2017 Dairy Situation & 2018 Outlook

Cornell Agricultural and Food Business Outlook

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Can I Be Forgiven?

MILK CHECK OUTLOOK

by Mark Stephenson

The dog days are over

I DIDN'T realize that the "dog days of summer" was a real thing. Specifically, they extend from July 3 to August 11, and it's when Sirius, the Dog Star, rises at the same time as the sun. It is also typically the hottest stretch of the summer. Extreme heat has impacted cows and milk production in California and the Southwest this year and that was of interest to a visitor who recently stopped by my Madison-based office.

It's winter down under and a dairy producer from New Zealand stopped by the University of Wisconsin. He was almost dreading going back home. Not because it is winter there, but because calving season is just about to begin on his farm. They have had lots of rain and the pastures look good, but calving season is a very stressful time when your entire herd calves over the course of a few weeks.

In years past, this would have just been a social visit, but today, opportunities like this help to provide valuable information about the potential milk production in other countries.

Part of what he was doing was assessing the upcoming milk production potential in Oceania.

What do we know?

While 2017 isn't quite in the books, it's close enough to know that it was a significant recovery year for milk prices. It looks to me as though Class III may be up nearly $1.40 above 2016 and Class IV about $2.20 for a U.S. All Milk price difference of $1.50.

Much of the Midwest and the Northeast have had a difficult growing season. In many areas, corn was planted late and many acres will make pretty sketchy stage at best. The quality of aflatoxin that has been put up is also questionable. Although it looks like there will be enough of a corn crop in the U.S. to keep central prices in a good range, gains in production per cow are likely to be modest for the year ahead.

The U.S. milk production growth has been in a very normal range for us — somewhere between 1 to 2 percent — for the last year and a half. I don't think that milk prices and feed quality will let us get much beyond that for 2018. The other major exporters of milk powder have also not been overly eager to expand milk production. They have certainly recovered from the lows in the fourth quarter of 2016, but the most recent data shows that the recovery is modest and the appetite for significant expansion is meager.

Recently, Mexico has been back in the market for U.S. skim milk powder, and China has been buying record levels of products on the world markets. Russia has looked interested in dairy products again, but may keep the embargo on EU- and U.S.-sourced products in place if our sanctions are reactivated up as a result of policy disputes. Who knows where trade negotiations will take us in the year ahead.

Even with production gains being modest and export demand picking up a bit, we still have significant stocks of some dairy products on hand. U.S. stocks of skim milk powder have been creeping upward, and the large inventory of powder that the EU purchased within its borders under intervention hasn't budged. Butter stocks are clearly not a problem, and even U.S. cheese stocks, which had been growing, look like they will be under control soon.

What markets might hold

I think that we have to assemble all of these pieces and conclude that the forecast for milk prices is cautiously optimistic. Which is to say that I think there is some more room for 2018 prices to improve over 2017 ... and those 2017 prices have been a pretty good improvement over 2016. I do think that butter prices will moderate somewhat, but skim milk powder prices are likely to improve and we will begin to work down those world stocks.

My forecast is for 2018 Class III prices to be up by about 50 cents and Class IV by almost 80 cents, making the U.S. All Milk price about 50 cents higher.

I can't put the All Milk price up anymore than that because I don't think that premiums will improve until the world feels as though it's actually moving toward tightness in markets, and that isn't on the horizon.

The dog days of summer are over and the trough of the last milk price cycle is in the rearview mirror. Let's take a breath and enjoy what fall brings.
Can I Be Forgiven?

Feb-18 CME Contract Prices Over Past 120 Days

Dollars per Hundredweight

Aug-2017 Sep Oct Nov Dec Jan-2018

Class III Futures

Class IV Futures

Updated 1/8/18
The Importance of Trade

12 Month Rolling Average Trade as a Percent of Solids Produced
U.S. American Cheese Stocks

American Cheese Stocks

1000s Pounds

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

2014 2015 2016 2017
Why the Long Trough?
Intervention Stocks Overhang Markets
Intervention Stocks Impact

- Intervention stocks are now old powder which can’t be used for yield products like cheese.
- Can still be used for products like yogurt.
- Will mostly be used for livestock feed (competes with whey).
- May also be reworked into “grey market” products.
Nonfat Prices Have Declined

CME Spot Nonfat Dry Milk Price

$1.10
$1.05
$1.00
$0.95
$0.90
$0.85
$0.80
$0.75
$0.70
$0.65
$0.60

Why Do We Continue to Produce?

- Milk price hasn’t dropped below the fixed portion of the cost of production
- Rather than the deep cut, this price trough is the long scrape
- We have been consuming capital now for close to three years
- Open accounts are growing

[Graph showing cost comparison between the United States and New Zealand]
Milk per Cow per Day

CAGR is about 2.1%.
Improved efficiency

Annual U.S. Milk Production per Cow

- Y-axis: Pounds per Cow
- X-axis: Years (1960 to 2010)

Graph showing a steady increase in milk production per cow from 1960 to 2010.
Consider trends in top four states
Number of Cows

The chart shows the number of cows over different months for the years 2014, 2015, 2016, and 2017. The x-axis represents the months from January to December, and the y-axis represents the number of cows in thousands.

- **2014**: The line for 2014 starts at the lowest point in January and shows a gradual increase throughout the year, ending just below the line for 2017.
- **2015**: The line for 2015 begins similarly to 2014 but shows a slower increase, stabilizing by the end of the year near the 2016 line.
- **2016**: The line for 2016 starts mid-range and shows a steady increase, reaching just below the 2017 line by December.
- **2017**: The line for 2017 starts high and shows a consistent increase throughout the year, ending near the highest point on the chart.
Percent Change in U.S. Milk Production
Regional Changes in Milk Production

Percent Change in Milk Production—first half of 2017 compared to 2016

The map shows the percent change in milk production across different regions of the United States, with values ranging from -10.78% to 15.05%. The changes are color-coded to indicate the magnitude and direction of the change.
Northern States Making More Milk?

Change in Milk Production—2016 compared to 2015
Location & Volume of Dairy Plants
Who are your customers?

- We can build a plant, but...
  - Plants are expensive!
  - Where do we put it?
  - What products do we produce?
  - Who are your customers?
  - How do you get the products to them?

- Raw milk is expensive to move!
Premiums in the Upper Midwest

Implied Over-Order Premiums

- Wisconsin
- Michigan
- New York
Dairy Products are a Good Buy

BLS – Dairy and Related Products
Fluid Milk Sales
U.S. per Capita Consumption

With population growth, we can handle about 1.5–2.0% more milk production. Either we need more exports or fewer cows!

Increase about 1.9 pounds of milk equivalent per year.
Global Dairy Trade Index

GDT Price Index

Year: 2013 to 2018
Other Factors

Dollar Index of Major Currencies

Index (Mar-73 = 100)

Jan-2012 Jan-2013 Jan-2014 Jan-2015 Jan-2016 Jan-2017

DMaP Dairy Markets and Policy

Updated 12/29/17
The Alternative to Producing Milk

Cull Cow Price

$130
$120
$110
$100
$90
$80
$70
$60
$50
$40

Price Forecasts

Actual and Forecast Milk Prices

- Class III
- Class IV
- All Milk Price

Month(s): Jan-15 to Oct-18
My Forecast...

- Our relatively strong U.S. economy is helping consume dairy products.
- World supply of milkfat is tight (milkfat is a luxury item).
- World supply of milk proteins is excessive
  - Either need to find new emergent economies (shift the demand curve) or need to explore current demand for skim milk powder (move down current demand curve).
- Southern hemisphere is half way through their production season, but the EU is in the driver’s seat.
- Unless circumstances change significantly on the export side, it’s hard to be very optimistic about milk prices in the short-run.
- I am forecasting 2018 Class III down by $1.35, Class IV down by 85¢ and the All Milk Price down by about $1.55 (reflects declining premiums). Basically, 2018 will feel like 2016.