855 pounds, 30 pounds higher than September 2017.

Number of milk cows



Source: USDA, National Agricultural Statistics Service.

In September, dairy exports declined from August but were up compared to September 2017. On a milk-fat milk-equivalent basis, September exports were 848 million pounds, 68 million less than August but 151 million more than September 2017. September exports on a skim-solids milk-equivalent basis were 3.446 billion pounds, 495 million less than August but 360 million more than September 2017. Exports declined from August to September for most dairy products, including nonfat dry milk/skim milk powder (NDM/SMP), butterfat products (butter, anhydrous milkfat, and dairy spreads), cheese, whey products, and lactose. High tariffs imposed by Mexico on cheese and by China on a wide variety of dairy products continue to limit exports to those countries.

In September, imports on a milk-fat basis were 549 million pounds, 38 million less than August but 113 million more than September 2017. On a skim-solids basis, September imports were 355 million pounds, 47 million less than August and 26 million less than September 2017. Notably, imports of milk protein products (casein and milk protein concentrate), whole milk powder, and various food preparations containing milk solids fell from August to September.

Year-over-year growth in domestic commercial use in the third quarter of 2018 was modest. On a milk-fat basis, it was 54.7 billion pounds, 1.1 percent higher than the third quarter of 2017. On a skim-solids basis, third-quarter domestic commercial use was 45.1 billion pounds, 1.6 percent higher than the third quarter of 2017. Notably, while overall third-quarter domestic uses of most major products were above the third quarter of 2017, domestic uses of NDM/SMP and dry whey were down by 20.0 percent and 11.7 percent, respectively.

September ending stocks on a milk-fat basis were 17.190 billion pounds, an increase from 16.163 billion pounds at the end of September 2017. On a skim-solids basis, September ending stocks were 10.465 billion pounds, a decrease from 12.114 billion pounds at the end of September 2017.

Outlook for Feed Prices

The alfalfa hay price in September was $180 per short ton, $3 higher than August and $31 higher than September of last year. The 2018/19 price forecast for corn is $3.20-$4.00 per bushel, 10 cents higher than last month's forecast at the midpoint. The 2018/19 soybean meal price forecast is unchanged from last month at $290-$330 per short ton. For more information, see the USDA Economic Research Service publication *Feed Price Outlook*.

Dairy Forecasts for the Remainder of 2018

Due to revisions of cow numbers for July and August and the fall in cow numbers reported by NASS in September, the estimate for the size of the milking herd in the fourth quarter of 2018 has been lowered 35,000 head to 9.365 million. Milk per cow, on the other hand, is forecast slightly higher for the fourth quarter, at 5,740 pounds. The lower forecast for the size of the milking herd more than offsets the increased yield per cow, resulting in a fourth-quarter milk production forecast of 53.8 billion pounds, 0.1 billion pounds lower than last month's forecast.

Forecasts for both imports and exports in the fourth quarter on a milk-fat basis are unchanged at 1.8 billion and 2.4 billion pounds, respectively. With higher than expected milk-fat basis ending stocks for the third quarter, the forecast for 2018 ending stocks has been raised 0.4 billion pounds to 13.9 billion. The domestic use forecast for the fourth quarter has been raised slightly to 56.1 billion pounds, as lower prices for cheese and butter are expected to lead to gains.

The forecast for imports on a skim-solids basis for the fourth quarter has been lowered 0.2 billion pounds to 1.3 billion, due to recent declines in imports of milk protein concentrate and casein. The export forecast for the fourth quarter has also been lowered due to lower expected shipments of lactose and whey products; the forecast is now 10.2 billion pounds. Domestic use on a skim-solids basis is expected to be 0.2 billion pounds lower in the fourth quarter than previously forecast, at 44.4 billion, as lower domestic demand over the past few months is expected to persist. Ending stocks are forecast at 10.7 billion pounds for 2018, 0.1 billion pounds lower than the last forecast.

Due to recent falling average cheddar cheese prices, the cheddar cheese price forecast for the fourth quarter has been lowered 12.5 cents at the midpoint of the range to $1.465-$1.495 per pound. The dry whey price is forecast slightly higher for the quarter than last month, at $0.440-$0.460 per pound. The price forecast for butter for the quarter is slightly lower at the midpoint of the range at $2.235-$2.295 per pound, while the forecast for nonfat dry milk is unchanged at $0.870-$0.900 per pound.

Due to the reduction in the cheese price forecast, the Class III price is now forecast lower for the fourth quarter, at $14.55-$14.85 per cwt. The Class IV price forecast is slightly lower for the quarter than last month's, at $14.85-$15.25 per cwt. The fourth-quarter all-milk price is now forecast at $17.05-$17.35 per cwt, 60 cents lower than last month's forecast at the midpoint. For the year, the all-milk price forecast is $16.20-$16.30, 15 cents lower than last month's forecast at the midpoint of the range.

Dairy Forecasts for 2019

A smaller milking herd in late 2018 is expected to persist into 2019; therefore, the milk cow forecast has been lowered to 9.375 million head, 35,000 less than last month's forecast. However, with increased culling of the herd, higher milking efficiency is expected, motivating an increase in the milk per cow

forecast to 23,565 pounds. With these changes, the overall milk production forecast for 2019 is now 220.9 billion pounds, 0.5 billion pounds lower than the last forecast.

Due to lower expected imports of milk protein concentrate and casein, imports on a milk-fat basis are forecast 0.1 billion pounds lower than last month's forecast, at 6.2 billion pounds for the year. The export forecast for 2019 is unchanged at 9.8 billion pounds. Ending stocks are now forecast at 12.6 billion pounds, 0.1 billion pounds higher than the last forecast, as higher stocks in late 2018 will carry through 2019 to some extent. The domestic use forecast for the year has been lowered 0.2 billion pounds to 217.3 billion.

The import forecast on a skim-solids basis has been lowered 0.2 billion pounds to 5.3 billion, as lower milk protein concentrate and casein imports are expected to continue into 2019. Exports on a skim-solids basis are forecast at 44.1 billion pounds, unchanged from the previous forecast. Ending stocks are forecast at 10.5 billion pounds for the year, a reduction of 0.3 billion pounds from last month's projection, as lower production should result in some drawdown in stocks. Domestic use in 2019 is projected at 181.2 billion pounds, 0.4 billion pounds lower than the last forecast.

Current weakness in cheese prices is expected to carry into 2019 but should begin to abate in the second half of the year; as a result, the cheddar cheese price has been lowered 15 cents at the midpoint of the range to $1.560-$1.650 per pound. With lower butter prices expected to continue next year, the butter price forecast has been lowered to $2.200-$2.320 per pound for the year. The dry whey price and NDM price forecasts for 2019 have been raised slightly to $0.390-$0.420 and $0.830-$0.900 per pound, respectively.

With lower projected cheese prices, the Class III price forecast has been lowered to $15.15-$16.05 per cwt. The Class IV price forecast for the year is unchanged at $14.35-$15.35 per cwt. With the lower Class III price forecast, the all-milk price for 2019 is now forecast 15 cents lower at the midpoint of the range than the previous estimate, at $16.70-$17.60 per cwt.

Pork/Hogs

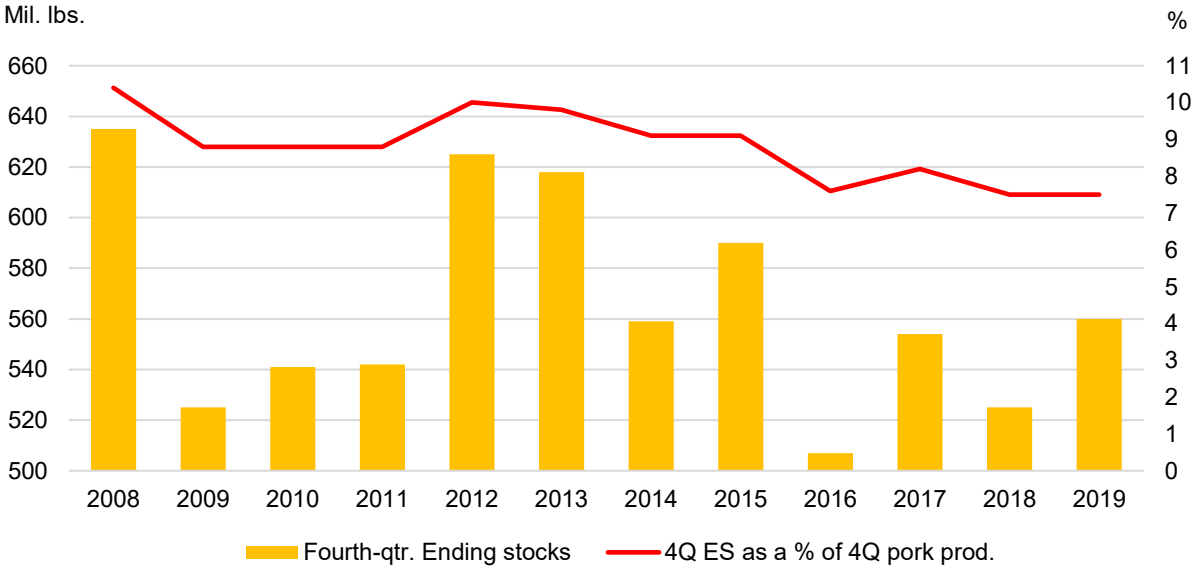
Mildred Haley

Robust Pork Demand Appears To Keep Pace with Production Increases

Fourth-quarter 2018 commercial pork production is expected to be about 7 billion pounds. While this volume is 3.5 percent greater than a year earlier, it is slightly lower than the volume that was anticipated last month. Persistently lower-than-expected weekly hog slaughter numbers in October and lower-than-expected average dressed weights largely drive the lower production forecast. Smaller production increases are likely to extend through the first quarter of 2019, for which the pork production forecast was also lowered—by 45 million pounds to 6.85 billion pounds, but still more than 3 percent ahead of production a year earlier.

It bears repeating that commercial pork production this year is expected to be record high—more than 26 billion pounds--due to recent and ongoing industry expansion. Annual production this year will be "juiced"—as it is almost every year—by fourth-quarter production, the quarter in which U.S. production achieves its annual high. This year, fourth-quarter production is expected to break the 7-billion pound per quarter barrier for the first time. It is especially notable that so far, pork demand appears to be more than keeping pace with production increases. Evidence of robust demand for U.S pork—from both domestic and foreign consumers—is implicit in estimated pork ending-stock volumes. Fourth-quarter 2018 ending stocks are expected to be 525 billion pounds, or about 7.5 percent of fourth-quarter pork production. This ratio has not been as low since1990. The same ending stocks-to-production ratio is likely to be achieved in the fourth quarter of 2019.

Fourth quarter, 2008-2019
Pork ending stocks and ending stocks as a percentage of production



Source: World Agricultural Outlook Board, USDA.

Consumers of U.S pork are likely responding to lower prices by increasing the quantities purchased. Wholesale pork prices through the end of October—as measured by the wholesale pork carcass cutout—has averaged more than 10 percent below the same period in 2017. Retail pork prices through September of this year—as approximated by monthly ERS composite pork retail values--have averaged about 1 percent below those of last year.

Stronger pork demand is also attributable, in part, to higher incomes that derive from accelerated economic growth. This factor is particularly germane to the United States, where more than three-fourths of commercial pork production is consumed. In the first three quarters of 2018, the U.S. GDP and real disposable personal income have each expanded at rates that average more than 3 percent.

A largely positive 2018 consumer scenario—domestic and foreign consumers are eating greater quantities of U.S. pork, likely due to both lower prices from increased supplies and higher incomes—is mitigated on the supply side by year-over-year lower hog prices and processing margins. Fourth-quarter average prices of live equivalent 51-52 percent lean hogs are expected to be $40-$42 per cwt, almost 9 percent below a year earlier. Through October of this year, hog prices have averaged $47.03 per cwt, almost 9 percent lower than the same period last year. Estimated returns to farrow-to-finish hog producers in Iowa, calculated by Iowa State University, suggest that through September producers have taken an additive loss of $24.58 per hog; for the same period last year, producers earned $150.38 per hog. Processor margins through mid-October 2018 have averaged a bit over $12 per cwt (lean, without the drop credit), more than 18 percent lower than the same period last year. USDA's 2019 forecast for hog prices—$40-$43 per cwt, almost 9 percent lower than 2018 prices—presages a continued challenging environment for hog producers but lower input costs for processors.

September and Third-Quarter Exports Both Register Increases

U.S. pork exports in September were 432 million pounds, 2.6 percent higher than a year earlier. For the third quarter, exports totaled 1.295 billion pounds, 5.3 percent higher than the third quarter of 2017. The 10 largest foreign buyers of U.S pork are summarized in the table below.

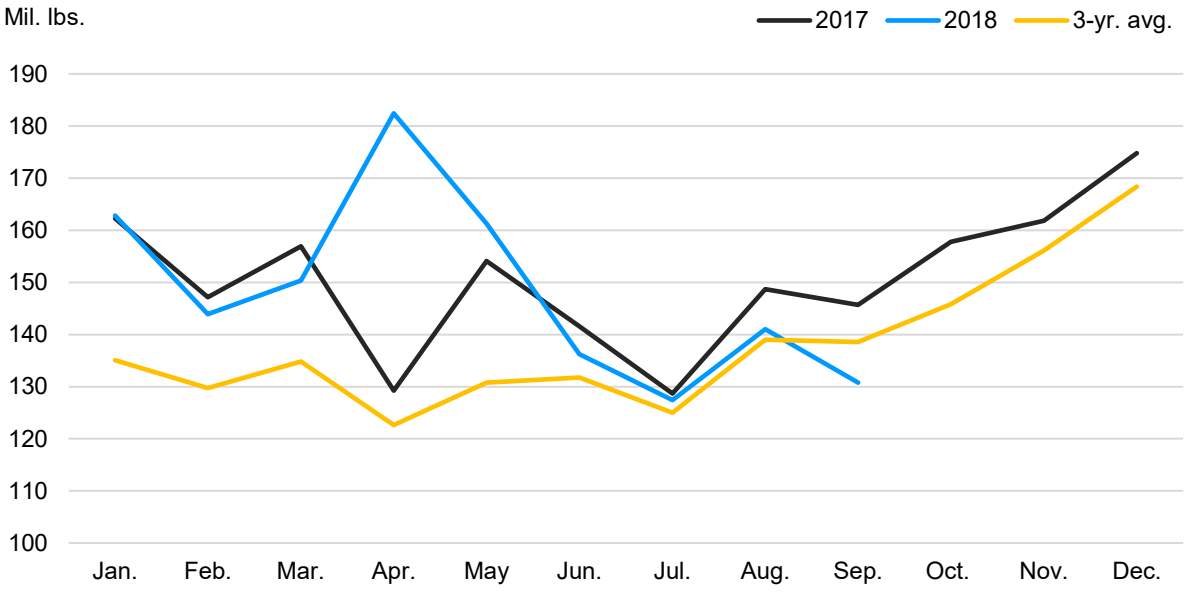
U.S. pork exports: Volumes, export shares and unit values of the 10 largest foreign destinations, September 2017 and 2018, and third quarter, 2017 and 2018

Country	Exports Sept. 2017 (mil. lbs)	Exports Sept. 2018 (mil. lbs)	Percent change (2018/2017)	Exports third qtr. 2017 (mil. lbs)	Exports third qtr. 2018 (mil. lbs)	Percent change (2018/2017)	Unit value third qtr. 2017 $/lb	Unit value third qtr. 2018 $/lb
World	421	432	2.6	1,230	1,295	5.3	1.08	1.00
Mexico	146	131	-10.3	423.1	399.2	-5.6	0.77	0.62
Japan	92	93	0.9	279.2	293.0	4.9	1.41	1.40
China/Hong Kong	32	21	-33.8	89.8	63.8	-29.0	0.65	0.71
Canada	51	51	0.7	140.5	140.7	0.1	1.88	1.75
South Korea	28	38	36.0	76.5	109.6	43.2	0.93	0.89
Colombia	18	23	22.9	43.9	56.1	27.6	0.83	0.76
Australia	10	15	54.8	40.6	50.0	23.1	0.99	0.90
Philippines	11	12	9.1	25.0	29.8	19.2	1.09	1.04
Dominican Republic	4	10	127.6	15.0	30.7	104.8	0.85	0.72
Honduras	5	7	33.2	17.3	21.3	23.0	0.75	0.62

Source: Economic Research Service, USDA.

Mexico remains the largest buyer of U.S. pork—more than three-quarters of trade to Mexico consists of fresh hams and shoulders—although shipments in September and for the third quarter were each year-over-year lower at 10.3 and -5.6 percent, respectively. Mexican retaliatory tariffs, assessed on most U.S. pork products, have been in place since early June of this year. In percentage terms, most of the year-over-year export declines for the third quarter and for September are attributable to reductions in shipments of processed ham and shoulder products. Nonspecified fresh cuts had reductions as well. The figure of monthly U.S. pork exports to Mexico, below, suggests that shipments typically accelerate in the fourth quarter as U.S. prices decline to reflect seasonally large pork production.

U.S. pork exports to Mexico



Source: Economic Reasearch Service, USDA.

Poultry

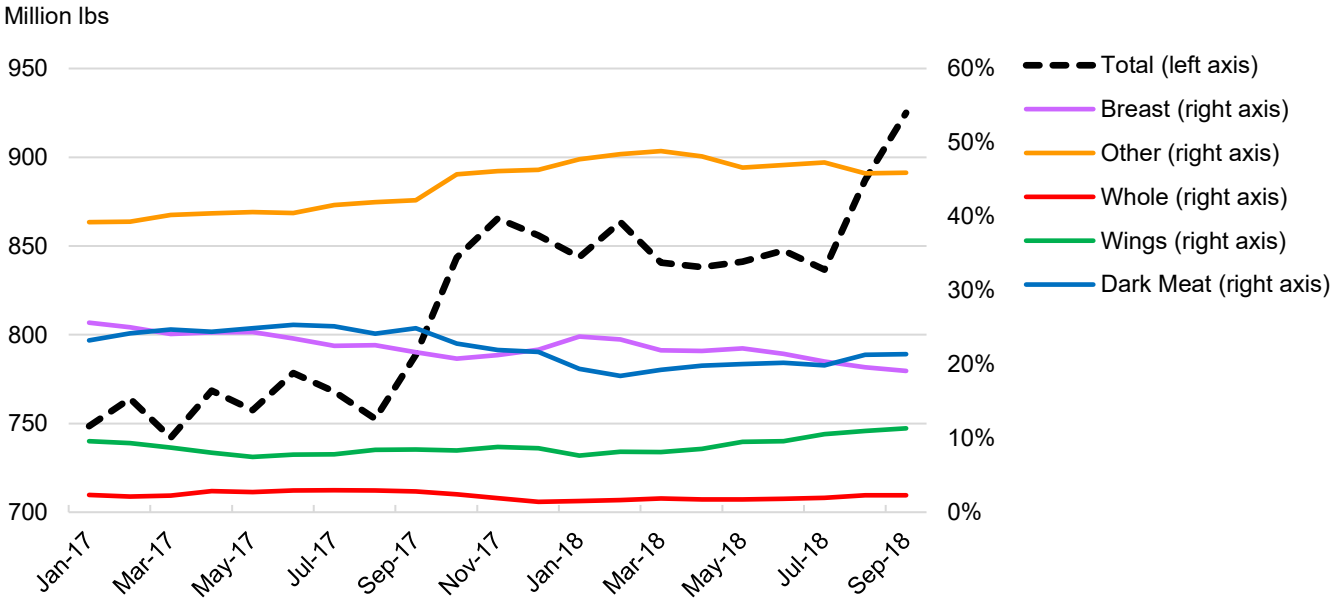
Sean Ramos, Kim Ha, and Alex Melton

Strong Broiler Supply Met with Weak Demand, Forecasts Revised Down

Third-quarter broiler production amounted to 10.9 million pounds, 3.6 percent higher than the same period in 2017. This increase was composed of a 2.3-percent increase in the number of birds slaughtered and a 1.2-percent increase in average live weights.

While year-to-date production has been fairly strong (2.6 percent year-over-year growth), high cold storage inventories suggest that supply may have outpaced demand. Third-quarter ending stocks were 925 million pounds, over 17 percent higher than a year earlier. This significant increase was driven by abundant inventories of other meat, wings, and drumsticks. The chart below illustrates general trends in cold storage inventories. As can be seen, total broiler products in cold storage have surged during the fall months in most recent years, consistent with declining seasonal demand marked by the end of grilling season and the shift by retailers to holiday-type meats. In terms of percent share of total stocks, inventories of other meat and wings have been on an upward trend for over a year, while dark meat has been trending upward since the beginning of the year. Conversely, the percent share of breast meat has been trending downward, while inventories of whole birds have remained stable relative to total stocks.

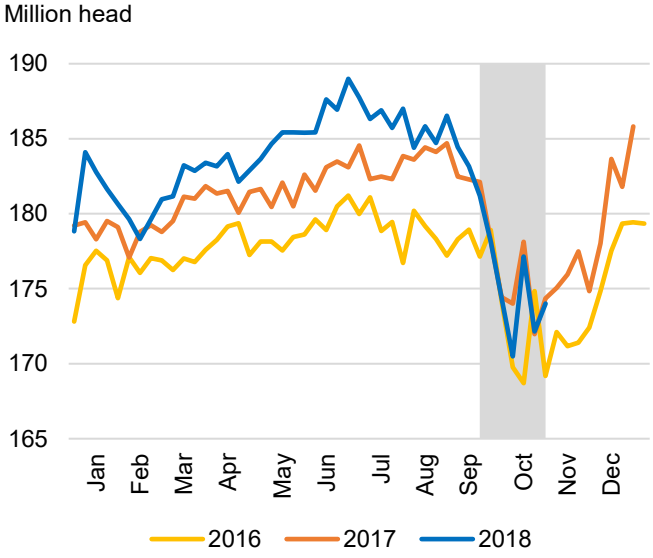
Broiler cold storage and percent share of broiler parts (end of period January 2017-September 2018)



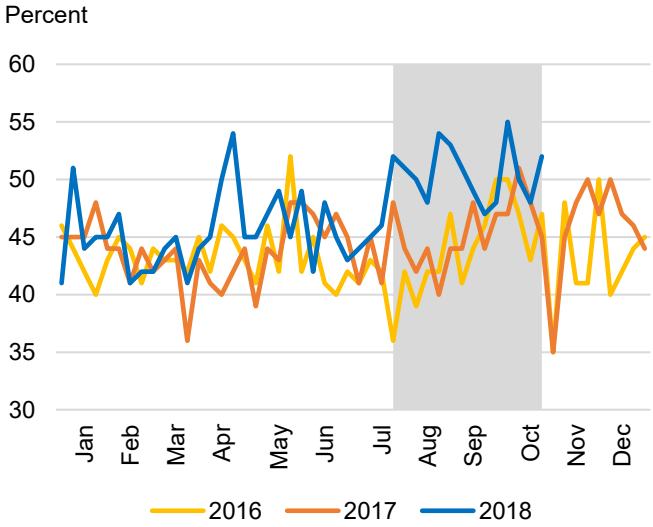
Source: U.S. Dept. of Agriculture, Economic Research Service calculations using data from U.S. Dept. of Agriculture, National Agricultural Statistics Service.

Weekly chick placement data suggest that producers are scaling back production in response to weak demand, as indicated by accumulating inventories and low wholesale prices for certain cuts. In the chart below, it can be seen that the number of chicks placed has trended downward since mid-September, averaging -0.3 percent year over year. As chick placements are an indicator of birds available for future slaughter, little-to-no year-over-year growth is anticipated in birds slaughtered in the fourth quarter. However, small production gains may be achieved by means of year-over-year increases of average weights, as the percent share of large-bird (heavier than 6.25 pounds) slaughter has been trending upward since late July (see chart). In anticipation of slower year-over-year growth, fourth-quarter production was decreased by 25 million pounds to 10,650 million pounds.

Weekly broiler chick placements



Weekly large-bird slaughter as % of total slaughter



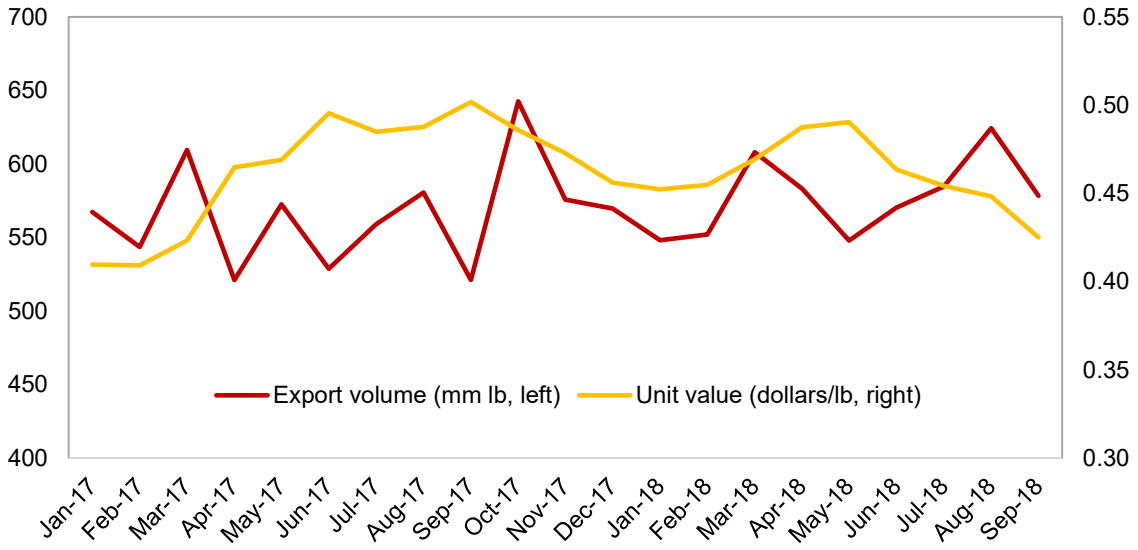
Source: U.S. Dept. of Agriculture, Economic Research Service calculations using data from U.S. Dept. of Agriculture, National Agricultural Statistics Service.

Broiler Export Volume Strong

September broiler exports totaled 578 million pounds, 11 percent higher than last year. September was the fourth consecutive month of year-over-year volume growth where unit value declined, as seen in the figure below. During this period, the net effect (on total value) has been mixed, but September was the lowest total value since early 2017 at 246 million dollars.[5]

[5] Schedule B codes for broiler exports are outlined here: https://www.ers.usda.gov/media/9839/tradecodesconversionfactors_1_.xls

Broiler exports remain strong while unit value slides



Source: U.S. Dept. of Agriculture, Economic Research Service calculations using data from U.S. Department of Commerce, Census Bureau, Foreign Trade Division

Stronger exports to Angola (+25 million pounds, year-over-year), where export growth has been strong recently, drove much of the export increase. Other African markets had strong growth, including South Africa (+7.7 million pounds), Republic of Congo (+7.2 million pounds), and Democratic Republic of Congo (+6.9 million pounds). Asian markets saw some growth as well, including Philippines and Vietnam (+9.7 and +9.4 million pounds, respectively). Exports to Mexico were up 5.4 million pounds.

Export forecasts going forward were not changed.

Benchmark Broiler Prices Up, Others Down

Whole broiler prices at wholesale (national composite) trended upwards slightly in October and reached nearly 85 cents per pound for the week ending November 2. Price forecasts were increased to 84-86 cents per pound for fourth quarter.

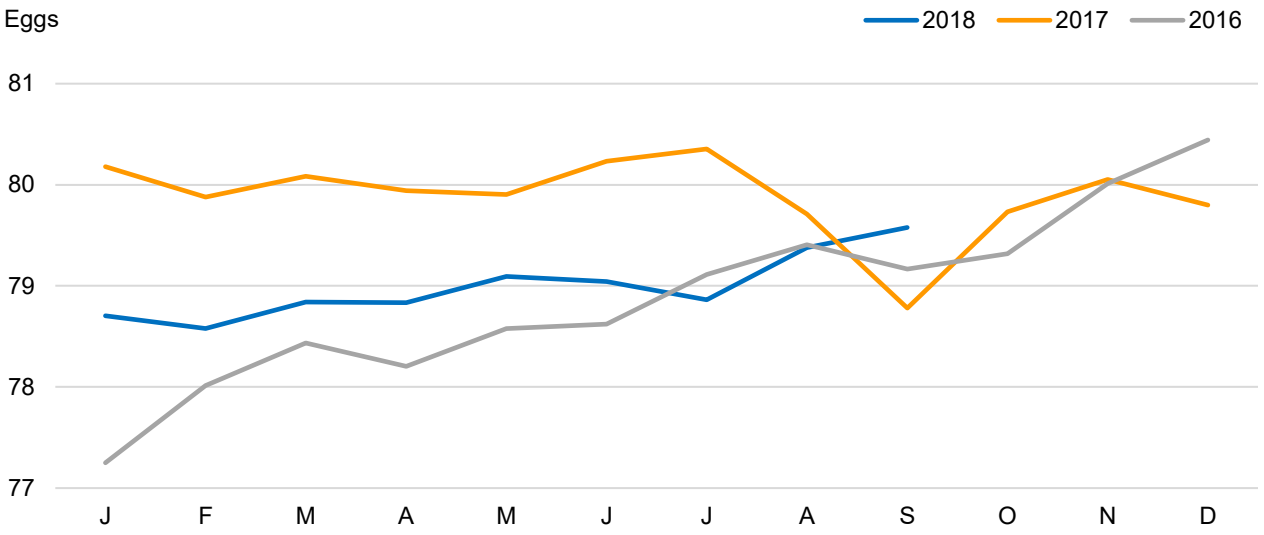
Prices for boneless-skinless breasts and leg quarters (Northeast) both eroded, falling respectively to 87 and 29 cents per pound as of the week ending November 2. Leg quarters remain well above 2015 levels when avian influenza (in other poultry commodities) led to a reduction of exports due to trade restrictions. Boneless-skinless breast prices, however, remain at multi-decade lows, as discussed in last month's *Livestock, Dairy, & Poultry Outlook*.

Egg Production Continues To Expand

Table egg production continued its trend of rapid expansion in September, increasing by 4 percent year-over-year to 646 million dozen. This growth was composed of a 3-percent year-over-year increase in the average number of table egg layers and a 1-percent increase in eggs per layer. Notably, September marks the first month this year that eggs per layer surpassed 2017 rates (see chart below). The October 1 eggs per layer rate indicates a continuation of this trend. The chart also illustrates that despite being below year-earlier rates, average eggs per layer have been improving over the course of

the year, the result of ongoing producer efforts to rejuvenate their laying flocks. Furthermore, year-over-year growth of hatching eggs in incubators–which has averaged more than 14 percent over the past 6 months–suggests that this expansion will likely continue well into 2019. Forecasts remain unchanged.

Average table eggs per 100 layers per day



Source: U.S. Dept. of Agriculture, Economic Research Service calculations using data from U.S. Dept. of Agriculture, National Agricultural Statistics Service.

Benchmark Egg Prices Stable

October wholesale egg prices (large grade A eggs, New York) started the month at $1.15 per dozen and fluctuated within a few cents of that amount for the majority of October before increasing to $1.24 to close out the month. Prices in the beginning of November indicate a continued upward trend, consistent with seasonal patterns. Price projections remain unchanged.

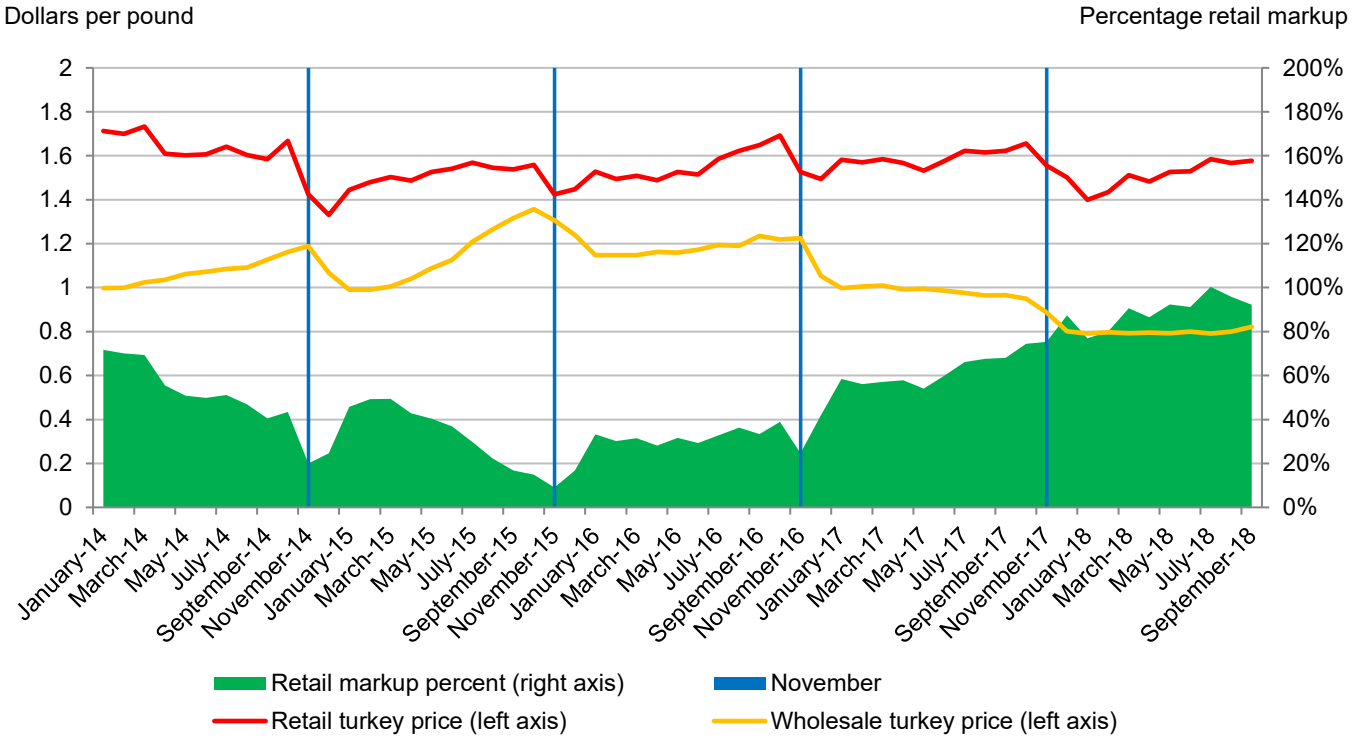
Egg Exports and Imports Down

Third-quarter egg exports totaled 81.7 million dozen (shell egg equivalent), nearly a 10-percent decrease compared to 2017. This decline was driven by a 24-percent decline in exports of egg products, while third-quarter exports of shell eggs were up by nearly 2 percent year over year. Among the top 10 export destinations, Mexico, Japan, South Korea, and the United Arab Emirates did not maintain 2017 levels, decreasing shipments by 7.0 million dozen, 4.6 million dozen, 2.5 million dozen, and 2.2 million dozen, respectively. A few important markets offset these decreases, including Canada, which increased third-quarter shipments by 5.2 million dozen year over year, the United Kingdom (2.2 million dozen), and Hong Kong (1.2 million dozen). Forecasts remain unchanged.

Egg imports amounted to 4.5 million dozen in the third quarter, a 39-percent decline from the same period in 2017. Canada and Thailand continue to be major suppliers, increasing third-quarter shipments to the United States by 17 percent year over year and 243 percent, respectively. Meanwhile, shipments from the Netherlands decreased year over year by 96 percent. In addition, shipments from China and Taiwan decreased by 32 percent and 4 percent, respectively.

Retail Markups for Turkey Wider This Year as Retail Prices Decline Less Than Wholesale Prices.

U.S. Retail and Wholesale Turkey Prices and Retail Markup



Source: USDA, Economic Research Service using USDA, Agricultural Marketing Service, Bureau of Labor Statistics

Typical Thanksgiving meals are filled with many iconic foods like pumpkin pie and stuffing, and turkey is usually the centerpiece. This year and last, wholesale turkey prices have been sharply lower than in years past. Do low wholesale prices indicate similar declines in retail prices? Not always. While wholesale and retail price movements are historically correlated on a yearly basis; seasonal factors can disrupt this correlation. In the past, Thanksgiving holiday season retail turkey prices were commonly near annual low points, while wholesale prices rose. The percentage November markup from wholesale to retail turkey prices between 2014 and 2016 was 18 percent, compared with a 38-percent average over all months in that period. Beginning in 2017, however, turkey prices began a sustained decline in prices that was not fully reflected in retail price movements. In 2017, the retail markup in November reached 78 percent—compared with 65 percent for the year—and a higher markup is expected in 2018. The data indicate that the past Thanksgiving season relationship between retail and wholesale turkey prices may be lessening.

Turkey Production Down 9 Percent in September

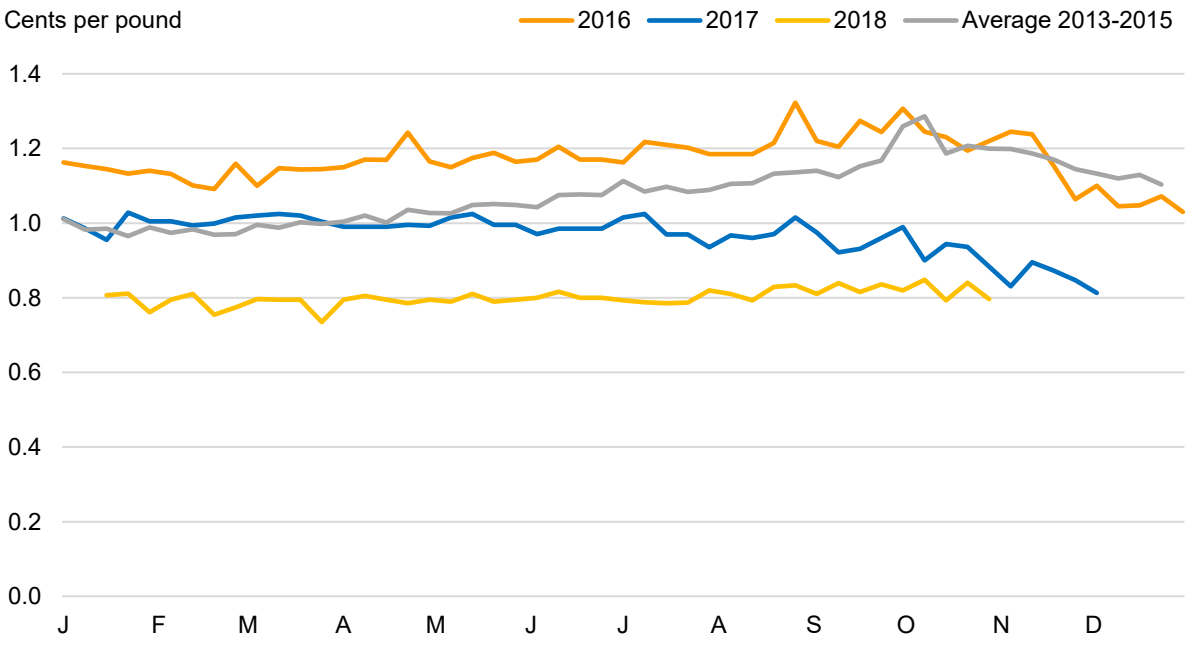
September 2018 turkey production totaled 425 million pounds, a 9-percent decrease from September 2017. This reflects 1 less slaughter day, however, relative to September 2017. On an average daily slaughter basis in September, production was down 4 percent compared with daily averages from a year earlier. Hatchery report data for September showed a 5-percent decline in poults hatched, but a gain of 0.1 percent in poult placements. Eggs in incubators on the first of the month were up 1 percent

on the 1st of October, ending their 10 month streak of negative growth. The data suggest that producers are still working to contain growth in the face of diminishing returns due to wholesale prices that have remained far below recent historical averages. The 2018 turkey production forecast is lowered by 24 million pounds to 5.875 billion pounds, 2 percent below 2017. Turkey production for 2019 is reduced 80 million pounds to 5.905 billion pounds, a half-percent increase over the 2018 forecast.

Whole Turkey Prices Maintain Stability Through 2018

Wholesale whole-hen frozen turkey prices have been remarkably stable throughout 2018 after their nearly 2-year fall to prices last seen in 2010. The latest price data, covering the week ending November 3, 2018, shows frozen whole hen prices at 80 cents per pound, well below early-November prices for the past several years. For context, prices were $1.25 per pound on November 5, 2016 and 88 cents per pound at the same time in 2017. The low wholesale prices indicate that turkey meat demand has not kept pace with production, further supported by higher than average stocks in cold storage. Turkey prices for 2018 are forecast to average $0.81 per pound for the year, about 16 percent below prices in 2017. In 2019, turkey prices are expected to average $0.81 to $0.88. If realized, prices at the midpoint of the range would be 4 percent higher than expectations for 2018.

Wholesale whole hen turkey prices



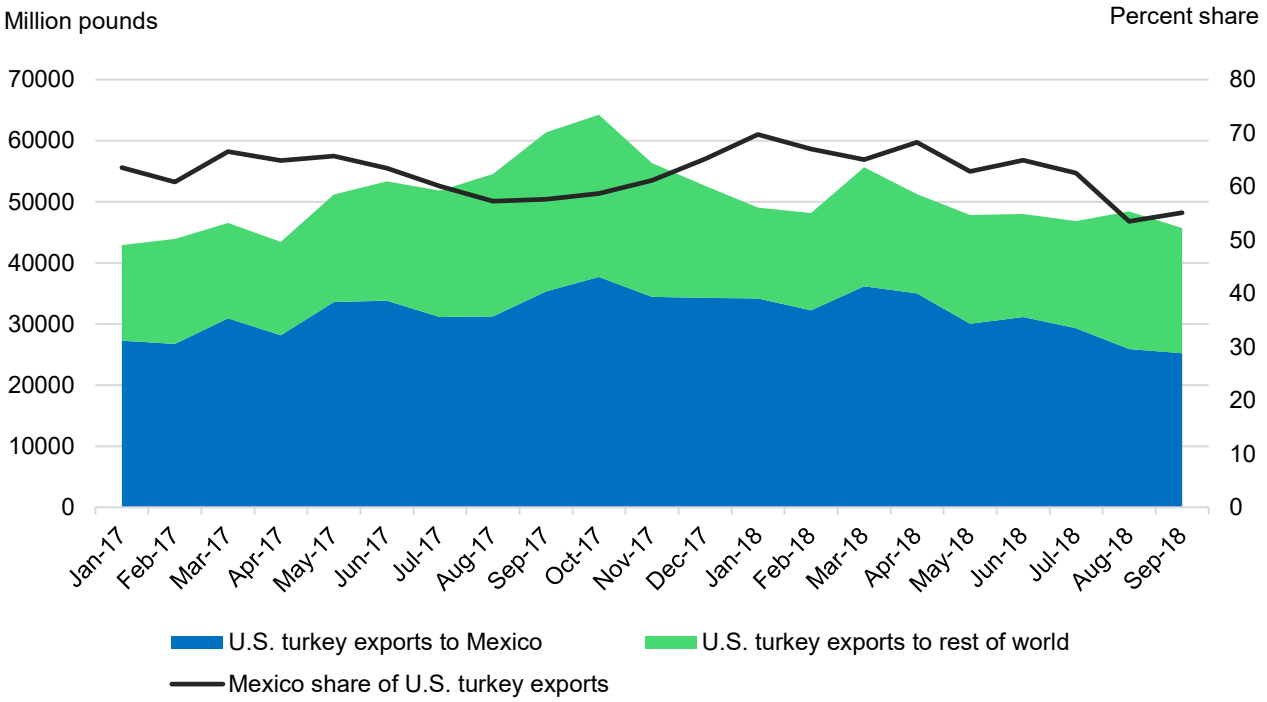
Source: USDA, Economic Research Service Livestock and Meat Domestic Data.

Turkey Exports Decrease Sharply Again in September

September 2018 turkey exports were 25 percent lower than a year earlier, totaling 46 million pounds. This marks the fifth consecutive month of year-over-year declines in turkey exports and the largest single month decline since January 2016, when the industry was still recovering from the 2014-15 U.S. outbreak of Highly Pathogenic Avian Influenza. Prior to the past 5 months, exports were seen as a lone bright spot given the sluggish domestic market. Up to April, exports had grown, often by double digits, in 20 of the previous 21 months with 8 consecutive months of stronger exports between September

2017 and April 2018. Mexico remains the largest destination for U.S. turkey shipments, with 25 million pounds shipped in September, or 55 percent of all U.S. shipments. However, September shipments to Mexico were down 29 percent from a year earlier, the largest year-over-year decline to Mexico since January 2016. The share of exports shipped to Mexico in September is the second lowest since September 2013—Only August 2018 was below this September. Exports are expected to total 586 million pounds in 2018, a 6-percent decrease from 2017. In 2019, turkey meat exports are expected to total 585 million pounds, a 0.2 percent decrease from the 2018 forecast.

U.S. turkey exports to Mexico and the rest of the world



Source: USDA, Economic Research Service Livestock and Meat International Trade Data.

Suggested Citation

Livestock, Dairy, and Poultry Outlook, LDP-M-293, U.S. Department of Agriculture, Economic Research Service, November 15, 2018

U.S. red meat and poultry forecasts

	2015					2016					2017					2018					2019			
	I	II	III	IV	Annual	I	II	III	IV	Annual	I	II	III	IV	Annual	I	II	III	IV	Annual	I	II	III	Annual
Production, million lb																								
Beef	5,665	5,856	6,068	6,109	23,698	5,938	6,187	6,472	6,625	25,221	6,303	6,407	6,736	6,742	26,187	6,465	6,724	6,820	**6,905**	**26,914**	**6,590**	**6,975**	**7,170**	**27,810**
Pork	6,162	5,925	5,958	6,457	24,501	6,230	5,963	6,100	6,648	24,941	6,410	6,137	6,240	6,796	25,584	6,645	6,325	6,315	**7,035**	**26,320**	**6,850**	**6,605**	**6,760**	**27,715**
Lamb and mutton	38	39	37	37	150	38	39	36	37	150	37	36	35	37	145	39	38	37	**38**	**151**	**37**	**39**	**36**	**149**
Broilers	9,718	10,021	10,372	9,937	40,048	10,039	10,253	10,338	10,065	40,696	10,233	10,407	10,551	10,472	41,662	10,385	10,685	10,929	**10,650**	**42,649**	**10,575**	**10,845**	**11,050**	**43,370**
Turkeys	1,429	1,389	1,351	1,458	5,627	1,435	1,520	1,515	1,511	5,981	1,488	1,482	1,479	1,533	5,981	1,452	1,477	1,431	**1,515**	**5,875**	**1,465**	**1,460**	**1,460**	**5,905**
Total red meat & poultry	23,157	23,382	23,940	24,150	94,629	23,834	24,119	24,623	25,038	97,614	24,617	24,621	25,197	25,734	100,169	25,129	25,406	25,693	**26,299**	**102,526**	**25,663**	**26,083**	**26,636**	**105,570**
Table eggs, mil. doz.	1,820	1,726	1,664	1,728	6,938	1,793	1,827	1,876	1,940	7,436	1,906	1,904	1,916	1,950	7,677	1,906	1,939	1,969	**2,030**	**7,844**	**1,955**	**1,975**	**1,995**	**7,980**
Per capita disappearance, retail lb 1/																								
Beef	13.1	13.6	13.9	13.3	54.0	13.6	13.9	14.0	14.0	55.5	14.0	14.2	14.4	14.3	56.9	13.9	14.4	14.3	**14.4**	**57.0**	**14.1**	**14.9**	**14.9**	**58.5**
Pork	12.2	11.8	12.1	13.6	49.7	12.6	11.8	12.1	13.5	50.1	12.4	11.8	12.4	13.5	50.1	12.5	12.1	12.4	**13.6**	**50.6**	**12.7**	**12.5**	**13.1**	**52.8**
Lamb and mutton	0.2	0.3	0.2	0.3	1.0	0.3	0.3	0.2	0.3	1.0	0.3	0.3	0.2	0.3	1.1	0.3	0.3	0.3	**0.3**	**1.1**	**0.3**	**0.3**	**0.3**	**1.1**
Broilers	21.4	22.1	23.3	22.1	89.0	22.5	22.7	22.7	21.8	89.7	22.4	22.9	23.2	22.4	90.8	22.6	23.3	23.5	**23.0**	**92.4**	**23.0**	**23.4**	**23.8**	**93.5**
Turkeys	3.5	3.6	3.9	4.9	16.0	3.6	3.9	4.2	4.9	16.6	3.7	3.7	4.0	5.0	16.4	3.5	3.8	3.9	**5.0**	**16.2**	**3.6**	**3.6**	**4.0**	**16.1**
Total red meat & poultry	50.8	51.8	53.8	54.5	211.0	52.9	53.0	53.7	54.8	214.4	53.2	53.2	54.6	55.8	216.8	53.2	54.3	54.8	**56.6**	**219.0**	**54.0**	**55.1**	**56.5**	**223.6**
Eggs, number	65.6	63.0	61.5	65.6	255.8	67.4	66.3	67.3	70.6	271.6	68.5	68.6	69.3	69.9	276.3	68.2	68.9	**70.2**	**72.2**	**279.5**	**68.9**	**68.9**	**69.7**	**280.1**
Market prices																								
Choice steers, 5-area Direct, $/cwt	162.43	158.11	144.22	127.71	148.12	134.81	127.68	113.26	107.69	120.86	122.96	132.76	112.46	117.88	121.52	125.60	116.72	110.83	**112-116**	**116.79**	**118-126**	**118-128**	**109-119**	**114-122**
Feeder steers, Ok City, $/cwt	210.31	219.65	208.11	173.59	202.92	155.83	146.49	140.66	128.30	142.82	129.56	147.75	148.12	154.88	145.08	146.29	143.05	150.46	**151-155**	**148.20**	**140-148**	**142-152**	**144-154**	**142-150**
Cutter Cows, National L.E., $/cwt	107.61	109.50	103.34	77.80	99.56	73.50	75.87	73.16	57.75	70.07	62.63	69.55	69.78	58.68	65.16	61.60	61.32	57.74	**49-53**	**57.92**	**54-62**	**57-67**	**56-66**	**55-63**
Choice slaughter lambs, St Joseph, $/cwt	149.23	146.04	156.34	150.48	150.52	136.76	139.35	162.47	142.71	145.32	142.34	167.94	172.40	136.92	154.90	136.83	154.86	147.95	**130-134**	**142.91**	**144-152**	**150-160**	**155-165**	**150-158**
Nat'l base cost, 51-52 % lean, live equivalent, $/cwt	48.47	53.20	54.59	44.66	50.23	44.63	53.71	49.26	37.02	46.16	49.73	51.70	55.59	44.89	50.48	49.12	47.91	43.90	**40-42**	**45.48**	**39-41**	**41-45**	**43-47**	**40-43**
Broilers, national composite, cents/lb	97.0	104.2	83.7	77.2	90.5	84.6	93.0	81.7	78.0	84.3	88.5	104.7	94.9	86.1	93.5	95.7	115.1	93.7	**84-86**	**97.4**	**91-97**	**100-108**	**91-99**	**92-99**
Turkeys, national, cents/lb	99.6	108.5	126.4	130.1	116.2	114.7	116.5	120.7	116.6	117.1	100.4	99.1	96.9	88.0	96.1	79.4	79.6	80.4	**83-85**	**80.8**	**75-79**	**79-85**	**84-90**	**81-88**
Eggs, New York, cents/doz.	146.9	170.3	235.7	174.1	181.8	121.5	67.9	71.6	81.7	85.7	80.0	74.7	102.1	147.0	100.9	179.6	124.4	120.8	**138-142**	**141.2**	**116-124**	**110-120**	**120-130**	**119-128**
U.S. trade, million lb, carcass wt. equivalent																								
Beef & veal exports	523	607	542	595	2,267	535	621	660	740	2,557	653	680	746	781	2,860	730	799	826	**835**	**3,190**	**770**	**805**	**840**	**3265**
Beef & veal imports	877	989	889	613	3,368	792	831	751	638	3,012	700	812	814	668	2,993	722	805	807	**680**	**3,014**	**730**	**820**	**810**	**3060**
Lamb and mutton imports	53	56	46	59	214	68	55	41	52	216	80	58	57	57	252	80	66	70	**57**	**273**	**82**	**69**	**63**	**279**
Pork exports	1,224	1,339	1,173	1,274	5,010	1,229	1,317	1,235	1,457	5,239	1,432	1,425	1,230	1,544	5,632	1,516	1,518	1,295	**1,655**	**5,984**	**1560**	**1555**	**1350**	**6200**
Pork imports	279	266	270	300	1,116	293	257	266	275	1,091	264	281	283	287	1,116	279	270	245	**265**	**1,059**	**270**	**265**	**255**	**1060**
Broiler exports	1,624	1,713	1,487	1,496	6,321	1,585	1,605	1,734	1,721	6,645	1,720	1,622	1,661	1,788	6,791	1,708	1,701	1,787	**1,720**	**6,916**	**1750**	**1745**	**1780**	**7045**
Turkey exports	148	123	125	132	529	116	141	160	153	569	133	148	168	173	622	153	147	141	**145**	**586**	**140**	**145**	**145**	**585**
Live swine imports (thousand head)	1,309	1,541	1,371	1,519	5,740	1,468	1,406	1,371	1,413	5,657	1,449	1,458	1,296	1,394	5,597	1,358	1,350	1,259	**1,325**	**5,292**	**1,350**	**1,350**	**1,275**	**5,325**

Note: Forecasts are in bold.

1/ Per capita meat and egg disappearance data are calculated using the Resident Population Plus Armed Forces Overseas series from the Census Bureau of the Department of Commerce.

Source: World Agricultural Supply and Demand Estimates and Supporting Materials.

For further information, contact: Mildred M. Haley, mhaley@ers.usda.gov

Updated 11/8/2018

Dairy Forecasts

	2017		2018					2019			
	IV	Annual	I	II	III	IV	Annual	I	II	III	Annual
Milk cows (thousands)	9,398	9,392	9,406	9,402	9,375	9,365	9,385	9,365	9,370	9,375	9,375
Milk per cow (pounds)	5,649	22,941	5,780	5,936	5,756	5,740	23,210	5,870	6,040	5,840	23,565
Milk production (billion pounds)	53.1	215.5	54.4	55.8	54.0	53.8	217.9	55.0	56.6	54.8	220.9
Farm use	0.2	1.0	0.2	0.2	0.2	0.2	1.0	0.2	0.2	0.2	1.0
Milk marketings	52.8	214.5	54.1	55.6	53.7	53.5	216.9	54.7	56.4	54.5	219.9
Milk-fat (billion pounds milk equiv.)											
Milk marketings	52.8	214.5	54.1	55.6	53.7	53.5	216.9	54.7	56.4	54.5	219.9
Beginning commercial stocks	16.2	12.7	13.4	16.4	19.1	17.2	13.4	13.9	16.3	18.4	13.9
Imports	1.6	6.0	1.2	1.6	1.7	1.8	6.3	1.4	1.5	1.6	6.2
Total supply	70.6	233.2	68.8	73.5	74.5	72.5	236.7	70.0	74.1	74.5	240.0
Commercial exports	2.4	9.2	2.4	3.0	2.6	2.4	10.5	2.3	2.7	2.5	9.8
Ending commercial stocks	13.4	13.4	16.4	19.1	17.2	13.9	13.9	16.3	18.4	15.8	12.6
Commodity Credit Corporation donations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.3
Domestic commercial use	54.8	210.5	50.0	51.5	54.7	56.1	212.3	51.2	52.9	56.2	217.3
Skim solids (billion pounds milk equiv.)											
Milk marketings	52.8	214.5	54.1	55.6	53.7	53.5	216.9	54.7	56.4	54.5	219.9
Beginning commercial stocks	12.1	9.5	11.8	11.4	11.5	10.5	11.8	10.7	11.2	12.0	10.7
Imports	1.5	6.1	1.4	1.4	1.3	1.3	5.4	1.4	1.3	1.3	5.3
Total supply	66.5	230.1	67.3	68.4	66.5	65.3	234.1	66.8	68.8	67.8	235.9
Commercial exports	11.0	40.7	11.5	12.5	10.9	10.2	45.1	10.8	11.6	11.0	44.1
Ending commercial stocks	11.8	11.8	11.4	11.5	10.5	10.7	10.7	11.2	12.0	10.8	10.5
Commodity Credit Corporation donations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Domestic commercial use	43.7	177.6	44.4	44.3	45.1	44.4	178.2	44.8	45.1	46.0	181.2
Milk prices (dollars/cwt) [1]											
All milk	17.83	17.65	15.67	16.10	16.05	17.05	16.20	16.80	16.50	16.55	16.70
						-17.35	-16.30	-17.40	-17.40	-17.55	-17.60
Class III	16.34	16.17	13.87	14.95	15.05	14.55	14.60	14.85	15.15	15.30	15.15
						-14.85	-14.70	-15.45	-16.05	-16.30	-16.05
Class IV	14.12	15.16	13.01	14.32	14.53	14.85	14.10	14.65	14.40	14.20	14.35
						-15.25	-14.30	-15.35	-15.40	-15.30	-15.35
Product prices (dollars/pound) [2]											
Cheddar cheese	1.712	1.634	1.515	1.608	1.565	1.465	1.535	1.510	1.555	1.580	1.560
						-1.495	-1.545	-1.570	-1.645	-1.680	-1.650
Dry whey	0.347	0.444	0.260	0.280	0.369	0.440	0.335	0.420	0.395	0.375	0.390
						-0.460	-0.345	-0.450	-0.425	-0.405	-0.420
Butter	2.295	2.330	2.161	2.320	2.284	2.235	2.240	2.195	2.195	2.205	2.200
						-2.295	-2.270	-2.285	-2.315	-2.335	-2.320
Nonfat dry milk	0.763	0.867	0.700	0.774	0.816	0.870	0.785	0.865	0.835	0.815	0.830
						-0.900	-0.805	-0.915	-0.905	-0.885	-0.900

Totals may not add due to rounding.

[1] Simple averages of monthly prices. May not match reported annual averages.

[2] Simple averages of monthly prices calculated by the Agricultural Marketing Service for use in class price formulas. Based on weekly U.S. Dept. of Agriculture, *National Dairy Products Sales Report*.

Sources: USDA, National Agricultural Statistics Service; USDA, Agricultural Marketing Service; USDA, Foreign Agricultural Service; and USDA, World Agricultural Outlook Board.

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