



United States Department of Agriculture

**U.S. Department of Agriculture
Report to Congress**

on the

**Dairy Promotion
and Research Program**

and the

**Fluid Milk
Processor Promotion Program**

2017 Program Activities

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Executive Summary

The enabling legislation of the dairy producer, dairy importer, and fluid milk processor promotion programs requires the U.S. Department of Agriculture (USDA) to submit an annual report to the House Committee on Agriculture and the Senate Committee on Agriculture, Nutrition, and Forestry. The dairy and fluid milk promotion programs are conducted under the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4501 *et seq.*) (Dairy Act); the Dairy Promotion and Research Order (7 CFR § 1150) (Dairy Order); the Fluid Milk Promotion Act of 1990 (7 U.S.C. 6401 *et seq.*) (Fluid Milk Act); and the Fluid Milk Promotion Order (7 CFR § 1160) (Fluid Milk Order), respectively. This report includes summaries of the activities for the dairy and fluid milk programs, including an accounting of funds collected and spent, USDA activities, and an independent analysis of the effectiveness of the programs. Unless otherwise noted, this report addresses program activities for January 1 through December 31, 2017, of the Dairy Promotion and Research Program and the Fluid Milk Processor Promotion Program.

Dairy Promotion and Research Program

Mandatory assessments collected under the Dairy Act totaled \$341.4 million in 2017. The Dairy Board portion of assessments totaled \$117.4 million and the Qualified Dairy Product Promotion, Research, or Nutrition Education Programs (QPs) totaled \$224 million. Expenditures by the Dairy Board and many of the QPs are integrated through a joint process of planning and program implementation to work together on the national, regional, State, and local level. The Dairy Board continued to develop and implement programs to expand the human consumption of dairy products by focusing on partnerships and innovation, product positioning with consumers, and new places for dairy product consumption.

During 2017, the Dairy Board launched *Undeniably Dairy*, a national, multi-year campaign to provide a platform through which the whole dairy community can engage and speak with one voice. The campaign was launched during June Dairy month to “reintroduce” dairy to consumers and showcase the nutrient-rich profile of dairy foods, as well as the dairy industry’s commitment to responsible production and positive local community impact.

The Dairy Board continued its commitment to childhood health and wellness through its *Fuel Up to Play 60* (FUTP60) program and hosted its inaugural *Nourish to Flourish School Meals Summit* (Summit). Summit participants represented 175 schools school organizations committed to strengthening school meals and student participation in meal programs.

Details of the activities of the Dairy Board are presented in Chapter 1. Details of the QPs’ activities can be found in Chapter 4.

Fluid Milk Processor Promotion Program

Mandatory assessments collected under the Fluid Milk Act totaled \$91.7 million in 2017. The Fluid Milk Processor Promotion Board (Fluid Milk Board) continued to administer a generic fluid milk promotion and consumer education program funded by America’s fluid milk processors. The program is designed to educate Americans about the benefits of fluid milk,

increase milk consumption, and maintain and expand markets and uses for fluid milk products in the contiguous 48 States and the District of Columbia. The Fluid Milk Board focused on driving milk consumption and sales through increasing consumer relevance and trust in fluid milk through a renewed focus on helping build milk brands, working with industry partners, launching new campaigns promoting the positive attributes of milk's nutrition, optimizing national partnerships, long-range planning, and a strategic roadmap to stem the decline in fluid milk consumption.

During 2017, the Fluid Milk Board launched the *Milk It!* campaign in an effort to reclaim more than one-half billion gallons of lost fluid milk volume found to be attributed to kids' decreased consumption over the last several years. *Milk It!* is a kids-only campaign focused on reminding kids to choose milk because of the powerful combination of great taste and nutrition, while reinforcing how milk helps them be their best every day.

The Fluid Milk Board continued its partnership with the United States Olympic Committee, naming white milk as an official sponsor of the Olympic Games through 2020. The Fluid Milk Board promoted a variety of messages and ads highlighting milk's 8 grams of protein per 8-ounce serving. Through these messages, the Fluid Milk Board sought to educate the general market and Hispanic consumers on the importance of protein in the morning and milk's essential nutrients. The Fluid Milk Board also continued its efforts to position chocolate milk as an authentic recovery beverage of choice for athletes after strenuous exercise through its *Built with Chocolate Milk* campaign.

The Fluid Milk Order requires the Fluid Milk Board to return 80 percent of the funds received from California fluid milk processors to the California Milk Processor Board. Per the Fluid Milk Order requirement, \$8.2 million was returned to the California Milk Processor Board. The California Milk Processor Board uses the funds to conduct its promotion activities, which include the *got milk?*® advertising campaign. The activities of the Fluid Milk Processor Promotion Program are presented in the Fluid Milk Board section in Chapter 1.

USDA Activities

USDA has oversight responsibility for the dairy and fluid milk promotion programs. The oversight objectives ensure the boards and QPs properly account for all program funds and administer the programs in accordance with the respective acts and orders and USDA guidelines and policies. USDA reviewed and approved all board budgets, contracts, and advertising materials. USDA employees attended all board and committee meetings, monitored all board activities, and were responsible for obtaining an independent evaluation of the programs. Additional USDA responsibilities include nominating and appointing board members, amending the orders, conducting referenda, assisting with noncompliance cases, and conducting periodic program management reviews. The boards reimbursed the U.S. Secretary of Agriculture (Secretary), as required by the Acts, for all of USDA's costs of program oversight and for the independent analysis discussed in Chapter 3. Chapter 2 details USDA's oversight activities.

Independent Analysis

Chapter 3 describes the results of the independent econometric analysis, conducted by Texas A&M University, on the effectiveness of the programs implemented by the Dairy Board and the Fluid Milk Board. The analysis indicates that the generic fluid milk marketing activities sponsored by the programs have mitigated the decline of fluid milk consumption.

In addition, Chapter 3 presents the combined effects of 2017 promotion activities on the consumption of fluid milk, cheese, butter, all dairy products, and dairy exports and includes benefit-cost ratios (BCRs) for dairy producers, dairy importers, and fluid milk processors. For every dollar invested in demand-enhancing activities, the BCRs for producers were as follows: (1) fluid milk – \$3.27, (2) cheese – \$3.94 and (3) butter – \$15.93. The BCR for fluid milk processors attributed to fluid milk promotion activities is \$3.04.

Chapter 1

The Dairy and Fluid Milk Promotion Programs

The Dairy Board and the Fluid Milk Board continued to develop and implement programs to expand the human consumption of fluid milk and dairy products. This chapter details the activities of each board.

1. National Dairy Promotion and Research Board

The mission of the Dairy Board is to coordinate a promotion and research program that maintains and expands domestic and foreign markets for fluid milk and dairy products. The Dairy Board is responsible for administering the Dairy Order, developing plans and programs, approving budgets, and monitoring the program results.

The Secretary appoints 37 members to the Dairy Board, 36 of whom are dairy producers, each representing 1 of 12 geographic regions within the United States, and 1 representing dairy importers. The appointments are made from nominations submitted by individual applicants, producer organizations, importer organizations, general farm organizations, and QPs. Dairy Board members must be active dairy producers or dairy importers. Members serve staggered 3-year terms, with no member serving more than two consecutive terms.

Total Dairy Board income and expenses are provided in the annual independent audit report. The Dairy Board's administrative budget continued to be within the 5-percent-of-revenue limitation required by the Dairy Order. An independent auditor's report for 2017 can be found in the Additional Information section of this report.

The Dairy Board has two standing committees: the Finance Committee and the Executive Committee. The Finance Committee consists of the Dairy Board officers and appointees named by the Dairy Board Chair. The Dairy Board Treasurer chairs the Finance Committee. The full Dairy Board serves as the Executive Committee. The other Dairy Board committees are joint program committees with the United Dairy Industry Association (UDIA).

Dairy Management, Inc. (DMI), the management and staffing corporation, is a joint undertaking between the Dairy Board and UDIA. UDIA is a federation of 19 of the 62 QPs under the direction of a board of directors. The mission of DMI is to drive increased sales of and demand for dairy products and ingredients on behalf of dairy producers and dairy importers. DMI works proactively, in partnership with leaders and innovators, to increase and leverage opportunities to expand dairy markets. The DMI Board of Directors comprises all Dairy Board (37) and all UDIA (45) members. Voting is equalized between the Dairy Board and UDIA.

DMI serves the Dairy Board and the UDIA Board and facilitates the integration of promotion funds through a joint process of planning and program implementation so that the programs on the national, regional, State, and local level work together. The Dairy Board and UDIA Board must separately approve the DMI budget and annual plan before these plans can be implemented.

During 2017, DMI continued to implement a national staffing structure to plan and execute the national programs.

DMI funds 1- to 3-year research projects supporting marketing efforts. Six Dairy Foods Research Centers and one Nutrition Institute provided much of the research in 2017. Universities and other industry researchers throughout the United States compete for these research contracts. A description of the research objectives and locations can be found in the Additional Information section of this report.

The joint Dairy Board and UDIA Board committee structure provides the framework for DMI program activities. The Dairy Board and UDIA Board Chairs assign their respective board members to the following four joint program committees: Research and Insights; Health and Wellness; Export and Ingredients; and Producer Relations and Consumer Confidence. Each committee elects a chair and vice-chair. The DMI Board and joint committees set program priorities, plan activities and projects, and evaluate results. During 2017, the Dairy Board and UDIA Board met jointly six times.

DMI hosted dairy director regional planning forums across the country to review and create marketing strategies for the unified dairy promotion plan in 2017. These forums are designed to create one unified dairy promotion plan and allow opportunities for grassroots dairy producers to ask questions, raise concerns, and offer thoughts on the plan's direction and development.

The following information describes the Dairy Board and UDIA Board activities and initiatives implemented in 2017.

National Dairy Council

The National Dairy Council® <http://www.nationaldairycouncil.org> (NDC) is the nutrition marketing arm of DMI and has been the leader in dairy nutrition research, education, and communication for more than 100 years. NDC provides timely, scientifically sound nutrition information to media, physicians, dietitians, nurses, educators, consumers, and other health professionals. Additionally, NDC funds independent research to aid in the ongoing discovery of information about dairy foods' important role in a healthy lifestyle. This research provides insights to industry for new dairy product innovation.

In 2017, NDC included a "sustainable nutrition" component to its areas of focus. Sustainable nutrition is the intersection of agriculture, food production, nutrition, and health and understanding how food nourishes the population while contributing to a healthy economy and environment.

Health professional outreach remained a critical component of NDC. The American Academy of Family Physicians, the American Academy of Pediatrics, the Academy of Nutrition and Dietetics, the National Medical Association, the School Nutrition Association, and the National Hispanic Medical Association all continued their support and partnership with NDC.

As an extension of its online engagement with health professionals, and consumers, NDC published articles on its website and contributed to the DairyGood.org blog. Blog contributors include NDC registered dietitians, Ph.D. nutritionists, and communication experts, as well as guest nutrition and health and wellness experts. Through the articles and blog posts, NDC provides the latest news, analysis, and opinions on dairy-related nutrition and health research.

NDC continued its partnership with Feeding America, in 2017, to address food insecurity. Limited or uncertain access to food is a major concern for 41.2 million Americans, including 13 million children. Milk is one of the least donated items to food banks, primarily due to its perishability and refrigeration requirements. As part of the partnership, Feeding America set a goal of increasing the amount of milk in its network by 25 million pounds, which would equal an additional 2.9 million gallons. NDC and Feeding America have worked to develop strategies to increase milk and dairy product donations to food banks. The Milk2MyPlate program, which helps provide milk directly to food banks, delivered more than 600,000 pounds of milk in 2017. Additionally, the Great American Milk Drive, a partnership with the Milk Processor Education Program (MilkPEP) resulted in 380,000 pounds of donated milk in 2017.

Fuel Up to Play 60

Fuel Up to Play 60 (FUTP60) is an in-school program combining the nutrition expertise of NDC and the fitness expertise and star power of the National Football League (NFL) to combat childhood obesity and provide youth with resources necessary to improve their personal health and school nutrition and wellness environment. FUTP60 is based on the USDA's Dietary Guidelines for Americans that recommends the consumption of low-fat and fat-free dairy foods; more fruits, vegetables, and whole grains; and getting 60 minutes of daily physical activity.

During the 2017 school year, FUTP60 reached more than 38 million students in more than 73,000 schools. Students and schools joined the program by signing up at www.fueluptoplay60.com. Through the enrollment, students and schools gained access to a School Wellness Kit containing in-school promotional materials and a "Playbook" containing healthy eating and physical activity strategies or "plays." Each of the "plays" could be tailored to individual school health and wellness needs. Students were encouraged to form teams, with supervision from an adult program advisor, to carry out the "plays" and generate excitement for making healthy changes throughout the student body.

School Meals Summit

In 2017, FUTP60, along with the Urban School Food Alliance, hosted partners, students, and parents for its inaugural *Nourish to Flourish School Meals Summit* (Summit). The Urban School Food Alliance, created by school foodservice professionals to address the unique needs of large schools, includes 11 of the Nation's largest school districts, 5,600 schools, representing 3.7 million students and 631 million school meals annually.

The Summit brought together over 250 participants from 175 schools and school organizations committed to strengthening school meals and student participation in meal programs. Using the Appreciative Inquiry process, Summit participants formed teams and developed 12 projects to

evaluate, determine best practices, and encourage improvement and participation in school meals.

GenYOUth Foundation

The *GenYOUth Foundation* (GenYOUth), launched in 2011 by NDC, is a nonprofit organization whose mission is to create a movement that will inspire youth to develop healthier eating and physical activity behaviors. GenYOUth works with schools, communities, and business partners to develop and support programs that create lasting changes in the child health and wellness arena, including FUTP60.

GenYOUth continued its Adventure Capital (AdCap) program in 2017. AdCap is an entrepreneurship program designed to empower students to create and pitch ideas, for funding, to improve nutrition and physical activity in their schools and communities. Through a partnership with software solutions company SAP, students design projects on a digital platform and team up with mentors.

U.S. Dairy Export Council

DMI's export enhancement and ingredient programs are implemented by the U.S. Dairy Export Council (USDEC). In 2017, USDEC announced the "Next 5%" plan to increase the volume of U.S. dairy exports from the equivalent of 15 percent of U.S. milk solids to 20 percent. One key part of the plan is to assist the U.S. dairy industry in becoming more customer-centric and demand driven. USDEC will create resources to encourage members to become consistent suppliers in export markets and encourage local partnership engagement. The "Next 5%" aligns with USDEC's continued focus on maximizing its resources to members and aligning with a shifting global business environment.

USDEC has representatives in 10 offices who provide support in identifying opportunities and monitoring regulatory activities: Washington, D.C.; Mexico City, Mexico; São Paulo, Brazil; Brussels, Belgium; Beirut, Lebanon; Tokyo, Japan; Seoul, South Korea; Hong Kong and Shanghai, China; Ho Chi Minh City, Vietnam; and Singapore. USDEC is headquartered in Arlington, Virginia.

USDEC's ingredient program supports dairy product and nutrition research, ingredient applications, development, and technical assistance for the dairy, food, and beverage industries. Dairy, food, and beverage manufacturers use this program to locate knowledge, laboratory, and professional resources to help develop or improve foods using dairy ingredients.

Innovation Center for U.S. Dairy

In 2008, dairy producers, processors, and manufacturers entered into an unprecedented agreement to form the Innovation Center for U.S. Dairy (Innovation Center). The goal of the Innovation Center is to collaborate on industry issues and accelerate industry innovation throughout the supply chain to increase sales in the competitive consumer marketplace.

In 2017, the Innovation Center Board of Directors continued to gather insights to better understand current and future issues and opportunities facing the dairy industry and set priorities. Based on the assessment, the Innovation Center developed a social responsibility plan with seven focus areas, and corresponding committees, to benefit the dairy community, its customers, and consumers:

- Animal Care
- Unified Messaging and Communications
- Environmental Stewardship
- Food Safety
- Global Insights and Innovation
- People and Community
- Sustainable Nutrition

The committees set goals and aligned efforts on best practices and next steps.

Food Safety

The Innovation Center's Food Safety committee works across all aspects of milk production and processing with the goal of reducing food safety risks and ensuring dairy products are safe to consume. Committee members provide input on and help promote research and science-based food safety tools; design and coordinate food safety training; and develop guidance, assessment materials, and metrics for dairy processors.

In 2017, the committee focused on artisan and farmstead cheesemakers, who represent a growing segment of cheese production with more than 1,000 processors in the United States. To reach the processors, the Innovation Center partnered with the American Cheese Society, academics, and retailers to launch the Safe Cheesemaking Hub (Hub). The Hub provides comprehensive and accessible food safety resources in English and Spanish. Additionally, an online course was launched in 2017 for artisan and farmstead cheesemakers to allow training to be completed from any location and at their own pace. More than 200 people completed the course and an additional 500 registered to take the course.

Additionally, in 2017, USDA's National Institute of Food and Agriculture awarded the Innovation Center and its university partners a \$400,000 grant to provide coaching sessions designed to help artisan and farmstead cheesemakers write their own food safety plans. The grant will also help to establish a network of local university and extension agents for ongoing support.

Environmental Stewardship – Resource Recovery

In 2017, the Innovation Center continued its interest in resource recovery—to extract the maximum practical benefits from products and generate the least amount of waste possible—to help prevent food waste. The Innovation Center helped to launch the Further with Food website. The website offers resources on food loss and waste in the United States and provides best practices on ways to help achieve a goal to reduce food waste by half in 2030.

Dairy Sustainability Alliance

The Dairy Sustainability Alliance (Alliance), originally the Sustainability Council, continued in 2017. The Alliance is a multi-stakeholder group with representatives from across the dairy community who are committed to advancing dairy sustainability and social responsibility. The Alliance provides a forum where member organizations can share knowledge, collaborate on issues affecting the dairy industry at large, and accelerate progress toward common sustainability goals. The Alliance seeks to improve, measure, and communicate dairy's role in a sustainable food system.

The Alliance represented over 100 member organizations in 2017, including crop and dairy farmers, processors, manufacturers, retailers, suppliers, and representatives from nonprofits, trade organizations, government, and academia.

Industry and Image Relations

Undeniably Dairy

In 2017, DMI launched Undeniably Dairy, a national, multi-year, multi-dimensional campaign to provide a platform through which the whole dairy community can engage and speak with one voice and “reintroduce” dairy to consumers. The campaign aims to bring dairy's story to life by showcasing the nutrient-rich profile of dairy foods, along with a farm-to-table look at the commitment the industry has to responsible production and positive local community impact. The Undeniably Dairy campaign is based on four key pillars to grow trust in relevant and relatable ways:

- **Nutrient-Rich**—Dairy's nutrients, including protein, help fuel the body and mind, and are readily available in a variety of products in the dairy aisle.
- **Locally Driven**—Dairy products are fresh, locally sourced, and have a positive impact on local communities.
- **Real Enjoyment**—Dairy is a part of so many foods people love to eat and plays a big part in some of the most special moments in consumers' lives.
- **Responsibly Produced**—The dairy industry uses technology, sustainable practices, and animal care to ensure dairy is always becoming a better product.

The Undeniably Dairy campaign began with a wide range of content, partnerships, and experiences to bring the story of dairy to life for consumers. Videos on the Food Network garnered 59 million impressions and brought the dairy farm to consumers to hear directly from farmers about where food comes from and the commitments farmers have to responsible production. Additional partnerships included the Cooking Channel, the Kitchen, and Upworthy. Articles and podcasts were created to highlight people throughout the dairy community, like food scientists, cheesemakers, chefs, restaurateurs, and dairy farmers from across the country, to share their love of dairy.

DMI reached 28 million people through its partnerships with a range of online influencers, including bloggers and chefs, to spotlight dairy's role in recipes. Hundreds of onfarm events were hosted throughout the country to bring consumers and health and wellness experts together

to share in farm-to-table dinners to learn more about the dairy farmers and dairy's role in the diet. Through its partnership with Domino's, 7 million people, per week, saw the Undeniably Dairy logo and farmer messaging on pizza boxes and napkin holders nationwide. Through its Discovery Education partnership, fifth through eighth grade classes were introduced to dairy farming, especially innovations in helping to care for cows, through virtual "field trips." The field trips were comprised of a 360-degree video experience and educator guides.

DairyGood

DMI continued www.dairygood.org as a platform in 2017, for the dairy community to collectively come together and tell its story using unified messaging. The website's goal is to put a "face" on the dairy industry and amplify conversations taking place in other dairy and social media channels, such as NDC, FUTP60, and Undeniably Dairy, to demonstrate dairy's commitment to food and nutrition security and to drive conversations to promote consumer confidence in the dairy industry and its products.

Issues Management and Crisis Readiness

DMI continued its Issues Management and Crisis Readiness programs in 2017. DMI staff and related dairy industry representatives worked to monitor and identify current and potential issues where the safety, benefit, or reputation of dairy farmers or dairy products may be publicly questioned. As needed, the network of representatives responded to media requests, trained dairy spokespeople, built third-party relationships within the agricultural industry, and distributed media alerts with key messages to maintain consistent industry-wide responses. Primary areas of focus included animal welfare, environment, sustainability, food safety, child nutrition, and modern farming practices.

II. National Fluid Milk Processor Promotion Board

The Fluid Milk Board, as authorized in the Fluid Milk Act, administers a fluid milk promotion and consumer education program funded by fluid milk processors. The program is designed to educate Americans about the benefits of fluid milk, increase milk consumption, and maintain and expand markets and uses for fluid milk products in the contiguous 48 States and the District of Columbia. The fluid milk marketing programs are research based and message focused for the purpose of positively changing the attitudes and purchase behavior of Americans regarding fluid milk.

The Secretary appoints 20 members to the Fluid Milk Board. Fifteen members are fluid milk processors who each represent a separate geographical region, and five are at-large members. Of the five at-large members, at least three must be fluid milk processors and at least one must be from the general public. The members of the Fluid Milk Board serve 3-year terms and are eligible to be appointed to two consecutive terms. The Fluid Milk Order provides that no company shall be represented on the Fluid Milk Board by more than three representatives. Fluid Milk Board members who fill vacancies with a term of 18 months or less may serve two additional 3-year terms. The Milk Processor Education Program (MilkPEP) carries out the activities of the Fluid Milk Board.

The Fluid Milk Board elects four officers: Chair, Vice-Chair, Secretary, and Treasurer. Fluid Milk Board members are assigned by the Chair to the Fluid Milk Board's occasion-based program committees. The program committees are responsible for setting program priorities, planning activities and projects, and evaluating results. In addition, the Fluid Milk Board has a Finance Committee to review all program authorization requests for funding sufficiency, the Fluid Milk Board's independent financial audit, and the work of the board's accounting firm. The Fluid Milk Board met three times in 2017.

Total Fluid Milk Board income and expenses are displayed in the annual independent financial audit. The Fluid Milk Board's administrative budget continued to be within the 5-percent-of-revenue limitation required by the Fluid Milk Order. An independent auditor's report for 2017 can be found in the Additional Information section of this report.

Medical Advisory Board

The Fluid Milk Board's Medical Advisory Board (MAB), comprised of academic, medical, and health care professionals with expertise relevant to the health benefits of fluid milk, continued to meet in 2017. The MAB provides guidance to the Fluid Milk Board's development of key nutritional and health messages for consumers and health professionals. As in previous years, the MAB members assisted the Fluid Milk Board in continuing relationships with health professional organizations such as the American Academy of Pediatrics, the Academy of Nutrition and Dietetics, and the American Heart Association.

The MAB activities of the Fluid Milk Board also included being quoted in press materials and acting as spokespersons on breaking research relevant to fluid milk. The MAB continued to inform others in the scientific community about the strong and growing body of research showing the benefits of consuming milk, particularly flavored milk, after exercise for muscle recovery and rehydration.

Fluid Milk Programs

I. Milk Life Committee – General Market and Hispanic

MilkPEP's *Milk Life* consumer campaign continued to focus on fluid milk and its nutritional benefits, including high-quality protein and its ability to help power the potential of every day. The *Milk Life* campaign continued its efforts to improve consumers' perceptions of milk and inspiring them to choose milk for themselves and their families.

In 2017, following an aggressive focus on moms in the prior year, MilkPEP launched the *Milk It!* campaign to reclaim the loss of more than one-half billion gallons of fluid milk volume attributed to kids' lowering consumption over the last several years. *Milk It!* is a kids-only campaign focused on reminding kids to choose milk because of the powerful combination of great taste and nutrition, all while reinforcing how milk helps them be their best every day. The *Milk It!* campaign used strategies to reach kids where they are: watching TV, online, and playing outside. The campaign's television commercials aired on all major kid networks and on the *Milk It!* YouTube page, and it had over 16 million views.

MilkPEP merged the *Milk It!* campaign with its Team USA partnership and created a kids' commercial featuring Team USA Gold Medalist Free-Skier, Maddie Bowman. MilkPEP also partnered with kid influencers who interviewed Olympians about how they *Milk It!* The content was used as digital advertising to reach kids where they engage online. These efforts proved to be one of MilkPEP's most efficient programs, resulting in 11 million gallons of incremental milk sales at 1.89 gallons per marketing dollar spent from the campaign's launch in June through the end of 2017.

MilkPEP continued its Hispanic promotional efforts in 2017, as part of the industry's outreach to the growing Hispanic population by striving for greater synchronization with its general market consumer campaign. In 2017, the *Lo Que Nos Hace Fuertes* (What Makes Us Strong) initiative continued with MilkPEP introducing Chef Lala as the Hispanic advocate for the year. Through advertising, public relations, and a social campaign, Chef Lala's messages helped to further educate first- and second-generation Hispanics about the benefits of milk, resulting in a rise in milk consumption within the category. Additionally, under the *Lo Que Nos Hace Fuertes* initiative, MilkPEP released a new series of TV commercials entitled *Encouragement*. One of the commercials featured a young ice skater and carried the message of moms' integral role in their children's success. Another commercial featured the Winter Olympics theme, further demonstrating the integration between general market and Hispanic marketing efforts.

MilkPEP continued its focus on the organic consumer as a loyal, real milk consumer through digital advertising and check-out and coupon activations. In 2017, MilkPEP partnered with an organic-only athlete, gold medal snowboarder Jamie Anderson, to serve as the organic athlete spokesperson for organic milk. Organic processors worked with Jamie Anderson as part of their individual marketing plans.

In 2017, MilkPEP, continued its partnership with Feeding America and the National Dairy Council with the *Great American Milk Drive* initiative designed to deliver nutrient-rich gallons of milk to families who struggle with food insecurity. Milk is one of the most requested, yet least donated, items at America's food banks because it is perishable. As a result, Feeding America is only able to provide, on average, less than 1 gallon of milk per person per year. MilkPEP's *Great American Milk Drive* encouraged consumers across the United States to donate milk to families in need through online or in-store donations and increased the awareness and need for more milk in food banks. In 2017, the program secured 348,000 gallons of milk from consumer donations. To date, the program has received over 1.6 million gallons of donated milk and 32 million gallons of milk sales driven by efforts in over 18,700 participating retail stores across the country.

II. Built with Chocolate Milk Committee

MilkPEP's *Built with Chocolate Milk* program continued to promote its low-fat chocolate milk message for exercise recovery to athletes in 2017, focusing promotional efforts on basketball, hockey, and other endurance sports. To further engage adult audiences, MilkPEP continued to promote the benefits of recovering and rebuilding muscles with chocolate milk after strenuous exercise to athletes and exercisers around the country.

MilkPEP's *Built with Chocolate Milk* forged a new relationship with NBA star Klay Thompson, shooting guard for The Golden State Warriors and 2017 NBA Champion. Through Klay, MilkPEP showcased how elite athletes recover with chocolate milk. Chocolate milk became a part of basketball season during the NBA Playoffs, Championship, and March Madness. The partnership included a full CBS.com take-over during March Madness during key professional basketball time periods, and engagement in social conversations on game days.

In 2017, MilkPEP renewed its partnership with NHL player, father, and former Olympian Zach Parise. Partnering with Zach helped *Built with Chocolate Milk* share the recovery story through ice hockey, enabling the chocolate milk campaign to become part of the conversation and excitement around the 2018 Winter Olympic Games and professional hockey season. The *Built with Chocolate Milk* campaign also worked with Jimmy Nguyen, a long-standing member of Team Chocolate Milk and Olympic skeleton hopeful. The campaign created content demonstrating the difficulty, danger, and intensity of skeleton, and a commercial was created for the build-up of the Winter Olympic Games.

In 2017, the *Built with Chocolate Milk* campaign continued its existing relationship with Mirinda (Rinny) Carfrae—the campaign's longest standing elite athlete partnership. A three-time IRONMAN champion, Rinny authentically conveys the chocolate milk recovery message to the endurance consumer. In 2017, Rinny brought a new lens to the program as a first-time mom. She demonstrated to consumers how she balances motherhood, training, and recovery with the help of chocolate milk. In 2017, Team Chocolate Milk members remained equally as passionate to the campaign as the elite athletes. Overall, the endurance athletes continued to act as chocolate milk ambassadors nationwide, wearing branded gear on race day, engaging actively on social media, and educating other everyday athletes on the benefits of recovering with chocolate milk.

For the 6th consecutive year, the *Built with Chocolate Milk* campaign continued its partnership with the Rock 'n' Roll Marathon. The race series shared chocolate milk recovery stories with over 238,000 runners participating in races across the country. Seventeen milk brands participated in the Rock 'n' Roll partnership, donating and sampling chocolate milk at the finish line in their local markets.

In 2017, the *Built with Chocolate Milk* campaign maintained its partnership with USA Swimming as the "Official Recovery Beverage of USA Swimming." The campaign continued to highlight the important role chocolate milk plays in recovery and was handed out at large meets across the country. As in past years, several brands participated and donated thousands of chocolate milk samples to swimmers at the point of sweat.

Chapter 2

USDA Activities

The USDA's Agricultural Marketing Service's (AMS) Dairy Program has oversight responsibilities for the Dairy Board and the Fluid Milk Board. AMS Dairy Program's oversight activities include reviewing and approving the Dairy and Fluid Milk Boards' budgets, contracts, investments, and marketing campaigns. Materials are monitored for conformance with provisions of the respective Acts and Orders, the U.S. Dietary Guidelines for Americans, and other legislation. The AMS Dairy Program also uses the "*Guidelines for AMS Oversight of Commodity Research and Promotion Programs*" to govern oversight and facilitate the application of legislative and regulatory provisions of the Acts and the Orders.

The AMS Dairy Program ensures that the collection, accounting, auditing, and expenditures of promotion funds are consistent with the enabling legislation; certifies Qualified Programs; and provides for the evaluation of the effectiveness of both promotion programs' advertising campaigns. The AMS Dairy Program assists the boards in their assessment collection, compliance, and enforcement actions.

Other AMS Dairy Program responsibilities include facilitating the nomination and appointment process of board members, amending the Orders, conducting referenda, reviewing public and industry communications, and conducting periodic management reviews. AMS Dairy Program representatives attend full board and committee meetings and other meetings related to the programs.

Dairy Promotion and Research Program Oversight

Collections

The Dairy Act specifies that each person making payments to a producer for milk produced in the United States and purchased from the producer should, in the manner prescribed by the Dairy Order, collect an assessment based on the number of hundredweights of milk for commercial use handled for the account of the producer and remit the assessment to the Dairy Board. The rate of assessment for dairy producers is 15 cents per hundredweight of milk for commercial use or the equivalent thereof, as determined by the Secretary. In addition, the rate of assessment for imported dairy products prescribed by the Dairy Order is 7.5 cents per hundredweight of milk for commercial use or the equivalent thereof, as determined by the Secretary.

Contracts

The Dairy Act and Dairy Order require contracts expending assessment funds be approved by the Secretary. During 2017, the AMS Dairy Program reviewed and approved 349 Dairy Board and DMI agreements, amendments, and annual plans. During 2017, DMI retained the certified public accounting firm of Ernst & Young to audit the records of the following contractors: Domino's National Advertising Fund, Inc.; Information Resources, Inc.; PR Consultants Limited; University of Illinois; and Watson Green, LLC. No material exceptions were found.

USDA Foreign Agricultural Service

The Secretary has delegated oversight responsibility for all foreign market development activities outside the United States to USDA's Foreign Agricultural Service (FAS) (7 CFR 2.43(a)(24)). FAS reviews the USDEC foreign market development plan and related contracts. The AMS Dairy Program also reviews USDEC contracts to ensure conformance with the Dairy Act, Dairy Order, and with established USDA policies. In 2017, the AMS Dairy Program reviewed and approved 141 USDEC agreements, amendments, and annual plans.

Organic Exemption

On December 31, 2015, a final rule was published, with an effective date of February 29, 2016, to amend the organic exemption regulations to allow persons who produce, handle, market, process, manufacture, feed, or import "organic" and "100 percent organic" products to be exempt from paying assessments associated with commodity promotion programs administered by AMS, regardless of whether the person requesting the exemption also produces nonorganic products (80 FR 82005, published December 31, 2015). In States having mandatory assessment laws, organic dairy producers are exempt only from the Federal assessment. Organic producers are still responsible for the remittance of State assessments. In 2017, the amount of exempted assessments was \$1,377,000. The Dairy Order requires organic producers to re-apply annually to continue to receive the exemption.

USDA Dairy Promotion and Research Program Expenses

Per the Dairy Board's enabling legislation, the Dairy Board reimburses the AMS Dairy Program for the cost of administrative oversight and compliance audit activities. In 2017, the AMS Dairy Program's oversight expenses totaled \$663,765, and the Federal Milk Market Administrators incurred \$231,415 in expenses for verification audits conducted on behalf of the Dairy Board.

Qualified Programs

Qualified Programs are State, regional, or importer organizations conducting dairy product promotion, research, or nutrition education programs, authorized by Federal or State law, or were active programs prior to the Dairy Act. In 2017, the AMS Dairy Program reviewed applications for continued qualification from 62 Qualified Programs. A list of Qualified Programs is provided in Chapter 4. Consistent with its responsibility for monitoring the Qualified Programs, the AMS Dairy Program obtained and reviewed income and expenditure data from each Qualified Program, and data reported are included in aggregate for 2017 in Chapter 4.

National Fluid Milk Processor Promotion Board Oversight

Program Development

The Fluid Milk Board contracted with the Interpublic Group Agencies of Foote, Cone & Belding Worldwide, Inc.; Campbell-Ewald and CMGRP, Inc., d/b/a Weber Shandwick to develop

programs for advertising, promotion, and consumer education in connection with the national fluid milk campaign.

Collections

The Fluid Milk Act specifies each fluid milk processor shall pay an assessment on each unit of fluid milk product processed and marketed commercially in consumer-type packages. The current rate of assessment is 20 cents per hundredweight of fluid milk products marketed.

Contracts

The Fluid Milk Act and Fluid Milk Order require budgets and contracts expending assessments be approved by the Secretary. During 2017, the AMS Dairy Program approved 87 Fluid Milk Board agreements, amendments, and annual plans. The Fluid Milk Board retained the certified public accounting firm of Snyder, Cohn, Collyer, Hamilton & Associates, P.C. (Snyder Cohn), in 2017 to audit the records of: Foote, Cone & Belding Worldwide, Inc., Campbell-Ewald, and CMGRP, Inc. d/b/a Weber Shandwick. No material exceptions were found.

Organic Exemption

On December 31, 2015, a final rule was published, with an effective date of February 29, 2016, to amend the organic exemption regulations to allow persons that produce, handle, market, process, manufacture, feed, or import “organic” and “100 percent organic” products to be exempt from paying assessments associated with commodity promotion programs administered by AMS, regardless of whether the person requesting the exemption also produces nonorganic products (80 FR 82005, published December 31, 2015). In 2017, the amount of exempted fluid milk assessments was approximately \$3,200,000. The Fluid Milk Order requires organic fluid milk processors to re-apply annually to continue to receive the exemption.

USDA Fluid Milk Processor Promotion Program Expenses

Per the Fluid Milk Act, the Fluid Milk Board reimburses the AMS Dairy Program for the cost of administrative oversight and compliance audit activities. In 2017, the AMS Dairy Program’s oversight expenses totaled \$481,950, and the Federal Milk Market Administrators incurred \$117,974 in expenses for verification audits conducted on behalf of the Fluid Milk Board.

Chapter 3

Quantitative Evaluation of the Effectiveness of Promotion Activities by the National Dairy Promotion and Research Program and the National Fluid Milk Processor Promotion Program – 2017 Activities

Introduction

The Dairy Act and the Fluid Milk Act require an annual independent analysis of the advertising and promotion programs that operate to increase consumer awareness and sales of fluid milk and dairy products. Texas A&M University researchers were awarded a competitive contract to conduct this study. This chapter is a summary of the 2017 quantitative evaluation of the effectiveness of the dairy and fluid milk promotion programs. Due to the prior data revisions, the results from the 2017 report are not comparable to previous years' reports.

Background on the Promotion Program

The National Dairy Promotion and Research Program is a coordinated research and promotion program intended to maintain and expand domestic and foreign markets for fluid milk and dairy products. To fund the program, U.S. dairy producers pay a 15-cent-per-hundredweight assessment on milk marketing, and importers pay a 7.5-cent-per-hundredweight assessment, or equivalent thereof, on dairy products imported into the United States. Dairy Management Inc. (DMI), a management and staffing corporation, is a joint undertaking between the National Dairy Promotion and Research Board (Dairy Board) and the United Dairy Industry Association (UDIA). UDIA is a federation of 19 of the 62 Qualified Programs¹ (QPs) under the direction of a board of directors. DMI's mission is to drive increased sales of and demand for dairy products and ingredients on behalf of dairy producers and dairy importers. DMI works proactively in partnership with leaders and innovators to increase and apply knowledge that leverages opportunities to expand dairy markets.

The National Fluid Milk Processor Promotion Program, or Fluid Milk Promotion Program, develops and finances generic advertising programs designed to maintain and expand markets for fluid milk products produced in the United States. Fluid milk processors marketing more than 3 million pounds of fluid milk per month pay a 20-cent-per-hundredweight assessment on fluid milk processed and marketed in consumer-type packages in the contiguous 48 States and the District of Columbia. The Milk Processor Education Program (MilkPEP) is the staffing organization that carries out the promotion programs on behalf of the Fluid Milk Promotion Program.

The National Dairy Promotion and Research Program, funded by dairy producers and dairy importers, and the Fluid Milk Processor Promotion program, funded by fluid milk processors, are hereinafter referred to jointly as the National Programs.

Objectives of the Evaluation Study

¹ Qualified Dairy Product Promotion, Research or Nutrition Educational Programs (Qualified programs or QPs) are State, regional, local, or importer promotion programs certified annually by the Secretary of Agriculture to receive a portion of the funds generated under the Dairy Research and Promotion Program.

The National Programs are evaluated with the key question in mind: Have the demand-enhancing activities conducted by dairy producers, importers, and fluid milk processors actually increased the demand for fluid milk and manufactured dairy products?

Historically, this question has been answered through econometric studies of the relationships between the consumption of dairy products and promotion program demand-enhancing expenditures. These demand relationships are estimated in a structure that controls for the impacts of key market forces. Economic returns to dairy producers, importers, and fluid milk processors that result from marketing and promotion activities and the associated changes in consumption are calculated using the parameters obtained from the estimated demand models. The summary indicator of economic return on investment is a benefit-cost-ratio (BCR).

The level of the BCR is often taken as an indication of the impact of a program. For example, a 1-dollar investment that returns 5 dollars in incremental revenue generates a BCR of 5 to 1. In addition, due to diminishing marginal returns, the ratio between the incremental revenue generated and the level of funding (the BCR) declines as funding increases. Usually, metrics other than the BCR, such as impacts on consumption and exports, are more revealing and useful indicators of the magnitude of program effectiveness rather than reliance on just the BCR.

The objectives of this report are threefold:

1. Statistically measure the combined effects of the promotion activities of the National Programs on the consumption of fluid milk, cheese, butter, all dairy products, and dairy exports;
2. Update and utilize a previously developed simulation model of the U.S. dairy industry to calculate the quantity and price effects of the National Programs in U.S. fluid milk, cheese, butter, and all dairy product markets, and on dairy exports and the BCRs corresponding to promotion in each of those markets for dairy producers and fluid milk processors;
3. Provide a qualitative and quantitative analysis of dairy product imports and import assessments; and
4. Update the benefit-cost analysis of the National Programs.

This project covers the period of 1995 to 2017 and captures the joint efforts of DMI, MilkPEP, and QPs. The shares of each promotion entity of demand-enhancing expenditures over this period are as follows: (1) DMI — 25.61 percent; (2) MilkPEP — 24.01 percent; and (3) QPs — 50.38 percent.

Summary of the Findings

The overall finding of this evaluation is that the dairy promotion under the National Programs has effectively increased U.S. demand (domestic and exports) for dairy products.

The gains in profit at the farm level were far larger than the costs associated with the National Programs combined. The returns from the programmatic activities of producers and to fluid milk processors are summarized with BCRs. The BCRs are based on the demand-enhancing expenditures only; therefore, they do not account for certain operating expenses such as overhead, technical support, and industry relations.

Over the period of 1995 to 2017, the BCRs expressed in terms of producer profit at the farm level were calculated to be \$3.27 for every dollar invested in demand-enhancing activities for fluid milk; \$3.94 for every dollar invested in demand-enhancing activities for cheese; and \$15.93 for every dollar invested in demand-enhancing activities for butter. Over the same period, the BCR of export promotion was \$6.91 per dollar invested. On a fat and skim solids basis, a significant positive relationship existed between the demand for all dairy products and the advertising and promotion expenditures associated with the National Programs. The aggregate all-dairy BCR was 4.35, meaning that, on average, producer profit increased by \$4.35 for each dollar invested in demand-enhancing activities.

The United States imported between \$3.0 billion and \$3.5 billion in dairy products over the period 2012 to 2017. Cheese products accounted for about just over 40 percent, by value, of those imports. Importers of dairy products have paid assessments to the Dairy Research and Promotion Program since August 2011. Total import assessment funds varied between \$3.41 million and \$4.76 million dollars per year between 2012 and 2017. The import assessment represents approximately 1 percent of the total demand-enhancing expenditures made by DMI, MilkPEP, and the QPs. Imported cheese levels were higher by roughly 1.2 million pounds due to promotion funds collected from importers. Unit values of cheese imports amounted to approximately \$3.16 per pound on average over the period 2012 to 2017. Hence, incremental revenue to importers solely from cheese attributable to the import assessment (on cheese) totaled roughly \$3.8 million.

Since cost-of-production data are unavailable for fluid milk processors, the fluid milk processor BCR was calculated using the milk cost as a proxy for cost of production. The fluid milk processor BCR was a \$3.04 for every dollar invested in demand-enhancing activities for fluid milk.

DMI, MilkPEP, and QP Promotion Program Expenditures

The expenditure data for this analysis were acquired from DMI, QPs, and MilkPEP. The demand-enhancing expenditures from all three entities were aggregated.

The National Programs use advertising as well as other means to influence consumers. Advertising dollars are directed to media outlets including television, outdoor, print, radio, and the internet. Marketing activities other than advertising are directed at the retail level of the marketing channel or at intermediaries. The non-advertising marketing expenditures include health and nutrition education programs, public relations, food service and manufacturing programs, sales promotion programs, school milk programs, school marketing activities, retail programs, child nutrition and fitness initiatives, and single-serve milk promotion.

Certain promotion expenditures are not directed at the retail level of the marketing channel; these types of expenditures include crisis management, trade service communications, and strategic research activities. Because their intent is to directly increase or support sales of dairy products, these expenditures are classified as demand-enhancing expenditures. Expenditures for overhead, technical support, and industry relations are excluded from this analysis because they are not primarily related to demand-enhancing efforts.

Over the past several years, the DMI Board of Directors changed its marketing strategies to focus

more on partnerships within the dairy industry to increase demand for fluid milk, manufactured dairy products, and dairy ingredients. Currently, DMI's strategies include the following: (1) working with and through specific partners to achieve sustainable, category-level sales impacts; (2) attracting partner co-investment to fund demand-enhancing efforts; and (3) maximizing resources and impacts in increasingly competitive markets. These efforts include co-developing marketing information, research, business models, and best practices that can be used by the industry to increase sales of fluid milk and dairy products.

Annual promotion program expenditures made by DMI, MilkPEP, and QPs over the period 1995 to 2017 are depicted in Table 3-1 and in Figure 3-1. On average, slightly more than \$365 million in total were spent annually by the respective entities over this period and between \$400 million and \$415 million since 2013.

The data associated with the demand-enhancing activities initiated by DMI and MilkPEP are both available on a quarterly basis. QP data, however, are only available on an annual basis. To estimate quarterly data for the QPs, the seasonal nature of DMI and MilkPEP expenditure data is assumed to be similar to the QP expenditure data. Consequently, the seasonal factors associated with DMI and MilkPEP data are obtained and applied to the annual QP data to arrive at quarterly expenditures. The estimation of these data on a quarterly basis is important in allowing for sufficient observations to conduct the econometric analysis of demand for dairy products.

Nominal seasonally adjusted, demand-enhancing expenditures by DMI, MilkPEP, and QPs for all dairy products (fluid and manufacturing) combined on a quarterly basis from 1995 to 2017 are exhibited in Figure 3-2. These demand-enhancing expenditures varied from \$42.7 million to \$109.6 million per quarter, averaging \$82.3 million.

Nominal seasonally adjusted demand-enhancing expenditures for fluid milk from DMI, MilkPEP, and QPs on a quarterly basis from 1995 to 2017 are exhibited in Figure 3-3. Over that period, nominal seasonally adjusted quarterly promotion program expenditures for fluid milk ranged from roughly \$23.9 million to \$63.3 million per quarter. On average over the same period, nominal seasonally adjusted demand-enhancing expenditures for fluid milk were \$34.6 million per quarter.

As exhibited in Figure 3-4, nominal seasonally adjusted demand-enhancing expenditures for cheese ranged from \$12.8 million to \$27.7 million between 1995 and 2004, averaging \$21.8 million per quarter. From 2005 to the third quarter of 2008, promotion expenditures associated with cheese were much smaller compared to the period of 1995 to 2004. On average, expenditures on cheese marketing and promotion were \$12.0 million during this period. From the fourth quarter of 2008 through the end of 2017, nominal quarterly expenditures on cheese marketing and promotion activities ranged from \$8.1 million to \$17.1 million, averaging \$11.9 million per quarter. Over that period, nominal seasonally adjusted demand-enhancing expenditures for cheese averaged \$16.2 million per quarter.

Table 3-1. Annual Dairy Management, Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Program (QP) Promotion Program Expenditures, 1995 to 2017¹

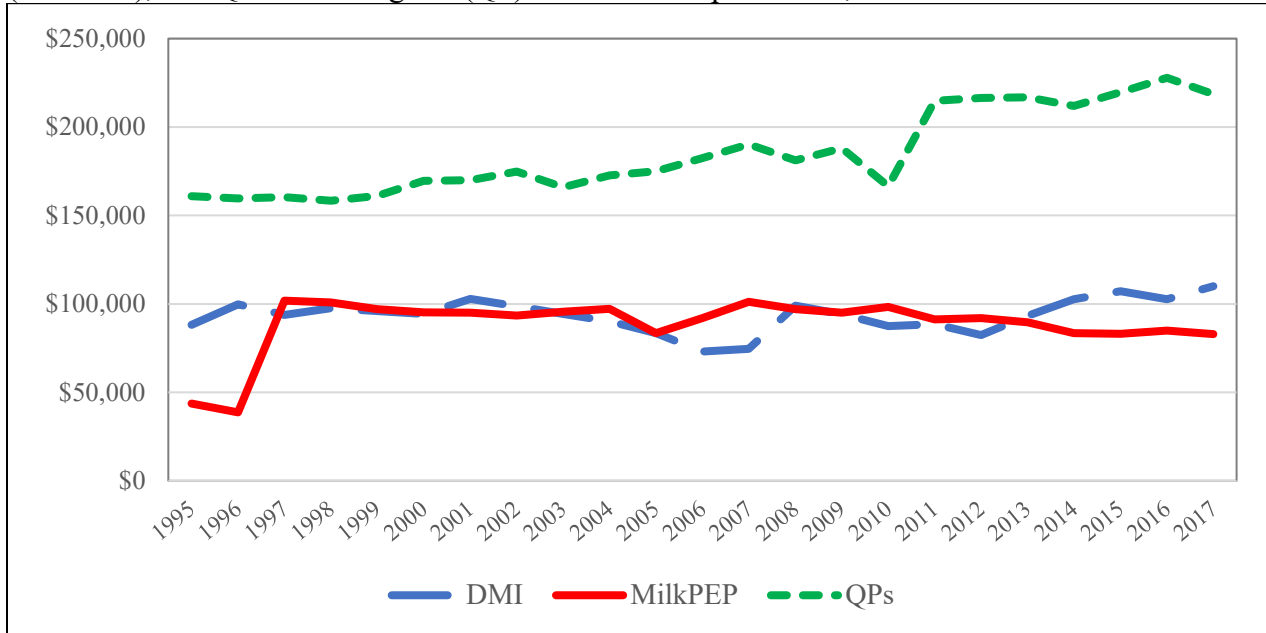
Year	DMI	MilkPEP	QPs	Total
1995	\$88,105	\$43,654	\$160,832	\$292,592
1996	\$99,674	\$38,690	\$159,600	\$297,964
1997	\$93,859	\$101,850	\$160,379	\$356,088
1998	\$97,570	\$100,901	\$158,348	\$356,819
1999	\$96,010	\$97,023	\$161,161	\$354,194
2000	\$94,260	\$95,158	\$169,654	\$359,072
2001	\$102,835	\$95,112	\$169,967	\$367,914
2002	\$98,752	\$93,511	\$174,857	\$367,120
2003	\$94,256	\$95,688	\$165,973	\$355,917
2004*	\$90,171	\$97,167	\$172,667	\$360,005
2005	\$83,484	\$83,527	\$175,081	\$342,092
2006	\$73,067	\$92,029	\$182,443	\$347,539
2007	\$74,623	\$101,125	\$190,289	\$366,037
2008*	\$99,051	\$97,003	\$181,092	\$377,146
2009*	\$94,071	\$95,109	\$187,992	\$377,172
2010*	\$87,512	\$98,316	\$166,459	\$352,287
2011*	\$88,456	\$91,289	\$214,763	\$394,508
2012*	\$82,360	\$91,893	\$216,484	\$390,737
2013*	\$93,184	\$89,633	\$216,844	\$399,611
2014*	\$102,728	\$83,426	\$211,919	\$397,623
2015	\$107,133	\$83,098	\$219,660	\$409,891
2016	\$102,712	\$84,858	\$227,834	\$415,404
2017	\$110,005	\$82,910	\$218,548	\$411,462

¹Thousands of dollars.

*Qualified Program data previously revised.

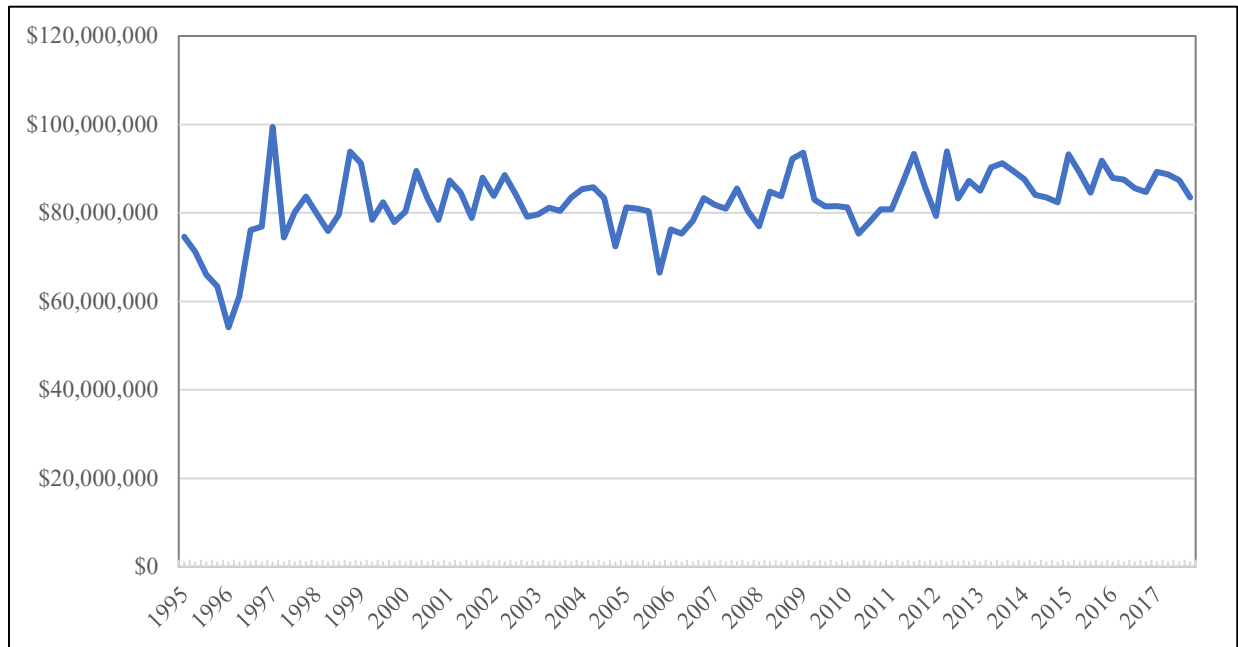
Source: Data from DMI, MilkPEP, and the U.S. Department of Agriculture.

Figure 3-1. Annual Dairy Management, Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Program (QP) Promotion Expenditures, 1995 to 2017



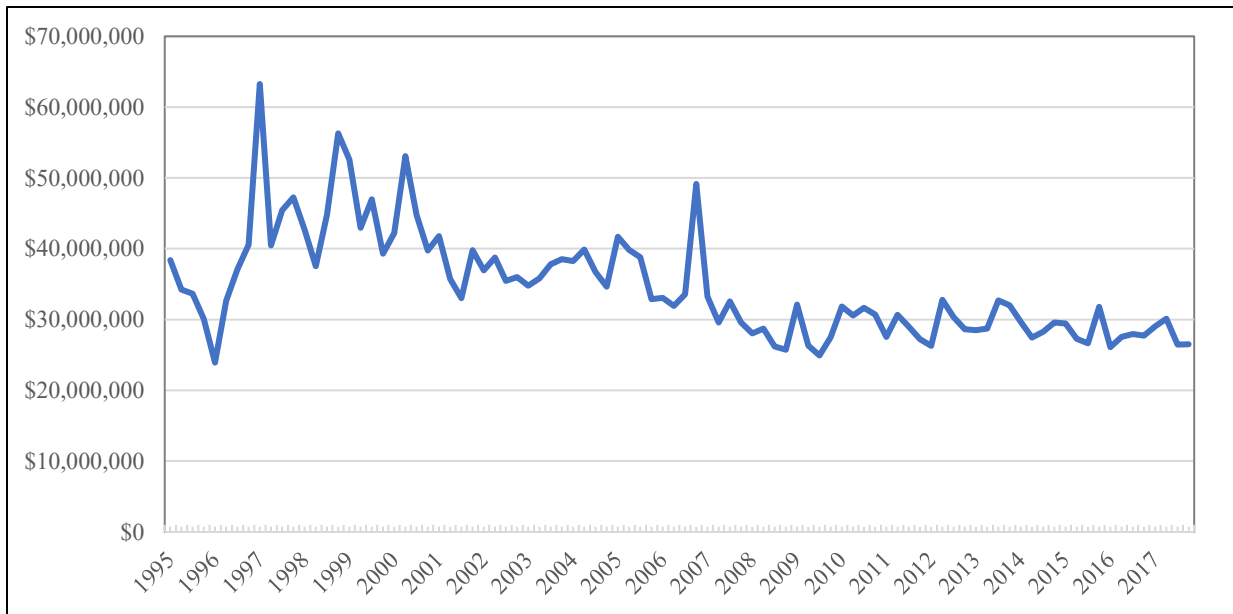
Source: Data from DMI, MilkPEP, and the U.S. Department of Agriculture.
QPs = Qualified Programs

Figure 3-2. Quarterly All Dairy Product Promotion Expenditures (Nominal Seasonally Adjusted) by Dairy Management, Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Promotion (QPs), 1995 to 2017*



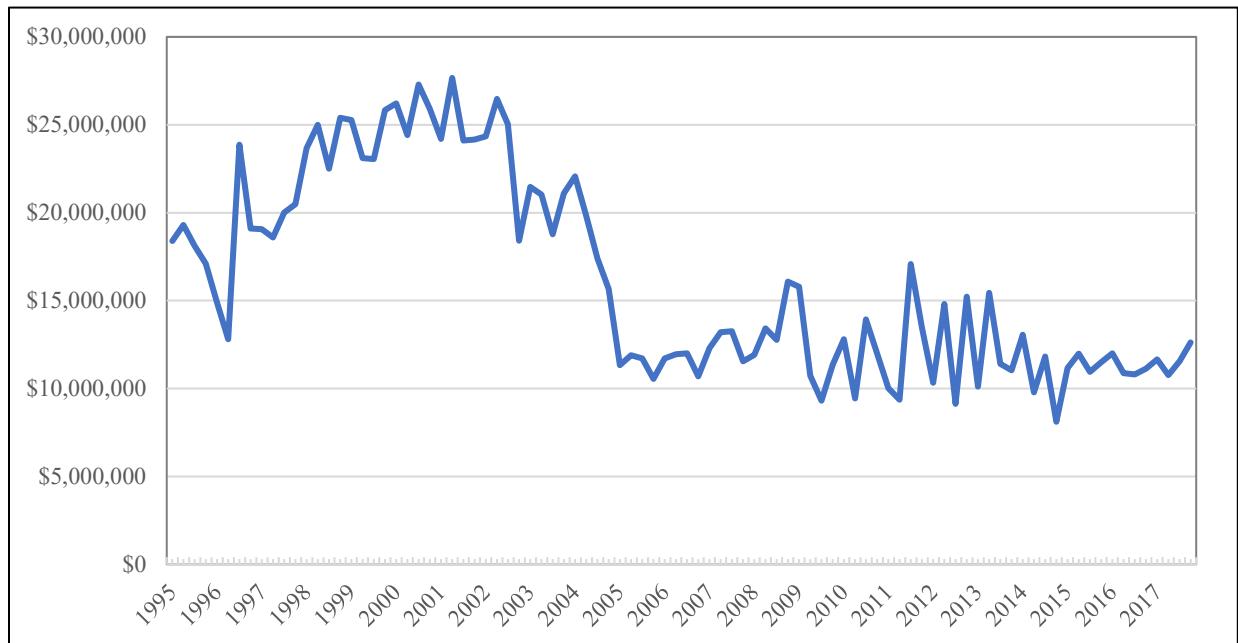
*Includes expenditures for advertising, promotion, dairy foods and nutrition research, nutrition education, and market and economic research.
Source: Data from DMI, MilkPEP, and QPs. Calculations by the authors.

Figure 3-3. Quarterly Fluid Milk Promotion Expenditures (Nominal Seasonally Adjusted) by Dairy Management, Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Programs (QPs), 1995 to 2017



Source: Data from DMI, MilkPEP, and QPs.

Figure 3-4. Quarterly Cheese Promotion Expenditures (Nominal Seasonally Adjusted) by Dairy Management, Inc. (DMI), and Qualified Programs (QPs), 1995 to 2017



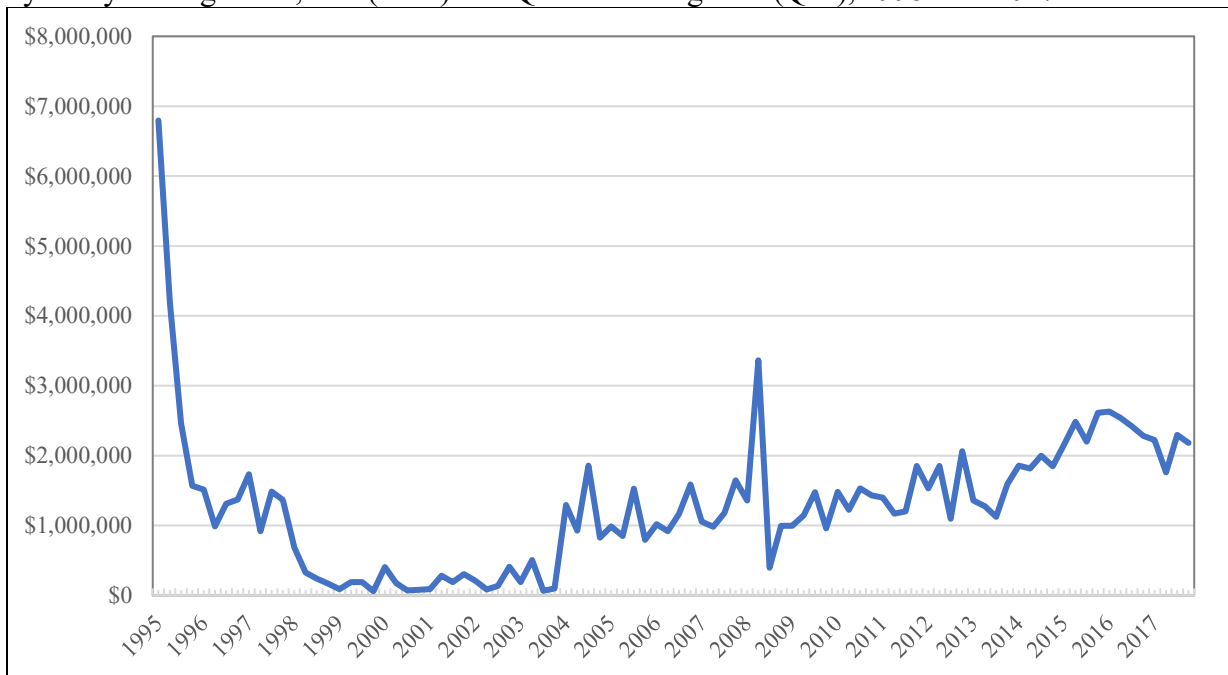
Source: Data from DMI and QPs. Calculations by the authors.

As shown in Figure 3-5, nominal seasonally adjusted demand-enhancing quarterly expenditures on marketing and promotion of butter ranged from close to \$60,000 to \$6.8 million, averaging slightly more than \$1.3 million per quarter over the period 1995 to 2017. Marketing and promotion expenditures for butter are a fraction of the expenditures for fluid milk and cheese.

Beginning in 2006, DMI transitioned from featuring milk, cheese, and butter in product-specific promotions to broader campaigns that relate to a number of dairy products. As a result of an increasing number of campaigns affecting multiple products, assessing demand enhancements for the aggregate of dairy products as well as within specific product classes is important.

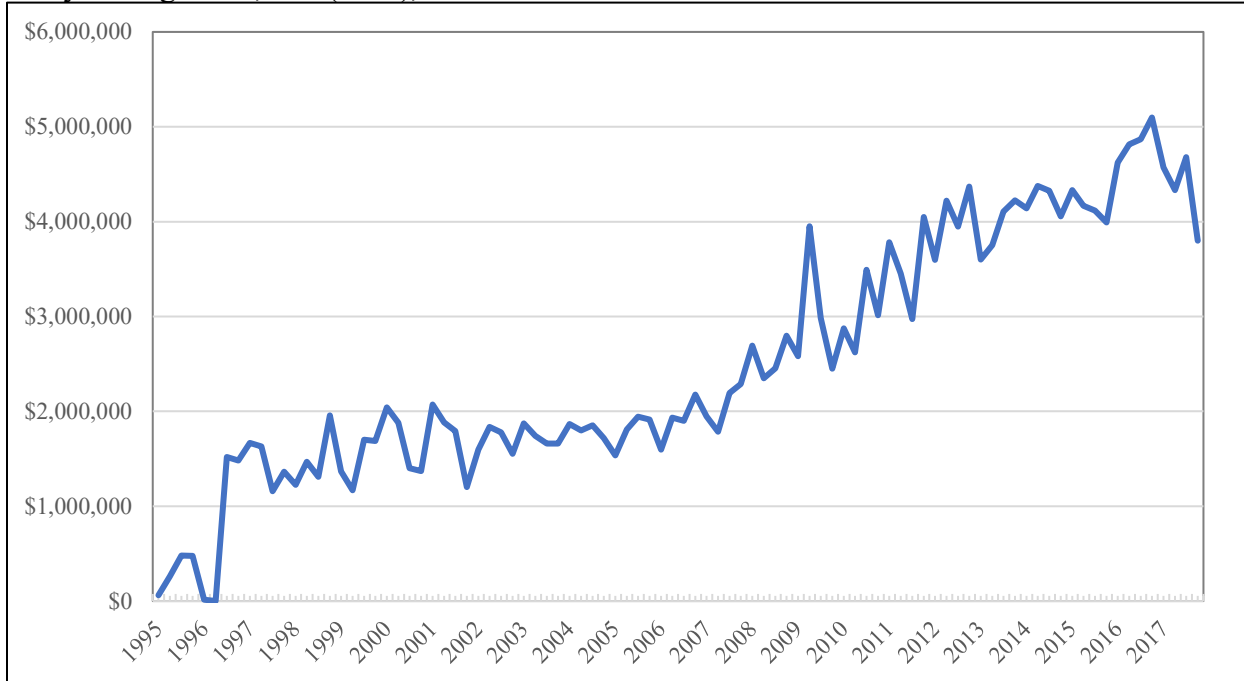
DMI also invests in dairy export promotion through the U.S. Dairy Export Council (USDEC). Nominal seasonally adjusted DMI expenditures directed to dairy export promotion on a quarterly basis ranged from just under \$800 to approximately \$5.1 million (Figure 3-6a). These expenditures trended upward from 1995 to 2017, averaging about \$2.5 million per quarter over this period. As exhibited in Figure 3-6b, nominal seasonally adjusted funds awarded through USDA’s Foreign Agricultural Service (FAS) directed to exports of dairy products on a quarterly basis varied from just under \$310,000 to about \$1.8 million, averaging nearly \$1.1 million per quarter over the period of 1997 to 2017. The funds are awarded through USDA FAS’ Foreign Market Development (FMD) program and the Market Access Program (MAP). The aggregate of DMI and FMD/MAP expenditures (nominal, seasonally adjusted) ranged from \$881 to \$6.6 million per quarter, averaging \$3.5 million on a quarterly basis over the same period from 1995 to 2017 (Figure 3-6c).

Figure 3-5. Quarterly Butter Demand-Enhancing Expenditures (Nominal Seasonally Adjusted) by Dairy Management, Inc. (DMI) and Qualified Programs (QPs), 1995.1 to 2017.4



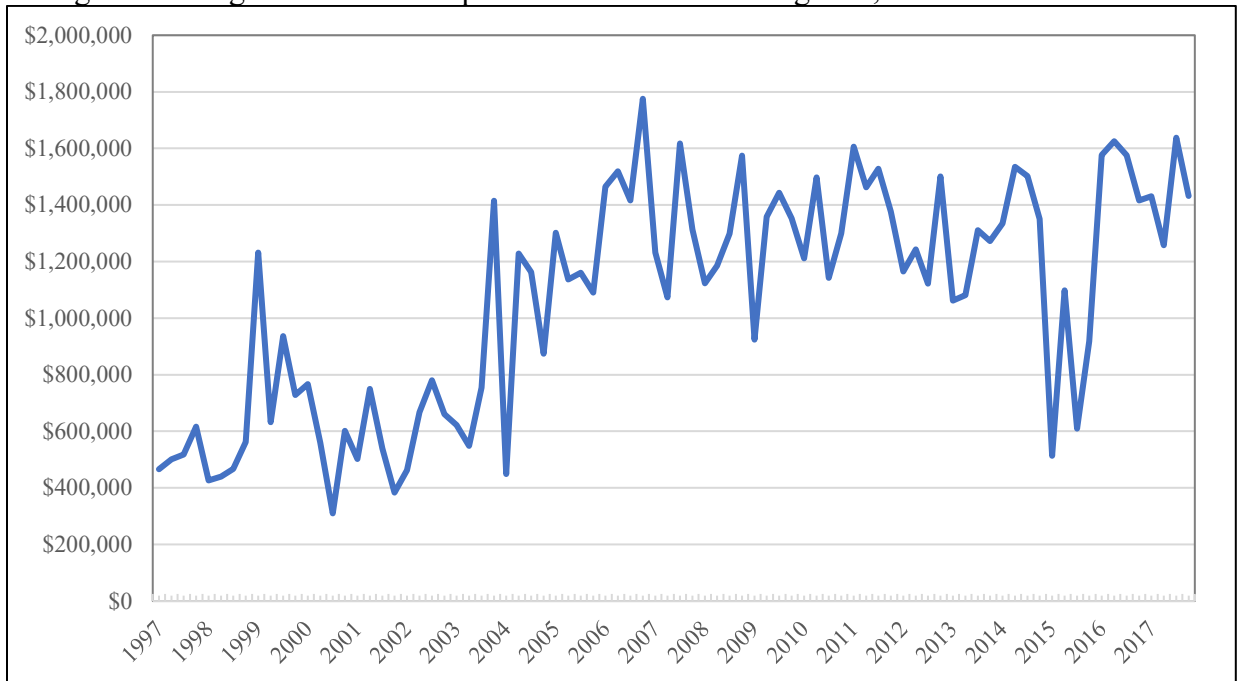
Source: Data from DMI and QPs. Calculations by the authors.

Figure 3-6a. Quarterly Dairy Product Export Expenditures (Nominal Seasonally Adjusted) by Dairy Management, Inc. (DMI), 1995.1 to 2017.4



Source: Data from DMI. Calculations by the authors.

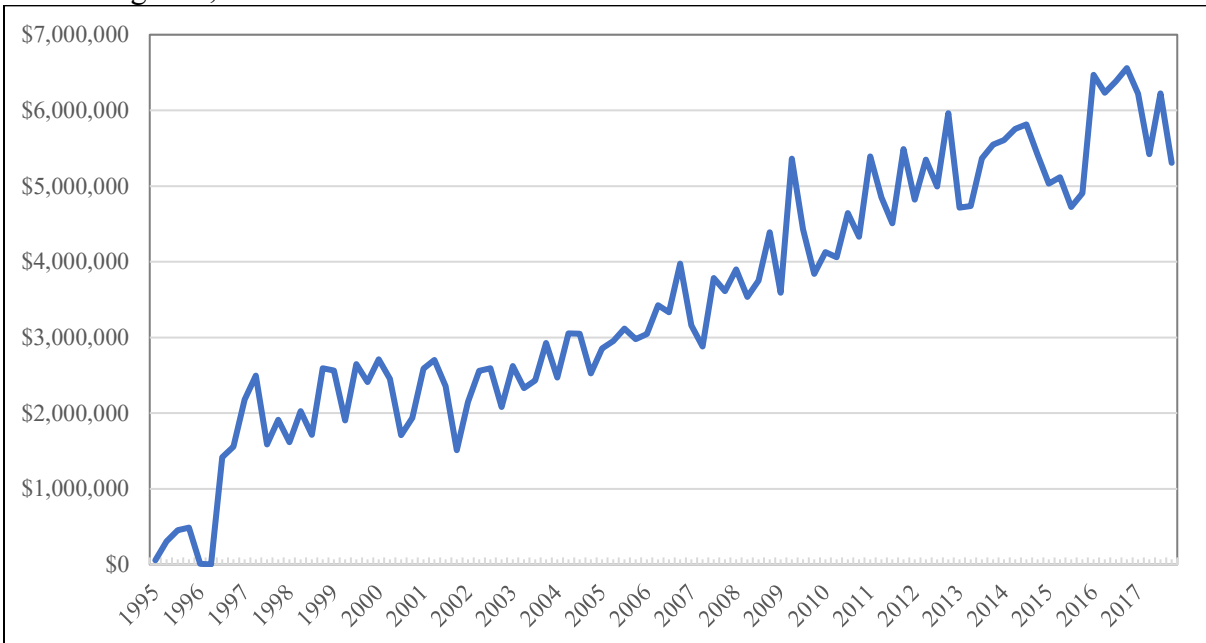
Figure 3-6b. Quarterly Dairy Product Export Expenditures (Nominal Seasonally Adjusted) through the Foreign Market Development/Market Access Programs, 1997.1 to 2017.4*



*Data were not available prior to 1997. Also, only annual data were available for 1997 and 1998. Quarterly interpolations were made for these years.

Source: Data from U.S. Department of Agriculture, Foreign Agricultural Service. Calculations by the authors.

Figure 3-6c. Quarterly Aggregate Dairy Product Export Expenditures (Nominal Seasonally Adjusted) by Dairy Management, Inc. (DMI) and the Foreign Market Development/Market Access Programs, 1995.1 to 2017.4



Source: Calculations by authors.

The assessment that importers of dairy products have paid to the National Dairy Promotion and Research Program since April 1, 2011 is based on milk content as follows:

“This rule requires importers to calculate assessments due based upon documentation concerning the cow’s milk solids content of the imported products. Products shall be assessed at the rate of \$0.01327 per kilogram of cow’s milk solids.”

(Agricultural Marketing Service, 2011, “Rules and Regulations,” *Federal Register*, Volume 76, No. 53, page 14479).

Two-thirds of the import assessment is allocated to the National Dairy Board. The remaining amount was designated to be used by one of three QPs to support dairy promotion: (1) Cheese Importers Association of America; (2) Global Dairy Platform; and (3) the Wisconsin Milk Marketing Board, Inc.

Import assessment funds totaled between \$3.41 million and \$4.76 million per year from 2012 to 2017. The total funds collected declined modestly from \$3.52 million to \$3.41 million between 2012 and 2014. These funds rose to \$4.18 million in 2015 and \$4.76 million in 2016 but declined to \$4.25 million in 2017. The cumulative import assessment funds totaled \$24.58 million from September 2011 to December 2017. On a monthly basis, funds from the dairy import assessment ranged from \$210,086 to \$493,975, averaging \$323,470 over the period of September 2011 to December 2017 (Figure 3-7). The import assessment averaged just over 1.0 percent of the total demand-enhancing expenditures made by DMI, MilkPEP, and the QPs between 2012 and 2017.

Trends in Dairy Use

Per capita fluid milk consumption trended downward between 1995 and 2017 (Figure 3-8). The downward trend likely reflects changes in the frequency of fluid milk intake rather than changes in portions (Stewart, Dong, and Carlson, 2013). The majority of Americans born in the 1990s tend to consume fluid milk less often than those born in the 1970s, who in turn consume fluid milk less often than those born in the 1950s. U.S. milk consumption has declined roughly 25 percent since 1975 due to changing consumption habits as well as increased competition from other beverages.

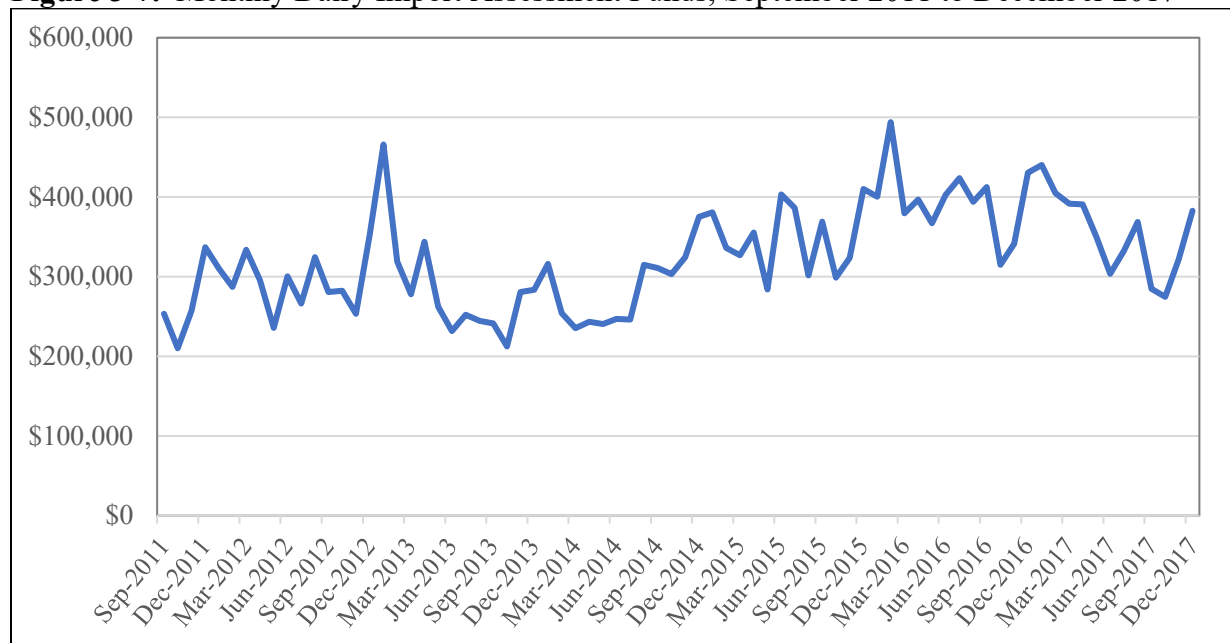
Cheese consumption per capita has grown over time and exhibits seasonal patterns (Figure 3-9). Between 1995 and 2017, the commercial per capita disappearance of cheese ranged from 6.4 pounds per quarter to 9.8 pounds per quarter, averaging about 7.9 pounds.

Over the same period, per capita butter consumption grew modestly and exhibited seasonal patterns as well (Figure 3-10). The commercial disappearance of butter on a per capita basis ranged from 0.9 pounds to per quarter to 1.7 pounds per quarter, averaging slightly more than 1.2 pounds.

On average over 1995 to 2017, the per capita commercial disappearance of all dairy products on a fat basis amounted to 150 pounds per quarter, ranging from 136 pounds to 169 pounds per quarter (Figure 3-11). On a skim-solids basis, the per capita commercial disappearance of all dairy products over that same period amounted to 137 pounds per quarter, ranging from 130 pounds to 143 pounds per quarter (Figure 3-12).

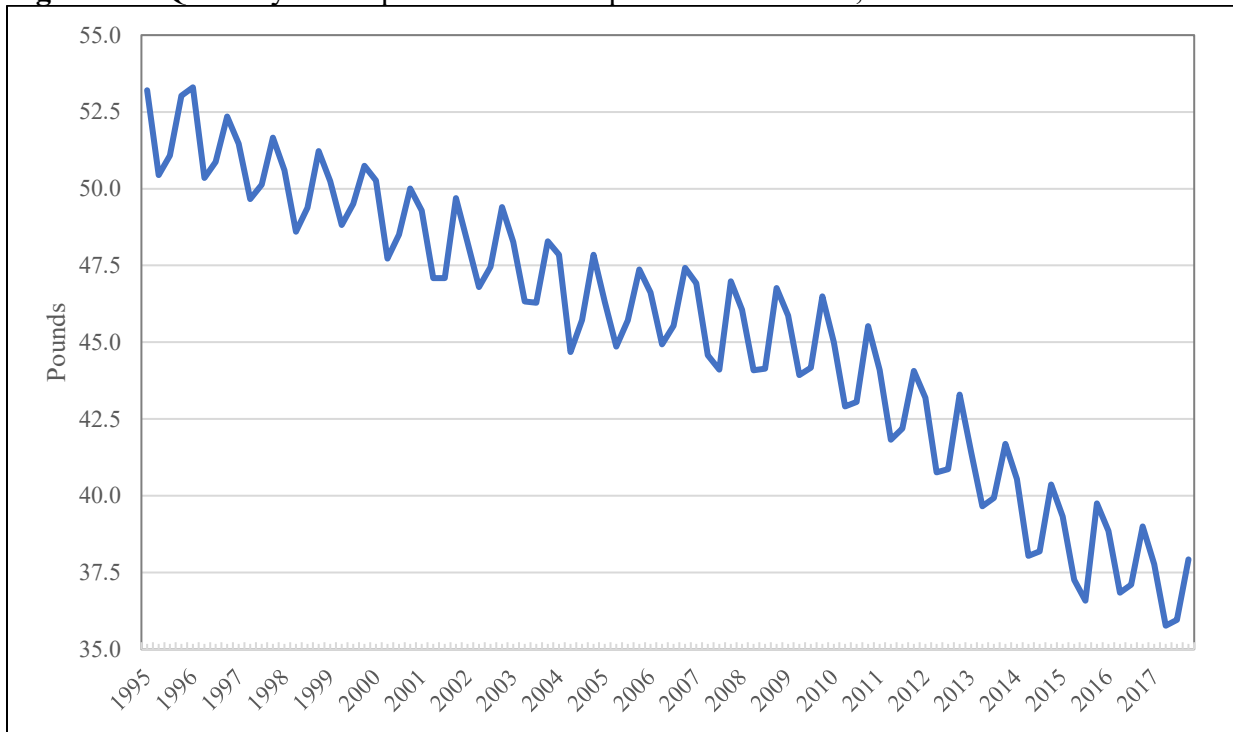
Between 1995 and 2017, quarterly dairy exports on a fat basis averaged nearly 1,350 pounds and slightly more than 5,400 pounds on a skim-solids basis (Figure 3-13).

Figure 3-7. Monthly Dairy Import Assessment Funds, September 2011 to December 2017



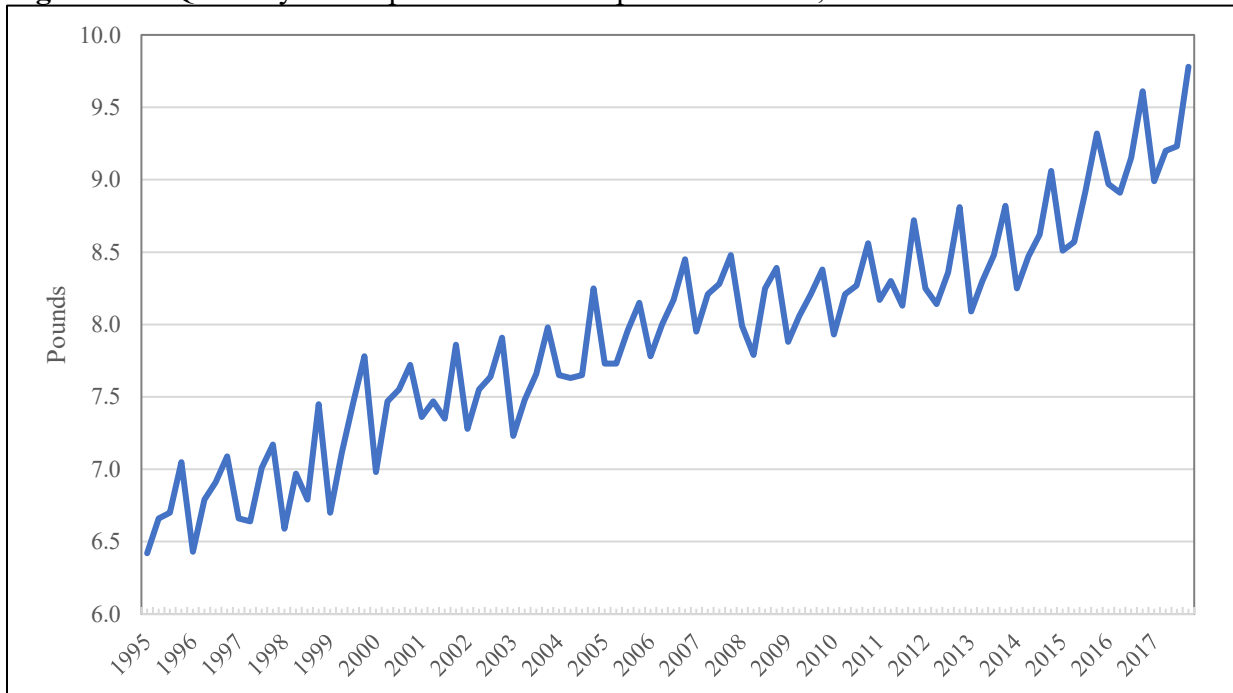
Source: U.S. Department of Agriculture

Figure 3-8. Quarterly Per Capita U.S. Consumption of Fluid Milk, 1995 to 2017



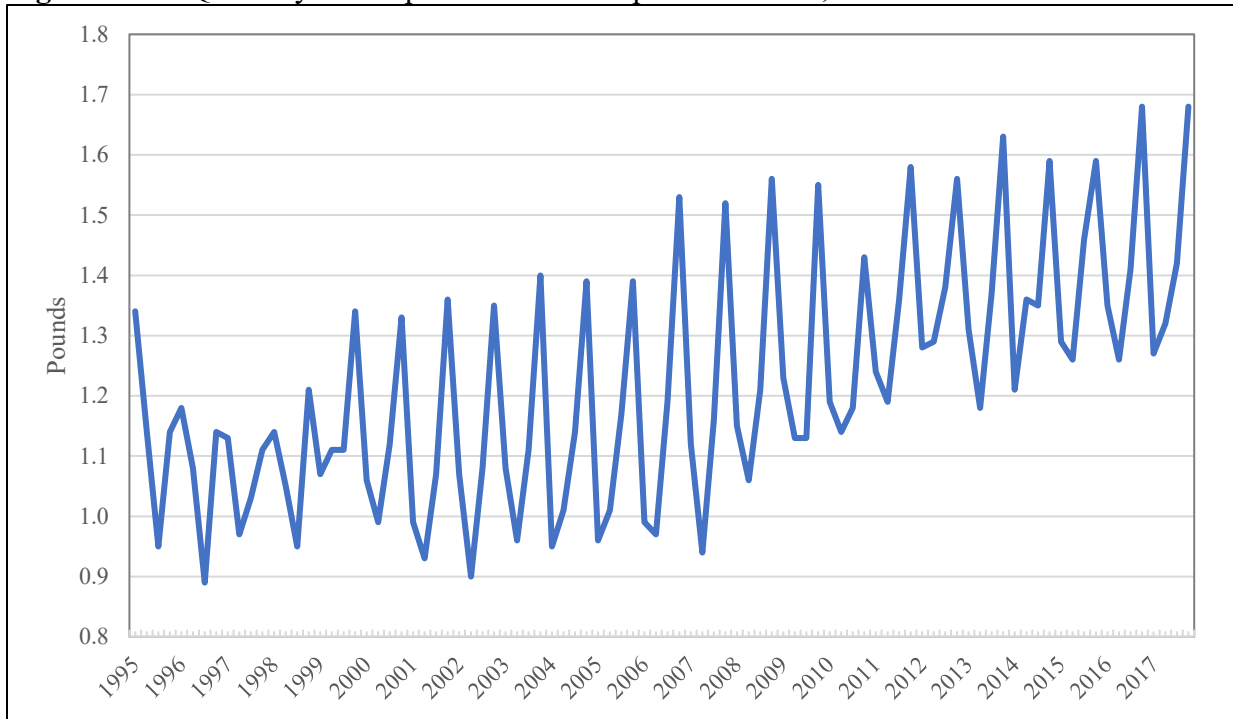
Source: U.S. Department of Agriculture.

Figure 3-9. Quarterly Per Capita U.S. Consumption of Cheese, 1995 to 2017



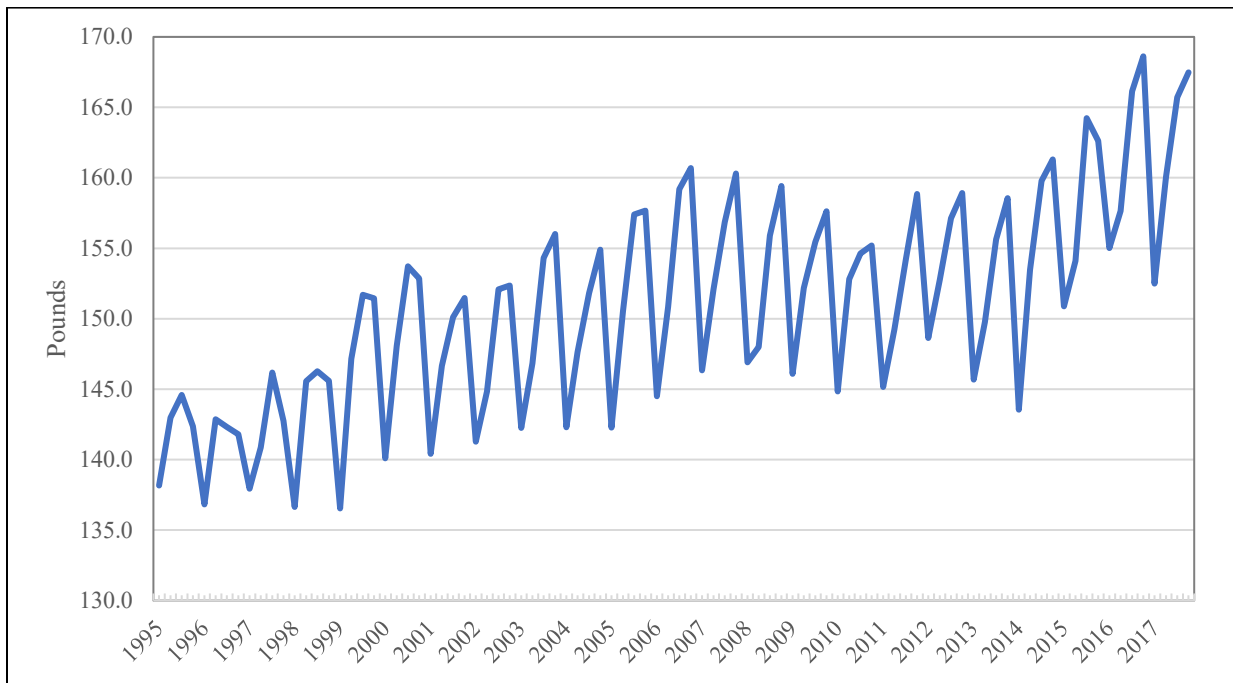
Source: U.S. Department of Agriculture.

Figure 3-10. Quarterly Per Capita U.S. Consumption of Butter, 1995 to 2017



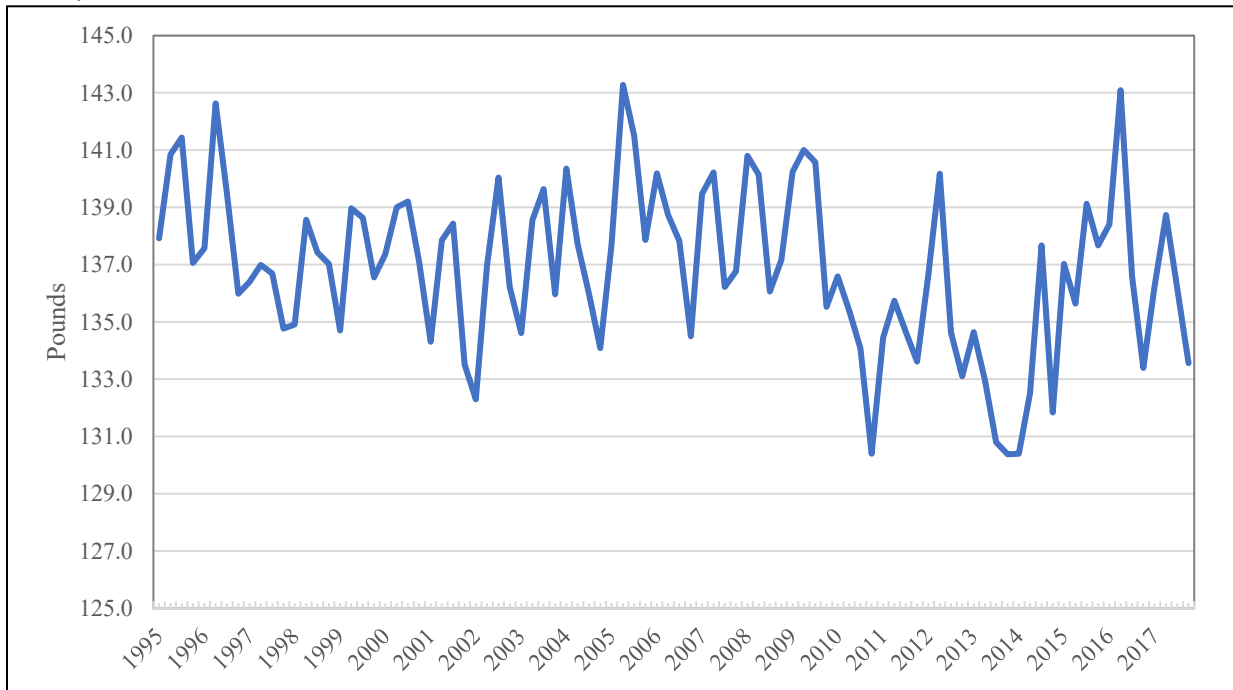
Source: U.S. Department of Agriculture.

Figure 3-11. Quarterly Per Capita U.S. Consumption of All Dairy Products on a Milk-Equivalent Fat Basis, 1995 to 2017



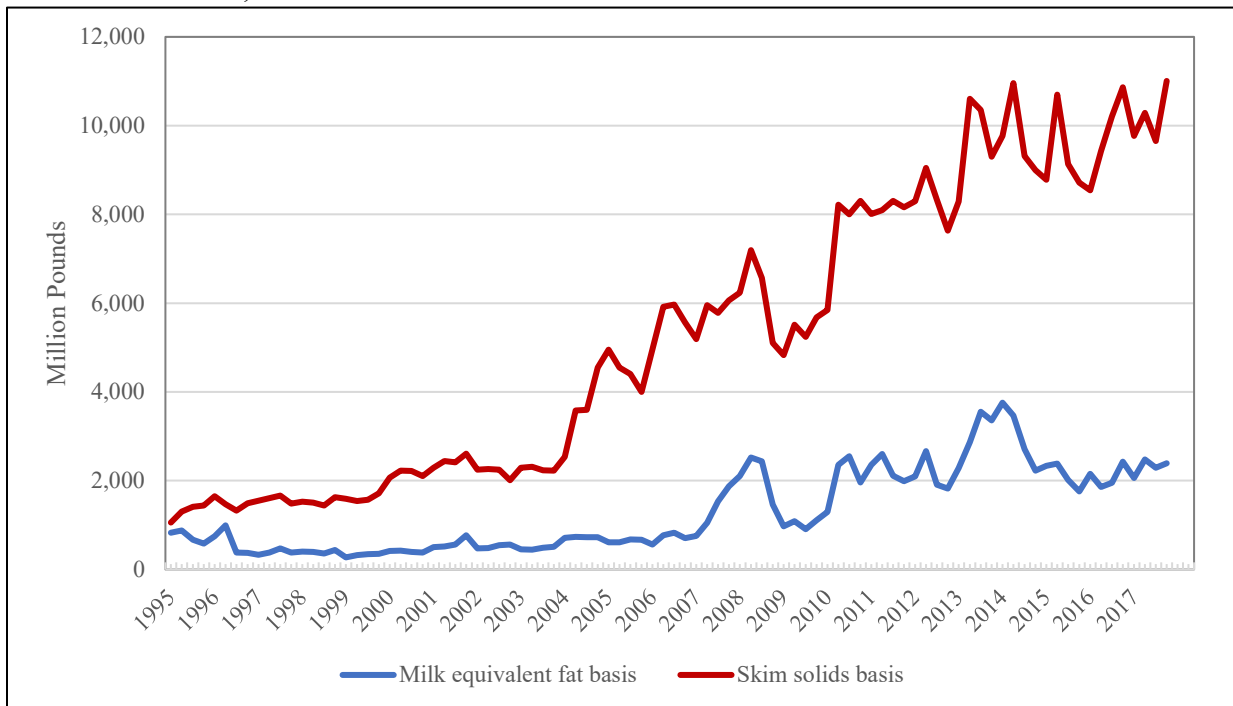
Source: U.S. Department of Agriculture and calculations by the authors.

Figure 3-12. Quarterly Per Capita U.S. Consumption of All Dairy Products on a Skim-Solids Basis, 1995 to 2017



Source: U.S. Department of Agriculture and calculations by the authors.

Figure 3-13. Quarterly U.S. Dairy Commercial Exports on a Milk-Equivalent Fat Basis and Skim-Solids Basis, 1995 to 2017



Source: U.S. Department of Agriculture and calculations by the authors.

The United States imported between \$3.0 billion and \$3.5 billion in dairy products in each of the last 5 years (Table 3-2). Cheese products accounted for slightly more than one-third (by value) of the dairy imports (Figure 3-14). Cheese imports as a percent of total dairy imports were highest in 2013 at 37.5 percent and lowest in 2012 and 2017 at 35.5 percent.

Given these trends, the analysis in the next section addresses the response of consumers to dairy promotion expenditures. Structural econometric models were developed to isolate the effects of those expenditures on demand for dairy products from those of other fundamental economic forces such as price and income. The results are reported in the next section.

Findings on Impacts of Promotion Expenditures on Dairy Demand

The primary objective of the analysis is to answer two key questions regarding the National Programs over time: (1) What have been the effects of dairy promotion programs on the domestic consumption of fluid milk, dairy products, and exports? and (2) What have been the returns to dairy promotion programs? In answering the first question, the focus is on the effects of the dairy promotion program on the U.S. demand and exports of fluid milk and dairy products. Once those market effects have been determined, a benefit-cost analysis of the dairy program at the producer level and at the fluid milk processor level is done to answer the question about returns to producers.

Table 3-2. U.S. Dairy Product Imports and Import Assessment Funds, 2012-2017¹

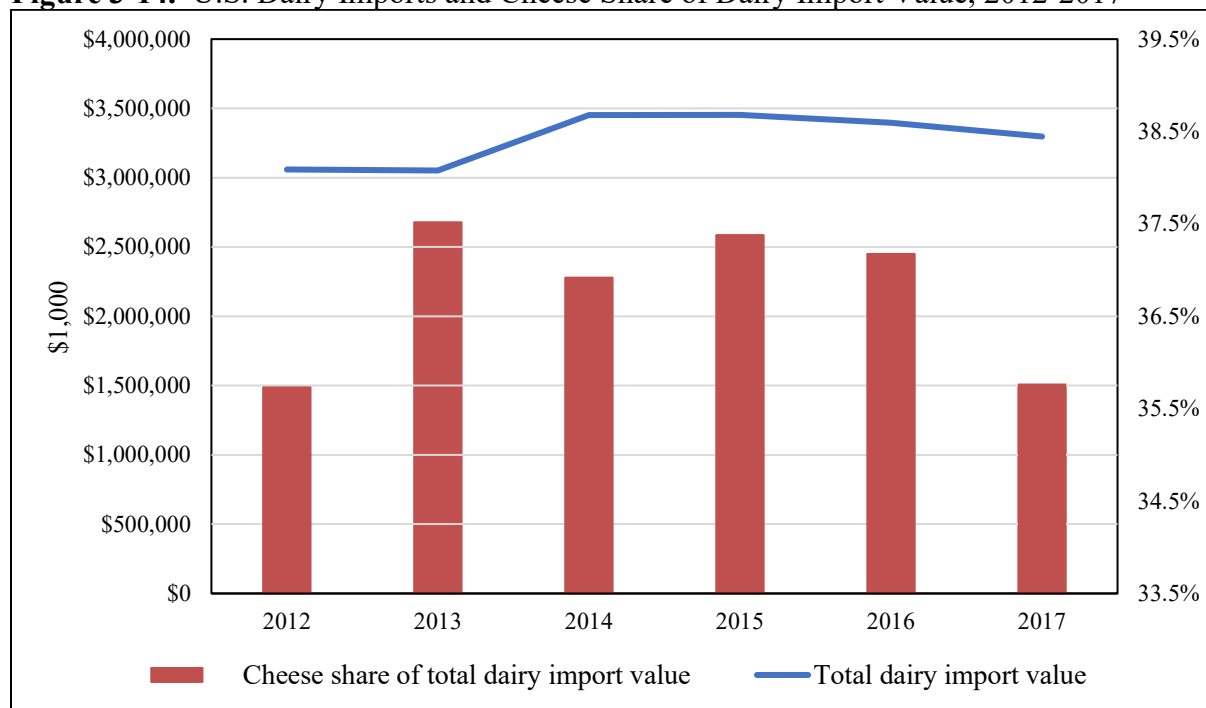
	2012	2013	2014	2015	2016	2017
Value of All Dairy Imports (\$1,000)	\$3,059,069	\$3,051,985	\$3,452,868*	\$3,453,305*	\$3,397,271*	\$3,296,482
Value of Cheese Imports (\$1,000)	\$1,093,017	\$1,145,000	\$1,274,747*	\$1,290,785*	\$1,262,880*	\$1,178,895
Quantity of Cheese Imports, (metric tons)	153,964	147,196	164,778*	197,768*	205,329*	182,393
Unit Value of Cheese Imports (\$/MT)	\$7,099	\$7,779	\$7,736	\$6,527*	\$6,151*	\$6,463
Import Assessment Funds (\$)	\$3,522,145	\$3,415,218	\$3,411,353	\$4,175,783	\$4,756,864	\$4,245,386
Import Assessment per \$1,000 of dairy imports	\$1.15	\$1.12	\$0.99	\$1.21	\$1.40*	\$1.29

¹ The import assessment went into effect April 1, 2011. Funds have been collected in each month from September 2011 to present. The table shows funds collected from January 2013 to December 2017.

*Revised

Sources: Import Assessment data from the U.S. Department of Agriculture's (USDA) Agricultural Marketing Service. Trade data from USDA's Foreign Agricultural Service.

Figure 3-14. U.S. Dairy Imports and Cheese Share of Dairy Import Value, 2012-2017



Source: Data from the U.S. Department of Agriculture, Foreign Agricultural Service. Calculations by authors.

Estimation of Dairy Consumption and Export Changes Due to Promotion

Program Expenditures

This evaluation study finds a significant positive association between dairy promotion program expenditures and consumer demand for dairy products. This association holds for all dairy products in the aggregate as well as for fluid milk, cheese, butter, and the activities of the National Programs individually. The impacts generally are modest during the quarter in which expenditures are made but larger cumulatively over time.

The key indicator of the effect of promotion expenditures on dairy product demand is a measure of the relative sensitivity of demand to such expenditures. This measure, known as the promotion expenditure elasticity, is defined as the percentage change in consumption given a 1-percent change in promotion expenditures, holding all other variables constant.

The statistical analysis centers attention on the retail level of the marketing chain. The economic model provides structural parameter estimates that are statistically valid and consistent with prior studies in the literature on evaluation of generic commodity promotion. Two key findings of the statistical analysis are as follows:

- Demand-enhancing expenditures have a significant positive impact on domestic consumption of dairy products. (Domestic consumption is defined as domestic commercial disappearance plus imports.)
- The promotion elasticities for butter, cheese, and fluid milk for 2017 were 0.037, 0.015, and 0.066, respectively. The promotion elasticities for all dairy products on a skim-solids basis

and on a fat basis for 2017 were 0.057 and 0.039, respectively.

The demand responsiveness to promotion was allowed to vary over time. Further, the cumulative impact of promotion was also identified. Demand-enhancing expenditures affect the market for cheese for up to 2 quarters. The effect on fluid milk persisted for up to 8 quarters and up to 12 quarters for butter. For the aggregate of all dairy products, the effect persisted for 6 quarters on both a fat and skim-solids basis.

To measure the effects of DMI export promotion enhancement expenditures on U.S. dairy commercial exports, two U.S. dairy export demand models were specified and estimated using two different data series for dairy exports supplied by USDA: (1) dairy exports on milk-equivalent skim-solids basis (SSB), and (2) dairy exports on a milk-equivalent fat basis (FB). The results indicated that when U.S. dairy prices were low (high) relative to Oceania dairy export prices, the United States exported more (less) dairy products.² The lag length for SSB export promotion expenditures was estimated to be 9 quarters. The SSB export promotion expenditure elasticity was estimated to be statistically significant at 0.055 over the sample period (Table 3-3). The lag length for the FB export promotion expenditures was estimated to be 6 quarters. The FB export promotion expenditure elasticity was estimated to be statistically significant at 0.100 (Table 3-3).

The analysis covers the period of 1995 to 2017. The results are decomposed for comparison purposes into four similar time periods: (1) 1995-1999, (2) 2000-2004, (3) 2005-2010, and (4) 2011-2017. The analysis was accomplished by first aligning the annual model of the U.S. dairy industry maintained at the University of Missouri, the Agricultural Markets and Policy Group Dairy Model (AMAP Dairy Model) as modified to account for dairy promotion, with the observed data over the 1995 to 2017 period. Then the impact of promotion was obtained by removing demand-enhancing expenditures from the model. The model was first simulated over history to generate a “with promotion” scenario representing the effects of the dairy programs over actual history. A second “no promotion” scenario (the counterfactual scenario) was then generated by setting promotion expenditures to zero. The “zero promotion” scenario results represent the levels of prices and quantities that would have existed if the National Programs had not been created and, thus, dairy promotion had not been done.

The results for selected key variables in the model for the “with promotion” and “no promotion” scenarios are presented in Table 3-4, Table 3-5, and Table 3-6. These tables provide a comparison of the “with promotion” levels of each variable (actual historical data) to the “no promotion” levels (simulated levels without promotion) to show the effects across time from dairy promotion spending. There are many factors at play in the year-by-year results, including the level of promotion expenditures each year and the supply dynamics built into the AMAP structural dairy model. To provide some insight into these model dynamics, four sub-periods of results are shown as well as the entire period for selected endogenous variables. The analysis starts in 1995 and, thus, does not include the effects of any dairy promotion that may have occurred prior to that year.

² Key drivers of dairy demand were found to include the ratio of the Oceania export butter price to the U.S. butter price on a fat basis; the ratio of the Oceania export price for skim milk powder (SMP) to the U.S. nonfat dry milk (NDM) price on a skim-solids basis; a measure of real world income; seasonality; and inertia or stickiness of dairy exports in world markets.

Because no other exogenous variable in the model (e.g., levels of inflation, exchange rates, income levels, Government policies, etc.) other than dairy promotion expenditures is allowed to change in either scenario, this analytical process effectively isolates the effects of the National Programs on U.S. dairy markets and exports. That is, the simulated differences between the values of the endogenous variables from the “with promotion” scenario and those from the “no promotion” scenario, provide direct measures of the historical effects of the dairy promotion expenditures (and only those expenditures) on U.S. dairy markets and exports.

Table 3-3. Estimated Dairy Demand Sensitivity to Promotion, Prices, and Income, 1995 to 2017

	Promotion Elasticities		Own-Price Elasticity	Income Elasticity
	1995 to 2017	2017 only		
Butter ¹	0.029	0.037	-0.124	0.263
Cheese ¹	0.020	0.015	-0.141	0.516
Fluid milk ¹	0.082	0.066	-0.113	-0.222
All dairy ¹				
Skim-solids basis	0.061	0.057	-0.061	0.082
Fat basis	0.042	0.039	-0.075	0.394
Exports ¹				
Skim-solids basis	0.055	0.055	-0.195	0.655
Fat basis	0.107	0.100	-0.309	0.581

¹Over the time period 1995.1 to 2017.4.

Table 3-4. Effects of Dairy Promotion on U.S. Dairy Markets Based on Simulation of Supply Response – Per Capita Consumption

		Fluid Milk Per Capita Consumption	Cheese Per Capita Consumption	Butter Per Capita Consumption	NFDM Per Capita Consumption	
Period	2012 - 2017	With Promotion (lbs)	177.21	35.14	5.59	3.17
		No Promotion (lbs)	161.73	33.76	5.39	3.12
		Change (lbs)	15.48	1.38	0.19	0.02
		Percent Change	9.6%	4.1%	3.6%	0.6%
	2006 - 2011	With Promotion (lbs)	195.31	32.76	4.95	3.11
		No Promotion (lbs)	177.37	31.44	4.83	3.07
		Change (lbs)	17.93	1.32	0.12	0.04
		Percent Change	10.1%	4.2%	2.4%	1.3%
	2000 - 2005	With Promotion (lbs)	202.12	30.54	4.46	3.16
		No Promotion (lbs)	182.19	29.35	4.41	3.16
		Change (lbs)	19.93	1.19	0.04	0.00
		Percent Change	10.9%	4.1%	1.0%	0.1%
	1995 - 1999	With Promotion (lbs)	209.95	27.68	4.32	3.24
		No Promotion (lbs)	188.96	26.77	4.27	3.26
		Change (lbs)	20.99	0.91	0.05	-0.02
		Percent Change	11.1%	3.4%	1.1%	-0.7%
	1995 - 2017	With Promotion (lbs)	195.55	31.70	4.85	3.17
		No Promotion (lbs)	177.07	30.49	4.75	3.15
		Change (lbs)	18.48	1.21	0.10	0.02
		Percent Change	10.4%	4.0%	2.2%	0.6%

Source: Calculation by the authors.

As shown in Table 3-4, the average annual per capita consumption of fluid milk, cheese, and butter was higher by 10.4 percent, 4.0 percent, and 2.2 percent, respectively, over the period of 1995 to 2017 due to promotion efforts, all other exogenous factors held constant. The average annual per capita consumption of nonfat dry milk (NFDM) would have been 3.15 pounds per capita annually without promotion versus 3.17 pounds per capita as actually occurred with promotion over the 1995 to 2017 period, an increase of 0.6 percent.

These results indicate that the overall downward trend of per capita fluid milk consumption between 1995 and 2017 was mitigated to some extent by the promotional efforts of the National Programs. Without the promotion programs, fluid milk consumption would have averaged 177.07 pounds per capita annually instead of 195.55 pounds per capita annually over the 1995-2017 period as actually occurred with promotion. Hence, the National Programs' spending on fluid milk reduced the rate of decline in consumption.

The results also indicate that the annual per capita consumption of cheese would have averaged 30.49 pounds without promotion versus the 31.70 pounds as actually occurred with promotion over 1995 to 2017. For butter, annual per capita consumption would have averaged 4.75 pounds without promotion versus the 4.85 pounds that actually occurred without promotion over the same period.

Average annual per capita consumption of fluid milk, cheese, and butter was higher by 9.6 percent, 4.1 percent, and 3.6 percent, respectively, due to promotion during the 2012 to 2017 period (Table 3-4). Annual exports of butter averaged 8.7 percent less than would have occurred without promotion, while annual exports of NFDM and cheese averaged 1.3 percent and 4.2 percent higher, respectively, due to promotion.

Looking specifically at import assessment impacts, cheese is the focus of the analysis given that cheese accounts for about one-third of total imported dairy products³ and that there are adequate data to support a thorough quantitative analysis. The analytical results indicate that over the 2012-2017 period, the level of cheese imports was higher by roughly 1.2 million pounds due to the expenditure of promotion funds collected from importers. Further, the annual unit value of cheese imports amounted to roughly \$3.16 per pound on average over the period 2011 to 2017 due to promotion using import assessments. Hence, incremental revenue to importers solely from cheese attributed to the import assessment totaled \$3.8 million.

The average annual per capita consumption of cheese was also higher by 0.020 pounds (0.06 percent) as a result of the promotion funded by the importer assessment. Consequently, total cheese consumption on average was higher by 6.4 million pounds as a result of the dairy importer contribution over the period of 2011 to 2017.

Dairy Promotion Program Benefit-Cost Analysis

This section provides a benefit-cost analysis of the National Programs based on the results of the scenario analyses discussed in the previous section. As calculated, the producer profit BCR is the additional industry profits (additional cash receipts net of additional production costs and promotion assessments) earned by producers as a consequence of the promotion expenditures (as measured through the scenario analyses) divided by the historical level of promotion expenditures made to generate those additional profits. The fluid milk processor BCR is calculated similarly to the producer BCR in which the cost of milk is used as a proxy for the cost of production since data for fluid milk processors' cost of production are not available.

Based on a comparative analysis results for the “promotion” and “no-promotion” scenarios as summarized in the previous section (see Table 3-4), the answer to the key question posed earlier regarding the National Programs, as it relates to the analyzed products, is that these programs have effectively increased the demand of promoted dairy products.

As exhibited in Table 3-5, over the period of 1995-2017, the gains in profit at the producer level were far larger than the expenditures on demand-enhancement programs. The BCRs for producers for fluid milk were calculated to be \$3.27 for every dollar invested in dairy demand promotion; for cheese \$3.94 for every dollar invested; and for butter \$15.93 for every dollar invested. Dairy export promotion expenditures increased foreign demand for U.S. dairy products by \$6.91 for every dollar invested. For the aggregate of all dairy products, the net profit BCR is \$4.35 for every dollar invested.

³ Total dairy imports include casein, lactose, milk powder, and other dairy products largely for industrial use that are not separately accounted for in the econometric dairy model used for this analysis.

Table 3-5. Calculated Benefit-Cost Ratio (BCRs), in Net Profit at the Producer Level Attributable to the National Programs, 1995 to 2017

Producers	
Product	BCR
All Dairy	4.35
Fluid milk	3.27
Cheese	3.94
Butter	15.93
Exports	6.91

Source: Calculations by the authors

The fluid milk processor BCR cannot be calculated as simply as the producer BCR since the cost of production data are not available. To calculate the fluid milk BCR, the milk cost is used as a proxy for cost of production since milk would be the largest input cost. Over the period 1995 to 2017, the gains in profit at the fluid milk processor level were larger than the expenditures on demand-enhancement programs. The BCRs for fluid milk were calculated to be \$3.04 for every dollar invested in demand-enhancing activities for fluid milk processors (Table 3-6).

Table 3-6. Calculated Benefit-Cost Ratio (BCRs), in Net Profit at the Fluid Milk Processor Level Attributable to the National Programs, 1995 to 2017

Fluid Milk Processors	
Product	BCR
Fluid Milk	3.04

Source: Calculations by the authors

Available expenditure data for the two participating entities in dairy promotion, DMI and MilkPEP, also allows for the calculation of separate BCRs for the two groups. To address the effectiveness of the investments made by DMI and MilkPEP separately, we simulated “with promotion” and “without” promotion” scenarios for each of the two entities following the same methodology as for the aggregate analysis. DMI promotion expenditures largely have focused on promotion programs for fluid milk, cheese, butter, non-delineated products, and exports. In contrast, MilkPEP promotion expenditures have targeted fluid milk exclusively. The scenario simulation results indicate that the BCR associated with DMI spending was 4.80, slightly higher than the 4.35 return on investment shown in Table 3-5 for all dairy product promotion investments. The BCR for MilkPEP was calculated at 3.04, slightly below the 3.27 calculated for all fluid milk promotional spending in Table 3-6.

As indicated earlier, each additional dollar spent has a declining effect on demand as spending on promotion increases. Thus, the total additional revenue achieved increases at a declining rate. This phenomenon is consistent with the law of diminishing returns in economics. Thus, the ratio between the additional revenue generated by promotion and the additional funds spent on promotion (the BCR) declines as funding increases. Further, a lower BCR during one time period than another or for one commodity than another does not mean the program is less effective in one time period than another or for one commodity than another.

Concluding Remarks⁴

This report provides an independent evaluation of the effectiveness of the National Programs covering the period 1995-2017. The key findings regarding markets for milk and manufactured dairy products over that period include the following:

- The National Programs have effectively increased the demand for promoted dairy products, especially cheese and butter, and moderated the decline in per capita fluid milk consumption.
- The gains in profit at the producer and fluid milk processor level from promotion were far larger than the costs of the National Programs. The overall BCR (using profit over costs) of the dairy producer promotion program was calculated to be 4.35. That is, for every \$1 spent on demand-enhancing activities, dairy producers received an additional \$4.35.
- Exports of butter and nonfat dry milk were smaller by annual averages of 19.9 percent and 8.3 percent, respectively, but exports of cheese were higher by an annual average of 5.5 percent.
- Promotion funds collected from importers boosted the annual average level of cheese imports by roughly 1.2 million pounds. Annual unit values of cheese imports amounted to about \$3.16 per pound on average over the period 2011 to 2017. Hence, the incremental revenue to importers solely from cheese attributable to the expenditure of the import assessments for cheese promotion totaled roughly \$3.8 million.
- The BCR for fluid milk promotion was calculated to be \$3.27 for every dollar invested in demand-enhancing activities. For cheese promotion, the BCR was calculated to be \$3.94 per dollar invested in cheese promotion and \$15.93 for every dollar invested in butter promotion. The BCR for dairy export promotion was calculated to be \$6.91 per dollar invested.
- The BCR for fluid milk processors attributed to the Fluid Milk Promotion Program was calculated to be \$3.04.

With regard to methodology, the analysis was accomplished by first statistically estimating the relationships between dairy product demands and the respective demand drivers including prices and promotion expenditures. The structural econometric models used for this analysis are statistically valid and largely consistent with prior studies evaluating generic commodity promotion.

⁴ A reference list is available upon request.

The annual model of the U.S. dairy industry maintained at the University of Missouri, the AMAP Dairy Model, was modified to include the statistical results of the dairy demand statistical analysis and then aligned with the observed data over the 1995 to 2017 period. The model was then simulated over history to generate a “with promotion” scenario representing the effects of the dairy programs over actual history. A second “no promotion” scenario (the counterfactual scenario) was then generated with the model over history in which promotion expenditures in the dairy product demand equations were set to zero. The second scenario results represent the levels of prices and quantities that would have existed if the National Programs had not been created and, thus, dairy promotion had not been done.

Chapter 4

Qualified State, Regional, or Importer Dairy Product Promotion, Research, or Nutrition Education Programs

The Secretary annually certifies Qualified Programs as part of the Dairy Act and Dairy Order. To receive certification, the Qualified Program must meet the following (7 CFR §1150.153):

1. Conduct activities intended to increase human consumption of milk and dairy products generally;
2. Active and ongoing before passage of the Dairy Act, except for programs operated under the laws of the United States or any State and importer programs;
3. Primarily financed by producers, either individually or through cooperative associations or dairy importers;
4. Not use a private brand or trade name in its advertising and promotion of dairy products (unless approved by the Dairy Board and USDA);
5. Certify requests from producers or importers for refunds under the program will be honored by forwarding to either the Dairy Board or a Qualified Program designated by the producer or importer that portion of such refunds equal to the amount that would otherwise be applicable to that program; and
6. Not use program funds for the purpose of influencing governmental policy or action.

The aggregate revenue from the assessment directed to the Qualified Programs in 2017 was \$224 million (approximately 10 cents of the 15-cent producer assessment and 2.5 cents of the 7.5-cent import assessment). This chapter provides the aggregate income and expenditure data of the Qualified Programs as well as a list of certified programs in 2017.

Some Qualified Programs participate in cooperative efforts conducted and coordinated by other Qualified Programs and/or other organizations such as DMI, the Dairy Board, and UDIA. Their goal in combining funding and coordinating projects is for more effective and efficient management of promotion dollars through larger, broad-based projects and to avoid duplication of efforts. For example, to support the unified marketing plan, UDIA coordinates the programs and resources of 19 federation members and their affiliated units nationally through DMI.

**2017 Qualified State, Regional or Importer
Dairy Product Promotion, Research or Nutrition Education Programs
Aggregate Income and Expenditure Data Reported to USDA
(Thousands)**

Aggregate Income	FY 2017
Carryover from Previous Year ¹	\$71,652
Producer Remittances	224,331
Transfers from Other Qualified Programs	62,884
Transfers to Other Qualified Programs	(57,557)
Other Income	<u>8,321</u>
Total Adjusted Annual Income	<u>\$309,631</u>
Aggregate Expenditures	FY 2017
General and Administrative	\$10,695
Milk Advertising and Promotion	13,454
Cheese Advertising and Promotion	27,511
Butter Advertising and Promotion	8,624
Frozen Dairy Products Advertising and Promotion	2,966
Other Advertising and Promotion ²	2,363
Unified Marketing Plan ³	92,956
Dairy Foods and Nutrition Research	7,592
Public and Industry Communications	18,939
Nutrition Education	17,398
Market and Economic Research	2,232
Other	<u>6,672</u>
Total Annual Expenditures	<u>\$211,402</u>
Total Available for Future Year Programs	\$96,104

¹ Differences can occur because of audit adjustments and varying accounting periods.

² Other includes "Real Seal," holiday, multi-product, calcium, foodservice, product donations at State fairs, and other promotional activities.

³ Unified Marketing Plan: Reported local spending by United Dairy Industry Association units participating in the Dairy Management Inc.'s Unified Marketing Plan to fund national implementation programs.

Source: Data reported by qualified dairy product promotion, research, and nutrition education programs.

**2017 Qualified State, Regional, or Importer
Dairy Product Promotion, Research, or Nutrition Education Programs**

Alabama:

- American Dairy Association of Alabama

Arizona:

- Dairy Council of Arizona

California:

- California Milk Advisory Board
- Dairy Council of California

Connecticut:

- Connecticut Milk Promotion Board

Florida:

- Florida Dairy Farmers

Georgia:

- Georgia Agricultural Commodity Commission for Milk
- Southeast United Dairy Industry Association (d/b/a Dairy Alliance)
- American Dairy Association of Georgia

Idaho:

- Idaho Dairy Products Commission
- Dairy West

Illinois:

- Illinois Milk Promotion Board

Indiana:

- American Dairy Association of Indiana
- Indiana Dairy Industry Development Board

Kansas:

- Kansas Dairy Commission

Kentucky:

- American Dairy Association of Kentucky

Louisiana:

- Louisiana Dairy Industry Promotion Board

Maine:

- Maine Dairy and Nutrition Council
- Maine Dairy Promotion Board

Massachusetts:

- Massachusetts Dairy Promotion Board
- New England Dairy and Food Council
- New England Dairy Promotion Board

Michigan:

- American Dairy Association of Michigan
- Dairy Council of Michigan, Inc.
- Michigan Dairy Market Program

Minnesota:

- Midwest Dairy Association
- Midwest Dairy Council
- Minnesota Dairy Research and Promotion Council

Mississippi:

- American Dairy Association of Mississippi

Missouri:

- Dairy Promotion, Inc.
- Promotion Services, Inc.
- St. Louis District Dairy Council

Nebraska:

- Nebraska Dairy Industry Development Board

Nevada:

- Nevada Farm Bureau Dairy Producers Committee

New Hampshire:

- Granite State Dairy Promotion

New Jersey:

- New Jersey Dairy Industry Advisory Council

New York:

- American Dairy Association & Dairy Council (d/b/a American Dairy Association Northeast)
- Milk for Health on the Niagara Frontier
- New York State Department of Agriculture, Division of Milk Control and Dairy Services
- Rochester Health Foundation, Inc.

North Carolina:

- American Dairy Association of North Carolina

North Dakota:

- North Dakota Dairy Promotion Commission

Ohio:

- American Dairy Association Midwest

Oregon:

- Oregon Dairy Products Commission

Pennsylvania:

- Allied Milk Producers' Cooperative, Inc.
- Mid-Atlantic Dairy Association
- Pennsylvania Dairy Promotion Program

Puerto Rico, Commonwealth of:

- Milk Industry Development Fund of Puerto Rico (Fondo Fomento Industria Lechera)

South Carolina:

- American Dairy Association of South Carolina

South Dakota:

- American Dairy Association of South Dakota

Tennessee:

- American Dairy Association of Tennessee
- Tennessee Dairy Promotion Committee

Texas:

- Dairy MAX, Inc.
- Western Dairy Association (Inactive)
- Southwest Dairy Museum, Inc.

Utah:

- Dairy Council of Utah and Nevada

Vermont:

- Vermont Dairy Promotion Council

Virginia:

- American Dairy Association of Virginia

Washington:

- Washington State Dairy Council
- Washington Dairy Products

Wisconsin:

- Wisconsin Milk Marketing Board.

Qualified Importer Programs:

- Cheese Importers Association of America (Importer)
- Global Dairy Platform (Importer)
- Wisconsin Milk Marketing Board (Importer)

2017 Dairy Management Inc. and United States Dairy Export Council

Contracts Approved by USDA

Contractor Name [Contract Activities]:

B = Business Development

F = Fluid Milk Revitalization

N = Nutrition and Wellness

P = Partnerships

C = Communications

60 = Fuel Up to Play 60

I = Ingredients

S = Sustainability

Co = Consultants,

E = Exports,

K = Knowledge & Insights,

U = Unified Marketing Plan

ABB Enterprise Software Inc. [*K*]

Academy of Nutrition and Dietetics [*N*]

ACE Secretarial Solutions [*B*]

Advantage Point Internationale, LLC [*C*]

Aga, Dr. Diana [*Co, S*]

Agribusiness-Connect Asia [*E*]

ALG Worldwide Logistics [*B*]

American Academy of Pediatrics [*N*]

American Butter Institute [*U*]

American Dairy Association Indiana, Inc. [*U*]

American Dairy Science Association [*K*]

American Humane Association [*B*]

American-Mexican Marketing [*E*]

American Society for Nutrition [*N*]

American Society for Bone and Mineral Research [*N*]

Animal Agriculture Alliance – College Aggies Online [*B*]

Arab Marketing Finance, Inc. [*E*]

ASK-Comm Strategies, LLC [*C*]

Association of National Advertisers, Inc. [*C*]

Bader Rutter and Associates, Inc. [*C, E, S*]

Baxter Communications, Inc. [*C*]

Benchmark Imaging & Display [*B*]

Blazer, Claudia [*K*]

Bodhi Road, Inc. (Fresh Company) [*B*]

Bokma, Dr. Bob [*Co, E*]

Bovina Mountain Consulting [*E, K*]

Branded Apparel [*B*]

Brand Crushin' [*U*]

Bryant Christie [*Co*]

Burson-Marsteller Korea [*E*]

C+R Research Services [*F, K*]

California Dairy Research Foundation [*K*]

Canadean – Kable Business Intelligence [*E, I*]

CAST, Inc. [*K*]

CBX [*P*]

CEB, Inc. [*B*]

Center for Food Integrity [*C*]

Center for Food Safety & Regulatory Solutions [*E, I*]

Centre National Interprofessionnel de l'Economie Laitere (CNIEL) [*E, K*]

CFE Solutions, Inc. [*Co*]

Cheese Chef John Esser [*I*]

Cheese Market News [*K*]

Cheese Reporter [K]
Chicago Council on Global Affairs [K]
Chris Cassidy Photography [C]
Cision US Inc. [C]
CliftonLarson Allen LLP [B]
CMGRP, Inc., d/b/a Current Marketing [C]
College & Professional Sports Dieticians [N]
ConferenceDirect, LLC [B]
Convergence LLC d/b/a GoConvergence [C,F]
Cooperrider Associates [N]
Copyright Clearance Center [B]
Core Design Research LLC [K]
Covance Laboratories Inc. [I]
Cowboy Media Productions, LLC [C, E]
Crimson Hexagon [C]
Crowd Companies, LLC (Catalyst) [C]
CSS360, LLC [B]
CSSI, Inc. [I]
Culinary Institute of America [I]
CustomED [C]
D.L. Peterson Associates [K]
Dairy Council of Utah/Nevada [U]
Dairy Girl Network [B]
Dairy Global Assist, LLC [C]
Dairy Insights, LLC [Co, E]
Dairy Max, Inc. [U]
Darigold, Inc. [P]
David S. Smith America, Inc. d/b/a Worldwide Dispensers [F]
DC Central Kitchen [P]
Deforest Group [C]
DH Business Consulting [Co]
Digital SpeakEasy LLC [C, S]
Discovery Education, Inc. [C]
Dolcera Information Technology Services Pvt Ltd. [K]
Domino's Pizza Enterprises – Japan [E]
Domino's Pizza Enterprises – Oceania [E]
Domino's Pizza LLC [P]
Drake, MaryAnne, Ph.D. [K]
DuPuis Group [C, F]
Dutcher & Associates, LLC [C]
Dynamic Signal [B]
Earthwide Business Intelligence Limited [E]
EAS Consulting Group [I]
East Coast Trekker [E]
Edelman Public Relations Worldwide [C, 60]
Elsevier B.V. [K]
Ernst & Young Global Limited [B]
ESHA Research [K]
Exponent, Inc. [K]
Fair Oaks Dairy Adventure [C, U]
fairlife, LLC [P]
Feeding America [P]
Field to Market [K]
Fleishman-Hillard Inc. [C]
Fletcher Knight [P]
Florida Dairy Farmers, Inc. [U]
Food & Culinary Professionals DPG [I]
Food Research and Action Center [N]

FoodMinds LLC [E, I]
 Foodsense, LLC [C, M]
 Foundation for Food Integrity [N]
 Girag & Associates [K]
 Global Dairy Platform, Inc. [C]
 Global Experience Specialists [B]
 Global Food & Nutrition, Inc. [E, I]
 GlobalData Plc (Canadean Consumer) [E, K]
 GNC Consulting, Inc. [B]
 HealthFocus International [N]
 Hebrew Rehabilitation Center [K]
 HGR Analytics, LLC [K]
 HighGround Trading LLC [K]
 Hillstrom Communications, Inc. [C]
 Hruska, Cindy [B, E]
 Hutchinson Cancer Research Center [K]
 Idea Couture [F]
 IDEA Health & Fitness [C]
 IFCN AG [K]
 Image Base Inc. [B]
 IN Marketing Services [F, C]
 Information Resources, Inc. [K]
 Ink Factory [C]
 Inmar Analytics, Inc. [K]
 Innerspace Studio [C]
 Innova Market Insights [K]
 Institute for Food Safety and Health [K]
 International Dairy Federation [K]
 International Dairy Foods Association [E, K]
 International Language Option [C, E]
 International Life Sciences Institute [K]
 International Scientific Association for Probiotics and Prebiotics [N]
 Interpublic Marketing Services Ltd. Beijing Branch (Weber Shandwick Shanghai) [E]
 Intersport, Inc. [C]
 IntNet [E]
 Inventit Consulting, LLC [P]
 Irish Design [B]
 J.C. Small Global Limited [Co, E]
 Joslin Diabetes Center Inc. [N]
 Johnson, Keliann [Co]
 K&M Printing [B]
 KaiNutra [I]
 Keenan, Judy [Co]
 Kemps [P]
 Kenney, Audrey [C, E]
 Keystone Policy Center [S]
 KJ Marketing Consulting [C]
 Kolade Osho [K]
 Kopman, Chris [Co]
 Korn Ferry Hay Group, Inc. [B]
 Koski, Shannon [C, E]
 Kroger Co. [P]
 Kropp, Jeanne [Co]
 Levinson & Associates [B]
 Liberty Creative Solutions [B]
 LexisNexis [K]
 Madison+Main [F, C]
 Maine Dairy Promotion Board [U]

Market Makers, Inc. [E]
 Marketecture [K]
 Marketing Concepts, Inc. [C, I]
 Marketing Connections S.A. [E]
 McDonald's USA, LLC [P]
 McLeod, Watkinson & Miller [B]
 Mercarum [E]
 Meros Consulting [E]
 MMS Education Inc. [C, N, 60]
 Monster Worldwide, Inc. [B]
 Moss, Melinda [Co]
 Narasimmon Consulting LLC [Co]
 National Academy of Sciences [I]
 National Dairy Shrine [B]
 National Fluid Milk Processor Promotion Board [F, P]
 National Football League Players Inc. [60]
 National Football League Properties [60]
 National Marketing Institute [C]
 National Milk Producers Federation [E, K]
 National Osteoporosis Foundation [N]
 NAVEX Global, Inc. [K]
 New England Dairy & Food Council, Inc. [U]
 Nokose, Inc. [K]
 Novak Birch [C, E]
 NPD Group, Inc. [K]
 NTT Data, Inc. [B, C]
 Nutrition Impact, LLC [N, K]
 Nutrition Insights LLC [N]
 Nutritional Strategies Inc. [N]
 Nygaard Consulting LLC [E, K]
 OCLC – CONTENTdm [B]
 Orrani Consulting [E, K]
 P R Consultants Limited [E]
 Parody, Kristen [Co, E]
 Paradox Nutrition LLC [C]
 Pelzer Communications Resources Inc. [C]
 Peryam & Kroll Research Corporation [F, K]
 Pizza Hut LLC [P]
 Pizza Hut Restaurants Asia Pte. Ltd. [E]
 PR Consultants Limited [E]
 Prime Consulting Group, Inc. [F, K]
 Prime Label Consultants [Co]
 Print & Marketing Solutions Group [B]
 PROforma [B]
 Protagonist/ExactCast [C]
 Quadrant Nutrition LLC [E, N]
 Quaife, Tom [Co]
 Quantis [S]
 Quarterra LLC [E]
 R.A.M. Production Service [C]
 Radloff, Katherine [Co]
 RB International [Co]
 Ready Ink Communications [C, E]
 Research Resources [I]
 Results Direct [C, E]
 Richard Fritz & Associates [E]
 River Global LLC [E]
 Robles, Sylvia [F, K]
 Rogers, Paul [Co, E]

RTC, Inc. [C, F]
 Ruby Do, Inc. [C]
 Sage Publications Inc. [C, E]
 SC Motion and Stills [C]
 Schonrock Consulting [Co, E]
 School Nutrition Association [N]
 Schulze, Brett [Co, 60]
 SEOmoz, Inc. [B]
 Shainwright Consulting & Research Group [E]
 Shamrock Foods Company [P]
 Sheppard, Liz [B]
 Sheryl Stern Sachman & Associates, LLC [N]
 Shutterstock [B]
 Significant Outcomes [E]
 Sikand, Dr. Vandna [Co, E]
 Silicon Valley Forum (Agtech) [K]
 Skyline Metro DC [C]
 Soil and Water Conservation Society [S]
 Sorenson, Carla [Co]
 Southeast United Dairy Industry Association
 d/b/a The Dairy Alliance [U]
 Southeast Milk, Inc. [P]
 sparks & honey, LLC [C, K]
 Spire Research and Consulting [Co, E]
 Spredfast [K]
 SRW Marketing, Inc. [I, N]
 State Agriculture and Rural Leaders [C]
 Stiefer, David L. [Co, E]
 Story Consulting [Co, E]
 Strategy Muse [K]
 Suber Global [Co, E]
 Tableau Software [B]
 Taco Bell Corporation [P]
 TAG Enterprise [C]
 Taylor Nelson Sofres Singapore Pte Ltd [E]
 Team Services LLC [60]
 Technomic, Inc. [K]
 Texas A&M AgriLife Research [K]
 The Centre for Food & Health Studies Ltd. [N]
 The Context Network, LLC [S]
 The Economist Intelligence Unit, NA, Inc. [C]
 The Family Room Strategic Consulting Group,
 LLC [K]
 The Foundation for the National Institutes of
 Health [N]
 The Fresh Approach, Inc. [C]
 The Ginger Network, LLC [C]
 The Hartman Group [I, N]
 The Kroger Company [P]
 The McCully Group [E, I]
 The Richards Group, Inc. [F, C]
 Think Healthy Group [C]
 TNS Custom Research, Inc. d/b/a Kantar
 Worldpanel [K]
 Tong, Dr. Phillip [E, K]
 TradeMoves, LLC [E, K]
 Tractus Asia Limited [E]
 Trusted Translations, Inc. [C]
 United Dairy Industry Association, Inc. [P, U]
 United Dairymen of Arizona [U]
 Upfield Group [C]

USDA Agriculture Research Service, Western
Human Nutrition Research Center *[K]*

Venga Global, Inc. *[C, E]*

VSBLTY *[C]*

Washington Dairy Products Commission *[U]*

Watson Green, LLC *[B, N, U]*

Weber Shandwick Worldwide *[C]*

Whey Protein Research Consortium *[K]*

World Wildlife Fund, Inc. *[C]*

Youth Improved Inc. d/b/a GenYouth *[N, 60]*

Yum! Restaurants International, Inc. *[P]*

Zenith International Ltd. *[E, I]*

Zosspack Consulting *[F]*

Zuber, Tristan *[Co, K]*

Zuroweste, Rick *[F]*

**2017 National Fluid Milk Processor Promotion Board
Contracts Approved by USDA**

Contractor Name [Contract Activities]:

A = Advertising and Marketing
M = Medical Advisory

B = Business Development
P = Partnerships

K = Knowledge and Insights

Abrams, Dr. Steven [M]	Hill, Dr. James [M]
Arc USA Chicago [A]	Hype Agency [A]
American Egg Board [P]	Influence Central, Inc. [A]
Barr, Dr. Susan [M]	InTech Integrated Marketing Services [B]
Bluetext, LLC [B]	International Dairy Foods Association [B]
Calabasas Pediatrics [A]	Interpublic Group of Companies, Inc. [A]
Campbell Ewald [A]	Ipsos-Insight, LLC [K]
Chef Lala [A]	Johnson, Dr. Rachael [M]
CMGRP, Inc. d/b/a Weber Shandwick [A]	Klay Thompson [A]
Collective Bias [A]	Leidy, Dr. Heather [M]
Competitor Group, Inc [P]	Liminal Research, LLC [K]
Crème de la Crumb, LLC [A]	Lindsay, Stone & Briggs [K]
Dairy Management Inc. [P]	Lorena Garcia Group Inc. [A]
DoExtra CRM Solutions, LLC [B]	Lowe & Partners Worldwide Inc. d/b/a SociedAD [A]
EcoNet Ventures, LLC d/b/a Latinium Network [K]	Lowe Campbell Ewald [A]
Economos, Dr. Christina [M]	Maximum Flavor, Inc. [A]
FCB Worldwide, Inc. (Foote, Cone & Belding) [A]	McLeod, Watkinson & Miller [B]
Feeding America [P]	Mullen Lowe Profero, LLC [A]
Food for Thought Consulting, Inc. [K]	National High School Athletic Coaches Association [P]
Gail Golden Consulting, LLC [B]	Jimmy Nguyen [A]
Grand Sports Management, LLC [A]	Zach Parise [A]
Hass Avocado Board [P]	Popular Pays, Inc. [B]

Prime Consulting Group *[A]*
Protagonist, LLC *[K]*
Radius Global Market Research *[K]*
Red Spark Consulting, LLC *[A]*
Revere Bank *[B]*
Rinny Runs Endurance Sports, Inc. *[A]*
Rubin, Ronald *[B]*
Sally's Baking Addiction, LLC *[A]*
Saunders, Dr. Michael *[M]*
SCA Promotions, Inc. *[B]*
Snyder-Cohn, PC *[B]*
Socialyte LLC *[A]*
Spectrum Group Productions, Inc. *[B]*
Tara Gidus Nutrition Consulting *[A]*
Taza LLC *[A]*
The Colony Group, LLC *[B]*
The Marketing Arm, Inc. *[A]*
ThinkVine Corporation *[K]*
United States Olympic Committee *[A, P]*
United States Swimming, Inc. *[P]*
United States Triathlon of Colorado *[P]*
Upshots, Inc. *[K]*
Ventura Associates *[A]*
Weelicious, Inc. *[A]*

2017 National Dairy Foods Research Centers

Established in 1987, there are six university-affiliated National Dairy Foods Research Centers supported by the National Dairy Council. The mission of the National Dairy Foods Research Centers is to conduct research, educate professionals, transfer knowledge to industry, and create dairy products and ingredients with improved health, safety, quality, and functionality.

California Dairy Research Center

The California Dairy Foods Research Center, located at the Dairy Innovation Institute at California Polytechnic State University–San Luis Obispo, supports the dairy industry from farm to table. Working with the California Dairy Research Foundation, the California Dairy Foods Research Center conducts applied and strategic dairy research and development in the areas of product technology and utilization, ingredient technology and utilization, products for health enhancement, food quality, and food safety. Facilities at the Dairy Innovation Institute are state-of-the-art, equipped with advanced and routine analytical equipment, dairy foods pilot plants, and a commercially licensed dairy processing facility. Adjacent to the Dairy Innovation Institute is the Cal-Poly University dairy farm, where fresh milk is available for research and development activities. For additional information, please visit: www.dptc.calpoly.edu.

- **California Polytechnic State University–San Luis Obispo**

David W. Everett, Ph.D., Center Director

- **California Dairy Research Foundation**

Midwest Dairy Foods Research Center

The Midwest Dairy Foods Research Center is a collaborative effort between dairy farmers and land-grant universities with a mission of providing responsive, agile, thorough and comprehensive product research. The Midwest Dairy Foods Research Center is well equipped with dairy processing and research facilities located at the University of Minnesota (St. Paul), South Dakota State University (Brookings), and Iowa State University (Ames). Research focuses on improving and controlling flavor development and functionality in cheese; improving the performance of cheese starter cultures through genetics; adding value to milk-based products with probiotics and nutraceuticals; improving shelf life of flavored milks; reducing undesirable taste attributes of milk; improving functionality and controlling flavor attributes of milk fractionation components; and developing methods for effective and profitable uses of whey. For additional information, please visit: www.midwestdairy.umn.edu.

- **South Dakota State University–Brookings**

Lloyd Metzger, Ph.D., Center Director

- **University of Minnesota–St. Paul**

Peggy Lehtola, Center Assistant Director

- **Iowa State University–Ames**

Stephanie Clark, Ph.D., Center Associate Director

- **Midwest Dairy Foods Research Center Affiliated Universities:**

University of Nebraska–Lincoln

Kansas State University

University of Missouri

Northeast Dairy Foods Research Center

The Northeast Dairy Foods Research Center, located at Cornell University, Ithaca, NY, was formed to conduct fluid milk and dairy ingredient research, provide applications and technical support for the improvements in milk powder quality and help establish the next generation of dairy ingredients. The Northeast Dairy Foods Research Center provides new learning opportunities for industry with short-course training in dairy food safety and Hazard Analysis and Critical Control Points and dairy processing, including artisan dairy production, with certificate programs in fluid milk processing, cheese making, and yogurt production. Facilities available at Cornell University include the Food Processing and Development Laboratory, Cornell Dairy Processing Plant, the Food Safety Laboratory, and the Sensory Evaluation Center. For additional information, please visit: www.foodscience.cals.cornell.edu/research.

- **Cornell University**

David M. Barbano, Ph.D., Center Director

Martin Wiedmann, Ph.D., DR. Med. Vet., Center Associate Director

- **University of Vermont**

Southeast Dairy Foods Research Center

The Southeast Dairy Foods Research Center has been in operation since 1988. Facilities are located at North Carolina State University, which is the lead institution, joined by Mississippi State University (Starkville). The Southeast Dairy Foods Research Center conducts research, educates scientists, and develops and applies new technologies for processing milk and its components into dairy products and ingredients with improved health, safety, quality, and expanded functionalities. The Southeast Dairy Foods Research Center hosts a Food Rheology Laboratory, Nutrition Technical Services Laboratory, and a Sensory Applications Laboratory, conducting analytical, qualitative, and affective sensory tests and flavor chemistry analyses tailored to meet specific needs of the dairy industry. For more information, please visit: sdfrc.ncsu.edu.

- **North Carolina State University**

MaryAnn Drake, Ph.D., Center Director

- **Mississippi State University–Starkville**

Western Dairy Center

The Western Dairy Center is located at the Utah State University, which is the lead institution. It is joined by affiliated universities through the Build University-Industry Linkages through Learning and Discovery Program (BUILD). The Western Dairy Center research focus includes

cheese flavor and functionality; cheese technology; fermented products, including cheese and yogurt; ultra-high-temperature and extended-shelf-life fluid milk beverages; milk protein chemistry, including coagulation, denaturation, and separation; milk fractionation and use of membrane separation in dairy foods; anaerobic digestion of dairy processing waste; whey protein extrusion; application of genetics, genomics, and metabolomics to lactic acid bacteria; whey and milk utilization; and microstructure of dairy. For additional information, please visit: www.usu.edu/westcent.

- **Utah State University–Logan**

Donald J. McMahon, Ph.D., Center Director

- **Western Dairy Center Affiliated Universities:**

Brigham Young University

Oregon State University

Texas A&M University

University of Idaho

Washington State University

Weber State University

Wisconsin Center for Dairy Research

Building on Wisconsin’s tradition as the “Dairy State,” the Wisconsin Center for Dairy Research was established in 1986 to provide the foremost scientific expertise in dairy research, technical support, and education. The Wisconsin Center for Dairy Research is located within a licensed operating dairy plant on the University of Wisconsin-Madison campus. The Wisconsin Center for Dairy Research offers expertise in five main program areas: cheese, dairy ingredients and functionality, cultured products and beverages, quality/safety, and dairy processing. Each of these areas are supported by expertise in dairy product research, sensory research, analytics, training, and outreach. In addition to degree programs, the Wisconsin Center for Dairy Research provides specialized training and short courses to over 1,400 industry personnel annually and cosponsors the Wisconsin Master Cheesemaker Program. Its extensive facilities include a cheese pilot plant, dairy ingredients pilot plan, sensory lab, an analytical lab, and an applications lab. For additional information, please visit: www.cdr.wisc.edu.

- **University of Wisconsin–Madison**

John Lucey, Ph.D., Center Director

Mark Johnson, Ph.D., Assistant Director

2017 Nutrition Competitive Research Activities

Lacy Alexander, PhD (Pennsylvania State University): *Milk and cheese consumption and human microvascular function* [ongoing 2017].

David Allison, PhD (Indiana University): *Science dialogue mapping of knowledge and knowledge gaps related to the effects of dairy intake on human health* [ongoing 2017].

Connie W. Bales, PhD, RD (Duke University Medical Center): *An enhanced protein (dairy) weight loss intervention for Dynapenic Obesity: Impact on Muscle Quality and Composition* [ongoing 2017].

Leila Barraaj, PhD (Exponent, Inc.): *Healthcare Costs and Savings Associated with Increased Dairy Consumption* [ongoing 2017].

Christopher Blesso, PhD (University of Connecticut): *Milk Phospholipids for the Prevention of Atherosclerosis* [commenced 2017].

Bradley Bolling, PhD (University of Wisconsin-Madison): *Reduction of obesity-associated intestinal inflammation by low-fat dairy yogurt* [concluded 2017].

Sarah L. Booth, PhD (Tufts University): *Menaquinone (Vitamin K2) content of dairy products* [concluded 2017].

Richard Bruno, PhD, RD (Ohio State University): *Regulation of postprandial nitric oxide bioavailability and vascular function by Dairy Milk* [ongoing 2017].

In-Young Choi, PhD (University of Kansas Medical Center): *Dairy intake and cerebral antioxidant defense in aging: a dietary intervention study* [ongoing 2017].

Sharon Donovan, PhD, RD and Barbara Fiese, PhD (University of Illinois at Urbana - Champaign): *STRONG Kids 2: A Cells-to-Society Approach to Nutrition in Early Childhood* [ongoing 2017].

Foundation for the National Institutes of Health: *The Performance of Novel Cardiac Biomarkers in the General U.S. Population* [ongoing 2017].

Osama Hamdy, MD, PhD, FACE (Joslin Diabetes Center): *Dairy and type 2 diabetes: Research, outreach, and education* [ongoing 2017].

Naiman A. Khan, PhD, RD (University of Illinois at Urbana - Champaign): *Diet quality & cognitive control function in early childhood: A pilot study* [ongoing 2017].

Samuel Klein, MD (Washington University in St. Louis School of Medicine): *Diet and exercise intervention in Type 2 Diabetes* [ongoing 2017].

Jana Kraft, PhD (University of Vermont): *Researching the effects of consuming a diet comprising of milk fat on metabolic health markers* [ongoing 2017]; *Full-fat yogurt and glucose tolerance* [commenced 2017].

Mario Kratz, PhD, MS (Fred Hutchinson Cancer Research Center - University of Washington): *The Impact of Low-fat and Full-fat Dairy Consumption on Glucose Homeostasis* [ongoing 2017].

Ronald M. Krauss, MD (Children's Hospital Oakland Research Institute): *Effects of replacing sugar sweetened beverages with milk on metabolic risk factors in overweight and obese adolescents* [concluded 2017]; *Effects of a modified high-fat Mediterranean dietary pattern on lipoprotein and inflammatory markers of CVD risk in adults* [ongoing 2017].

Benoit Lamarche, PhD, FAHA (Laval University (Canada)): *Investigation of the impact of cheese consumption on HDL function* [ongoing 2017].

Benjamin F. Miller, PhD (Colorado State University): *Activation of Nrf2 by conjugated linoleic acid to decrease oxidative stress and inflammation and thereby increase muscle building effects of milk proteins* [ongoing 2017].

Lynn L. Moore, D.Sc., MPH (Boston University School of Medicine): *Protein Effects on Metabolic Outcomes in Older Adults* [ongoing 2017]; *Effects of animal and plant proteins on functional decline in older adults* [ongoing 2017].

Paul Moughan, PhD (Massey University (New Zealand)): *Determination of True Ileal Amino Acid Digestibility in Dietary Protein Sources Commonly Consumed by Humans: Toward an international database of the protein quality of human foods* [ongoing 2017].

Douglas Paddon-Jones, PhD (University of Texas Medical Branch at Galveston): *Whey Protein, Aging and Physical Inactivity* [ongoing 2017].

Stuart Phillips, PhD (McMaster University (Canada)): *Whey protein intake in the amelioration of skeletal muscle quantity and function during inactivity in older adults* [ongoing 2017].

Scott A. Rankin, PhD (University of Wisconsin-Madison): *Catalytic conversion of lactose-rich co-products into value-added components* [commenced 2017].

Stephen Ritchie, PhD (University of Alabama): *Functionalized mesh materials for Listeria mitigation in milk and milk-derived products processed in dairy plants* [commenced 2017].

Shivani Sahni, PhD (Harvard University - Hebrew Rehabilitation Center): *Dairy food intake, vitamin D status and bone measures* [ongoing 2017].

Karen Schmidt, PhD (Kansas State University): *Producing dairy protein ingredients for targeted markets* [ongoing 2017].

Carolyn Scrafford, PhD, MPH (Exponent, Inc.): *Nutrition Evidence Library Review of Dairy and Health Outcomes* [ongoing 2017].

Tonya Schoenfuss, PhD (University of Minnesota): *Evaluation of cheese with desirable fat and sodium attributes for school lunch snack choices* [ongoing 2017]; *Improving sensory and functional properties of reduced sodium low—moisture part—skim mozzarella cheese via brine and make procedure modifications* [ongoing 2017].

Jeffery Schwimmer, MD (University of Birmingham): *In Children with Obesity, the Intake of Dairy-Derived Odd Chain and Branched Chain Fatty Acids is Inversely Associated with the Risk for Nonalcoholic Fatty Liver Disease* [commenced 2017].

Mary Beth Spitznagel, PhD and John Gunstad, PhD (Kent State University): *Is Milk the Drink that Helps You Think? Dairy, Acute Glycemic Control, and Cognitive Function* [concluded 2017].

Lyn Steffen, PhD, MPH, RD (University of Minnesota): *Dairy Consumption, Dietary Patterns and Cardiac Phenotypes* [commenced 2017].

Hirofumi Tanaka, PhD (University of Texas): *Destiffening and hypotensive effects of whole milk and full-fat dairy products* [ongoing 2017].

Jeff Volek, PhD, RD (Ohio State University): *Controlled clinical study to determine novel health benefits of cheese consumption* [ongoing 2017].

Elena Volpi, MD, PhD (University of Texas Medical Branch at Galveston): *Whey protein and exercise to accelerate recovery of muscle mass and function after acute hospitalization in previously independent older adults* [concluded 2017].

Taylor Wallace, PhD, CFS, FACN (National Osteoporosis Foundation & George Mason University): *Protein intake and bone health – Phase II Systematic review and meta-analysis* [ongoing 2017].

Gareth Wallis, PhD (University of Birmingham (United Kingdom)): *Exploring novel uses for lactose constituents in sports nutrition* [commenced 2017].

Connie Weaver, PhD (Purdue University): *Guidelines for Enhancing Design and Analysis of Prospective Cohort Studies Related to Bone Health for Use in Nutrition and Health Research* [commenced 2017].

Robin White, PhD (Virginia Polytechnic Institute and State University): *Nutritional and Environmental Consequences of Dairy Removal from US Agriculture* [commenced 2017].

Christine D. Wu, PhD (University of Illinois-Chicago): *Consumption of milk after sugar snacks reduces dental plaque acid production and benefits oral health in children* [ongoing 2017].

2017 Product Competitive Research Projects

Principal Investigator, Institution, Project Title and Status

Alirez Abbaspourrad, PhD (Cornell University): *Annatto-free Cheddar Cheese Whey* [ongoing 2017].

Jayendra K. Amamcharla, PhD (Kansas State University): *Use of Nano-scale aqueous ozone to remove biofilms from selected dairy product contact surfaces* [ongoing 2017]; *Use of Micro and Nano bubbles in Spray drying* [ongoing 2017]; *Altering the microstructure to improve functionality of dairy powders using micro- and nano-bubbles* [ongoing 2017].

Jayendra K. Amamcharla, PhD (Kansas State University) and Lloyd Metzger, PhD (South Dakota State University): *Understanding the effects of various intrinsic and extrinsic factors on the stability of lactose-rich co-product* [commenced 2017].

Samuel Alcaine, PhD (Cornell University): *Evaluation of Protective Bacterial Cultures for the Effective Control of Listeria in High Risk Cheese* [commenced 2017]; *Evaluation of commercial bio-protective cultures and their ability to inhibit the outgrowth of eukaryotic spoilers in cheese* [commenced 2017]; *Create Nationwide Food Safety Resources and provide support for Artisan/Farmstead Dairy Producers* [commenced 2017]; *Designed Survival of Protective and Probiotic Cultures through HPP for Novel Dairy Products* [commenced 2017].

Sanjeev Anand, PhD (South Dakota State University): *Understanding the process of spore germination or sporulation, and biofilm formation under simulated skim milk powder manufacturing conditions* [concluded 2017]; *Evaluation of adherence ability and biofilm formation of HHRS to modified stainless steel surfaces* [concluded 2017]; *Scale up of hydrodynamic cavitation as an in-line process combined with milk pasteurization for sporeformer control* [ongoing 2017]; *Evaluating enzyme formulations for biofilm removal from dairy separation membranes* [ongoing 2017]; *To identify quorum inhibitor based anti-biofilm molecules for developing new generation membrane-biofilm cleaners for the dairy industry* [commenced 2017].

David M. Barbano, PhD (Cornell University) and MaryAnne Drake, PhD (North Carolina State University): *The impact of milk and whey protein based ingredients on sensory and physical properties of beverages* [ongoing 2017].

Maire Begley, PhD (Cork Institute of Technology (Ireland)): *Identification of microbially-derived anti-listeria compounds using high-throughput robotics* [ongoing 2017].

Andreia Bianchini, PhD (University of Nebraska): *Application of interventions at farm level to reduce sporeformer bacteria* [ongoing 2017].

Mindy Brashears, PhD (Texas Tech University): *Inhibition of Listeria monocytogenes on Cheese using Lactic Acid Bacteria as a Biocontrol System Intervention* [commenced 2017].

Stephanie Clark, PhD and Tong Wang, PhD (Iowa State University): *Technology for novel and scalable isolation of dairy phospholipids (PL) and its stabilization against lipid auto-oxidation* [commenced 2017].

Dennis D'Amico, PhD (University of Connecticut): *Determining the efficacy of glycolipids to control Listeria monocytogenes in Queso Fresco* [commenced 2017].

MaryAnne Drake, PhD (North Carolina State University): *Southeast Dairy Center Application Laboratory Program* [ongoing 2017]; *The role of Vitamin Premix on Flavor and Flavor Stability of Fluid Milk* [concluded 2017]; *Identification of the chemical flavor differences between milks ultra-pasteurized by indirect or direct heat* [ongoing 2017]; *Food Safety Course for Artisan and Farmstead Cheesemakers* [ongoing 2017]; *Consumer perceptions of lactose free milk* [commenced 2017]; *Sensory analysis of white and chocolate milk on child acceptance* [commenced 2017]; *Determination of the impact of anticake agents on consumer perception of Cheddar cheese shreds* [commenced 2017]; *Evaluation of methods to reduce astringency in clear acidic protein beverages* [commenced 2017]; *The role of packaging on the flavor of fluid milk* [commenced 2017].

Susan E. Duncan, PhD (Virginia Polytechnic Institute and State University): *Milk packaging options for light protection of milk flavor from processing through retail purchase* [ongoing 2017]; *Color Temperature Guidance for Optimizing LED Lighting in Retail Dairy Cases* [commenced 2017].

David W. Everett, PhD (California Polytechnic State University – San Luis Obispo): *California Dairy Center Application Laboratory Program* [ongoing 2017]; *Improving the Flavor of Cheese Made from Powdered Milk Using Buttermilk* [commenced 2017].

Kathleen Glass, PhD (University of Wisconsin-Madison): *Inhibition of Clostridium Botulinum in Reduced-Sodium Pasteurized Cheese Products* [concluded 2017]; *Control of Listeria monocytogenes in high-moisture cheese* [ongoing 2017]; *Safety of reduced sodium processed cheese* [commenced 2017].

Lisbeth Goddik, PhD (Oregon State University): *Impact of Milk Hauling and Receiving on Microbial Content in Raw Milk* [ongoing 2017]; *A comprehensive approach to reducing the risk of E. coli in bloomy rind cheeses: product reformulation and HPP* [commenced 2017].

Selvarani Govindasamy-Lucey, PhD (University of Wisconsin-Madison): *Shelf-life Extension of Cream Cheeses for Export* [concluded 2017]; *Controlling cheese acidity by adjustment of the lactose to protein content of cheese milk* [ongoing 2017]; *Extending the shelf-life performance of natural Mozzarella cheese for export markets* [ongoing 2017]; *High Quality Block Gouda by Dry Salting Method* [commenced 2017].

Federico Harte, PhD (Pennsylvania State University): *High Pressure Jet Spray Drying to Create Novel Dairy Powders* [commenced 2017].

Shinya Ikeda, PhD (University of Wisconsin-Madison): *Inhibiting the formation of poorly soluble skin layers on high milk protein powders* [commenced 2017].

Mark Johnson, PhD (University of Wisconsin-Madison): *Improving the Functionality and Quality of Large Cheese Blocks* [commenced 2017]; *Use of extrusion technology for snack cheeses* [commenced 2017].

Kevin Keener, PhD (Iowa State University): *Controlling Listeria monocytogenes in soft cheeses with high voltage atmospheric cold plasma (HVACP) treatment* [ongoing 2017].

Nancy L. Keim, PhD, RD (USDA-Agricultural Research Service): *Evaluation of Health Benefits of a High-Quality Diet in Persons at Risk for Development of Metabolic Disease: Rapidity and Weight-Independent Effects* [ongoing 2017].

John A. Lucey, PhD (University of Wisconsin-Madison): *Wisconsin Center for Dairy Research Applications Laboratory* [ongoing 2017]; *Designing novel cheese with high levels of intact casein* [ongoing 2017]; *Separation and Characterization of Phospholipids from Whey Protein Phospholipid Concentrate (WPPC), and other dairy feed streams* [commenced 2017]; *Impact of Microfiltration Retentates on Cheese Quality* [commenced 2017]; *New membrane technology to make high-value dairy ingredients* [commenced 2017].

Donald McMahon, PhD (Utah State University): *Western Dairy Center Technology Innovation Laboratory Program* [ongoing 2017].

Lloyd Metzger, PhD (South Dakota State University): *Midwest Dairy Foods Applications Laboratories Program* [ongoing 2017]; *Improve technology to manufacture lactose and dry acid whey* [concluded 2017]; *Explore technologies to reduce microbial load in dairy powders at/before packaging step* [commenced 2017].

Carmen Moraru, PhD (Cornell University): *Use of Forward Osmosis as a Non-Thermal Method of Concentration for the Manufacture of High-Quality Milk Concentrates and Powders* [ongoing 2017].

NIZO Food Research B.V. (Netherlands): *Reduction of spore count in milk powder production - Phase II of development of an improved enumeration method for highly heat resistant spores* [ongoing 2017].

Hasmukh Patel, PhD and Lloyd Metzger, PhD (South Dakota State University) and Cordelia Selomulya, PhD (Monash University (Australia)): *Single droplet drying technology for optimization of dairy ingredients for best quality and functionality* [ongoing 2017].

Hasmukh Patel, PhD (South Dakota State University): *Scale-up and implementation of strategies to improve quality and process efficiency during manufacturing of dairy ingredients* [ongoing 2017]; *Comparison of functionality and properties of liquid concentrates and dried dairy ingredients* [ongoing 2017].

Sonia Patel, MSc (University of Minnesota): *Development of a shelf stable dairy-based creamer* [concluded 2017].

Martin Wiedmann, PhD, DVM (Cornell University): *Impact of bedding type in raw milk contamination with spore formers affecting dairy powder quality* [ongoing 2017]; *Understanding regulation of *Listeria monocytogenes* cell envelope composition to facilitate development and discovery of improved control strategies* [concluded 2017]; *Evaluation of variation in spore count methods and determination of optimal parameters for standardization of milk powder spore testing* [ongoing 2017].

Bongkosh Vardhanabhuti, PhD (University of Missouri) and Lloyd Metzger, PhD (South Dakota State University): *Whey protein ingredient with improved emulsification properties* [ongoing 2017].

Qixin Zhong, PhD (University of Tennessee): *Delivery system of lactose to improve the quality of milk for lactose-intolerant consumers* [ongoing 2017].

2017 Sustainability Competitive Research Activities

Principal Investigator, Institution, Project Title and Status

Diana Aga, PhD (University of Buffalo): *Understanding and guidance on the fate and transport of pharmaceuticals, endocrine disrupting compounds (EDCs), herbicides, and pathogens in dairy manure* [commenced 2017].

Richard A. Erdman, PhD (National Research Council and University of Maryland): *Nutrient Requirements of Dairy Cattle, 8th Edition* [concluded 2017].

Olivier Joliet, PhD (University of Michigan): *Dairy's Nutritional Benefit and Environmental Impact – Phase II* [ongoing 2017].

Ermias Kebreab, PhD (University of California - Davis): *Interactions between dairy cattle nutrition and management interventions versus enteric and manure emissions and nitrogen excretion – Model Assessment* [ongoing 2017].

Johannes Lehmann, PhD (Cornell University): *Feasibility Assessment of Dairy Biochar as a Value-Added Potting Mix in Horticulture and Ornamental Gardening* [commenced 2017].

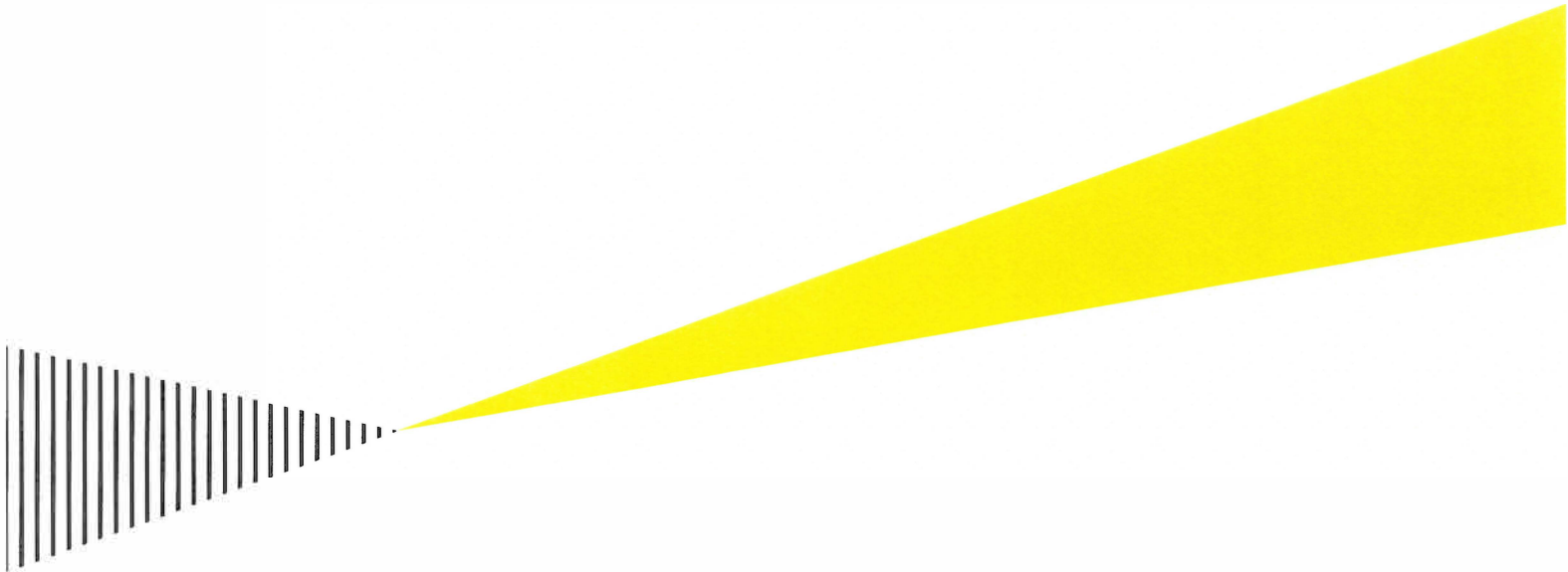
Meredith Niles, PhD (University of Vermont): *Assessing Dairy Farmer Decisions and Barriers for Adopting Sustainable Manure Management Systems* [commenced 2017].

Mary Beth de Ondarza, PhD (Paradox Nutrition, LLC): *Advantages and limitations of dairy efficiency measures and the effects of nutrition and feeding management interventions II* [ongoing 2017].

FINANCIAL STATEMENTS

National Dairy Promotion and Research Board
Years Ended December 31, 2017 and 2016
With Reports of Independent Auditors

Ernst & Young LLP



EY

Building a better
working world

National Dairy Promotion and Research Board

Financial Statements

Years Ended December 31, 2017 and 2016

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Report of Independent Auditors

The Board of Directors
National Dairy Promotion and Research Board

We have audited the accompanying financial statements of National Dairy Promotion and Research Board, which comprise the statements of financial position as of December 31, 2017 and 2016, and the related statements of activities and changes in net assets and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in conformity with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free of material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of National Dairy Promotion and Research Board as of December 31, 2017 and 2016, and the changes in its net assets and its cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we also have issued our report dated May 2, 2018, on our consideration of National Dairy Promotion and Research Board's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering National Dairy Promotion and Research Board's internal control over financial reporting and compliance.

Ernst + Young LLP

May 2, 2018



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Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

The Management and Board of Directors
National Dairy Promotion and Research Board

We have audited, in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of National Dairy Promotion and Research Board, which comprise the statements of financial position as of December 31, 2017 and 2016, and the related statements of activities and changes in net assets and cash flows for the years then ended, and the related notes to the financial statements, and have issued our report thereon dated May 2, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered National Dairy Promotion and Research Board's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of National Dairy Promotion and Research Board's internal control. Accordingly, we do not express an opinion on the effectiveness of National Dairy Promotion and Research Board's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.



Compliance and Other Matters

As part of obtaining reasonable assurance about whether National Dairy Promotion and Research Board's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the result of that testing, and not to provide an opinion on the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Ernst + Young LLP

May 2, 2018

National Dairy Promotion and Research Board

Statements of Financial Position

	December 31	
	2017	2016
Assets		
Current assets:		
Cash	\$ 37,988,171	\$ 44,147,015
Domestic assessments receivable, net of allowance for doubtful accounts of \$40,000 in 2017 and \$40,000 in 2016	10,772,223	11,409,390
Import assessments receivable	382,786	430,718
Total current assets	49,143,180	55,987,123
Fixed assets, net of accumulated depreciation of \$268,256 in 2017 and \$267,251 in 2016	–	1,005
Total assets	\$ 49,143,180	\$ 55,988,128
Liabilities and net assets		
Current liabilities:		
Due to related party – Dairy Management Inc., current portion	\$ 16,214,547	\$ 16,594,851
Accounts payable	263,108	165,887
Accrued expenses and other liabilities	497,932	623,014
Total current liabilities	16,975,587	17,383,752
Due to related party – Dairy Management Inc., less current portion	–	7,328,132
Unrestricted net assets:		
Designated	19,148,520	26,914,373
Undesignated	13,019,073	4,361,871
Total unrestricted net assets	32,167,593	31,276,244
Total liabilities and net assets	\$ 49,143,180	\$ 55,988,128

See accompanying notes.

National Dairy Promotion and Research Board

Statements of Activities and Changes in Net Assets

	Year Ended December 31	
	2017	2016
Revenues		
Domestic assessments	\$ 107,428,437	\$ 106,470,203
Import assessments	3,393,646	3,725,635
Select funding	6,533,055	5,985,277
Interest income	—	1,481
Total revenues	117,355,138	116,182,596
Expenses		
Programs:		
Domestic and export marketing	111,047,688	103,270,962
United States Department of Agriculture	770,434	577,762
Total programs	111,818,122	103,848,724
General and administrative:		
Dairy Management Inc. general and administrative	3,479,863	3,091,014
General and administrative	821,225	986,924
Total general and administrative	4,301,088	4,077,938
Dairy Management Inc. additional pension contribution	344,579	10,216,336
Total expenses	116,463,789	118,142,998
Change in net assets	891,349	(1,960,402)
Net assets, beginning of year	31,276,244	33,236,646
Net assets, end of year	\$ 32,167,593	\$ 31,276,244

See accompanying notes.

National Dairy Promotion and Research Board

Statements of Cash Flows

	Year Ended December 31	
	2017	2016
Operating activities		
Change in net assets	\$ 891,349	\$ (1,960,402)
Adjustments to reconcile change in net assets to net cash (used in) provided by operating activities:		
Depreciation	1,005	3,546
Changes in assets and liabilities:		
Assessments receivable	685,099	(613,947)
Due to related party – Dairy Management Inc.	(7,708,436)	9,655,822
Accounts payable	97,221	78,190
Accrued expenses and other liabilities	(125,082)	205,912
Net cash (used in) provided by operating activities	(6,158,844)	7,369,121
Net (decrease) increase in cash	(6,158,844)	7,369,121
Cash, beginning of year	44,147,015	36,777,894
Cash, end of year	\$ 37,988,171	\$ 44,147,015

See accompanying notes.

National Dairy Promotion and Research Board

Notes to Financial Statements

December 31, 2017 and 2016

1. Organization

National Dairy Promotion and Research Board (NDB) was established on May 1, 1984, pursuant to The Dairy and Tobacco Adjustment Act of 1983 (Public Law 98-180), as part of a comprehensive strategy to reduce milk surplus supplies in the United States (U.S.) and increase human consumption of fluid milk and other dairy products. The purpose of NDB is to establish a coordinated program of promotion and research designed to strengthen the dairy industry's position in the marketplace and to maintain and expand domestic and international markets' usage of U.S.-produced fluid milk and other dairy products.

United States Department of Agriculture (USDA) approved a joint venture between NDB and United Dairy Industry Association (UDIA) to form Dairy Management Inc. (DMI) effective January 1, 1995. The purpose of DMI, a related-party organization, is to promote greater coordination, efficiency, and effectiveness and avoid incompatibility and duplication in the marketing programs and projects undertaken by NDB and UDIA, which jointly plan, develop, and implement their various marketing programs and activities through DMI, subject to the approval of USDA. These collective programs and activities are called the Unified Marketing Plan (UMP).

2. Summary of Significant Accounting Policies

Basis of Presentation

The financial statements are prepared on the accrual basis of accounting in conformity with U.S. generally accepted accounting principles (GAAP). These principles require management to make estimates and judgments that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of revenues and expenses in the reporting period. Actual results could differ from those estimates.

Financial Instruments

The carrying values of cash, domestic assessments receivable, import assessments receivable, amounts due to related party, accounts payable, and accrued expenses and other liabilities are reasonable estimates of fair value due to the short-term nature of these financial instruments.

NDB has cash balances in a financial institution that exceed federal depository insurance limits. Pursuant to guidelines published by USDA's Agricultural Marketing Service, NDB's cash balances are reviewed daily by the financial institution in which the balances are held and are fully collateralized by U.S. Treasury securities.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued)

Assessments

Domestic assessment revenue is generated by a mandatory assessment of \$0.15 per hundredweight on all milk produced and marketed in the United States. Milk producers can direct up to \$0.10 per hundredweight to USDA-qualified state and regional generic dairy promotion organizations. For the years ended December 31, 2017 and 2016, the net NDB assessment was \$0.0535 and \$0.0533, respectively, per hundredweight of milk marketed. Assessment revenue is recognized in the month in which milk is marketed. In addition, effective August 2011, the mandatory assessment was extended to dairy importers at \$0.075 per hundredweight. Importers can direct \$0.025 per hundredweight to USDA-qualified generic dairy promotion organizations.

The Dairy Promotion and Research Order allows organic dairy producers, as defined, to be exempt from paying assessments. The amount of exempted assessments in 2017 and 2016 was \$1,377,000 and \$1,352,000, respectively.

Fixed Assets

Fixed assets consist of computer software and are recorded at cost. Depreciation and amortization are provided in amounts sufficient to charge the costs of depreciable assets to operations over estimated service lives of five years using the straight-line method.

Income Taxes

The Internal Revenue Service has ruled that NDB is an entity engaging in an activity under the oversight of USDA and, accordingly, is not subject to federal taxation.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

3. Assessments Receivable

Domestic and import assessments receivable are recorded at the estimated net amounts to be received based on the amount of milk marketed and the average payment per hundredweight when collectability is reasonably assured. Domestic and import assessments receivable for which collectability is not reasonably assured are not recorded as revenue until such payments are ultimately received. Additionally, in accordance with Public Law 98-180, NDB forwards unpaid assessments to USDA for collection and other legal proceedings. As of December 31, 2017 and 2016, cumulative unpaid assessments of \$1,216,853 and \$734,324, respectively, were at USDA pending further action. Such amounts are not included in assessments receivable as of December 31, 2017 or 2016, and will not be recorded as revenue until such amounts are ultimately received. Civil penalties exist for any persons who do not pay the assessment and/or file required milk marketed assessment reports with NDB.

4. Related-Party Transactions

NDB funds DMI on a cost-reimbursement basis. DMI core costs, which include staff salaries and benefits of DMI employees, travel, Board of Directors, and office operating expenses, are primarily funded by NDB, with UDIA funding one-half of the Office of CEO and Board of Directors costs. DMI marketing program costs, which include expenses associated with implementing the marketing programs of NDB and UDIA, are funded by NDB and UDIA.

NDB has funded DMI program and core costs as follows:

	<u>2017</u>	<u>2016</u>
Program costs	\$ 76,868,916	\$ 69,138,195
Core costs (including additional pension contribution of \$344,579 in 2017 and \$10,216,536 in 2016)	<u>38,003,214</u>	<u>47,440,117</u>
Total funding to DMI	<u>\$ 114,872,130</u>	<u>\$ 116,578,312</u>

U.S. Dairy Export Council (USDEC) was incorporated in 1996 to improve the marketing conditions for the U.S. dairy industry with respect to the export of U.S. dairy products by promoting their acceptability, consumption, and purchase in international markets. DMI serves as the primary source of USDEC's funding. Of the program funding NDB reimbursed DMI, \$11,945,636 and \$13,156,010 for 2017 and 2016, respectively, for USDEC's program and operational expenses.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

4. Related-Party Transactions (continued)

Dairy Research Institute (DRI) was incorporated in 2010 for the purpose of engaging in dairy scientific research and sustainability advancement and operates under the oversight and control of DMI. Of the program funding, NDB reimbursed DMI \$80,360 and \$87,506 for 2017 and 2016, respectively, for DRI's program and operational expenses.

Youth Improved, Inc. was incorporated on May 8, 2009 and obtained a certificate of registration on January 24, 2001 to operate under the trade name GENYOUth Foundation (GENYOUth). GENYOUth was formed for the purpose of encouraging, monitoring, and assisting organizations in implementing youth-oriented health programs in schools and promoting healthy diet and exercise programs. DMI is the primary source of GENYOUth's unrestricted contributions which are used to fund its operating costs. NDB reimbursed DMI, \$1,839,396 and \$1,857,363 for 2017 and 2016, respectively, in support of GENYOUth's program implementation and operational expenses.

5. Transactions with Other Industry Organizations

NDB reimburses USDA for the cost of administrative oversight and compliance audit activities. Expenses incurred under this arrangement amounted to \$770,434 and \$577,762 for 2017 and 2016, respectively.

6. Net Assets

Prior to 2016, NDB's Board of Directors designated a portion of net assets for cash reserves. In addition, designated net assets also include funding required to cover subsequent year budget deficits as well as carryover funding for projects not completed prior to year-end. The amounts designated to cover subsequent year budgets were approved by the board during the fourth quarters of 2017 and 2016. The carryover funding was approved by the board during the first quarters of 2018 and 2017. Total designations of net assets are as follows:

	<u>2017</u>	<u>2016</u>
Designated net assets:		
Cash reserves	\$ 1,800,000	\$ 1,800,000
Subsequent year program activity	<u>17,348,520</u>	<u>25,114,373</u>
Total designated net assets	<u>19,148,520</u>	<u>26,914,373</u>
Undesignated net assets	<u>13,019,073</u>	<u>4,361,871</u>
Total net assets	<u>\$ 32,167,593</u>	<u>\$ 31,276,244</u>

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

7. Guarantees

NDB guaranteed DMI's \$10 million revolving bank line of credit with CoBank, which expired on June 30, 2017 and was not renewed. Borrowings made, if any, under the line of credit accrued interest and were payable monthly at the prevailing prime interest rate. There were no borrowings on the line of credit during 2017 and 2016.

NDB also has guaranteed DMI's five-year note payable with CoBank, which was initiated in October 2016 to fund the deficiency in plan assets upon termination of the UDIA-sponsored multi-employer pension plan. The note payable balance was \$5,455,986 and \$20,900,000 at December 31, 2017 and 2016, respectively. The terms of the note agreement require quarterly principal payments and monthly interest payments, based on the outstanding loan balance, at an annual interest rate of 3.93%. The original loan amount was based on a preliminary estimate from DMI's external actuarial consulting firm. Upon finalization of the allocation of the liability for each employer, DMI was able to repay \$4,434,755 on April 11, 2017. On October 10, 2017, DMI repaid \$8,202,009 to satisfy the balance attributable to its portion of the liability.

The following is a schedule of future expected principal payments of the CoBank note as of December 31, 2017:

2018	\$ 1,704,996
2019	1,363,997
2020	1,363,997
2021	1,022,996
	<u>\$ 5,455,986</u>

DMI has entered into separate loan agreements with a number of the other participating employers, under the same terms as its loan with CoBank. The notes receivable balance related to these loan agreements totaled \$5,114,987 and \$7,080,945 at December 31, 2017 and 2016, respectively.

8. Subsequent Events

NDB evaluated events occurring between January 1, 2018 and May 2, 2018, which is the date when the accompanying financial statements were available to be issued. No events subsequent to December 31, 2017 have been identified that require recognition or disclosure in the consolidated financial statements.

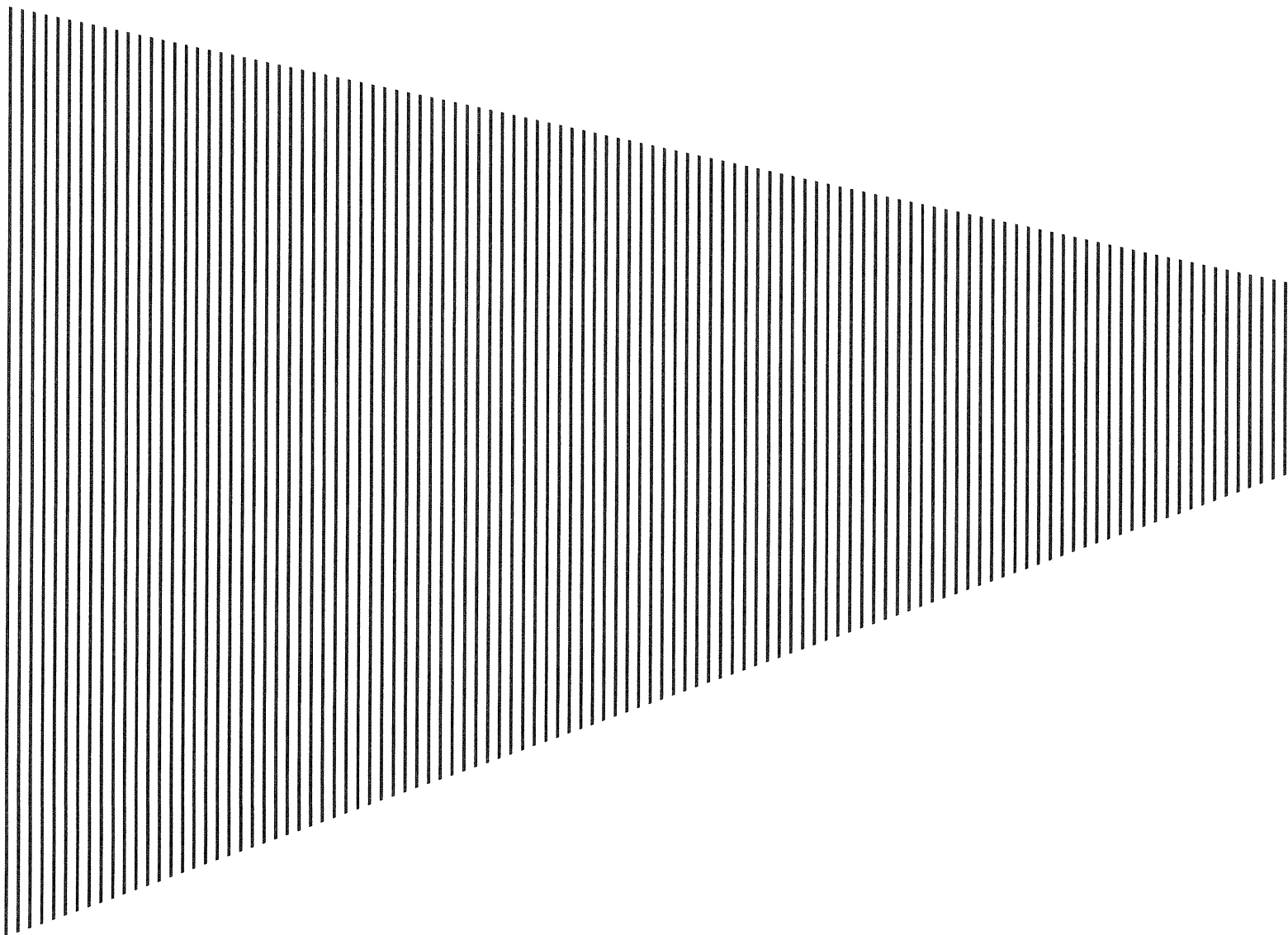
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**National Fluid Milk Processor
Promotion Board**

Financial Statements
and
Independent Auditor's Report

Years Ended December 31, 2017 and 2016

**1250 H Street, N.W., Suite 950
Washington, D.C. 20005**

Part I

Financial Statements and Independent Auditor's
Report for the Years Ended December 31, 2017 and
2016

Part II

Independent Auditor's Report on Internal Control Over
Financial Reporting and on Compliance and Other
Matters Based on an Audit of Financial Statements
Performed in Accordance with Government Auditing
Standards

Part III

Independent Auditor's Comments on Compliance with
Government Auditing Standards

PART I

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Independent Auditor's Report

**To the Board of Directors
National Fluid Milk Processor
Promotion Board
Washington, D.C.**

Report on the Financial Statements

We have audited the accompanying financial statements of the National Fluid Milk Processor Promotion Board, which comprise the statements of financial position as of December 31, 2017 and 2016, and the related statements of revenues, expenses and changes in net assets, and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the National Fluid Milk Processor Promotion Board as of December 31, 2017 and 2016, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.



To the Board of Directors
National Fluid Milk Processor
Promotion Board
Page two

Report on Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements taken as a whole. The accompanying supplementary information shown on pages 16 through 19 is presented for purposes of additional analysis and is not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information, other than the budget amounts, has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole. Budget amounts have not been subjected to the auditing procedures applied in the audits of the financial statements, and accordingly, we do not express an opinion or provide any assurance on these amounts.

Report Issued in Accordance with *Government Auditing Standards*

In accordance with Government Auditing Standards, we have also issued a report dated March 28, 2018 on our consideration of the National Fluid Milk Processor Promotion Board's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, agreements, and other matters. The purpose of this report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. This report is an integral part of an audit performed in accordance with Government Auditing Standards and should be considered in assessing the results of our audits.

Snyder Cohn, PC

SNYDER COHN, PC
North Bethesda, Maryland
March 28, 2018



National Fluid Milk Processor Promotion Board

Statements of Financial Position

December 31	2017	2016
Assets		
Current assets:		
Cash and cash equivalents	\$ 13,906,998	\$ 12,105,692
Assessments receivable, net	8,831,113	9,234,246
Future year costs	3,726,203	1,258,642
Prepaid expenses	75,689	76,607
Total current assets	26,540,003	22,675,187
Property and equipment, net	37,202	23,153
Total assets	\$ 26,577,205	\$ 22,698,340
Liabilities and net assets		
Current liabilities:		
Accounts payable and accrued expenses	\$ 12,531,651	\$ 6,792,808
Coupon liability	449,604	600,050
Capital lease, current portion	7,252	6,517
Total current liabilities	12,988,507	7,399,375
Other liabilities:		
Capital lease, net of current portion	6,664	13,916
Total liabilities	12,995,171	7,413,291
Commitments		
Net assets:		
Board designated for contingencies	2,500,000	2,500,000
Undesignated	11,082,034	12,785,049
Total net assets	13,582,034	15,285,049
Total liabilities and net assets	\$ 26,577,205	\$ 22,698,340

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Statements of Revenues, Expenses and Changes in Net Assets

For the years ended December 31	2017	2016
Revenues:		
Assessments	\$ 91,664,161	\$ 94,655,494
Late payment charges	22,811	33,606
Interest income	49,032	25,707
Other	236,118	125,420
Total revenues	91,972,122	94,840,227
Expenses:		
Program expenses:		
Meals at home	68,960,076	70,721,256
Built with chocolate milk	11,309,361	11,410,196
Strategy and market research	2,640,281	2,726,387
Total program expenses	82,909,718	84,857,839
Other expenses:		
California grant	8,201,379	8,667,970
Administrative	1,964,224	2,084,271
USDA oversight	473,949	445,092
USDA compliance audit	123,989	127,566
Interest expense	1,878	2,538
Total other expenses	10,765,419	11,327,437
Total expenses	93,675,137	96,185,276
Excess of expenses over revenues	(1,703,015)	(1,345,049)
Net assets - beginning	15,285,049	16,630,098
Net assets - ending	\$ 13,582,034	\$ 15,285,049

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Statements of Cash Flows

For the years ended December 31	2017	2016
Cash flows from operating activities:		
Excess of expenses over revenues	\$ (1,703,015)	\$ (1,345,049)
Adjustments to reconcile excess of expenses over revenues to net cash provided by (used in) operating activities:		
Depreciation	11,102	16,172
(Increase) decrease in:		
Assessments receivable	403,133	627,415
Future year costs	(2,467,561)	(829,084)
Prepaid expenses	918	(24,834)
Increase (decrease) in:		
Accounts payable and accrued expenses	5,738,843	(2,177,477)
Coupon liability	(150,446)	145,295
Net cash provided by (used in) operating activities	1,832,974	(3,587,562)
Cash flows from investing activities:		
Payments made for property and equipment	(25,151)	-
Cash flows from financing activities:		
Payments made on capital lease	(6,517)	(5,857)
Net increase (decrease) in cash and cash equivalents	1,801,306	(3,593,419)
Cash and cash equivalents - beginning	12,105,692	15,699,111
Cash and cash equivalents - ending	\$ 13,906,998	\$ 12,105,692
Supplemental disclosure of cash flow information:		
Cash paid during the year for:		
Interest	\$ 1,878	\$ 2,538

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 1: Summary of significant accounting policies:

The National Fluid Milk Processor Promotion Board (the Board) was established pursuant to the authority of the Fluid Milk Promotion Act (the Act) of 1990, Subtitle H of the Title XIX of the Food, Agriculture, Conservation and Trade Act of 1990. The purpose of the Board is to administer the provisions of the Fluid Milk Promotion Order (the Order) established pursuant to the Act which establishes an orderly procedure for the development, and the financing through an assessment, of a coordinated program of advertising, promotion, and education for fluid milk products.

The Act required that a referendum be conducted among processors to determine if a majority favored implementing the fluid milk program. In the October 1993 initial referendum, the majority of processors voted to approve the implementation of the fluid milk program. A continuation referendum was held in February-March 1996. Of the processors voting in that referendum, the majority favored continuation of the fluid milk program. In November 1998, another continuation referendum was held at the request of the Board and processors voted to continue the fluid milk program as established by the Order. The Act and the Order state that the United States Department of Agriculture (USDA) will hold future referenda upon the request of the Board, processors representing 10% or more of the volume of fluid milk products marketed by those processors voting in the last referendum, or when called by the U.S. Secretary of Agriculture.

For financial reporting purposes, the Board is considered a quasi-governmental agency of the U.S. government. As such, it is exempt from income taxes under the Internal Revenue Code. The USDA and its affiliated agencies operate in an oversight capacity of the Board.

The financial statements of the Board are prepared in conformity with accounting principles generally accepted in the United States of America. To facilitate the understanding of data included in the financial statements, summarized below are the more significant accounting policies.

Assessments - Assessments are generated from any person who processes and markets commercially more than 3,000,000 pounds of fluid milk per month by a 20-cent per hundred weight assessment on fluid milk products processed and marketed commercially in consumer-type packages in the 48 contiguous United States and the District of Columbia. Assessment revenue is recognized in the month in which the fluid milk product is processed. Late payment charges are assessed, as provided under the Act, to processors who do not remit monthly assessments within 30 days following the month of assessment.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 1: Summary of significant accounting policies: (continued)

Assessments (continued) - The late payment charge is equal to 1.50% of unpaid assessments and accrues monthly. For both 2017 and 2016, an allowance for doubtful accounts of \$-0- has been established for those amounts where the late charges are being appealed.

California grant - In accordance with the Act, the Board is required to provide a grant to a third party equal to 80% of the assessments collected from Regions 14 and 15 to implement a fluid milk promotion campaign. Disbursements under these provisions are recorded as "California grant" in the accompanying financial statements.

Cash equivalents - For purposes of the statements of cash flows, the Board considers all highly liquid investments with an original maturity of three months or less to be cash equivalents.

Future year costs - Future year costs represent costs incurred for the next budget year's projects.

Assessments receivable - An allowance for uncollectible accounts is established for those assessments which management has determined as uncollectible. The total allowance for uncollectible accounts at December 31, 2017 and 2016 was \$-0-.

Property and equipment - Property and equipment are stated at cost. Depreciation is provided over the estimated useful lives of the related assets on a straight-line basis. Expenditures for repairs and maintenance are charged to expense as incurred.

Use of estimates - The Board has made certain estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the period. Actual results could differ from those estimates.

Investments - The Board is required to follow the Agricultural Marketing Service (AMS) investment policy. Accordingly, the Board is authorized to invest in securities consisting of obligations issued or fully insured or guaranteed by the U.S. or any U.S. government agency, including obligations of government-sponsored corporations that mature within one year or less from the date of purchase.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 1: Summary of significant accounting policies: (continued)

Fair value measurements - The FASB Accounting Standards Codification (ASC) 820, *Fair Value Measurements and Disclosures*, provides the framework for measuring fair value. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements). The three levels of the fair value hierarchy under FASB ASC 820 are described as follows:

Level 1 - inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Board has the ability to access.

Level 2 - inputs to the valuation methodology include:

- quoted prices for similar assets or liabilities in active markets;
- quoted prices for identical or similar assets or liabilities in inactive markets;
- inputs other than quoted prices that are observable for the asset or liability;
- inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified (contractual) term, the level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 - inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

The preceding methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the Board believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Advertising - In accordance with its mission, the Board has approved the development of direct and nondirect response advertising and promotional activities. All costs related to these activities are charged to expense as incurred.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 2: Cash and cash equivalents:

At December 31, 2017 and 2016, the bank balance of the Board's cash deposits was entirely covered by federal depository insurance or was covered by collateral held by the Board's agent in the Board's name. Included in cash and cash equivalents is \$2,500,000 of Board designated cash reserves (unrestricted net assets) at December 31, 2017 and 2016.

Note 3: Property and equipment:

Property and equipment consist of the following as of December 31:

	<u>2017</u>	<u>2016</u>
Furniture and fixtures	\$ 30,261	\$ 30,261
Leasehold improvements	159,941	134,790
Office equipment	119,758	119,758
	<u>309,960</u>	<u>284,809</u>
Less: accumulated depreciation	<u>(272,758)</u>	<u>(261,656)</u>
	<u>\$ 37,202</u>	<u>\$ 23,153</u>

Depreciation expense for the years ended December 31, 2017 and 2016 was \$11,102 and \$16,172, respectively.

Note 4: Capital lease:

In January 2012, the Company entered into a capital lease for a copier at an effective interest rate of 11.85%. Beginning March 17, 2012, the terms of the lease required 47 monthly payments of \$653, plus additional usage charges as outlined in the agreement. The lease was effective through January 17, 2016.

In October 2014, the Company exchanged its 2012 copier for a new copier by entering into a new capital lease with an effective interest rate of 10.73%. The terms of the lease require 60 monthly payments of \$700, plus additional usage charges as outlined in the agreement. The lease is effective through October 1, 2019.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 4: Capital lease: (continued)

Future minimum lease payments under the capital lease are as follows:

2018	\$	8,395
2019		<u>6,996</u>
Total minimum lease payments		15,391
Less amount representing interest		<u>(1,475)</u>
Present value of minimum lease payments	\$	<u>13,916</u>

Note 5: Line of credit:

During December 2011, the Board obtained a revolving line of credit for up to \$2,500,000. The line provides for advances from time to time, but must be paid down to \$-0- and remain at \$-0- for 90 consecutive days at least once every 12 months. Interest is accrued on outstanding balances at prime minus 0.25% with an interest floor of 3.75%. The line is secured by a first position lien on all receivables of the Board and all general intangibles. The Board is also subject to reporting requirements and financial covenants as outlined in the line of credit agreement. The line of credit agreement expires in January 2019. The amount outstanding on the line of credit at December 31, 2017 and 2016 was \$-0-.

Note 6: Compliance matters:

In accordance with the Act and the Order, effective one year after the date of the establishment of the Board, the Board shall not spend in excess of 5% of the assessments collected for the administration of the Board. For the years ended December 31, 2017 and 2016, the Board did not exceed this limitation.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 7: Program administration:

During 2017 and 2016, the Board entered into agreements with various organizations to develop programs for advertising, promotion, consumer education and certain minority initiatives in connection with the national fluid milk campaign. The funding levels vary for the various organizations and are subject to approval. The organizations and the expiration dates of the agreements are as follows:

Agency	Expiration
Foote, Cone, & Belding	Terminated 2017
Campbell-Ewald	Until Terminated
CMGRP, Inc. d/b/a Weber Shandwick	Until Terminated

To assist the above organizations in the development of advertising, promotion, consumer education and certain minority initiatives in connection with the national fluid milk campaign, the Board has also entered into numerous other smaller contracts throughout the years ended December 31, 2017 and 2016. In addition, the Board has three master service agreements with three contractors which allow for scopes of work to be attached on an as needed basis by the Board.

In October 2007, the Board entered into two agreements, an office services and a professional services agreement, with the International Dairy Foods Association (IDFA).

The duration of the office services agreement was from October 1, 2007 through September 30, 2008 and was subsequently extended multiple times through December 31, 2018. Under this agreement, IDFA provides certain administrative services and resources to the Board. Fees for these services are based on predetermined amounts totaling \$4,370 per month plus out-of-pocket costs and hourly charges for additional services. During the years ended December 31, 2017 and 2016, the Board incurred fees in the amount of \$54,270 and \$52,897, respectively, under this agreement.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 7: Program administration: (continued)

The duration of the professional services agreement was from October 1, 2007 through September 30, 2009 and was subsequently extended multiple times. The current agreement is effective until December 31, 2018. The agreement allows for IDFA to assist the Board in performing general services pursuant to its responsibility under the Fluid Milk Promotion Act of 1990. General services are set forth in greater detail in the agreement, but include areas such as:

- Medical and nutritional
- Communications and public relations
- Sales and econometric analysis
- In house legal services
- Specialized IT services
- Other services as requested

Fees for these services are based on hourly rates ranging from \$300 to \$360 plus out-of-pocket costs. Total costs incurred under this agreement were \$17,931 and \$28,808 for the years ended December 31, 2017 and 2016, respectively.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 8: Operating lease:

In October 2007, the Board entered into a sublease agreement with IDFA, which has been extended through May 31, 2022. Under the terms of the sublease, the Board is required to pay escalating monthly base rent plus additional monthly charges equal to a pro rata portion of the building's operating expenses and other charges as defined in the sublease agreement. From January 1, 2019 through March 1, 2019, the Board shall have a sixty day window within which it can terminate the sublease by providing nine months' notice. If the Fluid Milk Promotion Order, 7 C.F.R. Part 1160 (the "Fluid Milk Order"), is terminated for any reason, then the sublease shall automatically terminate six months from the date that the U.S. Secretary of Agriculture announces that the Fluid Milk Order will be terminated. In the event of termination, monthly rent payments will increase up to the termination date as outlined in the agreement.

The future minimum payments under this sublease for the years ending December 31 are as follows:

2018	\$ 165,841
2019	170,816
2020	175,941
2021	181,219
2022	<u>67,874</u>
Total	<u>\$ 761,691</u>

The Board incurred \$161,012 and \$156,321 of rental expense during the years ended December 31, 2017 and 2016, respectively.

Note 9: Transactions with the United States Department of Agriculture:

Under the provisions of the Act and the Order, the Board is required to pay the United States Department of Agriculture certain fees for oversight and evaluation costs. These costs were \$597,938 and \$572,658 during 2017 and 2016, respectively.

Note 10: Related party activity:

Accounting services for the Board are performed by Bridgewater Wealth & Financial Management, LLC (Bridgewater). The agreement is effective through December 31, 2018. The costs of accounting services were \$386,250 and \$375,000 during 2017 and 2016, respectively. A principal of Bridgewater serves as the Chief Financial Officer of the Board, for which Bridgewater is compensated. At December 31, 2017 and 2016, the total amount due to Bridgewater was \$-0-.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2017 and 2016

Note 11: Retirement plan:

In October 2007, the Board adopted a safe harbor 401(k) plan. An employee is eligible to participate in the plan once the service requirement is completed as defined in the plan document. If an employee was employed by the Board on October 1, 2007, the service requirement was waived and those employees were immediately eligible to participate. Participants may elect to defer a portion of their salary and contribute it to the retirement plan. Additionally, the Board will make a safe harbor matching contribution equal to 100% of deferrals that do not exceed 3% of the employees' compensation plus a 50% match for deferrals between 3% - 5% of employees' compensation. However, for any plan year when the plan is not a "safe harbor" plan, the contribution is at the Board's discretion. The Board's contribution totaled \$118,882 and \$153,461 for the years ended December 31, 2017 and 2016, respectively.

Note 12: Concentration:

Accounts payable to three vendors represented approximately 86% of total accounts payable at December 31, 2017. Payments to two of these vendors represented approximately 85% of total program expenses for the year ended December 31, 2017.

Accounts payable to two vendors represented approximately 56% of total accounts payable at December 31, 2016. Payments to these vendors represented approximately 91% of total program expenses for the year ended December 31, 2016.

Note 13: Subsequent events:

Subsequent events have been evaluated through March 28, 2018, which is the date the financial statements were available to be issued.

**SUPPLEMENTARY
INFORMATION**

National Fluid Milk Processor Promotion Board

**Schedule of Revenues and Expenses
Actual Compared to Budget
(Budget Basis)**

For the year ended December 31, 2017

	Unexpended/ Amended Budget (Unaudited)	Current Year Actual	Actual Over (Under) Budget
Revenues:			
Assessments	\$ 91,730,000	\$ 91,664,161	\$ (65,839)
Late payment charges	-	22,811	22,811
Interest income	-	49,032	49,032
Other	234,803	236,118	1,315
Total revenues	91,964,803	91,972,122	7,319
Expenses:			
Program expenses:			
Program - current year	84,454,803	82,515,523	(1,939,280)
Program - prior years	1,534,757	394,195	(1,140,562)
Total program expenses	85,989,560	82,909,718	(3,079,842)
Other expenses:			
California grant	8,714,350	8,201,379	(512,971)
Administrative	2,228,561	1,964,224	(264,337)
USDA expenses	525,000	597,938	72,938
Interest expense	1,878	1,878	-
Total other expenses	11,469,789	10,765,419	(704,370)
Total expenses	97,459,349	93,675,137	(3,784,212)
Excess of expenses over revenues	\$ (5,494,546)	\$ (1,703,015)	\$ 3,791,531

See Independent Auditor's Report

National Fluid Milk Processor Promotion Board

**Schedule of Program Expenses
Actual Compared to Budget
(Budget Basis)**

For the year ended December 31, 2017

	Current Year Amended Budget (Unaudited)		Expended Current Year Actual		Actual Over (Under) Budget		Prior Year Unexpended Budget (Unaudited)		Expended Prior Year Actual		Actual Over (Under) Budget		Total Program Activity	
Meals at home	\$ 70,334,803	\$ 68,865,030	\$ (1,469,773)	\$ 879,924	\$ 95,046	\$ (784,878)	\$	\$	\$ 95,046	\$ (784,878)	\$ 68,960,076			
Built with chocolate milk	11,620,000	11,244,939	(375,061)	274,323	64,422	(209,901)			64,422	(209,901)	11,309,361			
Strategy and market research	2,500,000	2,405,554	(94,446)	380,510	234,727	(145,783)			234,727	(145,783)	2,640,281			
Total program expenses	\$ 84,454,803	\$ 82,515,523	\$ (1,939,280)	\$ 1,534,757	\$ 394,195	\$ (1,140,562)	\$	\$	\$ 394,195	\$ (1,140,562)	\$ 82,909,718	\$	\$	\$ 82,909,718

National Fluid Milk Processor Promotion Board

**Schedule of Administrative Expenses
Actual Compared to Budget
(Budget Basis)**

For the year ended December 31, 2017

	Current Year Amended Budget (Unaudited)	Current Year Actual	Actual Over (Under) Budget
Board meeting expenses	\$ 215,000	\$ 169,978	\$ (45,022)
Staff salaries and benefits:			
Staff salaries and benefits	1,727,300	1,429,362	(297,938)
Program management salary allocation	(1,440,000)	(1,145,535)	294,465
Total staff salaries and benefits	<u>287,300</u>	<u>283,827</u>	<u>(3,473)</u>
Finance and administration:			
Contract staff	160,000	160,000	-
Consultants - HR, IT, strategic	26,000	32,279	6,279
Financial services	386,250	386,250	-
Total finance and administration	<u>572,250</u>	<u>578,529</u>	<u>6,279</u>
Other operating expenses:			
Audits	71,000	65,598	(5,402)
Depreciation	11,000	11,102	102
Dues and memberships	13,500	18,000	4,500
Employee development	21,000	26,292	5,292
IDFA professional & office support	52,000	51,603	(397)
Insurance	40,000	39,991	(9)
Legal	410,000	300,624	(109,376)
Miscellaneous	2,500	2,050	(450)
Office facilities	161,011	161,012	1
Office supplies and expense	20,000	20,832	832
Payroll service and pension administration	7,000	5,168	(1,832)
Postage and delivery	12,000	8,479	(3,521)
Recruiting expense	40,000	1,795	(38,205)
Staff travel	215,000	195,273	(19,727)
Telephone	28,000	24,071	(3,929)
Unallocated administrative	50,000	-	(50,000)
Total other operating expenses	<u>1,154,011</u>	<u>931,890</u>	<u>(222,121)</u>
Total administrative expenses	<u>\$ 2,228,561</u>	<u>\$ 1,964,224</u>	<u>\$ (264,337)</u>

See Independent Auditor's Report

National Fluid Milk Processor Promotion Board
Schedule of Cash Receipts and Disbursements

For the year ended December 31, 2017

Cash receipts from operations:	
Assessments	\$ 92,067,294
Late payment charges	22,811
Interest income	49,032
Other	<u>236,118</u>
Cash receipts from operations	<u>92,375,255</u>
Cash disbursements for operations	(90,542,281)
Cash disbursements for investing activities:	
Purchase of property and equipment	(25,151)
Cash disbursements for financing activities:	
Payments made on capital lease	<u>(6,517)</u>
Excess of disbursements over receipts	1,801,306
Cash and cash equivalents - beginning	<u>12,105,692</u>
Cash and cash equivalents - ending	<u><u>\$ 13,906,998</u></u>

See Independent Auditor's Report

PART II

Independent Auditor's Report on Internal Control
Over Financial Reporting and on Compliance and Other Matters
Based on an Audit of Financial Statements Performed in Accordance
with Government Auditing Standards

**To the Board of Directors
National Fluid Milk Processor
Promotion Board
Washington, D.C.**

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States, the financial statements of the National Fluid Milk Processor Promotion Board (the Board) which comprise the statements of financial position as of December 31, 2017 and 2016, and the related statements of revenues, expenses and changes in net assets, and cash flows for the years then ended, and the related notes to the financial statements and have issued our report thereon dated March 28, 2018.

Internal Control Over Financial Reporting

In planning and performing our audits of the financial statements, we considered the Board's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. Accordingly, we do not express an opinion on the effectiveness of the Board's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Board's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audits we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.



To the Board of Directors
National Fluid Milk Processor
Promotion Board
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Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Board's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audits, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Board's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Board's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

This report is intended solely for the information of the Board of Directors of the National Fluid Milk Processor Promotion Board, management, and the Dairy Programs, Promotion and Research Branch of the Agricultural Marketing Service Agency of the United States Department of Agriculture, and is not intended to be and should not be used by anyone other than these specified parties.

Snyder Cohn, PC

SNYDER COHN, PC
North Bethesda, Maryland
March 28, 2018



PART III

**To the Board of Directors
National Fluid Milk Processor
Promotion Board
Washington, D.C.**

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial statement audits contained in Government Auditing Standards issued by the Comptroller General of the United States, the financial statements of the National Fluid Milk Processor Promotion Board which comprise the statements of financial position as of December 31, 2017 and 2016, and the related statements of revenues, expenses and changes in net assets, and cash flows for the years then ended, and the related notes to the financial statements and have issued our report thereon dated March 28, 2018. The financial statements were prepared in conformity with accounting principles generally accepted in the United States of America.

In connection with our audits, nothing came to our attention, insofar as it relates to accounting matters, that causes us to believe that the National Fluid Milk Processor Promotion Board:

- Failed to comply with laws and regulations applicable to the National Fluid Milk Processor Promotion Board;
- Failed to comply with Section 1160.212 of the Fluid Milk Promotion Order, relating to the use of assessment funds for the purpose of influencing governmental policy or action;
- Expended assessment funds for purposes other than those authorized by the Fluid Milk Promotion Act and the Fluid Milk Promotion Order;
- Expended or obligated assessment funds on any projects prior to the fiscal year in which those funds were authorized to be expended by the National Fluid Milk Processor Promotion Board's approved Budget and Marketing Plan;
- Did not adhere to the original or amended Budget and Marketing Plan for the years ended December 31, 2017 and 2016;
- Did not obtain a written contract or agreement with any person or entity providing goods or services to the National Fluid Milk Processor Promotion Board;
- Failed to comply with Section 1999H, paragraph (g) of the Fluid Milk Promotion Order, relating to the limitations on the types of investments which may be purchased by the National Fluid Milk Processor Promotion Board and the insurance or collateral that must be obtained for all National Fluid Milk Processor Promotion Board deposits and investments;



SNYDER COHN

CPAs and Business Advisors

To the Board of Directors
National Fluid Milk Processor
Promotion Board

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- Failed to comply with internal controls;
- Failed to comply with disclosure requirements for lease commitments;
- Failed to comply with standards established requiring signed contracts, USDA approval letters (if necessary), contract term documentation within the file, and CFO's signature on the Board approval letter;
- Failed to comply with the by-laws of the National Fluid Milk Processor Promotion Board or any other policy of the National Fluid Milk Processor Promotion Board, specifically as they relate to all financial matters, including time and attendance, and travel; or
- Failed to comply with USDA guidelines for AMS Oversight of Commodity Research and Promotion Programs.

During the course of our audits, no compliance matters came to our attention, insofar as it relates to the USDA guidelines for AMS Oversight of Commodity Research and Promotion Programs. However, our audits were not directed primarily toward obtaining knowledge of such noncompliance.

This report is intended solely for the information and use of the National Fluid Milk Processor Promotion Board, management, and the Dairy Programs, Promotion and Research Branch of the Agricultural Marketing Service Agency of the United States Department of Agriculture and is not intended to be and should not be used by anyone other than these specified parties.

Snyder Cohn, PC

SNYDER COHN, PC
North Bethesda, Maryland
March 28, 2018

