

## Overview

*The recent upsurge in dairy prices is forcefully showing up in data, with many of the most recently announced and reported key milk and dairy prices achieving their highest prices in nearly five years. The September U.S. average all-milk price was the highest since December 2014, as was the October AMS survey price of non-fat dry milk and the advance-announced federal order Class I mover for December. The October AMS survey price of cheddar cheese and the federal order Class III price were both the highest announced since November 2014.*

*Continued reduction in the number of U.S. milking cows – a trend that will likely taper off in a few months – and moderate increases in the average production of milk and milk solids per cow have been important supply-side contributors to higher prices. Good domestic demand growth and improved cheese exports has also been a positive factor, as has the final liquidation of the massive government-acquired stocks of skim milk powder the European Union built up in 2015 and 2016. These developments more than offset a drop in exports, some recent softening of U.S. butter prices and deteriorating dry whey prices, owing to China’s swine fever epidemic and the ongoing U.S. trade war with that country.*

## Commercial Use of Dairy Products

Commercial domestic milk solids use rose over the prior year at essentially the same rate as additional milk solids were produced during the July–September period. Gains were faster for total skim milk solids use, driven by increased consumption of cheese, nonfat dry milk and dry whey products. A pullback in butter consumption held back increased use of milkfat in all products.

## U.S. Dairy Trade

The year-over-year change in total cheese exports turned positive during July–September. The driver of this change was a recovery in exports of cheeses other than American-type cheese. Exports continued to fall from last year’s levels for dry skim ingredients, American-type cheese and fat-based products. Overall exports were down during the period by

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Domestic Commercial Use	Jul–Sept 2019	Jul–Sept 2018	2018–2019 Change	Percent Change
	(million pounds)			
Total Fluid Milk Products	11,249	11,352	-103	-0.9%
Yogurt	1,065	1,126	-61	-5.4%
Butter	460	468	-8	-1.8%
American-type Cheese	1,292	1,264	29	2.3%
All Other Cheese	1,916	1,878	37	2.0%
Total Cheese	3,208	3,142	66	2.1%
Nonfat Dry Milk /Skim Milk Powders	230	204	26	12.5%
All Products (milk equiv., milkfat basis)	54,647	54,536	111	0.2%
All Products (milk equiv., skim solids basis)	45,497	45,078	419	0.9%
All Products (milk equiv., total solids basis)	48,246	47,909	337	0.7%

### U.S. Dairy Trade *from page 1*

the equivalent of just over 1 percent of total U.S. milk solids production.

Butter, cheese, milk protein concentrate, and casein imports all increased by double-digit percentages during July–September. These are the longstanding, major categories of U.S. dairy imports. Combined with the year-over-year reduction in dairy exports, the U.S. dairy trade balance deteriorated by the equivalent of 1.8 percent of total U.S. milk solids production during the period.

## Milk Production

Average milk production per cow in the United States has increased by an average of 1 percent per year since 2015. This rate is considerably below the 1.6 percent average annual increase in per cow milk production that occurred between 1999 and 2015. The corresponding average annual growth

rates in U.S. milk solids production per cow are 1.4 percent since 2015 and 1.8 percent between 1999 and 2015. This slowing in the rate of per-cow productivity in recent years has coupled with the slowing growth, and more recent drop, in the number of milk cows in the country to slow the rate at which those cows supply increased milk and milk solids to the market. That's resulted in higher milk and key dairy product prices in recent months.

## Dairy Products

Continued butter-production increases in the face of lower domestic commercial use and exports of butter has softened butter prices in recent months, although they remain high by historic standards. By contrast, increased production of American-type cheese has not outpaced total commercial use, despite lower exports, which has supported higher cheese prices.

U.S. Dairy Exports	Jul–Sept 2019	Jul–Sept 2018	2018–2019 Change	Percent Change
	(metric tons)			
Butter	4,303	6,381	-2,079	-33%
Anhydrous Milk Fat / Butteroil	927	5,258	-4,330	-82%
Cheddar Cheese	9,069	11,481	-2,412	-21%
American-type Cheese	9,165	11,573	-2,408	-21%
All Other Cheese	72,578	68,714	3,864	6%
Total Cheese	81,743	80,287	1,456	2%
Nonfat Dry Milk / Skim Milk Powder	165,851	169,055	-3,204	-2%
Whole Milk Powder	13,117	13,857	-740	-5%
Dry Whey	37,284	52,052	-14,768	-28%
Whey Protein Concentrate / Isolate	41,382	45,698	-4,315	-9%
Lactose	97,209	99,599	-2,390	-2%
Percent of U.S. Milk Solids Exported	14.5%	15.6%	-1.1%	-7%

U.S. Dairy Imports	Jul–Sept 2019	Jul–Sept 2018	2018–2019 Change	Percent Change
	(metric tons)			
Butter	13,150	11,355	1,795	16%
Cheese	51,038	43,736	7,301	17%
Nonfat Dry Milk / Skim Milk Powder	32	388	-356	-92%
MPC (all protein levels)	10,838	6,821	4,017	59%
Casein	15,403	13,542	1,861	14%
Percent of U.S. Milk Solids Imported	3.9%	3.2%	0.7%	22%

## Dairy Product Inventories

Butter inventories were effectively unchanged at the end of September, remaining at a level considerably higher than typical for that month given the seasonally cyclical nature of butter stocks. Stocks of both American-type and other cheese were in line with trends for days of total commercial use in stock. September ending stocks of nonfat dry milk were comparatively low by this measure.

## Dairy Product and Federal Order Class Prices

The story of milk prices in the United States over the past five years can be told by weaving the stories of the four

basic dairy product prices surveyed weekly by USDA's Agricultural Marketing Service into one master narrative. The USDA survey prices determine the monthly values of all of the federal milk marketing order product-price formulas. The combined value of the federal order prices in turn closely tracks the price of milk.

U.S. Cheddar cheese prices spent 2014 oscillating mostly between \$2.05 and \$2.35 a pound, but then plunged to spend almost the next five years mostly between \$1.40 and \$1.80 a pound. Too much milk became too much cheese, which set a lid on this key determinant of milk prices and spawned a disruptive disconnect between the prices of block and barrel Cheddar cheese. In September, cheese

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Milk and Dairy Products Production	Jul–Sept 2019	Jul–Sept 2018	2018–2019 Change	Percent Change
<b>Milk Production</b>				
Cows (1,000 head)	9,319	9,383	-64	-0.7%
Per Cow (pounds)	5,823	5,752	71	1.2%
Total Milk (million pounds)	54,268	53,969	299	0.6%
Total Milk Solids (million pounds)	6,852	6,812	41	0.6%
<b>Dairy Products Production</b>		(million pounds)		
<b>Cheese</b>				
American Types	1,315	1,300	14	1.1%
Cheddar	922	935	-13	-1.4%
Italian Types	1,402	1,367	35	2.5%
Mozzarella	1,116	1,083	33	3.0%
Total Cheese	3,295	3,233	62	1.9%
Butter	416	403	13	3.3%
<b>Dry Milk Products</b>				
Nonfat Dry Milk	425	393	32	8.0%
Skim Milk Powder	137	142	-5	-3.4%
Dry Whey	260	239	21	8.7%
Whey Protein Concentrate	118	126	-7	-5.9%

Dairy Product Inventories	Sept 2019	Aug 2019	Sept 2018	2018–2019 Change
		(million pounds)		
Butter	302	304	282	7%
American Cheese	771	766	804	-4%
Other Cheese	598	597	576	4%
Nonfat Dry Milk	254	270	262	-3%

### Dairy Product and Federal Order Class Prices *from page 3*

prices finally broke out of this range and should go well north of \$2.00 a pound this month.

Nonfat dry milk prices are effectively global prices: during 2014 those prices plunged from \$2.09 to \$1.25 a pound, then spent most of the following five years largely between \$0.70 and \$1.00 a pound, trapped there by the mountain of surplus acquired by the European Commission. Only since last May have they ventured above \$1 as the last of the EU stocks were finally sold. Dry whey prices were between about

\$0.60 and \$0.70 a pound in 2014, but have been mostly between \$0.25 and \$0.50 a pound since then, fluctuating roughly with the level of U.S. exports, particularly exports to China. Whey exports have fallen during the past year, driven primarily by falling exports to China.

Butter prices have been the one strong factor providing support for milk prices, keeping them from being completely disastrous during a bleak half-decade. During 2014 and 2015, prices were as low as \$1.55 and as high as \$2.85 a pound but have subsequently settled down to generally

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Dairy Product and Federal Order Prices	Oct 2019	Sept 2019	Oct 2018	2018–2019 Change
<b>AMS Commodity Prices</b>		(per pound)		
Butter	\$2.156	\$2.234	\$2.281	-\$0.126
Cheddar Cheese	\$1.969	\$1.905	\$1.569	\$0.401
40-Pound Blocks	\$2.057	\$1.984	\$1.680	\$0.377
500-Pound Barrels	\$1.838	\$1.791	\$1.437	\$0.401
Nonfat Dry Milk	\$1.096	\$1.052	\$0.874	\$0.222
Dry Whey	\$0.340	\$0.370	\$0.447	-\$0.107
<b>Class Prices for Milk</b>		(per hundredweight)		
Class I Mover	\$17.84	\$17.85	\$16.33	\$1.51
Class III	\$18.72	\$18.31	\$15.53	\$3.19
Class IV	\$16.39	\$16.35	\$15.01	\$1.38
<b>Retail Dairy Product Prices</b>				
Fluid Whole Milk (per gallon)	\$3.119	\$3.102	\$2.913	\$0.206
Lowfat Fluid Milk (per gallon)	\$2.818	\$2.742	\$2.625	\$0.193
Cheddar Cheese (per pound)	\$5.277	\$5.406	\$5.158	\$0.119
Butter (per pound)	\$3.979	\$3.954	\$4.111	-\$0.132

Milk and Feed Prices	Sept 2019	Aug 2019	Sept 2018	2018–2019 Change
<b>Producer Prices</b>				
All Milk (per cwt.)	\$19.30	\$18.90	\$16.70	\$2.60
<b>Feed Prices</b>				
Corn (per bushel)	\$3.80	\$3.93	\$3.39	\$0.41
Soybean Meal (per ton)	\$296	\$297	\$318	-\$23
Alfalfa Hay (per ton)	\$193	\$194	\$180	\$13
DMC Feed Cost (per cwt.)	\$8.89	\$9.05	\$8.44	\$0.44
DMC Margin (per cwt.)	\$10.41	\$9.85	\$8.26	\$2.16

## Dairy Product and Federal Order Class Prices *from page 4*

well above \$2.00 a pound. Since spring of 2018, they rose further to remain well above \$2.20 a pound until this past October. Consumers have reevaluated the role of fats in their diets at a fortuitous time for U.S. dairy farmers, and the effects on butter prices, compared to the fortunes of the other three basic dairy products, drove the estimated percentage of their total milk checks contributed by butter alone from about 30 percent at the beginning of 2014 to almost 70 percent at the end of 2015, keeping it between 50 and 65 percent since then. Butter prices are now backing off from these levels, but the recent strength of cheese and nonfat dry milk prices are more than overcoming this and moving milk prices to their highest levels since 2014.

## Milk and Feed Prices

The U.S. average all-milk price rose to \$19.30 per cwt. in September, the highest it has been since December 2014. The DMC margin was also up in September, to \$10.41 per cwt., its highest level since November 2017. A harvest season drop in corn prices is driving down the DMC feed cost formula.

## Looking Ahead

The milk price forecast based on the mid-November CME dairy futures closely agreed with USDA's November updated forecast for average milk prices during 2019. With just three remaining months to be reported, both were pointing to \$18.60 per cwt for the calendar year, \$2.30 per cwt higher than during 2018. Their two forecasts for 2020 diverged significantly. USDA projected \$18.85 per cwt. for 2020, while the futures were pointing to an average of \$19.65 per cwt. for the calendar year. At the same time, USDA's DMC Decision Tool was indicating that there was less than a 25 percent probability that the DMC margin would fall below the maximum coverage level of \$9.50 per cwt. before the end of 2020, with the lowest point coming in the middle of next year.

But forecasts are just that. Enrolling in the DMC program at the generous coverage and affordable premiums available will always be a highly-recommended risk-management option for dairy farmers.

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The **National Milk Producers Federation (NMPF)** is a farm commodity organization representing most of the dairy marketing cooperatives serving the U.S.