The Pennsylvania Dairy Industry: Current Status and Future Challenges

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Joint Informational Meeting

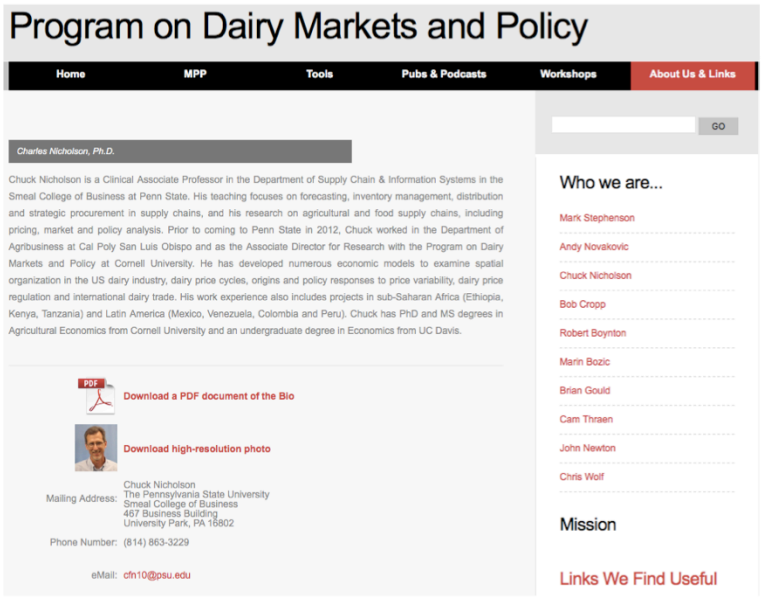
House Agriculture and Rural Affairs Committee
&
Senate Agriculture and Rural Affairs Committee

August 17, 2016

PENNSTATE SMEAL College of Business

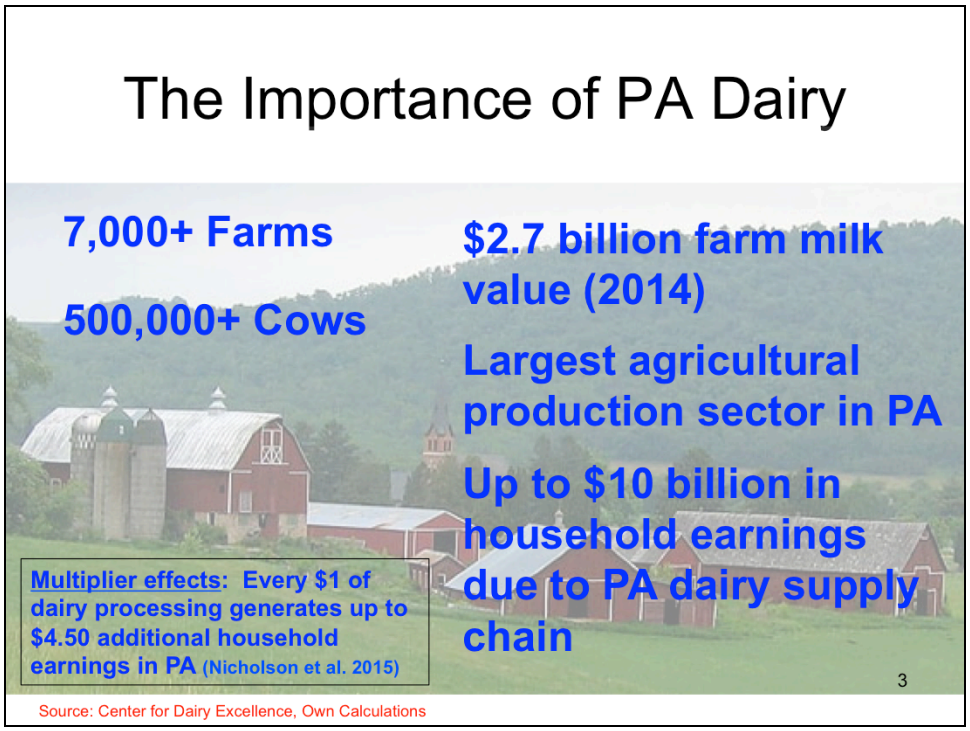
I have been asked to provide some background information at this hearing on the current status of the Pennsylvania dairy industry, and also want to place this in the context of challenges to future growth and profitability for Pennsylvania's industry.

Why a B-School Guy?

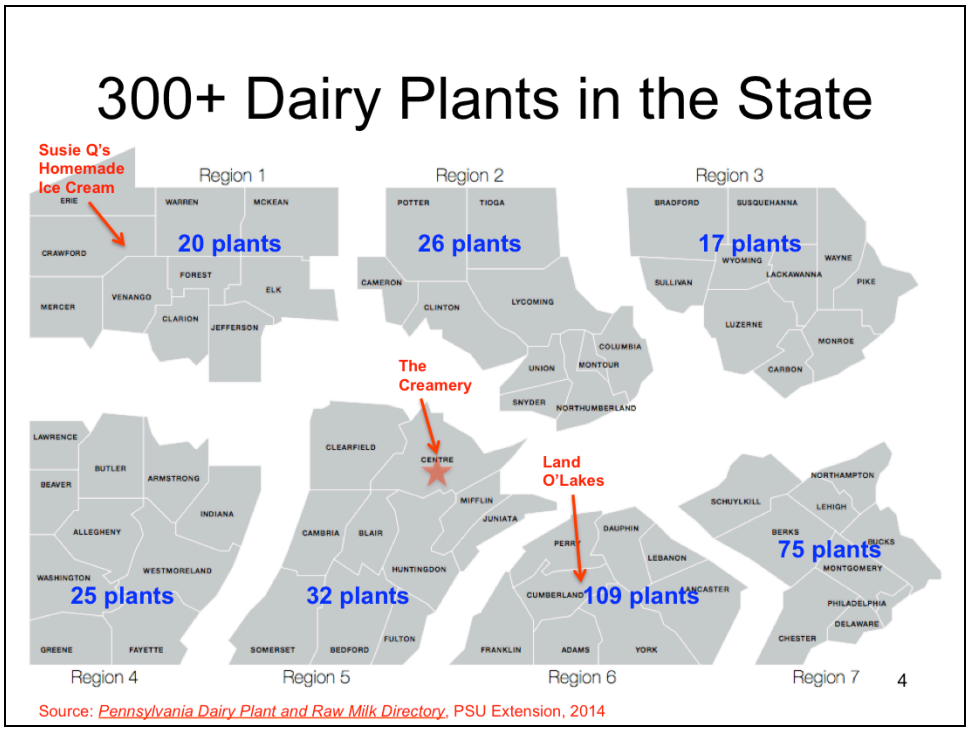


2

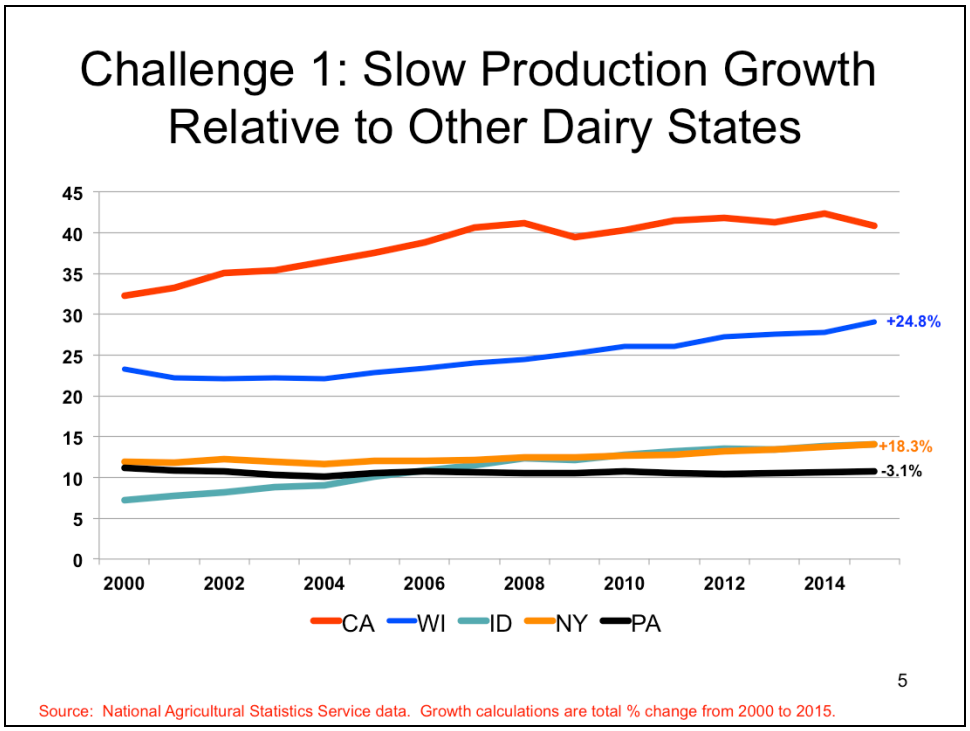
Although my current position with Penn State is in the area of supply chain management, I have been an active member of the Program on Dairy Markets and Policy (DMAP), a collaboration of dairy economists from Wisconsin, Minnesota, Michigan State, Cornell and Penn State. I also have worked on dairy industry issues in the Northeast for more than 25 years.



The great importance of the PA dairy industry in terms of farms, processing, input suppliers, transportation and retailing is known to many. Dairy is the largest segment of production agriculture in the state by value of product sold, an in a high-price year, dairy farm revenues approach $3 billion. However, the overall industry likely generates more than $10 billion in contributions to household income in the state based on the direct value of milk, the value added during processing, and "multiplier" effects that occur because income from dairy to other sectors generates additional activities and household income. Previous studies indicate that every additional $1 of dairy processing expenditure results in $4.50 in additional household income in PA.



The PA dairy industry should be viewed as a integrated supply chain, so in addition to farm production, processing is an important component of the economic activity, and is essential for producers to have a profitable outlets to market their milk. In 2014, over 300 dairy plants were identified in the state, ranging from the small and specialized (like Susie Q's Homemade Ice Cream in Titusville) to the quite large (such as Land O'Lakes plant in Carlisle). (And it is always important to remember the Creamery on the Penn State campus!) Overall, the dairy supply chain in PA generates tens of thousands of jobs.



I would now like to discuss a number of challenges to the future growth and profitability of the dairy supply chain in PA. One key challenge is that production growth has been slower in PA than in neighboring states or those with similar production systems. Total milk production in PA is about the same in 2015 as it was in 2000, whereas NY has grown by more than 18% and Wisconsin has grown by nearly 25% in those 15 years. As was noted in the information session, Michigan has now surpassed PA in total milk production for some months in 2016. The reasons for this slower growth are not entirely understood, but one factor is that milk per cow (productivity) on PA farms has grown more slowly than in other states. In 2000, milk per cow was higher in PA than NY, and now NY's production per cow is 12% above PA's.

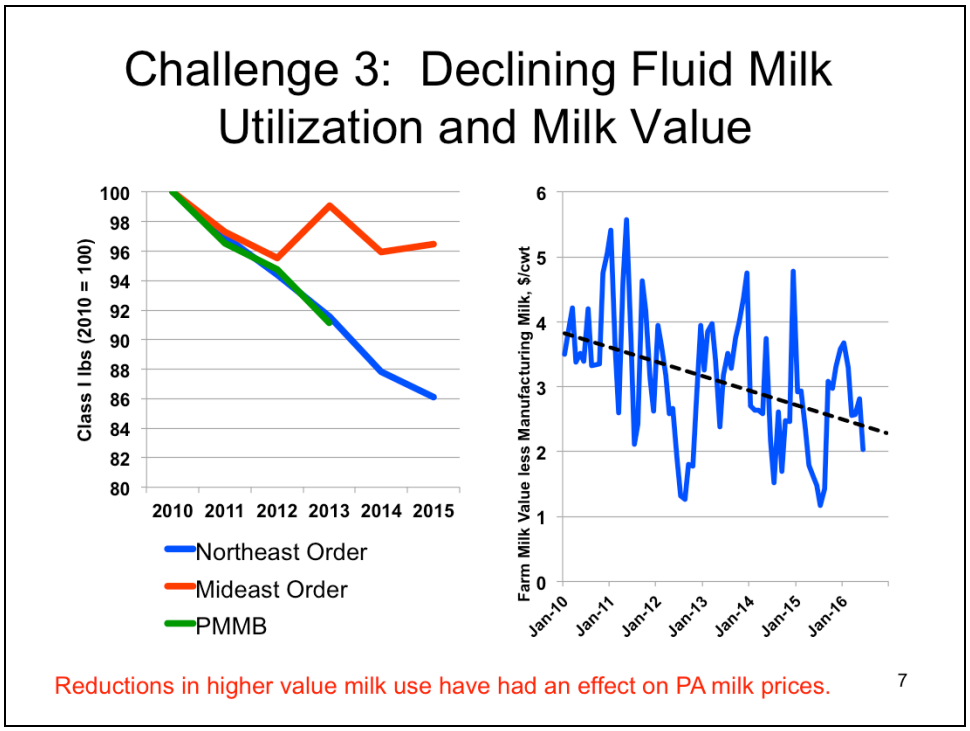
Challenge 2: Milk Production & Processing Capacity Balance

- Plant capacity in Northeast has long been an issue of discussion
- Slow milk production growth doesn't encourage investment
- Some periods of insufficient capacity led to dumped milk and assessments

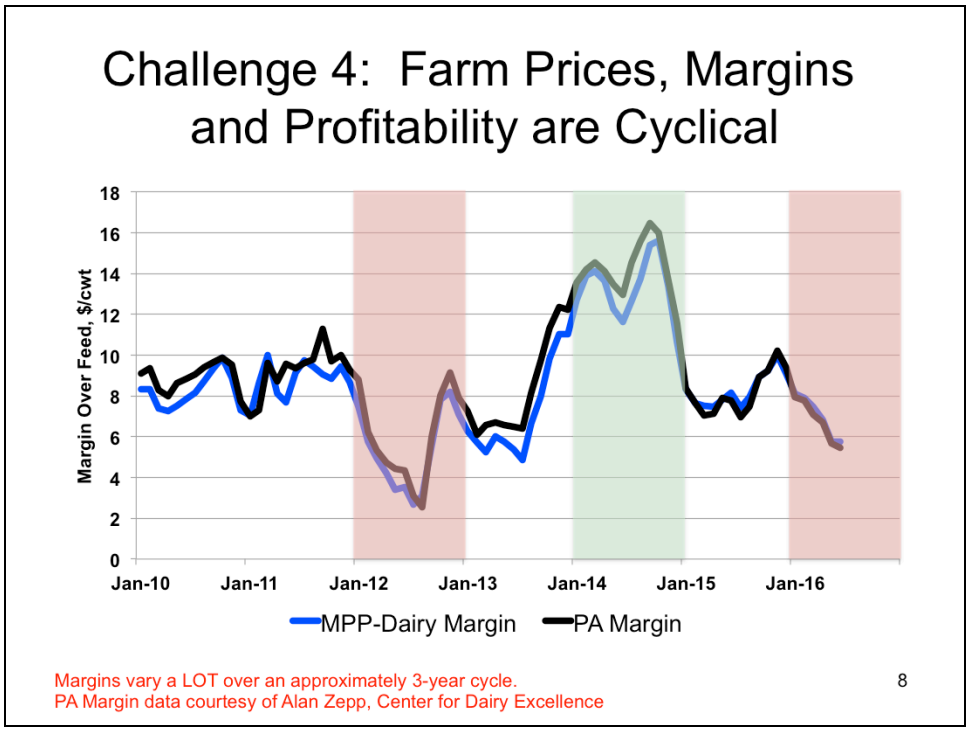
Photo: Dairy Foods magazine

6

Slow growth in milk production also relates to another challenge, which is maintaining an appropriate balance between milk production and processing capacity. This is not a new issue; it has been the subject of discussion in the northeast region since I was a graduate student at Cornell in the early 1990s. In recent years, most large (efficient) new processing facilities have been built through coordination of milk producers and processing companies, in locations with the potential to develop a large and dedicated milk supply to support lower-cost processing through economies of scale. It is much more difficult to accomplish this in areas where milk production growth is slow. Recent imbalances in milk supplies and plant capacity have led to dumped milk and producer assessments to cover these costs. Essentially, growth in production and growth in capacity need to be coordinated, and be consistent with growth in market opportunities.



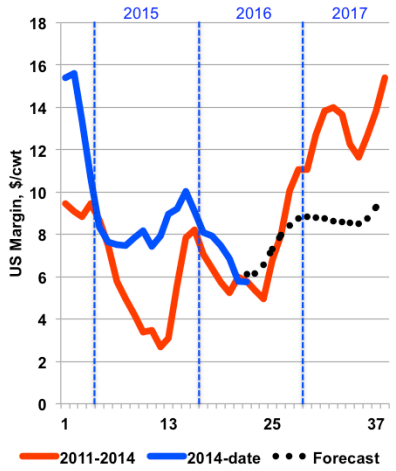
The milk price paid to farmers depends on the use of the milk (for example, in beverage milk or cheese) and the location at which milk is first received by a plant. Because the highest-value milk to farmers is that used in Class I under Federal Milk Marketing Orders (for beverage milk), the reduction in total producer milk (lbs) used in Class I will result in a decrease in the average farm price of milk. The left panel indicates that Class I usage is down by 14% since 2010 in the Northeast milk marketing—a dramatic decline–and this is similar to reductions in beverage milk priced under the Pennsylvania Milk Marketing Board based on data through 2013. The right panel indicates the trend in what might be thought of as the "total premium above manufacturing milk price", which subtracts the higher of the Class III (cheese) or Class IV (butter, powder) milk price from the PA state "All-milk" price, reported by the National Agricultural Statistics Service of USDA. Since 2010, changes in utilization account for much of a nearly $2 decrease in the average value of milk above the manufacturing milk price, although more recently, there have been declines in the "over-order" premiums paid for milk as well.



The dairy industry experiences cyclical patterns in prices and profitability. The average length of the cycle for farm prices and margins is about 3 years, as shown by the MPP-Dairy program margin (one indicator of national average profitability) for the US and a similar calculation for Pennsylvania. We are currently in a low-margin part of the cycle (red shading), following record-high margins in 2014 (green shading). The calculated PA margin was higher than the MPP-Dairy margin before 2015, but has converged to it in the past couple of years (in part due to the reduction in milk value mentioned in Challenge 3). Although cycles are often attributed to specific events (like decreases in export sales), previous research suggests that a large contributor to the cyclical behavior originates with production decisions.

Challenge 4, continued

- 2016 is a definitely a low profitability year
- *"This is a downturn, not a disaster…our dairy portfolio is still increasing."*
  - Chris Laughton, Farm Credit East
- When will the current downturn end?
  - Recovery may be slow



9

Low profitability is currently a challenge for many farms. However, conditions as measured by margins and from the perspectives of agricultural lenders suggest that the current cycle (actual shown by blue line) is not as punishing as the previous one (shown by red line). We are at a nearly identical margin in June 2016 as we were in a similar part of the previous cycle (which lasted from 2011 to 2014) but dairy farmers did not experience nearly as many months with national-average margins below $6/cwt during this cycle. Agricultural lenders indicate that this cycle has not stressed their loan portfolios as much as during the previous two cycles, and they are continuing to expand the total value of their dairy portfolios. We have probably reached the bottom of the margin cycle and forecast values. My forecast (black line) and those from futures markets suggest recovery in the second half of 2016, although it is likely to be less rapid and result in lower margin peaks than occurred in the previous price cycle.

Thank You! Questions?

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Dairy Markets and Policy website:

www.dairymarkets.org

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10

The foregoing provides a brief overview. If additional information would be helpful, contact information is provided above.