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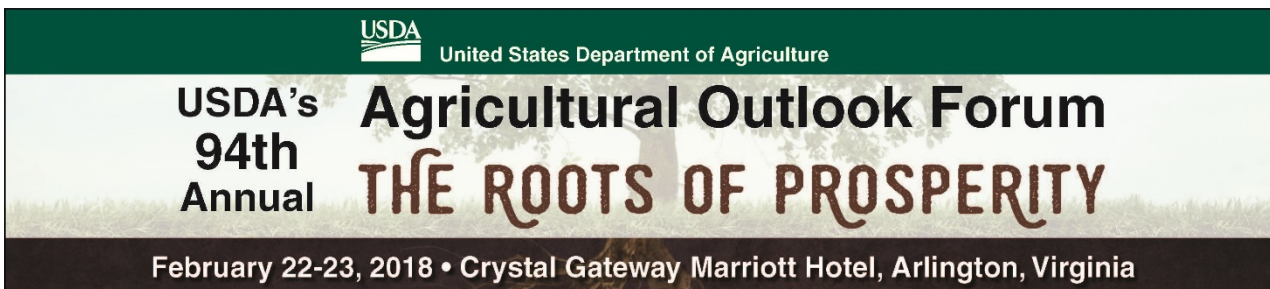
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United States Department of Agriculture

A banner for the Agricultural Outlook Forum. It features a green header with the USDA logo and name. Below the header, the text "USDA's 94th Annual" is on the left, and "Agricultural Outlook Forum" is in the center. Below that, "THE ROOTS OF PROSPERITY" is written in a large, stylized, brown font. At the bottom, a dark bar contains the date and location: "February 22-23, 2018 • Crystal Gateway Marriott Hotel, Arlington, Virginia". The background of the banner shows a blurred image of a field with a tree.

USDA United States Department of Agriculture

USDA's 94th Annual Agricultural Outlook Forum

THE ROOTS OF PROSPERITY

February 22-23, 2018 • Crystal Gateway Marriott Hotel, Arlington, Virginia

# Dairy Outlook

Friday, February 23, 2018

[www.usda.gov/oc/forum](http://www.usda.gov/oc/forum)

## **OUTLOOK FOR U.S. DAIRY**

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The U.S. dairy sector enters 2018 in a steady-state mode. Growth in milk cow numbers and milk per cow slowed from early-2017. Although milk margins over feed costs were above 2016 most of the year, by December 2017 they averaged below year-earlier. Much of December's margin decline can be traced to weaker milk prices during the month; December feed prices were only slightly above 2016. In response to the improved returns during much of 2017, producers expanded their herds but at a cautious rate. On January 1, 2018, the number of dairy cows was 9.4 million head, up less than one percent from 2017. However, the increase did reflect a greater willingness to expand the herd than indicated at the beginning of 2017. Producers at the beginning of 2017 had indicated 1 percent fewer heifers were being held for placement in dairy herds; after factoring in dairy cow slaughter, replacement utilization was almost 65 percent, higher than the rate of the prior 2 years.

Although milk prices in 2017 recovered from their recent bottom of 2016, the gains in prices were most pronounced in the first half of the year with prices virtually flat during the second half. Prices for cheese, butter, nonfat dry milk (NDM), and dry whey increased during the first part of the year despite large stocks. However, during the year, prices of these products began to decline as demand was relatively weak through the year and stocks remained relatively high.

### **Outlook for 2018: Slow Production Growth in the Face of Weak Margins**

Milk production in 2018 is forecast to increase to a record 218.7 billion pounds, about 1.5 percent higher than 2017. The cow herd is forecast to expand only modestly during the year as weaker milk prices weigh on producer expansion decisions. Output per cow is expected to increase slightly faster than 2017 reflecting a recovery in output in the West, but will also reflect the apparent longer-term trend in a slowing rate of growth in output per cow.

On January 1, 2018, the dairy cow herd was about 1 percent higher than 2017 and producers were holding one percent more heifers for addition to the dairy herd in 2018. Producers also appeared to be taking a "wait-and-see" attitude toward expansion during 2018. Despite holding more heifers for addition to the dairy herd, they indicated that they expected 1 percent fewer heifers to calve during the year. The number of replacement heifers per 100 cows remains about the same as 2017, but prices of dairy cows in January were below year earlier and weakening prices for Springers, young open heifers, and light-weight calves may also point towards producer caution regarding expansion. The dairy herd in 2018 is expected to average 9.415

million head, about 0.2 percent above 2017. Cow numbers are expected to increase through mid-year but stabilize in the second-half.

Output per cow on a daily basis is forecast to increase just over 1 percent in 2018, which is fractionally faster than 2017 and the 5-year average. The ration value for 2018 is expected to be slightly higher based on forecast corn and soybean meal prices for 2017/18 and 2018/19 while demand for alfalfa hay has supported hay prices. Normal pasture conditions in much of the country should support improvements in output per cow relative to 2017, but continuing dry conditions in dryland alfalfa areas may become a cause for concern. Milk production in California was affected by high summer temperatures during the summer of 2017 and milk per cow, which averaged below the U.S. average during second-half 2017, is expected to recover in 2018 on the expectation of normal temperatures during 2018. As California is the largest dairying state in the nation, an increase in milk per cow relative to last year should help boost the national average.

### **Domestic Demand Softness is Overhanging Markets at the Beginning of the Year**

Commercial use on a fat and skim-solids basis diverged during 2017. Fat basis use was 0.3 percent above year-earlier, but skim-solids use was about 0.7 percent lower. However, on both a fat and skim-solids basis, 2017 ending stocks were generally above year earlier with fourth-quarter prices of a number of major dairy products lower than 2016. Butter was a significant exception with both higher year-over-year stocks and prices; this likely reflects stock-holding behavior in the face of perceived demand strength.

With larger milk supplies in 2018, growth in domestic use is expected on both a fat and skim solids basis. The increase will likely be driven largely by two factors, an improved economy and lower prices. Continued economic growth and diminishing unemployment is expected to underpin gains in demand for dairy products. With larger stocks of most major products coming into 2018 and in the face of price softening during the last quarter of 2017, demand is expected to increase. Domestic commercial use on a fat basis is expected to increase slightly over 2 percent in 2018, with a draw down in fat basis stocks expected. Growth of commercial use on a skim solids basis is expected to increase slightly more rapidly (2.4 percent) than on a fat basis as prices of NDM and whey fall more than those for butter or cheese, encouraging increased use of those products.

### **Strengthening International Demand and Lower Prices Should Support Exports**

U.S. exports have been steadily increasing from the sharp decline of late-2014. Led by gains in a number of dairy products, 2017 exports on a fat basis increased 11 percent from 2016 and skim-solids basis exports increased almost 5 percent. However, although exports on a skim-solids basis breached the record set in 2014, fat-basis exports did not reach the peak trade levels of 2014 as competition in global markets for milk-fat containing products was strong. In tonnage, 2017 U.S exports showed the greatest growth for cheese, whey, and nonfat dry milk/skim milk powder (NDM/SMP) with a smaller increase in butter export volumes.

Interestingly, during much of the year, butter imports and exports were both higher than the prior year.

For 2018, lower U.S. prices, a weaker dollar, and global economic growth should support U.S. exports. However, production in a number of competing countries, notably the EU, is expected to remain high and competition will remain strong, especially for skim based products. For the year, exports on a fat basis are expected to reach 9.5 billion pounds; about 2 percent above 2017 and on a skim-solids basis, exports are forecast to be a record 42.5 billion pounds, 4 percent above 2017.

### **Commercial Stocks Forecast to be Lower, but High Levels of Some Products will Overhang Markets in 2018**

Commercial stocks of dairy product at the end of 2017 were, in aggregate, at record levels<sup>1</sup>. Led by higher stocks of cheese, butter and whole milk powder, fat-basis ending stocks at the end of December were 13.5 billion pounds, 6 percent higher than 2016. With higher ending stocks of nonfat dry milk (NDM), whey protein products, lactose, cheese and whole milk powder (WMP), skim-solids basis stocks at the end of the year were 11.9 billion pounds, 25 percent above 2016.

Fat-basis ending stocks for 2018 are expected to decline almost 5 percent to 12.9 billion pounds as the quantity demanded for cheese and butter increases with lower prices. Stocks on a skim-solids basis are expected to decline almost 3 percent to 11.6 billion pounds. Stronger sales of cheese, NDM and whey are expected to help reduce the overhang, but dry whey stocks were record large in 2017 and it will take time to work those stocks lower.

### **Prices to Average Lower in 2018**

Price patterns for dairy products differed during 2017 but generally reflected year-over higher prices in the first part of the year, followed by weakening prices in the later part of the year. With the exception of butter which had a December average price above 2016, prices of cheese, NDM and whey were below 2016 at the end of 2017. Part of the pressure on prices of cheese, NDM, whey and to a lesser extent butter during the year may have reflected increased production, but the level of stocks in the face of falling prices also likely reflected relatively weak demand during the year.

As 2018 begins, wholesale product prices remain under pressure. Prices in January averaged below 2017 and are likely to remain so through the first quarter. Beyond the first quarter, continued growth in the U.S. economy and gathering strength in dairy exports is expected to help cut in the large stocks and underpin rising prices. Nonetheless, with the exception of NDM, prices are forecast to remain below 2017 during the year as supplies remain large. Cheese and butter prices are expected to be largely supported by gains domestic in demand as the U.S. economy improves. However, the level of cheese currently held in stock will likely be a

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<sup>1</sup> Prior to 2008, USDA's Commodity Credit Corporation held stocks in addition to those held commercially. Thus, these stock levels may not be a record for total stocks held.

headwind in the price recovery of those products. For 2018, the cheddar cheese price is forecast to average \$1.530 to \$1.600 per pound and butter is forecast to average \$2.195 to \$2.295 per pound.

Weakness in NDM prices during the first half will likely reflect the large beginning-year stocks. In addition, declines in cheese prices and whey relative to butter and NDM may encourage a shift towards higher production of butter and skim-milk containing products, thus increasing the supply of NDM/SMP and further pressuring prices. Exacerbating the situation, reduced cheese production may limit cheesemakers' demand for NDM, potentially increasing available supplies. Exports will likely provide an outlet for the large supplies. Despite relatively large international supplies, the widening gap between international prices and U.S. domestic prices may afford opportunities to increase exports. However, potential changes in EU intervention policies add uncertainty to the export picture. As the year progresses, NDM prices are expected to strengthen as demand improves and excess supplies are worked through. By the fourth quarter, NDM prices are expected to be above 2017. For the year, NDM prices are forecast to average \$0.715 to \$0.775 per pound.

Dry whey stocks were record large at the beginning of 2018 and prices in January 2018 averaged 38 percent below 2017. However, relatively low U.S. whey prices vis-à-vis those competing exporters will likely support increase exports during the year. To the extent milk flows to butter and NDM at the expense of cheese and whey, supplies should tighten. Improvements in domestic demand from an improving economy is also expected to support later-year price increases. For 2018, the whey price is forecast to average \$0.270 to \$0.300 per pound.

In the face of weaker dairy markets, the 2018 average all milk price is forecast to decline from 2017's \$17.63 per cwt. For 2018, prices are expected to average \$15.70-\$16.40 per cwt, with prices moving lower in the first half, before recovering somewhat in the second half. However, prices are expected to be below 2017 for the entire year. Class prices are also likely to decline, reflecting weaker product prices. However, the sharp declines in both cheese and whey prices will likely result in a larger absolute decline in Class III prices. The Class III price is forecast to average \$14.20-\$14.90 per cwt and the Class IV price is expected to average \$13.35-\$14.15 per cwt.

Additional information about the 2018 dairy forecasts is available at:

World Agricultural Supply and Demand Estimates

<http://www.usda.gov/oce/commodity/wasde/index.htm>

Livestock, Dairy, and Poultry Situation and Outlook

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1350>

Dairy: World Markets and Trade

<https://www.fas.usda.gov/data/dairy-world-markets-and-trade>