

Economic Research Service | Situation and Outlook Report

LDP-M-350 | August 17, 2023

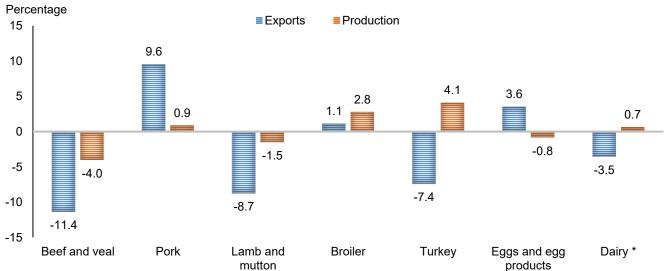
Next release is September 18, 2023

Livestock, Dairy, and Poultry Outlook: August 2023

First-Half 2023 Year-Over-Year Changes in Animal Product Export Volumes Reflect Industry-Specific Conditions

A mid-year comparison of January to June export volumes for 2023 to the same period last year shows a wide range of increases and reductions across the selected animal products: beef and veal (-11.4 percent), pork (+9.6 percent), lamb and mutton (-8.7 percent), broiler (+1.1 percent), turkey (-7.4 percent), eggs and egg products (+3.6 percent), and dairy (-3.5 percent). Although dollar depreciation was favorable to higher exports, there are industry-specific factors that either enhanced or offset this impact. Beef and veal shipments were lower due to lower production and higher domestic prices, as drought conditions in the major U.S. cattle production regions since late 2020 negatively impacted the cattle supply. Shipments of pork were higher due to modest increases in domestic production, competitive pork prices, and reduced production in the European Union—a major global pork producer. Shipments of broilers were higher due to increased domestic production and strong international demand. Shipments of turkey, despite higher production, were lower, likely due to export restrictions related to Highly Pathogenic Avian Influenza. Shipments of eggs and egg products were higher due to lower domestic prices and strength in international demand. On a skim-solids, milk equivalent basis dairy shipments were lower, largely due to weakness in demand for skim milk powder and dry whey from a number of overseas importers, notably China and other Southeast Asian markets.

Year-over-year percent changes in export volumes and commercial production: January to June 2022–23



*Percent change for dairy exports is on a skim-solids milk equivalent basis, while production change is for milk production. Source: USDA Economic Research Service calculations using data from USDA, World Agricultural Outlook Board, World Agricultural Supply and Demand Estimates.

Summary

Beef/Cattle: Second-half 2023 production is forecast to decline 180 million pounds from last month on a slower pace of fed cattle marketings, which is only partially offset by higher expected cow slaughter. This resulted in a temporal shift of marketings from late 2023 to 2024. Higher projected placements in late 2023 and early 2024 raises anticipated marketings next year. Projected 2024 production is increased 465 million pounds based on the shift in marketings from 2023 to 2024 and an increase in placements. The cattle price forecasts for 2023 and 2024 are adjusted mainly on current price strength. Based on June trade data, beef imports are lowered on second-quarter data, but the outlook for imports and exports is unchanged.

Sheep/Lamb: Forecasts for imports and exports of lamb and mutton have been lowered in this report. Continued-high reported lamb prices led to increases in lamb-price forecasts.

Dairy: For 2023 and 2024, farm milk production forecasts have been reduced to 227.9 billion and 230.5 billion pounds, respectively, from last month's projections. Based on a lower projected milk supply and recent strength in some dairy product wholesale prices, the all-milk price forecast for 2023 and 2024 has been increased from last month. The all-milk price forecast for 2023 is \$19.95 per hundredweight (cwt), \$0.40 higher than last month's forecast. For 2024, all-milk price is forecast at \$19.35 per cwt, \$0.25 higher than last month.

Pork/Hogs: July pork production increased about 2 percent year over year on 3.2 percent higher slaughter numbers. Production was mitigated by continued-lower average dressed weights. The July wholesale carcass cutout continued a value surge that began in June. Improved wholesale prices combined with lower hog prices to widen packer spreads in July. Net sow and boar slaughter as a proportion of federally inspected weekly hog slaughter has risen above year-earlier and 5-year-average levels since early May, perhaps signaling a contraction of U.S. breeding inventories, given extended low industry returns. U.S. pork exports for June were up 10 percent compared with a year ago. Second-quarter 2023 exports, at 1.78 billion pounds, were almost 11 percent above a year ago. In several highly competitive foreign markets—most of them in Asia—U.S. pork is gaining shares where high-priced European pork is less competitive. Total 2023 exports are expected to be 6.9 billion pounds, more than 9 percent higher than a year ago. Total 2024 exports are forecast at slightly less than 7 billion pounds, about 1 percent higher than expected exports this year.

Poultry and Eggs: Projected broiler production is adjusted down in 2023 and 2024, reflecting recent production data, decreasing prices, and expectations of a retrenchment in the sector. Broiler export projections are decreased, while imports are increased on strong shipments from Chile. Broiler prices are adjusted down on recent data. The table egg production projections for 2023 and 2024 are revised downward based on recent pullet-placement and egg-type hatchery data. The 2023 and 2024 projections for the wholesale egg prices (New York, large, Grade A) are unchanged from last month based on recent price movements and on-hand inventory data. Expectations for both egg and egg product exports and imports are adjusted down slightly in 2023 on recent data. Turkey production is adjusted up on strong recent production and hatchery data, as are exports. Turkey prices are adjusted down in this year and next on expectations for increased production and persistent price declines in recent weeks.

Beef/Cattle

Russell Knight and Hannah Taylor

Cattle Report Supports Downward Trend in Cattle Supplies

On July 21, the USDA, National Agricultural Statistics Service (NASS) released its biannual *Cattle* report. According to the report, on July 1, 2023, all cattle and calves were estimated at 95.9 million head, down 2.7 million head, or nearly 3 percent, from July 2022. The largest decline by class was beef cows, which were down 800,000 head from a year earlier. The dairy cow herd size remained unchanged.

The total number of heifers decreased 600,000 head, or 3.8 percent. The largest percentage decline by heifer class was in the number of "other heifers" over 500 pounds not retained for replacement. The number of steers weighing more than 500 pounds dropped by 500,000 head. The inventory of bulls weighing 500 pounds and over fell by just 100,000 head.

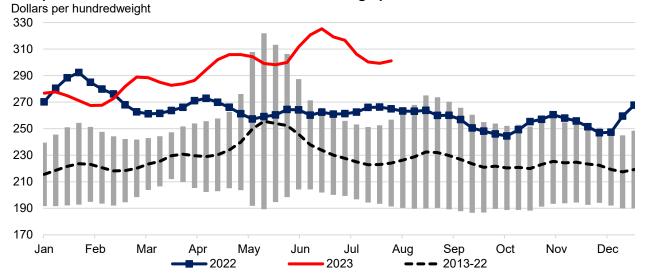
The 2023 calf crop is estimated at 33.8 million head, a decline of nearly 2 percent from last year and larger than expected. However, the year-over-year calf crop decline implies a small pool of calves for either retention or placement in feedlots in 2024. Based on the current pace of placements and the larger-than-expected size of the 2023 calf crop, the projections for feedlot placements for late-2023 and early-2024 are raised.

Fed Cattle Slaughter Pace Slows, Lowering 2023 Production

The outlook for 2023 beef production is lowered from last month by 180 million pounds to 27.0 billion pounds. This reflects a slower-than- expected pace of fed cattle slaughter that is projected through the end of the year. Average carcass weights were slightly lowered on recent slaughter data. The downward pressure on the forecast was partially offset by higher anticipated cow slaughter in the second half.

The chart below shows that wholesale beef values have retrenched from their strong upward trend in the first half of the year. During that time, fed steer prices showed similar strength, but did not pull back to the same degree as wholesale prices in the third quarter. This move for beef prices is not atypical, but fed steer prices historically decline through September, the time of year when most fed cattle are marketed for slaughter. Steady cattle prices but lower wholesale prices have the effect of lowering packer margins. In turn, packers appear be slowing the pace of slaughter to bolster wholesale beef prices.

Comprehensive beef cutout values break from strong uptrend in first half



Note: Error bars represent one standard deviation.
Source: USDA, Economic Research Service calculations using data from USDA, Agricultural Marketing Service.

Packers' initiative to slow the pace of slaughter coincides with two of the three largest cattle feeding States, Texas and Nebraska, holding 14 and 19 percent fewer cattle on feed over 150 days as of July 1 than a year ago—that is, these feedlots have fewer market-ready cattle available than at the same time last year. Further, the historically high choice-select spread in July and August suggests a potential incentive to keep cattle on feed longer.

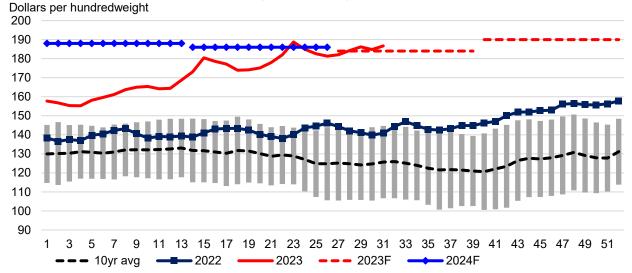
Beef production for 2024 is projected higher than last month by 465 million pounds to 25.2 billion pounds. The large increase over last month's forecast is largely based on an increase in projected fed cattle marketings, for which there is a twofold explanation. First, a higher-than-expected calf crop estimate raised anticipated placements in late 2023 and early 2024. Second, a slower anticipated pace of marketings in second-half 2023 shifted more marketings into 2024. There was also a slight upward adjustment to cow slaughter in the first half of 2024.

Cattle Prices Projected Higher From Last Month

In July, the weighted-average price for feeder steers weighing 750–800 pounds at the Oklahoma City National Stockyards was \$244.22 per hundredweight (cwt). This was a \$13 increase from June and nearly \$75 higher than July 2022. In the sale on July 31, feeder steers set a record at \$248.14 per cwt, and prices remained steady into the first week of August. Accounting for recent price strength, the third-quarter price forecast for feeder steers is raised \$9 to \$250 per cwt, and fourth quarter is raised \$9 to \$255 per cwt. Further, the 2024 forecast is raised \$3 to \$253 per cwt. In first-half 2023, weekly boxed beef values and fed steer prices in the in the 5-area marketing region¹ followed a similarly strong trajectory over the period. However, as noted, boxed beef values retracted further than fed steer prices from the highs established in mid-June. Consequently, packer margins tightened and likely encouraged slowing production.

¹ The 5-area marketing region includes Texas/Oklahoma/New Mexico; Kansas; Nebraska; Colorado; and Iowa/Minnesota.





Note: Error bars represent one standard deviation.

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

The July average price for fed steers in the 5-area marketing region was \$184.25 per cwt, nearly flat from the record set in June and \$42 higher year over year. Based on recent price data and expectations that market-ready supplies will continue to tighten despite a slower slaughter pace, the third-quarter 2023 fed steer price forecast is raised \$6 to \$184 per cwt, and the fourth quarter is raised \$7 to \$190 per cwt. The forecast for 2024 is raised \$2 to \$186 per cwt.

Beef Exports Down in the First Half of the Year

U.S. beef exports in June totaled 270 million pounds, 14 percent lower year over year but 2 percent higher than the 5-year average. Exports to Mexico and Taiwan were particularly strong, nearly 25 and 26 percent higher year over year, respectively. Monthly exports to Canada and Hong Kong were also higher than a year ago. However, exports to the top three markets (South Korea, Japan, and China) were down by a combined 42 million pounds, pulling total monthly exports lower than a year ago.

June exports brought the second-quarter total to 805 million pounds. This was a year-over-year decrease of 15 percent compared to last year's record second quarter. Exports to Taiwan were the highest on record for the quarter, about 1 percent up year over year. Quarterly exports to Canada were up nearly 9 percent, and exports to Mexico were up 7 percent year over year. Exports to Japan were down nearly 31 percent year over year for the second quarter.

The table below shows the exports to the top six markets for the first half of the year. Cumulative exports were down 11 percent so far this year, with lower year-over-year exports to all major markets except Mexico. The largest declines have been to the top three Asian markets with Japan down 16 percent, China down 14 percent and South Korea down 13 percent. Exports to smaller markets not in the top six were down a combined 16 percent.

U.S. beef exports by volume, January-June 2022 and 2023

| | _ | | Ye | ar-to-date expor | ts | Share of YTD exports, | | | | |
|-------------|-------------------|--------|--------|------------------------------|-------------------------------|-----------------------|-------------|--------------------------|--|--|
| Country | June 2023 exports | 2022 | 2023 | Year-over-year volume change | Year-over-year percent change | perc 2022 | ent 2023 | | | |
| South Korea | 57.3 | 421.1 | 365.3 | -55.8 | -13 | 24 | 23 | | | |
| Japan | 54.7 | 407.5 | 341.0 | -66.6 | -16 | 24 | 23 | | | |
| China | 47.9 | 310.3 | 267.5 | -42.7 | -14 | 23 | 22 | ■ South Korea ■ Japan | | |
| Mexico | 25.1 | 131.7 | 148.2 | 16.5 | 13 | | | ■ China ■ Mexico | | |
| Canada | 25.8 | 135.8 | 134.2 | -1.6 | -1 | 17 | 17 | Canada Taiwan | | |
| Taiwan | 22.5 | 114.6 | 104.3 | -10.3 | -9 | 7 | 9 | ROW | | |
| ROW | 36.6 | 265.4 | 223.1 | -42.3 | -16 | 6 | 8 | | | |
| Total | 269.9 | 1786.5 | 1583.6 | -202.8 | -11 | 15 | 14 | | | |

Note: The rating of the top six countries shown here is based on 2023 year-to-date exports; YTD = year-to-date; ROW = rest of world.

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

The total value of trade for the first half of the year was almost \$4.7 billion. This was a 19-percent decrease from the same period last year. The chart below shows how first-half exports compare to previous years by volume and value. The total value of exports in the first half of the year was still the second-highest on record. The average unit value of exports was down about 30 cents from last year. Exchange rates have tempered slightly from last year; the Nominal Broad Dollar Index² has come down from the peak in October 2022 and remained relatively flat through the first 6 months of 2023. Wholesale beef prices in the United States remain strong, and foreign buyers will be looking at higher prices and lower availability of U.S. beef going forward.

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²The Nominal Broad Dollar Index is a weighted average of the foreign exchange value of the U.S. dollar against the currencies of a broad group of major U.S. trading partners. Source: Board of Governors of the Federal Reserve System. Foreign Exchange Rates-H.10.

Volume, million Value. million dollars pounds 6,000 3,000 5,000 2,500 2,000 4,000 1,500 3,000 1,000 2.000 500 1,000 0 0 2015 2016 2017 2018 2019 2020 2021 2022 2023 Volume Value

First-half U.S. beef exports by volume and value

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

The forecasts for 2023 third and fourth quarters remain unchanged from last month at 840 and 790 million pounds, respectively. The annual forecast for 2023 is 3.214 billion pounds. Following an increase in expected beef production next year, the annual export forecast for 2024 is raised 20 million pounds to 2.970 billion.

Beef Import Forecasts Unchanged From Last Month

U.S. beef imports in June totaled 295 million pounds, bringing the second-quarter total to 901 million. Second-quarter imports were about 5 percent higher than the same period last year, aided by increased imports from Australia (+38 percent) and New Zealand (+34 percent). These higher imports from Oceania more than offset lower imports from North America and Brazil.

Imports in the first half of 2023 totaled nearly 1.9 billion pounds, as the chart below shows. First-half imports were about 1 percent above a year ago. Cumulative imports from Australia have increased 26 percent from the same period last year. Australia's exports to the world are up 20 percent year over year as higher production has provided more exportable supplies.

U.S. beef imports by volume, January-June 2022 and 2023

| | | | , | Year-to-date impo | rts | _Share of YTD imports, | | , |
|-------------|-----------|--------|--------|-------------------|----------------|------------------------|------|--|
| Country | June 2023 | | | Year-over-year | Year-over-year | perc | ent | |
| | imports | 2022 | 2023 | volume change | percent change | 2022 | 2023 | |
| Canada | 73.5 | 463.0 | 469.5 | 6.5 | 1 | 25 | 25 | |
| Mexico | 58.7 | 390.6 | 347.5 | -43.1 | -11 | 20 | | |
| Brazil | 26.7 | 337.6 | 301.8 | -35.8 | -11 | 21 | 19 | CanadaMexico |
| New Zealand | 53.3 | 243.6 | 277.6 | 34.0 | 14 | 18 | 16 | BrazilNew Zealand |
| Australia | 42.8 | 194.1 | 244.8 | 50.8 | 26 | | 15 | AustraliaROW |
| ROW | 40.3 | 214.5 | 216.5 | 2.1 | 1 | 13 | 13 | |
| Total | 295.3 | 1843.4 | 1857.8 | 14.4 | 1 | 12 | 12 | |

Note: The rating of the top five countries shown here is based on 2023 year-to-date imports; YTD = year-to-date; ROW = rest of world

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

Imports as a percent of total disappearance (production + net trade + net stocks) for the first half of the year were about 13.3 percent, slightly higher than the same period last year. Imports for the full year are expected to be 12.8 percent of total disappearance, compared to an average of 11.7 percent from 2018–22. That percentage is expected to increase to about 13.8 percent in 2024 as domestic production declines and imports increase. The forecasts for third and fourth quarter 2023 remain unchanged from last month at 890 and 765 million pounds, respectively. The annual forecast for 2023 is 3.512 billion pounds, and the forecast for 2024 is 3.560 billion pounds.

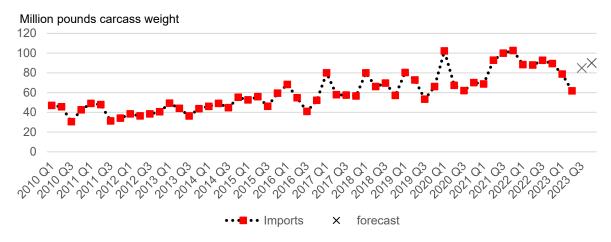
Lamb/Sheep

William Hahn

Mutton and Lamb Trade for Second Quarter of 2023 Lower Than Expected

Second-quarter 2023 livestock and meat trade data were released earlier this month. The July issue of this report forecast that second-quarter 2023 imports would be 65 million pounds; the reported imports for the quarter were 61.7 million pounds. July's forecast second-quarter exports were 1.4 million pounds, reported exports were slightly over 1 million pounds. The two figures below show actual quarterly imports and exports since 2010.

Quarterly lamb and mutton imports since 2010 with forecasts for the last two quarters of 2023



Source: USDA, Economic Research Service livestock international data and World Agricultural Outlook Board forecasts.

Given the lower-than-expected trade numbers, both import and export forecasts were lowered from last month's report. For imports, only the third-quarter 2023 forecasts were lowered, down from 85 to 75 million pounds. Export forecasts this month are generally below those for the July report. The third- and fourth-quarter 2023 export forecasts were 1.4 million pounds in July; both are now 1.2 million pounds. The total export forecast for 2024 is 1 million pounds lower this month. The July forecast for 2024 was 6 million pounds; this month's forecast is 5 million pounds.

Quarterly lamb and mutton since 2010, with forecasts for Q3 and Q4 of 2023



Source: USDA, Economic Research Service livestock internaional data and USDA, World Agricultural Outlook Board forecasts.

Substantial changes were made to the lamb price forecasts, as the chart above shows. May 2023's second-quarter lamb price forecast was 143 dollars per hundredweight (cwt). The second-quarter starts in April, and prices for lambs have been higher than 143 dollars per cwt since the beginning of that month. It is common for lamb prices to decline somewhat toward the end of the second quarter, but prices have been relatively stable throughout April and May. Given these stronger prices to date this quarter, the second-quarter 2023 price forecast is now 155 dollars per cwt. Price forecasts for third- and fourth-quarters 2023 and first-quarter 2024 have been raised to 150 dollars per cwt.

Continued-High Lamb Prices

Lamb prices have generally increased since the start of this year. In the early part of 2023, prices were around 133 dollars per cwt; prices were over 190 dollars per cwt in late July and early August. August price forecasts are higher than the July forecasts: the third-quarter 2023 forecast has been increased from 155 to 180 dollars per cwt, and the fourth-quarter 2023 forecast has been increased from 155 to 175 dollars per cwt. The August forecast for the annual average 2024 price is 10 dollars per cwt higher; July's forecast was \$146.25 and the current forecast is \$156.25 per cwt.

Lamb prices by week, January to early August 2023



*cwt = hundredweight.

Source: USDA, Agricultural Marketing Service data.

Dairy

Angel Terán

Recent Developments in U.S. Dairy Product Wholesale Prices

From the week ending July 8 to the week ending August 5, 2023, wholesale dairy product price trends reported in the USDA *National Dairy Products Sales Report* (NDPSR) were mixed. The price per pound for 40-pound blocks of Cheddar cheese increased 27.48 cents, while for 500-pound Cheddar cheese barrels (adjusted to 38-percent moisture) it rose by 15.94 cents. The price for butter increased by 17.57 cents. Meanwhile, the prices for nonfat dry milk (NDM) and dry whey fell by 3.90 cents and 2.88 cents, respectively.

Dairy products wholesale prices

Dollars per pound

| | For the v | veek ending | |
|---------------------|-----------|-------------|---------|
| | July 8 | August 5 | Change |
| Butter | 2.4594 | 2.6351 | 0.1757 |
| Cheddar cheese | | | |
| 40-pound blocks | 1.4293 | 1.7041 | 0.2748 |
| 500-pound barrels * | 1.4950 | 1.6544 | 0.1594 |
| Nonfat dry milk | 1.1797 | 1.1407 | -0.0390 |
| Dry whey | 0.2757 | 0.2469 | -0.0288 |

^{*} Adjusted to 38-percent moisture.

Source: USDA, Agricultural Marketing Service, National Dairy Products Sales Report, August 9, 2023.

For the trading week³ ending August 11 at the Chicago Mercantile Exchange (CME), the average spot prices for Cheddar cheese 500-pound barrels and 40-pound blocks averaged \$1.8055 and \$1.9705 per pound, respectively. CME spot prices for NDM, butter, and dry whey averaged \$1.1200, \$2.6690, and \$0.2730 per pound, respectively.

According to the USDA *Dairy Market News* (DMN), most dairy product export prices for Oceania and Europe declined from June to July 2023. For Oceania, the DMN sources report increased milk supplies and weaker demand from China since the beginning of the year. Meanwhile, cooler temperatures have promoted milk production growth in Northern Europe, but elevated temperatures in July have stymied milk production.

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³ While the end of each week for National Dairy Products Report average prices falls on a Saturday, the trading week for the Chicago Mercantile Exchange usually ends on a Friday.

Dairy product export prices for Oceania and Europe

Dollars per pound

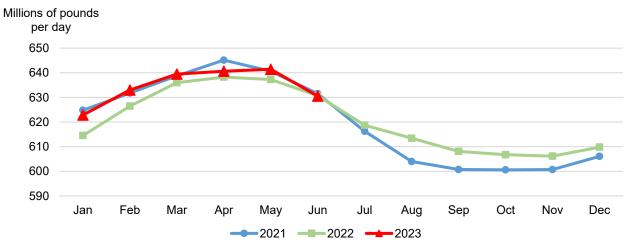
| Product | Region | June 2023 | July 2023 | Change |
|------------------|----------------|--------------|--------------|--------|
| Butter | Oceania | 2.383 | 2.221 | -0.162 |
| | Western Europe | 2.367 | 2.319 | -0.048 |
| Cheddar cheese | Oceania | 2.148 | 1.890 | -0.258 |
| Skim milk powder | Oceania | 1.252 | 1.173 | -0.079 |
| | Western Europe | 1.220 | 1.181 | -0.039 |
| Dry whey | Western Europe | 0.371 | 0.348 | -0.023 |

Sources: USDA, Economic Research Service calculation using information from USDA, Agricultural Marketing Service, *Dairy Market News*.

Recent Dairy Supply and Use Data

According to the USDA's National Agricultural Statistics Service (NASS), milk production in the United States totaled 18.916 billion pounds (631 million per day) in June 2023, unchanged from June 2022. Milk cows on farms averaged 9.408 million head in June, down 5,000 head from June 2022. The average milk production per cow was 2,011 pounds in June 2023, up only 1 pound from June 2022.

U.S. raw milk production

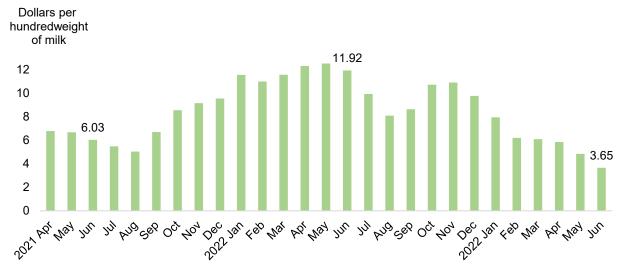


Source: USDA, National Agricultural Statistics Service.

According to the recent NASS *Cattle* report, milk replacement heifers numbered 3.65 million head as of July 1, 2023; this was 100,000 head lower than July 1, 2022. As reported by NASS in the most recent monthly *Agricultural Prices* report, the all-milk price in June 2023 averaged \$17.90 per hundredweight (cwt), down \$8.80 from June 2022. The June 2023 corn price was \$6.49 per bushel, down \$0.89 from June 2022. The price for alfalfa hay was \$263 per short ton, up \$18 from June 2022. The soybean meal price (reported by USDA, Agricultural Marketing Service) was \$413.46 per short ton in June, down \$32.47 from June 2022. The milk-feed price

ratio reported by NASS was 1.36 in June, down 0.56 points from June 2022. The farm milk margin above feed costs, as calculated for the Dairy Margin Coverage program, declined to \$3.65 in June, \$8.27 lower than June 2022 and the lowest dairy farm margin so far in 2023.

Milk margin above feeding costs



Source: USDA, Economic Research Service using information from USDA, Farm Service Agency, Dairy Margin Coverage Program.

Dairy export volumes declined in the second quarter of 2023 (2023-Q2) compared to the same quarter a year ago. In 2023-Q2, dairy exports on a milk-equivalent skim-solids basis totaled 12.9 billion pounds, 1.6 billion pounds lower than 2022-Q2. Meanwhile, on a milk-equivalent milk-fat basis, dairy exports totaled 2.7 billion pounds in 2023-Q2, 1.0 billion pounds lower than 2022-Q2. Most dairy product export volumes declined, including cheese, butter, and dry skim milk products, among others. Weaker demand from international markets such as China and Southern Asia and increased competition from New Zealand and Europe have taken a toll on U.S dairy exports.

Exports of milk and major dairy products for the second quarter of 2022 and 2023

| Exports of filling and major daily p | nouucis ioi | tile secolla qu | arter or 2022 | and 2023 | |
|--------------------------------------|-------------------|---------------------------|---------------------------|----------|-------------------|
| Product | Units | 2022 second quarter | 2023 second quarter | Change | Percent change |
| Milk in all products | | | | | |
| Milk-fat basis | Billion pounds | 3.7 | 2.7 | -1.0 | -27.8 |
| Skim-solids basis | pourius | 14.4 | 12.9 | -1.6 | -11.0 |
| Dairy products | | | | | |
| Cheese | | 278.7 | 232.4 | -46.3 | -16.6 |
| Butter | | 31.6 | 16.0 | -15.7 | -49.6 |
| Dry skim milk products | Million pounds | 494.4 | 474.7 | -19.7 | -4.0 |
| Dry whey | pourius | 115.1 | 96.9 | -18.2 | -15.8 |
| Whey protein concentrate | | 103.5 | 83.0 | -20.5 | -19.8 |
| Lactose | | 260.5 | 245.9 | -14.6 | -5.6 |

Sources: USDA, Economic Research Service (ERS) calculations using information from USDA, National Agricultural Statistics Service; USDA, Foreign Agricultural Service; and U.S. Dept. of Commerce, Bureau of the Census. Numerous sources were used for conversion factors. For more information, see the ERS Dairy Data Documentation webpage.

Imports of dairy products decreased in 2023-Q2 from 2022-Q2, meaning that there was less competition for U.S. dairy products in the domestic market. In 2023-Q2, imports on a milk-fat basis totaled 1.8 billion pounds, 160 million lower than 2022-Q2. On a skim-solids basis, 2023-Q2 imports were 1.4 million pounds, 226 million below 2022-Q2.

In 2023-Q2, domestic use on a milk-fat basis totaled 54.9 billion pounds, 2.2 percent higher than 2022-Q2, while on a skim-solids basis domestic use was 46.2 billion pounds, an increase of 4.3 percent. In 2023-Q2, domestic use of American-type cheese, butter, dry skim milk, dry whey, whey protein concentrate, and lactose was higher than 2022-Q2, but domestic use of Other-than-American-type cheese was lower.

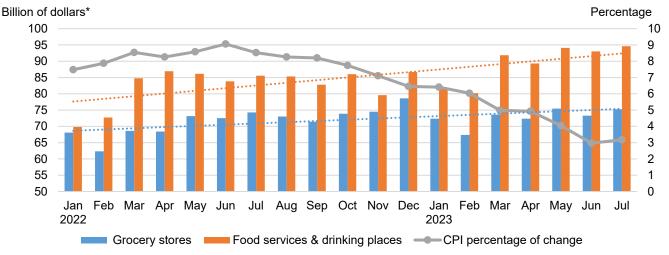
Domestic use of milk and dairy products for the second quarter of 2022 and 2023

| Bonicotio doc or mink and dairy produc | to for the | 000011G G | 4 | TOTE GIIG | |
|--|----------------|---------------------------|---------------------------|-----------|-------------------------|
| Product | Units | 2022 second quarter | 2023 second quarter | Change | Percent of change |
| Milk in all products | D.III. | | | | |
| Milk-fat basis | Billion pounds | 53.7 | 54.9 | 1.2 | 2.2 |
| Skim-solids basis | p c aa.c | 44.2 | 46.2 | 1.9 | 4.3 |
| Dairy products | | | | | |
| American-type cheese | | 1345.3 | 1404.3 | 58.9 | 4.4 |
| Other-than-American-type cheese | | 1960.8 | 1927.4 | -33.5 | -1.7 |
| Butter | Million | 466.4 | 527.5 | 61.2 | 13.1 |
| Dry skim milk products | pounds | 194.9 | 239.9 | 45.0 | 23.1 |
| Dry whey | | 121.4 | 134.4 | 13.0 | 10.7 |
| Whey protein concentrate | | 14.3 | 54.3 | 40.1 | 280.4 |
| Lactose | | 39.8 | 54.2 | 14.4 | 36.3 |

Sources: USDA, National Agricultural Statistics Service; USDA, Farm Service Agency; USDA, Foreign Agricultural Service; U.S. Dept. of Commerce, Bureau of the Census; and USDA, Economic Research Service (ERS) calculations. Numerous sources were used for conversion factors. For more information, see the ERS Dairy Data Documentation webpage.

The increase in dairy product domestic use so far in 2023 may be associated in part to growth in sales at grocery stores and restaurants. According to the U.S. Census Bureau, estimated sales at grocery stores and food service and drinking places increased from February to July 2023 compared to the same period in 2022. Meanwhile, according to the U.S. Bureau of Labor, the Consumer price index for all products (CPI) has declined on average on a year-over-year basis for the same period, with a slight increase in April and July of 2023.

Estimated sales in grocery stores and food service and drinking places versus year over year percentage of change of the Consumer Price Index (CPI)



^{*}Sales are not seasonally adjusted.

Source: USDA, Economic Research Service, using information from the U.S. Dept. of Commerce, Bureau of the Census, Estimated Monthly by Kind of Business based on data from the Advance Monthly Retail Trade Survey and and U.S. Department of Labor, Bureau of Labor Statistics.

Dairy Forecasts for 2023

The U.S. milk production forecast for 2023 is 227.9 billion pounds, 0.3 billion lower than last month's forecast. Lower milk cow numbers and yield per cow were forecast for 2023-Q3 and 2023-Q4. Projections for lower milk cow numbers were based on low July 1 dairy cow inventory estimates provided in the recent *Cattle* and *Milk Production* reports. The 2023 annual projection for the dairy cow inventory is 9.410 million head, 5,000 head below last month's projection. The 2023 annual forecast for milk per cow has been lowered by 30 pounds to 24,225 pounds.

Based on recent trade data showing sluggish exports of cheese, whole milk powder, dry whey, butter, and butterfat products, dairy export forecasts are projected downward for the rest of 2023. On a milk-fat basis, exports are projected at 11.1 billion pounds, 0.5 billion pounds lower than last month's projection. On a skim-solids basis, exports are forecast at 50.5 billion pounds, 0.4 billion lower than last month's forecast.

The 2023 import forecast on a milk-fat basis is 7.5 billion pounds, 0.3 billion lower than last month's forecast. On a skim-solids basis, the projection for imports is 6.5 billion pounds, unchanged from last month's projections. Expectations for imports of butter and some types of cheese are lower for the rest of 2023.

On a milk-fat basis, the 2023 domestic use projection is 223.1 billion pounds, 0.3 billion lower than last month's forecast. On a skim-solids basis, the 2023 domestic use forecast is 182.6 billion pounds, unchanged from last month's forecast.

The 2023 price forecasts for Cheddar cheese, butter, and NDM are increased to \$1.775 (+10.0 cents), \$2.495 (+6.0 cents), and \$1.175 (+0.5 cents) per pound, respectively, due to recent price strength. In contrast, the 2023 dry whey price forecast is reduced to \$0.325 per pound (-2.5 cents) based on weaker expectations for international demand.

With higher expected prices for cheese more than offsetting lower dry whey prices, the Class III milk price forecast for 2023 is adjusted to \$16.90 per hundredweight (cwt), up \$0.85 from last month's forecast. With higher expected prices for butter and NDM in 2023, the Class IV milk price forecast increased by \$0.30 to \$18.50 per cwt. The all-milk price forecast for 2023 is \$19.95 per cwt, \$0.40 higher than last month's forecast.

Dairy Forecasts for 2024

The 2024 milk cow inventory projection is decreased by 5,000 head to 9.385 million head, while the forecast for milk per cow is unchanged at 24,560 pounds. The projection for 2024 milk production has been lowered to 230.5 billion pounds, 0.1 billion lower than last month's forecast.

Dairy exports on a milk-solids basis are projected lower for 2024 compared to last month's projection. On a milk-fat basis, the export forecast for 2024 is 12.4 billion pounds, 0.2 billion below last month's forecast. In 2024, dairy exports are projected to total 53.3 billion pounds on a skim-solids basis, 0.5 billion lower than the previous month's forecast. Lower exports for butter, cheese, whey, and lactose are expected in 2024.

With lower expected imports of casein, butter, and cheese, 2024 dairy imports are projected lower in 2024 from last month's forecast at 7.5 billion pounds (-0.1 billion) on a milk-fat basis and 6.8 billion pounds (-0.1 billion) on a skim-solids basis.

On a milk-fat basis, the annual domestic use forecast for 2024 is 224.6 billion pounds, unchanged from the previous forecast. On a skim-solids basis, the forecast for domestic use is 182.9 billion pounds, 0.2 billion above last month's forecast.

The 2024 price forecast for Cheddar cheese and butter are increased to \$1.755 (+6.5 cents) and \$2.430 (+8.5 cents) per pound, respectively. The 2024 NDM price projection is \$1.125 per pound, unchanged from last month, while the dry whey price forecast is lowered at \$0.305 per pound (-1.0 cent) based on weaker expectations for international demand.

The Class III milk price forecast for 2024 is adjusted to \$16.55 per cwt, up \$0.60 from last month's forecast, while the Class IV milk price forecast is \$17.80 per cwt, up \$0.35. The all-milk price forecast for 2024 is \$19.35 per cwt, \$0.25 higher than last month's forecast.

Pork/Hogs

Mildred Haley

Improved Wholesale Pork Prices Widen Packer Spread in July

July was another month in 2023 when most pork producers would have been fortunate to break even. Federally inspected (FI) July hog slaughter, estimated at about 9.6 million head, was 3.2 percent higher than a year ago. Estimated FI pork production, at roughly 2 million pounds, was about 2 percent higher than in July 2022 due to lighter July 2023 average dressed weights. Seasonal heat and high feed costs contributed to weights averaging about 2.5 pounds below those of last July. While feed costs have moderated compared to earlier this year, they are still high relative to hog prices. Lighter dressed weights might also explain the relation of July slaughter to the 180-pound-and-over category of the June *Hogs and Pigs* report. The number of hogs that were slaughtered during the period when these animals achieved slaughter weight—which encompassed most of July—was slightly higher than the number implied in the June report. This suggests that some animals may have been pulled forward; that is, the slaughter of lighter weight animals lowered the already-lower July dressed-weight average even more. July prices of live equivalent 51-52 percent lean hogs averaged \$73.92 per hundredweight (cwt), 12 percent lower than a year ago.

Wholesale pork carcass values averaged \$112.17 per cwt in July, scoring another high for 2023 and continuing a summer surge that began in June. The figure below is notable because while the July cutout was almost 7 percent below that of July 2022, both June and July cutout values show departures from the sluggish pace that marked the first 5 months of 2023. Higher pork cutout values are likely driven by a seasonal component—vacationing consumers patronizing quick-service restaurants while traveling, combined with outdoor grilling of ribs, smoking picnics, loins, etc.—at the same time that high prices of substitute proteins (beef cuts in particular) are likely inclining consumers to substitute pork cuts.

Value of wholesale pork carcass cutout



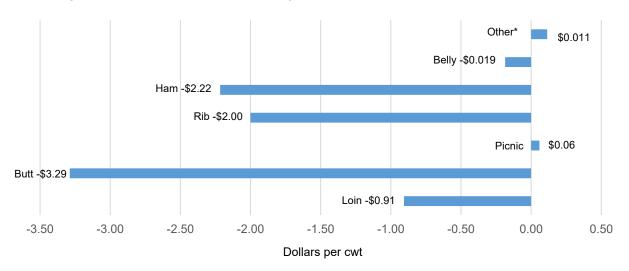
*cwt = hundredweight.

Source: USDA, Agricultural Marketing Service.

The \$8.42 per cwt difference between the cutout of this year (July 2023) and July 2022 is disaggregated according to proportion, or share, of the carcass that each primal comprises in the figure below. The bars in the figure indicate that declines in the values of butt, ham, and rib

primals accounted for 89 percent of the \$8.42 per cwt year-over-year decline in the July 2023 cutout value.

Primals whose summed values reduced the average July 2023 wholesale carcass pork value by \$8.42 per cwt compared to July 2022's value

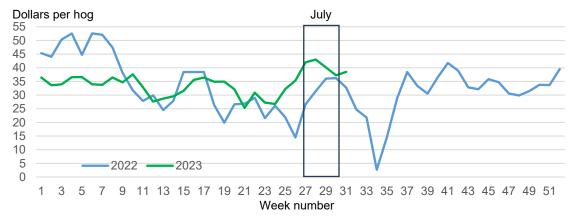


^{*}Other = Jowls, necks, tails, feet, cut loss.

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

Increasing wholesale pork prices, compared with other relatively more expensive substitute meats, seemed to have hit a seasonal sweet spot with consumers beginning in June and continuing through July. This factor combined with lower-than-year-earlier July hog prices resulted in higher per hog packer spreads relative to last year, even in an economic environment favoring lighter dressed weights. The July packer spread averaged almost \$41 per head, 25 percent more than a year ago.

Estimated per hog packers' spread, including byproduct drop value



Source: USDA, Agricultural Marketing Service. with USDA, Economic Research Service calculations.

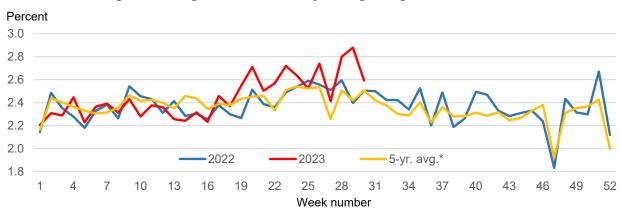
Third-Quarter Pork Production Lowered on Expected-Lower Average Dressed Weights

The third-quarter pork production forecast is lowered to about 6.5 billion pounds, almost 1 percent lower than production in the same period a year ago. The change was made on expectations of continued-lower average dressed weights. Prices of live equivalent 51-52 percent lean hogs are expected to average \$74 per cwt in the third quarter, almost 8 percent below prices in the third quarter of 2022. Hog prices for the fourth quarter of 2023 were raised to \$63 per cwt, about 1 percent lower than in the same period of 2022. Total 2023 commercial pork production is expected to be 27.3 billion pounds, 1 percent higher than 2022 production. Forecast quarterly hog prices average to \$62.13 per cwt for 2023, about 12.7 percent below average quarterly prices in 2022.

U.S.—Origin Breeding Animals as a Share of Weekly FI Hog Slaughter Has Been Elevated Since Early May

lowa State University's series of estimated returns to lowa farrow—to—finish operations show that producers have been operating at losses since late 2022. More recently, major publicly-owned pork production companies have announced plans to reduce the size of their operations. One indicator that the U.S. pork industry may be downsizing—or at least the midst of a hard cull of its breeding inventory—is the rising share of sow and boar slaughter as a percent of total weekly FI hog slaughter, which has been apparent since late spring 2023.

The figure below shows the share of breeding animals (sows plus boars) as a percent of weekly FI hog slaughter, corrected for imports of Canadian sow and boars for slaughter. It is notable that from week 18 (ending May 6, 2023) through week 30 (July 29, the latest available), the calculated share of the breeding stock slaughter is mostly above a year ago and/or the 5-year average share of the ratio. Prolonged levels of elevated breeding stock slaughter—under circumstances of financial stress—are consistent with industry contraction. The industry typically reverts to lower percentages of breeding stock slaughter when pork market supply and demand are realigned, and hog production and pork processor profitability is restored.



Share of U.S.-origin breeding animals in weekly FI hog slaughter

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

^{* 5-}yr. avg. = 2017-19, 2021-22.

U.S. Export Gains in 2023 Appear To Be Mainly at the Expense of Higher Cost European Pork

U.S. exports in June were about 584 million pounds, almost 10 percent higher than shipments last June. The June exports combine with those of May and April to yield a second-quarter export volume of 1.78 billion pounds, 10.6 percent higher than the same period in 2022. In 2023 U.S. pork appears to have gained market share in markets where European pork has either been dominant or very competitive: Japan, South Korea, the Philippines, and Australia, for example. Higher production costs, however, have reduced EU pork production this year, and EU exports have declined as a result. Eurostat data show that EU pork exports have declined more than 20 percent through May. Persistently-increasing energy costs and environmental restrictions are likely to keep European production costs high.

The 10 largest foreign destination countries and regions for U.S. exported pork in June are listed below, together with associated export shares. It is notable that in June a higher share of U.S. exports went to Western Hemisphere nations (55 percent) than to Asian countries (40 percent).

| U.S. pork exports: Volumes and export shares of the 10 largest foreign | | | | | | | | | | | |
|--|------------------|------------------|-------------------|--------------|--------------|--|--|--|--|--|--|
| destinations in June | | | Je im geet ierei, | . | | | | | | | |
| | | | | | | | | | | | |
| Country | Exports | Exports | Percent change | Export share | Export share | | | | | | |
| | June 2022 | June 2023 | (2023/2022) | June 2022 | June 2023 | | | | | | |
| | (Million pounds) | (Million pounds) | | Percent | Percent | | | | | | |
| | | | | | | | | | | | |
| World | 533 | 584 | 10 | | | | | | | | |
| | | | | | | | | | | | |
| Mexico | 178 | 197 | 11 | 33 | 34 | | | | | | |
| Japan | 99 | 103 | 4 | 18 | 18 | | | | | | |
| Central\South America | 63 | 61 | -3 | 12 | 10 | | | | | | |
| China\Hong Kong | 52 | 54 | 4 | 10 | 9 | | | | | | |
| South Korea | 50 | 45 | -10 | 9 | 8 | | | | | | |
| Canada | 39 | 43 | 11 | 7 | 7 | | | | | | |
| Australia | 12 | 23 | 85 | 2 | 4 | | | | | | |
| Caribbean | 25 | 21 | -17 | 5 | 4 | | | | | | |
| Philippines | 11 | 17 | 52 | 2 | 3 | | | | | | |
| Taiwan | 1 | 12 | 1683 | 0 | 2 | | | | | | |
| | | | | | | | | | | | |
| Western Hemisphere Nations | 304 | 321 | 6 | 57 | 55 | | | | | | |
| Asian Nations | 213 | 231 | 8 | 40 | 40 | | | | | | |

Source: USDA, Economic Research Service.

Export forecasts for the second half of 2023 remain unchanged at 1.7 billion pounds in the third quarter and about 1.8 billion pounds in the fourth quarter. For 2024, first-half forecasts are unchanged as well: first-quarter exports are expected to be about 1.7 billion pounds, 1.9 percent higher than shipments this year. For the second quarter of 2024, exports are forecast at about 1.8 billion pounds, almost 1.3 percent below volumes exported in the same period this year. Total exports in 2023 are expected to be 6.9 billion pounds, more than 9 percent higher than in 2022. Total exports in 2024 are forecast at just under 7 billion pounds, about 1 percent higher than expected 2023 exports.

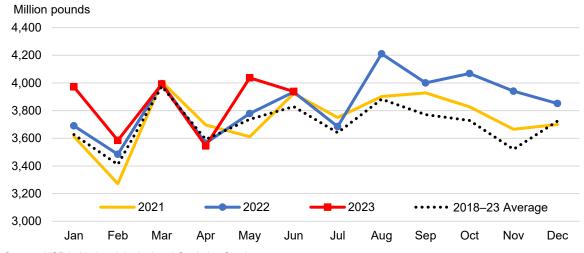
Poultry

Grace Grossen and Adriana Valcu-Lisman

Broiler Production Adjusted Down in 2023 and 2024

Broiler production in June totaled 3.938 billion pounds, just 3 million pounds more than June of last year. This makes the second-quarter total 11.527 billion pounds. Total production in the first half of the year was 2.8 percent over the same period in 2022. For the second half of the year, production growth over 2022 is not expected to be as rapid. This is in part because broiler production at the end of last year was exceptionally strong, especially in August. In addition, broiler-type chickens hatched in May and June were down slightly year-over-year. These hatched birds mature in July and August. Preliminary weekly data suggest July slaughter was slightly lower compared to last year. Based on recent hatchery and preliminary slaughter data, the third-quarter production estimate was adjusted down by 150 million pounds to 12.0 billion pounds. With the fourth-quarter forecast unchanged at 11.9 billion pounds, production for the second half would total 23.9 billion pounds, an increase of 0.6 percent from the second half of 2022. In total, 2023 production is projected at 46.976 billion pounds, an increase of 1.7 percent from 2022.

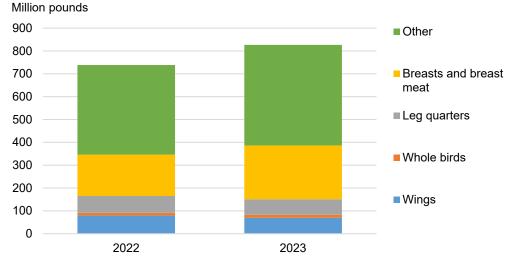
Monthly broiler production, 2018-23



Source: USDA, National Agricultural Statistics Service.

Based on expectations of a retrenchment in the sector, as well as a lowered broiler price forecast that will put continued pressure on margins, broiler production in 2024 is adjusted down to 47.47 billion pounds. If realized, this would still be an increase of 1 percent from the 2023 projection.

Broiler meat in cold storage at the end of June, 2022-23



Note: Other includes drumsticks, thigh meat, and other parts and forms. Source: USDA, National Agricultural Statistics Service.

Broiler meat in cold storage at the end of June totaled 826.8 million pounds, an increase of 12 percent from a year earlier. Of this total, 69.4 million pounds were chicken wings, 67.6 million pounds were leg quarters, and 14.0 million pounds were whole chickens. However, the majority of the year-over-year increase was in breast meat, which totaled 235.7 million pounds at the end of June, accounting for 28.5 percent of all broiler meat in cold storage. Based on recent data, projected 2023 ending stocks are adjusted up to 880 million pounds. The ending stocks projection for 2024 is unchanged at 900 million pounds.

Projected Broiler Meat Exports Decreased, Imports Increased

U.S. broiler exports in June totaled 587.7 million pounds, down 2 percent from last June and the lowest-volume month this year. Shipments were notably lower year-over-year to Vietnam (-17.2 million pounds), Ghana (-10.6 million pounds), Angola (-10.2 million pounds), Haiti (-5.9 million pounds), the Philippines (-5.6 million pounds), and Colombia (-4.7 million pounds). In early June, Colombia temporarily stopped granting permits to import U.S. poultry. While the interruption to trade was brief, it was not negligible. Colombia was the 13th-largest destination for exported U.S. broiler meat by volume in 2022 at 152.7 million pounds, representing 2.6 percent of exports. In the first half of 2023, Colombia accounted for 1.5 percent of broiler exports. Based on both recent export data and downward adjustments to production, projected U.S. 2023 broiler exports are adjusted down to 7.293 billion pounds, virtually unchanged from 2022. Projected exports in 2024 are also adjusted down to 7.515 billion pounds. As a share of projected production, this would be slightly higher than 2023 at almost 16 percent.

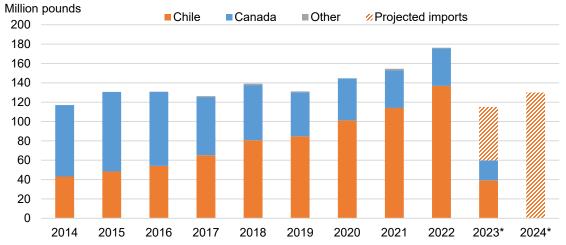
| U.S. broiler meat exp | orts: Volume | and export | s share, June 2022 a | and 2023 | | |
|-----------------------|--------------|---------------|----------------------|--------------|------------|--|
| | Vo | olume, millio | n pounds | Export Share | e, percent | |
| Largest markets: | 2022 | 2023 | Change in volume | 2022 | 2023 | |
| Mexico | 120.2 | 138.5 | 18.3 | 20.0 | 23.6 | |
| Taiwan | 59.6 | 58.5 | -1.0 | 9.9 | 10.0 | |
| Cuba | 51.0 | 60.4 | 9.4 | 8.5 | 10.3 | |
| China | 19.0 | 26.3 | 7.3 | 3.2 | 4.5 | |
| Canada | 27.6 | 31.7 | 4.1 | 4.6 | 5.4 | |
| Philippines | 38.2 | 32.5 | -5.6 | 6.4 | 5.5 | |
| Guatemala | 20.2 | 20.7 | 0.6 | 3.4 | 3.5 | |
| Angola | 24.6 | 14.4 | -10.2 | 4.1 | 2.4 | |
| Vietnam | 22.9 | 5.8 | -17.2 | 3.8 | 1.0 | |
| | | | | | | |
| Other markets: | | | | | | |
| Haiti | 15.1 | 9.2 | -5.9 | 2.5 | 1.3 | |
| Ghana | 16.6 | 6.0 | -10.6 | 2.5 | 1.0 | |
| Colombia | 12.9 | 8.2 | -4.7 | 2.2 | 1.4 | |
| | | | | | | |
| World | 599.9 | 587.7 | -12.2 | | | |

Note: Largest markets based on 2023 year-to-date export volumes

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

U.S. broiler imports in June totaled 12.1 million pounds, of which 8.4 million pounds were shipped from Chile. This is a return to form for Chile after outbreaks of Highly Pathogenic Avian Influenza (HPAI) limited shipments in April and May. Assuming no further outbreaks, import projections are adjusted up in the remainder of 2023 and in 2024, reflecting expectations of shipments from Chile. Imports in 2023 are projected at 115 million pounds, and in 2024 at 130 million pounds. Both are still well below imports in 2022, which totaled 176 million pounds.

Annual broiler imports by country, 2014-24

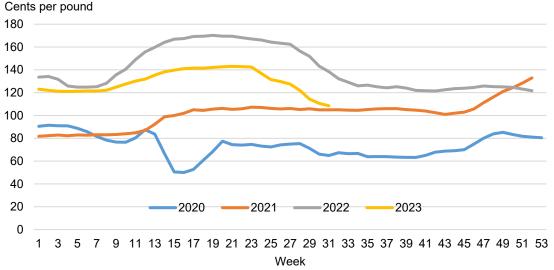


Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census, and USDA, World Agricultural Supply and Demand Estimates.

Broiler Prices Adjusted Down in 2023 and 2024

National composite wholesale broiler prices averaged 118.48 cents per pound in July, about 35 cents below last July. Weekly prices have followed a seasonal pattern similar to last year, though declining from a lower peak in late May. In the week ending August 4, the weighted average broiler price was 108.49 cents per pound, about 30 cents below the same week in 2022. Prices decreased from week to week for the 10 weeks leading up to and including August 4th. Based on recent price trends, projected quarterly average prices are adjusted down in the third and fourth quarters to 110 and 115 cents per pound, respectively. This makes the 2023 annual price projection 122 cents per pound. For 2024, the annual average price projection is decreased by 8 cents to 121 cents per pound, based on the same recent price trends.

Weekly weighted average national composite whole broiler price 2020–23

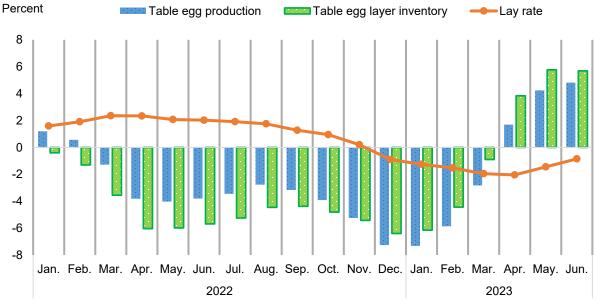


Source: USDA Agricultural Marketing Service.

2023–24 Table Egg Production Projections Revised Down

The table egg layer inventory continued its year-over-year growth for the third consecutive month in June and averaged 317.6 million layers, 5.7-percent higher than last June. However, June layer productivity, as measured by lay rate (eggs per 100 layers per day), was still below last year's levels. Mirroring the growth pattern set by the layer flock—albeit weighted down by lower productivity—June table egg production was estimated at 648 million dozen, 4.8-percent year-over-year higher.

Year-over-year percent change in monthly table egg production, average table egg layer inventory, and average lay rate January 2022–June 2023



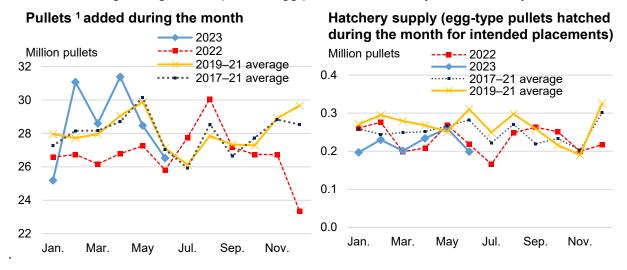
Source: USDA, Economic Resource Service using data from USDA, National Agricultural Statistics Service.

The year-over-year lower lay rates in the first half of 2023 are likely the result of several factors, such as the average age of the layer flock and lay and molting rates. Given the HPAI-related disruptions during 2022, the current layer inventory is made up of older layers, many of whom are likely beyond their peak productivity, and younger layers that have been added to the production flock earlier in the year and haven't yet achieved their peak productivity. Usually, egg production in layers starts when layers are between 18 to 22 weeks old, peaks around week 42, and then gradually declines. Flock management indicators such as percentage of flock that completed molting, layers sold for slaughter, and slaughter of light-spent hens trended lower in the first half of the year relative to recent historical averages. These downward trends suggest that producers might have kept older layers in production.

Percent of flock, molting complete Monthly slaughter of light-spent hens 2022 2023 2023 Percent 2022 2017-21 average Million 2019-21 average 16 2019-21 average 5.0 2017-21 average 4.0 3.0 2.0 10 1.0 0.0 8 Jan. Nov. Jul. Sep. Jan. Mar. May Jul. Sep. Nov. Mar. Mav

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

Several short-term and long-term flock indicators signal changes that might impact production. In the near-term, data on pullets (chicks less than 3 days) added to the pullet flocks shows strong additions from January to April. These chicks likely entered the laying flocks during late spring or the early summer months (about 4 to 5 months later). However, the pullet placements have been declining faster than seasonally suggested in May and June. These changes are likely to impact production later this year. In the longer term, egg-type hatchery supply flocks and the cumulative potential placements 7 to 18 months earlier are indicators for egg production. The stronger egg-type hatchery supply numbers earlier in the year were followed by counterseasonal declines in June. Since these flocks are the source of the future egg layers, and due to biological lags, the impact on egg production will likely be later next year.



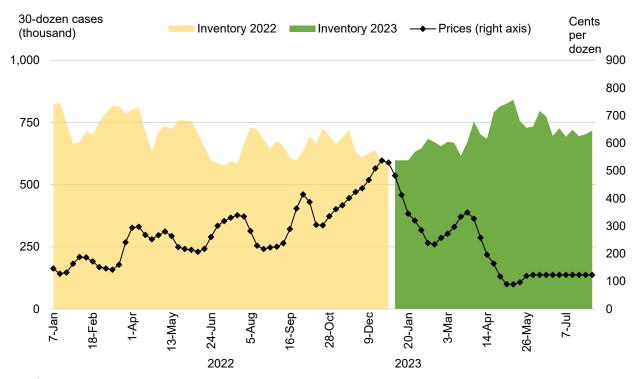
Note: * Pullet chicks less than 3 days old added to pullet flocks.
Source: USDA, Economic Research Service using data from USDA, National Agricultural Statistics Service.

Given the recent trends across various egg-laying flock indicators, the second- and third-quarter table egg production projections are revised downward to 2,010 and 2,070 million dozen eggs, respectively. These changes bring the 2023 table egg production forecast to 7,933 million dozen eggs, almost 2-percent year-over-year higher. Going forward, given the most recent data on egg-type hatchery flocks, the 2024 projection for table egg production is decreased to 8,205 million dozen. The updated projection represents about a 3.4-percent increase over 2023 projected production.

Wholesale Table Egg Prices Remained Static in July

Daily wholesale prices for eggs remained flat in July and in early August. Thus, July wholesale prices (New York, Grade A, Large) averaged 123 cents per dozen, almost 64.0 percent down from last year. However, in line with seasonal expectations and in preparation for the kickoff of the back-to-school season, daily wholesale prices have become livelier and as of August 9 have been inching upward. While the demand for eggs tends to improve relative to the more-sluggish summer months, the expected bump in demand does not have the magnitude of the holiday-baking or Easter-demand upticks. The at-hand shell egg inventories continued to fluctuate within the expected ranges, supporting price stability.

Weekly U.S. at-hand shell egg inventory (large) and wholesale prices (New York, Grade A, large)



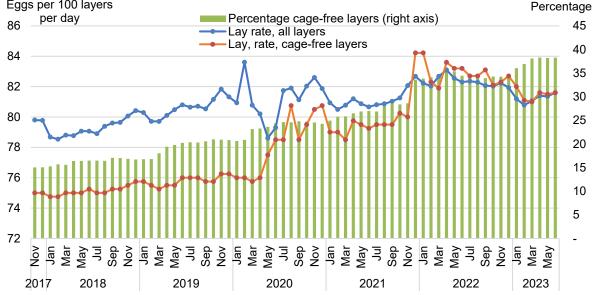
Note: ¹Week ending January 7, 2022, through week ending August 11, 2023. Source: USDA, Economic Research Service calculations using USDA, Agricultural Marketing Service data.

Given the current wholesale prices, egg inventory trajectories, and seasonal price expectations, the third- and fourth-quarter average wholesale egg price forecasts remain unchanged at 130 and 145 cents per dozen, respectively. Thus, the 2023 average egg price is forecast at 181.7 cents per dozen, almost 36 percent year-over-year lower. At almost 144 cents per dozen, the average egg price projection for 2024 is unchanged from last month.

Recent Trends in the Cage-Free Egg Layer Inventory

According to the USDA, *Monthly Cage-Free Shell Egg Report*, the cage-free table egg layer flock (nonorganic and certified organic) added more than 10.5 million layers in the first 6 months of this year. As a result, the percentage of cage-free layers to the average egg layer inventory increased from 36.0 percent in January to 38.2 percent in June. The growth in the cage-free layer flock aligns to the goals set up by the States with cage-free legislation—2022 (California, Massachusetts, and Nevada), 2024 (Washington and Oregon), 2025 (Arizona, Colorado, Michigan, and Utah), and 2026 (Rhode Island). A closer look at the data shows that most of the layers were added to the nonorganic cage-free flock, with fewer additions to the organic egg laying flock. The same report estimates the cage-free layers' productivity. The estimated data shows that, starting late 2021, cage-free lay rates have been moving mostly above or at similar levels to the lay rates in the overall table egg laying flock. This is a departure from the trend previously observed.

Cage-free layer percentages to all table egg layers and their lay rates Eggs per 100 layers

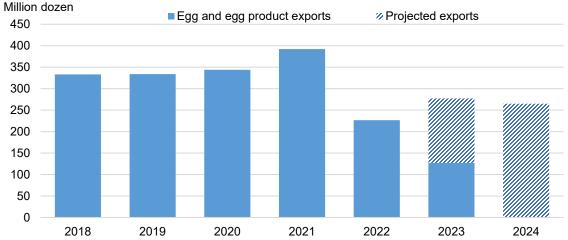


Source: USDA, Economic Research Service calculations using USDA, Agricultural Marketing Service and USDA, National Agricultural Statistics Service data.

Egg Export Expectations Lowered in 2023

U.S. egg exports in June totaled 23.2 million shell egg equivalent dozen. This is down from last month due to decreases in shipments of both shell egg (-3.4 million dozen) and egg products (-2.5 million dozen). For the first half of the year, egg and egg product exports totaled 127.2 million shell egg equivalent dozen. This is 3.6 percent more than the first half of 2022 but still less than the same period in 2021. The top three destinations for egg and egg product exports in the first half of the year, making up nearly 75 percent of shipments, were Canada (48.5 million dozen), Mexico (29.2 million dozen), and Japan (17.4 million dozen). Based on recent data and lowered production expectations, projected total exports in 2023 were adjusted down slightly to 277 million dozen. The total export forecast for 2024 is unchanged at 265 million dozen.

Annual egg and egg product exports (shell-egg equivalent), 2018-24



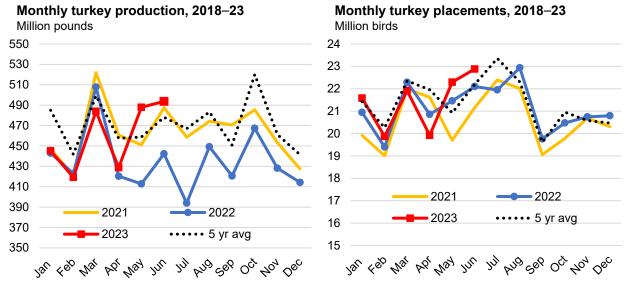
Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census and USDA, World Agricultural Supply and Demand Estimates.

Egg and egg product imports totaled 1.2 million dozen in June, the smallest month so far this year. The decrease is mainly attributable to shipments from Turkey falling to zero, after accounting for 23 percent of total imports in the first 5 months of the year. The top three countries, accounting for 82 percent of June imports, were Canada (422 thousand dozen), China (306 thousand dozen), and Thailand (263 thousand dozen). Based on recent data, projected 2023 egg and egg product imports were adjusted down to 27 million dozen. For 2024, projected imports are unchanged at 19 million dozen.

Turkey Production Projection Increased for 2023 and First Quarter of 2024

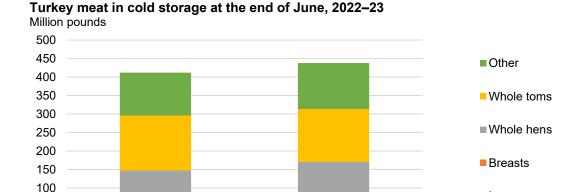
In June, U.S. turkey production totaled 493.7 million pounds. This was the highest production for one month since March of last year and 11.6 percent higher than last June. The monthly average live weight was 32.12 pounds, 6 percent higher than the previous June. Second-quarter production totaled 1.41 billion pounds, 10.6 percent higher than the second quarter of last year. This strength in production likely indicates a recovery from the HPAI outbreak of 2022 and early 2023. Preliminary weekly slaughter data from the USDA, Agricultural Marketing Service indicates that the strength in production continued in July. Based on this preliminary data, third-quarter production is adjusted up by 80 million pounds to 1.4 billion pounds. This would be 10.8 percent over the third quarter of 2022, nearly level with the third quarter of 2021.

Turkey placements were up almost 4 percent year-over-year in both May and June. These birds would mature in September and October. Based on these strong hatchery data and expectations that the sector will continue its pace of recovery, 10 million pounds were added to both the fourth quarter of 2023 and the first quarter of 2024. Expectations of expansion beyond the third quarter are somewhat tempered by declines in wholesale prices putting pressure on producer margins. In total, however, projected 2023 broiler production is adjusted up by 125 million pounds to 5.578 billion pounds. This would be an increase of 6.8 percent from 2022 and 20 million pounds above 2021 production. Projected 2024 production is 5.65 billion pounds, which would be 1.3 percent over 2023 production.



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

Turkey in cold storage totaled 437.8 million pounds at the end of June, 6.3 percent higher than the same time last year. However, the breakdown by parts is different from last year. Whole hens made up 23 percent of turkey in cold storage at the end of June 2022 but were only 20 percent of turkey in cold storage at the same time in 2023. Whole toms also decreased from 36 percent to 33 percent of turkey in cold stocks at the end of June. Turkey legs increased from less than 1 percent of stocks to just over 2 percent. Turkey breasts increased from 12 percent of turkey in cold storage to 17 percent. All other turkey, including deboned meat and other parts and forms, accounted for a similar share of cold stocks in June 2022 and 2023, at 28 percent. These shifts indicate a slight change in emphasis from whole birds to turkey parts in cold storage. Projected year-ending stocks for 2023 are unchanged at 200 million pounds.



Note: Other includes deboned meat and other parts and forms. Source: USDA, National Agricultural Statistics Service.

2022

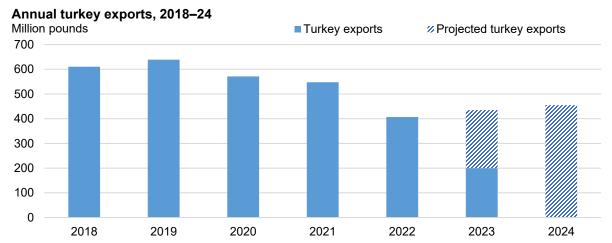
50 0

2023

Legs

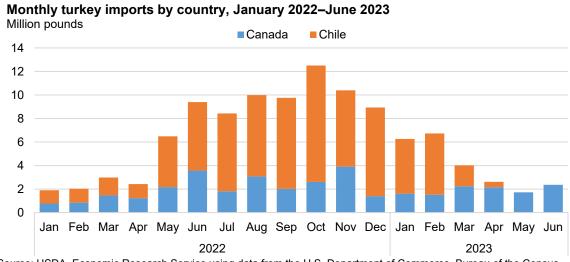
Turkey Exports Adjusted Up; Imports Unchanged

Turkey exports totaled 41.3 million pounds in June, up 5 million pounds from the same month last year and the strongest month of the year so far. Based on improving production, stronger shipments to smaller markets, and fewer restrictions due to HPAI, exports are expected to improve through the rest of the year and into 2024. The 2023 turkey export projection was adjusted up by 25 million pounds to 435 million pounds, up 7 percent from total exports in 2022. In 2024, turkey exports are forecast at 455 million pounds, which would still be below the 2021 export total.



Source: USDA, Economic Research Service using data from the U.S. Department of Commerce, Bureau of the Census and USDA, World Agricultural Supply and Demand Estimates.

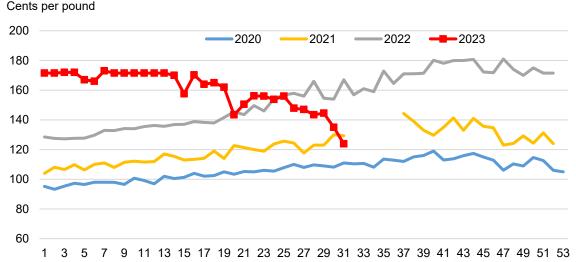
Turkey imports totaled 2.4 million pounds in June and came solely from Canada for the second month in a row. While broiler shipments from Chile have resumed, shipments of turkeys have not. Projected imports for 2023 are unchanged at 50 million pounds, down 35 million pounds from last year's total.



Turkey Prices Adjusted Down in 2023 and 2024

As turkey production and availability in cold storage have increased, wholesale prices have fallen. In the week ending August 4th, the average wholesale price for frozen whole-hen turkeys was 123.92 cents per pound, 43 cents below the same week last year and 5 cents lower than the same week in 2021. Based on both increased production expectations and the persistence of recent price decreases, projected quarterly prices are adjusted down to 135 cents per pound in the third quarter and 145 cents per pound in the fourth. This would make the annual average 152.4 cents per pound in 2023. For 2024, price projections were adjusted downward in all four quarters for an annual average price of 154 cents per pound, only about one cent higher than the 2023 average price.

Weekly wholesale price for frozen whole hen turkeys, 2020–23



Source: USDA, Agricultural Marketing Service.

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U.S. red meat and poultry forecasts

| orer real mean and peaning revealed | 2021 | | | | | 2022 | | | | | 2023 | | | | | 2024 | | |
|--|--------|--------|--------|--------|---------|--------|--------|--------|--------|---------|--------|--------|--------|--------|---------|--------|--------|---------|
| | | II | III | IV | Annual | I | II | III | IV | Annual | I | II | III | IV | Annual | I | II | Annual |
| | | | | | | | | | | | | | | | | | | |
| Production, million pounds | | | | | | | | | | | | | | | | | | |
| Beef | 6,900 | 6,963 | 6,979 | 7,106 | 27,948 | 7,023 | 7,072 | 7,144 | 7,052 | 28,291 | 6,821 | 6,710 | 6,705 | 6,745 | 26,981 | 6,335 | 6,315 | 25,165 |
| Pork | 7,292 | 6,668 | 6,530 | 7,185 | 27,675 | 6,905 | 6,639 | 6,534 | 6,919 | 26,996 | 7,071 | 6,593 | 6,480 | 7,120 | 27,264 | 6,895 | 6,520 | 27,335 |
| Lamb and mutton | 35 | 36 | 32 | 35 | 138 | 32 | 35 | 33 | 32 | 131 | 33 | 33 | 32 | 33 | 131 | 32 | 33 | 129 |
| Broilers | 10,893 | 11,232 | | 11,193 | 44,899 | 11,170 | 11,279 | | 11,861 | 46,206 | 11,549 | 11,527 | 12,000 | 11,900 | 46,976 | 11,710 | 11,710 | 47,470 |
| Turkeys | 1,390 | 1,399 | 1,403 | 1,366 | 5,558 | 1,374 | 1,275 | 1,264 | 1,310 | 5,222 | 1,348 | 1,410 | 1,400 | 1,420 | 5,578 | 1,400 | 1,400 | 5,650 |
| | | | | | | | | | | | | | | | | | | |
| Total red meat and poultry | 26,651 | 26,450 | 26,679 | 27,030 | 106,810 | 26,651 | 26,455 | 27,035 | 27,034 | 107,469 | 26,976 | 26,433 | 26,779 | 27,360 | 107,548 | 26,525 | 26,130 | 106,353 |
| Table eggs, million dozen | 1,995 | 1,970 | 1,996 | 2,069 | 8,031 | 1,998 | 1,894 | 1,934 | 1,956 | 7,781 | 1,891 | 1,962 | 2,010 | 2,070 | 7,933 | 2,025 | 2,050 | 8,205 |
| Per capita disappearance, retail pounds 1/ | | | | | | | | | | | | | | | | | | |
| Beef | 14.6 | 14.9 | 14.6 | 14.8 | 58.9 | 15.0 | 14.7 | 14.7 | 14.6 | 59.1 | 14.9 | 14.4 | 14.0 | 14.0 | 57.3 | 13.8 | 13.5 | 53.6 |
| Pork | 13.1 | 11.8 | 12.3 | 14.0 | 51.1 | 13.1 | 12.4 | 12.4 | 13.1 | 51.1 | 13.0 | 11.9 | 11.7 | 13.0 | 49.6 | 12.5 | 11.6 | 49.5 |
| Lamb and mutton | 0.3 | 0.4 | 0.3 | 0.4 | 1.4 | 0.3 | 0.3 | 0.3 | 0.3 | 1.3 | 0.3 | 0.3 | 0.3 | 0.3 | 1.1 | 0.3 | 0.3 | 1.3 |
| Broilers | 23.5 | 24.3 | 25.0 | 23.8 | 96.5 | 23.8 | 24.2 | 25.7 | 25.1 | 98.9 | 24.8 | 24.6 | 25.9 | 25.3 | 100.7 | 24.8 | 24.9 | 100.7 |
| Turkeys | 3.4 | 3.6 | 3.8 | 4.5 | 15.3 | 3.4 | 3.2 | 3.6 | 4.3 | 14.6 | 3.4 | 3.6 | 3.9 | 4.6 | 15.5 | 3.5 | 3.6 | 15.7 |
| • | | | | | | | | | | | | | | | | | | |
| Total red meat and poultry | 55.2 | 55.4 | 56.4 | 57.8 | 224.8 | 56.1 | 55.4 | 57.3 | 57.9 | 226.8 | 56.8 | 55.2 | 56.2 | 57.7 | 226.0 | 55.4 | 54.4 | 222.6 |
| Eggs, number | 70.2 | 69.2 | 69.8 | 73.3 | 282.5 | 71.3 | 68.2 | 69.4 | 70.2 | 279.0 | 67.5 | 69.5 | 71.0 | 73.1 | 281.2 | 71.5 | 72.1 | 289.4 |
| Market prices | | | | | | | | | | | | | | | | | | |
| Steers 5-area Direct, Total all grades, dollars/cwt | 112.98 | 120.75 | 123.51 | 132.36 | 122.40 | 139.25 | 141.93 | 143.42 | 152.99 | 144.40 | 160.92 | 179.02 | 184.00 | 190.00 | 178.49 | 188.00 | 186.00 | 185.50 |
| Feeder steers, Medium Frame No. 1, OK City, dollars/cwt | 134.30 | 140.22 | 153.69 | 159.59 | 146.95 | 156.04 | 158.35 | 172.31 | 177.06 | 165.94 | 183.48 | 211.49 | 250.00 | 255.00 | 224.99 | 248.00 | 247.00 | 253.25 |
| Cows, Live equivalent, Cutter 90% lean, 500 lbs and up, National, dollars/cwt | 59.63 | 67.54 | 69.21 | 63.24 | 64.91 | 72.65 | 83.41 | 84.01 | 73.69 | 78.44 | 82.91 | 96.62 | 105.00 | 105.00 | 97.38 | 110.00 | 115.00 | 112.50 |
| Choice/Prime slaughter lambs, National, dollars/cwt | 165.42 | 211.79 | 256.86 | 233.61 | 216.92 | 225.00 | 210.33 | 138.69 | 124.26 | 174.57 | 134.23 | 161.36 | 180.00 | 175.00 | 162.65 | 170.00 | 165.00 | 156.25 |
| Barrows and gilts, National base cost, 51-52% lean, live equivalent, dollars/cwt | 55.71 | 80.92 | 76.15 | 56.36 | 67.29 | 65.55 | 75.58 | 80.20 | 63.49 | 71.21 | 54.83 | 56.69 | 74.00 | 63.00 | 62.13 | 63.00 | 68.00 | 64.75 |
| Broilers, Wholesale, National composite, weighted average, cents/lb | 84.0 | 104.4 | 105.4 | 110.9 | 101.2 | 135.1 | 167.5 | 136.1 | 123.5 | 140.5 | 124.5 | 139.3 | 110.0 | 115.0 | 122.2 | 120.0 | 125.0 | 121.3 |
| Turkeys, National 8-16 lb hens, National, cents/lb | 110.1 | 117.7 | 129.7 | 133.4 | 122.8 | 131.4 | 143.9 | 165.4 | 177.5 | 154.5 | 170.8 | 158.9 | 135.0 | 145.0 | 152.4 | 152.0 | 153.0 | 153.5 |
| Eggs, Grade A large, New York, volume buyers, cents/dozen | 127.8 | 94.2 | 120.1 | 131.8 | 118.5 | 170.8 | 251.6 | 295.6 | 411.7 | 282.4 | 315.9 | 135.8 | 130.0 | 145.0 | 181.7 | 155.0 | 130.0 | 143.8 |
| U.S. trade, million pounds, carcass-weight equivalent | | | | | | | | | | | | | | | | | | |
| Beef and veal exports | 788 | 875 | 912 | 853 | 3,428 | 843 | 944 | 912 | 846 | 3,544 | 779 | 805 | 840 | 790 | 3,214 | 730 | 760 | 2,970 |
| Beef and veal imports | 696 | 865 | 922 | 861 | 3,345 | 985 | 859 | 797 | 750 | 3,390 | 956 | 901 | 890 | 765 | 3,512 | 960 | 870 | 3,560 |
| Lamb and mutton imports | 69 | 93 | 100 | 103 | 364 | 88 | 88 | 93 | 89 | 358 | 79 | 62 | 75 | 90 | 305 | 95 | 90 | 370 |
| Pork exports | 1,922 | 1,903 | 1,549 | 1,649 | 7,024 | 1,538 | 1,611 | 1,514 | 1,681 | 6,345 | 1,668 | 1,783 | 1,650 | 1,825 | 6,926 | 1,700 | 1,760 | 6,980 |
| Pork imports | 247 | 260 | 308 | 364 | 1,180 | 358 | 369 | 317 | 300 | 1,344 | 284 | 271 | 255 | 270 | 1,080 | 300 | 280 | 1,155 |
| Broiler exports | 1,851 | 1,772 | 1,835 | 1,889 | 7,348 | 1,833 | 1,803 | 1,723 | 1,931 | 7,290 | 1,873 | 1,805 | 1,740 | 1,875 | 7,293 | 1,915 | 1,875 | 7,515 |
| Turkey exports | 130 | 140 | 138 | 140 | 548 | 107 | 109 | 96 | 96 | 407 | 85 | 115 | 120 | 115 | 435 | 100 | 120 | 455 |
| Live swine imports (thousand head) | 1,607 | 1,649 | 1,772 | 1,635 | 6,663 | 1,654 | 1,664 | 1,602 | 1,565 | 6,486 | 1,671 | 1,673 | 1,700 | 1,625 | 6,669 | 1,675 | 1,665 | 6,630 |

Note: Forecasts are in bold. cwt=hundredweight.

Updated 8/11/2023

^{1/} Per capita meat and egg disappearance data are calculated using the Resident Population

plus Armed Forces Overseas series from U.S. Department of Commerce, Bureau of the Census.

Source: World Agricultural Supply and Demand Estimates and Supporting Materials. For further information, contact: Mildred Haley, Economic Research Service, USDA.

Dairy forecasts

| Years | | | | | | 2023 | | | | 2024 | |
|---|------------------|--------|------------------|------------------|------------------|----------------|-------|----------------|----------------|-------|----------------|
| Quarters | III | IV | Annual | I | II | III | IV | Annual | l | II | Annual |
| Milk cows (thousands) | 9,408 | 9,404 | 9,402 | 9,427 | 9,419 | 9,400 | 9,390 | 9,410 | 9,385 | 9,385 | 9,385 |
| Milk per cow (pounds) | 5,999 | 5,944 | 24,087 | 6,031 | 6,160 | 6,035 | 6,000 | 24,225 | 6,150 | 6,240 | 24,560 |
| Milk production (billion pounds) | 56.4 | 55.9 | 226 | 56.9 | 58.0 | 56.7 | 56.3 | 227.9 | 57.7 | 58.6 | 230.5 |
| Farm use | 0.3 | 0.3 | 1.0 | 0.2 | 0.2 | 0.3 | 0.3 | 1.0 | 0.2 | 0.2 | 1.0 |
| Milk marketings | 56.2 | 55.6 | 225 | 56.6 | 57.8 | 56.5 | 56.1 | 226.9 | 57.5 | 58.3 | 229.5 |
| Milk-fat (billion pounds milk equiv.) | | | | | | | | | | | |
| Milk marketings | 56.2 | 55.6 | 225.5 | 56.6 | 57.8 | 56.5 | 56.1 | 226.9 | 57.5 | 58.3 | 229.5 |
| Beginning stocks | 18.4 | 16.6 | 14.3 | 14.4 | 16.6 | 18.5 | 17.2 | 14.4 | 14.6 | 16.5 | 14.6 |
| Imports | 1.9 | 1.9 | 7.1 | 1.8 | 1.8 | 1.9 | 2.0 | 7.5 | 1.7 | 1.9 | 7.5 |
| Total supply | 76.5 | 74.1 | 246.9 | 72.8 | 76.1 | 76.9 | 75.3 | 248.8 | 73.8 | 76.8 | 251.6 |
| Exports | 3.4 | 3.2 | 13.4 | 0.0 | 2.7 | 2.9 | 2.8 | 11.1 | 2.8 | 3.4 | 12.4 |
| Ending stocks | 16.6 | 14.4 | 14.4 | 16.6 | 18.5 | 17.2 | 14.6 | 14.6 | 16.5 | 18.8 | 14.6 |
| Domestic use | 56.5 | 56.5 | 219.1 | 56.2 | 55.0 | 56.8 | 57.9 | 223.1 | 54.5 | 54.6 | 224.6 |
| Skim solids (billion pounds milk equiv.) | | | | | | | | | | | |
| Milk marketings | 56.2 | 55.6 | 225.5 | 56.6 | 57.8 | 56.5 | 56.1 | 226.9 | 57.5 | 58.3 | 229.5 |
| Beginning stocks | 12.4 | 11.8 | 11.1 | 11.7 | 12.4 | 12.5 | 12.1 | 11.7 | 12.0 | 12.3 | 12.0 |
| Imports | 1.6 | 2.0 | 6.7 | 1.8 | 1.4 | 1.5 | 1.8 | 6.5 | 1.7 | 1.6 | 6.8 |
| Total supply | 70.2 | 69.5 | 243.3 | 70.1 | 71.6 | 70.5 | 70.0 | 245.1 | 71.2 | 72.2 | 248.3 |
| Exports | 13.6 | 12.9 | 52.9 | 12.6 | 12.9 | 12.9 | 12.1 | 50.5 | 12.9 | 14.2 | 53.3 |
| Ending stocks | 11.8 | 11.7 | 11.7 | 12.4 | 12.5 | 12.1 | 12.0 | 12.0 | 12.3 | 12.5 | 12.1 |
| Domestic use | 44.7 | 45.0 | 178.7 | 45.0 | 46.2 | 45.6 | 45.8 | 182.6 | 46.0 | 45.5 | 182.9 |
| Milk prices (dollars/hundredweight) 1 | | | | | | | | | | | |
| All milk | 24.57 | 25.17 | 25.34 | 21.93 | 19.30 | 18.45 | 20.10 | 19.95 | 20.20 | 19.00 | 19.35 |
| Class III | 20.81 | 21.11 | 21.96 | 18.44 | 16.51 | 16.00 | 16.65 | 16.90 | 16.95 | 16.45 | 16.55 |
| Class IV | 25.08 | 23.46 | 24.47 | 19.08 | 18.10 | 18.65 | 18.25 | 18.50 | 17.70 | 17.70 | 17.80 |
| Product prices (dollars/pound) ² | | | | | | | | | | | |
| Cheddar cheese | 2.0428 | 2.1004 | 2.1122 | 1.8797 | 1.7033 | 1.720 | 1.790 | 1.775 | 1.800 | 1.750 | 1.755 |
| | 2.0428 0.5143 | 0.4723 | 0.6057 | 0.4186 | 0.3810 | 0.255 | 0.250 | 0.325 | 0.300 | 0.300 | 0.305 |
| Dry whey Butter | 3.0136 | 2.9743 | 2.8665 | 2.4338 | 2.4337 | 0.255 2.590 | 2.530 | 0.325 2.495 | | 2.400 | 2.430 |
| Nonfat dry milk | 1.6831 | 1.5141 | 2.6665 1.6851 | 2.4336 1.2717 | 2.4337 1.1577 | 2.590 1.145 | 1.130 | 2.495 1.175 | 2.430 1.110 | 1.130 | 2.430 1.125 |
| Nomat dry milk | 1.0031 | 1.5141 | 1.000.1 | 1.4111 | 1.13// | 1.140 | 1.130 | 1.175 | 1.110 | 1.130 | 1.125 |

Totals may not add due to rounding.

Updated 8/17/2023.

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. Product prices are based on weekly USDA *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.

Published by USDA, Economic Research Service, in Livestock, Dairy, and Poultry Outlook.