

## Overview

*Continued growth in domestic butter and cheese consumption, coupled with further recovery of world prices for skim milk powder and whey, strengthened U.S. milk prices as 2016 drew to a close. The all-milk price hit a high for the first 11 months of the year in November, while the November Farm Bill Margin Protection Program (MPP) feed cost was the lowest of all previous months in 2016. As a result, the \$9.98 per hundredweight MPP margin for November was the highest for the year up to that point.*

## Commercial Use of Dairy Products

Domestic sales of fluid milk dropped by half a percent during August–October, compared to the same period a year earlier. This is in line with recent trends in fluid milk sales. Butter consumption was up almost 5 percent from a year earlier, marking a return to the strong growth the category experienced during the first months of 2016. Growth in American-type cheese consumption, at more than 3 percent, was similarly strong compared to recent months. By contrast, the rate of increase in other cheese consumption trended lower throughout 2016. In addition, the use of nonfat dry milk and skim milk powder continues to drop steadily as exports recover and pull more skim solids away from the domestic market. Use of milkfat in all products during August–October rose by 3.6 percent from a year earlier, while the corresponding use of skim solids was

1.4 percent less. This was the largest difference in these two U.S. market growth rates since at least the beginning of 2015, likely symbolizing the growing divergence between the domestic market’s increasing appetite for milkfat and the world market’s recovering need for skim milk solids.

## U.S. Dairy Trade

U.S. butter exports tripled from a year earlier during September–November, with more than three-quarters of the increase going to Canada. Our neighbor to the North is experiencing a growth in demand for milkfat — similar to the United States — to which its managed milk supply system cannot easily adjust. During the same period, Canada’s cream imports from the United States expanded nine-fold from a year earlier, an increase of about 4,600 metric tons. Overall, U.S. cheese exports showed

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Domestic Commercial Use	Aug–Oct 2016	Aug–Oct 2015	2015–2016 Change	Percent Change
	(million pounds)			
Total Fluid Milk Products	12,435	12,492	-57	-0.5%
Butter	514	490	24	4.9%
American-type Cheese	1,186	1,151	36	3.1%
All Other Cheese	1,824	1,780	45	2.5%
Nonfat Dry Milk / Skim Milk Powders	190	250	-59	-23.7%
All Products (milk equiv., milkfat basis)	54,222	52,340	1,883	3.6%
All Products (milk equiv., skim solids basis)	43,987	44,603	-616	-1.4%

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

their strongest growth in at least two years, even though exports of American types dropped by more than 20 percent. Exports of milk powders and whey products rose strongly during the period. Overall, the United States exported 15.4 percent of its milk solids during September–November, almost 2 percent more than during the same period a year earlier.

Imports of butter and cheese have been dropping at an accelerated rate recently, after rising earlier in 2016. As world dairy markets recover, the United States is becoming less of a magnet for foreign butter, and cheese producers and exporters are refocusing on the major dairy-deficit countries, including China, Algeria and Japan. Imports of concentrated dairy proteins continue to increase, particularly casein, which is not produced here, but for which a specialized market exists.

## Milk Production

Milk production was 2.4 percent higher during September–November than during the same months in 2015. Milk production increased by 1 percent or less annually for most months between spring 2015 and spring 2016. Since then, however, milk production has been climbing steadily. The spring-to-spring interlude of slow growth was largely the result of declining production in a few large milk producing states, which have subsequently stabilized or reversed their declines. Average production per cow has followed the same basic trend, with cow numbers essentially flat during 2016. The possibility of further gains in production in the months ahead will be an important factor affecting milk prices during 2017, primarily through its effect on the domestic supply–demand balance for cheese.

U.S. Dairy Exports	Sept–Nov 2016	Sept–Nov 2015	2015–2016 Change	Percent Change
		(metric tons)		
Butter	6,444	2,113	4,331	205%
Anhydrous Milk Fat/Butteroil	626	555	71	13%
Cheddar Cheese	5,509	7,031	-1,523	-22%
American–type Cheese	5,604	7,425	-1,822	-25%
Total Cheese	71,796	68,564	3,232	5%
Nonfat Dry Milk/Skim Milk Powder	161,449	139,666	21,784	16%
Whole Milk Powder	8,945	6,942	2,004	29%
Dry Whey	86,519	61,266	25,253	41%
Whey Protein Concentrate/Isolate	46,725	38,160	8,565	22%
Lactose	93,328	90,132	3,196	4%
Percent of Milk Solids Exported	15.4%	13.6%	1.8%	13%

U.S. Dairy Imports	Sept–Nov 2016	Sept–Nov 2015	2015–2016 Change	Percent Change
		(metric tons)		
Butter	4,793	6,048	-1,255	-21%
Cheese	52,607	58,494	-5,888	-10%
Nonfat Dry Milk/Skim Milk Powder	61	656	-595	-91%
MPC (all protein levels)	10,984	9,510	1,474	15%
Casein	16,482	15,327	1,155	8%
Percent of Milk Solids Imported	3.7%	3.5%	0.2%	7%

## Dairy Products

After declining slowly for most of 2016, production of Cheddar and American-type cheese demonstrated a marked upturn during the fall. Production of Mozzarella and Italian-type cheese has been relatively stable all year, with annual growth rates mostly higher than 3 percent. Production of cheese has not outpaced domestic consumption during the spring and summer of 2016. Butter production dropped during the fall after growing strongly all year. The decline reflected the strong, holiday-season demand for cream in other products. Production of skim milk powder continues to grow strongly, but at a slowing rate, while the rate of export growth has been increasing.

## Dairy Product Inventories

Stocks of butter, American and other cheeses, and nonfat dry milk all reached their highest levels for 2016 at the end of July. November inventories were down from those peak levels by 52 percent for butter, 7 percent for both American and other cheeses, and 16 percent for nonfat dry milk.

## Dairy Product and Federal Order Class Prices

The monthly butter prices reported by USDA's Agricultural Marketing Service averaged \$2.08 per pound in 2016. Corresponding averages

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Milk and Dairy Products Production	Sept–Nov 2016	Sept–Nov 2015	2015–2016 Change	Percent Change
<b>Milk Production</b>				
Cows (1000 head)	9,338	9,319	19	0.2%
Per Cow (pounds)	5,529	5,412	117	2.2%
Total Milk (million pounds)	51,631	50,436	1,195	2.4%
<b>Dairy Products Production</b>				
		(million pounds)		
<b>Cheese</b>				
American Types	1,170	1,152	18	1.6%
Cheddar	830	816	14	1.7%
Italian Types	1,310	1,266	44	3.5%
Mozzarella	1,018	993	25	2.5%
Total Cheese	3,034	2,978	56	1.9%
Butter	421	434	-14	-3.2%
<b>Dry Milk Products</b>				
Nonfat Dry Milk	393	366	27	7.4%
Skim Milk Powder	128	112	17	14.8%
Dry Whey	233	235	-2	-0.8%
Whey Protein Concentrate	109	121	-12	-9.7%

  

Dairy Product Inventories	Nov 2016	Oct 2016	Nov 2015	2015–2016 Change
		(million pounds)		
Butter	161	228	133	21%
American Cheese	713	736	700	2%
Other Cheese	467	487	448	4%
Nonfat Dry Milk	216	225	199	9%

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

for Cheddar cheese, nonfat dry milk and dry whey were \$1.61, \$0.83 and \$0.29 per pound, respectively. It is interesting to compare these to the corresponding averages in 2009. Both years began with world dairy markets in complete meltdown, with some recovery during the second half. Nonfat dry milk prices were \$0.09 per pound lower last year than during 2009, and dry whey prices were just \$0.03 per pound higher in 2016. Major exposure to world markets for these two products, along with other commodity-type skim powder and whey complex products, ensures that they each effectively have a single, global market price. By contrast, U.S. Cheddar cheese prices were \$0.31 per pound higher last year than in 2009 and domestic butter prices

were \$0.87 per pound higher. Strong domestic consumption, particularly for milkfat, has increasingly disconnected the domestic market from world markets for butter and cheese, somewhat buffering domestic prices for these products from deeper global downturns.

## Milk and Feed Prices

The all-milk price rebounded in November after its \$0.70 per hundredweight drop a month earlier. The \$1 per hundredweight November increase was quite robust, given the November changes in federal order class prices. The Class III price did the heavy lifting, jumping \$1.82 per hundredweight from October, while

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Dairy Product and Federal Order Prices	Dec 2016	Nov 2016	Dec 2015	2015–2016 Change
<b>AMS Commodity Prices</b>		(per pound)		
Butter	\$2.100	\$1.909	\$2.571	-\$0.471
Cheese	\$1.799	\$1.760	\$1.572	\$0.227
Nonfat Dry Milk	\$0.958	\$0.912	\$0.789	\$0.169
Dry Whey	\$0.399	\$0.369	\$0.234	\$0.166
<b>Class Prices for Milk</b>		(per hundredweight)		
Class I Mover	\$16.88	\$14.78	\$16.71	\$0.17
Class III	\$17.40	\$16.76	\$14.44	\$2.96
Class IV	\$14.97	\$13.76	\$15.52	-\$0.55

Milk and Feed Prices	Nov 2016	Oct 2016	Nov 2015	2015–2016 Change
<b>Producer Prices</b>				
All Milk (per cwt.)	\$17.60	\$16.60	\$18.20	-\$0.60
<b>Feed Prices</b>				
Corn (per bushel)	\$3.23	\$3.29	\$3.59	-\$0.36
Soybean Meal (per ton)	\$322	\$323	\$309	\$14
Alfalfa Hay (per ton)	\$130	\$135	\$147	-\$17
2014 Farm Bill Feed Cost (per cwt.)	\$7.62	\$7.75	\$8.13	-\$0.52
2014 Farm Bill Margin (per cwt.)	\$9.98	\$8.85	\$10.07	-\$0.08
<b>Retail Dairy Product Prices</b>				
Fluid Milk (per gallon)	\$3.292	\$3.292	\$3.299	-\$0.007
Cheddar Cheese (per pound)	\$5.352	\$5.352	\$5.433	-\$0.081

### **Milk and Feed Prices** *from page 4*

the lagged Class I price dropped by almost \$2, and Class IV and Class II prices rose modestly. The monthly MPP feed cost calculation declined by a modest \$0.13 per hundredweight from October to November, causing the MPP margin to rise by \$1.13 per hundredweight.

## **Looking Ahead**

The January CME dairy futures indicated that milk prices would average about \$2.50 per hundredweight higher this year than in

2016. The grain futures indicated that the MPP dairy feed cost would be about \$1 per hundredweight higher this year, which would make the MPP margins about \$1.50 per hundredweight higher. USDA's more bullish MPP decision tool was projecting margins approximately \$2.50 per hundredweight higher in 2017. In its January update, USDA raised its estimate of the 2017 U.S. average all-milk price by \$0.75 per hundredweight from a month earlier, to \$18. The move brought USDA's forecast closer to, but still below, the CME futures milk price indication. Nevertheless, these various outlooks clearly point to be better year in 2017 than in 2016.

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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.