

# LEGISLATIVE BUDGET AND FINANCE COMMITTEE

A JOINT COMMITTEE OF THE PENNSYLVANIA GENERAL ASSEMBLY

## A Study of Pennsylvania's Dairy Industry

September 2019



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# REPORT SUMMARY



## Study Objectives

*Our study was in response to Senate Resolution 384, which directed the LBFC to study Pennsylvania's dairy industry. The LBFC officers adopted the following objectives for our study:*

- 1. To document the historical and contextual perspectives of Pennsylvania's dairy industry and the Milk Marketing Law.*
- 2. To identify and document the current issues facing the dairy industry, including but not limited to: general economic pressures, consumer preferences, non-PA based processors and producers, and regulatory influences from the Milk Marketing Board.*
- 3. To identify recommendations for policymakers to consider in aiding the dairy industry, including: successful initiatives undertaken in other states, dairy processing expansion, and the expansion of specialty dairy markets.*

## Report Overview

Dairy farming is often portrayed as an idyllic and pastoral business enterprise. In reality, it is extremely hard work—and that work has been made even more arduous—by an ongoing crisis facing many Pennsylvania dairy producers.

The crisis dairy producers (i.e., dairy farmers) face today is one of low prices for the milk they produce from their herds. Pennsylvania, like many other states, is experiencing one of the longest sustained periods of low prices for milk. The cause for this downward cycle is not easily explained by any single factor; instead, it results from a conglomeration of issues involving local, state, federal, and even global laws, regulations, policies, and practices. In turn, these issues impact the economic principles of supply and demand—and stated simply—supply is high, while demand is wavering.

In response to this ongoing dairy crisis, Senate Resolution (SR) 384, directed the Legislative Budget and Finance Committee (LBFC) to study Pennsylvania's dairy industry. See Appendix A for a copy of the resolution. SR 384 directed us to obtain information about past, present, and future problems impacting the industry and to develop recommendations for initiatives to assist dairy producers. In response to SR 384, the LBFC Officers adopted the study objectives listed in the left-facing text box. Our study's procedures generally focused on the time period of July 1, 2015, through June 30, 2019; however, in some areas we preceded or extended the scope. These areas are noted in the report.

In conducting our work, we met with numerous stakeholders representing all segments of the dairy industry, including but not limited to, producers, processors, and retailers. We also met with individuals representing the regulatory community, principally, the Pennsylvania Milk Marketing Board (PMMB), and the Pennsylvania Department of Agriculture. Using the most current data available, we calculated the estimated economic impact of Pennsylvania's dairy industry, which is the largest segment of Pennsylvania's agricultural economy. We reviewed applicable federal and state laws pertaining to dairy regulation, and we spoke with experts in dairy economics and dairy policy. We also reviewed numerous other documents, studies, survey results, and testimony before the PMMB.

As listed below, our report is organized by the following sections:

**Section I – Objectives, Scope, and Methodology**

**Section II – Background Information about Pennsylvania's Dairy Industry**

**Section III – Historical and Contextual Issues**

**Section IV – Current Issues Facing Pennsylvania's Dairy Industry**

**Section V – Future Options for Consideration**

Additionally, we have included various appendices that contain supplemental information about Pennsylvania's dairy industry. As guided by our objectives, and as described further in the subsequent report sections, we found the following:

## **Understanding the Dairy Industry**

Pennsylvania's dairy industry contributes many positive externalities, such as open space for neighboring residents, employment opportunities for citizens from rural communities, and access for consumers to purchase locally-produced wholesome dairy products. The dairy industry is complex, and it involves many different contributors to move milk from farm to table. Understanding these complexities and the various stages of production and processing is necessary background information to understand today's dairy crisis.

Producers, more commonly known as farmers, raise cattle and collect raw milk from their herd. The milk is picked up at the farm, in refrigerator tankers, and shipped to Processors, who depending on the end use of the product (e.g., consumable fluid milk, cheese, yogurt, etc.), process the milk into retail products. Processors also typically treat the raw milk through pasteurization and homogenization to protect the product from pathogens. After processing, the finished product is distributed to retailers, where it is sold to meet consumer demand for dairy and dairy-related products.

Raw milk is classified by its end use. For example, milk that is used for beverage purposes, is known as Class I milk. There are four different classes of milk with each classification also having a different price point for the producer. In Pennsylvania, Class I milk receives the highest price for producers, but only if that milk is also processed and sold within the

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*The Pennsylvania Milk Marketing Board has broad powers to set dairy prices in Pennsylvania.*

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state's borders. As such, when purchasing milk in Pennsylvania, it is important to look for the "PA Preferred" label or a "42" printed on the plant-code label. In this way, consumers can be assured that their milk purchase is benefitting Pennsylvania-based producers and processors.

The dairy industry is, arguably, one of the most heavily regulated industries. At the federal level, the United States Department of Agriculture (USDA) and the Food and Drug Administration (FDA) are integrally involved in dairy regulation and food safety. At the state level, the Pennsylvania Department of Agriculture (PDA) promotes and helps develop agriculture and also ensures safe handling practices. The Center for Dairy Excellence (CDE), a public-private partnership, receives funding from PDA, and helps to "grow the profitability of Pennsylvania's dairy industry." Most recently, in June 2018, the CDE and the PDA commissioned an extensive nine-part review of Pennsylvania's dairy industry, which was conducted by experts from Cornell University and the University of Wisconsin. That report, *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*, served as a beginning for various findings, conclusions, and recommendations in our report.

Perhaps most directly involved in milk regulation, the Pennsylvania Milk Marketing Board (PMMB), establishes minimum prices for milk at the producer, processor, and retailer levels, among other administrative duties which aid Pennsylvania producers. The PMMB consists of three members. Two of the members currently represent the producer community, and one member represents consumers. The Board receives no General Fund assistance, and operates solely on receipts into the Milk Marketing Fund from the sale of licenses and fines/penalties. As of June 30, 2018, the Milk Marketing Fund held a balance of \$3,679,000. The Fund balance has been decreasing, and as of May 2019, the PMMB was planning to raise license fees to increase needed revenue.

## Historical and Contextual Issues

While it is important to understand how milk travels from cow to retail shelf, it is also important to understand why the dairy industry is so heavily regulated. Understanding these historical and contextual issues, provides a greater appreciation for the dairy industry's complexities and the need for governmental oversight. Moreover, these perspectives frame the discussions for why Pennsylvania is experiencing a crisis: the economic principles of supply and demand.

Dairy farming is significantly different today than even just a few years ago. Initially, dairy farms started small and were located far from population centers. Organized marketing of raw milk for fluid consumption

started in the late 18th century when families in cities were unable to obtain milk from nearby producers. As a result of this demand, "middle-men" arose in the 19th century to connect milk producers with consumers. Milk pricing within this structure was determined by simple negotiation between buyer and seller.

By the late 19<sup>th</sup> century, with the rapid development of railroads and expanding urbanization, a market structure was developing where hundreds or thousands of farmers were selling milk to only a handful of middle-men or milk dealers. These dealers held power over the farmers as they controlled the markets. By the early 20<sup>th</sup> century, cooperative dairy associations began to increase as a means of negotiating better producer milk prices for its members. Cooperatives would continue to grow in strength, and would later be given federal protection from anti-trust actions.

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*Historically, producers (dairy farmers) were at a disadvantage in the marketplace because milk is a highly perishable product. As a result, federal and state governments began milk control initiatives to stabilize the market and protect producers.*

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Through the early 20<sup>th</sup> century, geopolitical and economic strife created a great deal of volatility in milk markets. Further, advancements in value-added uses for milk continued to grow. In response, milk dealers and handlers developed complex pricing strategies that varied depending on the milk's end use. These initial classifications and price protocols served as the basis for increased federal involvement in subsequent years.

By the 1930s it was apparent that federal oversight was necessary to help stabilize market conditions. In turn, Federal Milk Marketing Orders (FMMO) were developed and remain in place today. FMMOs created and codified a classified milk pricing system for various sectors of the United States. FMMOs help to stabilize market conditions and require milk handlers to pay milk producers uniform prices for milk and adhere to other specified rules. Milk pricing under FMMOs is incredibly complex and involves formulas derived from commodity prices, components within the milk (e.g., butterfat, protein, etc.), and classification. In Pennsylvania, there are two FMMOs: the Northeast Federal Order Number 1 and the Mideast Federal Order Number 33. These FMMOs are not specific to Pennsylvania, as the territory includes several other states (and not all of Pennsylvania is covered by an FMMO).

At the time the federal government instituted its regulatory structure, Pennsylvania (like several other states) also began instituting reforms to regulate their dairy industries. Pennsylvania's initial milk control legislation was enacted in 1934, and subsequently revised and made permanent in 1937 (and with subsequent amendments through the intervening years), as the Milk Marketing Law (Law). This Law continues to be the means by which the Commonwealth seeks to regulate a fair price for milk and ensures that producers receive prompt payment for their product within the state's borders. This latter aspect is also ensured through companion legislation known as the Milk Producers' Security Act of 1984.



While the Law requires the PMMB to establish minimum milk prices at the producer, processor, and retail levels—it also establishes a price premium for producers known as the Over-Order Premium (OOP). As the name implies, the OOP is an added fee that processors are required to pay producers “over the Federal Order” price. This premium is then factored into the retail price and is passed along to consumers on their fluid milk purchases. Currently, the OOP is \$1.00 per hundred weight of milk (cwt). A cwt of milk is approximately 11.6 gallons.

The OOP is a unique aspect of Pennsylvania’s milk pricing control structure—in fact, while other states may have price support structures—Pennsylvania is the only state that uses an OOP. Because the OOP is a premium price added to the FMMO price, it must be carefully calculated. For example, if the OOP is set too high, then milk from other states becomes more attractive to in-state processors. Thus, it is critical that the PMMB stay informed of business trends not just within Pennsylvania but in surrounding states as well. OOP hearings are held twice a year for this purpose.

We reviewed data from the PMMB from 2008 through 2018 and found that during that period the OOP ranged from a low of \$0.83 to a high of \$3.19 per cwt. During that same timeframe, more than \$408.1 million was paid in premiums.

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*Pennsylvania's dairy industry is the number one segment of its agriculture economy.*

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The fact that Pennsylvania continues to regulate milk prices (and has established an OOP) gives credence to the significance of the dairy industry to the state’s economy. To provide further context to this point, we obtained data from the USDA and economic indicator data from the International Dairy Foods Association.<sup>1</sup> Using these data sources, we calculated Pennsylvania’s dairy-related economic impacts in 2017. We found the following:

- Between the producer, wholesaler (processor), and retailer sectors, 45,029 jobs are attributed to Pennsylvania’s dairy industry.
- Every 12 dairy cows generate at least one dairy-related job in Pennsylvania.
- Direct economic benefits alone generated \$8.9 billion in economic activity.

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<sup>1</sup> This study analyzed economic data obtained from a number of federal, state, and local sources. The authors developed an economic impact model based on IMPLAN economic models, which use a series of input-output accounts maintained by the United States Department of Commerce, Bureau of Economic Analysis. We did not independently audit the information in this economic study; however, we reviewed the report’s methodology, and we believe it is sufficiently reliable to be used for our purposes.

- When factoring indirect and induced economic benefits, as much as \$28.31 billion in economic activity—or 3.8 percent of Pennsylvania's gross domestic product—can be attributed to Pennsylvania's dairy industry.
- Further, each cow represents \$16,864 in direct economic benefits.
- Dairy farms can be found in every county in Pennsylvania, with the exception of: Philadelphia, Cameron, Delaware, and Pike Counties.

## Current Issues Facing Pennsylvania's Dairy Industry

While the dairy industry is the largest sector of Pennsylvania's agriculture economy, the viability of many dairy producers is threatened because Pennsylvania has witnessed a sustained period of low milk prices.

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### Historical Producer Milk Prices

(prices per cwt)



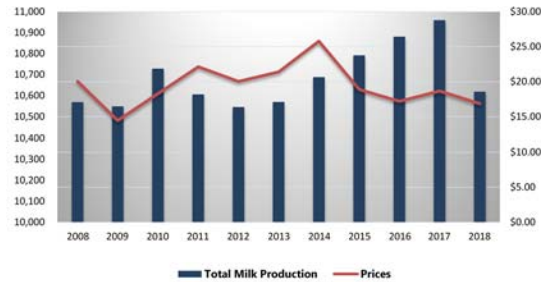
Note: Depicted trend lines are not linear.

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While price fluctuations and cycles have always been apparent in the dairy industry, Pennsylvania (and all states) have remained in a price trough since approximately 2014. We also found that within the dairy industry, when prices are low—which would normally indicate a pressure to curtail production—there is actually a tendency to increase production as a means of quickly making up profit shortfalls. In turn, this further disrupts the balance between supply and demand, as markets become over-supplied.

Although Pennsylvania milk production decreased in 2018, the trend of increasing production during a period of declining prices was apparent during 2015, 2016, and 2017.

### Pennsylvania Milk Production and Prices



Obviously, with low producer prices, profitability becomes increasingly difficult and many dairy producers end up leaving dairy farming or end up in bankruptcy. We found that over the same period (2008-2018) there has been a 19.2 percent decline in the number of dairy farms, with a six percent decline from 2017 to 2018.

*In the last decade, Pennsylvania has seen a nearly 20 percent decline in the number of dairy farms. Pennsylvania and Wisconsin have similar dairy demographics—but differ in that Pennsylvania is losing dairy cows, while Wisconsin herd sizes are growing.*

This number is large, but Pennsylvania is actually better off than similar states like Wisconsin, which have experienced a 40 percent decline in dairy farms over the same period. Where Pennsylvania differs from a state like Wisconsin, however, is in the number of dairy cows. While Wisconsin lost more farms, those farms that remained in business simply expanded. This trend was not as apparent in Pennsylvania because cow populations have decreased, and especially so in 2018. This trend was also supported by a survey of Pennsylvania's dairy producers, which was conducted by the CDE/PDA. Those results indicated that the least important factors among dairy producers were increasing herd size and increasing milk production per cow; further, approximately 14 percent of those producers surveyed expected to leave the industry within the next five years.

We also identified other trends within the United States dairy industry, such as the continued move toward larger, more efficient dairy operations and vertical integration within the retail industry. Both of these aspects potentially impact Pennsylvania because the state has smaller dairy farms with fewer cows. The state also has more independent processors, which also tend to be smaller.

Because the economic forces of supply and demand ultimately drive the dairy industry, we also looked at the demand for dairy products. As might be expected, demand is especially low for fluid milk. This trend is

problematic for Pennsylvania because it is heavily concentrated in that segment. One product that is increasing in demand is cheese.

The fact that fluid milk continues to decline in popularity can be attributed to numerous factors. There is no data readily available on just Pennsylvania consumer milk choices, but undoubtedly, the rapid growth of plant-based milks—and the placement of these products within the dairy section—have contributed to fluid milk's decline. National data indicates double digit growth in some of these products, while fluid milk sales continue to decline. The issue of plant-based milks, and the federal government's apparent refusal to enforce product labeling requirements, were frequently cited by stakeholders as significant issues that have impacted the dairy industry.

Along these same lines, another issue of concern for producers was milk choices within the National School Lunch Program. Recent changes to this federal program limited the milk options available to students. As a result, many producers view these changes as a factor which has impacted milk consumption. We attempted to review this issue further; however, data is very limited, and especially so for Pennsylvania. We did look at PMMB data pertaining to Class I milk sales between processor and retailers, and found a possible impact on flavored milk. However, we caution that the data is not reflective of all retail sales, and most importantly, actual consumption. Therefore, with existing data sources, it is impossible to make definitive conclusions about the impact of this federal change to the demand for, and consumption of, fluid milk. Moreover, ongoing modifications that are currently being introduced to the school lunch program will introduce more variability to any analysis. Nevertheless, at least anecdotally, this issue will continue to permeate discussions about current issues facing the dairy industry.

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*The PMMB provides value to the dairy industry by stabilizing prices and markets.*

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Finally, from our review of producer surveys, another recurring issue that arose was this: in light of Pennsylvania's sustained period of low producer prices, is there value in having the PMMB? We reviewed this issue extensively among stakeholders, consulted with experts in dairy policy and economics, and reviewed the CDE/PDA commissioned study, which also touched on this issue. We concluded that there is value in having the PMMB—and further, that without the PMMB—Pennsylvania producers would see “price wars” similar to those that occurred in the 1930s. Moreover, the Milk Marketing Law, and the PMMB's strong regulatory arm, perfectly positions itself to be at the forefront of innovative actions to aid the dairy industry.

## Future Options for Consideration (Recommendations)

As noted throughout this report, the issues confronting Pennsylvania's dairy industry are complex and cannot be solved with quick fixes. Many of the issues extend beyond Pennsylvania's borders and are impacted by federal control, or global trade practices. Despite these challenges, we focused on developing recommendations to address the issues identified, and to supplement the foundations established by the CDE/PDA and its *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*.

Our recommendations center on three themes that seek to improve the **fairness**, **potential**, and **oversight** of Pennsylvania's milk market.

### Fairness

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#### 1. Regulate Plant-based Milks as a Class V Milk Product.

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*Pennsylvania's Milk Marketing Law may provide a pathway for Pennsylvania to take the lead in a highly controversial area within the dairy industry: the loss of market share to plant-based milks.*

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Plant-based milks have risen in popularity and demand, while fluid milk has (and continues to) decline precipitously. Plant-based milks are marketed in Pennsylvania as "milk;" yet, continue to elude federal product identity requirements. The Milk Marketing Law created a powerful regulatory responsibility, which may include the authority to regulate these products. Because plant-based milks seek the identity of milk, and further seek the same competitive shelf space as fluid milk, we believe a premium should be placed on these products which would be deposited into the Milk Marketing Fund, and would be used to defray the administrative costs of implementing the Milk Marketing Law. While the PMMB has the authority to pursue this action, an amendment to the Milk Marketing Law, which would include plant-based milks as "milk," would eliminate ambiguities.

#### 2. Clarify Milk Date Coding Requirements.

Pennsylvania and Montana are the only states that have a restrictive "sell-by" date for fluid milk. Pennsylvania currently requires fluid milk (not ultra-pasteurized or ultra-filtered) to have a sell-by date of 17 days. Date labeling on food continues to be a vexing issue, which confuses consumers. Consumers believe that a product with a later date code is a fresher product, even though all products will lose freshness at approximately the same time once opened. Fairness in the marketplace could be improved by allowing processors to label fluid milk with later sell-by dates.

## **Potential**

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### **3. License Milk Retailers to Capture More Detail About Milk Sales in Pennsylvania.**

The PMMB can track milk sales at the wholesale level, but it lacks specificity about sales at the retail level. By licensing milk retailers, the PMMB could collect data on out-the-door milk sales. Collecting data about consumer purchases would allow the PMMB to better regulate Pennsylvania's milk market, and in establishing price levels. The data would also be helpful in establishing the premium recommended on plant-based milks.

### **4. Expand Existing Research and Development Assistance for the Dairy Industry.**

Product innovation, including value-added products developed from milk, will help to move dairy supplies and increase demand—critical elements when trying to restore the dairy industry's vibrancy. However, developing these products is extremely expensive and Pennsylvania's processors, which tend to be small to medium-sized, are hesitant to take on this innovation independently. Grant funding that was made available through the Pennsylvania Dairy Investment Program offered an initial first step; however, of the grants that were awarded only two were selected for research and development (R&D) activities (four applied). Going forward, more emphasis should be placed on aiding processors with this available opportunity.

### **5. Aid the Development/Construction of Cheese Plants.**

This recommendation was initially presented in the CDE/PDA study. Cheese production is significant for two reasons: (1) cheese, especially Italian-type specialty cheese, is one dairy product segment that is in high demand; (2) making cheese requires substantial amounts of milk, which in turn, helps to move supply. The study recommended the development/construction of two cheese plants in Pennsylvania. We agree; however, some important caveats also need to be considered if Pennsylvania is going to attract this type of development. Pennsylvania lags far behind Wisconsin in cheese processing, and even further behind California in Italian-type cheese processing. As such, Pennsylvania is at a disadvantage to these states, which already have high processing and dairy producing capacity. Additionally, there is currently a cheese "glut" in the United States with cheese stocks at an all-time high; thus, processors may not see a need to expand capacity. This latter issue is also complicated by ongoing trade tariffs that have resulted in a 63 percent decrease in cheese shipments to China. These adverse influences will need to be countered in order to successfully attract new plant development.

## **6. Further Develop Pennsylvania's Identity and Uniqueness for Fluid Milk.**

Building off of our fourth recommendation, Pennsylvania needs to better brand itself as a fluid milk state. While the "Choose PA Dairy" campaign and "PA Preferred" initiative are excellent examples highlighting Pennsylvania's strong agricultural identity, those initiatives and identity need to be further strengthened for fluid milk and carried beyond Pennsylvania's borders to other states. To be clear, this recommendation is not simply to "drink more milk" – rather this recommendation encourages new strategic investments and partnerships to develop an identity so that consumers can identify and demand Pennsylvania-based fluid milk products. Research has shown that the "locally sourced" identity is important to consumers; consequently, Pennsylvania fluid milk (and products) need to be distinguished above all others for their uniqueness, quality, and wholesomeness.

## **Oversight**

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### **7. Expand the Size of the Milk Marketing Board.**

The PMMB is a three-member board currently consisting of two members representing producers, and one member representing consumers. While there is precedent for a three-member board, we believe five members is a better organizational structure. The two additional members should represent retailers (one member) and processors (one member). These are segments of the dairy industry that are impacted by the PMMB's actions, but which currently lack representation on the PMMB.

### **8. Change the Name of the Milk Marketing Board.**

We recognize that this recommendation may seem perfunctory, but the term "marketing" is oftentimes misinterpreted to imply that PMMB has a role in promotional, advertising, or commercialization of milk—which it does not. We think a more appropriate name is the Milk Control Board, which is similar to the naming convention used by other Pennsylvania regulatory boards (e.g., the Liquor Control Board, the Gaming Control Board). Further, in reviewing the 24 regular and associate members of the International Association of Milk Control Agencies—only Pennsylvania and Colorado use the term marketing in their agency name.

### **9. Improve the Transparency and Distribution of the PMMB's Over-Order Premium.**

The over-order premium, an added fee collected on fluid milk that is produced, processed, and sold in Pennsylvania, is a well-intended benefit for Pennsylvania dairy producers. For dairy producers that sell milk directly

to a processor, the benefit can be clearly identified on the producer's milk check. For producers who belong to cooperatives; however, the benefit is less transparent because the cooperative receives and disburses the premium to its members. There have been ongoing discussions on this matter before the PMMB, and there are various solutions which could be pursued (e.g., official order, regulatory change, or statutory amendment). Given the significant amount of money that is generated by the OOP (over \$12 million in 2018)—and further, given the current financial crisis besetting many Pennsylvania producers—we recommend a statutory change to the Milk Marketing Law. This amendment should give the PMMB more authority to work with the Department of Revenue, which is better suited to collect and disburse the premium in a manner that is transparent and accountable to all Pennsylvania dairy producers.



# SECTION I

## OBJECTIVES, SCOPE, AND METHODOLOGY



### ***Why we conducted this study...***

*Pennsylvania's dairy industry is a key component of the state's agricultural economy. While the dairy industry has always been cyclical, with up and down swings in pricing, more recently, the industry has faced a sustained period of unprecedented financial distress. In response to these concerns, the Pennsylvania Senate adopted Senate Resolution 384 on June 18, 2018, which directed the LBFC to conduct this study.*

## **Objectives**

The objectives for this study were outlined within Senate Resolution 384 (SR 384), which passed the Pennsylvania Senate on June 18, 2018. SR 384 focused on Pennsylvania's dairy industry and directed the Legislative Budget and Finance Committee (LBFC) to obtain additional information about past, present, and future problems impacting the industry.

In response to SR 384, and to further frame our work for this study, on September 26, 2018, the Officers of the LBFC adopted the objectives that follow:

1. To document the historical and contextual perspectives of Pennsylvania's dairy industry and the Milk Marketing Law.
2. To identify and document the current issues facing the dairy industry, including but not limited to: general economic pressures, consumer preferences, non-PA based processors and producers, and regulatory influences from the Milk Marketing Board.
3. To identify recommendations for policymakers to consider in aiding the dairy industry, including: successful initiatives undertaken in other states, dairy processing expansion, and the expansion of specialty dairy markets.

## **Scope**

Our study primarily covered the period July 1, 2015, through June 30, 2019. In some areas, our scope preceded July 1, 2015, because it was necessary to provide a historical context of relevant issues confronting the dairy industry. Additionally, some analysis includes forward-looking projections. These projections are only speculative and should not be interpreted as a guarantee of actual outcomes.

## Methodology

With respect to the significance of the dairy industry to Pennsylvania we defined the economic impact in terms of the number of jobs, wages, economic impact (direct, indirect, and induced), and estimated state/local taxes collected. We obtained information from the United States Department of Agriculture (USDA) and its 2017 Pennsylvania Census of Agriculture to identify the extent of dairy farming operations in Pennsylvania. We also obtained economic impact data from a 2017 study commissioned by the International Dairy Foods Association. We reviewed this study's methodology and found it to be sufficiently reliable to be used in making our estimations of the economic impacts generated from Pennsylvania's dairy industry.

To develop an understanding of milk pricing, we reviewed documentation on federal and Pennsylvania milk marketing areas. We also read relevant laws, such as, the Pennsylvania Milk Marketing Law, Milk Marketing Fee Act, and the Milk Producers' Security Act. We attended Pennsylvania Milk Marketing Board (PMMB) meetings to witness minimum pricing hearings and gain an understanding of PMMB functions. We also attended Pennsylvania's 2019 Farm Show and reviewed show topics relevant to the dairy industry.

We reviewed and analyzed the results of the *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*. This nine-part study, released in June 2018, was commissioned by the Pennsylvania Center for Dairy Excellence (CDE) and the Pennsylvania Department of Agriculture (PDA). The study was conducted by three experts in dairy economics and policy.<sup>2</sup> We also reviewed the promotional efforts used in the "Choose PA Dairy" campaign and the "PA Preferred" program.

To identify and document current issues facing the dairy industry we focused on the dairy industry's three primary components: producers, processors, and retailers. We met with individuals from each of these areas along with numerous organizations and associations representing each component.

We interviewed government officials, academicians, economists, and other dairy industry stakeholders. We reviewed trends in the dairy industry from farm sizes to consumer demand for dairy products to school lunch changes. We reviewed and discussed aspects of the United States

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<sup>2</sup> The study's authors were: Chuck Nicholson (Cornell University), Mark Stephenson (University of Wisconsin), and Andrew Novakovic (Cornell University).

Constitution and the commerce clause, and Pennsylvania's Milk Marketing Law with a law professor from the Penn State Law School in State College, Pennsylvania.

To further understand the complications facing the dairy industry we attended House and Senate Agricultural and Rural Affairs Committee meetings in which PDA or PMMB testified. We reviewed transcripts and watched videos from relevant committee meetings that occurred before our study began. Additionally, we distributed a letter soliciting comments about our study to members of the House and Senate Agricultural and Rural Affairs Committees.

To compare current problems with data we analyzed USDA and PMMB data for Pennsylvania's historical milk prices, milk production, number of dairy farms, and number of dairy cows. We did not audit this data for accuracy; however, the data is from the best known sources and we believe it to be sufficiently reliable to be used as a basis for our findings and conclusions.

We reviewed survey results and comments to gain an understanding of the public perception of the PMMB. We also reviewed testimony submitted as part of the PDA's petition to the PMMB regarding Pennsylvania's dairy crisis.

In order to provide ideas for improvements to the dairy industry we reviewed regulatory authority, other states' involvement in their dairy industries, expert testimony and reports, and other Pennsylvania state government boards. We also utilized feedback from the many stakeholders we interviewed for areas in which the General Assembly could assist in improving the industry.

## Frequently Used Abbreviations and Definitions

Throughout this report, we use a number of abbreviations for government-related agencies, industry terms, and functions. These abbreviations are defined as follows:

Abbreviation	Name	Definition
CDC	Centers For Disease Control and Prevention	One of the major operating components of the Department of Health and Human Services. Protects the population from health, safety and security threats, both foreign and domestic.
CDE	Pennsylvania Center For Dairy Excellence	Non-profit organization that provides programs and resources to Pennsylvania's dairy industry.

<b>CFA</b>	Commonwealth Financing Authority	An independent agency of the Department of Community and Economic Development to Administer Pennsylvania's economic stimulus packages.
<b>CWT</b>	Hundredweight of milk	100 pounds of raw milk or approximately 11 gallons.
<b>DCED</b>	Pennsylvania Department of Community and Economic Development	Promotes economic activity in Pennsylvania by providing strategic technical assistance, training and financial resources to help communities and industries flourish.
<b>FDA</b>	Food and Drug Administration	An agency of the United States Department of Health and Human Services. Provides sanitation guidelines for milk processing.
<b>FMMO</b>	Federal Milk Market Order	Designed to stabilize market conditions and require milk handlers to pay milk producers uniform prices for milk and adhere to other specified rules.
<b>HHFKA</b>	Healthy, Hunger-Free Kids Act of 2010	Changed the milk requirement in schools to only allow plain (non-flavored) low-fat (1%) milk, plain nonfat (skim), and flavored nonfat (skim) in order to be eligible for NSLP.
<b>MMA</b>	Milk Marketing Areas	For purposes of implementing the Milk Marketing Law, the state is divided into six different Milk Marketing Areas. Each area is regulated by a different federal order, or no order at all.
<b>NASS</b>	National Agricultural Statistics Service	USDA agency that conducts hundreds of surveys every year and collects data and prepares statistics pertaining to agriculture in the United States.
<b>NSLP</b>	The National School Lunch Program	Established for the purposes to safeguard the health and well-being of the nation's children and encourages the domestic consumption of nutritional agricultural commodities and other foods.
<b>OOP</b>	Over-Order Premium	An amount over the applicable Federal Order or Pennsylvania Milk Marketing Board-established base price, which the Milk Marketing Board mandates be paid to Pennsylvania producers for all Class I milk produced, processed, and utilized in Pennsylvania.
<b>PDA</b>	Pennsylvania Department of Agriculture	Oversees programs for Pennsylvania's agricultural industry.
<b>PDE</b>	Pennsylvania Department of Education	State education agency that oversees public funded schools.
<b>PDIP</b>	Pennsylvania Dairy Investment Program	Created under Act 42 of 2018. Provides \$5 million in grants to assist applicants with innovative dairy-related projects.
<b>PFMA</b>	Pennsylvania Food Merchants Association	A statewide trade association advocating the views of convenience stores, supermarkets, independent grocers, wholesalers and consumer product vendors operating in Pennsylvania.

<b>PMMB</b>	Pennsylvania Milk Marketing Board	An independent state agency that oversees economic regulations on dairy products in Pennsylvania.
<b>SMP</b>	United States Special Milk Program	For schools, child care institutions, and camps which do not participate in other Federal child nutrition meal service programs.
<b>UHT</b>	Ultra-high Temperature Pasteurization	Milk is heated to 280 degrees Fahrenheit for a minimum of two seconds. The higher temperature for a shorter amount of time extends the shelf life of the product.
<b>USDA</b>	United States Department of Agriculture	The federal oversight agency involved in agricultural activities, including the dairy industry.

<b>Industry Terms</b>	
<b>Term</b>	<b>Definition</b>
Blend Price	The actual price per hundredweight due or paid to producers for milk during a one-month period after computation of the licensed dealer's or handler's producer obligation pursuant to the applicable Rules, Regulations, or Orders of the Board or applicable Orders established by the USDA.
Citation	A document alleging that a person has violated a Law or Regulation administered by the Board or an Official General Order issued by the Board.
Consumer	Any person, natural, corporate, statutory or governmental, other than a milk dealer or milk handler, who purchases milk for consumption or use by themselves or others.
Container	A bottle, carton, bag, etc. in which milk is packaged.
Cooperative	An agricultural association or corporation of producers organized to engage in making collective sales or in the marketing of milk for producers under current contract with it.
Fixed Fee	License fee imposed by the Pennsylvania Milk Marketing Board under the provisions of the Milk Marketing Fee Act.
Handler/Dealer	Any person who purchases or receives on consignment milk for processing or manufacture and further sales.
License	Authorization granted by the Pennsylvania Milk Marketing Board making it legal for all handlers, including milk dealers, subdealers and haulers to buy, transport, and/or sell milk in the Commonwealth of Pennsylvania.
Milk Check	The amount paid to producers for milk they deliver. The milk check is based on a complicated formula that includes milk components, revenue from federal orders, and market/government premiums.
Official General Order	An order issued by the Pennsylvania Milk Marketing Board establishing minimum producer or resale prices, or addressing other issues involving the orderly marketing of milk in Pennsylvania.
Petitioners	Individuals or organizations who officially submit a request for the Pennsylvania Milk Marketing Board to hold a hearing to review specific problems that come under the Board's jurisdiction.
Processor	One who purchases raw milk from producers or other dealers and processes, bottles, and delivers the product to wholesale and/or retail accounts.
Producer	Individual or organization milking cattle (a.k.a. The dairy farmer).

Retail Out-Of-Store Prices	Minimum prices to be charged by and paid to the grocery store, dairy store, or similar mercantile establishment by a consumer when the product purchased is for off-premises consumption or use.
Store	Includes a grocery store hotel, restaurant, soda fountain, dairy products store, or any similar mercantile establishment which sells or distributes milk.
Subdealer or sub-handler	Any person other than a store or controlled affiliate who handles milk within the state and delivers all such milk--in the same container in which it was purchased--to consumers, schools, institutions, or stores.
Wholesale Prices	Prices charged by and paid to a licensed milk dealer when the product purchased is delivered or made available to a grocery store, dairy store, or similar mercantile establishment for resale to a consumer. This price is also charges to hotels, restaurants, hospitals, and institutions, irrespective of ultimate use.

## Acknowledgements

We acknowledge and appreciate the excellent cooperation we received from the staff of the Department of Agriculture and the Milk Marketing Board. In particular, Mr. Robert Barley, Chairman, and Dr. Carol Hardbarger, Consumer Member, of the Milk Marketing Board, and Mr. Greg Hostetter, Department of Agriculture Deputy Secretary, were helpful as we completed our research for this study.

We also appreciate the input we received from the numerous stakeholder groups and associations with which we met during the course of this study.

## Important Note

This report was developed by the staff of the Legislative Budget and Finance Committee, including project manager, Stephen Fickes and analysts, Stevi Sprenkle and Joseph Asare. The release of this report should not be construed as an indication that the Committee as a whole, or its individual members, necessarily concur with the report's findings, conclusions or recommendations.

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## SECTION II BACKGROUND INFORMATION ABOUT PENNSYLVANIA'S DAIRY INDUSTRY



### ***Fast Facts...***

- ❖ *Pennsylvania's dairy industry is the leading segment within the agriculture economy.*
- ❖ *The dairy industry is often viewed as an idyllic and pastoral activity. In reality, the process of delivering milk from the farm to retail establishments is incredibly complex and highly regulated at both the federal and state level.*
- ❖ *Pennsylvania's dairy industry contributes many positive externalities, such as open space for neighboring residents, employment opportunities for citizens from rural communities, and access for consumers to purchase locally-produced wholesome dairy products.*

Research conducted by the University College London, suggests that dairy farming can be traced back to communities that lived in Central Europe approximately 7,500 years ago.<sup>3</sup> Since that time, dairy farming—and the use of dairy-related products—have become staples of our diet. Understanding the dairy industry and how dairy makes it way from “cow to shelf” is crucial to any analysis of Pennsylvania's dairy industry. Within this Section of the report, we provide relevant background information to better understand the uniqueness of the dairy industry.

### **Dairy Farming Overview**

While dairy farming has come a long way since the practices employed some 7,500 years ago, the main objective remains the same: the production and collection of milk,<sup>4</sup> which is then processed and distributed for the eventual sale of a dairy product.

Initially milking a cow was labor intensive and “hands on.” For example, cows were milked by hand, and it took one person approximately an hour to milk six cows.<sup>5</sup> Today, dairy farming remains labor intensive, however, farmers (i.e., producers) have technological assistance, which has significantly improved the speed and efficiency of the milking process.

With advances in technology, feed techniques, and veterinary assistance, cows are producing more milk than ever before. Milk machines make the process much faster too. For example, using modern techniques, one person can now milk as many as 100 cows per hour.<sup>6</sup>

The process by which milk travels from the cow to the grocery store shelf is complex, but it can be broken down into several stages. Exhibit 1 provides a simplified overview of the process.

<sup>3</sup> Science Daily, *Milk Drinking Started 7,500 Years Ago in Central Europe*, September 1, 2009.

<sup>4</sup> It is important to note that according to the United States Food and Drug Administration, milk is specifically defined as: “the lacteal secretion, practically free from colostrum, obtained by the complete milking of one of more healthy cows.” (21 CFR 133.3(a)). The implications of this designation are discussed later.

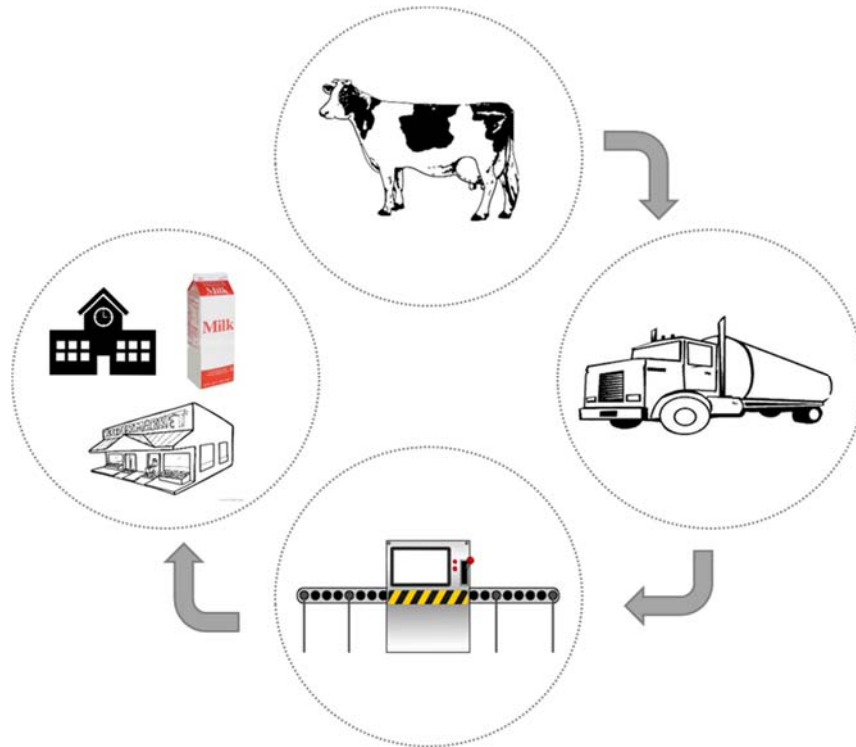
<sup>5</sup> The Farm School Project at Keyon College, *Let's Milk*.

<sup>6</sup> Ibid.

## Exhibit 1

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### Milk Delivery Stages



Source: Developed by LBFC staff.

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### Farm

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The process begins with bovines (cattle), and specifically females—known commonly as cows. A cow is a female that has given birth to at least one calf. Prior to her first pregnancy that cow is referred to as a heifer.<sup>7</sup> There are varying breeds of dairy cows in the United States, including the following: Holstein, Jersey, Brown Swiss, Guernsey, Ayrshire, Milking Shorthorn, and the Red and White Holstein.<sup>8</sup>

After a cow gives birth to a calf she begins lactating (producing milk). Initially, cows produce a liquid called colostrum, exclusively used to feed the calf. After the initial colostrum, the cow's milk will "come in" and the cow may be moved into production. In order to produce a steady supply of milk, the cow must consume large quantities of water and food. For

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<sup>7</sup> Woods, Katie, Farm and Dairy. *How to Determine if Cattle are Bulls, Steers, Cows or Heifers*. July 30, 2015.

<sup>8</sup> Midwest Dairy, *Meet the Dairy Cow Breeds in the U.S.*



example, a milking cow eats around 100 pounds of feed (hay, grain, silage, and proteins) per day.<sup>9</sup> There are also 100 percent grass-fed dairy cows, which consume only various types of grasses. The amount of water the cow drinks is directly related to her size, the amount of milk being produced, and the climate. On average, a lactating dairy cow drinks 30 to 50 gallons of water per day.<sup>10</sup>

Lactating cows are milked two to three times per day and must be milked daily in order for them to continue producing milk. As mentioned previously, this process is largely automated using sophisticated milking machines that control the suction and the flow of milk from the cow's udder. While cows are hooked up to the milking machine, the raw milk travels through a pipe system to a central location on the farm. It is then pooled together and chilled to at least 40 degrees Fahrenheit. Due to milk's perishability, the milk must be transported off the farm within 48 hours of collection.

## **Tanker**

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Transporting milk looks much different today than it did in the early 1900s. At that time, early milk hauling involved farmers transporting their own milk on multi-purpose horse-drawn wagons. Today, producers contract with milk haulers either directly or through a cooperative.<sup>11</sup> Some milk processors (discussed later) pick up and haul their own milk; however, not all haulers are processors. Milk haulers are responsible for making sure that the milk travels safely from the farm to the processor, an expense which is typically paid by the farmer.

Haulers are also the first step in testing milk for purity. Before being transferred onto the milk hauling truck, haulers check for proper temperatures and volume. Haulers also take a sample of the milk to measure bacterial counts, somatic cell<sup>12</sup> count, indicators of antibiotics,<sup>13</sup> and the milk's composition.<sup>14</sup> The next stop is the processor where raw milk makes the journey to the bottle.

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<sup>9</sup> University of Arkansas Division of Agriculture Research & Extension, *Dairy Facts*.

<sup>10</sup> Thomas, Craig. Michigan State University Extension, *Drinking Water for Dairy Cattle, Part I*, April 5, 2011.

<sup>11</sup> A cooperative is "a farm, business, or other organization which is owned and run jointly by its members, who share the profits or benefits." Cooperatives are discussed further later.

<sup>12</sup> Somatic cells are white blood cells that have the same function as human white blood cells.

<sup>13</sup> "The legal standard, as defined by the FDA, requires that milk contain no traceable antibiotics when analyzed using approved test methods." (Milk Facts, Cornell University. *Antibiotics in Milk*. Antibiotics are used to treat cows that have an infection, such as mastitis. For conventional/traditional farms, cows are temporarily removed from the herd while they undergo antibiotic treatment until it is determined that the drugs are out of the cow's system.

<sup>14</sup> Erba, Eric, Walter Wasserman, and James Pratt, Department of Agricultural, Resource and Managerial Economics, Cornell University, *All You Ever Wanted to Know About Milk Hauling*.

## Processor

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There are many different types of processors. Milk from farms may be processed into various types of cheese, yogurt, ice cream, or in the example that follows, fluid (consumable) milk. Regardless of how the milk is ultimately used, the processor is responsible for ensuring the product is safely treated and packaged for consumption. For fluid milk purposes, these techniques involve pasteurization and homogenization.

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*According to the Centers for Disease Control, pasteurization is one of public health's most effective food safety interventions ever invented.*

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**Pasteurization.** During pasteurization the raw milk is quickly heated and then instantly cooled to kill dangerous bacteria that is naturally present in milk. Interestingly, this process was not initially invented for processing milk. In the 19<sup>th</sup> century, Louis Pasteur was conducting research for ways to preserve beer and wine. Milk pasteurization was a result of this research.<sup>15</sup>

In the 1920s, the United States began using pasteurization for milk, with it becoming more widely used by the 1950s. According to the Centers for Disease Control and Prevention (CDC) "most public health professionals and health care providers consider pasteurization one of public health's most effective food safety interventions ever."<sup>16</sup> In addition to increasing the safety of milk, pasteurization also extends the product's shelf life.

Milk that travels across state lines must meet minimum pasteurization standards prescribed by the United States Food and Drug Administration (FDA). States also use these guidelines for milk that remains in the state and may have even more stringent regulations.<sup>17</sup>

Exhibit 2 further outlines how federal regulations define traditional pasteurization techniques. In addition, federal regulations also allow other time and temperature combinations, which have been demonstrated to be equivalent in microbial destruction.

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<sup>15</sup> Organic Valley, *What is the History of Pasteurization?*

<sup>16</sup> Center for Disease Control and Prevention, *Raw Milk Questions and Answers*, June 15, 2017.

<sup>17</sup> Milk Facts, Cornell University. *Milk Processing*.

## Exhibit 2

### Pasteurization Techniques

Temperature	Time Milk is Exposed to Temperature
145°F	30 minutes
161°F	15 seconds
191°F	1 second
204°F	0.05 second
212°F	0.01 second

Source: Developed by LBFC staff from 21 C.F.R. § 131.3 (b).

Another type of pasteurization that is gaining popularity is ultra-high temperature (UHT) pasteurization. With UHT, milk is heated to 280 degrees Fahrenheit for a minimum of two seconds.<sup>18</sup> While UHT kills the same amount of bacteria as traditional pasteurization, the higher temperature for a shorter amount of time extends the shelf life of the product.

**Homogenization** Following milk's pasteurization, a process called homogenization occurs. Unlike pasteurization, homogenization does not relate to the safety of the product. Instead, homogenization creates an appealing consistency for consumers to drink by distributing milk's fat content throughout the volume. Without homogenization the cream and fat of the milk would begin to separate and rise to the top of the remaining liquid.

Homogenization starts by removing the cream and butterfat from the milk. These ingredients may also then be used to create other dairy-based products, such as cheese, butter, and ice cream.

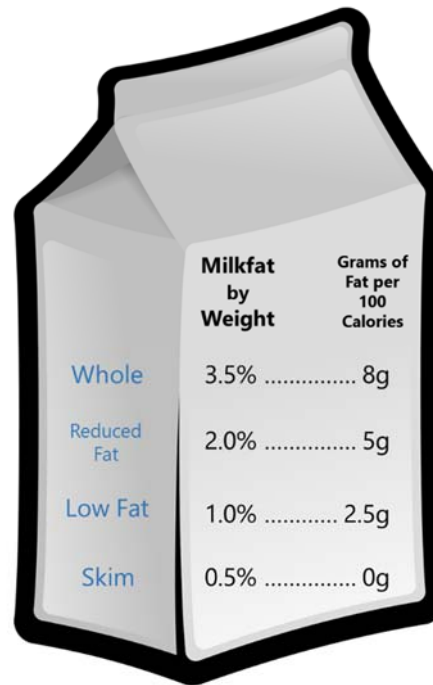
Milk is homogenized and packaged according to its fat content. As shown in Exhibit 3, there are four different levels of fat content in fluid milk. In order to create these varieties, fat particles are broken down to the point where they blend back into the liquid.<sup>19</sup> Additionally, Vitamins A and D are added during this process. Lastly, if the milk is flavored (e.g., chocolate, strawberry, etc.) flavoring is added during the homogenization process.

<sup>18</sup> Organic Valley, *What is Pasteurization?*

<sup>19</sup> Spiegel, Alison. Huffington Post. *Pasteurized vs. Homogenized Milk: What's the Difference?* November 29, 2016.

Exhibit 3

**Amount of Fat per Milk Type**



	Milkfat by Weight	Grams of Fat per 100 Calories
Whole	3.5% .....	8g
Reduced Fat	2.0% .....	5g
Low Fat	1.0% .....	2.5g
Skim	0.5% .....	0g

Source: Developed by LBFC staff from information published by DairyGood.

After completing homogenization, the finished milk goes through an assembly line to fill various sized cartons or bottles. At this point, the finished containers are labeled, including manufacturing codes and date stamps. The milk is then stored in bulk in refrigerated warehouses as it awaits transportation to retail outlets or institutions.

***Pennsylvania-based Processing.*** With respect to manufacturing codes, all Pennsylvania-based processing plants begin with code "42." Further, within Pennsylvania, the "PA Preferred" logo indicates that the processor participates in a state marketing program that requires milk to be 100 percent sourced from Pennsylvania farmers.<sup>20</sup>

As an example, Exhibit 4 shows how to identify milk that was processed in Pennsylvania.

<sup>20</sup> To locate the processor of the milk, the full plant code can be entered at <https://www.wherismymilkfrom.com/>.

Exhibit 4

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**How to Identify Pennsylvania Processed Milk**



Source: Choose PA Dairy.

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**Consumer**

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Processors or their contracted distributor deliver the milk via refrigerated trucks to grocery stores, convenience stores, schools, hospitals, and prisons for consumer purchase and consumption.

Today consumers are faced with numerous options within a grocery store's dairy case. For example, in addition to "traditional" fluid milk (whole, reduced fat, low fat, and skim), there are many dairy and non-dairy varieties from which to choose. Exhibit 5 is an example of an actual dairy case in Pennsylvania. Following the exhibit we define several of the more common varieties that are offered at retail establishments.

## Exhibit 5

### What's in the Dairy Case?



Source: Developed by LBFC staff.

- **Raw.** Milk that is not pasteurized or otherwise treated. It is essentially “straight from the cow.” Raw milk sales are regulated by the Pennsylvania Department of Agriculture (PDA). While Pennsylvania permits raw milk sales (many states do not), federal law prohibits raw milk sales across state lines.
- **A2.** A2 milk is a newer specialty milk that only comes from cows that produce A2 protein. Recent research has indicated that many people who experience difficulty digesting lactose (a natural sugar found in milk) may actually be more directly affected by the type of protein in the milk, specifically A1 proteins.<sup>21</sup> According to *Medical News Today*, this distinction in proteins is best described as follows:

<sup>21</sup> It is important to note that many of these studies are funded by the makers of A2 milk products.



The two major proteins in milk are casein and whey. Casein, is the most prevalent, and accounts for about 80 percent of the protein in milk. Within the casein protein, beta-casein is the key protein form, and its most common forms are A1 and A2.<sup>22</sup>

Traditional fluid milk contains both A1 and A2 betacasin proteins; however, "A2 milk" only contains A2 proteins. A2 milk is isolated through genetic testing of the cow. Certain breeds, such as Guernsey and Jersey, have been shown to be more likely to carry the A2 protein in their milk.

- **Organic.** Organic milk is produced by cows under organic farming methods. Organic milk producers provide cows with certain feed and care practices, following criteria established by the United States Department of Agriculture (USDA).<sup>23</sup>
- **Flavored.** Flavored milk has been sweetened and/or has artificial or natural flavorings added to change the flavor. Chocolate milk is perhaps the most familiar flavored milk; however, Pennsylvania processors have become creative with flavorings, including: vanilla, orange, strawberry, mint, and peanut butter.
- **Lactose-free.** Lactose is a natural sugar present in milk. As discussed with A2 milk, people who have a medical diagnosis of lactose intolerance cannot easily digest this sugar, which may result in digestive distress.<sup>24</sup> Lactose-free milk is regular milk that has an added enzyme, lactase. Lactase breaks down lactose into simple sugars, glucose and galactose, which are more easily digested.
- **Ultra-filtered.** The FDA defines this milk as "raw or pasteurized milk that is passed over one or more semipermeable membranes to partially remove water, lactose, minerals, and water-soluble vitamins without altering the casein: whey protein ratio of the milk, and resulting in a liquid product."<sup>25</sup> Typically, this ultra-filtered milk results in a product that is lower in sugar and higher in protein and calcium than traditionally processed milk. Additionally, the lactose is typically removed, making it another possible milk choice for those individuals with the medical diagnosis of

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<sup>22</sup> Ware, Megan, and Megan Metropulos. *A2 Milk: What You Need to Know*. Medical News Today. July 25, 2017.

<sup>23</sup> "Organic milk comes from cows that have never received added hormones of any type, ever. And these cows have also never been treated with antibiotics. If they do get sick, they are removed from the herd, and their milk is not included, even when they have recovered after antibiotics have been completed." (NBC News, *Should you be Drinking Organic Milk?* August 6, 2018.

<sup>24</sup> Milk Life, *Get the Facts: Types of Milk Explained*.

<sup>25</sup> United State Food and Drug Administration, Office of Nutrition and Food Labeling. *Guidance for Industry: Ultrafiltered Milk in the Production of Standardized Cheese and Related Cheese Products*. August 2017.

lactose-intolerant. Ultra-filtered products also have a longer shelf life; however, once opened these products have the same perishability concerns as regular milk.

- **Plant-based dairy alternatives.** A large part of the dairy case is made up of non-dairy beverages made from plant or grain foods such as soy, almond, oat, coconut, rice, and cashew. The nutritional make up of these products varies by product and brand. These products are made by grinding the plant-based material into a slurry, adding heat and water to the slurry, and then filtering the resulting liquid. Additional ingredients are added to improve nutritional content, flavor, and aroma. These products are especially popular with individuals who follow lactose free, vegan-based diets, or who may have other objections to dairy-based products.

## **Milk Use Classification and Price Control Overview**

Unlike many goods in the supermarket in which the free market dictates price, dairy product pricing is regulated by both federal and state agencies. In economic terms, a "price floor" is placed on milk and other dairy products by the government in an attempt to protect producers from low prices. A price floor is a minimum price for which an item can be sold. This floor price is set above what the market price would bear, if typical supply and demand factors were in play. Most other goods in a grocery store have prices set at the equilibrium between the consumers demand for the product and the manufactures supply of the product.

In Pennsylvania there is a minimum producer, wholesale, and retail price. Dairy product pricing is also determined by the way milk will be utilized or the "class of milk." Exhibit 6 contains the classification types.



Exhibit 6

**Milk Classifications**

Class	Dairy Products
<b>I</b>	Fluid (consumable) Milk. Including: <ul style="list-style-type: none"><li>o Whole</li><li>o Reduced Fat (2%)</li><li>o Lowfat (1%)</li><li>o Nonfat (Skim)</li><li>o Flavored</li><li>o Flavored Reduced Fat</li><li>o Nonfat Flavored</li><li>o Buttermilk</li><li>o Egg Nog</li></ul>
<b>II</b>	Cream Products. Including: <ul style="list-style-type: none"><li>o Mixed Cream</li><li>o Light Cream</li><li>o Medium Cream</li><li>o Heavy Cream</li><li>o Sour Cream</li><li>o Milkshake Mix</li><li>o Cottage &amp; Ricotta Cheese</li><li>o Yogurt</li><li>o Custards</li><li>o Puddings</li><li>o Batter Mixes</li><li>o Candy</li><li>o Soup</li><li>o Bakery Products</li></ul>
<b>III</b>	Hard Cheese, Spreadable Cheeses, Cream Cheese, Butteroil
<b>IV</b>	Butter, Dried Milk Products, Evapo-rated Milk, Sweetened Condensed Milk

Source: Developed by LBFC staff from information obtained from the Pennsylvania Milk Marketing Board.

Class I milk products are set at the highest prices, in both federal and state price setting. Pennsylvania specifically has an additional premium on certain Class I milk as well. The "Over-Order Premium" (OOP) is an additional premium set on top of minimum prices for fluid milk that is produced, processed, and sold in Pennsylvania (see also Section III that follows). All three steps (produced, processed, and sold) must be met in order for the milk to be eligible for the OOP.

Farmers are paid per hundredweight of milk (which means per 100 pounds of milk) based on an average of milk classes. Exhibit 7 explains a hundredweight of milk further. Farmers receive their milk check from their cooperative or directly from independent processors. Farmers in cooperatives may also see dues deducted from their milk checks in order to be part of the cooperative.

### Exhibit 7

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#### What is a “Hundredweight” of Milk?



**Hundredweight =  
approximately 11.6 gallons**

Source: Developed by LBFC staff from information obtained from the Pennsylvania Milk Marketing Board.

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#### **United States Department of Agriculture**

The United States Department of Agriculture (USDA) is a major player in the dairy industry. The USDA is a large federal agency that was created to serve one of the United States' oldest industries: farming. Today the USDA mission statement is to "provide leadership on agriculture, food,

natural resources, rural infrastructure, nutrition, and related issues through fact-based, data-driven, and customer-focused decisions.”<sup>26</sup>

The USDA is the first step in dairy price setting. The USDA sets pricing minimums based on Federal Milk Marketing Order (FMMO) regions. Parts of Pennsylvania are under two separate FMMOs. See Section III for further information about the significance of FMMOs to Pennsylvania’s dairy industry.

Additionally, the USDA oversees marketing and educational efforts for dairy products. Per federal law, for every hundred pounds of milk sold, 15 cents is paid by a dairy farmer, or 7.5 cents is paid by a dairy importer, to a product promotion fund known as “dairy checkoff.”<sup>27</sup> This money is divided among regions and used (with USDA oversight) to promote the broad dairy industry to consumers.<sup>28</sup> Famous marketing efforts that used dairy checkoff dollars have included “Milk Does the Body Good” and the “Got Milk?” campaigns.

## **United States Food and Drug Administration**

The United States Food and Drug Administration (FDA) is an agency of the United States Department of Health and Human Services (DHHS). The FDA plays an important role in food safety. Specific to dairy, the FDA publishes the *Grade A Milk Pasteurized Milk Ordinance* (PMO), that provides sanitation guidelines for milk processing.

According to the FDA, milk is graded as either A or B. Only Grade A milk may be used for fluid purposes. Grade B milk is used for manufacturing purposes and is generally of lesser quality than Grade A. More than 90 percent of milk produced in the United States is Grade A, and because there is already more milk supplied than is needed for fluid purposes, most of this excess is used for manufacturing purposes.

The FDA also provides guidelines for laboratory testing of milk. Additionally, the FDA assists in the response to foodborne illness outbreaks, including those originating from dairy products.

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<sup>26</sup> United State Department of Agriculture, *USDA Strategic Plan, FY 2018-2022*.

<sup>27</sup> See 7 U.S.C. 4501-4514.

<sup>28</sup> Dairy Management Inc., *How the Dairy Checkoff Works*.

## **Pennsylvania Department of Agriculture**

The Pennsylvania Department of Agriculture (PDA) oversees programs for Pennsylvania's agricultural industry. PDA outlines its mission as the following:

PDA is committed to a sustainable and safe supply of food and agricultural products in the Commonwealth – from the farm to the table – and to being good stewards of the land and Pennsylvania's natural resources. The department promotes the viability of farms, protects consumers, and safeguards the health of people, plants, animals and the environment.<sup>29</sup>

Dairy is one part of the large agricultural industry in Pennsylvania that PDA helps to promote. The PDA also has a food safety role. The PDA's Bureau of Food Safety and Laboratory Services oversees milk sanitization and food safety as follows:

- Issuing permits for the manufacture and sale of dairy products.
- Conducting inspections.
- Enforcing regulations for raw milk and pasteurized dairy processing plants/permit holders.
- Assisting manufactures with operational and regulatory questions.<sup>30</sup>

## **Pennsylvania Milk Marketing Board**

The Pennsylvania Milk Marketing Board (PMMB) is an independent state agency that oversees economic regulations on dairy products in Pennsylvania. PMMB administers the Milk Marketing Law and the Milk Producers' Security Act.

### **Board Composition**

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PMMB is comprised of three board members, appointed by the Governor and confirmed by the Pennsylvania Senate. Board members serve six year terms, with no term limits. Exhibit 8 contains information about the current members of the board.

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<sup>29</sup> Pennsylvania Department of Agriculture, *About PDA*.

<sup>30</sup> Kaylegian, Kerry. Penn State Extension, *Dairy Food Processing – Pennsylvania Regulations*. July 19, 2016.

## Exhibit 8

### PMMB Board Members

Board Member	Position	Home County	Appointing Governor	Date Confirmed	Annual Salary
Robert Barley	Chairman	Lancaster	Wolf	6/18/2018	\$25,735
Carol Hardbarger	Consumer Member	Perry	Wolf	6/18/2018	\$24,746
James Van Blarcom	Member	Bradford	Corbett	6/7/2014	\$24,756

Source: Developed by LBFC staff from information obtained from the PMMB and PennWatch.

### Board Staff

PMMB also employs 17 staff members<sup>31</sup> to carry out the operations of the board. As shown on Exhibit 9, aside from the board members, PMMB employs an Executive Secretary to oversee the administrative and day-to-day duties of the PMMB. There is also a Bureau of Consumer Affairs, Legal Counsel, Support Services Division, and Enforcement and Financial Division.

## Exhibit 9

### PMMB Organization Chart



Source: Developed by LBFC staff from information obtained from the Pennsylvania Office of Administration.

<sup>31</sup> As of March 15, 2019.

Staff perform lab inspections, wholesale audits, hauler audits, bulk tank calibrations, examinations, investigations, weigher/sampler certifications, store surveys, and utilization reviews. All of these activities are intended to protect all parties involved in the dairy industry from producers to consumers.

### **Funding**

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The PMMB oversees a special fund, the Milk Marketing Fund (Fund), which is a non-major special revenue fund of the Commonwealth. Milk dealers, subdealers, milk haulers, milk testers, and weigher/samplers operating in Pennsylvania are licensed by PMMB. Revenue collected from the sale of these licenses and from fines issued for noncompliance citations are deposited into the Fund. PMMB does not receive any tax dollars or any additional funding from the Commonwealth's General Fund.

Exhibit 10 shows the changes to the Milk Marketing Fund over fiscal years (FYs) 2015-16, 2016-17, and 2017-18.

### **Exhibit 10**

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#### **Milk Marketing Fund Statement of Cash Receipts and Disbursements (\$000)**

	<b>FY 2015-16</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>
Cash Balance, Beginning	\$3,919	\$4,006	\$3,906
Receipts	2,547	2,464	2,311
Disbursements	<u>-2,460</u>	<u>-2,564</u>	<u>-2,538</u>
Cash Balance, Ending	\$4,006	\$3,906	\$3,679

Source: Developed by LBFC staff from Governor's Executive Budgets for FYs 2017-18, 2018-19, and 2019-20.

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As mentioned above, the primary source of revenue to the Fund is from the issuance of licenses to various entities involved in Pennsylvania's milk industry. These licenses are as follows:

- **Dealer (or Handler).** Any person, who purchases, receives or handles on consignment or otherwise, milk within the Commonwealth, for processing or manufacture and further sale, within or outside the Commonwealth, whether on behalf of himself, others, or both.
- **Hauler.** Licensed trucks that transport raw milk from a producer to a processor.

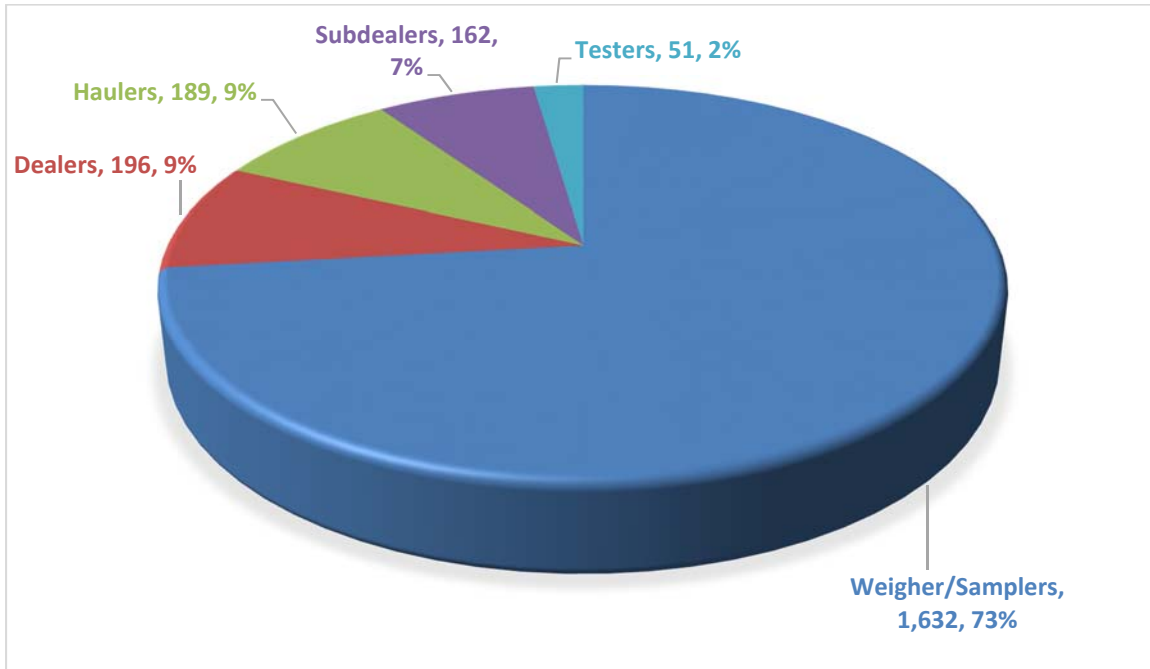
- **Subdealer (or Subhandler).** Any person, other than a store or controlled affiliate, who handles milk within the Commonwealth and delivers all such milk to consumers, schools, institutions, or stores in the same containers as those in which it was purchased.
- **Tester.** A certified technician operating electronic instruments, and/or a person certified to perform specific reference method for determining the components in raw milk.<sup>32</sup>
- **Weigher (or Sampler).** A person who retrieves, transports, and delivers raw or bulk milk from producers or dealers to dealers for processing. Their duties include obtaining a milk sample of the transported milk for individual testing. Weigher/Samplers are certified based upon knowledge of proper milk handling procedures.

Exhibit 11 shows the number of licenses PMMB issued for FY 2017-18.

Exhibit 11

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**Number of PMMB Licenses Issued  
FY 2017-18**



Source: Developed by LBFC staff from information obtained from PMMB.

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<sup>32</sup> Pennsylvania Milk Marketing Board, *Study Material for Testers*.

As mentioned previously, revenues are also generated from fines issued as a result of citations. Some citations that may warrant a fine include late filing of required monthly reports, late payments of fees or license renewal, failure to take proper samples, employment of unlicensed weigher/sampler, hauling milk without a license, pricing below PMMB minimums, and improper payments to producers. For FYs 2015-16, 2016-17, and 2017-18 the fines and penalties collected totaled \$32,000 over the three years.<sup>33</sup> The most common citations over the same period were as follows:

- FY 2015-16: Late filing of dealer annual financial statement (20 of 82 citations).
- FY 2016-17: Late filing of annual subdealer license renewal (16 of 62 citations).
- FY 2017-18: Late filing of annual hauler license renewal (13 of 48 citations).<sup>34</sup>

## **Pennsylvania Department of Community and Economic Development**

More recently, the Pennsylvania Department of Community and Economic Development (DCED) has taken a role in aiding Pennsylvania's dairy industry. Generally speaking, DCED promotes economic activity in the Commonwealth. With respect to the dairy industry, Act 42 of 2018 created the Pennsylvania Dairy Investment Program (PDIP), which is to provide \$5 million in grants to assist applicants with innovative dairy-related projects. The PDIP is jointly administered by DCED and PDA. All projects require approval by the Commonwealth Financing Authority (CFA).<sup>35</sup>

Eligible applicants of the PDIP include: business, not-for-profit, schools, and institutions of higher education. The categories for PDIP projects include: research and development, transitioning to certified organic production, processing, distribution, value-added processing, and marketing.

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<sup>33</sup> Governor's Executive Budgets Fiscal Years: 2017-18, 2018-19, and 2019-20.

<sup>34</sup> Pennsylvania Milk Marketing Board, *Fiscal Year Report 2014-2015 and 2015-2016*; and *Fiscal Year Report 2016-2017 and 2017-2018*.

<sup>35</sup> The CFA is an independent agency of DCED charged with approving various loans and grants for specified commonwealth economic programs. The CFA consists of seven board members: four legislative appointees, and the secretaries of DCED, the Office of the Budget, and the Department of Banking and Securities. Project approval requires five affirmative votes, four of which must come from legislative appointees.



DCED receives the applications, scores them to the program criteria, and gets agricultural input from PDA. The CFA votes and announces the approved projects at their board meetings. Exhibit 12 shows the first PDIP projects approved by the CFA on March 26, 2019, with FY 2018-19 funding.

## Exhibit 12

### **Pennsylvania Dairy Investment Program Approved Projects (FY 2018-19)**

Topic Area	No. of Applications Received	No. of Projects Approved	Awarded Amounts
Research & Development	4	2	\$92,500
Transiting to Certified Organic	0	0	0
Value-Added Processing	27	22	4,469,035
Marketing	11	5	438,464
<b>Total</b>	<b>42</b>	<b>29</b>	<b>\$4,999,999</b>

Source: Developed by LBFC staff from information obtained from the Commonwealth Financing Authority.

### **Pennsylvania Center for Dairy Excellence**

The Pennsylvania Center for Dairy Excellence (CDE) is a 501(c)(6) non-profit organization that provides programs and resources to Pennsylvania's dairy industry.<sup>36</sup> As a public-private partnership, CDE receives state funding from the PDA "Agriculture Excellence and PA Preferred" budget line items. Exhibit 13 highlights the CDE's primary funding sources.

<sup>36</sup> Section 501(c)(6) of the United States Internal Revenue Code provides for the exemption of business leagues, chambers of commerce, real estate boards, boards of trade and professional football leagues, which are not organized for profit and no part of the net earnings of which inures to the benefit of any private shareholder or individual. A business league is an association of persons having some common business interest, the purpose of which is to promote such common interest and not to engage in a regular business of a kind ordinarily carried on for profit. Trade associations and professional associations are business leagues.

Exhibit 13

**CDE Funding Source  
(2017)**

Source	Amount
External Grants	\$127,333
CDE Foundation of PA	103,058
Industry Support	44,503
PA Preferred	40,102
Agriculture Excellence Line	1,151,427
<b>Total</b>	<b>\$1,466,423</b>

Source: Pennsylvania Center for Dairy Excellence, *2017 Annual Summary*.

CDE's mission is "to empower the people, create the partnerships and coordinate the resources to grow the profitability of Pennsylvania's dairy industry."<sup>37</sup>

More recently, in partnership with PDA, CDE funded a 2017 multifaceted study on Pennsylvania's dairy industry. Issued in June 2018, the different facets of the study included the following:

- *Phase I: A Diagnostic Study.*
- *Incentives for Additional Processing Capacity.*
- *Comparative Farm Financial Performance.*
- *Stakeholder Comments and Comparative Organization Support for the Pennsylvania Dairy Industry.*
- *Economic Impacts of the Pennsylvania Dairy Industry.*
- *Export Potential Through the Port of Philadelphia.*
- *Projections of Prices, Farm Profitability and United States Dairy Product Exports from 2018 to 2025.*
- *Impact of PMMB on Fluid Milk Prices and Processing Volumes.*
- *Key Recommendations.*

The study was conducted by agricultural economists from Cornell University and University of Wisconsin. The results of the *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry* will be cited throughout our report.<sup>38</sup>

<sup>37</sup> CDE's programs include the following: Dairy Decisions Consultants; Benchmark Discussion Groups; Farm Profitability Resources; Stress Management; Next Generation Resources; Processors and Retailers; and Risk Management Tools.

<sup>38</sup> Nicholson, Chuck; Stephenson, Mark; Novakovic, Andrew. *Study to Support Growth and Competitiveness of Pennsylvania Dairy Industry*.

## SECTION III HISTORICAL AND CONTEXTUAL ISSUES



### **Fast Facts...**

- ❖ *Because of milk's unique status as a commodity, historically dairy producers have been at a disadvantage in the marketplace. Price instability and unfair business practices have further challenged dairy producers.*
- ❖ *In the early 1930's, federal and state regulatory action was necessary to stabilize market forces and ensure that wholesome and healthy milk was produced. These actions continue to shape and guide the dairy industry today.*
- ❖ *Pennsylvania's dairy industry is the leading segment of its agricultural economy, generating 45,029 jobs and \$8.9 billion in direct economic benefit.*

### **Overview**

Hard work, dedication, and commitment to vocation are required for all agricultural enterprises, but the dairy industry stands out as an especially complex and difficult enterprise. The challenges of the dairy industry begin with dairy producers (i.e., farmers), who must make substantial and continuous investments in their enterprises to remain successful. Moreover, the product they generate—raw milk—cannot be handled like other agricultural commodities. Stated simply, cows need to be milked (at least twice a day) and given milk's high perishability, it must be quickly processed into products for consumer demand.

Milk dealers and cooperatives, who take milk from the farm for processing also face challenges. These parties must ensure there is sufficient raw product (supply) to meet the demands for various dairy products (e.g., fluid milk, butter, cheese, ice cream, etc.). Finally, retailers face challenges in ensuring that their store shelves are kept stocked and that the retail products meet their customers' demands and changing tastes.

At the root of all these challenges are the market forces of supply and demand—and in an ideal situation—these factors would naturally balance. Historically, however, reaching this natural balancing state has been challenging and unfair trade practices have transpired. More often than not, it was the dairy producers who fell victim to these practices and were left unprotected in the marketplace.

Milk is a significant commodity. It provides a wholesome and valuable food source for society, and the dairy industry supports jobs and economic vitality that is important to many local communities. Because of these issues, various federal and state regulatory actions have been necessary to ensure the marketplace remains fair for all involved parties.

Within this Section of the report, we discuss the rise of, and need for, these complex governmental controls within the dairy industry. Specifically, we present an overview of the role of Federal Milk Marketing Orders, as well as the overlay of Pennsylvania's Milk Marketing Law. Finally, we also discuss the significance of agriculture and Pennsylvania's dairy sector within the state's overall economy.

## Issue Areas

### A. Historical Perspectives About the Dairy Industry

Milk can be used for a variety of products, including fluid (i.e., consumable) milk, butter, cheese, yogurt, and dry milk powder, to name just a few.<sup>39</sup> Because of the variety of products derived from milk, dairy farming is an important and much needed agricultural endeavor. Moreover, dairy farming is an important economic driver within many state's agricultural industry.

*Because milk is highly perishable and must be collected on daily schedules, dairy farming is unlike other agricultural enterprises.*

To most individuals, the dairy industry may seem a rather idyllic and modest process: cows are milked on a farm and the milk appears on the retail shelf in the grocery store. As discussed in Section II - Background, the realities of how milk is processed into food, and how it ultimately reaches our store shelves involves a multitude of supporting actors, all of whom are governed by federal and state laws and regulations.

Beyond the intricacies of dairy processing, for a producer (i.e., farmer) dairy farming requires significant capital investments in land, feed crops, equipment, and herds. Further, dairy farming is unlike other agricultural sectors that have some flexibility in how the product reaches the market. For example, beef farmers can vary when they send their cattle to market, or crop farmers may be able to store their produce and wait for more favorable market conditions. Conversely, dairy farmers lack this flexibility. Cows must be milked, and because milk is a perishable product, it must travel quickly to available processors.

Given the perishability of milk and the need for a sustainable and continuous supply of fresh milk, balancing milk supply with demand has always been challenging because the volume of milk produced and collected varies daily, monthly, and seasonally. Similarly, consumer demand for milk and for dairy-related products varies. For example, cheese, butter, and dairy consumption is higher around the holidays, than it is at other times of the year. And, here in Pennsylvania, at the first indication of a significant snow accumulation, consumers have an almost instinctual desire to stock up on fluid milk.<sup>40</sup>

While technology, efficiency, and commercialization have impacted the agricultural industry, the basis of any discussion about the dairy industry

<sup>39</sup> Under Title 21, Section 131.110 (a) of the Code of Federal Regulations, milk is defined as the "lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows." Raw milk is milk that has not been pasteurized or otherwise processed.

<sup>40</sup> One dairy processor informed us that they have studied this milk purchasing phenomenon and can generally gauge how much additional fluid milk they should process based on the number of inches of snow that is expected.

is driven by factors of supply and demand over milk. Moreover, from a historical perspective, it is these economic factors that have driven most governmental influences over the dairy industry.

## **Dairy Industry Evolution**

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Dairy farming is significantly different today than just a few years ago. Initially, dairy farms started small and were remotely located. Organized marketing of raw milk for fluid consumption started in the late 18th century when families in cities were unable to obtain milk from nearby producers. As a result of this demand, "middle-men" arose in the 19th century to connect milk producers with consumers. Milk pricing within this structure was determined by simple negotiation between buyer and seller.

By the late 19th century, with the rapid development of railroads and expanding urbanization, the market structure for milk was increasingly developing toward a system where hundreds or thousands of dairy farmers sold to only a handful of large fluid milk dealers. This system largely remained in place until the early 20<sup>th</sup> century, when cooperative dairy associations began to increase as a means of better negotiating producer milk prices.<sup>41</sup>

Cooperative associations developed near eastern cities to negotiate milk prices with dealers and distributors. These member groups were based on similar associations that immigrant dairy farmers had used in Northern Europe. Cooperatives allowed members to have a steady market for their product. Through the cooperative system, milk was pooled among the members and prices were negotiated with larger distributors. Producers received payments from the cooperative based on the amount of milk each farmer produced.<sup>42</sup>

One tactic the early cooperatives used to their favor was "milk strikes," whereby members would withhold milk from the market which would then tighten the supply of available milk. One of the most famous milk strikes occurred in 1883, when New York producers, who demanded a higher price for their milk, created a milk famine in New York City by dumping milk on the roads. These actions generally had short-term success in enforcing demands. However, ultimately the dealers began to develop a bargaining edge over farmers, primarily due to better market information through the larger and more powerful processor/distributor organizations. Further, the rural isolation and the generally independent

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<sup>41</sup> USDA, *Cooperatives in the Dairy Industry*, September 2005.

<sup>42</sup> Ibid.

nature of most dairy farmers combined to restrain the influence of the producers.<sup>43</sup>

## Governmental Oversight/Regulation

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By the early 20th century, a number of factors contributed to the need for greater governmental control within the dairy industry. First, unfavorable economic conditions, chaotic pricing of fluid milk, and dealers who balanced fluctuating supply needs by refusing to accept some producers' milk spurred the successful formation of large-scale cooperative bargaining organizations for raw whole milk.<sup>44</sup> Secondly, increasing demands for quality milk, which was free from food-borne illnesses, sparked advancements in milk processing and handling. Lastly, the United States involvement in geopolitical conflicts, as well as significant swings in the United States economy created a need for securing and stabilizing milk supplies.

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*The passage of the Capper-Volstead Act in 1922 gave rise to cooperatives and protected these organizations from anti-trust actions. Cooperatives are an important part of the dairy industry.*

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During this time, perhaps one of the most significant events was the passage of the Capper-Volstead Act of 1922. This law allowed producers of agricultural products, including dairy, to act together in associations to organize collective processing, preparation for market, handling, and marketing of milk and other agricultural goods.<sup>45</sup> Most significantly, this law also granted cooperatives protection from federal anti-trust actions. With this legislation, and the subsequent strengthening of cooperatives' position in the marketplace, the federal government established the initial framework for dairy industry pricing.

With authority from the Capper-Volstead Act, bargaining associations and cooperatives quickly found that increases in milk prices led to problems in disposing of milk not needed for fluid use. In response, numerous markets began using classifications on milk and cooperatives would develop pricing plans which correlated to the classification.

These initial pricing plans recognized the difference in the value of milk, depending upon how it was used. Thus, raw milk prices were based on end-use. Generally, raw milk that was to be used for fluid milk purposes was of the highest quality; thus, it commanded the highest price. Audit procedures were also established to ensure correct payment by handlers. Consequently, dairy cooperatives developed milk pooling systems to more equitably distribute returns for milk used in different products to members and also implemented plans for dealing with the seasonality of milk deliveries.<sup>46</sup> These initial plans served as the basis for more federal government involvement in the 1930s.

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<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> See 42 Stat. 388, 7 U.S.C.A., 291-192, Approved February 18, 1922.

<sup>46</sup> USDA, *Cooperatives in the Dairy Industry*, September 2005.

## Federal Milk Marketing Orders

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Despite efforts by the first cooperatives to stabilize milk prices, there was continued instability in fluid milk pricing during the 1930s. As this instability grew, so too did producers' impatience with the lack of an acceptable market for their milk. From this discontent, the federal government initiated its formal regulation of the dairy industry, which was the creation of Federal Milk Marketing Orders (FMMO).

FMMOs originated in 1933 with the passage of the Agricultural Adjustment Act of 1933, which authorized marketing agreements and licensing for processors. Amendments added in 1935 expanded and made explicit the authority of the USDA to establish minimum milk prices. Finally, with the passage of the Agricultural Marketing Agreement Act of 1937, FMMO boundaries were permanently authorized.

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*The federal government's involvement in the dairy industry is seen most directly through FMMOs.*

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FMMOs created and codified a classified milk pricing system for various sectors of the United States. More importantly, FMMOs gave credence to the unique market issues that are present for producers in supplying the nation with milk. Exhibit 14 highlights these distinct issues, which continue to serve as the basis for today's federal milk policy.

FMMOs are designed to stabilize market conditions and require milk handlers to pay milk producers uniform prices for milk and adhere to other specified rules. Stated simply, FMMOs are designed to assure milk producers of fair treatment in the marketplace while assuring consumers a consistent and adequate supply of dairy products.<sup>47</sup>

For greater than 50 years, FMMOs governed milk prices for much of the United States. In 1996, as part of the federal "farm bill," the USDA was mandated to consolidate and reform the FMMO system. Specifically, the USDA was required to reduce the number of FMMOs from 31 to no fewer than 10 and no more than 14.<sup>48</sup>

Individual FMMOs are established and amended through a formal public hearing process that allows interested parties to present evidence regarding marketing and economic conditions in support of, or in opposition to, instituting an order. FMMOs are overseen as part of the Dairy Program, administered by the USDA's Agricultural Marketing Service (see also the Section II - Background).<sup>49</sup>

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<sup>47</sup> Congressional Research Service, *Federal Milk Marketing Orders: An Overview*, December 17, 2017.

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.

Exhibit 14

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**Initial Influences for the Creation of  
Federal Milk Marketing Orders**

1. Fluid milk is highly perishable—it must be kept cool or refrigerated almost immediately after production. This fact creates logistical hurdles throughout the marketing chain.
2. Milk production has no distinct planting and harvest season as compared to field crops—that is, milk production occurs continuously on a daily basis. Most farms have limited on-farm milk storage capacity, and new milk production must move to markets on a regular basis whether prices are high or low. Thus, milk producers are in a weak bargaining position vis-à-vis milk buyers.
3. Milk production and demand exhibit seasonality patterns that further complicate the marketing process. Milk production tends to increase in the spring and early summer when pastures are lush and the weather is mild, but it tends to decline in the late summer, fall, and winter months. In contrast, milk demand tends to peak in the fall and winter months during the school year and decline in the spring and summer.
4. Fluid milk has a more inelastic demand than most other dairy products—that is, fresh milk consumption is not very sensitive to price changes. However, lower prices do affect the economic viability of the dairy farm.
5. Milk that is produced in excess of fluid needs is processed into manufactured products with a longer shelf-life, such as butter, cheese, powdered milk, yogurt, and ice cream. Milk for these specific purposes does not require the same quality as fluid milk.
6. The dairy industry is a high fixed-cost industry: A dairy farm has substantial investments in infrastructure, equipment, and dairy cattle. For example, it takes nearly two years from the time a calf is born until it is mature enough to join the milking herd and start to generate revenue. During that time it must be housed, fed, and cared for (including veterinary services).

Source: Developed by LBFC staff from information obtained from the Congressional Research Service.

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As shown on Exhibit 15, there are currently 11 FMMOs. Recently, in October 2018, California dairy producers voted to join the FMMO program. As a result, according to the USDA, more than 80 percent of the nation's milk supply is covered under the FMMO regulatory framework.

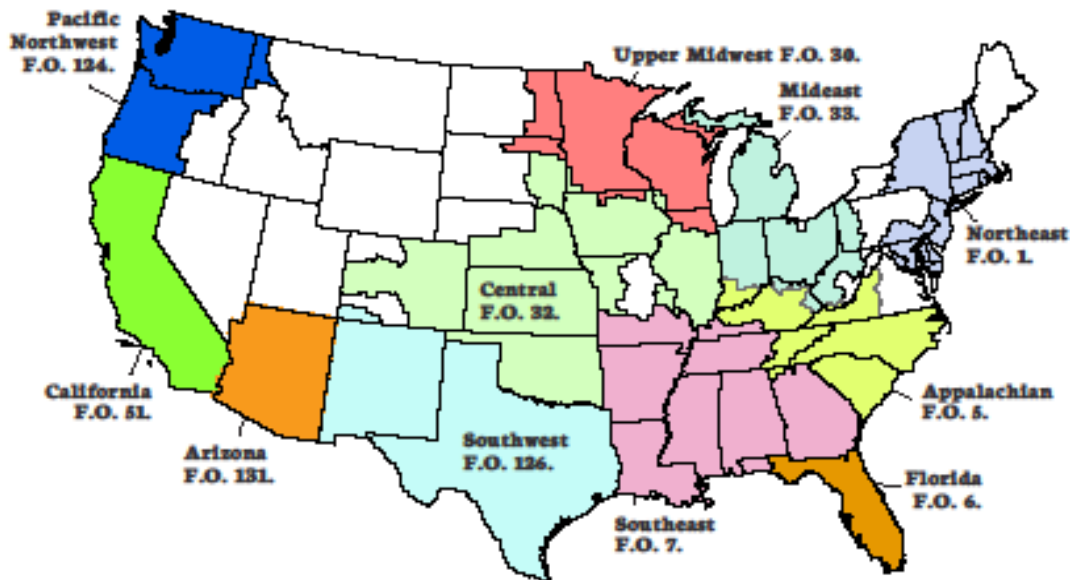
Within Pennsylvania, two different FMMOs divide the state, the Northeast FMMO 1 and the Mideast FMMO 33. Interestingly, FMMO 33 is even further divided by municipality within the covered counties. This further sectoring is not seen in other FMMOs. Producers and dealers who are not under either FMMO 1 or FMMO 33 are not covered by federal pricing



regulations, although they are still covered under the state's milk marketing orders.

## Exhibit 15

### 11 Federal Milk Marketing Order Areas



#### Pennsylvania Territory Covered by Federal Milk Marketing Orders

##### Northeast Federal Order 1

Adams, Bucks, Chester, Cumberland, Dauphin, Delaware, Franklin, Fulton, Juniata, Lancaster, Lebanon, Montgomery, Perry, Philadelphia, and York.

##### Midwest Federal Order 33

Allegheny, Armstrong, Beaver, Butler, Crawford, Erie, Fayette, Greene, Lawrence, Mercer, Venango, and Washington. In Clarion County only the townships of Ashland, Beaver, Licking, Madison, Perry, Piney, Richland, Salem, and Toby. All of Westmoreland County except the townships of Cook, Donegal, Fairfield, Ligonier, and St. Clair, and the boroughs of Bolivar, Donegal, Ligonier, New Florence, and Seward.

Source: Developed by LBFC staff from information obtained from the USDA.

### ***How do FMMOs help Pennsylvania dairy producers?***

In an ideal setting, the normal market influences of supply and demand would drive the fair and equitable pricing for fluid milk. However, as noted previously, milk is a unique and challenging commodity to produce, and the proper management of milk supplies leads to pricing

swings that have vexed producers and processors since the earliest days of colonization.

On a macro level, FMMOs are intended to act as silent controllers that balance the aforementioned issues. Milk orders; therefore, are critical to producers and consumers alike for at least the three reasons that follow:

- First, the FMMOs assist farmers in developing steady, dependable markets by providing prices for their milk that are reasonable in relation to economic conditions.
- Second, FMMOs assure consumers, at all times, of adequate supplies of pure and wholesome milk at reasonable prices.<sup>50</sup>
- Third, because FMMOs are derived from federal authority, they transcend any state or local regulations; thus, providing uniform trade practices.

As depicted in Exhibit 16, FMMOs are able to meet these objectives by providing a legal framework of rules and procedures on which orderly marketing activities are based to the benefit of all parties.

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<sup>50</sup> USDA, Agricultural Marketing Service, Dairy Divisions, AMS – 559, March 1996.

Exhibit 16

**How do FMMOs help  
Pennsylvania's dairy producers?**



Providing farmers an active voice in determining minimum farm milk prices through a public hearing procedure.



Establishing minimum prices to fluid milk buyers that assure farmers as much for their milk as general supply and demand conditions in the market warrant and assure the market of adequate current and future supplies of milk.



Providing for the orderly marketing of reserve milk through a pricing method based on the uses for which milk is sold and a payment method by which farmers are assured uniform prices for the milk they deliver to the market or to individual handlers in the market.



Reducing the dangers of unwarranted and harmful fluctuation of prices paid to farmers.



Allowing for impartial audit of handlers' records to verify accurate payments to dairy farmers and to verify reported utilization of milk.



Assuring farmers of accurate weighing, testing, classification and accounting for milk.



Making available information on the handling of milk in the marketing area so as to enable interested parties to evaluate the market situation.

Source: Developed by LBFC staff from information obtained from the USDA.

It is important to note that while FMMOs help to stabilize the market, and thereby aid dairy producers, FMMOs only apply to milk handlers.<sup>51</sup> More specifically, FMMOs require that when a milk handler operating under the federal order purchases milk from a dairy farmer, such handler must pay at least the minimum price, make accurate weights and tests and account properly for the way the milk is used. The FMMO does not control from whom the milk handler shall buy, to whom the handler shall sell, how much the handler should buy or sell, or at what prices the handler may sell.<sup>52</sup> As a result, there is considerably more flexibility on the part of the producer to sell his milk to buyers (handlers). The producer receives payment from handlers directly, or if a member of a cooperative, the handler will pay the cooperative for milk purchased.

<sup>51</sup> Milk handlers are defined as anyone who handles Grade A milk from dairy farmers for distribution within the marketing area.

<sup>52</sup> USDA, Agricultural Marketing Service, Dairy Divisions, AMS – 559, March 1996. As discussed later, if the handler is operating in Pennsylvania, additional state regulations apply.

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*FMMO pricing is an extremely complex issue, but it is based on milk's commodity pricing, component make-up, and its end-use classification.*

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***How is milk priced under a FMMO?*** While the milk industry is often plagued by differing opinions, there seems to be universal agreement that milk pricing is extremely complex and difficult to comprehend. As depicted in Appendix B, at the simplest level, pricing is derived by the three C's: Commodity, Component, and Classification. The USDA publishes different formulas for each class of milk, which are also based on component prices as set by various commodity indexes.<sup>53</sup> Price adjustments are periodically implemented by the Milk Order Administrator based on various economic factors.<sup>54</sup>

Establishing the minimum price levels, as defined by the Agricultural Marketing Agreement Act of 1937, requires that minimum farm prices for milk be established at levels which will achieve the following:<sup>55</sup>

- Reasonably reflect economic conditions affecting the supply and demand for milk (such as the price of feeds).
- Assure an adequate supply of pure and wholesome milk for the market.
- Assure a level of farm income adequate to maintain productive capacity sufficient to meet anticipated future needs.
- Be in the public interest.

In short, the Act requires the establishment of minimum prices which will equate the supply of milk with the demand in regulated marketing areas after making provisions for necessary reserve supplies.

The concept of milk classification and ensuring reserve milk supplies within the FMMO pricing scheme is especially confusing to those not closely involved in the dairy industry. However, the pricing principles are based on the foundations established by creating FMMOs in the first place, which are essentially to manage and compensate for supply and demand. The USDA describes this balance most succinctly as follows:<sup>56</sup>

A well-supplied market requires a daily reserve supply of fluid milk to take care of daily fluctuations in demand. In addition, there are significant seasonal variations in the volume of milk produced which influence the quantity of reserve supplies carried by a market. Milk delivered to

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<sup>53</sup> As described in the Background section of this report, federal regulation outlines four classifications of milk, which are based on the milk's final use.

<sup>54</sup> Each FMMO has a Milk Market Administrator, who is appointed by the U.S. Secretary of Agriculture. The Administrator employs a staff of auditors, agricultural economists, laboratory personnel, data processing personnel, and clerical staff.

<sup>55</sup> USDA, Agricultural Marketing Service, Dairy Divisions, AMS – 559, March 1996.

<sup>56</sup> Ibid.

the market in excess of sales in the highest priced class is placed in a lower priced class or classes. By pricing reserve milk supplies, the classified pricing plan prevents such supplies from depressing the price of milk to dairy farmers to the point where the supply for a market may become endangered. It also results in greater market stability, without the price fluctuations that short-time changes in supply and demand could bring about. The classified pricing plan also contributes to the orderly marketing of milk by pricing reserve milk at a level commensurate with its value in manufactured dairy products. Thus, reserve supplies are priced at a level related to their value to the handler and at a level at which handlers will be willing to accept such excess milk.

The classified pricing plan recognizes that it is more costly to produce and market milk for fluid use than for milk that can only be used for manufacturing such products as butter, cheese and nonfat dry milk. This cost difference exists because additional expenditures must be made for fluid milk to comply with the rigid sanitary standards which apply to Grade A milk. Further, milk in fluid form, which is perishable in nature, usually must be transported relatively long distances from production areas to market centers.

Another relevant aspect of pricing within an FMMO are blend price and pooling. Here too, this pricing concept involves complex calculations based on how the milk is used within the FMMO. The overall concept, however, is to minimize overly competitive practices among producers. According to the USDA, the most common type of pool is the market-wide pool, which requires handlers to pay not less than the uniform pool price for all milk they have received from each producer.

Under a market-wide pool, the minimum average price is calculated on a market-wide basis, combining into one total the utilization of all handlers and the total receipts from all producers in the market. By this arrangement all producers receive the same uniform or blend price per hundred-weight for the milk they deliver, regardless of the handler to whom it is delivered. Because of the different utilizations of handlers, it is necessary for the market administrator to maintain a producer-settlement fund for the purpose of equalizing payments among various handlers.<sup>57</sup>

In the end, FMMOs are significant to Pennsylvania and its dairy industry, because FMMOs set the initial playing field for how milk is

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<sup>57</sup> Ibid.

sold as a commodity. Moreover, without the regulatory influences and control of FMMOs, the United States dairy industry would likely revert back to the unpopular conditions that existed prior to the 1930s.

## **B. Pennsylvania's Milk Marketing Law**

In the previous issue area, we discussed the evolution of the dairy industry and the dramatic economic conditions caused by the Great Depression. These conditions gave rise to the federal government's involvement in regulating milk marketing, which continues to be the primary basis by which the dairy industry is regulated (within federal milk marketing orders).

While the Great Depression was arguably the seminal moment for the federal government's involvement in trying to "fix" the dairy industry, state governments were also active in trying to help their respective dairy industries. To that end, at least 22 other states, including Pennsylvania, created emergency milk control statutes around the 1930s. These laws were seen as remedial and temporary fixes to the market conditions that plagued producers. Pennsylvania enacted its initial milk legislation in 1934.

Later, in 1937, the law was again reworked and made permanent. It is this 1937 law, known as the Milk Marketing Law,<sup>58</sup> with subsequent amendments to maintain its effectiveness and relevance, which continues to guide milk marketing within Pennsylvania's borders.<sup>59</sup> Because of the significance of this law to Pennsylvania's dairy producers, a high-level understanding of the law and its overseeing body, the Milk Marketing Board, is necessary.

## **Pennsylvania Milk Marketing Board**

As discussed in Section II - Background, the Pennsylvania Milk Marketing Board (PMMB or Board) consists of three members, each of whom is appointed by the Governor and confirmed by the Senate. At the most basic level, the Board has two key responsibilities:

1. Ensure the prompt payment to Pennsylvania's producers for milk produced in Pennsylvania.

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*Pennsylvania's Milk Marketing Law only applies to transactions for milk that are produced, processed, and sold in Pennsylvania.*

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<sup>58</sup> Act 1937-105, as amended, 31 P.S. §700j-101, *et seq.*

<sup>59</sup> The term marketing is used in this context to mean business regulation. Today, marketing typically refers to satisfying customers and business relationships, which is not the intent of the law.

2. Administer a comprehensive milk pricing program that enhances farm milk price, while at the same time providing a fair and competitive price for consumers.

Before discussing how the Board carries out these functions, it is important to also discuss what the Board does not do. Specifically, the Board has no authority to regulate the dairy industry outside of Pennsylvania's borders. In other words, only milk transactions which are produced, processed, and marketed (sold) in Pennsylvania falls under the Board's regulatory control. This exclusion is mandated by the United States Constitution and what is known as the "dormant commerce clause."

***Federal/State Authority.*** The influence of the dormant clause originates from Article 1, Section 8, Clause 3 of the Constitution. This clause grants Congress the exclusive power to "regulate commerce with foreign nations, and among states, and with the Indian tribes." Although not explicitly stated in the commerce clause, this grant of Congressional power to regulate interstate commerce carries with it the negative corollary—the dormant commerce clause—which imposes implied limitations on any state to impede interstate commerce.<sup>60</sup> As such, the dormant commerce clause refers to the prohibition, implicit in the commerce clause, against states passing legislation that discriminates against or excessively burdens interstate commerce.<sup>61</sup>

Interestingly, while the dormant commerce clause has been tested in numerous cases before the United States Supreme Court (Court), with respect to milk regulation and the Pennsylvania Milk Marketing Board, the Court has affirmed the authority of the PMMB. For example, shortly after the PMMB was formed in 1939, a Pennsylvania-based milk dealer sued the PMMB, claiming that it was not required to purchase a license and comply with other portions of Pennsylvania's Milk Marketing Law because a portion of the milk it purchased was shipped to New York City; therefore, by requiring the milk dealer to abide by Pennsylvania's milk marketing law, the PMMB was restricting interstate commerce. The Court disagreed and found that if dealers were "free to ignore the requirements of the statute on the ground that all or a part of the milk they purchase is destined to another state, the uniform operation of the statute locally would be crippled, and might be impracticable [sic]."<sup>62</sup> As a result, the Court upheld the PMMB's authority and found its authority not to be an infringement upon interstate commerce.

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<sup>60</sup> Pifer, Ross, Director, Agriculture Law Resource and Reference Center, Pennsylvania State University, Dickinson School of Law, *State Regulation of Dairy Pricing and the Dormant Clause*. Testimony before the Pennsylvania Senate Agriculture and Rural Affairs Committee, December 9, 2009.

<sup>61</sup> See [https://www.law.cornell.edu/wex/commerce\\_clause](https://www.law.cornell.edu/wex/commerce_clause).

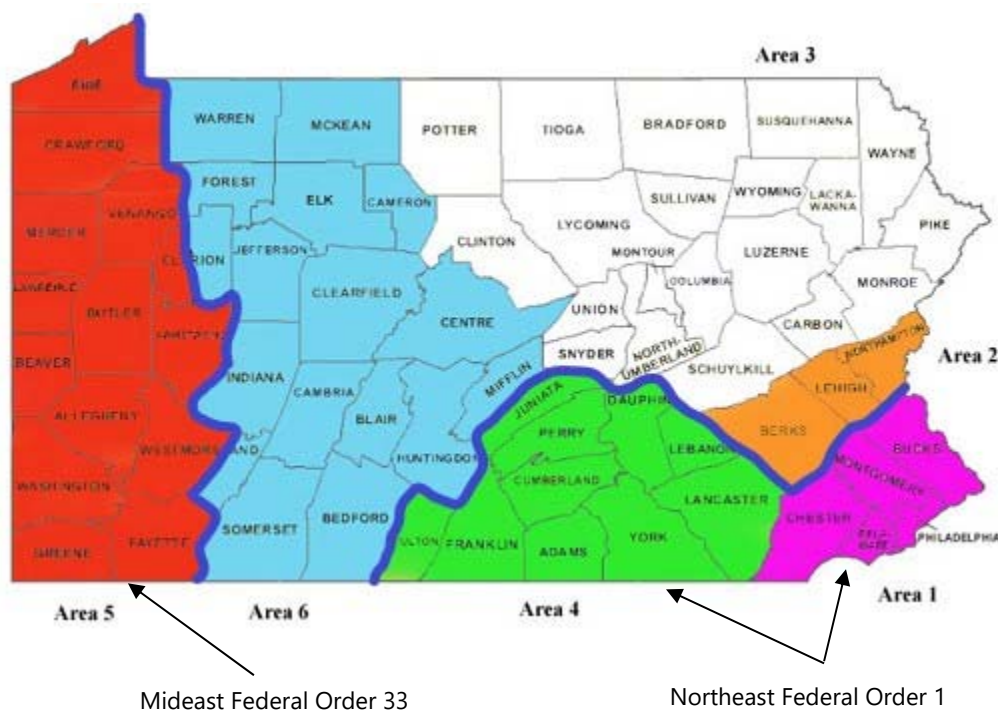
<sup>62</sup> *Milk Control Board of Pennsylvania v. Eisenberg Farm Products*, 306 U.S. 346 (1939).

The delicate balance between the federal government's authority to ensure commerce among the states, and Pennsylvania's authority to regulate milk, is oftentimes misunderstood. Yet, this fact is central to what the PMMB can (and cannot) do to help Pennsylvania's dairy industry.

***Pennsylvania Milk Marketing Areas.*** Similar to the federal government's establishment of federal milk marketing order areas, for purposes of implementing the Milk Marketing Law, the state is divided into six different Milk Marketing Areas (MMA). Each area is regulated by a different federal order, or no order at all. For example, as shown in Exhibit 17, and depicted by the blue boundary lines, Pennsylvania MMAs 1 and 4 are regulated by FMMO 1 and MMA 5 is regulated by FMMO 33. MMA 2, 3, and 6 are not regulated by an FMMO.

Exhibit 17

### **Pennsylvania Milk Marketing Areas and Federal Milk Order Boundaries**



Source: Developed by LBFC staff from information obtained from the PMMB and USDA.

It is important to remember that although FMMOs may overlap certain Pennsylvania counties, the FMMOs are not exclusive to just Pennsylvania. For example, the Northeast FMMO continues into New Jersey and north-



ward into New York and other northern states. The purpose of Pennsylvania's MMAs is generally to allow the PMMB to better factor price/cost variation across the state and across the different segments of the dairy industry: producer, processor, and retailer.

In the areas that follow we will discuss the uniqueness of the PMMB and how it carries out its two primary responsibilities: ensuring producers receive payment for their milk; and creating a fair and competitive milk pricing program.

## **Producer Payment Security**

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The PMMB's authority to ensure producer payment for milk, is established in the Milk Producers' Security Act of 1984 (Security Act).<sup>63</sup> According to Section 626.2 of this Act, the following declaration of policy is set forth:

It is hereby declared that the dairy industry is a paramount agricultural industry of this Commonwealth and that the normal processes of producing and marketing milk are enterprises of vast economic importance to the Commonwealth and of vital importance to the consuming public which ought to be safeguarded and protected in the public interest. The General Assembly finds that the marketing of milk requires dairy farmers and cooperatives to receive prompt payment from dealers and handlers. It has been, and continues to be, the policy of this Commonwealth to protect producers and cooperatives against loss of payment for milk because of defaults by purchasers. The public interest requires the establishment of an act to provide security for dairy farmers and cooperatives.

As a result of this statute, the PMMB was required to establish a process by which producers would be protected from non-payment by milk dealers. As noted in Section II - Background, milk dealers are individuals who purchase, receive, or handle milk on a consignment basis for the sale, shipment, storage, processing, or manufacturing of milk.<sup>64</sup> In other words, a milk dealer is any individual who takes milk from a farmer and later uses that milk—either as a fluid product, or for additional processing in a dairy product. For purposes of this Act; however, a cooperative shall not be deemed a dealer..

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<sup>63</sup> Act 1984-136, as amended, 31 P.S. §626.1, *et seq.*

<sup>64</sup> "On consignment basis" generally refers to a type of business arrangement whereby the goods, in this case raw milk, are left in the possession of a third party to sell (a milk dealer). Typically, the consignor receives a percentage of the revenue from the sale.

In order to ensure these producer payments, the PMMB requires milk dealers to post a bond with the PMMB that is sufficient to cover one month's worth of purchases. These bonds are posted annually and are based on the value of each milk dealer's purchases during the prior year. Milk dealers may also pay a prescribed amount per hundredweight of milk handled into the Milk Producer's Security Fund. This fund also provides further protections against nonpayment for milk producers. Any payments to producers for nonpayment by milk dealers is handled solely by the PMMB. The PMMB ensures milk dealer compliance with the requirements of the Security Act through its periodic audits of milk dealers.

According to the PMMB's most recent annual report, there was \$3.1 million in the Producer's Security Fund, and more than \$110 million in collateral or corporate surety bonds posted by milk dealers. These funds are statutorily-protected for Pennsylvania producers.

## **Pennsylvania's Milk Pricing Program**

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As required by Pennsylvania's Milk Marketing Law (Law), the most significant program responsibility for the PMMB is the implementation of Pennsylvania's milk pricing program. Unlike most other states, which have little regulation over fluid milk price setting, Pennsylvania has a highly-regulated milk pricing program. For example, the PMMB sets minimum producer, wholesale, and retail prices for each of the six milk marketing areas in Pennsylvania. The PMMB also establishes an "over-order premium" that is intended to supplement producer milk revenues.<sup>65</sup> Exactly how the PMMB sets these prices and the over-order premium is a complex and difficult process to understand, but this structure is a key element to understanding the historical and contextual issues of Pennsylvania's dairy industry.

### ***Minimum producer, wholesale, and retail prices***

When establishing minimum prices, the Law requires the Board to give equal consideration to all segments of the dairy industry. To that end, the Law focuses on three sectors: 1) producers (i.e., farmers); 2) wholesalers (i.e., milk dealers); and 3) retailers (i.e., grocery stores or convenience stores). These three sectors are commonly referred to as the "three-legs" of the dairy industry.

With respect to processors and retailers, Section 802 of the Law requires the Board to set prices by "official order." To accomplish this task, each year the PMMB holds public hearings for each of the six milk market areas. For the processor leg of the dairy stool, the PMMB receives cost information regarding how much it costs to process, package, and deliver milk. This would include costs for items such as plastic containers, paper

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<sup>65</sup> In addition to the over-order premium, the Board has established a diesel fuel premium.

packaging, etc. This cost information is also factored along with audited financial data that the PMMB receives through its regular audits of dealers. From this information, a weighted average of costs is developed for a representative sample of processors and retailers in each region.

Similarly, for the retailer leg of the dairy industry stool, the PMMB takes testimony and obtains cost information about retailer costs associated with selling milk to consumers. The PMMB then develops a similar weighted average cost. For both processors and retailers, these costs may be adjusted monthly based on various input costs, such as increases for utilities, materials, or the Consumer Price Index.

In terms of price-setting for producers, the Law similarly requires the PMMB to establish a minimum producer price, which is obtained through testimony received at PMMB hearings and the PMMB's calculation of farm costs related to milk production. Factored with these amounts are the corresponding FMMOs that cover Pennsylvania. All of the wholesale and retail milk prices are set monthly.

***Over-Order Premium.*** PMMB also sets another aspect specific to producer pricing, the over-order premium (OOP). As the name implies, the OOP is an amount that is paid to Pennsylvania producers over the applicable FMMO price for class I milk produced, processed, and sold in Pennsylvania. The OOP is a relatively new pricing tool that was first implemented in 1988 as a means of helping producers who had been significantly impacted by a severe drought.

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*The Over-Order Premium is an amount paid to producers over the federal milk order. It is a unique aspect of Pennsylvania's dairy pricing process, and one not seen in other states.*

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As described by the PMMB, the OOP does the following:

Current [FMMO] pricing is intended to reflect national supply and demand dynamics by basing producer prices on wholesale sales of dairy commodities. This pricing structure has led to increased milk price volatility. The Milk Marketing Law provides Pennsylvania with the opportunity to enhance producer revenue in response to more local conditions...the over-order premium has primarily been established based on market conditions in Pennsylvania and surrounding states; the expert recommendations presented at recent hearings have generally advocated extracting the greatest return possible from the market to benefit Pennsylvania producers while at the same time not threatening the markets of those Pennsylvania producers and providing milk to Pennsylvania consumers at a reasonable cost.

In effect, the OOP provides producers with additional income for milk that is used for class I purposes. Because the OOP is a premium price added to the FMMO price, it must be carefully calculated. For example, if

the OOP is set too high, then milk from other states becomes more attractive to in-state processors. Thus, it is critical that the PMMB stay informed of business trends not just within Pennsylvania but in surrounding states as well. OOP hearings are held twice a year for this purpose.

It should be noted that because only about 15-20 percent of all Pennsylvania-produced milk is used for class I purposes, not every producer is seeing the full benefits of the OOP. Moreover, if the producer is part of a cooperative, the producer may not even see the direct benefit of the OOP because it is distributed among all members in the cooperative.

The balance of milk not used for in-state class I purposes is sold for fluid consumption outside of Pennsylvania's borders, or to process butter, cheese, and milk powder. According to the PMMB, these markets are much more competitive (both with other states and globally) because the products are not as perishable. This fact is the primary reason why the OOP does not apply to milk used for these purposes—the OOP would place Pennsylvania milk at a disadvantage in those markets. Exhibit 18 lists the total OOPs that were reportedly paid to Pennsylvania producers since 2008.

### Exhibit 18

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#### Over-Order Premiums Collected

Year	Premium Range	Total Premium
2008	\$1.97 - \$3.19	\$50,559,426
2009	\$2.44 - \$3.06	\$46,997,070
2010	\$2.65 - \$3.18	\$51,181,738
2011	\$2.71 - \$2.98	\$49,302,971
2012	\$2.75 - \$3.01	\$48,047,929
2013	\$1.85 - \$1.89	\$35,886,681
2014	\$1.85 - \$2.00	\$30,741,375
2015	\$1.85	\$28,981,874
2016	\$1.85 - \$2.00	\$28,633,274
2017	\$1.62 - \$2.00	\$25,781,177
2018	\$0.83 - \$0.93	\$12,030,520
<b>TOTAL</b>		<b>\$408,144,036</b>

Source: Developed by LBFC staff from information obtained from the Milk Marketing Board.

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As shown above, the OOP has generated a substantial amount of money for Pennsylvania producers. In fact, since the OOP was first enacted in 1988, more than \$840 million has been collected. However, in more recent years, this premium has significantly declined. Since 2008, total premiums collected have declined by more than 75 percent. This decline is

due in part to decreasing the OOP set value and the decreased consumption of class I fluid milk.

## C. Significance of Agriculture and Dairy to Pennsylvania

*Dairy farming is the largest economic contributor of all segments of Pennsylvania agriculture industry.*

Agriculture has played an important role in Pennsylvania's identity and economy since the earliest days of colonization. In fact, at one point in Pennsylvania's history, most citizens lived on a farm and were actively engaged in farming. Today, less than two percent of the state's population is actively engaged in farming.<sup>66</sup> Despite today's low participation rate, agriculture continues to be an important and prevalent industry that impacts all residents.

Pennsylvania's agricultural industry is a major contributor to the state's overall economy.<sup>67</sup> The agricultural industry is comprised of many sectors or segments. For example, crop (plant) production, animal production, forestry, and landscaping are some of the primary groupings. Within each primary grouping, further subdivisions exist, such as dairy production, poultry, beef production, etc. As shown on Exhibit 19, dairy farming is the largest economic contributor of all segments of Pennsylvania agriculture industry; therefore, it is highly significant to the health of Pennsylvania's agricultural economy.

### Exhibit 19

#### Pennsylvania's Top 10 Agricultural Sectors (2017)\*

Rank	Sector	Percent of Total Sales
1	Milk from Cows	25.5
2	Poultry and Eggs	21.7
3	Nursery, Greenhouse, Sod	13.1
4	Grains, Oilseeds, Dry beans	12.6
5	Cattle and Calves	8.1
6	Hogs and Pigs	7.4
7	Other Crops and Hay	4.6
8	Vegetables	2.4
9	Fruit	2.2
10	Horses, Ponies, etc.	0.6

Note: \*Based on USDA data on the market value of agricultural products sold.

Source: Developed by LBFC staff from information obtained from the USDA.

<sup>66</sup> Team Pennsylvania, Pennsylvania Agriculture: A Look at the Economic Impact and Future Trends, January 2018.

<sup>67</sup> Ibid, page 24.

## **Dairy Farming's Economic Impact to Pennsylvania**

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In order to demonstrate the significance of dairy farming to Pennsylvania's economy, we conducted a limited economic analysis of the impact of dairy farming, processing, and retailing (the three key economic segments within the dairy industry) to each of Pennsylvania's 67 counties.

Our analysis was based on data we obtained from a June 2017 study commissioned by the International Dairy Foods Association.<sup>68</sup> We also supplemented our analysis with data from the USDA's, National Agriculture Statistics Service (NASS) and its 2017 Agriculture Census.<sup>69</sup> From these data sources, we were able to determine the number of jobs, wages, and the direct economic impact Pennsylvania's dairy industry creates for the state. We also determined the amount of potential state and local taxes that were collected.

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*Economic benefits can be viewed as direct, indirect, and induced benefits.*

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It should be noted that our review focused somewhat conservatively on just direct economic benefits, which are the economic benefits that are directly attributable to the defined activities of producing, wholesaling, and retailing (e.g., employment) dairy products. Beyond direct economic benefits, there are also indirect and induced economic benefits, which are multipliers of the direct benefits. Indirect economic benefits include activities such as the purchase of goods and services from local and regional suppliers to support the direct activity (e.g., grain purchases for cows). Similarly, induced benefits are related to the direct and indirect activity by employees who spend their wages on items such as housing, educational services, or healthcare in a region. These induced benefits are "ripple effects" of the direct activity and tend to be more inflated. For this reason, we focused primarily on direct economic benefits.

Exhibit 20 highlights the results of this analysis.

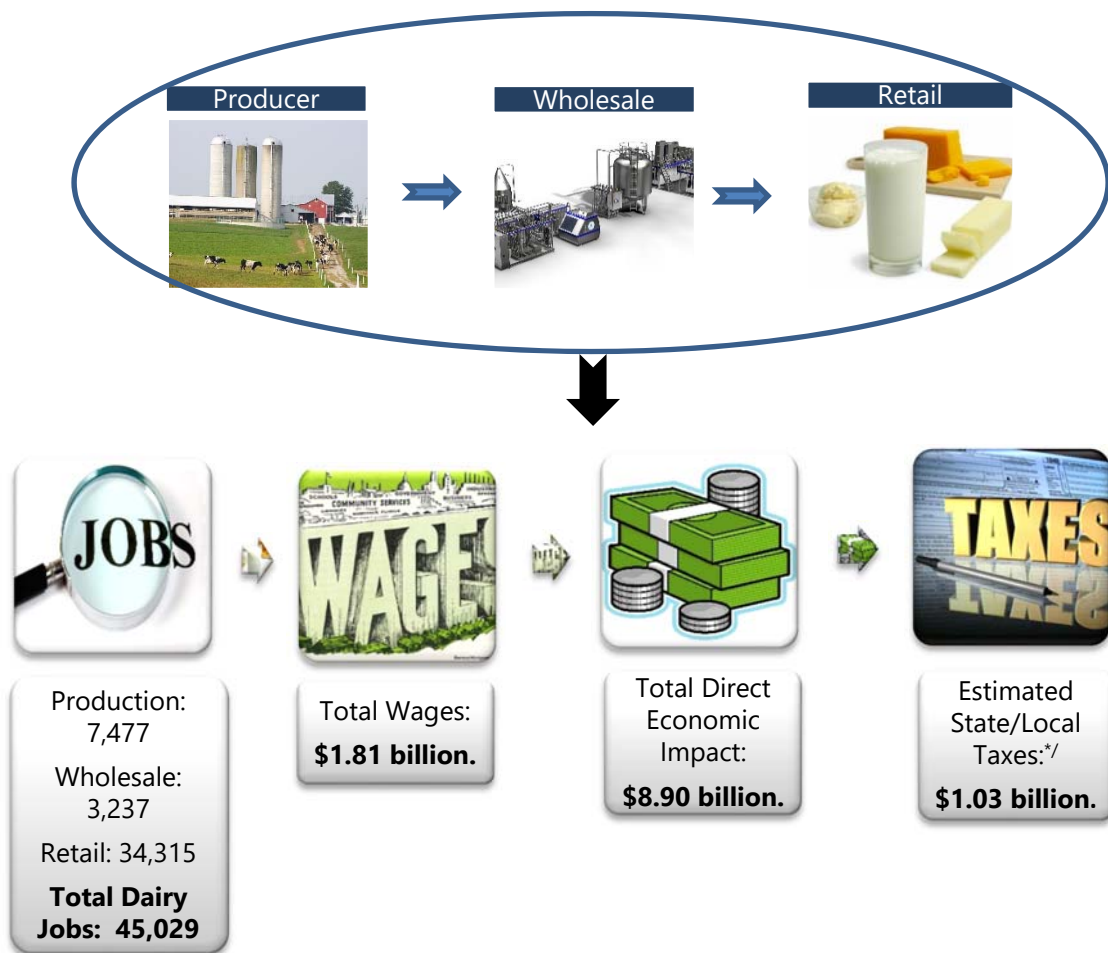
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<sup>68</sup> See *Economic Impact Study of the Dairy Products Industry*, conducted by John Dunham and Associates, June 2017. This study analyzed economic data obtained from a number of federal, state, and local sources. The authors developed an economic impact model based on IMPLAN economic models, which are based on a series of input-output accounts maintained by the United States Department of Commerce, Bureau of Economic Analysis. We did not independently audit the information in this economic study; however, we reviewed the report's methodology, and we believe it is sufficiently reliable to be used for our purposes.

<sup>69</sup> The Census of Agriculture is a complete count of United States farms and ranches. According to the USDA, even small plots of land - whether rural or urban - growing fruit, vegetables or some food animals count if \$1,000 or more of such products were raised and sold, or normally would have been sold, during the census year. The Census of Agriculture is taken every five years and looks at land use and ownership, operator characteristics, production practices, incomes and expenditures.

Exhibit 20

**Pennsylvania's Dairy-Related  
Economic Impacts  
(2017)**



Note: \*/State taxes include estimates for corporate profits, property, sales, severance, estate, gift, personal income, licenses, and certain payroll taxes.

Source: Developed by LBFC staff from information obtained from the *2017 Economic Impact of Dairy Products in Pennsylvania*.

As shown in the previous Exhibit, in 2017, Pennsylvania's dairy industry was responsible for more than 45,000 jobs, generating wages of \$1.81 billion, and creating a direct economic impact of \$8.9 billion, or approximately 1.2 percent of the state's gross domestic product.<sup>70</sup>

<sup>70</sup> According to the United States Bureau of Economic Analysis, gross domestic product is the total market value of the goods and services produced within a year. Pennsylvania's GDP for 2017 was \$752 billion.

Additionally, in terms of public sector impacts, more than \$1 billion in state and local taxes are generated. In total, when factoring direct, indirect, and induced economic impacts, Pennsylvania's dairy industry generated \$28.31 billion in economic activity or approximately 3.8 percent of the state's gross domestic product.

## **County Level Economic Impacts**

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*In 2017, each cow in Pennsylvania represented \$16,864 in benefit to Pennsylvania's economy.*

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Using data obtained from the USDA's, *2017 Pennsylvania Census of Agriculture*, we calculated the dairy industry's economic impact by county. Highlights of our analysis include the following:

- As of 2017, there were 6,914 dairy farms. This number varies somewhat based on how a dairy farm is defined. We chose to remain with the USDA's definition, which counts a "farm" as an entity that produces at least \$1,000 of dairy-related products.
- Of these 6,914 dairy farms, there are a total of 527,338 milk cows. Consequently, this equates to an average of 76 cows per farm. As discussed later in this report, Pennsylvania's relatively low "average cow per farm" ratio presents challenges in developing the dairy industry. In fact, Pennsylvania has generally the lowest or second lowest average herd size of all 50 states.
- Based on the direct economic benefits alone, each cow represents \$16,864 of economic benefit to Pennsylvania.
- Every 12 dairy cows generate at least one dairy-related job in Pennsylvania.
- Dairy farming is most prevalent in Lancaster County, where over 9,000 jobs are created by dairy farming. Franklin County is second at 4,377 jobs, and Berks County is third at 2,535 jobs. Approximately 20 percent of the state's total dairy-related direct economic benefits are tied to Lancaster's dairy farms.
- Of Pennsylvania's 67 counties, only four have no dairy farms: Philadelphia, Cameron, Delaware, and Pike.

The results of our county based analysis are presented in Exhibit 21, which follows.



Exhibit 21

**Economic Impact of Pennsylvania's Dairy Industry by County  
(2017)**

County	Number of Farms	Number of Milk Cows	Direct Economic Impact	Number of Jobs Created
Adams	45	7,465	\$125,889,760	637
Allegheny	4	26	\$438,464	2
Armstrong	37	3,179	\$53,610,656	271
Beaver	29	1,628	\$27,454,592	139
Bedford	177	12,751	\$215,032,864	1,088
Berks	298	29,704	\$500,928,256	2,535
Blair	107	18,707	\$315,474,848	1,597
Bradford	201	15,351	\$258,879,264	1,310
Bucks	37	2,613	\$44,065,632	223
Butler	37	2,773	\$46,763,872	237
Cambria	17	1,860	\$31,367,040	159
Cameron	0	0	\$0	0
Carbon	8	a/	b/	b/
Centre	160	10,561	\$178,100,704	901
Chester	333	21,602	\$364,296,128	1,844
Clarion	36	2,075	\$34,992,800	177
Clearfield	30	1,082	\$18,246,848	92
Clinton	53	4,285	\$72,262,240	366
Columbia	36	2,234	\$37,674,176	191
Crawford	166	11,304	\$190,630,656	965
Cumberland	240	20,197	\$340,602,208	1,724
Dauphin	70	4,671	\$78,771,744	399
Delaware	0	0	\$0	0
Elk	10	404	\$6,813,056	34
Erie	83	4,329	\$73,004,256	369
Fayette	31	2,352	\$39,664,128	201
Forest	1	a/	b/	b/
Franklin	427	51,283	\$864,836,512	4,377
Fulton	37	6,165	\$103,966,560	526
Greene	12	868	\$14,637,952	74
Huntingdon	66	11,968	\$201,828,352	1,021
Indiana	93	5,747	\$96,917,408	490
Jefferson	32	1,036	\$17,471,104	88

Exhibit 21 Continued

County	Number of Farms	Number of Milk Cows	Direct Economic Impact	Number of Jobs Created
Juniata	116	8,521	\$143,698,144	727
Lackawanna	25	1,279	\$21,569,056	109
Lancaster	1613	106,429	\$1,794,818,656	9,083
Lawrence	59	3,062	\$51,637,568	261
Lebanon	263	26,054	\$439,374,656	2,224
Lehigh	22	1,323	\$22,311,072	113
Luzerne	14	318	\$5,362,752	27
Lycoming	62	3,181	\$53,644,384	271
McKean	10	199	\$3,355,936	17
Mercer	115	6,127	\$103,325,728	523
Mifflin	203	12,135	\$204,644,640	1,036
Monroe	1	a/	b/	b/
Montgomery	15	908	\$15,312,512	77
Montour	44	1,644	\$27,724,416	140
Northampton	22	1,591	\$26,830,624	136
Northumberland	81	4,377	\$73,813,728	374
Perry	115	10,126	\$170,764,864	864
Philadelphia	0	0	\$0	0
Pike	0	0	\$0	0
Potter	61	6,592	\$111,167,488	563
Schuylkill	44	3,183	\$53,678,112	272
Snyder	115	5,929	\$99,986,656	506
Somerset	241	16,772	\$282,843,008	1431
Sullivan	23	2,090	\$35,245,760	178
Susquehanna	95	6,200	\$104,556,800	529
Tioga	144	10,408	\$175,520,512	888
Union	128	8,173	\$137,829,472	698
Venango	18	1,407	\$23,727,648	120
Warren	54	3,879	\$65,415,456	331
Washington	23	1,312	\$22,125,568	112
Wayne	75	4,000	\$67,456,000	341
Westmoreland	56	3,787	\$63,863,968	323
Wyoming	32	1,117	\$18,837,088	95
York	112	6,995	\$117,963,680	597
<b>Total<sup>c/</sup></b>	<b>6,914</b>	<b>527,338</b>	<b>\$8,897,968,400</b>	<b>45,029</b>

Notes: a/ USDA withheld information to avoid disclosing data for individual operators.

b/ Not calculated due to incomplete information.

c/ Totals are the known statewide total, not the sum of the counties.

Source: Developed by LBFC staff from data obtained from the USDA and the International Dairy Foods Association.

## SECTION IV CURRENT ISSUES FACING PENNSYLVANIA'S DAIRY INDUSTRY



### **Fast Facts...**

- ❖ *Pennsylvania milk producers have been in a sustained period of low milk prices for approximately the past five years. In turn, production costs continue to increase and it is becoming increasingly difficult for producers to stay in the dairy business.*
- ❖ *Pennsylvania lost 19 percent of its dairy farms in the past decade. Pennsylvania is also losing dairy capacity, which may threaten Pennsylvania's competitiveness with other states.*
- ❖ *Although often criticized as contributing to the crisis, we found the PMMB and its price control structure is actually helping to protect Pennsylvania's dairy industry. This conclusion is supported by experts in the field of dairy economics and policy.*

### **Overview**

Over the past year, there has been considerable attention given to the current crisis in the dairy industry. The crisis is generally attributable to low producer prices for milk, but there are also other issues that transcend pricing and impact the viability of Pennsylvania's dairy industry. Within these issue areas, we identify some of the key issues and trends that have contributed to the current dairy crisis, and we discuss potential issues for the dairy industry going forward.

In answering this objective, we conducted numerous interviews with industry stakeholders; analyzed recently completed studies commissioned by the Center for Dairy Excellence and others; consulted with experts in dairy economics and policy; and obtained and analyzed data from the United States Department of Agriculture (USDA) and the Pennsylvania Milk Marketing Board (PMMB) about the dairy industry.

We found that Pennsylvania is, in fact, experiencing one of the longest sustained periods of low producer prices for milk, which is clearly a crisis for all dairy producers. We found that this low price period has also had a counterintuitive effect: even though prices are low, which would normally indicate a curtailment in production, producers have, until last year, been increasing their production. In turn, this occurrence has continued to over supply the market with milk, which also keeps prices low.

The low price point for milk is undoubtedly financially straining Pennsylvania's producers. We found that during the period from 2008-2018, the number of dairy farms in Pennsylvania decreased by 19 percent—although in a glimmer of positivity—the decrease was not as great as has been seen in other states, like Wisconsin. Of greater concern to Pennsylvania's dairy industry, however, is the loss of dairy cows. We found that over the same period, Pennsylvania's total dairy cow population decreased by 5.2 percent, with significant decreases in the last quarter of 2018. This trend is concerning because it means production capacity is leaving the state. Other trends are also apparent, including a push toward larger dairy operations and vertical integration between the processor and retail segments of the dairy industry. These latter aspects may change the face of dairy farming in Pennsylvania.

We also discuss other potential issues that were consistently brought to our attention, such as consumer preferences for dairy products, and the impact of recent changes to the National School Lunch Program. These issues are hot topics within the dairy industry. While we were unable to make definitive conclusions about these issues, we do discuss the arguments surrounding these topics and the relevancy to Pennsylvania's dairy industry.

Finally, we discuss the role of the PMMB in the current dairy crisis. As documented by survey results and "listening sessions" conducted by the PMMB, many individuals question the value of the PMMB and its existing regulatory function. We reviewed these comments, and weighed them against expert opinions and research in the field of dairy policy. Overall, we think the PMMB is beneficial to Pennsylvania's dairy industry, because it eliminates destructive price wars, which historically have been detrimental to producers and processors.

## Issue Areas

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### **A. Declining Milk Prices Threaten Pennsylvania Dairy Producers**

As we documented in Section III, Pennsylvania's dairy industry is the largest economic sector within the agricultural industry. However, the viability of many dairy producers is threatened because Pennsylvania has witnessed a sustained period of low prices for milk. As such, the extent to which Pennsylvania's dairy industry will continue to be a leading agriculture sector may be in jeopardy. In turn, low dairy prices makes dairy farming unprofitable for most producers, which may lead to farms closing and/or going out business. This outcome would then likely cause a trickle effect of job losses and a general economic erosion to many communities in Pennsylvania, especially in those counties where dairy production is the leading agricultural enterprise.

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*Pennsylvania is witnessing one of the longest sustained periods of low milk prices.*

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### **Declining Dairy Prices**

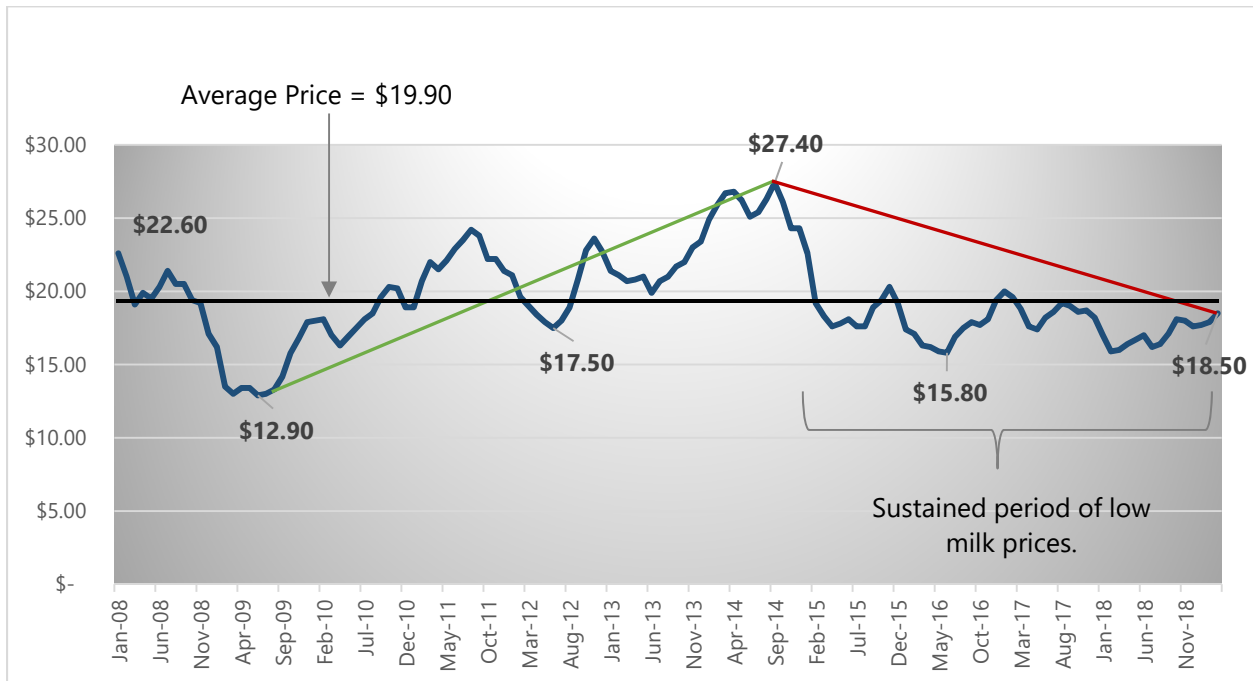
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The dairy industry has always been cyclical, with price fluctuations that are driven by supply and demand. Producer milk prices tend to drop in late spring, when schools close and students are on summer break. Conversely, prices tend to rise in the late fall as students return to school and consumer demand increases around seasonal holidays. Similar production cycles also occur with cows. For example, cows generally produce more milk in the spring and fall.

As shown in Exhibit 22, using data we obtained from the Milk Marketing Board, we reviewed Pennsylvania's producer milk price over the period from January 2008 through January 2019, to document the ongoing condition threatening the dairy industry.

## Exhibit 22

### Historical Producer Milk Prices (Per Hundred Weight)



Note: Depicted trend lines are not linear.

Source: Developed by LBFC staff from information obtained from the PMMB.

As further depicted in Exhibit 22, beyond the normal cyclical price fluctuations, there have been at least two trends involving dairy pricing. First, between January 2008 and June 2009, dairy prices fell to an all-time low of \$12.90 per hundred weight. There was an especially steep decline between November 2008 and March 2009. While this was a significant low point, prices did start to recover and increased through September 2011, when another downward price decrease occurred that lasted until June 2012. Prices again increased until December 2012, when yet another downward trend occurred, which lasted until June 2013. Prices then continued to rise, reaching an all-time high of \$27.40 per hundred weight in September 2014. The **green** line depicts this cyclic period (with generally increasing prices) between 2009 and 2014.

Since that time, a second more troubling trend has occurred. As depicted by the **red** line, following the peak of price of \$27.40 per hundred weight in September 2014, prices again fell. While there were modest recovery periods, generally the price of milk has stayed below the average period price of \$19.90. In fact, there has been a 32.5 percent decrease from the high of \$27.40 in September 2014, to the latest available price of \$18.50. Moreover, the period of deflated prices has remained for a much longer period of time (approximately 5 years).

It is this steep decline in prices, followed by the subsequent sustained period of low milk prices that is threatening dairy producers' viability. As one dairy producer told us, "for the past four to five years dairy farmers have been lucky if they were able to break even."

We discussed this trend with industry officials and with representatives from the Department of Agriculture. Those officials agreed with our analysis and noted that this recent period of lower producer milk prices is the longest in recent memory.

## **Milk Price Volatility Leading to Counterintuitive Market Forces**

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While low producer milk prices are an issue currently impacting the dairy industry, low prices also lead to counterintuitive production practices that in turn establish a negative cyclical pricing pattern. Specifically, within the dairy industry there is an inclination that during periods of low milk prices producers simply increase production to try to make up for the income shortfall. Senate Resolution 384, which directed this study references this illogical trend (see also Appendix A):

...the typical response to lower milk prices, increasing production to increase revenue, no longer provides sufficient economic relief and overall may lead to a milk surplus, adversely affecting the prices that the producer receives.

We investigated this issue further to see the extent to which low prices lead to increasing milk supplies. Before discussing this issue further, a high-level overview of the theories of supply and demand, and how those theories should impact price needs to be discussed.

In basic terms, supply and demand theories are described best as follows:<sup>71</sup>

**Demand** refers to how much (quantity) of a product or service is desired by buyers. The quantity demanded is the amount of a product people are willing to buy at a certain price; the relationship between price and quantity demanded is known as the demand relationship. **Supply** represents how much the market can offer. The quantity supplied refers to the amount of a certain good producers are willing to supply when receiving a certain price. The correlation between price and how much of a good or service is supplied to the market is known as the supply relationship. Price, therefore, is a reflection of supply and demand. (emphasis added)

In theory then, in times of low milk prices, dairy farmers should curtail milk production as there is less potential profit. Further, owing to the principles of supply and demand, too much supply will keep prices down, at least until demand returns. However, within the dairy industry, because price fluctuations are normal, we were informed that it is common for some producers to increase production in the hope that the market will rebound.

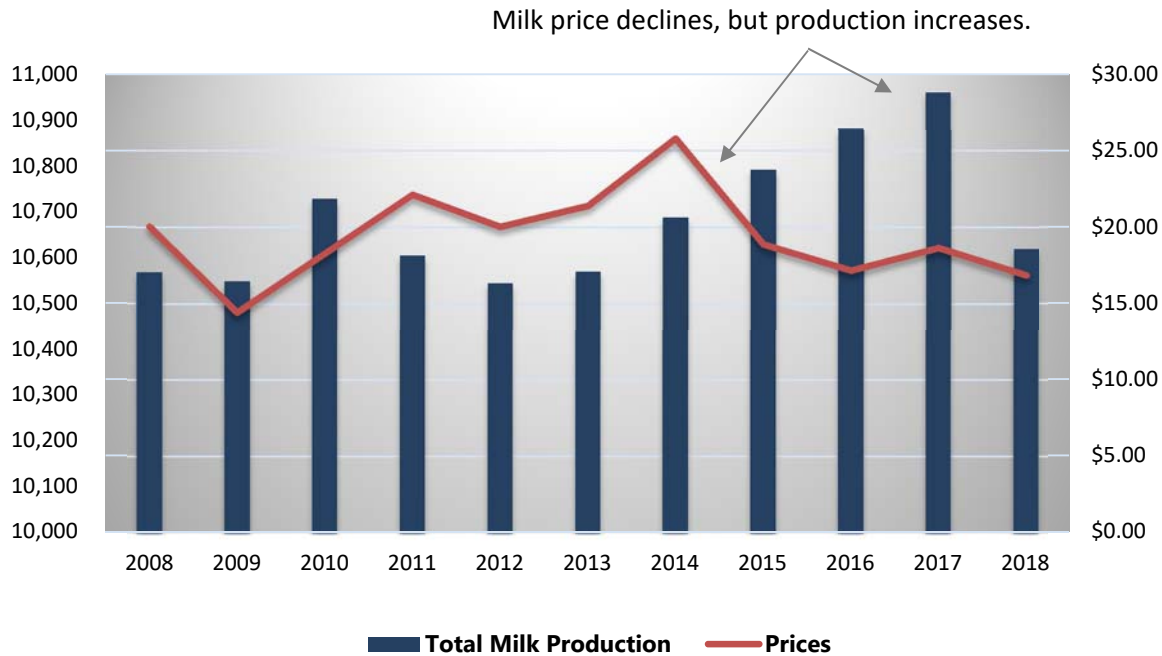
We analyzed Pennsylvania's milk production over generally the same period that we reviewed prices, January 2008 through December 2018. We were unable to review milk production on the same month-to-month basis because there is too much variability in milk production for a meaningful analysis. Accordingly, we totaled milk production by year to smooth out these normal variations and compared the data on a year-to-year basis. Our results are presented in Exhibit 23.

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<sup>71</sup> Hayes, Economics Basics: Supply and Demand, accessed at [www.investopedia.com](http://www.investopedia.com), May 29, 2019.

Exhibit 23

**Comparison of Pennsylvania Milk Production and Prices**



Source: Developed by LBFC staff from information obtained from the USDA and PMMB.

As highlighted above, while milk prices have been in a sustained decline for the past five years, with the exception of 2018, milk production has increased. Further, as explained by the general economic theories of supply and demand, this excess supply is contributing to low milk prices. Some of the excess production in Pennsylvania from 2015-2017, could also be explained by the fact that 2014 saw near record prices for milk. As a result, many producers likely gambled that the price would continue to increase (or level) and increased their milk production.

It is also important to understand that there are a number of other factors beyond price that contributed to Pennsylvania's milk oversupply. For example, a number of other large dairy states (Wisconsin in particular) actively increased milk production in these years, which contributed to a general domestic oversupply in the United States.<sup>72</sup>

Additionally, international trade factors and decreasing demand on the export markets have also impacted demand in Pennsylvania and in other

<sup>72</sup> In 2012, Wisconsin instituted an incentive program to increase milk production by 15 percent by 2020. Dairy farmers met that target and surpassed it in 2016.



states as well. Finally, some researchers point to governmental subsidy influences offered at the federal level, which encourage farmers to purchase more cows (with each cow producing more milk) as contributing to the oversupply of milk.<sup>73</sup>

## **B. Other Issues and Trends Impacting Pennsylvania's Dairy Industry**

As discussed in the previous issue area, oversupply of milk continues to be a contributing factor for the low prices producers receive for their product. Similarly, low producer prices have a direct impact on dairy farm profitability. Although difficult to quantify because of the variability in how dairy farms operate, many farms reportedly operate on already thin profit margins because of the amount of debt required to sustain their agricultural enterprise (e.g., feed costs, herd investment, diesel fuel, and machinery).<sup>74</sup> With increasing debt loads required to sustain operations, and low producer prices, many farms face bankruptcy.

Pennsylvania is in a unique position compared to other states. It has outstanding access to water, pastureland, and its proximity to major eastern seaboard markets. It is one of the largest milk producing states (currently seventh) and is second in the number of dairy farms. In this issue area discussion, we will discuss some of the other issues which impact and challenge the overall competitiveness of Pennsylvania's dairy industry.

### **Declining Dairy Farms**

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Actual year end counts of dairy farms are not tracked in Pennsylvania. Instead, Pennsylvania's Department of Agriculture supplies data to the USDA on the number of brucellosis tests conducted on dairy herds.<sup>75</sup> The USDA uses this data to calculate an average for the number of dairy farms licensed to sell milk in each state. While this figure is not as accurate as a true count of dairy operations, it is a reasonable estimation from which to evaluate trends in Pennsylvania's dairy industry and within the United States.

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<sup>73</sup> *Dairyland in Distress*, Milwaukee Journal Sentinel, May 16, 2019.

<sup>74</sup> *Farm Numbers Tumble in Some Areas of Pennsylvania*, WITF, April 15, 2019.

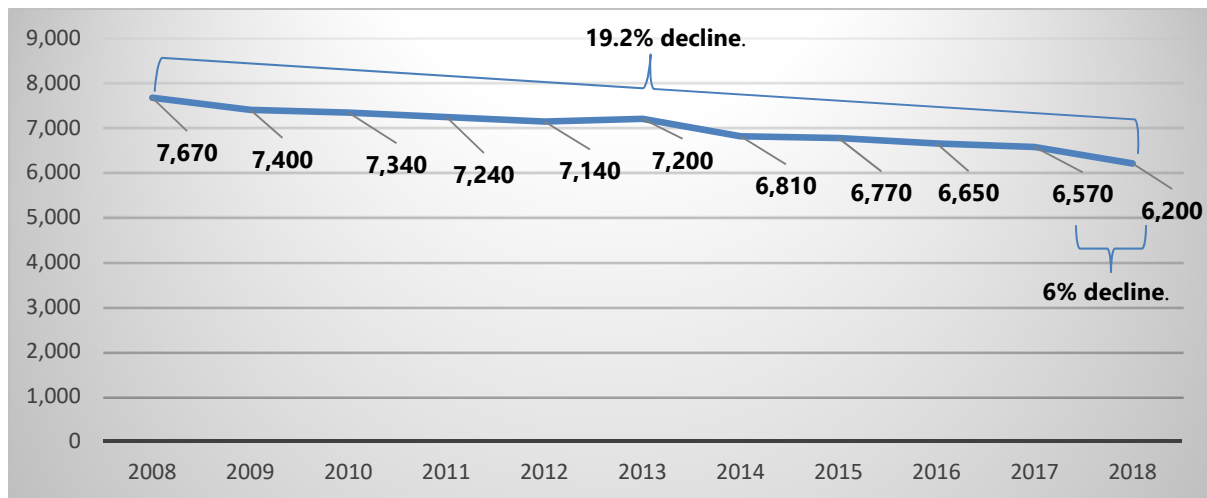
<sup>75</sup> While dairy farms are not counted on a year-to-year basis, the USDA does conduct an "Agriculture Census" within each state. The census counts "farms with milk cows." The last census was 2017.

Pennsylvania has seen a constant decline in licensed dairy farms.<sup>76</sup> We reviewed available USDA data and found that the number of dairy farms has declined by 19.2 percent since 2008. While this number seems high, Pennsylvania is actually better off than a number of other large dairy states. For example, Wisconsin has seen a 40 percent decline in the number of dairy farms over the past 10 years.<sup>77</sup> Appendix C provides additional statistics on Pennsylvania's dairy industry compared to surrounding states, as well as the six leading dairy states.

Exhibit 24 depicts the steady decline in Pennsylvania's dairy farms, since 2008 which was the peak year in our review.

### Exhibit 24

#### Number of Pennsylvania Dairy Farms 2008-2018



Source: Developed by LBFC staff from information obtained from the USDA.

In 2008, there were 7,670 dairy farms. In 2018, there were just 6,200 dairy farms. Worse still, from 2017 to 2018, Pennsylvania saw a six percent decline, the largest drop since 2014.

Given the sustained period of low producer prices, it is easy to see why Pennsylvania producers are leaving the industry. Simply put, dairy farming is a very hard way to make a profit, and many farms simply cannot continue to operate in the "red." A decline in the number of dairy farms

<sup>76</sup> Although there is an overall downward trend, in 2014 there was actually a small increase of 60 farms. Calendar year 2014 also coincided with the peak year of high dairy prices.

<sup>77</sup> *Struggling Dairy Farmers Seek Higher Milk Prices – before it's too late*, Milwaukee Journal Sentinel, March 25, 2019.

is an especially problematic issue for rural communities as there are not as many other job opportunities. Moreover, given the economic activity generated by dairy farms, there can be spill over economic impacts to other business, which can be especially devastating to communities.

## **Declining Cow Numbers Threaten Pennsylvania's Dairy Capacity**

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While the decreasing number of dairy farms is a concern to Pennsylvania's dairy industry, a larger concern is the overall decline in dairy cow populations.<sup>78</sup> To better demonstrate this concern, consider the scenarios that follow:

- Farm A exits the dairy industry, but in so doing, sells its dairy cows to neighboring farm B. In this scenario, the net effect of losing farm A to the overall health of the dairy industry is offset because farm B's operations just gets bigger.
- However, if farm A exits the industry, and its cows are sold for slaughter or to a farm in another state because there is no interest to expand existing Pennsylvania-based dairy farms, then the overall health of Pennsylvania's dairy industry is weakened by the loss of farm A because it is losing capacity to produce milk.

Another data element reported by the USDA is the monthly number of milk cows by state. We used this data to see if there was a negative trend that was apparent with respect to the number of cows in Pennsylvania. We averaged Pennsylvania's data by calendar year for the period 2008 through 2018.<sup>79</sup>

As shown in Exhibit 25, in looking at year-to-year averages there has been a slight downward trend in the average number of cows. For the period, the decline was 5.2 percent, which indicates that while the number of dairy farms decreased rather significantly over the same period at 19.2 percent, that decrease was offset by other Pennsylvania farms expanding their operations. From the viewpoint of trying to sustain Pennsylvania's dairy industry, this outcome is generally positive.

Yet, while the overall period shows a decrease of 5.2 percent, it must be noted that 2018 saw more significant decreases. Specifically, while there was a 1.1 percent decline in cow numbers from 2017 to 2018, between

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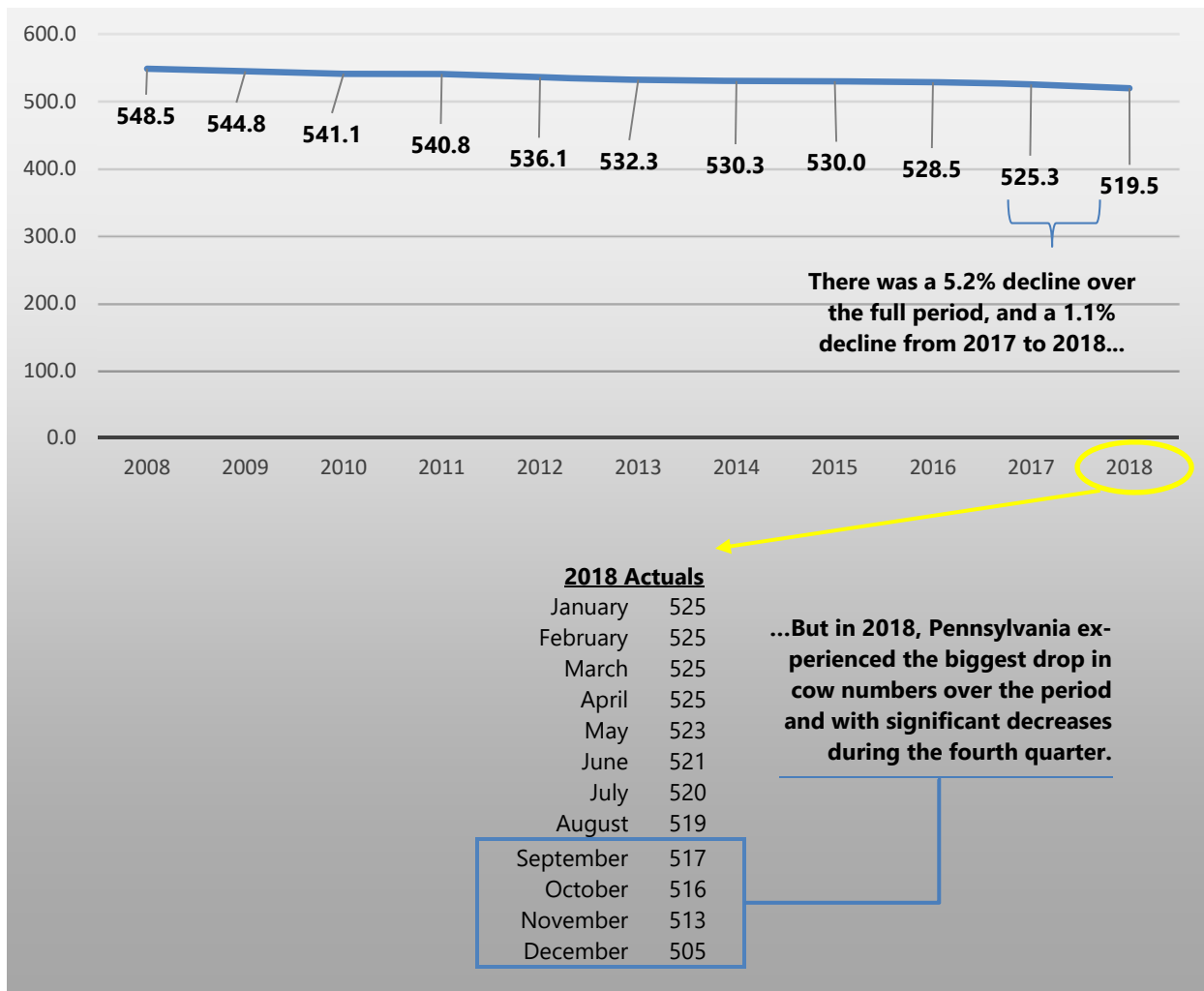
<sup>78</sup> Within the dairy industry the term "herd" can also mean a dairy farm. Within this section, we are referring to the total population of cows in the state, not the number of herds or farms.

<sup>79</sup> 2013 data was incomplete because of a federal sequester. Only seven months of data was available.

January 2018 and December 2018, there has been a 3.8 percent decline, with significant declines in the last quarter of 2018. Accordingly, given the continued low milk prices, future USDA numbers may be indicative of a more damaging trend.

## Exhibit 25

### Average Number of Dairy Cows in Pennsylvania 2008-2018 (000)



Source: Developed by LBFC staff from information obtained from the USDA.

Other trends are also apparent when reviewing this data. For example, when comparing Pennsylvania to a state like Wisconsin (note: Pennsylvania is second to Wisconsin in the number of dairy farms) the relationship

between declining dairy farms and dairy cows suggests Pennsylvania could be at a competitive disadvantage. This issue was discussed in a dairy industry trade publication, which noted the following:<sup>80</sup>

While communities sustained high dairy farm exits in Wisconsin affecting community-wide dairy infrastructure, the state is still maintaining national milk production growth and smaller losses in the number of cows relative to the losses in the number of farms. This suggests that as farms exit the dairy business in Wisconsin, others have growth making up for it...In Pennsylvania, the situation is different. As [Pennsylvania] loses farms, the cows and production are leaving also. Those losses are not being replaced with in-state growth.

This trend is also documented by survey results conducted by the Center for Dairy Excellence (CDE). In 2017, the CDE surveyed 992 dairy producers to obtain information on various producer-related issues. Key findings from that survey included the following:<sup>81</sup>

- Approximately 14 percent of the surveyed farms expect to exit the industry within the next five years.
- Higher exit rates were expected by smaller farms, than larger farms. No farms with herds over 250 cows expected to exit, while approximately 20 percent of those farms with fewer than 50 cows expected to exit.
- When asked about various factors that were important to improve farm operations, the most common answer was maximizing milk prices and stabilizing milk price volatility. The least important factors were increasing herd size and increasing milk production per cow.

Consequently, the above results confirm a potential issue: not only are smaller Pennsylvania dairy farms expected to leave, but those farms that remain are more focused on sustaining existing milk prices than more forward-looking concerns like expanding operations to better position the industry's competitiveness with other states.

This outcome is not surprising, nor should it be viewed as pejorative of Pennsylvania's dairy producers. After all, in this current sustained period of low milk prices coupled with producers struggling to make ends meet,

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<sup>80</sup> Bunting, Sherry, Dairy Consolidation: Dairy Data Show Sifting Sands, *Farmshine*, March 15, 2019.

<sup>81</sup> These survey results were included in the CDE/PDA's commissioned report, *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*. The study's authors were: Chuck Nicholson (Cornell University), Mark Stephenson (University of Wisconsin), and Andrew Novakovic (Cornell University).

it would be illogical to expect producers to be concerned with what is happening with other farms, let alone farms in other states. Further, when supply is already beyond existing demand, many producers would be rightly concerned with “doubling down” on their operations. As we noted previously, this condition can lead to continued deflated milk prices, which in the long run creates another disastrous cycle. Still, this is a trend that is unique to Pennsylvania, and a factor which may explain why there has been much slower growth than similar states like Wisconsin, Michigan, and New York.<sup>82</sup>

As we noted in Section III, the dairy industry is the number one agricultural sector in Pennsylvania and generates significant economic benefits to many communities. Going forward, Pennsylvania’s loss of dairy farms, and the lack of willingness to expand by those remaining producers, may signal problems for Pennsylvania. Consequently, if Pennsylvania policymakers want to sustain existing capacity in the state—and by extension Pennsylvania’s competitiveness with other similarly situated dairy producing states—new supports will be necessary. However, as we will discuss later, those supports need to be aligned with ongoing industry trends.

## **Dairy Industry Moving to Larger Farms and More Vertical Integration**

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Throughout our research for this study, many stakeholders spoke to us about ongoing changes impacting Pennsylvania’s dairy industry. While many of these changes are driven by supply and demand issues already discussed, two other related issues impacting the industry are the growth of larger dairy farms and vertical integration within the industry.

***Larger Dairy Farm Operations.*** As previously stated, Pennsylvania is ranked second nationally in the number of dairy farms. However, the size of these farms are much smaller than what is typically found in larger producer states (the exception being Wisconsin, which has the most dairy farms per state). For example, in 2015, California, the largest dairy-producing state in the nation, averaged over 1,200 cows per farm. Pennsylvania, at that time, averaged about 78 cows per dairy farm.

As a further example of the difference between Pennsylvania and California consider this comparison: one of the largest dairy producers in California operates on a farm with more than 30,000 cows, and produces enough milk in one day to feed the entire city of Chicago.<sup>83</sup> In one day,

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<sup>82</sup> Nicholson, Chuck; Stephenson, Mark; Novakovic, Andrew., *Combined Final Report Study to Support Growth and Competitiveness of the Pennsylvania Dairy industry, Phase I Diagnostic Study*, June 2018.

<sup>83</sup> Eastabrook, Barry, *A Tale of Two Dairy Farms*, August 8, 2010.

that facility births more calves than the average size herd on a Pennsylvania dairy farm.<sup>84</sup>

The growth of larger dairy operations, and producing more milk per cow, are the reasons why milk production has continued to increase, while the number of farms decreases. Simply put, larger farms operate on greater economies of scale. The USDA, through its Economic Research Service, published an article on the changing structure of the dairy industry, and noted the following:<sup>85</sup>

Large farms usually purchase significant amounts of feed and contract with other operations to raise their heifers offsite. Small farms grow more of their own feed and raise their heifers onsite. Large operations tend to confine their milk cows in large barns or in drylot feedyards, while small operations may graze their cows on pasture. Most labor on small dairy farms is provided by the operator and the operator's family, whereas large farms rely extensively on hired labor (although they are usually family-owned and operated).

As discussed previously regarding declining farms and milk cows, Pennsylvania producers have been slow to expand operations. This outcome is reasonable given the current climate within the dairy industry. Nonetheless, if Pennsylvania's dairy industry is to remain competitive with other states it must factor in the trend of bigger dairy operations.

The CDE/PDA study of dairy competitiveness, touched on this very subject. The authors noted the following:<sup>86</sup>

Our assessment is that one likely constraint to growth during the past 15 years has been farm structure—the size and number of farms—interacting with incentives to invest in new processing capacity. As noted in the Phase I report, the average size of farms in PA was considerably below that in comparison states. Unlike those states, the largest total number of cows was owned by farms with 50 to 99 cows rather than farms with more than 500 cows. Farm structure implies a number of potentially important characteristics that affect competitiveness and the potential for growth. Smaller average farm sizes tend to be associated with higher costs of production (there are economies of scale in production), lower prof-

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<sup>84</sup> Ibid.

<sup>85</sup> USDA, Economic Research Service, *Profits, Costs, and the Changing Structure of Dairy Farming*, ERR-47.

<sup>86</sup> Nicholson, Chuck; Stephenson, Mark; Novakovic, Andrew., *Combined Final Report Study to Support Growth and Competitiveness of the Pennsylvania Dairy industry, Phase I Diagnostic Study*, June 2018, Pg. 184.

itability (observed to some extent in our comparative assessment of farm financial performance), access to inputs (including credit and specialized management advice), and higher costs of milk hauling (for the same distance). These characteristics can reduce both the interest in and ability for growth. However, we do NOT mean to imply that big farms in and of themselves are the main pathway to dairy industry growth. We firmly believe that "Bigger is not always better, but better *might* imply bigger." That is, better managed farms—of all sizes—can support farm growth if that is otherwise aligned with individual farm manager objectives.

We reviewed the author's conclusions, and factored them against our own observations, which we obtained from interviews with dairy industry stakeholders and review of research into this ongoing industry trend. We agree with the authors that farm structure will be a significant issue confronting producers, and especially so (if and when) Pennsylvania rebounds from this extended period of low milk prices.

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*"Bigger is not always better, but better might imply bigger."*

*CDE/PDA Study on Dairy Competitiveness.*

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We also strongly agree that "bigger is not always better, but better *might* imply bigger." Simply stated, it is hard to ignore the trend of increased efficiencies that can be achieved through robotic milking, professional farm management, etc. However, implementing these technologies and practices requires significant investment of capital and resources that many smaller farms lack. Additionally, as the Pennsylvania Secretary of Agriculture recently noted, having many producers puts Pennsylvania at a disadvantage because processors prefer to work with as few suppliers as possible.

Further to the point of efficient dairy operations, we were also informed that banks and creditors are becoming stricter with their lending and are less willing to lend money to dairy farmers with inefficient operations. While this trend may not be an issue for producers who have access to their own capital, many producers rely on creditor lending to sustain their operations; thus, they will need to make difficult decisions about how to sustain themselves in the dairy industry.

During our interviews, we found little interest in moving Pennsylvania's dairy industry to be more like California's dairy industry, i.e., extremely large dairy "factories." In fact, most stakeholders value the current structure of many dairy farms with smaller herds, which can allow cows to graze on pastureland. While this is an ideal chance to promote Pennsylvania's dairy uniqueness, maintaining this condition will require new strategic thinking and planning. We will discuss some of these ideas in Section V of this report.



**Vertical Integration.** Another ongoing issue impacting the dairy industry is vertical integration, or more specifically, the linkage of processing and retailing functions. As discussed in Section II – Background, in Pennsylvania there are typically three legs to the dairy stool: producing, processing, and retailing. Within the last several years, there has been increasing trend for retailers to “integrate” into the processing sector. Consequently, instead of purchasing milk from processors at the wholesale price point, retailers simply purchase milk directly from producers and process and package the milk into their own brand, which is then sold exclusively at their own retail stores.

Vertical integration can have a positive or negative impact to producers. For those producers living near the vertically integrated processing facility, it presents an opportunity for a dedicated source (buyer) to purchase milk. However, because the retailer also owns the processing facility, the retailer also has greater leverage over the producers in terms of dictating production standards and can essentially dictate production contracts. In Pennsylvania, this aspect is less of an issue because of the influence of the PMMB (note: This issue will be explored later).

Although expensive and out of reach for most smaller dairy producers, vertical integration could also involve producers developing their own processing capacity, and selling their products at on-farm retail locations. This type of vertical integration is especially popular for meeting consumer demand for organic and/or fresh “farm-to-table” dairy products.

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*As a result of vertical integration, 42 Pennsylvania dairy farms received cancellation notices in February 2018.*

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In February 2018, an extreme example of vertical integration within the dairy industry negatively impacted several Pennsylvania producers who held contracts with a large processor. That processor was also the source for fluid milk products sold by a large retailer. The retailer made the decision to vertically integrate and built its own milk processing facility in Indiana, thereby reducing the need for the processor’s product.<sup>87</sup> In a trickle-down effect to dairy producers, 42 Pennsylvania dairy producers ultimately received cancellation notices notifying them that the processor would no longer purchase their milk supply.<sup>88</sup>

The timing of these cancellations hit especially hard for the reason already documented: the sustained low dairy prices which producers were already enduring. Dairy farms in the Northwest and Southcentral parts of the Commonwealth were especially hard hit. According to the Center for Dairy Excellence, as many as eight farms have since left the dairy industry, while the remainder were fortunate to find new markets. To this point, we spoke with one processor in the Harrisburg area who acknowledged that they accepted milk from some of those impacted farms.

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<sup>87</sup> Delany, Arthur, *Does America Want Walmart Milking Its Cows*, Huffington Post, April 4, 2019.

<sup>88</sup> In all, more than 100 farms in eight states had milk contracts cancelled as a result of this retailer’s vertical integration into processing.

Other animal-based industries have also seen this trend occur, including the poultry and pork industries, with some success. However, as we have noted, the dairy industry operates differently and with different regulatory nuances. The extent to which large scale vertical integration over fluid milk processing proves to be profitable and a sustainable option remains to be seen. If proven to be successful, undoubtedly the trend will continue and may further threaten Pennsylvania producers.

## **C. Consumer Preferences for Dairy Products**

Satisfying the consumer's demand for quality milk products is the primary objective of the dairy industry. However, meeting those demands can be difficult because consumer preferences—which are generally driven by differing medical opinions and trends regarding lifestyle and diet choices—are constantly changing.

A classic example is the debate between margarine and butter. For much of the 20<sup>th</sup> century, margarine was thought to be healthier and a better substitute for butter. Margarine's popularity reached an all-time high by 1976, when the United States annual per capita consumption of margarine reached 12 pounds, compared to just 5 pounds for butter.<sup>89</sup> Over the subsequent years, research has questioned margarine's health benefits because of its high use of trans fats.<sup>90</sup> Butter has since retaken its prominence over margarine, and sales are again leading over margarine.<sup>91</sup>

Yet another example of changing consumer demand for dairy-related products is yogurt. After a decade of year-after-year growth in sales, yogurt sales fell six percent by volume through February 2019, and Greek-style yogurt, which was leading most of yogurt's demand over the past decade, declined by 11 percent during the same period.<sup>92</sup> According to industry representatives, the decline in yogurt sales is attributable to a combination of too many options, increasing "better-for-you" products, and the growing trend toward more plant-based foods.<sup>93</sup>

Conversely, while overall yogurt sales are down, one type of yogurt is experiencing meteoric growth and demand. Icelandic-style yogurt has replaced Greek-style yogurt in popularity. According to Bloomberg News,

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<sup>89</sup> McCowan, David, *I can't Believe It's not Butter: The rise and fall of margarine*, The Takeout, January 7, 2018.

<sup>90</sup> Trans fats are unhealthy substance made through the chemical process of hydrogenation of oils. Hydrogenation solidifies liquid oils and increases shelf life and the flavor stability of oils and foods that contain them. See Shiel, William, MD, FACP, FACR, [www.medicinenet.com/transfats](http://www.medicinenet.com/transfats).

<sup>91</sup> McCowan, David, *I can't Believe It's not Butter: The rise and fall of margarine*, The Takeout, January 7, 2018.

<sup>92</sup> Siegner, Cathy, *Yogurt sales tumble after a decade of growth*, Food Dive, April 10, 2019.

<sup>93</sup> Ibid.

Icelandic style yogurt sales increased by 24 percent in 2018, and it is especially popular within the dairy industry because it requires four pounds of milk to make just one pound of Icelandic yogurt.<sup>94</sup> Obviously using more milk helps to reduce supply and increase demand.

Regardless of how much milk is used to make any value-added dairy product, the point to be made here is that trying to gauge dairy production on the whims of consumer demand is, in our opinion, very difficult to do. Arguably, Pennsylvania's dairy industry would be better positioned to meet consumer demands for fluid milk, if it had more market data and consumer research data.

## **Per Capita Consumption of Dairy Products Suggests Fluctuating Demand**

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To illustrate how consumer preferences for dairy products can vary, we compared the United States per capita consumption of the most popular dairy-related products: fluid milk, butter, cheese, yogurt, evaporated and condensed milk, and frozen dairy. We relied on data we obtained from the USDA for the period 1975 through 2017.

As shown in Exhibit 26, fluid milk consumption has been on a steady decline for the past 45 years. We'll discuss this specific decline later, because there are important ramifications for Pennsylvania's dairy industry, which has traditionally been heavily targeted toward fluid milk consumption.

As we discussed previously, regarding changing consumer preferences, butter consumption has been increasing, especially since 1999. In fact, butter consumption has rebounded from its early declines, and now is showing a 20 percent increase since 1975. Cheese per capita consumption, which includes all varieties of cheeses, has had a steady increase in consumption. Cheese consumption has increased 107 percent since 1975. And, as discussed previously with yogurt sales, yogurt consumption has seen the most dramatic increase—659 percent—when it peaked in 2013. Since that time, however, yogurt consumption has started a decline. Whether that decline sustains itself remains to be seen.

Evaporated and condensed milk saw two periods of sustained dips in consumption. In particular, consumption dipped during the late 80s, and again in the 1990s through the early 2000s when consumption again increased. Overall, evaporated and condensed milk consumption declined by 21 percent. Finally, with respect to frozen dairy products, there was flatter growth in the 1980s, which continued through the late 1990s. Since 1975, frozen dairy consumption has declined 17 percent, although

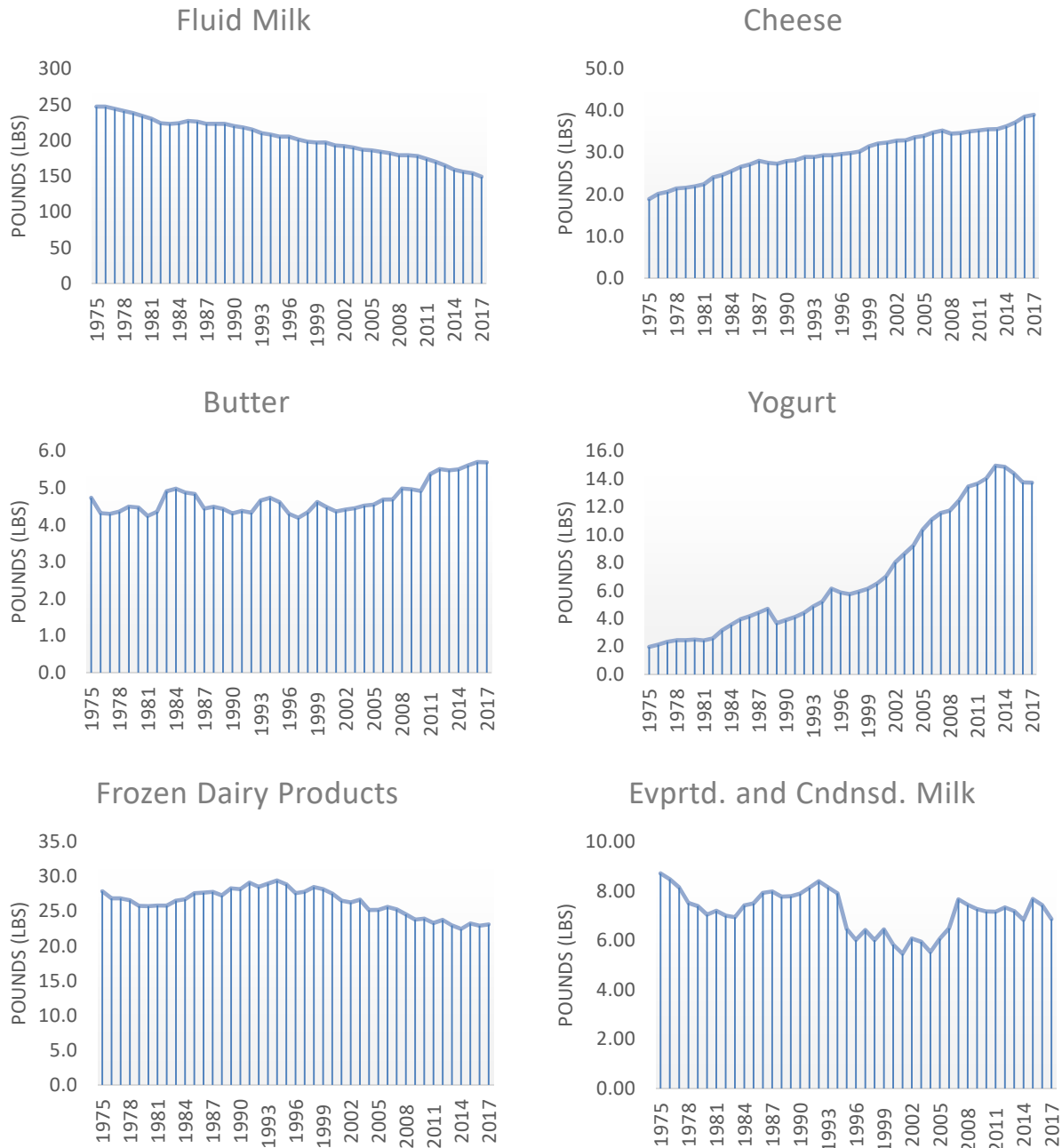
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<sup>94</sup> Bloomberg News, *In yogurt world, the Greeks are down, the Vikings are up*, April 20, 2019.

this occurrence may also be attributable to changes in the USDA's data and which products were included within the classification.

Exhibit 26

**United States Per Capita Consumption  
of Dairy Products  
(1975-2017)**



Source: Developed by LBFC staff from information obtained from the USDA.

Consumption data for dairy products is not available for Pennsylvania. Nevertheless, these trends present opportunities and challenges for Pennsylvania's dairy industry. Specifically, because demand is tied to consumption, it is important to highlight areas where consumer consumption is growing. In this way, Pennsylvania may be able to better target its resources to further develop dairy product demand.

### **Decline in Fluid Milk Consumption Likely Attributable to Market Saturation and Competing Preferences for Plant-Based "Milks"**

A key issue within the dairy industry that is impacting Pennsylvania's dairy producers has been the declining popularity of fluid milk. In turn, the lack of demand for fluid milk is one reason leading to an oversupply of milk, which continues to keep milk prices low.<sup>95</sup>

As shown in the previous exhibit, fluid milk consumption is down 40 percent since 1975. In Pennsylvania, fluid milk, or Class I milk, is the most profitable category of milk for dairy producers. Consequently, it is easy to connect the lack of demand for fluid milk to the problems dairy producers are experiencing in Pennsylvania.

The reasons why fluid milk consumption is declining is the basis for its own report; however, in the most basic terms, the reason ultimately comes down to this: there are a plethora of milk choices on the market—including those that are not dairy—and consumers are becoming overwhelmed and confused.

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*According to marketing experts, too many choices can lead to consumer confusion and inaction.*

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***Too many choices.*** In support of the above conclusion, we looked further at the trend in yogurt sales and its recent decline. As shown in the previous exhibit, yogurt was, until recently, experiencing substantial growth in demand. More recently, it has since started a precipitous decline. We sought to determine if there were lessons to be learned between yogurt's rise and fall and fluid milk's decline.

One lesson to be learned pertains to market over-saturation. According to experts in the industry, one of the primary reasons for yogurt's decline is that there simply too many products on the retail shelf. For example, consider this statistic: the average supermarket retail shelf carries 306

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<sup>95</sup> We are not suggesting that the decline of fluid milk consumption is the only reason for the general oversupply of milk in Pennsylvania and nationally. There are numerous others factors including production techniques, farm management and expansion, and supply/demand within global markets. Nevertheless, the decline of fluid milk consumption is frequently raised as a significant issue when discussing Pennsylvania's dairy industry. As such, we believe it is necessary to provide further context about this issue.

different varieties of yogurt. Consequently, with so much variety in flavor, consistency, and production, consumers become frustrated and confused and turn to alternatives.

The idea that too much choice can lead to inaction may seem counterintuitive to many observers. After all, we have been accustomed to thinking that more choices are always better. However, research has shown that the adage of “analysis makes for paralysis” is actually true when it comes to consumer decision-making.<sup>96</sup> Further, consumer behavior research also indicates that while additional choices can be confusing, so too is the problem of information overload. In other words, just as people are affected by the number of choices, so too are they affected by the lack of information or any prior understanding of the options they have.<sup>97</sup>

We spoke with three Pennsylvania fluid milk processors who confirmed these theories within their fluid milk markets. Stated simply by one processor, a confused consumer is relegated to inaction—inaction in this scenario is not buying milk and switching to another beverage option.

Further, we learned that with respect to fluid milk, the industry has a perplexing way of eroding its own sales. For example, all varieties of milk, in and of themselves, are a healthy, wholesome food source. However, in order to boost sales of specialty varieties of milk, such as organic, lactose-free, A2, and ultra-high filtered milk, the message that is delivered to the consumer is that these milks are “healthier” and better for the consumer than “regular” milk. Here again, this practice ultimately confounds the consumer and eventually pushes consumers to non-dairy products, which are believed to be even healthier.

This fact was also found to be the case in research conducted by the North Carolina State University's Department of Food, Bioprocessing and Nutrition Sciences, Southeast Dairy Foods Research Center, who found from survey responses that balanced and healthy diets were important among all consumers. But, misconceptions exist about milk as a healthy food, and that better education of consumers about fluid milk's nutrition would help to increase fluid milk's marketability and appeal with consumers.<sup>98</sup> As discussed below, this confusion and advanced product marketing may be contributing to non-dairy alternative milks.

### ***Dairy Case Competition with Plant-Based “Milks.”***

Plant-based milks are derived from nuts, seeds, or other parts of plants. Although marketed as milks, these products are essentially suspensions

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<sup>96</sup> Tugend, Alina, *Too Many choices: A problem that can paralyze*, New York Times, February 26, 2010.

<sup>97</sup> See Scheibehenne, Benjamin, et al, *Can there ever be too many options: A meta-analytic review of choice overload*, Journal of Consumer Research, October 2010.

<sup>98</sup> McCarthy, K.S., et al, *Drivers of choice for fluid milk versus plant-based alternatives: What are consumer perceptions of fluid milk?*, Journal of Dairy Science, Vol. 100, No. 8, 2017.

of dissolved, disintegrated, or extracted plant material in water.<sup>99</sup> Homogenization and thermal treatments are used to improve the suspension and stability of the product.<sup>100</sup> Additional emulsifiers, sugars, proteins, and vitamins/minerals are added to simulate dairy milk's consistency and nutritional content. These products have become increasingly popular with consumers who perceive them to be healthier, an alternative for lactose intolerance, allergies, or for those wanting to follow a vegan diet.

Plant-based beverages are not new. In fact, soy milk has been around as a dairy alternative for decades. More recently; however, plant-based beverages have exploded in number, variety, and sales—all of which have had a direct impact to declining fluid milk sales.

There is no data available specific to Pennsylvania, but using national market research we were able to obtain found the following:

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*Plant-based "milks" continue to evolve and grow market share. Fluid milk consumption continues to decline.*

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- Plant-based milks grew by 61 percent between 2012 and 2017.<sup>101</sup>
- Almond milk is the leading plant-based milk with 64 percent of the market share.<sup>102</sup>
- In 2018, almond milk sales alone increased by 10 percent.<sup>103</sup>
- Almond milk sales are expected to continue to increase through at least 2022.<sup>104</sup>
- Currently, nearly half of all American consumers use plant-based milks, including 68 percent of parents and 54 percent of people younger than 18.<sup>105</sup>

The variety of milk derived from plant-based products appears to be never ending. New variants of plant-based milk include: oat, pea, sunflower seed, hazelnut, pecan, macadamia nut, barley, tiger nut, and hemp. "Blended" plant-based milks, which combine varieties of nut milks are also becoming more popular as consumers seek out dairy alternatives. Recent blends entering the market include: almond/cashew, coconut/almond, and flax/hemp/pea. Retailers are also introducing their own brands of plant-based milks to further compete for consumer demand. Finally, we also found that there is increasing product development for

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<sup>99</sup> Bridges, Meagan, *Move Over Cow's Milk: The rise of plant-based dairy alternatives*, Practical Gastroenterology, January 2018.

<sup>100</sup> Ibid.

<sup>101</sup> Mintel, *US Non-Dairy Milk Sales Grow 61% Over the Last Five Years*, January 4, 2018.

<sup>102</sup> Ibid.

<sup>103</sup> Nielsen, StatistaCharts, July 2018.

<sup>104</sup> Wright, KC, *The Coup in the Dairy Aisle*, Today's Dietitian, September 2018.

<sup>105</sup> Ibid.

coffee creamers, cheeses, and yogurts, all of which are derived from plants.

While plant-based beverages are not new, the introduction of these items to the “dairy shelf” in grocery stores and retail stores seems to be aiding in their popularity. Historically, plant-based milks were specialty drinks found in organic store aisles, they were not refrigerated, and were not sold alongside fluid milk. However, to improve marketability, plant-based processors began using similar pasteurization and packaging techniques as fluid milk and the products began to be placed in refrigerated aisles of grocery stores.

We were unable to pinpoint a specific date when plant-based milks became mainstream products found on the dairy shelf, but according to data from Nielsen, refrigerated plant-based milks (i.e., those found in the dairy case) are 88 percent of all plant-based milk dollar sales, and their sales continue to outpace shelf-stable plant-based products.<sup>106</sup> Further, according to the Good Food Institute, “the shelving change many years ago that saw plant-based milk move to the refrigerated set was key to introducing these products to a much larger consumer base and thus, rapidly growing category sales.”<sup>107</sup> As such, it appears that plant-based milk’s introduction to the dairy shelf has aided plant-based milk’s popularity, and by extension, has helped to further erode fluid milk sales.

Given the popularity of these products, and the fact that manufacturers continue to expand product development, fluid milk is going to continue to be at a competitive disadvantage. Whether plant-based milks follow the path of specialty-yogurts and over-saturate the market, leading to “consumer paralysis,” remains to be seen.

***Federal Involvement in Regulating Plant-based Milks.*** It should be noted that there is ongoing discussion at the federal level as to whether plant-based milks can be labeled as milk. This argument is based on the fact that plant-based milks do not meet the federal definition of milk, which is “the lacteal secretion, practically free from colostrum, obtained by the complete milking of one of more healthy cows.”<sup>108</sup>

We were frequently informed of this regulatory inconsistency during many stakeholder meetings. The issue has also been raised at PMMB hearings on Pennsylvania’s dairy crisis. Stated mildly, among many dairy producers, allowing plant-based milks to be labelled as milk and placed

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<sup>106</sup> U.S. Plant-Based Market Overview – Research From Nielsen, The Good Food Institute. See also [www.gfi.org/marketresearch](http://www.gfi.org/marketresearch), accessed June 12, 2019.

<sup>107</sup> Ibid.

<sup>108</sup> See 21 CFR 133.3(a).



in the dairy case is a serious unfairness in the marketplace and it is a direct threat to many of their livelihoods.

In September 2018, the FDA issued a request for further information on milk labeling. Specifically, the FDA issued a request for information seeking input on issues related to standards of identity and for other related issues. The FDA's concerns related to how consumers use plant-based products and the differences between the products. To that end, the FDA Commissioner noted the following:<sup>109</sup>

Many dairy products, such as milk, yogurt and certain cheeses, have standards of identity established by regulation, which require certain components and ingredients in these foods. Names such as "milk," "yogurt," and "cheddar cheese" have long been recognized by the American public as identifying the dairy foods described in the standards. More recently, these names have appeared in the labeling of plant-based products as part of the name of the product. Some examples include "soy milk" or "almond milk" and "vegan mozzarella cheese." These plant-based products are sometimes packaged very similarly to those used for milk or yogurt, for example, and sold in the dairy section of grocery stores. However, these plant-based products may not be satisfactory substitutes for all uses of dairy. And some may not be nutritionally equivalent.

This can have significant health consequences – contributing to under consumption of key nutrients, such as calcium and vitamin D for which dairy products are good sources in the U.S. population. The risk of under-consuming key nutrients may be heightened in children if parents substitute certain plant-based beverages for milk because children have less diverse diets than adults with fewer opportunities for other foods to provide those nutrients.

The FDA supports choice and innovation in the marketplace, and we recognize that some consumers may prefer to use plant-based products instead of dairy products for a variety of reasons, including an allergy or lifestyle choice. However, we must also ensure that the labeling of such products does not mislead consumers, especially if this could compromise their health and well-being.

The FDA extended the comment period for this issue through January 2019. The FDA has received testimony regarding this issue, but to date

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<sup>109</sup> FDA, *Statement from FDA Commissioner on modernizing standards of identity and the use of dairy names for plant-based substitutes*, September 27, 2018.

has not taken any definitive action to require plant-based milk processors to change their labeling. Legislation has been introduced to compel the FDA to take action on the issue, but the legislation has yet to pass Congress.<sup>110</sup>

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*The federal government has yet to take definitive action on the issue of plant-based milk's identity and ability to be labeled as milk.*

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To date, while there have been several federal court cases involving the labeling of plant-based milk, we were unable to locate any case that has noticeably resulted in changes to how these products are marketed. Most recently, plant-based milk producers did have a limited victory in a case involving almond milk labeling.<sup>111</sup> In that case, a federal appeals court upheld a district court's decision to dismiss a case involving milk labeling.

Given the number of new plant-based milks that are being developed, coupled with the increasing popularity of these products, it is likely these products will continue to compete with fluid milk. Moreover, we also question whether the FDA's action to impose labeling restrictions will have a significant impact to retail sales, and a resurgence of fluid milk consumption for two reasons. First, in 2017, the European Union instituted a prohibition on plant-based products using dairy names; however, after that restriction retail sales still increased, and are projected to do so through 2024. To further accentuate this point, Canada also instituted similar labeling restrictions, yet fluid milk consumption has continued to decline. Secondly, according to a recent survey of consumer practices in the United States, 48 percent of those surveyed are already purchasing plant-based and dairy milk. Therefore, it seems unlikely that a change in labeling for plant-based milks would lead to a significant increase in fluid milk consumption.

On a final note, the issue of milk formulations and labeling will continue to be an issue in the coming years and needs to be addressed at either the federal or state level. For example, according to research we conducted for this study, a California-based company is spearheading a new "dairy product" that is neither animal-based nor plant-based. Instead, the company is developing a dairy substitute product using microflora from yeast and bacteria to create proteins that are identical to dairy proteins. The process is complex, but on a basic level it is similar to how brewer's yeast is used to produce alcohol. According to the developer, the products are very similar to dairy products in taste and texture and can be used in a variety of dairy products. The resulting product is, however, entirely animal-free and results in a product that is also lactose-free, hormone-free, antibiotic-free and gluten-free, while boasting a longer shelf life than traditional dairy products.<sup>112</sup>

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<sup>110</sup> 115<sup>th</sup> United States Congress, Senate Bill 130, *Dairy Pride Act*.

<sup>111</sup> *Painter v. Blue Diamond Growers*, CV 17-02235-SVW-AJW.

<sup>112</sup> Additional information on this technology and product development plans can be obtained from [www.perfectdayfoods.com](http://www.perfectdayfoods.com).

## D. School Lunch Milk Choices

When we spoke to stakeholders about the current status of the dairy industry, a frequent and highly debated topic was milk choices within the federal school lunch program. This issue is complex, which is made even more complex because the greatest influence on policy rests with the federal government. Further, because Pennsylvania is a local control state with respect to public education, local school boards have significant influence over milk choices offered. Nevertheless, because the issue is frequently raised as a cause for the decline in milk consumption, additional context and information is warranted.

### National School Lunch Program and the Dairy Industry

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The National School Lunch Program (NSLP) was established in 1946 during the Truman Administration, with two main purposes: (1) "safeguard the health and well-being of the Nation's children, (2) encourage the domestic consumption of nutritional agricultural commodities and other foods."<sup>113</sup> NSLP is a federal program administered by the USDA with pass through funds from designated state education agencies to the local school districts. The Pennsylvania Department of Education (PDE) oversees Pennsylvania's NSLP funding.

The NSLP provides reimbursements for meals provided at public and non-profit private schools, and residential child care institutions. In order to be eligible, schools must offer food that meets minimum nutritional guidelines set by the USDA. Schools must then offer free and/or reduced meals to eligible students. Children are eligible for the free meal program if they live in households with incomes below 130 percent of the federal poverty level or those receiving Supplemental Nutrition Assistance Program or Temporary Assistance for Needy Families.<sup>114</sup> Children are eligible for the reduced lunch rate if their family income is between 130 and 185 percent of the poverty line.<sup>115</sup>

With respect to the dairy industry and NSLP, the most recent controversy pertains to changes that were made to the program as a result of the *Healthy, Hunger-Free Kids Act of 2010* (HHFKA). The HHFKA unanimously passed the United States Senate before passing the United States House

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*The Healthy, Hunger-Free Act of 2010 changed milk requirements in schools, which some argue will impact milk consumption in the future.*

*Data is presently lacking to draw clear conclusions on its impact.*

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<sup>113</sup> Avey, Tori. WITF. *The History of School Lunch*. September, 3, 2015.

<sup>114</sup> Feeding America. *The National School Lunch Program (NSLP)*. See also: <https://www.feedingamerica.org/take-action/advocate/federal-hunger-relief-programs/national-school-lunch-program>

<sup>115</sup> Ibid. Note: Poverty thresholds are determined by household size and household income. Current poverty guidelines can be found at <https://aspe.hhs.gov/2019-poverty-guidelines>.

of Representatives with a 264 to 157 vote. As a strong supporter, President Obama signed the HHFKA into law on December 13, 2010, in an effort to reduce childhood obesity rates. HHFKA was implemented during the 2012-13 school year (although it is possible that schools decided to begin making the changes the school year prior).

A key change in the NSLP, HHFKA only allows plain (non-flavored) low-fat (1%) milk, plain nonfat (skim), and flavored nonfat (skim) in order to be eligible for NSLP. Some school districts around the nation decided to cut flavored milk from their offerings altogether due to the worry about added sugar in those products. This action was solely a local decision and was not required by the new federal regulations.

After one year, Congress allowed for a temporary (one school year at a time) waiver from the new nutrition guidelines, if a school district could prove that a financial hardship was incurred for implementing the guidelines. The general consensus was that the new standards implemented by HHFKA meant less appetizing food, which led to a decrease in program participation and an increase in food waste in schools. At the time the USDA claims were quite opposite stating that their analysis "suggests that nationwide schools saw a net revenue in the first year of implementing the updated standards and preparing more nutritious meals."<sup>116</sup>

One research study that collected data from low-income, high-minority public schools in four New Jersey cities concluded:<sup>117</sup>

There were no meaningful changes in NSLP participation rates among students overall. Among students eligible for free or reduced meals, NSLP participation rates were high during the recession (2008-2012) and then dropped to their lowest ever levels when the HHFKA was first implemented in the SY 2012-2013 before rebounding in the subsequent years... Overall, our results are consistent with those of previous studies<sup>118</sup> indicating that, contrary to controversial media reports on reactions to the new standards, the effects of the HHFKA on school meal acceptance and participation are minimal. With time, students are likely to accept the healthier options.

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<sup>116</sup> United States Department of Agriculture, Office of Communications. *USDA Announces School Meal Flexibility for Upcoming School Year*. May 20, 2014.

<sup>117</sup> Vaudrin, Nicole, et al., *The American Journal of Public Health, Impact of the 2010 US Healthy, Hunger-Free Kids Act on School Breakfast and Lunch Participation Rates Between 2008 and 2015*. January 2018.

<sup>118</sup> The other studies referenced by Vaudrin et al.: "In a study conducted in middle and high schools in 11 Massachusetts school district, Cohen et al. found no significant differences in NSLP participation rates 1 year before and 1 and 2 years after the implementation of HHFKA among students overall and among those receiving free meals. Using a small sample (n = 6) of Washington State schools from a single district Johnson et al. evaluated NSLP participation via meal production records 16 months before and 15 months after implementation of the HHFKA and saw a 1% decrease in participation among middle and high school students."

Nevertheless, the overarching opinion was that HHFKA severely impacted school meals across the nation. Most recently, the USDA issued a proclamation reversing the HHFKA ban on flavored low-fat (1%) milk (among other changes to sodium and whole grain requirements).<sup>119</sup> Starting in 2017, the USDA allowed the sale of flavored low-fat milk in NSLP schools without the use of a waiver. Some argue that the damage has already been done and it is possible that an entire generation of milk consumers has been "lost." Additionally, some members of Congress have also proposed a bipartisan, complete role back of HHFKA milk standards by allowing all milk options to be available in schools.

## **Trends in Milk Consumption Among School-Aged Children**

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Critics of HHFKA often cite the changes in school milk requirements as a major contributor to the decline in fluid milk consumption in the United States. Unfortunately there is no annually collected data about milk consumption in United States and/or Pennsylvania schools, which would allow for a meaningful comparison and subsequent conclusion about the impacts of HHFKA on consumption. Nevertheless, we will present the best available data and note the limitations of such data.

A news article by Bloomberg attempts to quantify the impact of school lunches generally on the dairy industry with these statistical points:

- The "feeding programs" account for 7.6 percent of total fluid milk sales, by one producer's 2017 estimate.
- The largest U.S. dairy processor ships 1.8 billion half-pints of milk to schools a year.
- Two-thirds of sales in schools are flavored milk, according to that National Dairy Council.
- Counting what they drink everywhere, kids ages 2 to 17 represent 40 percent of milk consumption, according to the Milk Processor Education Program, or MilkPEP, a quasi-governmental marketing group funded by federal levies on milk processors.<sup>120</sup>

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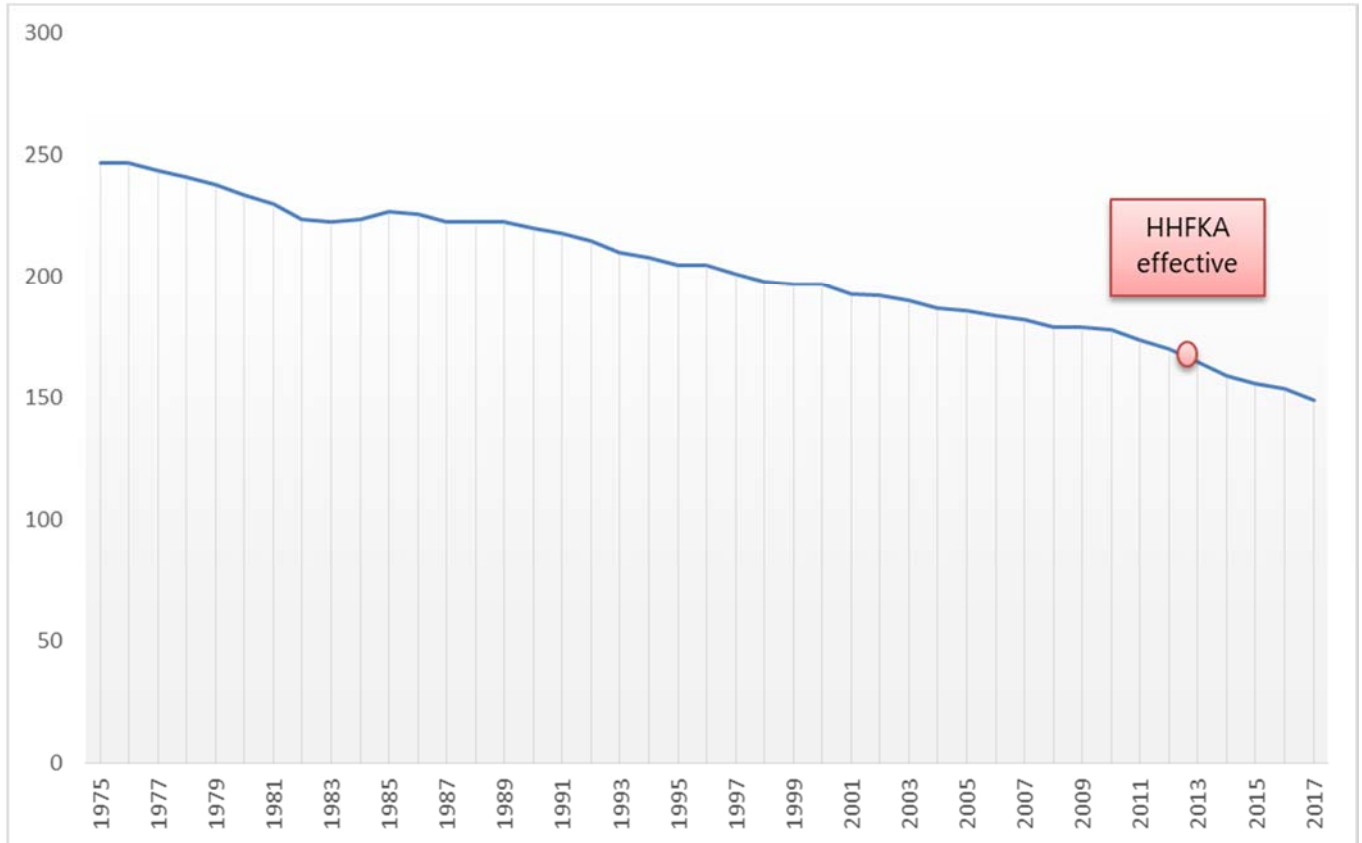
<sup>119</sup> United States Department of Agriculture, Office of the Secretary. *USDA Commitment to School Meals*. May 1, 2017.

<sup>120</sup> Robison, Peter and Lydia Mulvany, *Big Dairy is About to Flood America's School Lunches with Milk*, Bloomberg, January 9, 2019.

It is important to highlight that long before the HHFKA was enacted, per capita fluid milk consumption was decreasing in the United States. Exhibit 27 shows the downward trend for fluid milk consumption, per capita, in pounds per person from 1975 through 2017.

Exhibit 27

**United States Fluid Milk Consumption, Per Capita  
(pounds per person)**



Source: Developed by LBFC staff from information provided by USDA, NASS.

After HHFKA, some of the largest decreases in consumption did occur. For example, a three percent decrease from 2012 to 2013, a four percent decrease from 2013 to 2014, and a three percent decrease from 2016 to 2017. However, because this data is based on the entire United States, including adults and not just K-12 students, we cannot conclude that the greater decreases after the HHKFA are due solely to the school lunch changes, though it is possible it contributed to the more dramatic declines.

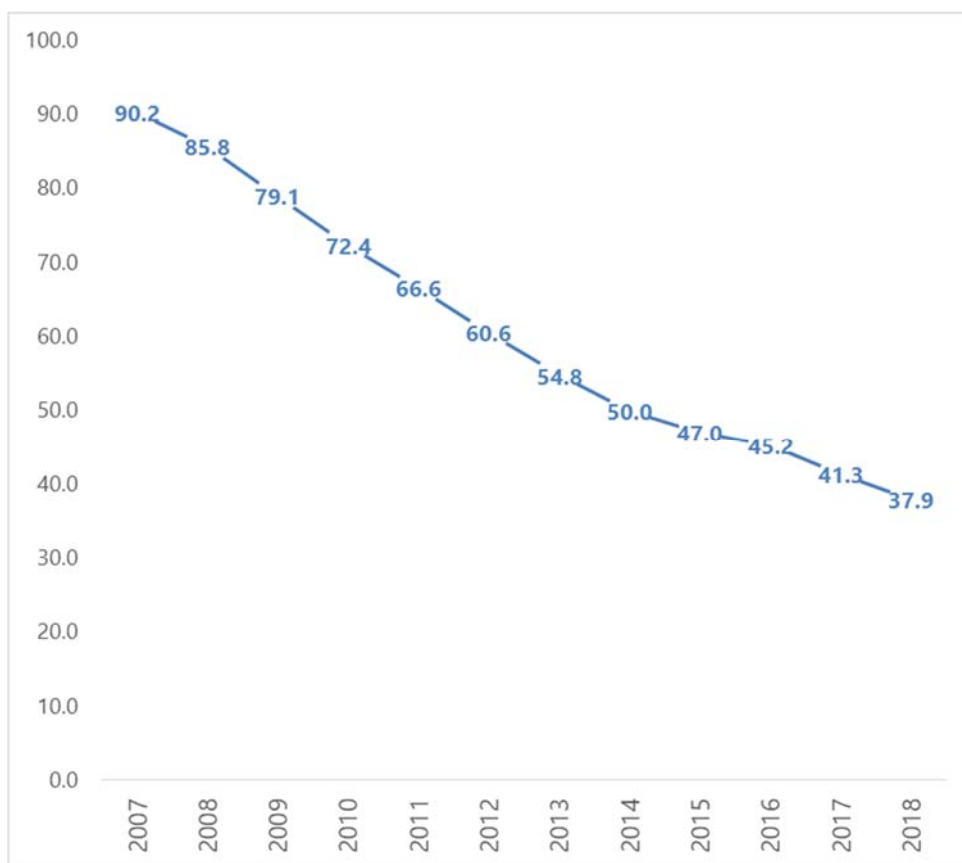
USDA tracks data on participation in the NSLP; however, it does not track specifics on milk consumption within the program. Conversely, the USDA does publish specific data on the United States Special Milk Program (SMP). The SMP is separate from NSLP and is for schools, child care institutions, and camps which do not participate in "other Federal child nutrition meal service programs."<sup>121</sup> As with the NSLP, SMP now requires nonfat (skim) or low-fat (1%) milk to be offered in order to be eligible. Exhibit 28 shows the number of half-pints served in the SMP since 2007.

### Exhibit 28

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#### United States Special Milk Program Number of Half-Pints Served (in millions)

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Source: Developed by LBFC staff from information provided by USDA, Food and Nutrition Service, Child Nutrition Tables.

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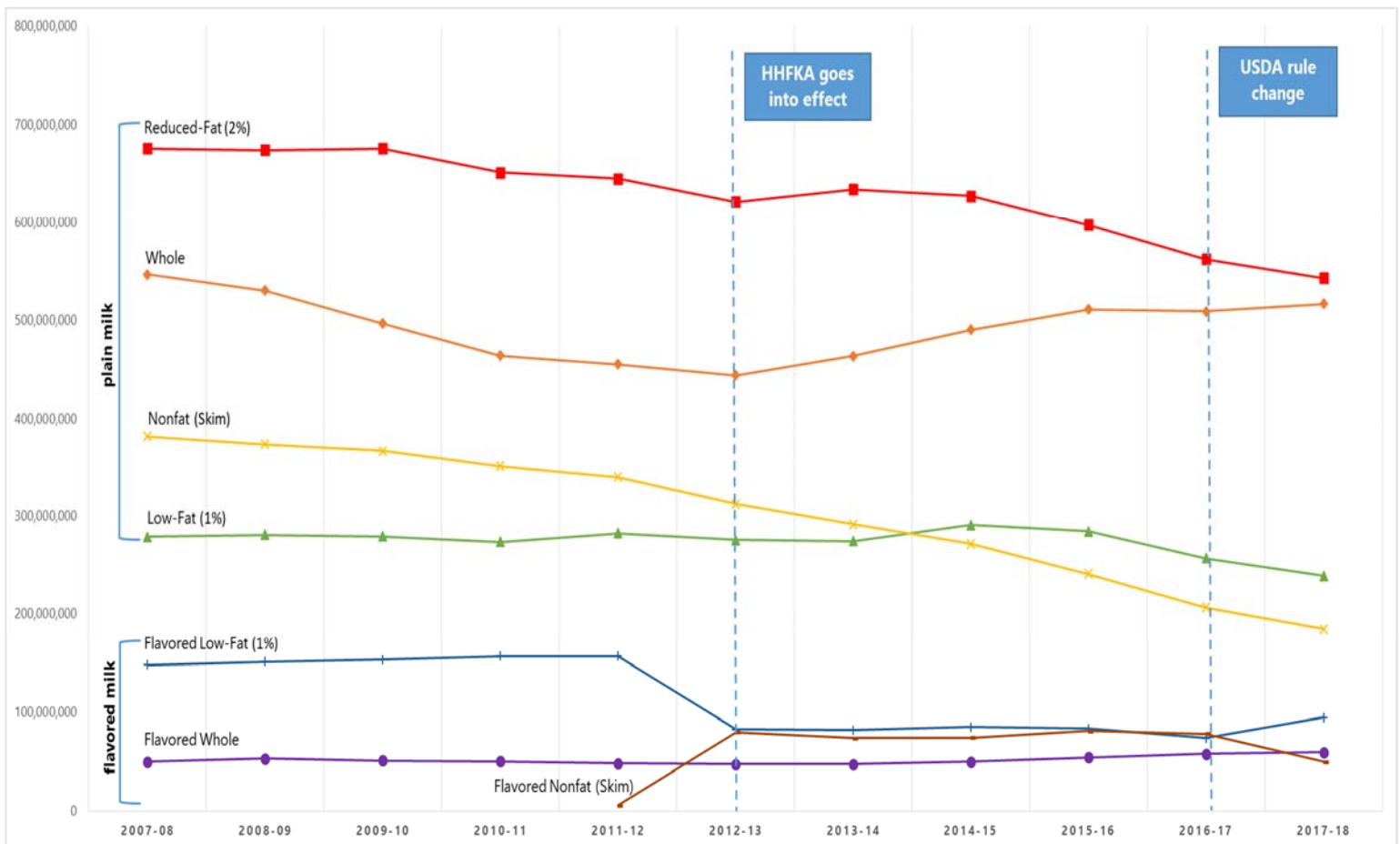
<sup>121</sup> United States Department of Agriculture, *Special Milk Program*, August 2012.

Here again, this data has its limitations. While the SMP falls under the umbrella of federal school meal programs, it is separate from NSLP. Nonetheless, it is clear there was a decline in milk served before the requirement for only nonfat and low-fat milk to be served took place.

We could not locate any publically available data about milk consumption in Pennsylvania schools. The PMMB tracks Class I "sales" data by the different types of milk, as shown in Exhibit 29.

### Exhibit 29

#### PA Class I Milk Sales, by Milk Type (in pounds, by state fiscal year)



Source: Developed by LBFC staff from information provided by the PMMB.

It is important to note the data presented in Exhibit 29 is not actual consumer data, as PMMB does not have the authority to collect consumer data from retailers. Instead, this data represents sales from processor to



retailer as reported to PMMB. Licensed processors report this information to PMMB on a monthly basis as part of PMMB's mission to ensure milk pricing integrity. This data does not capture milk processed in another state and that is sold to a Pennsylvania retailer, because not all out-of-state processors are licensed by PMMB.

This data is also limited because it includes all retailers. A retailer could mean a school; however, it also includes data for other retailers too (e.g., big box stores, convenience stores, grocery stores, hospitals, prisons, etc.). Therefore, the data is again not limited to only children.

In analyzing available data, it appears that HHFKA may have the greatest impact on flavored milk sales, particularly flavored nonfat (skim) and flavored low-fat (1%) milks. After HHFKA was enacted, plain reduced-fat (2%) and whole milk sales in Pennsylvania actually increased, despite them not being available for purchase in schools eligible for reimbursement under the NSLP. Nonfat (skim) milk saw a decrease and low-fat (1%) milk was relatively flat in sales directly after HHFKA implementation.

The sudden surge in plain whole milk, with the steady decline in nonfat (skim) after HHFKA, is more likely a result of outside (of school) factors. One factor that may explain the uptick in whole milk consumption is the prevalence of research supporting the healthfulness of whole milk's fat content. This idea became more mainstream in other research around that same time.<sup>122</sup>

As previously stated, it appears that HHFKA may have impacted flavored milk sales. Sales of flavored low-fat (1%) milk dropped off right before the implementation school year. Additionally, flavored nonfat (skim) milk sales occurred for the first time as Pennsylvania processors added this product to meet the new demand from schools that wanted to comply with HHFKA regulations. This impact on flavored milk makes sense—given the estimate that two-thirds of milk sold in school is flavored—we would expect to see the greatest impact on flavored milk.<sup>123</sup> Flavored whole milk remained steady over the entire period shown despite HHFKA – likely because it was not served in schools prior to HHFKA and was not allowed by the HHFKA regulations.

The most recent changes by the USDA in allowing the sale of flavored low-fat (1%) milk in schools is also reflected in the flavored milk "sales"

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<sup>122</sup> Some study examples include: (1) Berkey, Catherine and Walter Willett, *The Archives of Pediatrics & Adolescent Medicine. Milk, Dairy Fat, Dietary Calcium, and Weight Gain: A Longitudinal Study of Adolescents*. June 2005. (2) O'Connor, Teresia, et al., American Academy of Pediatrics. *Beverage Intake among Preschool Children and Its Effect on Weight Status*. June 5, 2006. (3) Huh, Susanna, et al., American Dietetic Association, *Prospective Association between Milk Intake and Adiposity in Preschool-Aged Children*. April 2010. (4) Scharf, Rebecca, et al., *Archives of Disease in Childhood, Longitudinal Evolution of Milk Type Consumed and Weight Status in Preschoolers*. May 2013.

<sup>123</sup> Robison, Peter and Lydia Mulvany. Bloomberg. *Big Dairy is About to Flood America's School Lunches with Milk*. January 9, 2019.

data from PMMB. There is an almost instant increase in flavored low-fat (1%) milk and a decrease in flavored nonfat (skim) milk directly following the USDA's decision. It is difficult to analyze any of the other milk types post-USDA order because the order only included flavored milk.

Some localized studies were conducted across the nation to try to measure the impacts of HHFKA. A "before-after" study was conducted in 11 Oregon elementary schools in which all flavored milk was banned by the school district. Researchers found that fewer students took milk overall and more milk was wasted. However, researchers noted that it was of interest to them that "90.1 [percent] of chocolate milk sales were recovered by [low-fat] (1%) and skim [plain] milk options," leading them to believe that "encouraging students to take [plain] milk can naturally decrease the amount of chocolate milk taken."<sup>124</sup> Nevertheless, the researchers also question the predicament between allowing students to consume chocolate milk (which has added sugar versus plain milk) versus students consuming sports drinks and juices, which can have even higher sugar contents than chocolate milk.<sup>125</sup>

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*The increased consumption of juices and sports drinks, which can have more sugar than flavored milks and have little nutritional benefit may be a greater concern to children's health.*

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Another study had similar findings to the Oregon study. In this study 51 elementary schools from seven districts in California, Colorado, and Illinois were reviewed. Of the schools studied, 43 eliminated flavored milk on certain days of the week (ranging from one to four days), whereas the remaining eight schools removed flavored milk every day.

In all schools in the study (regardless if they offered flavored milk some days or not at all) there was a reduction in total milk consumed and an increase in waste. Additionally, from a nutritional standpoint, the researchers calculated what foods would need to be added to school menus to "make up" for milk's nutrients. The researchers found the costs alone would likely not make it a worthwhile option for school districts.<sup>126</sup>

We acknowledge the school lunch changes could have had some impact on the declining fluid milk consumption overall. It appears that school lunches have the most impact on flavored milks. For non-flavored milk, school lunches are likely one of many contributing factors in the declining demand for fluid milk.

Like many aspects of the dairy industry, the school lunch issue is a complicated area. The medical community generally has very divisive opinions of what type of milk is most healthful. Aside from health and nutritional requirements, schools are also faced with budgetary constraints.

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<sup>124</sup> Hanks, Andrew, et al., PLoS ONE. *Chocolate Milk Consequences: A Pilot Study Evaluating the Consequences of Banning Chocolate Milk in School Cafeterias*. April 2014.

<sup>125</sup> Ibid.

<sup>126</sup> Quann, Erin and Doug Adams. *Nutrition Today, Impact on Milk Consumption and Nutrients Intakes from Eliminating Flavored Milk in Elementary Schools*. May/June 2013.

Further, just as adults are inundated with drink choices, so too are children. Family meals are changing, particularly at common times when milk was traditionally consumed. For example, cereal has struggled to compete in recent years with trendier “on-the-go” options becoming more popular for modern families. For these reasons, we are less confident that a complete reversal of HHFKA will provide the panacea to improve the dairy industry in Pennsylvania.

## **E. Milk Marketing Board Regulatory Role**

Throughout our research for this report a frequent discussion point that arises is the exact need for—and the benefit of—the PMMB to Pennsylvania’s dairy industry. These comments arise more frequently from producers, who question that because prices are already so low, how can the PMMB be of any value to Pennsylvania, and more specifically, producers? We looked at the origins of this argument, and we spoke with a number of economists and other dairy specialists, as well as reviewed testimony presented at PMMB listening sessions about the benefits of the PMMB.

### **Department of Agriculture Petition to the PMMB**

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On April 4, 2018, the PDA, through the Secretary of Agriculture, submitted a petition to PMMB for a hearing(s) in response to the Pennsylvania dairy market crisis, requesting that “the PMMB and its staff investigate, undertake and/or recommend as many measures as deemed necessary to help address current Pennsylvania dairy market conditions.” The petition specifically sought recommendations to either actions that the Board could pursue without statutory changes to the Milk Marketing Law, or alternatively, requests to the General Assembly for amendments to the Milk Marketing Law.

In connection with this petition, PDA also created a form on its web site for interested parties to submit comments about the dairy crisis. We reviewed these comments to identify opinions about the role of the PMMB. Exhibit 30 highlights a number of these comments.

Exhibit 30

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**Selected Comments about the Current Dairy Crisis and  
the Role of the PMMB**

- ❖ The PA Milk Marketing Board should be ELIMINATED. The Milk Marketing Board is one of the reasons why milk is being imported into PA. Additionally, the PA Milk Marketing Board has cost consumers Hundreds of Millions of Dollars as the price of Milk in PA is artificially inflated higher than it should be.
- ❖ I would like to recommend not having a milk marketing board. This puts additional costs on milk sold in PA, thus consumers buy NY milk in our area, where there is no MMB. It is also putting the PA producers in a disadvantaged market...Many states operate w/out this agency, we need too, as well. Thank you!
- ❖ I am sure at one time the PMMB was useful and helpful to the PA dairy producer, but we live in a different world than when the law was written, or even last amended. We are not only competing with other states, we are competing with other countries. Our milk is based on a multitude of factors including the weather on the other side of the world, the value of the dollar, the quotas in other countries, trade agreements between countries, and many factors. As my business is sustained by dairy producers, I do not wish to keep dairy producers just for the sake of having dairy producers. I wish to encourage thriving dairy producers that can compete with any other producer in the world.
- ❖ ...My impression is that current policies place PA dairy producers at a competitive disadvantage with out-of-state milk to market their own PA milk. IF this is not corrected soon the PA dairy industry will be diminished at an ever increasing rate. The hardest hit are the small herds. Larger producers have expanded their herds, become more efficient, and used the latest technologies available. It has made them better producers.
- ❖ Price supports for dairy farmers should be phased out. Artificially inflating demand for dairy products is counter to natural economic cycles. Why must consumers pay more than fair market value for dairy (or any other product) in our capitalistic economy? Do not manipulate the market. Now is the time to phase out subsidies. The dairy farmers will need to adjust to the changing market conditions, just like me and everyone else in the economy.

Source: Developed by LBFC staff from comments submitted by PDA as testimony to the PMMB's May 16, 2018, *Dairy Market Issues Hearings*.

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The comments listed in Exhibit 30 are a small selection of the comments received by PDA; however, they are indicative of a significant issue for the

PMMB: an apparent lack of awareness about the PMMB's role and a belief that the PMMB is unfair and/or harmful to the dairy industry.<sup>127</sup>

### **PMMB Information Gathering Activities Identify Similar Confusion over the PMMB's Regulatory Influences**

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Similar to the PDA's solicitation for comments in support of its petition, the PMMB also recently held four "listening sessions" and distributed a survey to Pennsylvania producers. From these activities, additional insights are also available about public perceptions of the PMMB.<sup>128</sup>

For example, two specific themes that came out of the listening sessions were the PMMB's minimum pricing and the OOP.<sup>129</sup> With respect to minimum pricing, the PMMB reported that many participants felt that eliminating the enforcement would increase sales, better benefit producers, and allow Pennsylvania to better compete with other states. Similarly, regarding the OOP, participants felt that too much money was going to out-of-state producers, there was disparity between independent and cooperative producers, and processors were pocketing the premium.

Further, regarding these two issues (minimum pricing and the OOP), the PMMB's survey revealed that producers believed the following:<sup>130</sup>

- Producers are less competitive in the market with other states because of Pennsylvania's minimum pricing system.
- The PMMB does not perform important functions for the dairy industry.
- Revenues are not higher because of minimum pricing.
- The PMMB should review and revise the minimum pricing system.

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<sup>127</sup> In total 98 comments were submitted to the PDA. A few commenters submitted their responses in multiple parts therefore the actual count is less.

<sup>128</sup> The results of the PMMB's information gathering techniques were presented to the House Agriculture and Rural Affairs on April 17, 2019, during a meeting to discuss "Issues and Challenges in the State's Dairy Industry."

<sup>129</sup> The PMMB reported other themes from their information sessions, including school milk choices, and limiting out-of-state milk in Pennsylvania. As discussed elsewhere in this report, these themes are outside the PMMB's authority.

<sup>130</sup> The PMMB's survey was a non-scientific poll of Pennsylvania dairy producers. At the time of publication, 248 producers responded. The PMMB reported that it emailed the survey to 591 producers, which it obtained through the Center for Dairy Excellence. While this provides a base number of surveys distributed through email, the actual number of producers that received the survey is unknown because copies were also distributed through numerous untracked channels (e.g., cooperative organizations, the Amish community, and producer-to-producer relationships). As a result, we cannot calculate a response rate to the survey.

- The OOP is not distributed fairly.
- The PMMB should revise its system for determining and distributing the OOP.

The important takeaway from these listening sessions, survey results, and web posted comments, is that there is considerable confusion over the role and value of the PMMB. More specifically, it appears that many producers doubt the significance of the PMMB's role. Obviously, this revelation is a disconcerting issue, because one of the stated purposes of the Milk Marketing Law is to protect and benefit producers. Consequently, if Pennsylvania dairy producers and consumers question the legitimacy of the PMMB, any action made by the PMMB will be reviewed with suspicion.

### **Expert Opinions on the Value of the PMMB**

Previously, we discussed the role of the PMMB in relation to the federal milk marketing system. While this comparison describes the contextual interplay of the systems, it does not answer the themes and questions about the value of the PMMB to Pennsylvania's dairy industry. To address this issue, we reviewed the CDE/PDA *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*, Combined Final Report. We also spoke with an expert in dairy economics, who provided additional context on the value of the PMMB compared to other states. Finally, we reviewed testimony presented to the PMMB in response to the PDA's petition.

One of the objectives of the CDE/PDA report was to assess evidence about the PMMB's pricing regulation on the retail fluid milk prices and the volume of milk processed in the state.<sup>131</sup> The study's authors conducted an exhaustive review of retail pricing in the state, which included reviews of retail pricing for milk in Philadelphia and Pittsburgh to three other comparative cities. The authors also conducted a detailed spatial economic model comparing Pennsylvania processing to other state processing for two selected months in 2016.

In contrast to many producer-held beliefs that the PMMB price regulation has caused a decline in fluid milk consumption, the researchers concluded the following:<sup>132</sup>

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<sup>131</sup> The results of this review are contained in Chapter 8 of the Combined Final Report: *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*. The authors of the chapter were: Dr. Chuck Nicholson, Adjunct Professor, Cornell University; Dr. Mark Stephenson, Director of Dairy Policy Analysis, University of Wisconsin-Madison; and Dr. Andrew Novakovic, E.V. Baker Professor of Agricultural Economics, Cornell University.

<sup>132</sup> Ibid, pg. 160.

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*Based on extensive research conducted by experts in the field of economics and dairy policy, there was no evidence to suggest that the PMMB's regulatory role was hindering Pennsylvania's dairy industry.*

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- We find no definitive evidence to suggest that price regulation under the PMMB is a major cause of declining fluid milk sales or decisions about the location of fluid milk processing, and thus, no evidence that major modifications to the PMMB would result in substantive improvement in sales of fluid milk or differences in processing location.
- Price enhancement due to the PMMB does not appear to be a major factor in the observed reduction of fluid milk sales in recent years. Our estimates suggest that the impact of retail pricing regulation under the PMMB at most accounts for less than one-fifth of the decline in fluid milk sales observed in the past five years.
- The volume of Pennsylvania farm milk priced by the PMMB has declined from 2007 to 2016, but these declines are largely in line with declines in fluid milk sales reported by the Northeast and Mideast Federal Milk Marketing Orders and for the US as a whole, which suggests that factors other than price regulation under the PMMB are more important drivers of the observed reductions in fluid milk sales.
- The difference between retail fluid milk prices between Philadelphia, Pittsburgh, and comparison cities showed variance over time, but over the past 11 years the prices are similar. In Pittsburgh, prices were higher than its comparison city (Cleveland, OH), but that was because retailers in Cleveland used a "loss-leader" pricing strategy, which sold milk at or below wholesale cost.

Stated differently, based on extensive research conducted by experts in the field of economics and dairy policy, there was no evidence to suggest that the PMMB's regulatory role was hindering Pennsylvania's dairy industry. Moreover, in comparing retail prices for milk in Pennsylvania's largest cities, there was virtually no meaningful difference in retail prices, except for those cities that were permitted to sell milk at severely discounted prices in an attempt to increase overall retail sales.

Another dairy economics expert, who has extensive knowledge about price control regulation, noted the following about the PMMB and its influence in ensuring producer prices:

Critics of the PMMB's operations appear to believe that removing minimum pricing would lead to more sales, which would then lead to better economic conditions for producers. However, these better economic conditions

would clearly include higher prices for producers, exactly the effect the PMMB's operations seek to accomplish. Moreover, milk prices received by Pennsylvania farmers are the result of supply and demand conditions in the wider national and international dairy industries—and the effects of just statewide actions by the PMMB will hardly move the needle among those larger forces—especially considering that milk sales are quite price inelastic (i.e., changes in prices result in relatively small changes in sales).

Those with a genuine interest in market deregulation in the dairy industry could justify being critical of the PMMB. The significant decline in state milk price regulation that has occurred throughout the United States over the past decades clearly indicates that those states that still do so are swimming against a very strong historical tide. But those who wish to see higher milk prices for dairy farmers in the state should seriously consider that increasing regulated prices to a limited extent, without attracting much out-of-state milk into the local market, will likely be the most effective means of accomplishing that goal.

We also received comments from retailers about the value of the PMMB to the dairy industry. According to the Pennsylvania Food Merchants Association (PFMA), a statewide trade association advocating the views of convenience stores, supermarkets, independent grocers, wholesalers, and consumer product vendors operating in Pennsylvania:<sup>133</sup>

The PFMA supports the PMMB and believes that state regulation of milk pricing has cultivated a positive business environment for Pennsylvania producers/farmers and processors providing consumers with quality locally produced and processed dairy products at competitive market driven prices.

In addition, one large Pennsylvania-based retailer noted that a benefit of the PMMB's pricing structure was that they could then advertise that their milk was sold at the state's minimum price, giving them a competitive edge over retailers who sold milk above the state minimum. This same retailer was proud to support local vendors, and was glad they could offer milk at a price that was competitive with national and international retailers. All of which they attributed to the regulatory influence of the PMMB.

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<sup>133</sup> Statement of the PFMA in Partial Opposition to the Petition for Hearing of the Pennsylvania Department of Agriculture, May 2, 2018.



## **Pennsylvania's Dairy Industry without the PMMB's Influence**

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Based on our research and interviews, we believe the PMMB's regulatory influence has a significant and valuable role in aiding Pennsylvania's dairy industry.<sup>134</sup> Nevertheless, while we see value in the PMMB in its present form, going forward we also see opportunities for the PMMB to expand its influence. We will discuss those opportunities further in Section V – Recommendations.

Despite our conclusion, questions are likely to persist regarding the practicality of the PMMB, especially among the producer community. To clarify our position, we attempted to answer the question of what would happen if Pennsylvania repealed its Milk Marketing Law and the PMMB's regulatory role? Before answering this question, a few caveats need to be presented. First, our opinions should not be viewed as a guarantee of future results. While we are comfortable presenting what are the most-likely outcomes, these are still just an educated guess. Secondly, unforeseen events can dramatically change projections. For example, geopolitical events, trade wars, or epidemics could have dramatic impacts to dairy markets here, nationally, and globally. Finally, it is important to remember that positives and negatives depend on one's viewpoint. For example, while we view the demise of the dairy industry in Pennsylvania as a "bad" outcome; there are those that may view its demise as a "great" thing. In particular, those that are opposed to the dairy industry for animal welfare reasons or other reasons, would be pleased to see Pennsylvania dairy farms go out of business. These viewpoints and considerations are outside the scope of this report.

If the Milk Marketing Law was repealed and the PMMB abolished, undoubtedly producers would be negatively impacted. For example, without the payment guarantees protected by the producer payment security requirement, producers would once again be vulnerable to non-payment from milk dealers. Additionally, there would be less uniformity in milk transactions as the licensing of testers, weighers, and samplers would no longer exist (assuming no other state agency undertakes these responsibilities). Ultimately, quality and wholesomeness of milk may also suffer.

Following repeal of the Law, and the minimum price regulations imposed by the PMMB, most experts agree that milk "price wars" would escalate at the retail level. This outcome is already witnessed in other states where milk is sold as a loss leader simply to generate traffic into the

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<sup>134</sup> By way of background information, in 1984 we conducted a "sunset audit" of the PMMB. Sunset audits were conducted pursuant to Act 1981-142. The audits were a form of performance auditing that focused on efficiency and effectiveness of government operations as measured against seven different criteria elements. Overall, we found that the PMMB provides an important regulatory role in protecting the public health and welfare, one of the key seven criteria. Our 1984 audit included several recommendations aimed at improving PMMB operations. Some of these recommendations were adopted; other recommendations are no longer relevant and have since been "sun-setted."

store. While this would benefit consumers in the short-term with low priced milk, it would have devastating trickle-down effects to processors and producers.

Because milk is already in oversupply in Pennsylvania, retailers would be able to pressure processors/wholesalers for cheaper prices. If processors/wholesalers did not capitulate, retailers would seek milk from other processors until a processor ultimately met their price.

As this process unfolded, processors would then have to “squeeze” producers and in turn, pay them less for their product. As farm costs continued to rise, and with no recourse from the PMMB to recover their costs, producers would face dire choices: accept the lower milk prices or go bankrupt.

As processors and producers went out of business, there would be ripple effects to local economies. As we discussed in Section III regarding the direct and indirect economic benefits generated from the dairy industry, many supporting businesses, such as farm equipment retailers, feed suppliers, etc., would be impacted by the demise of dairy farmers. In turn, the trickle-down effects would continue with higher rates of unemployment and loss of tax revenue.

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*There could be unintended consequences if the Milk Marketing Law was repealed and the PMMB eliminated.*

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Some observers have argued that should the Law and the PMMB be abolished, any negative impacts would be ameliorated by gains made from surviving farms. We agree that this outcome may occur. In fact, if those farms are to survive, “going bigger” is probably their best chance for survival. Large dairy states like California and Texas are prime examples of this model of dairy farming. However, as we presented earlier, “bigger is not always better” and data to date has shown Pennsylvania cow numbers are declining, meaning that Pennsylvania has already lost capacity to other states.

As a result, it is also likely that these new larger Pennsylvania dairy farms are likely to experience the same competitive pressures—only on a much larger scale and from farms in other states. Moreover, as documented by one large retailer who has already vertically integrated their fluid milk operations outside of Pennsylvania, it is more likely that those farms would simply increase production to compete for Pennsylvania’s fluid milk needs. Thus, Pennsylvania would most likely see an influx of out-of-state milk coming into the market.

One final note regarding the repeal of the PMMB and Pennsylvania’s existing milk pricing system, throughout our stakeholder interviews we were frequently reminded of the law of unintended consequences. This

economic law, although not formerly defined, generally illuminates the unanticipated effects of legislation and regulation in the marketplace.<sup>135</sup>

A perfect case study of this juxtaposition occurred in 1986 when the USDA offered a dairy herd buyout program as a means of reducing milk supplies and transitioning dairy farmers out of the business. While this solution worked to reduce cow numbers, it decimated the beef industry as cows flooded the beef market. As an example, prices for calves dropped from \$62 per 100 pounds to just \$6 in the span of two months.<sup>136</sup> Therefore, we caution against making indiscriminate changes to Pennsylvania's existing regulatory scheme, and instead suggest using the existing authority to better develop an equitable marketplace for producers, processors, retailers, and consumers.

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<sup>135</sup> Norton, Rob, *Unintended Consequences*, The Library of Economics and Liberty, accessed June 27, 2019.

<sup>136</sup> Kelly, Ed. The Oklahoman, *Dairy Buy-out Program of 1986 a Story with Two-Sides*, March 8, 1987.

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## SECTION V FUTURE OPTIONS FOR CONSIDERATION



### **Fast Facts...**

- ❖ *We offer nine recommendations to aid Pennsylvania's dairy industry, which are centered on improving milk market fairness, potential, and oversight. Our recommendations are a starting point for future discussions and action by policymakers.*
- ❖ *One of our primary recommendations is to use the power of the Milk Marketing Law and begin regulating plant-based milks. Specifically, we believe a market access fee should be placed on these products, which would be deposited into the Milk Marketing Fund and would help to defray the administrative costs of implementing Pennsylvania's Milk Marketing Law.*
- ❖ *We also offer other recommendations such as moving toward open dating on fluid milk, capturing better data on fluid milk sales, and making administrative changes within the structure of the PMMB.*

### **Overview**

Our third objective directed us to develop recommendations for policymakers to consider in aiding the dairy industry. This task was challenging, because the issues that have led to the present-day dairy crisis are complex and involve issues beyond the borders of Pennsylvania or even the United States. As such, there are few quick and easy fixes to help restore Pennsylvania's dairy industry to the vibrancy it witnessed decades ago.

Nevertheless, in the issue areas that follow we present options and recommendations that we believe to be sensible, fair, and reasonable. Our recommendations are not a panacea for every potential issue confronting the dairy industry, but we think these areas have value in being addressed by Pennsylvania policymakers. We have aligned our options and recommendations on these three themes:

- Improve milk market fairness.
- Improve milk market potential.
- Improve milk market oversight.

Within each of these themes additional specific recommendations are included. Our recommendations are based on our own research, coupled with insight and input from policy and legal experts. Some of the recommendations will require statutory changes, while others may be implemented within existing regulatory frameworks. Recent actions taken by the General Assembly and the Governor to aid agriculture (e.g., the passage of Pennsylvania's "farm bills") suggest that now is the time for action. To that end, these recommendations will make a good starting point for further discussion and action by the state's newly created Dairy Future Commission.

Within the theme of milk market fairness, we recommend the state begin regulating the sale of plant-based milks in the Commonwealth. We believe authority exists within the Milk Marketing Law for this action; however, we also believe statutory changes could clarify the state's action and make premiums issued by the PMMB easier to collect. Premiums collected on plant-based milk should be deposited to the Milk Marketing Fund to be used to defray Board expenses and activities, which would benefit all regulated parties. We also recommend that the Department of Agriculture end its 17-day sell-by date regulation on fluid milk. We

found this requirement to be an arbitrary and unnecessary regulatory requirement, and moving toward open dating will help to increase milk's marketability with other products.

Within the theme of improving milk market potential, we recommend the state begin licensing fluid milk retailers. This action will allow the PMMB to capture needed data on fluid milk sales; thus, improving the administrative and regulatory abilities of the PMMB. We also recommend that the Commonwealth aid processors with research and development needs to help foster innovation with dairy products. Further, to the extent that Pennsylvania can overcome the lead that other states have in cheese manufacturing, we think the addition of two new cheese plants in Pennsylvania would benefit many dairy producers, and the state should try to attract these new projects. The state should also further promote the state's identity and brand as a unique leader in quality fluid milk products.

Within the theme of milk market organizational oversight, we recommend the current Board membership be expanded to five members from its present three members. We believe the two additional members appointed to the PMMB should represent retailers and processors, respectively. We also recommend that the PMMB be renamed the Pennsylvania Milk Control Board, a name which better reflects its duties and is consistent with the naming convention used by other regulatory boards, such as the Gaming Control Board or the Liquor Control Board. Finally, we recommend the PMMB improve the transparency and distribution of the over-order premium collected on fluid milk produced, processed, and sold in Pennsylvania.

## Issue Areas

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### **A. Improve Milk Market Fairness**

As highlighted in Sections III and IV of this report, Pennsylvania's milk market is highly regulated at both the federal and state level. At the state level, we believe there are opportunities for improvement. Specifically, as discussed further below, with respect to plant-based beverages the PMMB should use its statutory authority to regulate these products in the marketplace. Further, we also recommend that the Department of Agriculture remove the current 17-day sell-by date restriction on class I fluid milk.

## **Recommendation #1 – Regulate Plant-Based Milks as a Class V Milk Product**

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Throughout our research for this study, we were informed of the impact of plant-based milks on fluid milk sales.<sup>137</sup> While data is lacking to definitively link the growth of these products with the subsequent decline in fluid milk sales, at an “arm’s length review” it is easy to make a causal association between the two. Stated differently, consumer demand for plant-based milk products has likely come at the expense of traditional fluid milk sales. After all, these products compete for the same shelf space and for consumer attention.

To date, Pennsylvania has essentially taken a hands-off approach toward regulating these products. The reason for this approach is because the issue has been viewed from the lens of non-compliance with federal product labeling requirements, instead of as a state regulatory issue falling under the Milk Marketing Law (Law). We disagree with that approach and think the Law may give the PMMB authority to regulate these products. More precisely, to ensure fairness in the Pennsylvania milk market and to protect consumers, the PMMB must regulate these products under the Law.

We discussed our proposed recommendation with a law professor from Penn State Law. By way of background, this professor has testified on Constitutional law issues, and in particular, issues pertaining to dairy regulation. The professor also is familiar with Pennsylvania’s Milk Marketing Law and teaches classes in agricultural law. According to this expert, our approach is unique, and to the best of his knowledge no other state has taken an approach as we recommend. After reviewing the law and conducting some preliminary research, the professor agrees with our notion that the existing Milk Marketing Law provides a path from which the PMMB could legally regulate these products. We outline one specific pathway (and the supporting basis for our argument) in the sections that follow. The professor noted; however, that if the federal government did take action to enforce its product labelling regulations, the pathway would be much more difficult and possibly void. Additionally, the professor noted that any proposed action would need to be analyzed to ensure that it complied with the “Dormant Commerce Clause” of the United States Constitution.

***Under what authority can the PMMB regulate plant-based milks?*** As stated above, the traditional argument against plant-based milks is that the products are, in fact, not milk. This argument is centered on the issue that plant-based milks do not meet the definition of milk as defined under the Code of Federal regulations,

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<sup>137</sup> These impacts were discussed in Section IV – Issue Area C. Consumer Preferences.

which is the "lacteal secretion, practically free from colostrum, obtained by the complete milking of one or more healthy cows."<sup>138</sup>

But, that definition is not how "milk" is defined under the Milk Marketing Law. Under the Law, milk is defined as follows:<sup>139</sup>

"Milk" includes the fluid milk and cream, fresh, sour or storage, skimmed milk, lowfat milk, flavored milk or milk drink, buttermilk, ice cream mix, and condensed or concentrated whole or skimmed milk except when contained in hermetically sealed cans. [underline emphasis added]

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*Pennsylvania's Milk Marketing Law provides a definition for milk that is product-centered.*

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Accordingly, while the federal definition is very precise (i.e., the lacteal secretion from a cow) the state definition is less specific and is more product-centered (i.e., fluid milk, cream, etc.). Beyond this distinction—and more important to the regulation of milk within Pennsylvania's borders—the Law defines milk as including "milk drinks," which is a suitable definition for plant-based milks.

Further to this point of milk labeling, many, if not most, plant-based milks self-identify as milk. For example, almond milk, soy milk, and coconut milk are a variety of milk—just as dairy could now be considered to be a variety of milk—under the definition of "milk." Accordingly, because milk is defined broadly in Pennsylvania, if a plant-based milk markets itself as milk, then within the boundaries of Pennsylvania it should be treated as such. And, if a product is milk, then it falls under the regulatory authority granted to the PMMB by the Law.

***How would plant-based milks be regulated and for what purpose?*** Procedurally there are many different ways to approach regulating plant-based milks. We believe one possible path to this goal would be to define it as a special class of milk, which is another power conferred to the PMMB by the Law.

Recall from Section II - Background that there are currently four classes of milk. Pennsylvania's milk classifications conform to those also found under the FMMOs. The PMMB sets minimum prices for producer, wholesaler, and retailer prices for fluid milk (Class I). The retail price for milk also factors a premium, known as the Over Order Premium (OOP), which is an amount set by the PMMB over the federal order price of milk. The authority to set an OOP lies with the PMMB's authority to establish milk prices.

Section 804 of the Law defines milk classification as follows:

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<sup>138</sup> See CFR Title 21, Chapter I, Section 131.110 Milk.

<sup>139</sup> See 31 P.S. §103.



When, pursuant to any statute or regulations or orders adopted thereunder, or any ordinance or reasonable trade practice, various grades of milk are specified, orders of the board fixing minimum or maximum prices may be applicable to each grade or milk component. Orders of the board fixing minimum or maximum prices may vary in different markets, and shall designate the markets to which applicable. Such orders may likewise classify milk and milk dealers or handlers in any reasonable manner which the board deems advisable, and may vary according to the classes to which they are applicable. The orders of the board with respect to the minimum prices to be paid to producers and others shall apply to the area in which the milk is produced, or to the area in which the milk so produced is manufactured, sold or distributed, as the board shall provide, and may vary in different areas according to varying uses, grades and conditions. Each such order may classify such milk by forms, classes, grade or uses, as the board may deem advisable, and may specify the minimum prices therefor. Other reasonable methods of classification may be prescribed by the board. [Underline emphasis added].

Accordingly, the PMMB has rather broad powers to establish different classifications of milk and its related pricing. Through an official order, the PMMB could establish a different classification of milk (e.g., Class V milk) and define that classification as a “milk drink” derived from the processing of plant-based milk. Once defined as a Class V milk, the PMMB could then establish (through official order) a premium on the milk, similar to the OOP.

In this hypothetical model, there is a distinct and important difference between the OOP and the Class V premium. The OOP premium is intended to be returned to producers. The Class V premium would not be returned to producers, but would instead be returned to the Milk Marketing Fund, to defray administrative costs of the PMMB. In this manner, the Class V premium is intended to “even the playing field” whereby all involved parties pay some share for the related costs of the PMMB. Currently, only those involved in Class I-IV activities bear the administrative cost burdens of the PMMB.<sup>140</sup>

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<sup>140</sup> Licenses and fees are the primary source of income to the Milk Market Fund.

***Why would a new Class V premium be used to defray PMMB costs?*** Stated simply, the Milk Marketing Fund needs additional revenue. In fact, as of May 2019, the Board is considering raising fees on milk dealers and others to make up a projected shortfall in revenue.<sup>141</sup> Accordingly, it is logical that before any additional burden is placed on Class I-IV parties to make up this shortfall, the proposed premium on Class V products should be used as a contributing source of funding for the PMMB.

The mechanism for collecting the Class V premium already exists. Article XI of the Law outlines "Moneys and Expenses of Board." Within this Article, Section 1101, creates and defines the Milk Marketing Fund and further states that:

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*The Milk Marketing Fund needs additional revenue – Class V premiums would generate this needed revenue.*

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All moneys collected or received by the board, arising from license fees, penalties, permits or any other source, shall be paid by the board into the State Treasury through the Department of Revenue, and shall, by the State Treasurer be placed in a separate fund to be known as the "Milk Marketing Fund." Fines imposed under this act shall be payable to, and collected by, the board, and similarly placed in the Milk Marketing Fund.

In essence then, a path exists by which the Board can impose a Class V premium (or fee), and the proceeds of which could then be collected through the Department of Revenue. The process would be very similar to the process already used by retailers when remitting collected sales tax to the Department of Revenue.

Moreover, once this new (Class V) premium is established and the proceeds deposited into the Milk Marketing Fund, the Law provides for the fund to be used as follows:<sup>142</sup>

- (a) As much of the money in the Milk Marketing Fund as may be necessary shall be annually appropriated to the Milk Marketing Board to be used to pay its expenses, including the following:
  - (1) Salaries of the board and of its employees.
  - (2) Rental and other expenses for offices, rooms, garage space and other accommodations outside of the Capitol Buildings, either in or outside of the capital city, occupied by the board.

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<sup>141</sup> Testimony of Tim Moyer, Executive Secretary of the PMMB, May 23, 2019. The PMMB is considering raising the fees on certain milk licenses and increasing fees on milk dealers.

<sup>142</sup> 31 P.S. §1102.

- (3) Premiums for workmen's compensation insurance covering the officers and employees of the board.
- (4) Premiums for surety bonds for such officers or employees of the board as may be required by law to furnish such bonds.
- (5) Purchase and operating costs of motor vehicles required by the board for full-time use, including premiums for liability insurance covering such motor vehicles and the members of the board and employees operating them; also the amount payable to the Department of General Services for the use of automobiles supplied by it for temporary use by the board.
- (6) Furniture, stationery, materials, supplies and all other overhead expenses of the board.
- (7) All other expenses of every kind and description necessary for the performance by the board of its work.

As shown above, the Law provides the PMMB with authority to use funds from the Milk Marketing Fund rather indiscriminately. For this reason, it would make sense to deposit the funds from the Class V premium into the Milk Marketing Fund to be used to equitably defray the important and necessary costs of the PMMB across all milk classes.

***How much should the Class V fee be, and how much money would be collected from a fee?*** At this time, we are unable to answer this question because there are too many variables and existing sales data is limited. In terms of setting the fee, for the reasons already stated, the fee should be placed at the retail level, specifically at the gallon or half-gallon level of product sold. The specifics of the amount of the fee, however, would need to be brought out through the PMMB hearing process.

Obviously any additional cost would ultimately be paid by the consumer. However, we also believe that consumer choices are being influenced by the marketing and promotion efforts of plant-based milk producers, which have gone unchecked at the federal level. These influences are within the jurisdiction of the Law, and Pennsylvania should be at the forefront of establishing renewed equity in the regulation of the milk industry.<sup>143</sup>

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<sup>143</sup> It is important to note that under Article III of the Milk Marketing Law, Section 301 refers to the Board as an instrumentality of the Commonwealth for the purpose of administering the provisions of the act; to execute the legislative intent; and it is vested with power to supervise, investigate and regulate "the entire milk industry" including: the pro-

***What statutory changes are necessary?*** This question is a bit of a grey area. The PMMB has sufficient statutory authority to enact a proposed Class V fee. That being said, additional statutory changes may make the process cleaner and less subject to interpretation by the courts, should the PMMB's authority be challenged. For example, House Bill 1224, introduced this past April would amend the Law to include a specific definition for a board established premium, which would be as follows: "Board established premium means a fee, charge or tax established by official order of the board at the retail or wholesale level on a class or classes of milk."<sup>144</sup>

Further, this legislation would also add a section to the Law that would specify that the "board is hereby vested with the authority to coordinate, facilitate or establish the collection and distribution of board established premiums with the Department of Revenue."

Along these same lines, the Law could amend the definition of milk, to include "all milks derived from plants" leaving little question as to the legality of the PMMB's authority in setting a board-established premium.

According to the co-sponsorship memo surrounding House bill 1224, the legislation is intended to provide greater accountability and transparency in the collection of the OOP (see Recommendation #9). In terms of enacting and collecting a fee on Class V milk, additional legislation could establish a mechanism for the PMMB to enforce equity in Pennsylvania's milk markets.

## **Recommendation #2 – Clarify Milk Date Coding Requirements**

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In our discussions with dairy processors, the issue of "sell-by" dates on fluid milk was often raised as an issue within the dairy industry. The issue is again centered on consumer confusion. For example, just as consumers are inundated with product choices at the grocery store, they are also faced with a variety of product freshness information. The dates stamped on food are intended to relay certain messages to consumers; however, the current system lacks uniformity and may be sending mixed messages.

From our review, the issue is really two parts:

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duction, transportation, disposal, manufacture, processing, storage, distribution, delivery, handling, bailment, brokerage, consignment, purchase and sale of milk and milk products in the Commonwealth, and including the establishment of reasonable trade practices, systems of production control and marketing area committee.

<sup>144</sup> House Bill 1224 was introduced by Representative Lawrence. The bill currently resides in the House Agriculture and Rural Affairs Committee.

- 1) Milk sold in Pennsylvania is required to be stamped with "sell-by" dates (versus "use-by" or "best-by" dates typically used in other states).
- 2) Pennsylvania specifically regulates the maximum number of days pasteurized fluid milk is allowed to be sold or offered for sale.

Current Pennsylvania regulations regarding label requirements for milk dating state the following:<sup>145</sup>

The cap or nonglass container of pasteurized milk held in retail food stores, restaurants, schools or similar food facilities for resale shall be conspicuously and legibly marked in contrasting color with the designation of the "sell-by" date – the month and day of the month after which the product may not be sold or offered for sale. The designation may be numerical – such as "8-15" – or with the use of an abbreviation for the month, such as "AUG 15 or AU 15." The words "Sell by" or "Not to be sold after" must precede the designation of the date, or statement "Not to be sold after the date stamped above" must appear legibly on the container. This designation of the date may not exceed 17 days beginning after midnight on the day on which the milk was pasteurized.

Fluid milk is one of two foods for which Pennsylvania specifically regulates the date code. The other food is shellfish, which is only required to have a "sell-by," "best if used by," or the date the shellfish was shucked (depending on the package size being sold), but does not have a maximum specific date code length requirement like fluid milk's 17-day requirement.<sup>146</sup>

**Federal Government.** The federal government has taken a hands off approach to food date labeling. This is mostly due to the fact that the Food and Drug Administration (FDA) and United States Department of Agriculture (USDA) both view date labeling as having little to do with food safety. Currently the only federal regulation regarding date labeling is for infant formula. The USDA's Food Safety and Inspection Service (FSIS) does provide the following definitions, but these definitions are simply guidelines for consumers:<sup>147</sup>

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<sup>145</sup> § 59a.15 (a).

<sup>146</sup> 7 Pa. Code § 46.249.

<sup>147</sup> See <https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/food-product-dating/food-product-dating>.

- A "Best if Used-By/Before" indicates when a product will be of best flavor or quality. It is not a purchase or safety date.
- A "Sell-By" date tells the store how long to display the product for sale for inventory management. It is not a safety date.
- A "Use-By" dates it the last date recommended for the use of the product while at peak quality. It is not a safety date except for when used on infant formula.

While the USDA considers none of these codes to be a safety date, "sell-by" is even more unique. The date is more for retailer convenience than consumers. Retailers use the sell-by date restriction for inventory management and not as an expiration date.

**Other States.** With a lack of uniform date labeling guidelines, some states have taken action to reform the issue. In a 2016 op-ed in the *LA Times*, two food policy experts noted the following:

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*Pennsylvania and Montana have the strictest date labeling requirements for fluid milk in the nation.*

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In the absence of federal labeling rules, states have stepped in. The variation in state laws is dramatic, providing further evidence that date labels are not related to safety... **Milk is the product with the most inconsistent labeling, state to state.** Milk sold in stores is generally pasteurized, a process that kills harmful pathogens and eliminates the risk of food-borne illness, even after the sell-by or use-by date. Although the modern industry standard for milk quality dating is 21 to 24 days after pasteurization (and again, milk will still be safe after that), some states impose much stricter time limitations. (Emphasis added)

With the exception of only one other state (Montana), Pennsylvania has the most restrictive date labeling requirements for fluid milk in the country. In Montana, pasteurized milk must have a sell-by date of 12 days. Exhibit 31 highlights the states that regulate fluid milk, along with the timeframe of the sell-by or best-by date, and who sets that particular date.

Exhibit 31

**States Regulating Date Coding for Fluid Milk**

	Timeframe	Date Set By	Legal Citation
<b>California</b>	Not Specified	Processor	Cal. Food & Agric. Code § 36004 (2013); Cal. Code Regs. tit. III, § 627
<b>Connecticut</b>	Not Specified	Processor	Conn. Gen. Stat. Ann. §22-179b; Conn. Agencies Regs. §22-133-131
<b>Florida</b>	Not Specified	Not specified	Fla. Admin. Code Ann. R. 5D-1.007
<b>Georgia</b>	Not Specified	Not specified	Ga. Comp. R. & Regs. 40-2-3-.01
<b>Hawaii</b>	Not Specified	Processor	Haw. Code R. § 11-15-39
<b>Kentucky</b>	Open Date	Processor	902 Ky. Admin. Regs. 50:010 and 50:080
<b>Maryland</b>	18 days from the date of processing, however, after a written request and shelf life study, the MD Department of Health may approve longer	Permittee	Md. Code Regs. 10.15.06.10
<b>Michigan</b>	Not Specified	Processor	Mich. Comp. Laws Ann. § 288.539
<b>Montana</b>	The 12 <sup>th</sup> consecutive day, never to exceed 288 hours, following pasteurization	Regulation	Mont. Admin. R. 32.8.101
<b>Nevada</b>	Not Specified	Processor	Nev. Admin. Code § 584.4321
<b>New Jersey</b>	Not specified – however, notes processor must consider “wholesomeness and consumer palatability”	Processor	N.J. Stat. Ann. § 24:10-57.23
<b>New Mexico</b>	Not Specified	Processor	N.M. Code R. § 21.34.5.7-9
<b>Pennsylvania</b>	Within 17 days after pasteurization	Regulation	7 Pa. Code § 59a.15
<b>Virginia</b>	Not Specified	Permit Holder	2 Va. Admin. Code § 5-531-60

Source: Developed by LBFC staff from information provided by ReFED, and the Harvard Law School Food Law and Policy Clinic, along with the state laws/regulations cited in the exhibit.

Of the states that regulate the use of date codes, all but one requires the use of a date code that is for inventory management purposes (13 states, including Pennsylvania). Kentucky is the only state that requires the use of a quality date.

As previously mentioned, Pennsylvania is unique with the specific date code requirement, because only three states have this specific language in regulation. Additionally, of the top 10 milk production states in 2018

(California, Wisconsin, New York, Idaho, Texas, Michigan, Pennsylvania, Minnesota, New Mexico, and Washington) Pennsylvania is the only state that sets the date code in regulation.

**Raw Milk Sales.** We also found particular irony in Pennsylvania's restrictive date code regulation compared to Pennsylvania's permissive stance on raw milk sales.<sup>148</sup> While some states prohibit the sale of raw milk entirely, Pennsylvania allows the sale of raw milk and also requires a 17 day sell-by date. Consequently, it seems rather arbitrary to enforce a 17 day sell-by date on a product that goes through pasteurization (which is known to kill virtually all bacteria), while unpasteurized raw milk (which is full of potentially lethal bacteria) is subject to the same sell-by date.

While raw milk producers/dealers may take every precautionary measure to deter bacteria, the fact remains that very serious outbreaks have occurred from consumption of raw milk that were linked to Pennsylvania.<sup>149</sup> We reviewed data from the Centers for Disease Control on raw milk outbreaks by state (from 2007 through 2012) and found that Pennsylvania had the most outbreaks. Over this period, Pennsylvania had 17 outbreaks, a significant number more than both of the second place states, New York and Minnesota, which each had six.<sup>150</sup>

As a result, at a time when Pennsylvania is leading the nation in outbreaks linked to raw milk sales, we can find little argument for sustaining the 17 day sell-by date on pasteurized milk, which offers far less risk to the public's health.

**Consumer Confusion.** As previously explained, without a uniform date code system, consumers are left to interpret date labels on their own. One milk processor told us this:

Our market learnings have shown that in beverage [sales], consumers define 'fresh' by the length of the sell by date on the day of purchase. Not by how the product was processed.

The above observation is an interesting and significant point with respect to fluid milk sales. It seems an almost habitual practice that when consumers reach the dairy aisle for fluid milk purchases, they seek out the

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<sup>148</sup> Raw milk is milk that comes directly from the cow without any pasteurization or homogenization. Some individuals believe it to be healthier because it is more natural and is helpful in treating allergies and asthma. We did not investigate these health claims, nor take an opinion on the issue beyond presenting these facts.

<sup>149</sup> Some examples include: Farber, Madeline. Fox News. *Raw Milk from Pennsylvania Farm May Have Exposed People in 19 States to Drug-Resistant Bacteria, CDC Says*. February 14, 2019; and Eustachewich, Lia. NY Post. *Bacterial Infection Linked to Raw Milk from Pennsylvania Farm*. December 28, 2018.

<sup>150</sup> United States Department of Health and Human Services, Centers for Disease Control. *Raw Milk, Know the Raw Facts*.



container that has the longest shelf date. The general perception being that the later the sell-by date, the fresher the product will be.

However, consider the impact of more recent innovations in fluid milk products such as ultra-pasteurized and ultra-filtered milk when consumers make a choice. These products are exempt from Pennsylvania regulations, and many of these products bear a 30, 60, or even 90 day date code. As a result, regular pasteurized milk is at a disadvantage because consumers view it as being less fresh than the "ultra" milk products. In reality, both products—after opening and exposure to air—will lose freshness at approximately the same rate.

Additionally, consumers may view the sell-by date as a quality date. As noted by a Cornell University professor and researcher, "consumers often discard the milk if it is past the sell-by date."<sup>151</sup> This is not necessarily an issue for milk sales because it could lead to increased sales. On the other hand, however, if consumers believe they are wasting money purchasing an inferior product that is not as fresh, they may be reluctant to purchase fluid milk and will gravitate toward other products, or purchase smaller sizes.

In a recent letter to the food industry, the FDA advocates for the use of "Best If Used By" to be uniformly adopted across the entire food industry to "include a quality-based date label to indicate when a product will be at its best flavor and quality." Under current Pennsylvania regulations, processors do not have the option to adopt the FDA's recommendation. If processors had that option, then they would need to guarantee the quality of the product, which includes the date placed on the carton. This fact is no different than processors of any other item.

**Next Steps.** According to PDA, the agency has been actively working on a regulatory change and is in the draft writing process to implement a change. As of June 2019, we were informed the current draft regulations would keep the 17 day date code in place, but the regulation would allow processors to apply for a longer period with a successful shelf life study that scientifically supports the processor's desired date. The processor would have to apply on an annual basis for the exception. Additionally, processors would be able to choose from either the use of "sell-by" or "best-by." It should be noted that while PDA is in the process of making changes, the regulatory approval process can be rather lengthy.

We believe PDA's proposed regulatory change, which is similar to Maryland's date coding requirement, is a step in the right direction toward improving equity in the dairy marketplace. Another approach would be to move to open date coding. Under this approach, processors are respon-

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<sup>151</sup> Leach, Taylor. Dairy Herd. *Milk Expiration Dates Could See an Update*. August 7, 2018.

sible for ensuring the product is fresh until the use-by date. Moving toward open dating may incentivize processors that are using traditional pasteurization techniques to be more innovative and competitive with newer styles of pasteurization. Allowing processors to use “best-by” should also help with the issue of consumer confusion, though it may also take consumer education as well. Overall, we encourage PDA to continue with the process to amend the current fluid milk date coding regulations.

On a final cautionary note, while we support extending the date code on fluid milk, this change will need to be monitored for its impact to the OOP and Pennsylvania producers. For example, if milk has a longer sell-by date, then processors may be encouraged to seek milk from out-of-state producers, because the OOP would not apply. For this reason, the PMMB needs to ensure that a change in fluid milk’s date coding is not having the unintended consequence of attracting out-of-state milk into Pennsylvania. Having access to improved data sources, as discussed in the next recommendation, will aid the PMMB in this effort.

## **B. Improve Milk Market Potential**

Throughout this report we have discussed the important interplay of economics, and specifically, the forces of supply and demand. As we showed previously, on the one hand, milk supply is quite high. While on the other hand, demand (depending on the milk classification) is generally declining. This condition is problematic for Pennsylvania’s dairy industry.

The second key theme of our recommendations pertains to improving the market for Pennsylvania milk. More specifically, within these recommendations, we focused on areas that could help to grow dairy demand in Pennsylvania.<sup>152</sup> Some of these recommendations are not new—but action ceased on implementing the recommendations because conditions (i.e., milk prices) improved. We believe the time for action is now, before Pennsylvania loses its competitive position to other states.

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<sup>152</sup> Alternatives could also be to curtail milk supply either through supply-side management practices or by other means that would systematically reduce milk production in the state. We viewed these practices as being outside the scope of Senate Resolution 384, which asked us to identify recommendations to assist dairy producers in response to decreasing demand and decreasing milk prices.

### **Recommendation #3 – License Milk Retailers to Capture More Detail about Milk Sales in Pennsylvania**

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While the PMMB can track milk at the wholesale level, it lacks specificity about retail level milk sales. The lack of retail milk sales data has frequently been cited as a limitation in conducting a thorough analysis of Pennsylvania's dairy industry. Further, before Pennsylvania can adequately address many of the inequities in the marketplace, more robust data is needed regarding retail milk sales.

One way to capture this data would be to license milk retailers, much as processors/dealers are already licensed in the state. Sales data (i.e., volume of products and type sold) could then be captured by PMMB staff and be used to understand milk consumption and purchasing habits. This information would be invaluable in aiding the PMMB staff in setting its regulatory price controls.

More recently, the economic reports commissioned by the CDE/PDA noted the absence of data as a limitation in analyzing the PMMB's pricing impacts on sales.<sup>153</sup> This issue was also noted in the PDA's petition to the PMMB requesting hearings on the dairy crisis.

In 2009, the issue of licensing milk retailers was investigated by the PMMB, but no action was taken. It should be noted that the Pennsylvania Food Merchants Association (PFMA), which represents many of the food retailers in Pennsylvania, strongly opposes this action.<sup>154</sup> The PFMA believes that regulating retailers would impose additional costs upon them, which would reduce operating margins. In turn, retailers would be less likely to promote dairy products.

We view the matter differently. As documented elsewhere, demand is driven by consumer choices, and retailers seek to meet consumer demand. Moreover, retailers are already held to selling milk at minimum prices. If retailers are forced to incur additional costs, they would be able to provide relevant evidence at PMMB price-setting hearings to recoup these costs.

Further, as noted by a Cornell University professor, who testified before the PMMB on this matter: "the regulatory burden is not as high as it would have been prior to the widespread adoption of scanners. This is now largely a question of programming."<sup>155</sup> We also agree that the issue

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<sup>153</sup> Nicholson, Chuck, Mark Stephenson, Andrew Novakovic. *Study to Support Growth and Competitiveness of Pennsylvania Dairy Industry*.

<sup>154</sup> Statement of the PFMA in Partial Opposition to the Petition for Hearing of the Pennsylvania Department of Agriculture, May 2, 2018.

<sup>155</sup> Novakovic, Andrew, Comments before the PMMB on Dairy Markets and Policy, May 16, 2018.

is more of data collection, which is already being captured at the retail level. Consequently, it should not be difficult for PMMB staff to access and obtain the data. As with all PMMB collected data, the information would remain confidential.

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*The OOP is considered to be “stranded” when retailers or wholesalers sell milk at Pennsylvania prices, but obtain it from outside Pennsylvania, possibly at a cheaper price. No one is able to tell the impact of this occurrence because data is lacking.*

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Sales data would also aid in resolving other important issues too. For example, sales data would allow the PMMB staff to address the issue of “stranded premiums.” Recall that the PMMB sets the OOP on fluid milk sales. While the OOP only applies to milk produced, processed, and sold in Pennsylvania, absent clear retail data, there is no way of ensuring that retailers are not increasing out-of-state milk to keep premiums. In other words, retailers could receive milk from other state processors (at a potentially cheaper price), sell the milk at the required Pennsylvania minimum price, and keep the profit. This practice is perfectly legal, but it goes against the purpose of the OOP, which is to aid Pennsylvania dairy producers. By all accounts, we know that this occurrence does happen to some extent, but estimates vary as to the impact of these stranded premiums because the data is lacking.<sup>156</sup>

Another relevant use of sales data to the PMMB would be in establishing the aforementioned Class V (plant-based milk) premiums. Currently, no shared data exists on actual out-the-door sales of these products. If the PMMB could first capture this data, it would then be better informed of the impact on fluid milk sales, as well as have a better idea how much revenue would be generated from a premium on Class V products.

## **Recommendation #4 – Expand Research and Development Assistance to Promote Innovation with Fluid Milk Products**

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A primary means of aiding Pennsylvania producers is through increasing the growth and demand for fluid milk products. Innovation, aided by research and development (R&D) into new dairy products, is central to achieving this goal. To this point, two dairy innovation experts noted the following:<sup>157</sup>

We are just scratching the surface of the myriad of products dairy can be part of. Innovations, including value-added and flavored milk, deliver targeted consumer products (lactose-free, tea, coffee drinks) and are just a

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<sup>156</sup> The issue of stranded premiums is very complex. It is important to reiterate that under the United States Constitution and the commerce clause, the PMMB cannot restrict out-of-state milk from being sold in Pennsylvania.

<sup>157</sup> Interview with Senior Vice President, Knowledge and Insights, and Executive Vice President, Global Innovation Partnerships, for Dairy Management Inc (DMI). DMI is funded by dairy farmers and dairy importers to increase sales and demand for dairy products. DMI funding is received primarily through the federal dairy check off program. Interview conducted by Moore, Mark, *Successful Farming*, July 2, 2019.

few of the areas where we can ride a growth wave. Our challenge will be to continue to identify these areas, work with the industry to develop products that consumers demand, and successfully market these products.

These sentiments were also echoed by the Chairman of the Milk Marketing Board, who during testimony to the Pennsylvania House of Representatives Agriculture and Rural Affairs Committee, pointed to the success of Fairlife, a national brand of ultra-filtered milk that is lactose-free and has a longer shelf-life.<sup>158</sup> Similarly, the Director of the Center for Dairy Excellence, noted the success of this product and others like it because the products were developed to specifically meet consumer demand for non-traditional fluid milk-based products.<sup>159</sup>

Historically, R&D has fallen on processors to develop new products. However, R&D and new product development is very costly—and in Pennsylvania's fluid milk price control environment—it can also be difficult for processors to develop the capital necessary for R&D. Meeting the demand for these types of products, presents an opportunity for Pennsylvania's processors and producers. Yet, processors indicated that they have difficulty accessing the necessary R&D support in Pennsylvania.

Referring to the difficulties in accessing R&D support, one processor relayed his experiences to the Pennsylvania Senate's Agriculture and Rural Affairs Committee. As stated to the committee members, he sought assistance from the Pennsylvania State University (PSU), because of its well-known agricultural extension and food science department. Unfortunately, PSU was unable to meet his R&D needs because it lacked a means to lend the necessary support for his product development. Ultimately, and to the dismay of this processor, he went to the North Carolina State University, because they had existing processes and supports in place to assist milk processors.<sup>160</sup> Regarding this issue, the producer relayed to us that the support he received from North Carolina State University was very helpful in his R&D efforts. While this occurrence was just one example, it signaled a potential issue, which was also affirmed in meetings with other stakeholders.

We discussed the issue of R&D assistance with a member of the food science department at PSU, who agreed that there is currently an insufficient R&D support structure for not just dairy processors, but all food processors. The PSU faculty member also noted that it was the goal of the department to be able to meet this need; however, it would require hiring at least one additional staff person. We recommend PSU should further dedicate available resources toward this endeavor.

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<sup>158</sup> April 17, 2019. See [https://www.legis.state.pa.us/WU01/LI/TR/Transcripts/2019\\_0058T.pdf](https://www.legis.state.pa.us/WU01/LI/TR/Transcripts/2019_0058T.pdf).

<sup>159</sup> Sebright, Jayne, *Going Beyond Our Boundaries*, Center for Dairy Excellence Newsletter, March 22, 2019.

<sup>160</sup> See <https://foodbusiness.ces.ncsu.edu/our-services/>.

The lack of R&D assistance and innovation in Pennsylvania was also cited in a recent report released by the Brookings Institute.<sup>161</sup> Although that report focused primarily on technology R&D and innovation, there are parallel conclusions to be drawn from it. As noted by the authors,<sup>162</sup>

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*According to a recent report, when comparing Pennsylvania's R&D assistance and innovation to peer states, Pennsylvania was lacking.*

*Coordination among stakeholders is important, if progress is to be made in this area.*

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It takes extensive cooperation by a variety of statewide actors, including the governor, state legislature, economic development agencies, universities, companies, non-profits, and other stakeholders to become an innovation leader. Unfortunately, in recent years Pennsylvania has struggled to get its stakeholders on the same page.

Going forward, more attention needs to be given to how R&D supports can be developed for the dairy industry. This focus area would be an ideal starting point for newly created Dairy Future Commission.<sup>163</sup> To that end, and as recommended in the Brookings Institute report, the commission will be comprised of 24 members representing various legislative, executive, and dairy industry stakeholders, including an appointee from PSU, "who has experience with the dairy industry." As a result, for the first time in recent memory, Pennsylvania will now have its dairy strategic partners "on the same page" to develop solutions to this issue.

Another potential area that could be expanded by policymakers to support R&D activities is through the Pennsylvania Dairy Investment Program (PDIP). Under this program, grants are available for R&D and for other related processing technologies and practices. However, after the first round of grant awards (FY 2018-19), only two of four R&D projects that requested funding were approved.<sup>164</sup> These two grants totaled \$92,500 or less than two percent of the \$5,000,000 that was awarded. Going forward, the PDIP administrators should publicize available funding to processors for R&D needs, and they should prioritize R&D-related projects when awarding grant funding.

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<sup>161</sup> The Brookings Institute is a nonprofit organization that describes itself as "devoted to independent research and policy solutions."

<sup>162</sup> Maxim, Robert and Muro, Mark. *Ideas for Pennsylvania Innovation*, Brookings Institute, August 2019.

<sup>163</sup> Governor Wolf signed the Dairy Future Commission into law on July 2, 2019. The commission is charged with reviewing and making recommendations to promote and strengthen the Commonwealth's dairy industry.

<sup>164</sup> Refer to the Background section for more information about this program and the category of grants that were funded.

## **Recommendation #5 – Aid the Development/Construction of Cheese Plants**

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Cheese manufacturing is especially significant to dairy producers because it takes approximately 10 pounds of milk (five quarts) to make one pound of cheese. In June 2018, the CDE/PDA released the results of a study it commissioned regarding Pennsylvania's dairy industry.<sup>165</sup> A key conclusion of that report was that the development of two "other" cheese plants (i.e., non-American type cheese including Italian and specialty cheese) would generate significant economic benefits for the state and reduce overall supply chain costs for producers. As part of our work, we reviewed the study's conclusions, and in particular we focused more closely on the notion of developing cheese plants in Pennsylvania as a means of aiding dairy producers.

Overall, we agree with the study's conclusion: two additional cheese plants would help Pennsylvania's dairy producers mostly because it would help to move milk supplies, which, as we documented earlier, exceeds demand. Moreover, as we documented in Section IV, cheese is one dairy product that has showed consistent and steady growth in demand over the years. Further still, having cheese plants in Pennsylvania reduces transportation costs for producers making their milk more profitable, which will in turn aid dairy producers.<sup>166</sup> We also recognize the additional economic benefits that would accrue to the state from added jobs and economic investments. While the aforementioned are all positive aspects, there are some confines that also need to be carefully considered and evaluated, which were not fully explored in the report.

First, Pennsylvania is at a competitive disadvantage in cheese manufacturing because two other states already produce substantially more cheese than Pennsylvania. As shown in Exhibit 32, using production data we obtained from the USDA, Pennsylvania currently ranks sixth in total cheese production. While this sounds like a positive statistic, it must be noted that it is rather distant from the two leading cheese manufacturing states of Wisconsin (first) and California (second). As of April 2019 (the most recent data available), these two states produced 46 percent of all cheese in the United States.

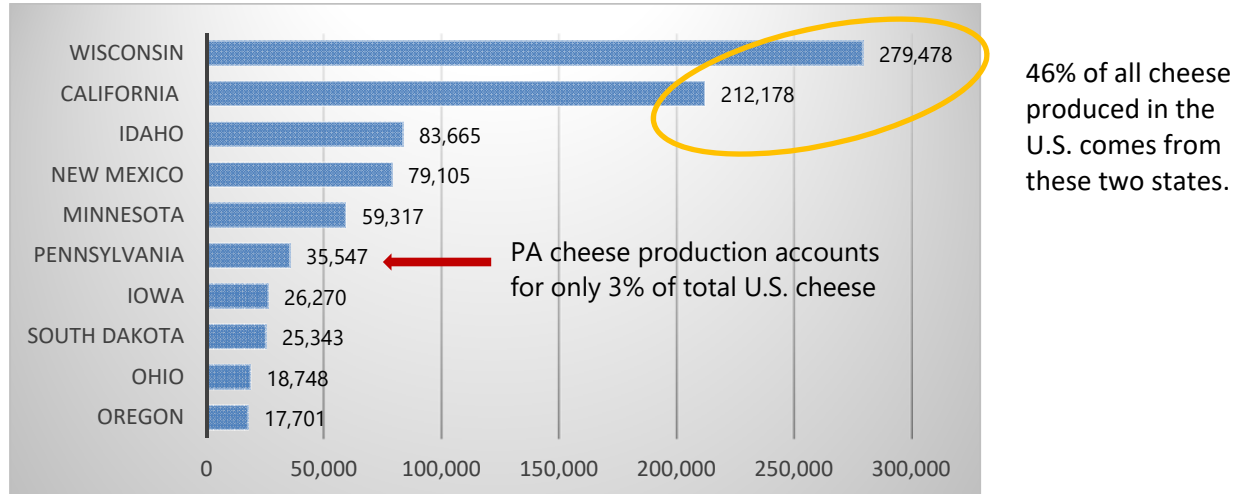
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<sup>165</sup>*Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry*, June 2018. The study's authors were: Chuck Nicholson, Mark Stephenson, and Andrew Novakovic, all of whom are experts in dairy economics and policy.

<sup>166</sup> Milk used in cheese production is, however, less profitable than Class I fluid milk.

Exhibit 32

**Top 10 Cheese Producing States  
(April 2019 – 1,000 pounds)**



Source: Developed by LBFC staff from information obtained from the USDA's National Agricultural Statistics Service, Dairy Products, April 2019.

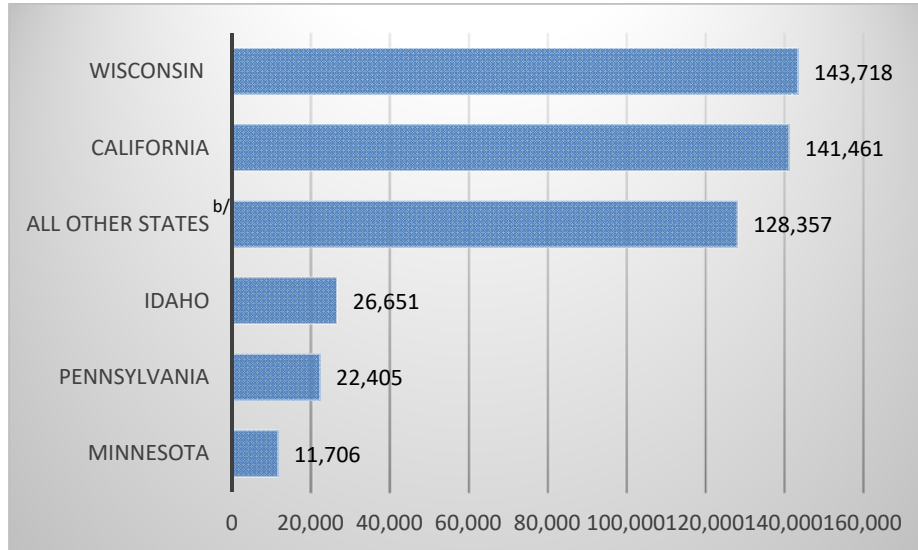
Moreover, as shown above, Pennsylvania's total cheese production is just three percent of the nation's total cheese production, which is overwhelmingly produced by plants in Wisconsin and California. In fact, Wisconsin's cheese production is more than seven times that of Pennsylvania's. As such, it will be very difficult for Pennsylvania to attract new cheese plants when there are already existing plants in Wisconsin and California that could more readily expand to meet any increase in demand. It also worth noting that these states already have high milk production capacity—and in the case of Wisconsin specifically—although Wisconsin has seen a decline in dairy farms, the capacity is not migrating to other states; it is staying within the state's borders.

We also used USDA data to look more closely at specialty cheeses, specifically total Italian cheeses (i.e., all Italian cheese varieties), and more specifically mozzarella cheese. As shown in Exhibit 33, here again, Pennsylvania is a leading producer in these cheese categories, but it is still distant from Wisconsin for total Italian cheeses, and from California, which is the leading mozzarella cheese producer.

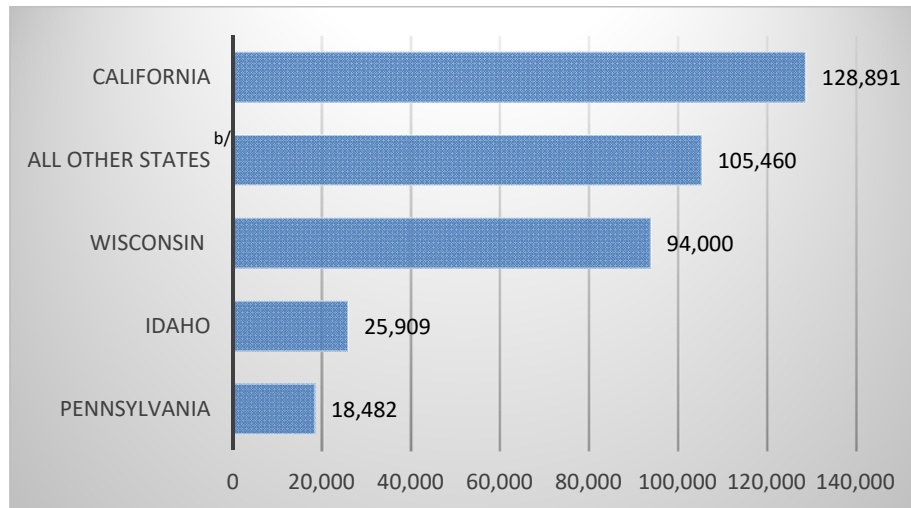


Exhibit 33

**Top Total Italian Cheese Producing States <sup>a/</sup>**  
(000 pounds)



**Top Mozzarella Cheese Producing States**  
(000 pounds)



Notes:

a/ Includes all varieties of Italian cheese (mozzarella, provolone, parmesan, ricotta, etc.).

b/ To protect producer confidentiality, the USDA does not publish state information where there are only three or less producers in that state. This category is the sum of all these states.

Source: Developed by LBFC staff from information obtained from the USDA's National Agricultural Statistics Service, Dairy Products. Data is as of April 2019.

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*Attracting private development in cheese plants located in Pennsylvania will help increase demand for Pennsylvania producers. However, capacity already exists in other states and cheese stocks are at an all-time high—these facts will need to be countered to attract new development.*

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It is also worth noting that in terms of production, Italian-type cheeses are currently the most popular cheese category. As of April 2019, 474,298,000 pounds of Italian-type cheeses were produced in the United States. American-type cheeses (i.e., cheddar, colby, monterey jack) were a close second at 431,877,000 pounds.

Secondly, while we do not dispute that demand for cheese is present and even growing in the United States, it should be noted that cheese has a much longer shelf life than other dairy products, particularly fluid milk. As a result, the recent period of low milk prices has been beneficial for cheese manufacturers because they have been able to increase cheese storage stocks. According to experts, manufacturers of aged cheeses, such as aged cheddar, took advantage of the opportunity to put cheese that will be cured for several months, or even several years, in storage.<sup>167</sup> As a result, about 1.4 billion pounds of American, cheddar, and other cheeses are socked away at cold-storage warehouses across the country, the biggest stockpile since federal record-keeping began a century ago.<sup>168</sup>

Adding to the cheese glut have been recent retaliatory trade tariffs from China and Mexico. Cheese shipments to Mexico were down 10 percent annually, and shipments to China were down 63 percent annually in 2018.<sup>169</sup> As a result, while cheese manufacturers ramped up production with low milk prices, the somewhat unexpected tariff/export issues, have left manufacturers with significant over-supplies for existing United States demand. According to research conducted by Texas A&M University, which conducted various economic models on the impact of Mexico and China's trade tariffs, five year losses to dairy farmers range from \$2.07 billion to \$13.87 billion.<sup>170</sup> Pennsylvania producers would not be immune to a portion of these impacts, but we could not isolate a Pennsylvania-only estimate accurately.

In the end, additional cheese plants would be beneficial to Pennsylvania's dairy producers, but it will be difficult to attract development in these new plants when available capacity is already located in Wisconsin and California. Further, cheese stocks are already at an all-time high, and with the ongoing trade issues limiting export development, manufacturers may not be looking to expand production capacity. Nevertheless, if policymakers can entice development, knowing these aforementioned issues are present, Pennsylvania may be able to make inroads on future production capacity from other states.

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<sup>167</sup> Ledman, Mary and Bailey, Tom. Rabobank, *Say Cheese! Rising Demand Drives growth in U.S. Milk Production*, January 2019.

<sup>168</sup> Haddon, Heather. *Marketwatch: American, cheddar and other cheese piling up in the U.S. as trade slows and tastes change*, December 17, 2018.

<sup>169</sup> Ibid.

<sup>170</sup> Ribera, Luis; Adcock, Flynn; Mu, Jianhong. *Estimated Economic Impacts of Retaliatory Tariffs by China and Mexico on U.S. Dairy Products*, Center for North American Studies, Texas A&M University, September 2018.

## **Recommendation #6 – Further Develop Pennsylvania's Identity and Uniqueness for Fluid Milk**

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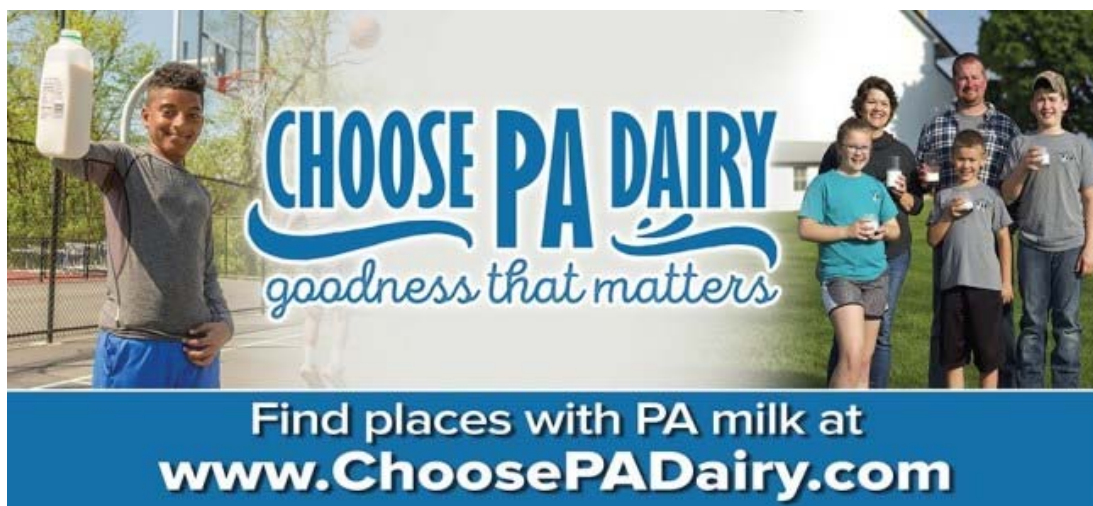
In addition to R&D, as mentioned in Recommendation #4, the Pennsylvania brand needs a strong marketing campaign. This campaign is not simply a message for consumers to drink more milk. The campaign needs to distinguish Pennsylvania as a fluid milk state, highlighting its historical and strong ties to agriculture, and why that benefits the consumer.

Pennsylvania, through a partnership involving the CDE, the PA Dairy-men's Association, PDA, and the American Dairy Association-Northeast, has undertaken a "joint promotional campaign with a goal to increase consumer awareness about the year-round availability of local milk, how to purchase it, and the incredible health benefits of consuming fluid milk."<sup>171</sup> This campaign, and its slogan, "Goodness that Matters" is an outstanding first-step in promoting Pennsylvania's dairy industry. Similarly, the "PA Preferred" program has targeted the uniqueness of many Pennsylvania products, including dairy. An example of a billboard highlighting the Choose PA Dairy message is shown in Exhibit 34.

### **Exhibit 34**

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#### **Billboard Promoting Choose PA Dairy**



Source: *Choose PA Dairy* campaign website.

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<sup>171</sup> See [www.choosepadairy.com/partners](http://www.choosepadairy.com/partners).

This campaign is important to Pennsylvania dairy producers, but the message could be expanded beyond just Pennsylvania's borders to surrounding states. This would serve to promote the identity of Pennsylvania's dairy industry.

One area that the campaign could expand is by furthering the message about Pennsylvania's "dairy uniqueness" and tying it to existing consumer demand for food identity and locality. For example, there has been a well-documented shift in consumer demand to local food sources, also known as the concept of "farm to table." A quick summary of literature on the topic follows:<sup>172</sup>

- Consumers place a high value on the "local" attribute compared to other value-added claims. (Such as organic)
- [Consumers] want to know where their food comes from, how it was made and by whom. They want the transparency that is required to know its source.
- [Consumers are] even willing to pay a little more for the confidence that their food purchases help to create jobs and promote local economies; safeguard the environment, protect groundwater and preserve American farmland; and support proper animal treatment.
- In many regions across the country, the infrastructure that connects family farmers to the growing demand for local product – the aggregators, processors, distributors, and marketers – no longer exists to service regional markets. Access to healthy food has dwindled in both rural and urban communities. Today's food entrepreneurs have the passion and the commitment to fill these gaps. What they need is financing and strategic assistance to help them accelerate their growth, scale their businesses, and achieve long-term success.

Pennsylvania's dairy industry has also seen a much slower shift in large scale dairy farming compared to other states. Some may view that trend as negative, but it may actually be an opportunity to highlight Pennsylvania's uniqueness.

We reviewed the current promotional efforts of the Choose PA Dairy program—and while the efforts are well produced and informative—the current television ads are public service announcements that are targeted to Pennsylvania consumers. It is important to target Pennsylvanians about

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<sup>172</sup> Printezies, Iryna, et al. The price is right!? A meta-regression analysis on willingness to pay for local food. PLoS ONE. 2019.

the availability of locally available dairy products; however, we also think it is important to access markets outside of the state's borders and better inform them of the availability of Pennsylvania's dairy products.

Stated differently, the campaign should further identify Pennsylvania as a leader in quality and wholesomeness, so consumers in other states demand Pennsylvania fluid milk. This can best be accomplished by having consumers from other states connect to the identity of Pennsylvania milk. For example, just as Wisconsin has successfully identified itself for cheese production, or Florida for orange juice, or Idaho for potatoes, and Georgia for peaches—Pennsylvania needs to better position itself as a unique leader in quality fluid milk production and processing.

It should also be noted that the expanded "Choose PA dairy" should not be viewed as a short-term campaign. It will take an organized, determined, and directed effort to build and deliver the message, which could take several years. As such, we think this area should be further pursued and strategically developed by the newly formed Dairy Future Commission with assistance from PDA.

## **C. Improve Milk Market Oversight**

Throughout this report, we have discussed the importance of the PMMB in protecting Pennsylvania's producers. While we believe the PMMB has an important and justified role, which should not be eliminated, we also believe there are some common-sense changes that could be implemented. These recommendations would further the PMMB's mission and help to alleviate many of the concerns we heard from stakeholders during our research for this study. In some cases, these recommendations will require statutory changes, in other areas, the recommendations could be made by official order of the PMMB, or by a change in regulations.

### **Recommendation #7 – Expand the Size of the Milk Marketing Board**

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The "three-legged stool" is a well-known term in the dairy industry to refer to the interconnectedness of the industry and its three major players: processors, producers, and retailers. Without any one of those players the "stool" or industry, is subsequently unbalanced.

During the course of this study, we came to learn that there are actually four legs to the dairy industry stool, with the fourth leg being consumers. Each of these "legs" is very much dependent on the other—and yet—the PMMB, which is vested with regulating the "entire milk industry of the

Commonwealth" currently only provides representation for producers (2) and consumers (1).<sup>173</sup>

We reviewed other Commonwealth boards and commissions listed on the Commonwealth of Pennsylvania Organization Chart to compare the number of members, as shown in Exhibit 35.

### Exhibit 35

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#### **Pennsylvania State Boards/Commissions Membership**

No. of Members	Board/Commission
3	<ul style="list-style-type: none"><li>• Board of Claims</li><li>• Board of Finance and Revenue</li><li>• Milk Marketing Board</li><li>• Liquor Control Board</li><li>• State Civil Service Commission</li><li>• State Tax Equalization Board</li></ul>
5	<ul style="list-style-type: none"><li>• Board of Pardons</li><li>• Environmental Hearing Board</li><li>• Public Utility Commission</li><li>• Turnpike Commission</li></ul>
7	<ul style="list-style-type: none"><li>• State Ethics Commission</li></ul>
8	<ul style="list-style-type: none"><li>• Board of Game Commissioners</li></ul>
9	<ul style="list-style-type: none"><li>• Juvenile Court Judges' Commission</li></ul>
10	<ul style="list-style-type: none"><li>• Fish and Boat Commission</li><li>• Gaming Control Board</li><li>• State Horse Racing Commission</li></ul>
11	<ul style="list-style-type: none"><li>• Human Relations Commission</li><li>• Municipal Retirement Board</li><li>• State Employees Retirement Board</li></ul>
14+	<ul style="list-style-type: none"><li>• Historical and Museum Commission</li><li>• Public Schools Employees' Retirement Board of Trustees</li><li>• Commission on Crime and Delinquency</li></ul>

Source: Developed by LBFC staff from information obtained from the listed boards.

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As shown in Exhibit 35, there are other Commonwealth boards or commissions with three members; however, the majority have five or more members.

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<sup>173</sup> It is worth noting that only the consumer representative is required by the Milk Marketing Law. As a matter of practice, the other two appointed members have been representatives of the producer community, but this appointment is not required in statute.

We recommend amending the Milk Marketing Law to increase the PMMB membership. A total of five PMMB members would provide a better balance and representation of Pennsylvania's dairy industry. Specifically, we recommend the following:

- Two (2) members representing producers.
- One (1) member representing consumers.
- One (1) member representing processors.
- One (1) member representing retailers, or food merchants.

Having two producer members on the PMMB, compared to one representative from each of the other stakeholder groups, is appropriate given that PMMB's mission is generally to protect Pennsylvania's dairy producers. Currently, PMMB members are appointed by the Governor and confirmed by the Pennsylvania Senate to six year terms. These newly added members should follow that same requirement and with similar terms as the other three PMMB members. The proposed premiums collected by the PMMB on plant-based milks could also be used to pay for the increased costs in adding these new members.

## **Recommendation #8 – Change the Name of the Milk Marketing Board**

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As we conducted our study, one often raised issue was this: The PMMB doesn't "market" milk—so why does the PMMB have "marketing" in its name? The answer to this question lies with how one defines marketing. According to the American Marketing Association and its Board of Directors, marketing is precisely defined as follows:<sup>174</sup>

Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large.

Within this true definitional context, marketing is more analogous to product advertising and increasing the strategic long-term value of commercial products. These are certainly important roles that would be beneficial to Pennsylvania's dairy producers, but these aspects are not a responsibility of the PMMB. These sort of promotional or advertising campaigns are conducted through the dairy "check-off" program, which is funded by all dairy producers through a 15 cent assessment paid by dairy

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<sup>174</sup> American Marketing Association, approved July 2013.

producers (and 7.5 cents by dairy importers) on every hundred pounds of milk.<sup>175</sup>

Conversely, marketing within the context of the PMMB, refers to the regulation of the market for milk, or more specifically, the producer, wholesale, and retail price of milk within Pennsylvania's borders. As such, it can be confusing for producers (and the general public) as to what exactly the PMMB's role is vis-à-vis marketing.

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*The PMMB is often confused with having a "marketing" role in Pennsylvania—it does not. Milk Control Board is a better description – and is consistent with other state agency naming conventions.*

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To simplify this confusion, we recommend the Milk Marketing Law be amended to rename the PMMB. More specifically, we recommend the PMMB's name be changed to the Pennsylvania Milk Control Board to better reflect its statutory duty. This renaming would also place it more in line with the naming conventions used for other significant regulatory bodies, such as the Gaming Control Board or the Liquor Control Board.

We reviewed the membership listing from the International Association of Milk Control Agencies (IAMCA) and found that among the 24 regular and associate members, only Colorado and Pennsylvania use "marketing" in their agency name. Colorado's Milk Marketing Board, however, only establishes a wholesale price for milk, unlike the PMMB which sets producer, wholesale, and retail prices for milk. Colorado's board also lacks many of the other regulatory responsibilities required of the PMMB.

It should be noted that the PMMB was at one time called the Milk Control Board; consequently, this recommendation is actually a return to its original title. We also recognize that an agency name change is unlikely to provide any direct tangible benefit to Pennsylvania's producers. Nevertheless, we think that coupled with the other recommendations contained in this report, now is an appropriate time to rename the agency—and to do so with a name more befitting its responsibilities.

## **Recommendation #9 – Improve the Transparency and Distribution of the PMMB's Over-Order Premium**

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Another often cited issue from producers is the lack of transparency with how the OOPs are collected and distributed by dairy cooperatives. As discussed in Section III of this report, the OOP is an additional fee collected on fluid milk that is produced, processed, and sold in Pennsylvania. For a producer that sells their milk directly to a dealer/processor this amount appears as a line-item on the producer's milk check.

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<sup>175</sup> The USDA oversees the checkoff program. The collected funds are used at promoting dairy consumption and protecting the good image of dairy farmers, dairy products, and the dairy industry.



For a producer that is a member of a cooperative, the amount the producer is receiving is less clear because the premium is collected by the cooperative and then redistributed as outlined by the cooperative agreement. Generally, cooperatives share Pennsylvania-collected premiums with Pennsylvania producers, but the transparency by which this occurs has been questioned.

On May 1, 2019, based on a petition filed before the PMMB, the Board held a hearing on this matter.<sup>176</sup> Although the PMMB was initially petitioned to issue an official order, the PMMB determined that a change to its regulations was the best way to proceed. Accordingly, the PMMB proposed a regulatory rule change as follows:<sup>177</sup>

143.15. Cooperative disclosure of over-order premium.

Cooperatives shall show by line item on their monthly statements to dairy farmers marketing milk through the cooperative the specific amount of the Pennsylvania Milk Marketing Board over-order premium being paid.

We attended the hearing, and we reviewed testimony that was provided during the hearing. Overall, there were pros and cons to the proposed regulatory change. On the pro-side of the equation, producers believed the issue would provide much greater transparency as to exactly how much OOP they were receiving. Moreover, the line-item requirement would ease their fears of the Pennsylvania OOP being comingled with milk sales from out-of-state producers. On the con-side of the equation, representatives from the cooperative community testified that the additional measures were unnecessary as they regularly communicate with producers about how the OOP is distributed. Further, one cooperative representative was concerned about the added costs that would be incurred through necessary changes needed to the cooperative's accounting software, if the regulation was adopted.

After reviewing this issue in greater detail, we believe the PMMB has the authority to issue a general order requiring cooperatives to provide this line item requirement. This authority lies within the Milk Marketing Law, specifically Section 301, which authorizes the board with "power to regulate the entire milk industry." Further still, Section 608, which requires a statement for the payment of milk, and which shall set forth such information as may be required by the board. That being said, we recognize too that the regulatory process provides for greater inclusiveness in the decision-making process, and it allows the PMMB to remain neutral through the process—these are important considerations as this amendment is evaluated.

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<sup>176</sup> The petition was filed by Representative Lawrence on January 3, 2019.

<sup>177</sup> The regulation change would be to Annex A, Title 7 Agriculture, Part VI Milk Marketing Board, Chapter 143 - Transactions between dealers and producers payment.

Regardless of the option chosen (i.e., official order, regulatory change, or statutory change), after reviewing this issue and discussing it with various stakeholders, we believe there is merit to this requirement. All Pennsylvania producers should benefit from the same level of accountability and transparency, regardless of whether they belong to a cooperative or sell their milk directly to a dealer. Moreover, the Milk Marketing Law defines cooperatives as dealers, therefore such entities should be held to those same reporting standards. Finally, given that the OOP is essentially a tax imposed upon Pennsylvania consumers, as a matter of good governance, as much transparency as possible should be given to how those funds are distributed.

Beyond this regulatory rule change, however, we also believe additional discussions should be held as to the manner in which the OOP is collected and paid to producers. As we discussed in the previous recommendations, licensing retailers and capturing more accurate milk sales data would aid this endeavor. We also believe there are better mechanisms for collecting the premium. One of these means would be to collect the premium through the Department of Revenue.<sup>178</sup> In this way, transparency is improved, and added economies and efficiencies may accrue to dealers because they are relieved of the accounting burden of making proper OOP payments.

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<sup>178</sup> See House Bill 1224, currently before the Pennsylvania House Agriculture and Rural Affairs Committee. This legislation provides this method.

## Appendix A - Senate Resolution 384

PRINTER'S NO. 1839

THE GENERAL ASSEMBLY OF PENNSYLVANIA

# SENATE RESOLUTION

No. 384 Session of  
2018

INTRODUCED BY SCHWANK, ARGALL, BROWNE, GORDNER, HUGHES, WARD,  
STREET, FOLMER, KILLION, SABATINA, WHITE, AUMENT AND BLAKE,  
JUNE 11, 2018

REFERRED TO AGRICULTURE AND RURAL AFFAIRS, JUNE 11, 2018

### A RESOLUTION

- 1 Directing the Legislative Budget and Finance Committee to
- 2 conduct a study and issue a report making recommendations for
- 3 initiatives to assist dairy producers in this Commonwealth.
- 4 WHEREAS, Years of lower milk prices and decreasing sales of
- 5 packaged beverage milk products have placed dairy producers in
- 6 this Commonwealth and others across the country under severe
- 7 financial stress; and
- 8 WHEREAS, Many dairy producers in this Commonwealth and
- 9 across the country are forced to borrow against the equity in
- 10 their farm to continue the dairy operations; and
- 11 WHEREAS, Due to these factors, the typical response to lower
- 12 milk prices, increasing production to increase revenue, no
- 13 longer provides sufficient economic relief and overall may add
- 14 to a milk surplus, adversely affecting the prices that the
- 15 producer receives; and
- 16 WHEREAS, Increasingly, dairy producers are forced to leave
- 17 dairy production due to the financial stress; therefore be it
- 18 RESOLVED, That the Senate direct the Legislative Budget and

Appendix A Continued

1 Finance Committee to conduct a study and issue a report making  
2 recommendations for measures to assist dairy producers in this  
3 Commonwealth in response to decreasing demand for dairy products  
4 and decreasing milk prices; and be it further

5       RESOLVED, That the Legislative Budget and Finance Committee  
6 identify the measures proposed or undertaken by the Pennsylvania  
7 Milk Marketing Board and the Pennsylvania Department of  
8 Agriculture to assist dairy producers in this Commonwealth; and  
9 be it further

10       RESOLVED, That the Legislative Budget and Finance Committee  
11 identify and examine the statutes, best practices and proposed  
12 measures of other states to assist their dairy producers during  
13 these economic times; and be it further

14       RESOLVED, That the Legislative Budget and Finance Committee  
15 identify current factors that contribute to the decrease in  
16 dairy product consumption and milk prices; and be it further

17       RESOLVED, That the Legislative Budget and Finance Committee  
18 identify the number and types of specialty dairy products, such  
19 as lactose-free milk, that are sold in this Commonwealth by out-  
20 of-state dairy producers and examine how milk produced in this  
21 Commonwealth can be utilized to meet the increased demand for  
22 this specialty dairy products market; and be it further

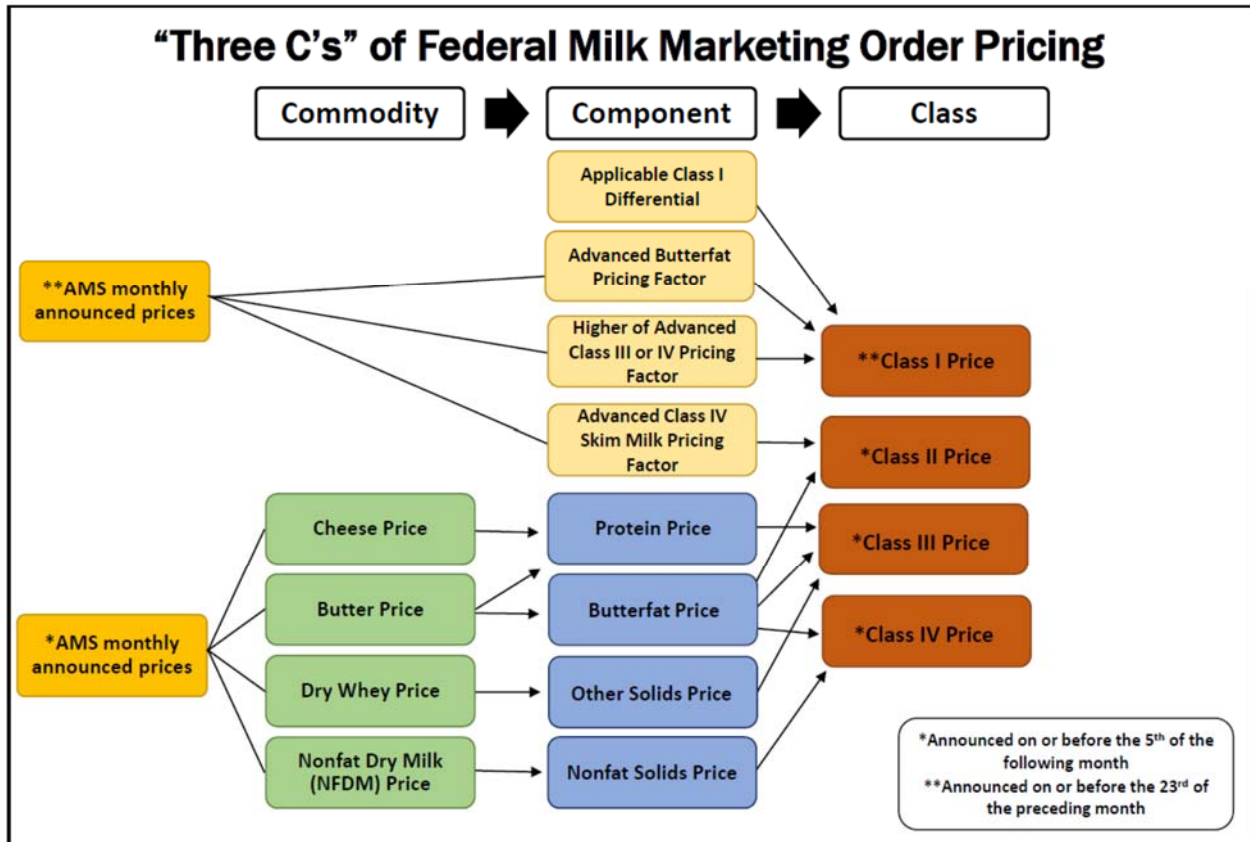
23       RESOLVED, That the Legislative Budget and Finance Committee  
24 examine the testimony submitted at the public hearings held by  
25 the Pennsylvania Milk Marketing Board regarding the Pennsylvania  
26 dairy market; and be it further

27       RESOLVED, That the Legislative Budget and Finance Committee  
28 report all findings and conclusions on this issue to the Senate  
29 within 12 months of the adoption of this resolution.

20180SR0384PN1839

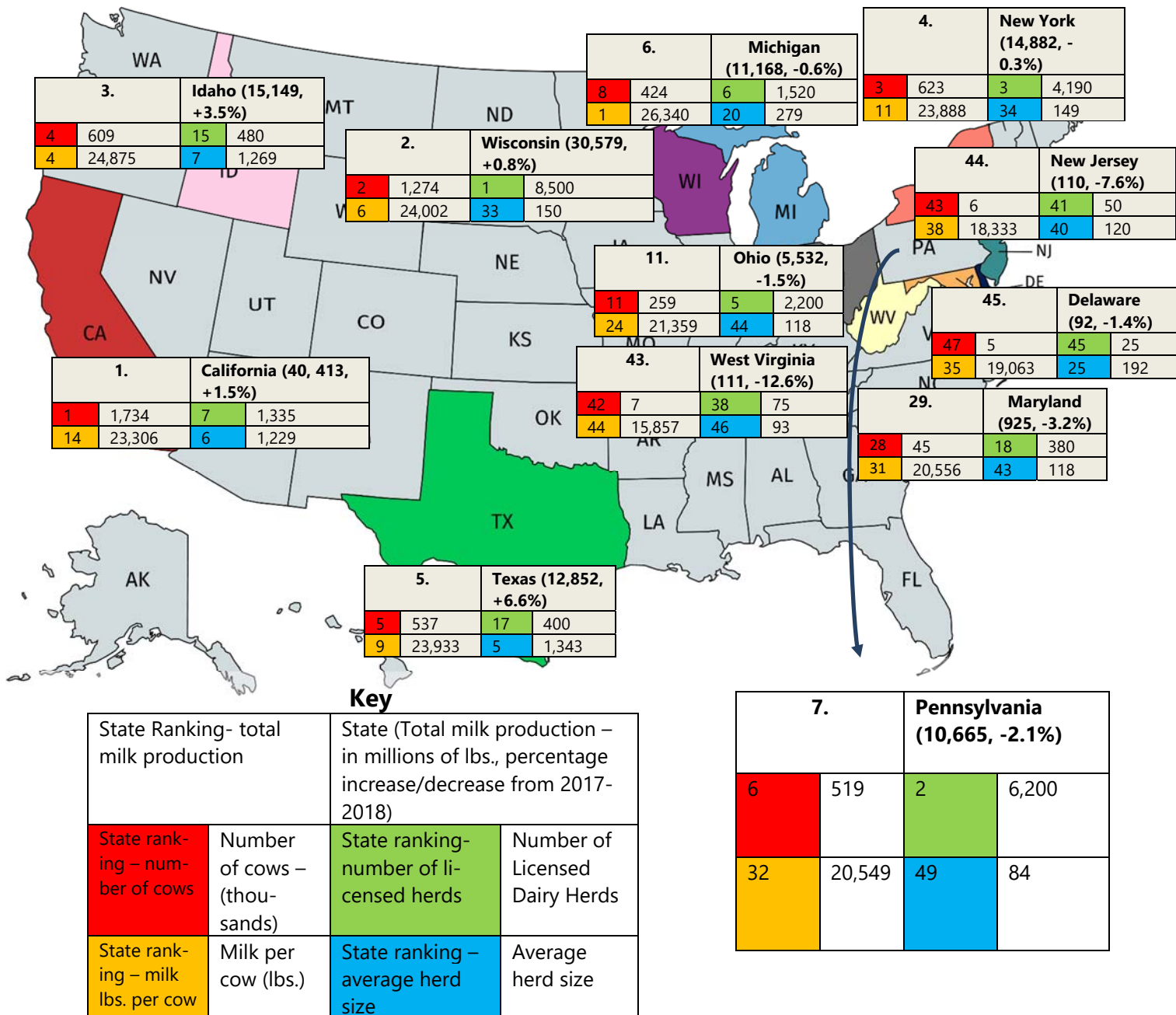
- 2 -

## Appendix B - Federal Milk Pricing Overview



Source: Developed by LBFC staff from information obtained from the USDA.

## Appendix C - Dairy Statistics for States Bordering Pennsylvania and the Top Six Milk Producing States (CA, WI, ID, NY, TX, and MI)



Source: Developed by LBFC staff from information obtained from the USDA's February 2018 Milk Production Report.



## **Appendix D – Response from the Pennsylvania Milk Marketing Board**



Commonwealth of Pennsylvania  
Milk Marketing Board

CHAIRMAN

2301 North Cameron Street  
Harrisburg, Pennsylvania 17110-9408  
717-787-4194

September 10, 2019

Via email to [sfickes@palbfc.us](mailto:sfickes@palbfc.us) and first class mail

Patricia A. Berger, Executive Director  
Pennsylvania Legislative Budget and Finance Committee  
400 Finance Building  
613 North Street  
Harrisburg, PA 17105-8737

Dear Ms. Berger:

Thank you for the opportunity to review the Legislative Budget and Finance Committee's Study of Pennsylvania's Dairy Industry. The Board appreciates the thoroughness and accuracy of the Study. As you know, Pennsylvania's dairy industry is inseparably intertwined with the national and global dairy industries. The Board would like to compliment your Staff on the incredible work they did to understand and place into context Pennsylvania's unique dairy industry and the challenges and opportunities that lie ahead.

The Board agrees with the Study's conclusion that the Milk Marketing Law and Board are beneficial to Pennsylvania producers. That being said, we have been working over the past year-plus to identify potential areas of improvement and welcome the Study's additional suggestions. In anticipation of the Study's formal release, we have some observations regarding the Study's recommendations.

First, we agree that the suggestion to regulate plant-based drinks as a new class of milk would be a unique approach. The Board has not analyzed this idea in any detail, but we do think it is a suggestion that the legislature and Dairy Futures Commission should consider, and we look forward to working with them if they decide to pursue it.

Second, while the Board broadly agrees with the suggestion to license retailers, this is a case where the devil's in the detail. Licensing retailers would certainly provide data that are currently lacking, but it would also provide data that we already have from other sources (dealer reports of in-state wholesale transactions, for instance). The primary data that we don't have currently involves importing retailers – stores selling milk that they purchase at wholesale outside Pennsylvania. The Board understands that there are issues involved in attempting to target a

Appendix D Continued

licensing scheme at such data, but we think it is an important consideration to review. As the study notes, the Board has looked at this in the past. We've also, within the past year, revisited this concept and look forward to sharing our ideas with the legislature and the Dairy Futures Commission.

Next, we would like to highlight an important issue regarding expansion of the Board to include a processor member and a retailer member. The Board relies on confidential and proprietary individual processor and retailer information to effectively administer the Milk Marketing Law. Maintaining the confidentiality of this information is so important that it is codified in section 310 of the Law. The regulated community relies on the Board's strict adherence to the confidentiality requirement. Therefore, if the Board were to be expanded as suggested, the member representing processors and the member representing retailers could not be actively engaged in the processing or retailing industries during or after their Board service. Allowing otherwise would provide access to competitors' proprietary information.

Finally, the Study correctly notes that going through the regulatory process to require cooperatives to provide information to their members regarding the amount of over-order premium being paid provides for greater inclusiveness in the decision-making process and allowed the Board to remain neutral through the process; these are among the reasons we chose the regulatory process rather than the official general order process. We have also been working, independent of the Study's recommendation, to develop a number of models demonstrating the effects of various changes to the collection and distribution of the over-order premium. We anticipate sharing these models with the legislature and the Dairy Futures Commission.

We look forward to joining you and the Legislative Budget and Finance Committee for the formal release of the Study and will be ready to answer questions and discuss your suggestions and Pennsylvania's dairy industry.

Sincerely,

A handwritten signature in cursive script, reading "Robert N. Barley". The signature is written in dark ink and is positioned above the printed name.

Robert N. Barley  
Chairman



## Appendix E – Response from the Pennsylvania Department of Agriculture

Note: Portions of the Department's response required us to provide additional clarification. Those areas are footnoted at the bottom of the Department's response.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF AGRICULTURE

September 12, 2019

Legislative Budget and Finance Committee  
P.O. Box 8737  
Harrisburg, PA 17105

**Re: Legislative Budget and Finance Committee, A Study of Pennsylvania's Dairy Industry**

To Whom It May Concern:

The Pennsylvania Department of Agriculture appreciates the opportunity to provide comments on the Legislative Budget and Finance Committee Senate Resolution 384, *A Study of Pennsylvania's Dairy Industry*. The overview of industry challenges will assist current initiatives and provide insight for years to come.

Governor Wolf and his administration recognize the importance of the Pennsylvania dairy industry and its benefits to farm families and commonwealth consumers. To best understand industry challenges, the Administration commissioned the 2017 Pennsylvania Dairy Study and used the data and information from that study to develop the Pennsylvania Dairy Development Plan, the Dairy Investment Program and the Choose PA Dairy Campaign. We are proud of these achievements and value Governor Wolf's support of the Department, Center for Dairy Excellence and Pennsylvania Milk Marketing Board.

Reflecting the oversight of the Federal Milk Marketing Order, it is important to note that the order does not cover all of Pennsylvania. Northeast Federal Order Number 1 manages southeastern Pennsylvania milk pricing, and Northeast Federal Order Number 33 covers the western Pennsylvania landscape. FMMO does not impact northeastern and central Pennsylvania milk pricing.

An additional point of clarification is found on Page 114, under *Raw Milk Sales*. The second sentence reads: "While some states prohibit the sale of raw milk, Pennsylvania allows the sale of raw milk and further places no date restriction on the product." Raw milk does follow restrictions. The regulation at 7 Pa. Code Section 59a.411(a)(3)(i) imposes the same 17-day "sell-by" date for raw milk that is required for pasteurized milk. 1/

Consistent language surrounding the *Study to Support Growth and Competitiveness of the Pennsylvania Dairy Industry* is needed to identify appropriate stakeholders and provide transparency. The nine-part study was commissioned by both the Center for Dairy Excellence and the Pennsylvania Department of Agriculture, which is not consistently reflected throughout the document. Additionally, the experts who conducted the study merit recognition, honoring their work while providing full transparency.

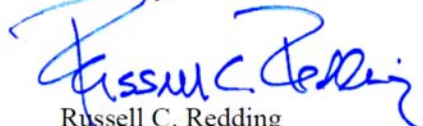
Appendix E Continued

Encouraging entrepreneurship and product innovation allows Pennsylvania processors to diversify while promoting the sale and consumption of dairy goods. The Pennsylvania Dairy Investment Program recognizes the cost associated with technology and is designed to assist small-medium processors with qualified research and investment activities. The language of the document states that “only two” processors received grants, misconstruing the context. Two of the four grant submissions in the processing category were selected to receive funds. All qualified and deserving candidates are eligible for the Pennsylvania Dairy Investment Program.

Consumer trends are changing, reshaping the dairy landscape. While demand for fluid milk has decreased, increased demand in value-added products continues to rise. Responding to market trends is a business practice that farmers and processors recognize and value. Adaptation and innovation have allowed the industry to grow in value-added processing, increasing the sales of yogurt, cheese and dairy desserts. Additionally, consumers are making conscious decisions based on preferences and needs. Plant-based products have seen an increase in sales; however, that does not mean consumers are eliminating dairy in other aspects of their diet. The conversation surrounding plant-based and dairy products is not an ‘either or’ decision, but rather an ‘and,’ encompassing the trends of both facets and consumer demands. 2/

The Pennsylvania Department of Agriculture respectfully submits these comments to the Legislative Budget and Finance Committee. We are grateful for the General Assembly’s collaborative efforts with the Department and industry stakeholders as we all strive to strengthen Pennsylvania’s dairy industry.

Sincerely,



Russell C. Redding  
Secretary

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LBFC Comments Concerning the Department of Agriculture’s Response:

1/ This comment actually refers to page 104. A clarification was added to the report, but the conclusion remains the same: a 17 day sell-by date is arbitrary, and especially so for raw milk.

2/ As shown on Exhibit 26, yogurt and dairy dessert consumption is actually declining, only cheese consumption is increasing. Additionally, as we stated in the report, “half of all American consumers use plant-based milks.” We agree that the issue is not an “either or,” which is why we recommend that plant-based milks be treated as a Class V milk product and fall under the same regulatory authority of the PMMB.