

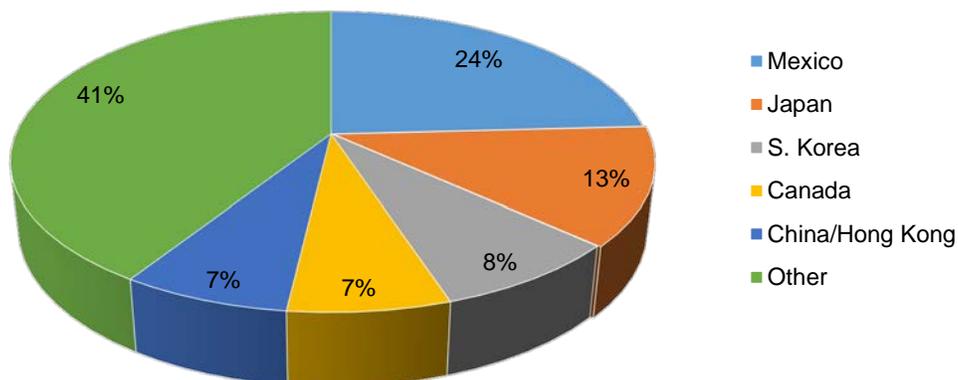


Livestock, Dairy, and Poultry Outlook

2018 Trade Data Shows That Mexico Has the Greatest Share of U.S. Animal Protein Exports

U.S. trade data shows Mexico as the largest single-country buyer of U.S. red meat and poultry in 2018, accounting for about 24 percent of beef, pork, lamb, mutton, broilers, and turkey exported last year. Mexico's purchases of U.S. animal proteins were spread across red meats and poultry; the country was the largest buyer of U.S. pork, lamb, mutton, broilers, and turkey and the third-largest buyer of beef. Japan accounted for a 13-percent share of red meats and poultry last year. Japan's export share is weighted heavily towards purchases of U.S. pork and beef—it was the second-largest buyer of pork and the largest buyer of beef. South Korea's 8-percent share of red meat and poultry exports was also weighted toward red meats; it was the third-largest buyer of pork and the second-largest buyer of beef. Canada's 7-percent share is accounted for mainly by its purchases of U.S. pork and beef, although it was also the fifth-largest buyer of broiler meat and turkey last year. China/Hong Kong accounted for 7 percent of red meat and poultry exports. It was the fourth-largest buyer of U.S. beef and the fifth-largest pork buyer, but also the second-largest buyer of turkey. A large share of U.S. red meat and poultry exports was distributed in small volumes, across a number of countries that together account for about 41 percent of exports.

U.S. red meat and poultry exports: 2018 shares of the largest foreign country buyers



Source: USDA, Economic Research Service.

Beef/Cattle: Low dairy returns continue to drive dairy cow slaughter. However, higher expected cow and fed cattle slaughter is more than offset by lower anticipated carcass weights, reducing the 2019 beef production forecast from last month. Based on current price data, the 2019 feeder steer price forecast was raised to \$143-\$150 per hundredweight (cwt), but the fed steer price forecast was left unchanged. Beef trade forecasts for 2019 were unchanged from the previous month's forecast. The 2019 U.S. cattle import forecast was revised upward to 2 million head based on higher January imports and stronger weekly reports in February and March.

Dairy: The 2019 forecast for the all-milk price has been raised to \$17.25-\$17.75 per cwt, an increase from \$17.00-\$17.60 forecast last month. Based on recent data and revisions, the 2019 milk production forecast has been lowered to 219.5 billion pounds, 0.2 billion less than last month's forecast. With lower expected exports of whey products, lactose, butterfat products, and nonfat dry milk, export forecasts have been lowered by 0.3 billion pounds on a milk-fat milk-equivalent basis and by 1.4 billion pounds on a skim-solids milk-equivalent basis.

Pork/Hogs: The most recent *Quarterly Hogs and Pigs* report indicated continued growth in the U.S. hog sector, with a record-high March 1 inventory of hogs and pigs. Hog price forecasts were adjusted higher to reflect new information from China indicating important hog losses from African Swine Fever (ASF). January pork exports were almost 2 percent lower than a year ago, dragged down by slower shipments to major markets.

Poultry/Eggs: The First-half broiler production forecast was revised down on expectations for dampened average bird weights. The 2019 egg production forecast was raised based on increasing layer inventory, while wholesale egg prices for the remainder of 2019 were revised down based on anticipation that a strong supply will put downward pressure on prices. Egg exports were revised down, on expectation of lower foreign demand. Turkey production for 2019 is increased by 5 million pounds from last month's forecast to 5.86 billion pounds, a half-percent decrease from 2018.

Beef/Cattle

Russell Knight and Lekhnath Chalise

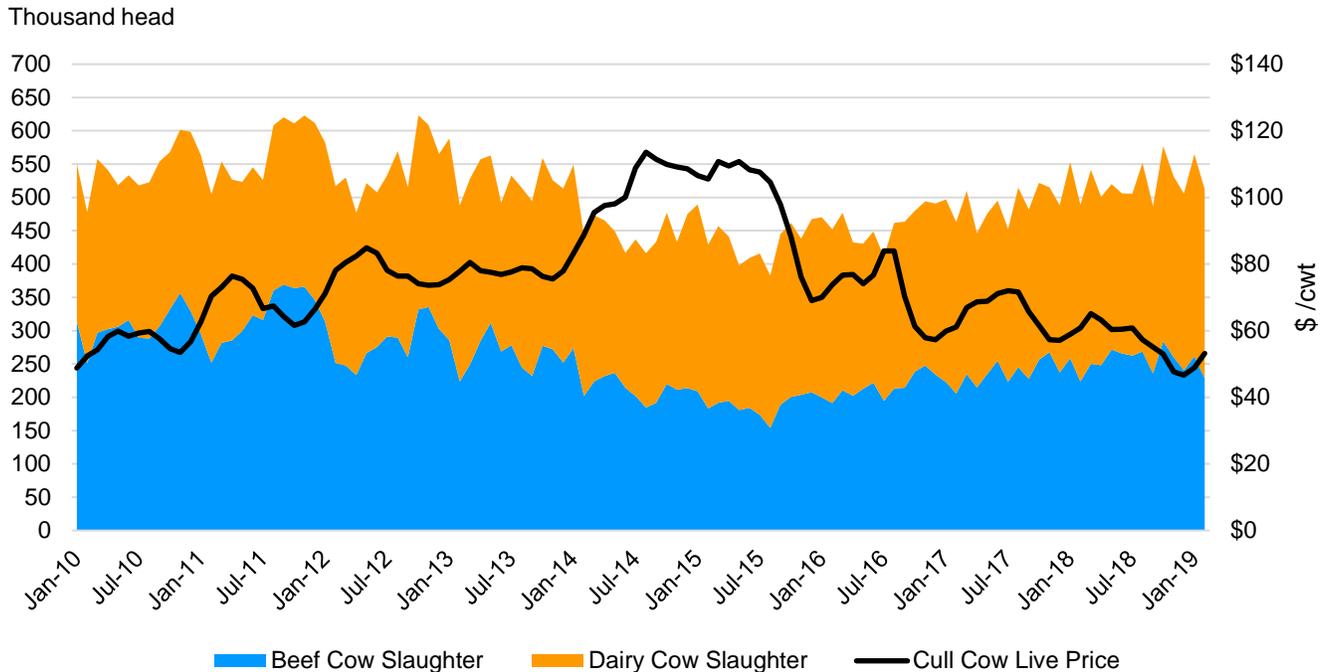
Higher Expected Cow Slaughter Partly Offsets Lower Weights

The beef production forecast for 2019 was lowered slightly by 20 million pounds from last month's forecast to 27.3 billion pounds. This adjustment is based on lower expected carcass weights that are partly offset by a greater anticipated number of cows to be slaughtered this year. The reduction in carcass weights is due to a combination of a higher proportion of cows expected in the slaughter mix and the residual impact of winter weather on fed cattle performance (i.e., on steers and heifers). Based on the USDA, Agricultural Marketing Service (AMS) weekly slaughter report for the week ending March 30, 2019, steer and heifer carcass weights are down 7 and 8 pounds, respectively, from the same time a year ago. Overall, average cattle carcass weights are down 12 pounds from year-earlier levels.

Cow slaughter is expected to be above 2018 levels, particularly of dairy cows as dairy producers respond to sustained low returns, but beef cow slaughter has also been above 2018 for much of the year. To the extent that the availability of cows for slaughter remains high, these supplies are expected to keep cull cow prices under pressure as the year progresses. Based on the expected increase in cow slaughter, the price forecast for live cutter cows¹ is lowered to \$52-\$54 per hundredweight (cwt). This is below the 2018 average of \$57.43/cwt and well below the 5-year average price of \$79.22/cwt. Note that the average monthly price over the last 5 years occurred when the cattle herd was in expansion mode and more cows were being retained in the herd. However, as the rate of expansion has slowed since 2014, monthly cutter cow live prices have declined with the rise of monthly beef and dairy cow slaughter.

¹ Live prices are converted from prices for cutter cow carcasses that are expected to yield 90 percent lean meat and weighing 500 pounds and up. The carcass prices are converted to live weight using a conversion factor of 0.495.

Monthly cutter cow live prices respond to cow slaughter



Source: USDA, National Agricultural Statistics Service and Agricultural Marketing Service data and Economic Research Service calculations.

Cattle on Feed Over 150 Days To Return to 5-Year Average Levels

The March *Cattle on Feed* report—released by USDA, National Agricultural Statistics Service on March 22—estimated there were 1.8 percent more net placements and 0.5 percent more marketings year over year in February, for a March 1 cattle-on-feed number of 11.8 million head. This was the first positive year-over-year change in placements of cattle into feedlots since August 2018. Further, the number of cattle held on feed over 150 days continued to build. Compared to March 2018, there were almost 23 percent more cattle on feed over 150 days in March 2019. Anticipated feedlot placements and marketings of fed cattle for slaughter in the coming months will likely bring the proportion of cattle on feed over 150 days into closer alignment with the 5-year average levels in the coming quarters.

Feeder Calf Prices Raised in Second- and Fourth-Quarter 2019

As described above and in the last few Outlook reports, large supplies of cattle in feedlots and a slower than expected pace of marketings in the first 2 months of 2019 have led to larger supplies of cattle on feed over 150 days. However, a greater proportion of market-ready cattle is expected to be sold for slaughter in the second quarter. This is expected to support the demand for feeder calves for placement into the feedlots. Recent price data and expectations of stronger feedlot demand underpinned an increase in the second-quarter feeder calf price. The second-quarter 2019 price was raised \$2 at the midpoint to \$144-\$150/cwt. The fourth-quarter 2019 price was also raised \$2 at the midpoint to \$140-\$152/cwt based on expected increased demand by feedlots. As a result, this month's annual price forecast for 2019 was raised to \$143-\$150/cwt.

As mentioned, these large supplies of market-ready cattle in feedlots have experienced a tough winter, and the performance of steers and heifers in the feedlot has suffered. Given how long feedlot operations have had to feed these animals, the feedlots may be more inclined to take prices offered than to feed their cattle longer to recover the lost weight. As a result, the momentum of the weekly 5-area steer price may have limited upward support, particularly given the strong number of market-ready cattle in early 2019. However, based on expected strength of beef demand as the year progresses, the 2019 annual price forecast was left unchanged at \$117-\$122/cwt.

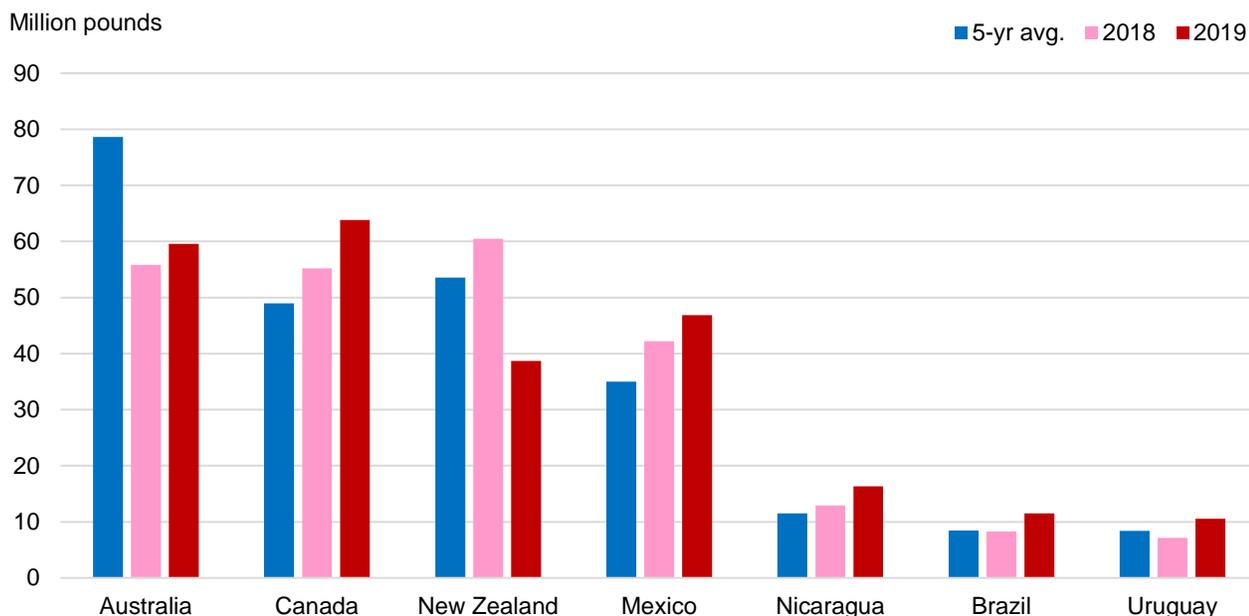
Beef Imports Increased in January

U.S. beef imports in January were 2-percent above year-earlier levels at 253 million pounds. Imports were greater from all major suppliers except New Zealand (see chart below). In January, imports from New Zealand, which in January 2018 was the largest supplier to the United States, declined 36 percent year-over-year in January 2019, the lowest for the month since 2012. Production declines along with increasing shipments of those limited supplies to key Asian markets, were likely drivers for this decline. The U.S. beef import forecast for 2019 was left unchanged from the previous month's forecast at 3.01 billion pounds.

Record U.S. Beef Exports in 2018

Beef exports in 2018 increased about 300 million pounds, or more than 10 percent, to 3.156 billion pounds from 2017. Exports were higher from year-earlier levels to most of the major destinations, excepting Hong Kong and Canada (see table below). This was the third consecutive year of double-digit growth, each year with record-high volumes. Expected overseas demand and readily available exportable U.S. beef supplies result in the 2019 export forecast being unchanged from the previous month's forecast at 3.255 billion pounds.

Year-over-year January imports from major suppliers

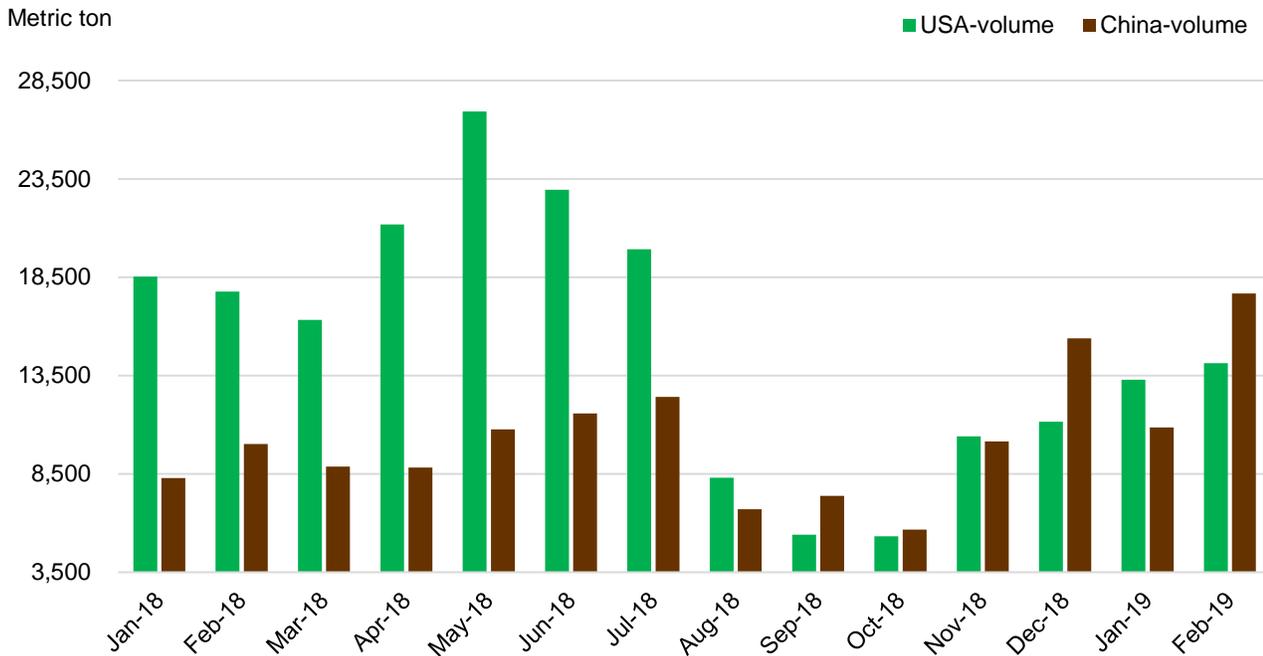


Source: USDA, Economic Research Service.

New Zealand Is Shifting Shipments to China

The price of imported beef in the United States declined in fourth-quarter 2018, and as a result, many U.S. suppliers—mainly Oceania—shifted products to Asian markets. Although the price of imported beef in the United States has increased in early 2019, shipments from Oceania to Asian markets continue to rise, mostly to fill Chinese demand. From January through February 2019, New Zealand reported an increase of shipments to China and fewer shipments to the United States as compared to the same period the previous year (see chart below).

New Zealand is shifting U.S. shipments to China



Source: Global Trade Information System (GTIS)

January Beef Exports Declined Year over Year

U.S. beef exports in January 2019 were 238 million pounds, down 2 percent from year-earlier levels. This was the first year-over-year decline in monthly U.S. beef exports since June 2016. Declines to Hong Kong, Canada, and Chile more than offset increases to the major export markets. Notably, exports to Hong Kong declined by 44 percent year-over-year, continuing a declining trend since April 2018.

USDA, Foreign Agriculture Service weekly export sales reports for February and March 2019 do not indicate stronger shipments. Based on lower January exports, and moderate weekly estimates for February and March, the first-quarter 2019 beef export forecast was revised downward by 10 million pounds to 760 million pounds. However, as small adjustments were made to the quarters, the 2019 full-year forecast remained unchanged from the previous month's forecast at 3.255 billion pounds.

Cattle Import Forecasts Higher

U.S. cattle imports in January 2019 were 142,628 head, up 25 percent year over year. Imports were higher from both Mexico (+19,174 head) and Canada (+9,178 head). Increased cattle production in Mexico is potentially permitting more cattle to be shipped to the United States. The available pastures in the United States are likely supporting this higher shipment, as imported cattle from Mexico are often backgrounded on grass prior to feedlot placement. AMS weekly sales reports indicate stronger year-over-year imports for February and March. Based on these grounds, 2019 U.S. cattle imports were revised upward by 20,000 head to 2 million head.

In January 2019, U.S. cattle exports were 22,917 head, a threefold rise from the previous year and the highest for the month since 2001. Most of the exports were to Canada, where they have increased, likely driven by growing demand from Canadian feedlots.

Dairy

Jerry Cessna and Jonathan Law

Recent Developments in Dairy Markets

From the week ending March 2 to the week ending March 30, movement of dairy product prices as reported in the USDA *National Dairy Products Sales Report* (NDPSR) were mixed. Prices increased by 4.2 cents for butter, 6.8 cents for 40-pound blocks of cheddar cheese, and 14.2 cents for 500-pound barrels. Nonfat dry milk (NDM) and dry whey prices fell by 2.5 cents and 3.7 cents, respectively.

Dairy wholesale product prices (dollars per pound)

	For the week ending		Change
	Mar. 2	Apr. 6	
Butter	2.2610	2.3039	0.0429
Cheddar cheese			
40-pound blocks	1.5653	1.6332	0.0679
500-pound barrels ¹	1.4178	1.5596	0.1418
Nonfat dry milk	0.9821	0.9569	-0.0252
Dry whey	0.4231	0.3859	-0.0372

¹ Adjusted to 38-percent moisture.

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

For the most part, recent export prices of major competitors have been relatively high compared to U.S. domestic wholesale prices. For the 2 weeks ending March 29, USDA *Dairy Market News* reported that skim milk powder (SMP) prices for Oceania and Western Europe were \$1.12 and \$0.99 per pound, respectively, at the midpoints of the ranges. The dry whey export price for Western Europe was \$0.46 per pound, and the Oceania cheddar cheese export price was \$1.85 per pound. Export prices for butter were comparable to recent U.S. domestic prices, at \$2.36 and \$2.17 per pound for Oceania and Western Europe, respectively.²

In March, USDA National Agricultural Statistics Service (NASS) estimated U.S. milk production of 217.527 billion pounds in 2017 and 217.575 billion pounds in 2018. These were upward revisions of 61 million pounds and 99 million pounds from the estimates published in February.³ Average milk cow numbers for 2017 and 2018 were revised upward by 14,000 head in each year to 9.406 million and 9.399 million head, respectively. Estimates for 2017 and 2018 milk production per cow were revised downward to 22,914 pounds (-28 pounds) and 23,149 pounds (-23 pounds), respectively.

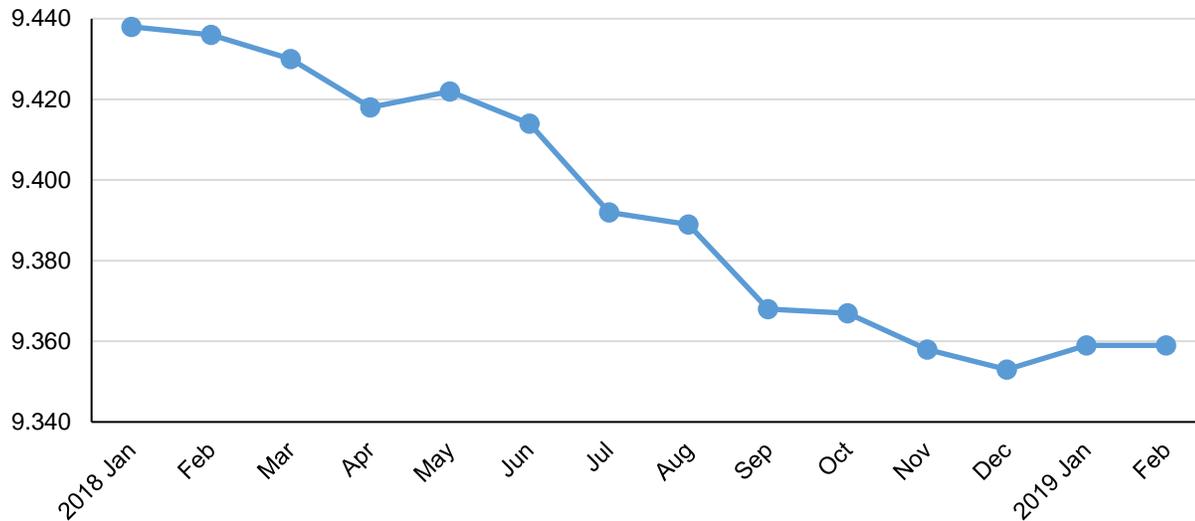
² Note that U.S. domestic wholesale prices are for products that have shipped with title transferred. Export prices include prices that have been contracted for future delivery. Export butter prices are for butter with 82-percent butterfat while domestic butter typically has about 80-percent butterfat.

³ For the March *Livestock, Dairy, and Poultry Outlook* report, analysis and forecasts reflected data from the *Milk Production* report published by NASS on February 20. In March, NASS published two *Milk Production* reports, on March 12 and March 19, as the agency has been updating data since the Federal Government shutdown.

NASS estimated that U.S. milk production was 17.015 billion pounds in February, up 0.2 percent from February 2018. Milk production per cow averaged 1,818 pounds in February, 19 pounds above February 2018. Milk cow numbers trended downward through 2018, reaching a low of 9.353 million head in December. In January 2019, milk cow numbers rebounded to 9.359 million head, and they remained at that level in February. Dairy cow slaughter has been high in the last couple of months. From the week ending February 9 to the week ending March 30, weekly federally inspected dairy cow slaughter averaged about 6,000 head above corresponding weeks in 2018.

U.S. milk cows

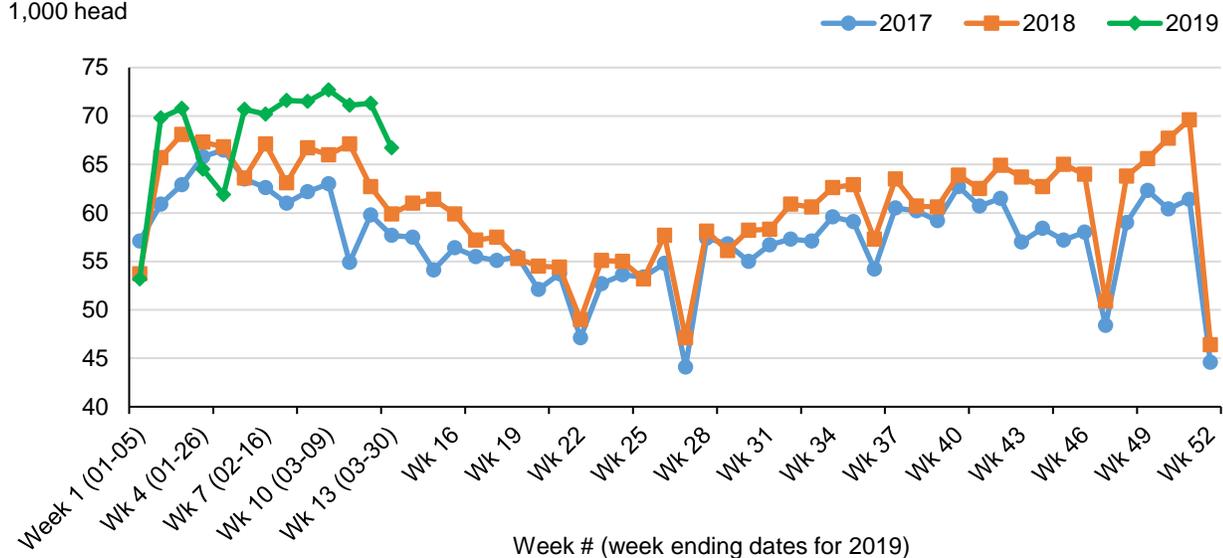
Million head



Source: USDA, National Agricultural Statistics Service.

Weekly dairy cow slaughter (federally inspected)

1,000 head

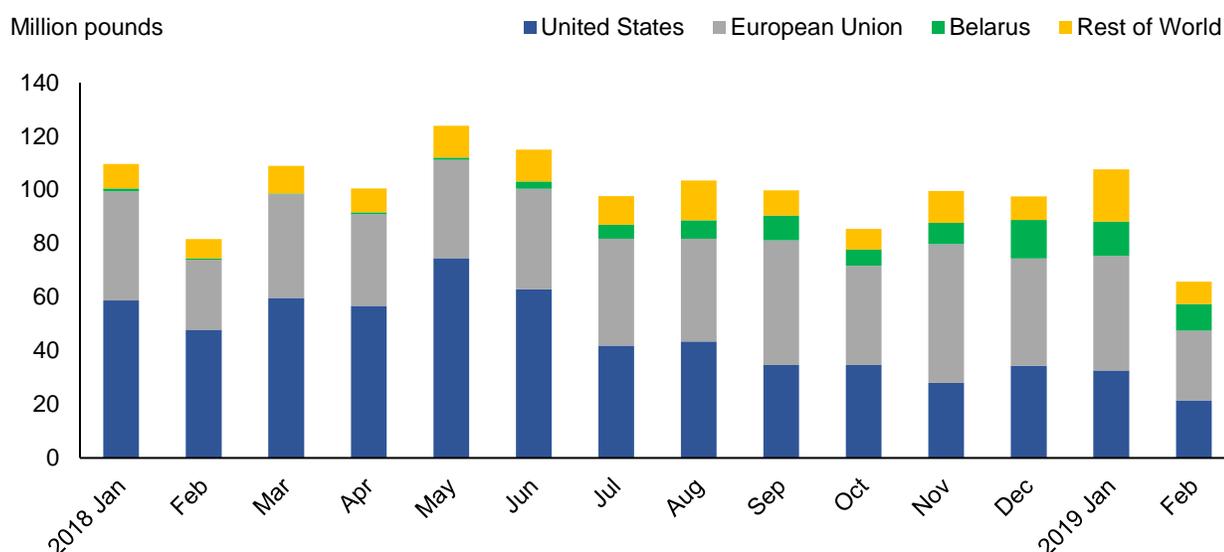


Source: USDA, Agricultural Marketing Service.

In January, dairy exports on a milk-fat milk-equivalent basis were 686 million pounds, 13 million above December 2018 and 1 million above January 2018.⁴ On a skim-solids milk-equivalent basis, January dairy exports were 3.053 billion pounds, 18 million above December but 342 million below January 2018. Exports of several key products were relatively low in January. Exports of butterfat products (mostly anhydrous milkfat; the products do not include butter or dairy spreads) were only 0.1 million and 0.9 million pounds in December and January, respectively. This followed a 2018 peak of 7.7 million pounds in October and 6.3 million pounds in November. U.S. exports of lactose were 63.9 million pounds in January, 3.4 million more than December but 3.9 million less than January 2018. U.S. exports of NDM/SMP were 108.9 million pounds in January, 2.2 million less than December and 0.5 million less than January 2018. U.S. exports of whey products (dry whey, whey protein concentrate (WPC), and modified whey) totaled 68.6 million pounds in January, 1.0 million pounds above December but 32.1 million pounds below January 2018.

In recent years, China has been the leading destination for U.S. exports of whey products. Although U.S. trade data for February are not yet available, China's import data have been published. China's February imports of whey products from the world were 66 million pounds, 42 million pounds less than January and 16 million pounds less than February 2018. In February, whey product imports from the United States made up 32.6 percent of China's total whey product imports, down from 58.5 percent in February 2018. Since the first half of 2018, the EU and Belarus have gained significant market share.

China's imports of whey products ¹



¹ This chart includes dry whey, whey protein, and modified whey products.
Source: Global Trade Atlas.

There are at least two factors that have likely contributed to low exports of U.S. dry whey products to China:

- (1) In response to U.S. tariffs on various goods, China imposed retaliatory tariffs on most U.S. dairy product imports, which went into force on July 6, 2018. The tariff for whey products increased from 2 percent to 27 percent at that time. As a result of the tariffs, U.S. exports of

⁴ U.S. international trade data are not yet available for February as the U.S. Census Bureau is currently in the process of updating data since the Federal Government shutdown.

Whey products to China have decreased significantly since the first half of 2018.

- (2) Whey products are commonly used as a component in pig and hog feed in China. As the swine population in China has been reduced due to the outbreaks of African Swine Fever, feed demand for whey products may have been impacted. In a report covering March 25-29, USDA *Dairy Market News* reported that the reduced demand for dry whey from China has caused inventories to build up for some U.S. manufacturers.

January dairy imports on a milk-fat basis were 479 million pounds, 184 million less than December but 55 million above January 2018. On a skim-solids basis, dairy imports were 479 million pounds, 21 million less than December and 8 million less than January 2018. Notably, milk protein concentrate imports increased 1.4 million pounds from December to January.

Domestic use has grown significantly in recent months. Since domestic use estimates are calculated using limited data from various sources, it is helpful to examine data over a 3-month interval rather than 1 month at a time. For the 3 months from November 2018 through January 2019, year-over-year domestic use increased by 2.6 percent on a milk-fat basis and by 2.9 percent on a skim-solids basis. February ending stocks on a milk-fat basis were 15.4 billion pounds, 3.6 percent below February 2018. On a skim-solids basis, February ending stocks were 11.1 billion pounds, 3.1 percent below the previous year. Notably, butter stocks were 8.7 percent below the previous year, and total aggregate cheese stocks were 4.0 percent above the previous year.

Dairy Forecasts for 2019

With upward revisions to 2018 milk cow numbers and a larger milking herd in February than previously expected, the annual estimate for size of the milking herd has been raised 10 thousand head to 9.360 million. However, downward revisions to 2018 milk per cow data motivated a decrease in the forecast for 2019 to 23,455 pounds. With these changes, milk production for 2019 is now forecast at 219.5 billion pounds, a reduction of 0.2 billion pounds from the last forecast.

The alfalfa hay price in February was \$180 per short ton, \$1 less than January and \$25 more than February 2018. The 2018/19 price forecasts for corn and soybean meal are \$3.40-\$3.70 per pound and \$305-\$325 per short ton, respectively, both unchanged at the midpoint from last month's forecast. For more information, see *Feed Outlook*, published by USDA, Economic Research Service.

The 2019 export forecasts have been lowered to 9.8 billion pounds (-0.3 billion) pounds on a milk-fat basis and to 42.2 billion pounds (-1.4 billion) on a skim-solids basis. The changes are primarily due to lower expectations for exports of whey products. Our forecasts assume that China's retaliatory tariffs will remain in place. Although there is considerable uncertainty concerning the spread of African Swine Fever, it is expected that China's swine inventories at the end of 2019 will be 13 percent below the first of the year. In addition to lower expected exports of whey products, lower expectations for exports of butterfat products, lactose, and NDM to a number of markets factor into the forecasts. These forecasts assume that current trade policies remain in place.

On a milk-fat basis, the import forecast for 2019 is unchanged at 6.5 billion pounds. The 2019 import forecast on a skim-solids basis has been raised 0.1 billion pounds to 5.3 billion due to higher expected imports of milk protein products. The domestic use forecast is 215.6 billion pounds for the year, an increase of 0.3 billion pounds based upon recent strength. Domestic use on a skim-solids basis is now forecast at 181.5 billion pounds, an increase of 1.4 billion pounds from the last forecast due to relatively strong domestic use in recent months and higher expected domestic use of whey products in response

to lower prices. Ending stocks on a milk-fat basis are forecast at 13.4 billion pounds for 2019, 0.2 billion less than the last forecast. The ending stock forecast on a skim-solids basis has been lowered 0.1 billion pounds to 10.4 billion.

The largest changes in product price forecasts have been made for cheese and whey. The cheddar cheese price for 2019 is now forecast at \$1.555-\$1.605 per pound, 4.0 cents higher at the midpoint of the range than the last forecast, based on recent gains in domestic cheese prices and higher expected demand. The dry whey price forecast for 2019 has been lowered 4.5 cents at the midpoint of the range to \$0.380-\$0.410 per pound, as weakness in exports is expected to persist throughout 2019. The butter price forecast for the year is \$2.255-\$2.335 per pound, a slight downward shift from last month's forecast; however, year-over-year growth in butterfat demand should still offer price support through the end of 2019. The NDM price forecast for 2019 is \$0.965-\$1.005 per pound, also a slight reduction from last month's forecast due to recent declines in prices.

The Class III price forecast for the year is \$15.10-\$15.60 per cwt, 15 cents higher at the midpoint of the range than previously forecast, as higher cheese prices should outweigh lower whey prices. The Class IV price forecast has been lowered 5 cents at the midpoint of the range to \$15.75-\$16.35 per cwt due to lower expected butter and NDM prices. The all-milk price for 2019 is now forecast at \$17.25-\$17.75 per cwt, an increase of 20 cents at the midpoint of the range from the last forecast.

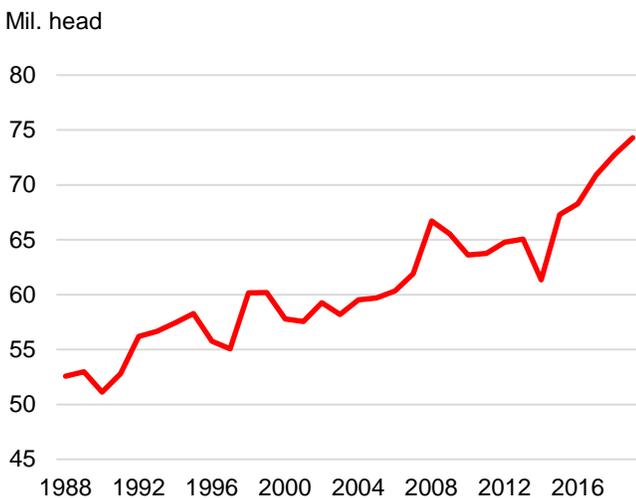
Pork/Hogs

Mildred Haley

March Hogs and Pigs Report Shows Industry Expansion Continuing

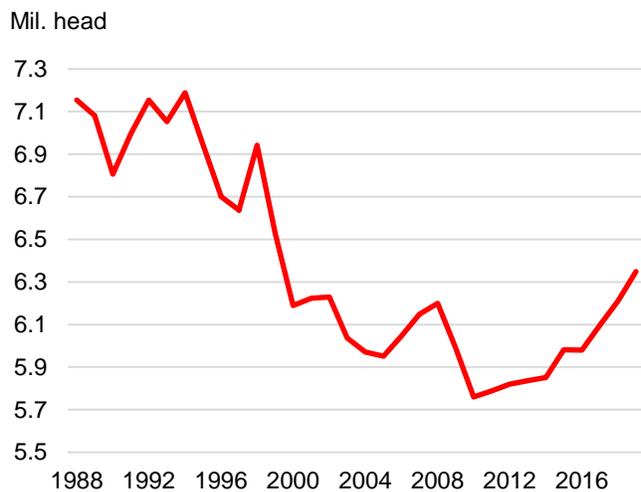
The information in the *Quarterly Hogs and Pigs* report released by USDA on March 28 showed that the U.S pork industry has racked up another set of record-setting numbers and statistics since the last report in December. An illustrative list begins with the inventory of all hogs and pigs, which was record-high for the March 1 series at 74.3 million head, more than 2 percent higher than last year. The litter rate for the December-February pig crop was 10.7 pigs per litter, the highest ever for that quarterly series. The inventory of breeding animals, at 6.3 million head, was more than 2 percent higher than a year earlier. The growth of the hog industry's productive base that sow numbers represent is largely driven by hog demand from the U.S. processing sector, whose expansion is ongoing; it is notable that a third new pork processing plant opened in Iowa in early March.

March 1 inventory of all hogs and pigs



Source: USDA, National Agricultural Statistics Service.

March 1 inventory of breeding animals



Source: USDA, National Agricultural Statistics Service

The winter pig crop that was slightly smaller than earlier intentions implied, combined with reduced producer intentions for March-May farrowings, suggests a somewhat lower second-half 2019 pork production than previously forecast. Nevertheless, the numbers are expected to be large—third-quarter production is expected to be just under 6.7 billion pounds, about 6 percent higher than a year earlier. Fourth-quarter production is forecast at about 7 billion pounds, 3 percent above year-earlier production levels.

The U.S. Market Responds and Adjusts to African Swine Fever Information In China

In March, new information became available from China showing important losses to its hog inventory due to African Swine Fever (ASF)⁵. USDA, Foreign Agricultural Service (FAS) updated production, supply, and distribution database for China shows a 12-percent reduction in the 2019 beginning sow stocks compared with a year earlier.⁶ The 2019 projections further show a 10-percent pork production decline in 2019, as well as an increase in China's 2019 pork imports, from 1.6 million tons in 2018 to 2.2 million tons this year. Also in March, there were indications in the weekly FAS Export Sales Reporting data⁷ that Chinese buyers had re-entered the U.S pork market and made purchases significantly larger than in the recent past. These China-related factors—and the export prospects brought about by China's ASF-created pork deficits—have dominated the U.S. hog and pork markets recently. This is not surprising given that China produces and consumes more than half of the world's pork. A discussion of the ASF situation and its implications for the Chinese pork sector can be found in the FAS publication, *Livestock and Poultry: World Markets and Trade* <https://www.fas.usda.gov/data/livestock-and-poultry-world-markets-and-trade>

March hog prices reacted sharply to the severity of the ASF damage in China and to the possible re-emergence of China as an important buyer of U.S pork. Prices of live equivalent 51-52 percent lean hogs began the month at \$36.68 per cwt and finished the end of March at \$54.58 per cwt, an increase of almost 49 percent. The wholesale value of the pork carcass also increased, beginning March at \$62.93 per cwt and finishing the month at \$82.15 per cwt, an increase of almost 31 percent. Processor margins declined, however, finishing the first week of March at about \$40 per cwt and ending the month at about \$33 per cwt. The more rapid increase in hog prices relative to wholesale pork prices and the drop credit likely squeezed processors. Moreover, USDA loads data suggests that processors who forward-sold pork earlier in the year when prices were low may have seen their margins compressed by contract delivery at higher current market prices.

⁵ Information on ASF can be found here:

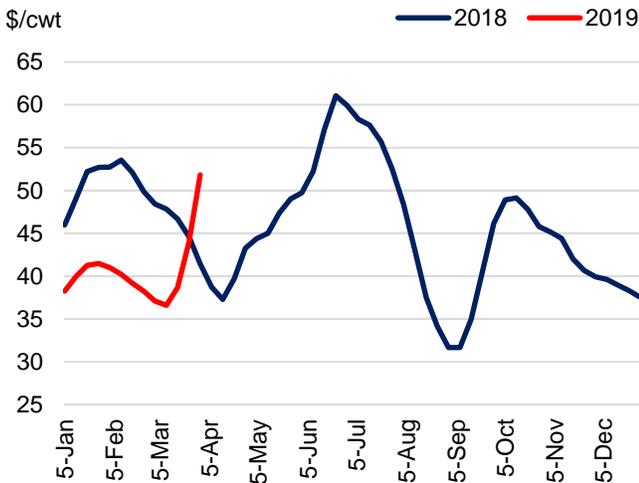
<https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/swine-disease-information/african-swine-fever/african-swine-fever>

⁶ The USDA, Foreign Agricultural Service's PSD database is found here:

<https://apps.fas.usda.gov/psdonline/app/index.html#/app/home>

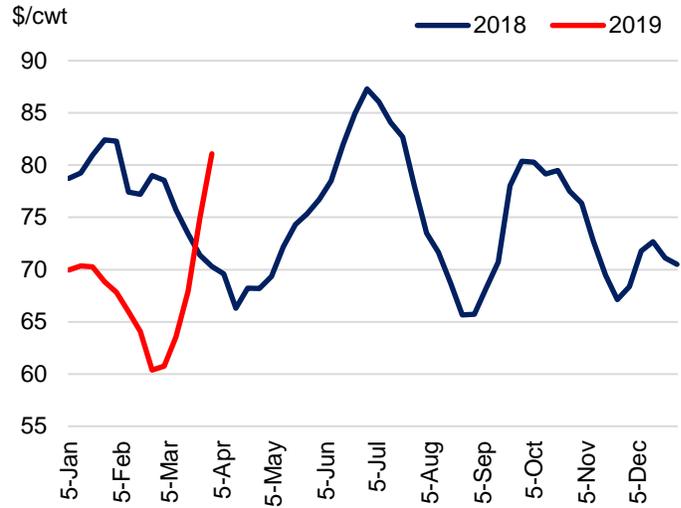
⁷ Access the USDA, Foreign Agricultural Service's Export Sales Query System here: <https://apps.fas.usda.gov/esrquery/>

Live equiv. hog prices, 51-52 percent lean, weekly



Source: USDA, Agricultural Marketing Service.

Wholesale pork carcass cutout, weekly



Source: USDA, Agricultural Marketing Service.

Hog Price Forecasts Revised Upward as Markets Reflect Demand Uncertainty Due to ASF

Live equivalent prices of 51-52 percent lean hogs averaged \$40.67 per cwt in the first quarter, more than 17 percent below a year earlier. Monthly hog prices in 2019 had lagged year-earlier prices until mid-March before heading higher and pushing the month's price to an average of \$42.46 per cwt. Although this was almost 7 percent below a year ago, prices for the first week in April averaged almost \$60 per cwt, about 45 percent above the same period in 2018. Information regarding ASF impacts on Chinese pork production will likely influence U.S hog prices for at least the balance of 2019 as market players balance expectations for increased exports against expectations for U.S. production and domestic demand. For the second quarter of 2019, hog prices are expected to average \$47-\$49 per cwt. Third-quarter prices are likely to be slightly higher, at \$47-\$51 per cwt. Fourth-quarter 2019 hog prices should fall seasonally to average \$43-\$47 per cwt. The average for 2019, \$45-\$47 per cwt, is about the same as the average price in 2018.

2019 Begins on a Sour Note for Pork Exports

U.S. pork exports in January were 478 million pounds, down almost 2 percent from a year earlier. Shipments to most major U.S. foreign markets were lower, hindered by a combination of retaliatory tariffs in Mexico and China, and by the startup of two trade agreements, in particular, to which the United States is not a party. Total January 2019 shipments to major export markets are summarized in the table below.

U.S. pork exports: Volumes and export shares for the 10 largest foreign destinations, January 2018 and 2019

Country	Exports Jan. 2018 (mil. lbs)	Exports Jan. 2019 (mil. lbs)	Percent change (2019/2018)	Export share Jan. 2018 %	Export share Jan. 2019 %
World	486	478	-1.8		
Mexico	163	142	-12.6	33	30
Japan	109	102	-6.3	22	21
South Korea	56	55	-1.7	11	12
Canada	37	42	12.5	8	9
Colombia	19	27	37.0	4	6
China/Hong Kong	39	26	-34.0	8	5
Australia	21	24	14.4	4	5
Dominican Republic	8	9	22.3	2	2
Chile	2	8	312.7	0	2
Honduras	8	8	1.5	2	2

Source: USDA: Economic Research Service.

The summary of January exports suggests that U.S. pork exports may continue to face trade impediments in 2019, some of which began in 2018 and others more recently. Mexico imposed a 20-percent retaliatory tariff on important pork cuts in July 2018. China began retaliatory tariffs on U.S. pork and pork offals in April 2018. Since early July, increased Chinese tariff rates faced by U.S. pork products have been as high as 78 percent.⁸ Further, two trade agreements—the Comprehensive and Progressive Agreement for Trans-Pacific Partnership Agreement (CPTPP) and the Japan-E.U. Economic Partnership Agreement (EPA)—recently went into effect. Both trade agreements liberalize the Japanese pork import regime for signatory countries, which include major pork exporting countries that compete with the United States for shares of the Japanese market: Canada and Mexico (signatories of the CPTPP) and Denmark, Germany, and Spain (signatories of the EPA).

Low U.S. pork prices have been an important factor in maintaining export flows, even as demand from larger export customers has slowed. In such an environment, smaller export markets in South America have become more prominent. Also, there is some evidence that Canada has increased imports of U.S. pork as Canadian pork production is diverted to export markets in China, Japan, and Mexico.

Canadian Government data indicates that January 2019 exports to China increased 19 percent, to Japan 2 percent, and to Mexico 22 percent year over year. Canada's imports of U.S. fresh and frozen pork increased from January 1 through March 31, 2019, by 19 percent over the same period last year. Over the same 3-month period, Canada's imports of U.S. processed pork products increased 103 percent.

⁸ USDA, Foreign Agriculture Service, GAIN Report Number: CH 18034, June 21, 2018.

Exports Expected To Pick Up in the Second Quarter

2019 pork trade flows may end up looking somewhat different from those of the past, as international buyers and sellers adjust to potential changes in Chinese import demand, to distortions that tariffs impose on trade into China and Mexico, and to the new rules that govern entry into Japan's lucrative pork market. From the U.S. perspective, continued sector expansion—evidenced by the March Hogs and Pigs report and the recent opening of the new processing plant in Eagle Grove, Iowa—is expected to provide competitively priced pork products for exports this year. First-quarter U.S. pork exports are expected to be about 1.5 billion pounds, about 2.7 percent below the same period a year ago. Second-quarter shipments should accelerate to 1.6 billion pounds, about 2.1 percent more than a year ago. For 2019, total U.S. pork exports should total 6.175 billion pounds, more than 5 percent above total exports in 2018.

Poultry

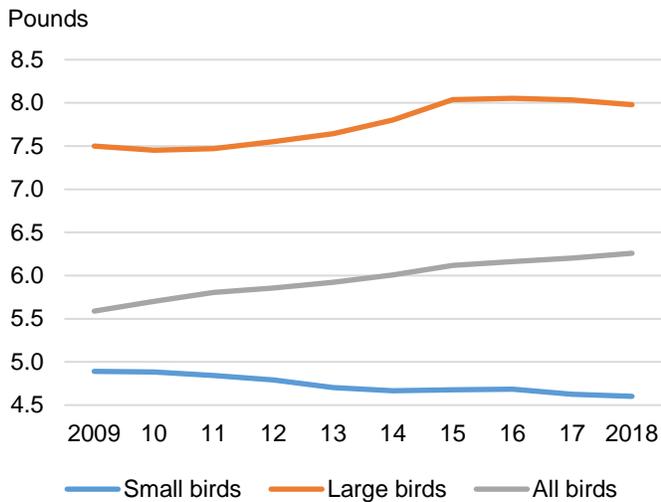
Kim Ha and Alex Melton

Average Bird Weights Continue To Dampen Broiler Production; Forecasts Revised Down

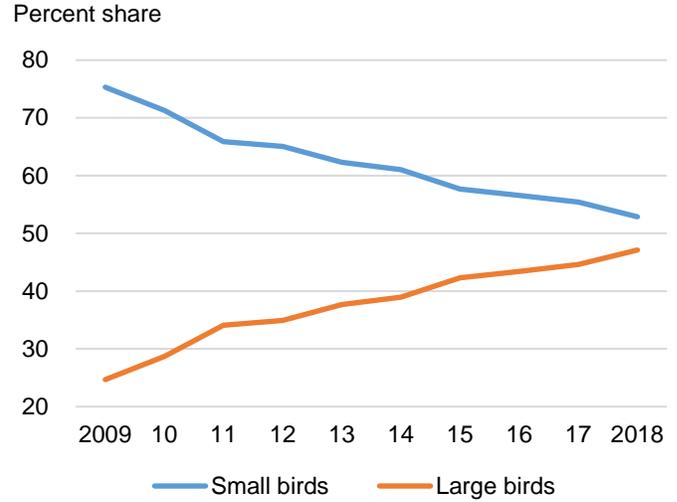
Broiler production totaled more than 3.7 billion pounds (up 2 percent year over year) in January and almost 3.3 billion pounds (nearly unchanged from last year) in February. January slaughter was up year over year (more than 2 percent), while average bird weights were slightly down (by less than -0.1 percent). February slaughter was up 0.6 percent year over year, and average bird weights were down -0.4 percent. Preliminary slaughter data for March suggest production will be comprised of a year-over-year increase in bird slaughter and a decrease in average bird weights. Based on expectations for dampened bird weights, the first- and second-quarter production forecast was revised down to 10.35 billion pounds and 10.81 billion pounds, respectively.

As discussed in last month's *Livestock, Dairy, & Poultry Outlook*, 2019 production is expected to increase year over year, largely due to expanded slaughter, while the outlook for bird weights is somewhat unclear. Though total average bird weights have been steadily increasing over the years (see chart), average weights among the small (≤ 6.25 lbs) bird and large (>6.25 lbs) bird categories have been on a slight downward trend in recent years. In particular, after several years of consecutive gains, large-bird weights appear to have hit a wall in 2016, which has been mainly related to woody breast issues. Nonetheless, total average bird weights continued to increase due to the growing share of large-bird production (see chart). This trend is expected to continue into 2019, with average bird weights dampened but large-bird production continuing to gain share. Year-to-date preliminary weekly slaughter data indicate that average weights for both small and large birds are lower year over year (about -1 percent and -2 percent, respectively), while the percentage share of large-bird slaughter increased by about 1 percentage point compared to the same period last year. Although the share of large-bird production increased, total average weights for the first 2 months of the year indicate a year-over-year fractional decline. In 2019, any potential gains in total average bird weights will likely depend on the extent to which large-bird production increases.

Average bird weights among weight classes (2009-2018)



Small- and large-bird slaughter as percent share of total slaughter (2009-2018)



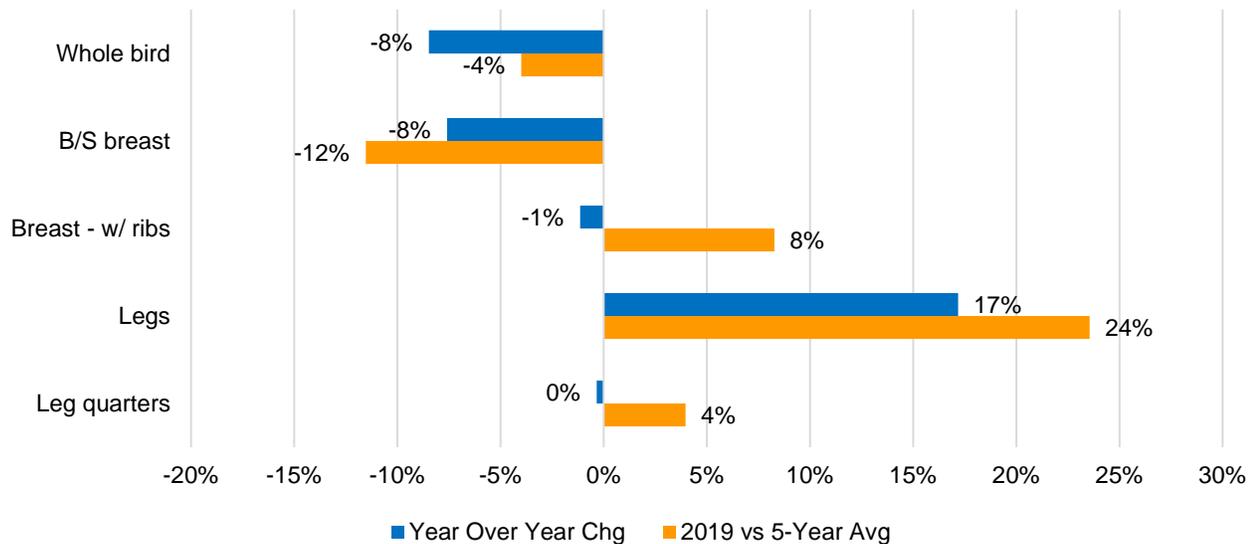
Note: Average weights for small birds (≤ 6.25 lbs) and large birds (> 6.25 lbs) calculated using weighted average of AMS weekly slaughter data. Average weights for all birds from NASS data.
 Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service (NASS) and USDA, Agricultural Marketing Service.

Wholesale Broiler Prices Down Year Over Year

The whole broiler (national composite) price averaged 93.33 cents per pound in March, more than 8 percent lower than last year. While weekly prices are on an upward trend in March—consistent with seasonal patterns—they are running about 4 percent below the 5-year average (see chart). Forecasts for whole bird prices remain unchanged.

With regards to the parts segment in the Northeast, the average price for boneless-skinless breasts in March was 113.96 cents per pound, a year-over-year decrease of nearly 8 percent and about 12 percent lower than the 5-year average. Prices for breasts with ribs averaged 120.11 cents per pound in March, about 1 percent lower than last year, but 8 percent higher than the 5-year average. Leg prices, which averaged 59.34 cents per pound in March, were 17 percent higher year over year and 24 percent higher than the 5-year average. March leg quarter prices averaged 39.17 cents per pound, about equal to last year and 4 percent higher than the 5-year average.

Percent change in wholesale broiler prices (March 2019/2018 and March 2019/5-yr avg)



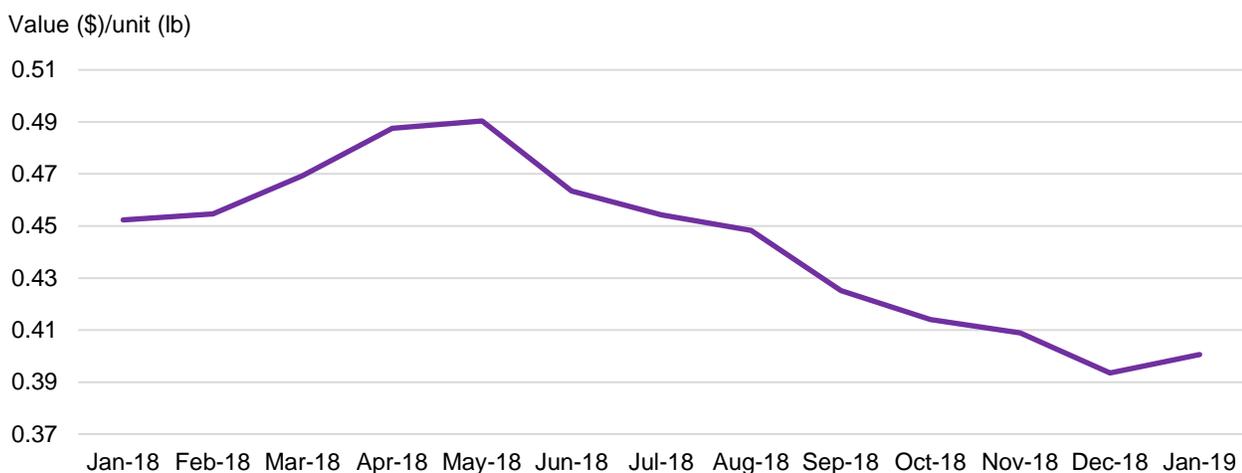
Source: USDA, Economic Research Service calculations using USDA, Agricultural Marketing Service data.

Broiler Trade

Broiler exports totaled 580 million pounds, nearly 6 percent higher than last year. Shipments were up to several key foreign markets, including Mexico (+9 percent), Angola (+18 percent), Taiwan (+1 percent), Cuba (+18 percent), and Vietnam (+26 percent). Conversely, shipments were down to Canada (-11 percent), Guatemala (-0.3 percent), Hong Kong (-11 percent), The Philippines (-25 percent), and South Africa (-45 percent). Forecasts for exports are unchanged.

After more than 8 months of declining unit values, January was the first month in which unit values appeared to be improving (see chart), likely a reflection of strengthening leg prices in the U.S. Nonetheless, unit values continue to be well below year-earlier levels (-11 percent).

Value per unit of broiler exports (\$/lb)



Source: USDA, Economic Research Service calculations using data from U.S. Department of Commerce, Census Bureau.

Table Egg Layer Inventory Continues To Expand; Production Forecasts Increased

February table egg production is estimated at 623 million dozen, a 3.5-percent increase year over year. This growth was comprised of a 1.9-percent increase in the table egg layer flock and a 1.6-percent increase in the table egg lay rate.

Despite a contraction in the December table egg layer inventory⁹, the layer flock continues to expand in the beginning of 2019 (see chart). The table egg lay rate, however, appears to be on a downward trend (see chart), despite having steadily climbed through most of 2018 when high wholesale table egg prices incentivized producers to increase production by expanding and rejuvenating their flocks. Based on revisions to 2018 production levels and expectations for continued expansion of the table egg layer flock, the 2019 forecast for total egg production (table and hatching) was revised up to 9.285 billion dozen, an estimated 1.9-percent increase over 2018.

Average table egg layer inventory

Layers (millions)

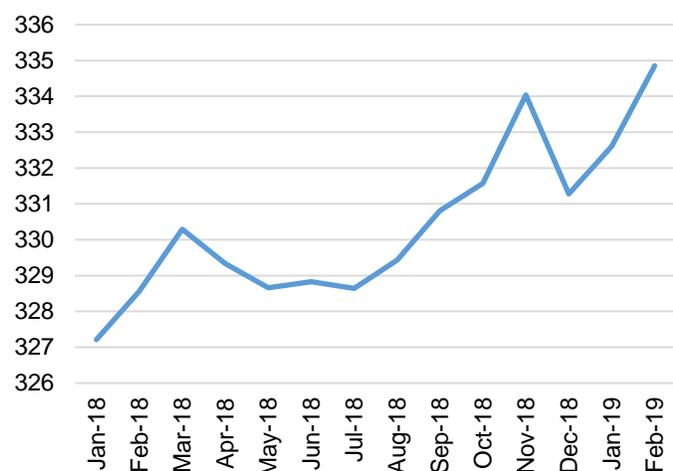
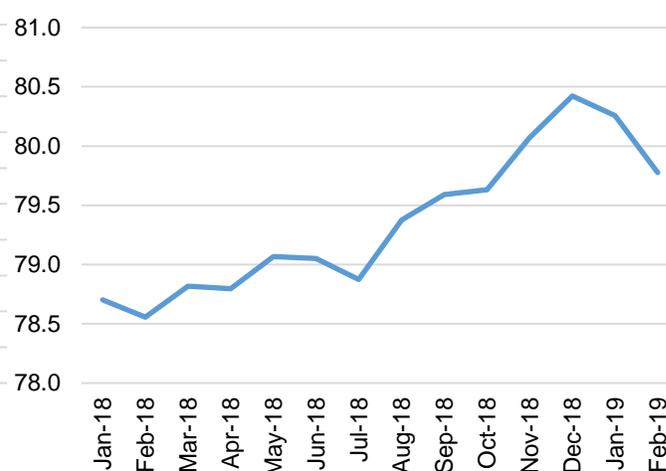


Table eggs per 100 layers per day

Eggs



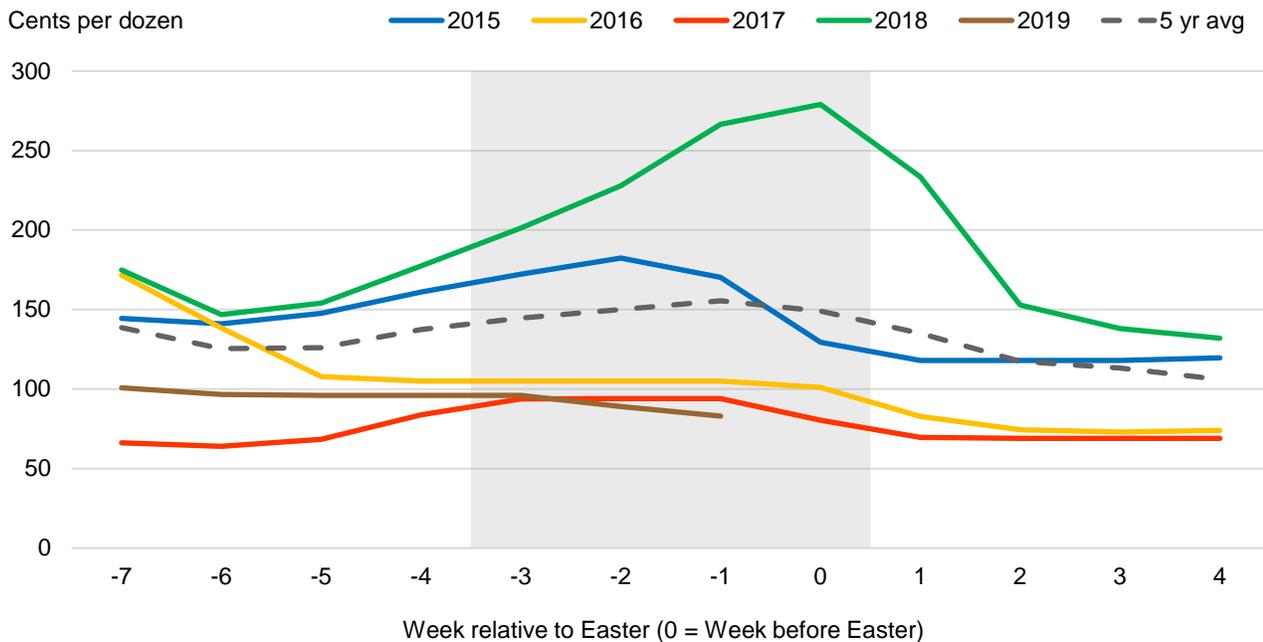
Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service.

Easter Bump for Wholesale Egg Prices Unlikely

Wholesale egg prices (New York, Grade A Large) averaged 96.33 cents per dozen in March, nearly 60 percent lower than last year—when egg prices were extremely high—and 35 percent lower than the 5-year average. As seen in the chart below, wholesale egg prices typically show a bump in the weeks leading up to Easter; however, in 2019, prices were flat in March and have been on a counterseasonal downward trend in the beginning of April. With Easter less than a week away, prices are not likely to stage a significant rally.

⁹ Last month's *Livestock, Dairy and Poultry Outlook* reported that a contraction in the layer inventory took place in January 2019. However, the USDA, National Agricultural Statistics Service revised the Chicken and Egg data, which indicated the contraction took place in December 2018.

Weekly midpoint prices for New York eggs (wholesale, large grade A) in the weeks before and after Easter



Source: USDA, Economic Research Service calculations using data from USDA, Agricultural Marketing Service.

Since the outbreak of Highly Pathogenic Avian Influenza (HPAI) in spring 2015, egg prices have been more volatile and have deviated from typical seasonal patterns observed pre-HPAI. The depressed prices in 2019 thus far can likely be attributed to the expansion in egg production over the past year. As a result, supply has outpaced demand, putting downward pressure on prices. Given expectations for continued production expansion in 2019, and thus for depressed prices, the price forecasts for the outlying quarters were lowered as follows: second quarter to 88-92 cents per dozen, third quarter to 101-109 cents per dozen, and fourth quarter to 115-125 cents per dozen.

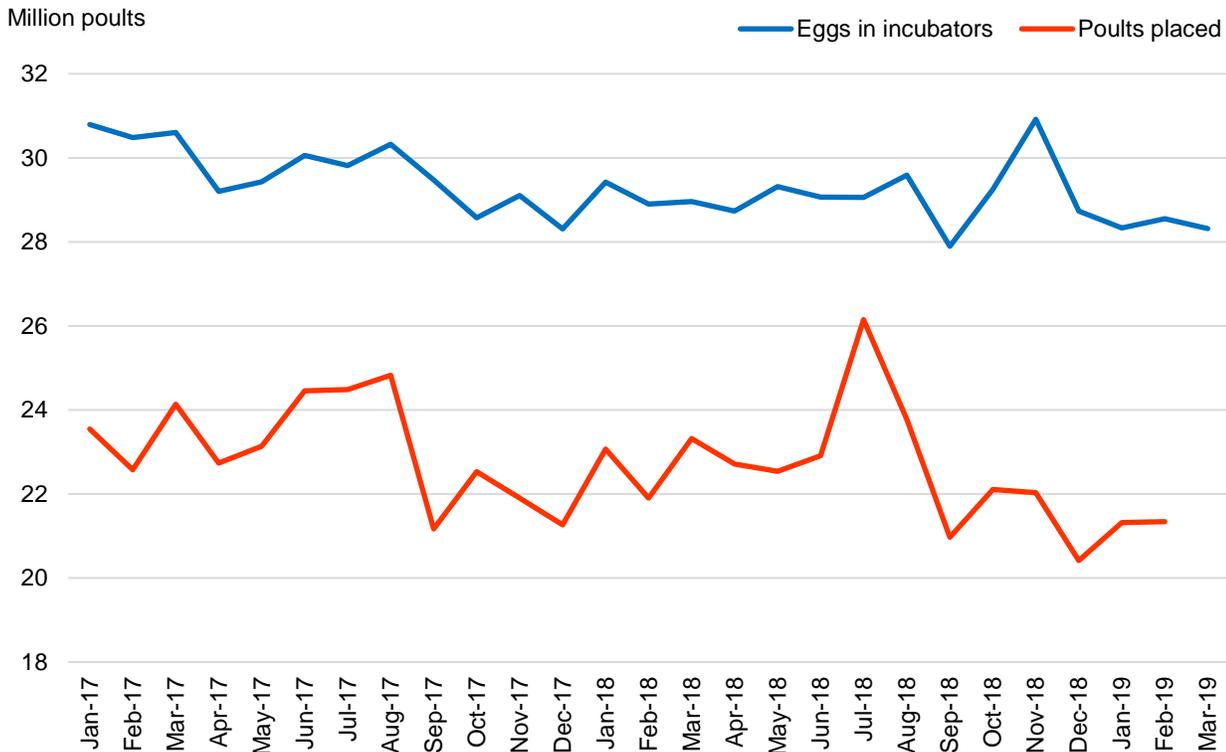
2019 Egg Export Forecast Revised Down

January exports of egg and egg products totaled nearly 23 million dozen (shell egg equivalent), a 20-percent decrease compared to last year. While shell egg exports saw year-over-year gains throughout much of 2018, January shell egg exports decreased by more than 5 percent. This is the second consecutive month in which shell egg export quantities fell below year-earlier levels, signaling a possible slowdown in shell egg export growth. Export volumes of egg products continued an 11-month trend of year-over-year contractions, decreasing by almost 37 percent in January. Based on expectations for lower foreign demand of U.S. eggs and egg products, the 2019 forecast for exports was lowered to 320 million dozen.

Turkey Production Down Slightly in February

February 2019 turkey production totaled 458 million pounds, a half-percent decrease from February 2018. Hatchery report data for February was mixed with a year-over-year decline of 3 percent in poult placements, but a 1-percent increase in poult hatches. Eggs in incubators on the first of the month were down 2 percent on March 1. Hatchery data over the past several months has indicated a lower rate of placements as a share of eggs set in incubators. 2018 turkey production totaled 5.878 billion pounds, 2 percent below 2017. Turkey production for 2019 is increased by 5 million pounds from last month's forecast to 5.86 billion pounds, a half-percent decrease from 2018.

Turkey eggs in incubators and poult placements

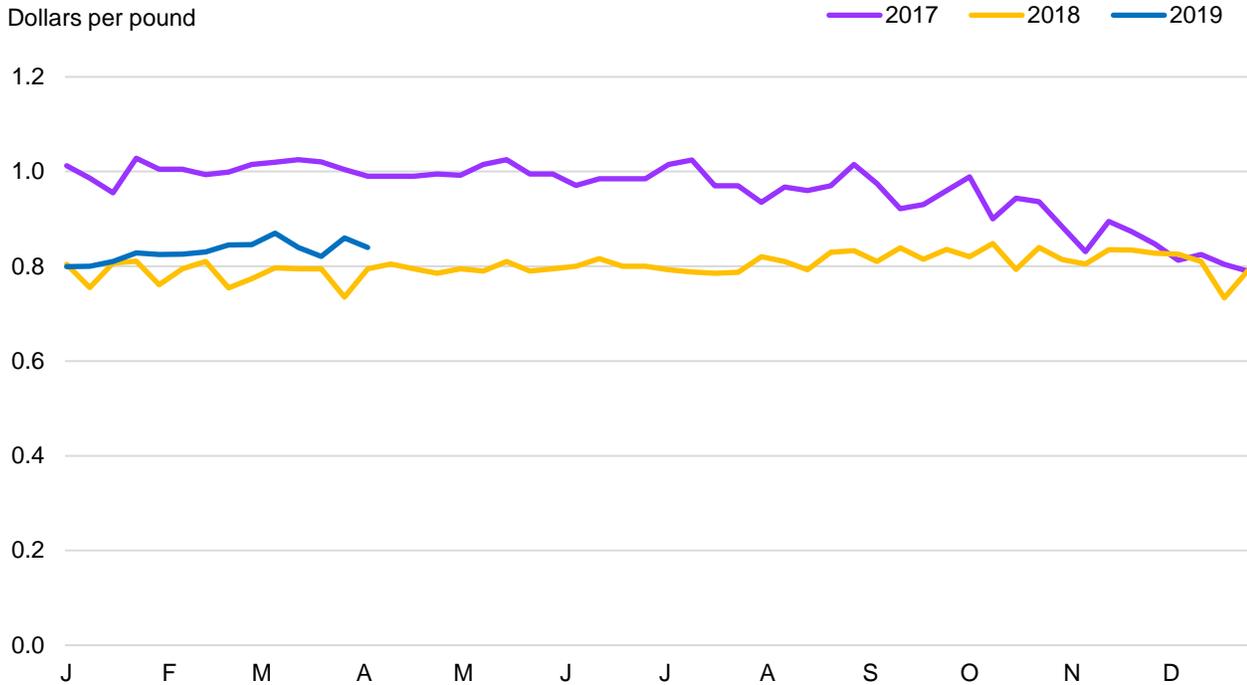


Source: USDA, Economic Research Service using USDA, National Agricultural Statistics Service Turkey Hatchery data.

Whole Turkey Prices Remain Above 2018 Levels

Wholesale whole hen frozen turkey prices were remarkably stable throughout 2018 after their nearly 2-year fall to prices last seen in 2010. The latest price data, covering the week ending April 6, 2019, shows frozen whole hen prices at 84 cents per pound. While still low relative to pre-2018 levels, the price reflects a continuing increase over 2018 and possibly indicates a return to the more seasonal price patterns in the whole turkey market common before 2017. Turkey prices for 2018 averaged \$0.80 per pound for the year, 17 percent below prices for 2017. In 2019, turkey prices are expected to average \$0.85 to \$0.89. The midpoint of the range would be 8 percent higher than 2018.

Wholesale whole hen turkey prices

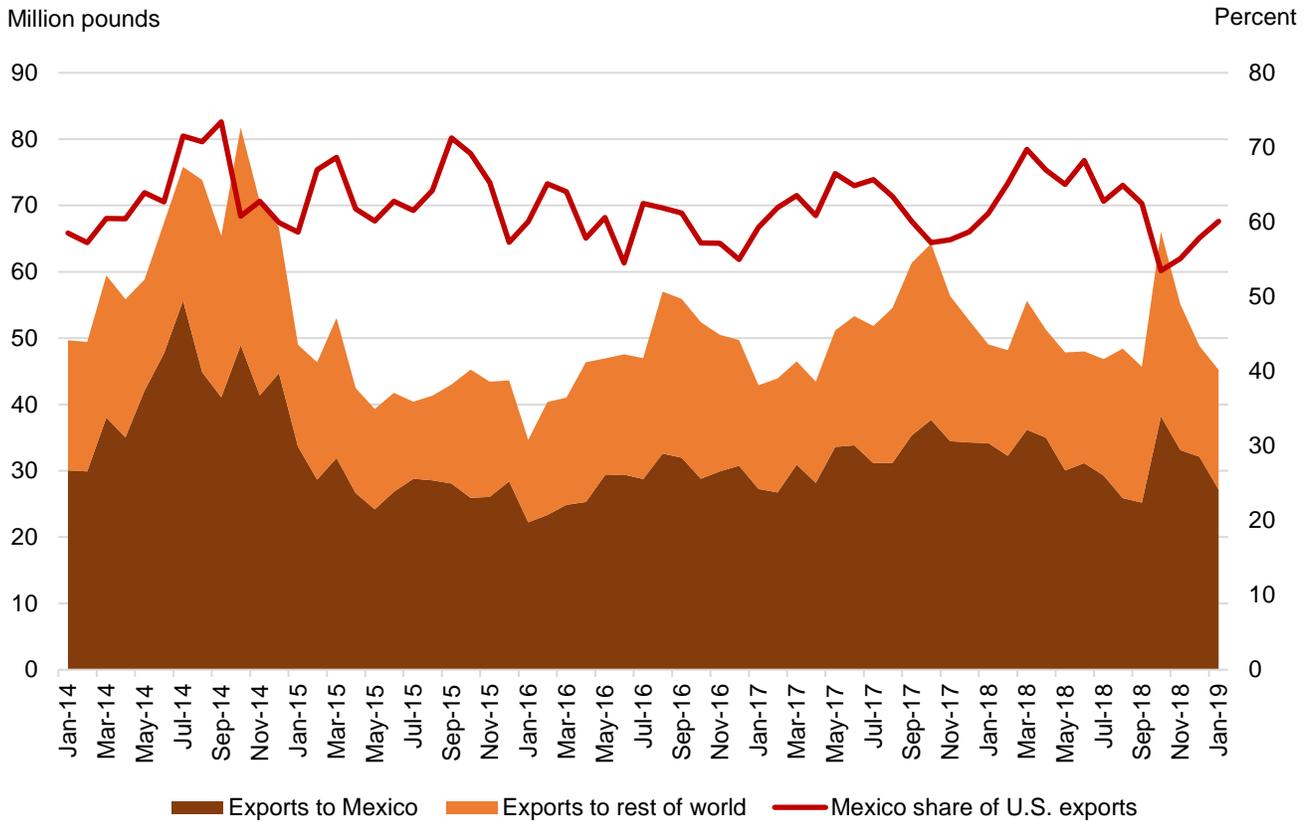


Source: USDA, Economic Research Service using USDA, Agricultural Marketing Service, Turkey Market News Reports data.

Turkey Exports Decrease Again in January

January 2019 turkey exports were 8 percent lower than a year earlier, totaling 45 million pounds. Mexico remains the largest destination for U.S. turkey shipments, with 27 million pounds shipped in December, or 60 percent of all U.S. turkey shipments. However, January shipments to Mexico were down 21 percent from a year earlier. In year-over-year terms, shipments to both Mexico and the World have been down in 8 of the last 9 months. In January, exports as a share of production totaled 9 percent, the lowest monthly level since March 2017. Exports totaled 611 million pounds in 2018, a decrease of 2 percent relative to 2017. In 2019, turkey meat exports are expected to total 610 million pounds, nearly unchanged from the 2018 total.

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



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

Suggested Citation

Livestock, Dairy, and Poultry Outlook, LDP-M-298, U.S. Department of Agriculture, Economic Research Service, April 15, 2019

U.S. red meat and poultry forecasts

	2016					2017					2018					2019				
	I	II	III	IV	Annual	I	II	III	IV	Annual	I	II	III	IV	Annual	I	II	III	IV	Annual
Production, million lb																				
Beef	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	6,859	26,868	6,405	6,810	7,040	7,025	27,280
Pork	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	7,030	26,315	6,835	6,555	6,695	7,240	27,325
Lamb and mutton	38	39	36	37	150	37	36	35	37	145	39	38	37	39	153	39	39	36	37	151
Broilers	10,039	10,253	10,338	10,065	40,696	10,233	10,407	10,551	10,472	41,662	10,385	10,687	10,940	10,588	42,601	10,350	10,810	11,100	10,750	43,010
Turkeys	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	1,518	5,878	1,430	1,450	1,460	1,520	5,860
Total red meat & poultry	23,834	24,119	24,623	25,038	97,614	24,617	24,621	25,197	25,734	100,169	25,128	25,408	25,705	26,188	102,429	25,206	25,822	26,491	26,726	104,245
Table eggs, mil. doz.	1,793	1,827	1,876	1,941	7,437	1,915	1,920	1,938	1,982	7,755	1,940	1,970	2,003	2,039	7,952	2,000	2,010	2,025	2,090	8,125
Per capita disappearance, retail lb 1/																				
Beef	13.6	13.9	14.1	14.0	55.6	14.0	14.2	14.4	14.3	57.0	14.0	14.5	14.4	14.4	57.2	13.7	14.5	14.7	14.6	57.6
Pork	12.6	11.9	12.1	13.5	50.1	12.4	11.8	12.4	13.5	50.2	12.6	12.2	12.4	13.8	50.9	13.0	12.5	12.9	13.9	52.3
Lamb and mutton	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	0.3	1.1
Broilers	22.5	22.7	22.7	21.8	89.8	22.4	22.9	23.2	22.5	91.0	22.7	23.4	23.6	22.8	92.4	22.2	23.4	23.9	23.0	92.6
Turkeys	3.6	3.9	4.2	4.9	16.7	3.7	3.7	4.0	5.0	16.4	3.5	3.8	3.9	4.9	16.2	3.4	3.6	4.0	4.9	16.0
Total red meat & poultry	52.9	53.0	53.7	54.9	214.6	53.2	53.3	54.7	55.9	217.1	53.4	54.5	55.0	56.6	219.5	53.1	54.8	56.2	57.1	221.2
Eggs, number	67.4	66.4	67.4	70.8	272.0	69.0	69.3	70.3	71.3	279.9	69.6	70.3	71.8	72.4	284.1	70.7	70.9	71.6	73.9	287.1
Market prices																				
Choice steers, 5-area Direct, \$/cwt	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	115.32	117.12	125.27	122-126	111-119	109-119	117-122
Feeder steers, Ok City, \$/cwt	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	147.90	146.93	140.76	145-149	146-154	141-151	143-148
Cutter Cows, National L.E., \$/cwt	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	49.07	57.43	53.34	52-56	52-60	43-53	50-55
Choice slaughter lambs, St Joseph, \$/cwt	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	134.30	143.49	136.23	153-157	149-157	132-142	143-148
Nat'l base cost, 51-52 % lean, live equivalent, \$/cwt	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	42.77	45.93	40.67	47-49	47-51	43-47	45-47
Broilers, national composite, cents/lb	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	86.7	97.80	94.0	103-107	92-98	86-94	94-98
Turkeys, national, cents/lb	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	81.4	80.20	82.8	83-87	85-91	89-97	85-89
Eggs, New York, cents/doz.	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	125.6	137.60	107.3	88-92	101-109	115-125	103-108
U.S. trade, million lb, carcass wt. equivalent																				
Beef & veal exports	535	621	660	740	2,557	653	680	746	781	2,860	730	799	826	801	3,156	760	820	840	835	3255
Beef & veal imports	792	831	751	638	3,012	700	812	814	668	2,993	722	805	807	664	2,998	720	810	800	680	3010
Lamb and mutton imports	68	55	41	52	216	80	58	57	57	252	80	66	70	57	273	86	67	62	57	272
Pork exports	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	1,541	5,870	1475	1550	1425	1725	6175
Pork imports	293	257	266	275	1,091	264	281	283	287	1,116	279	270	245	248	1,042	260	250	240	255	1005
Broiler exports	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	1,872	7,068	1780	1750	1805	1810	7145
Turkey exports	116	141	160	153	569	133	148	168	173	622	153	147	141	170	611	150	155	145	160	610
Live swine imports (thousand head)	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	1,286	5,253	1,350	1,360	1,280	1,280	5270

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 4/9/2019

Dairy Forecasts

	2017	2018					2019				
	Annual	I	II	III	IV	Annual	I	II	III	IV	Annual
Milk cows (thousands)	9,406	9,435	9,418	9,383	9,359	9,399	9,360	9,355	9,360	9,365	9,360
Milk per cow (pounds)	22,914	5,766	5,928	5,752	5,703	23,149	5,840	6,020	5,810	5,785	23,455
Milk production (billion pounds)	215.5	54.4	55.8	54.0	53.4	217.6	54.7	56.3	54.4	54.2	219.5
Farm use	1.0	0.2	0.2	0.2	0.2	1.0	0.2	0.2	0.2	0.2	1.0
Milk marketings	214.5	54.2	55.6	53.7	53.1	216.6	54.4	56.1	54.1	53.9	218.6
Milk-fat (billion pounds milk equiv.)											
Milk marketings	214.5	54.2	55.6	53.7	53.1	216.6	54.4	56.1	54.1	53.9	218.6
Beginning commercial stocks	12.7	13.4	16.4	19.1	17.3	13.4	13.9	16.1	18.5	16.5	13.9
Imports	6.0	1.2	1.6	1.7	1.8	6.3	1.4	1.5	1.7	2.0	6.5
Total supply	233.2	68.8	73.5	74.5	72.2	236.4	69.7	73.6	74.3	72.4	239.0
Commercial exports	9.2	2.4	3.0	2.6	2.4	10.5	2.2	2.7	2.6	2.4	9.8
Ending commercial stocks	13.4	16.4	19.1	17.3	13.9	13.9	16.1	18.5	16.5	13.4	13.4
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	210.6	50.1	51.5	54.6	55.9	212.0	51.4	52.4	55.2	56.6	215.6
Skim solids (billion pounds milk equiv.)											
Milk marketings	214.5	54.2	55.6	53.7	53.1	216.6	54.4	56.1	54.1	53.9	218.6
Beginning commercial stocks	9.5	11.8	11.4	11.5	10.5	11.8	10.5	11.3	11.9	11.0	10.5
Imports	6.1	1.4	1.4	1.3	1.4	5.5	1.4	1.2	1.3	1.4	5.3
Total supply	230.1	67.4	68.4	66.5	65.1	233.8	66.3	68.6	67.3	66.3	234.3
Commercial exports	40.7	11.5	12.5	10.9	9.7	44.6	9.7	11.2	10.6	10.7	42.2
Ending commercial stocks	11.8	11.4	11.5	10.5	10.5	10.5	11.3	11.9	11.0	10.4	10.4
Commodity Credit Corporation donations	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Domestic commercial use	177.6	44.4	44.4	45.1	44.9	178.8	45.2	45.4	45.6	45.2	181.5
Milk prices (dollars/cwt) ¹											
All milk	17.65	15.67	16.10	16.00	16.93	16.18	16.95	17.20	17.20	17.60	17.25
								-17.60	-17.90	-18.60	-17.75
Class III	16.17	13.87	14.95	15.05	14.58	14.61	14.30	15.55	15.60	14.90	15.10
								-15.95	-16.30	-15.90	-15.60
Class IV	15.16	13.01	14.32	14.53	15.05	14.23	15.68	15.65	15.90	15.70	15.75
								-16.15	-16.70	-16.80	-16.35
Product prices (dollars/pound) ²											
Cheddar cheese	1.634	1.515	1.608	1.565	1.463	1.538	1.440	1.605	1.615	1.550	1.555
								-1.645	-1.685	-1.650	-1.605
Dry whey	0.444	0.260	0.280	0.369	0.459	0.342	0.449	0.380	0.365	0.355	0.380
								-0.400	-0.395	-0.385	-0.410
Butter	2.330	2.161	2.320	2.284	2.264	2.257	2.258	2.260	2.280	2.235	2.255
								-2.330	-2.380	-2.365	-2.335
Nonfat dry milk	0.867	0.700	0.774	0.816	0.887	0.795	0.963	0.950	0.970	0.975	0.965
								-0.990	-1.030	-1.045	-1.005

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 USDA, Agricultural Marketing Service, for use in class price formulas.

Based on weekly USDA, *National Dairy Products Sales Report*.

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

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Animal Production and Marketing Issues, <https://www.ers.usda.gov/topics/animal-products/animal-production-marketing-issues/>

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