



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

2016 Program Activities

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February 2019

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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, 2016, 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 \$329.1 million in 2016. The Dairy Board portion of assessments totaled \$116.1 million and the Qualified Dairy Product Promotion, Research, or Nutrition Education Programs (QPs) totaled \$213 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.

In August 2016, USDA issued a final rule that amended the Dairy Order by modifying the number of Dairy Board importer members. The total number of importer members was reduced from 2 members to 1 member, and the domestic Dairy Board members remained the same at 36. The total number of Dairy Board members is 37. The Dairy Order requires the Secretary, at least once every 3 years, to review the average volume of domestic dairy product production compared to the average volume of dairy imports and if warranted, reapportion Dairy Board importer representation to reflect the proportional shares of the U.S. market served by domestic production and imported products.

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 \$94.7 million in 2016. 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 2016, the Fluid Milk Board launched a strategic, first-of-its kind 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 the recovery beverage of choice for athletes after strenuous exercise and delivered its 1 millionth gallon of milk to families in need through the *Great American Milk Drive*.

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, \$8.7 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, 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 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 2016 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 - \$4.11, (2) cheese - \$4.81, and (3) butter - \$22.74. The BCR for fluid milk processors attributed to fluid milk promotion activities is \$3.73.

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 U.S. Secretary of Agriculture (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 2015 and 2016 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 63 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 2016, 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 2016. 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 2016, 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. 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 2016.

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, scientific 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.

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.

In 2016, NDC hosted *Honor the Harvest*, a farm to table summit highlighting the connection between nutrition, health and wellness, and agriculture. *Honor the Harvest* focuses on using food for its highest purpose and moving nutrients through the food system – from people, to animals, and back to the land – instead of going to waste in a landfill. Over 200 attendees from 45 States gathered at Fair Oaks Farms in Indiana for a hands-on learning experience in the areas of animal care, on-farm practices, dairy nutrition science, and health and wellness.

As an extension of its online engagement with health professionals, NDC continued its blog, “The Dairy Report” (www.thedairyreport.com). Blog contributors include NDC registered dietitians, Ph.D. nutritionists, and communication experts, as well as guest nutrition and health and wellness experts. Through the blog, NDC provides the latest news, analysis, and opinions on dairy-related nutrition and health research.

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 2016 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.

GenYOUth Foundation

The *GenYOUth Foundation* (GenYOUth), launched in 2011 by NDC, is a non-profit 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 2016. 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. In 2016, students participated in a series of regional competitions hosted by GenYOUth and SAP. Ten winners were provided a \$1,000 grant to bring their AdCap projects to life and two students were chosen to compete in a national competition. The winning project was a “Community Wellness App” to track and award points to students for their healthy lifestyle choices. The winning student, an eighth grader from Philadelphia, Pennsylvania, won a \$10,000 grant to build the app.

In 2016, GenYOUth, FUTP60, the NFL and USDA, announced the availability of \$35 million in grants to schools nationwide to purchase kitchen equipment and to offer students better access to nutritious foods. More than 30 million students rely on USDA’s National School Lunch

Program and School Breakfast Program for one to two meals per day, but 88 percent of schools reported lacking at least one piece of equipment needed to serve healthier foods. The grants will allow schools to purchase equipment and meet national nutrition standards and provide healthy meals with more whole grains, fruits, vegetables, lean protein, low-fat dairy, and less sodium and fat.

U.S. Dairy Export Council

DMI's export enhancement and ingredient programs are implemented by the U.S. Dairy Export Council (USDEC). In 2016, USDEC continued to 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 2016, 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:

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

*The Global Insights and Innovation and Communications committees play crosscutting roles to inform and support efforts in each area.

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

Dairy Sustainability Alliance

During 2016, the Innovation Center evolved the Sustainability Council, originally formed in 2008, into the Dairy Sustainability Alliance (Alliance) to more closely align with the priorities of the Innovation Center strategic plan. 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 goal of the Alliance is to provide a forum where member organizations can share knowledge, collaborate on issues affecting the industry at large, and accelerate progress toward common objectives.

The Alliance represented 108 member organizations in 2016, including crop and dairy farmers, processors, manufacturers, retailers, suppliers, and representatives from nonprofits, trade organizations, government, and academia.

The Innovation Center launched a portfolio of projects in 2009 to reduce greenhouse gas emissions across the dairy supply chain and to reduce greenhouse gas emissions by 25 percent from a 2007 baseline by 2020. The following six projects have since been completed as of 2016:

- **Farm Smart** – The methodology and science within the Farm Smart tool became the foundation for a new Environmental Stewardship module within the National Dairy FARM Program. The module integrates Farm Smart’s science-based models to provide dairy farmers, cooperatives, and companies with a more streamlined, single source for voluntary on-farm assessment and communication of greenhouse gas emissions and energy use on dairy farms.
- **Farm Energy Efficiency** – Elements of this program were incorporated into Farm Smart as part of the Environmental Stewardship module described above.
- **Dairy Plant Smart** – The Dairy Plant Smart project focused on helping processors and manufacturers measure the energy and greenhouse gas emissions intensity of fluid milk production. With the development and availability of widely adopted resources to measure the indicators defined in the *Stewardship and Sustainability Framework for U.S. Dairy* document, the Dairy Plant Smart tool and project were completed in 2016. In 2016 a processor-led team of Alliance members worked to develop a processor handbook with guidance on consistently calculating and reporting metrics with the framework.
- **Dairy Fleet Smart** – The goal of the Dairy Fleet Smart project was to accelerate the adoption of transportation and distribution practices that reduce fuel consumption, costs, and greenhouse gas emissions. The project built on the Environmental Protection Agency’s SmartWay program by providing recommended management practices and improvement strategies for dairy. As the SmartWay program continued to evolve, a dairy-specific version was no longer needed and the project concluded.
- **Dairy Power/Biogas Capture and Transport** – These projects concentrated on lowering the barriers to adoption of anaerobic digester technologies and resulted in the creation of an organization, Newtrient, focused on assessing and advancing manure

management technologies, acting as a business incubator for manure-based products and actively designing and implementing market mechanisms to allow dairy farmers to recover economic value for voluntarily assisting others in achieving their pollution prevention obligations.

Industry and Image Relations

Today's consumers are less connected to food production and receive mixed messages through media about the agriculture industry. In 2016, DMI continued www.dairygood.org as a platform 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 and FUTP60, to demonstrate dairy's commitment to food and nutrition security, and drive conversations to promote consumer confidence in the dairy industry and its products.

In 2016, DMI continued the development of its *Acres + Avenues* YouTube video series. *Acres + Avenues* pairs urban millennials with dairy farmer millennials through job shadowing experiences to show shared values between the two seemingly different participants. The 2016 videos followed the job shadowing experiences of a Los Angeles tattoo artist and Virginia dairy farmer, and YouTube sensation Flula Borg and a Florida dairy farmer.

DMI continued its Issues Management and Crisis Readiness programs in 2016. 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 National Fluid Milk Processor Promotion Board (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 continuous 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 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 2016.

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 2016 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 2016. 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

In 2016, MilkPEP focused on white milk marketing efforts to drive sales through relevance and consumer confidence by launching a breakthrough, long-term partnership with the United States Olympic Committee (USOC). A survey conducted by MilkPEP, among Team USA athletes, affirmed 9 out of 10 Olympic athletes grew up drinking milk. MilkPEP used this claim in the new *Built Not Born* campaign, showcasing Olympic athletes and hopefuls across the United States in their athletic dream and the importance of milk and its role in their diet. Appropriately dubbed *Team Milk*, this promotional campaign and roster of athletes engaged consumers in a new way, increased awareness of milk's benefits, and improved milk attitudes and encouraged consumption of milk by kids among moms. These athletes were featured in social, digital,

online, television, and print advertisements, garnering over 3.5 billion impressions. More than 60 milk processor brands participated nationwide in this partnership through on-package assets, customized social content, consumer promotions, and athlete engagements. The 5-year USOC partnership will continue through the 2020 Olympics in Tokyo, Japan.

MilkPEP's popular *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. In 2016, MilkPEP's white milk marketing efforts continued to focus on reinvigorating milk's relevancy and the importance of getting enough protein in the mornings, including the 8 grams of protein in every 8-ounce serving of milk, by launching the new *My Morning Protein* program. The *My Morning Protein* program touted milk's protein benefits as a morning pairing with other high-protein foods and promoted the concept of consuming 25-30 grams of protein before noon. The first phase of this campaign included national advertising, retail messaging, milk brand tools, digital and social content, partnerships, and messaging from over 70 food, nutrition, fitness and mom influencers. More than 35 milk processors and industry partners shared more than 200 pieces of content through their social channels, promoting milk's role in getting enough protein in the morning.

The *Milk Life* campaign continued its efforts to improve consumers' perceptions of milk and inspiring them to choose milk for themselves and their families. Through a targeted organic outreach program, MilkPEP was able to reinforce the varieties of milk available to consumers, including organic, conventional, and value-added products, all containing the same essential nutrients, while highlighting organic-specific messaging communicating the USDA requirements of organic milk production.

In 2016, MilkPEP, in partnership with Feeding America, continued the *Great American Milk Drive*, the first-ever national program 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's 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. In 2016, the program reached a significant milestone, exceeding 1 million gallons of milk donated to families in need. The *Great American Milk Drive's* new campaign, *Feed a Childhood*, was instrumental in connecting with consumers and motivating support, resulting in 14,358 stores participating in the program, a 68-percent increase from 2015. The program partnered with Entemann's, MARS, Pillsbury, Del Monte, Lender's, and Cheryl's Cookies in 2016, generating nearly 1 billion media impressions nationwide, and increasing the awareness and need for more milk in food banks.

In 2016, MilkPEP continued the *Get Real* campaign, an industrywide social advocacy initiative focused on driving consumer awareness of the health benefits of milk, via social and traditional media. This campaign, designed to improve consumer's confidence in milk and to correct common milk myths, engaged in efforts with new television, digital, and social promotions comparing ingredients and nutritional content in milk and milk alternatives. The campaign continued to promote milk's benefits by reminding consumers of milk's wholesome simplicity and the nutritional and lifestyle benefits of consuming milk.

MilkPEP continued its Hispanic promotional efforts in 2016, as part of the industry's outreach to the growing Hispanic population. MilkPEP maintained synergy with its general market consumer campaign, *Milk Life*, by leveraging the importance of protein in the diet and using ambassadors of strength to inspire Hispanic viewers with the *Lo Que Nos Hace Fuertes* (What Makes Us Strong) initiative. Through a partnership with Team Milk member and silver medalist Danell Leyva, the Hispanic campaign continued to promote the importance of milk's role in proper nutrition and, especially protein, for reaching your full potential.

II. Built with Chocolate Milk Committee

MilkPEP's *Built with Chocolate Milk* program continued to promote its lowfat chocolate milk message for exercise recovery to athletes in 2016, focusing promotional efforts on swimming, soccer, and basketball. To engage audiences, MilkPEP promoted the benefits of recovering and rebuilding muscles with chocolate milk after strenuous exercise to athletes and exercisers nationwide seeking recovery after a tough workout. MilkPEP continued its partnership with USA Swimming, as the "Official Recovery Beverage of USA Swimming." The television, print, in-store, and digital campaign featured Olympic medalists Tyler Clary and Jessica Hardy, highlighting chocolate milk's important role in the recovery of competitive swimmers. This partnership garnered over 3.3 million impressions and 20 milk brands participated in the partnership through consumer promotions, on-pack assets, social posts, and providing milk deliveries.

In 2016, *Built with Chocolate Milk* continued its partnership with United States Women's National Soccer Team forward, Kelley O'Hara, showcasing how elite athletes recover with chocolate milk. The campaign with Kelley O'Hara included a four-part workout video where Kelley showed fans how to get toned and how to recover with chocolate milk. The videos received over 400,000 views and over 2 million impressions.

In 2016, *Built with Chocolate Milk* continued its partnership with Kevin Love of the Cleveland Cavaliers, promoting chocolate milk as his recovery beverage of choice. The campaign included real-time conversations around Cleveland Cavaliers basketball games and social media conversations during NBA Playoffs and Championship basketball games, generating a total of 3.5 million impressions.

For the fifth consecutive year, the *Built with Chocolate Milk* campaign continued its successful partnership with the Rock 'n' Roll Marathon, engaging Team Chocolate Milk members consisting of over 120 athletes who engaged their audiences through social media about their training techniques, race information, and recovery with lowfat chocolate milk. This grassroots effort generated over 8.2 million impressions and 16 processor brands participated in the marathon events by handing out nearly 220,000 samples of lowfat chocolate milk to athletes as they crossed the finish line.

The *Built with Chocolate Milk* campaign continued its partnership with the Challenged Athletes Foundation as the "Official Recovery Beverage" and joined forces to help people with physical challenges pursue active lifestyles through race entries, gear, and grants. The athletes served as spokespeople wearing branded gear during races and participating in media interviews. The

Built with Chocolate Milk campaign also continued to promote strong relationships with Team Chocolate Milk elite athletes, including Miranda “Rinny” Carfrae, Craig “Crowie” Alexander, and Luke McKenzie, by supporting them on social media channels throughout 2016.

Industry Collaboration and Program Measurement

In 2016, MilkPEP continued to leverage its partnership with DMI by strengthening efforts to build consumer confidence and trust through joint partnerships including *The Great American Milk Drive* and *Milk to My Plate*. By working closely to identify joint opportunities and areas of synergies, MilkPEP and DMI collaborated on initiatives, communications, promotional milk sales and consumption, while increasing efficiencies and effectiveness across both programs. MilkPEP and DMI focused on uniting the dairy industry, with one voice, around common issues and making milk relevant for consumers.

MilkPEP continued its commitment to conducting research and building the strategy for the consumer campaign. MilkPEP conducted research that shaped the direction of the consumer-facing *Milk Life* and *My Morning Protein* programs, as well as the new *Built Not Born* campaign. Additionally, MilkPEP continued to conduct research on the *Built with Chocolate Milk* recovery message strategy, aiding the effort in campaign development.

Ongoing efforts such as the Consumption Tracker, Attitude and Awareness Tracker, and All Channel Tracking helped MilkPEP identify what is happening in milk consumption and develop new plans to drive better business practices. MilkPEP also started developing a 3-year strategy to help milk remain competitive in the dairy case, as new product segments emerge and shopper behavior continues to change, including the emergence of e-commerce.

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, budget amendments, contracts, advertising campaigns, and investment plans. Materials are monitored for conformance with provisions of the respective Acts and Orders, the U.S. Dietary Guidelines for Americans, and other legislation. 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 the collection, accounting, auditing, and expenditures of promotion funds are consistent with the enabling legislation and Orders, 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, 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 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 current 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 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 2016, the AMS Dairy Program reviewed and approved 344 Dairy Board and DMI agreements, amendments, and annual plans.

Contractor Audits

During 2016, DMI retained the certified public accounting firm of Ernst & Young to audit the records of the following contractors: Arab Marketing & Finance, Inc.; Daniel J. Edelman, Inc.; McDonald's USA, LLC; Team Services, LLC; and the University of Wisconsin. No material exceptions were found.

USDA Foreign Agricultural Service

The Secretary of Agriculture has delegated oversight responsibility for all foreign market development activities outside the United States to the USDA 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 2016, the AMS Dairy Program reviewed and approved 93 USDEC contracts.

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 States having mandatory assessment laws, organic dairy producers are exempt only from the Federal assessment. Organic producers are still responsible for remittance of State assessments. In 2016, the amount of exempted assessments was \$1,352,000. 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 2016, the AMS Dairy Program's oversight expenses totaled \$613,836, and the Federal Milk Market Administrators incurred \$250,363 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 2016, 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 2016 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 that 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 2016, the AMS Dairy Program approved 123 Fluid Milk Board agreements, amendments, contracts, and annual plans.

Contractor Audits

The Fluid Milk Board retained the certified public accounting firm of Snyder, Cohn, Collyer, Hamilton & Associates, P.C. (Snyder Cohn), in 2016 to audit the records of: Foote, Cone & Belding Worldwide, Inc., Campbell-Ewald, and CMGRP, Inc. d/b/a Weber Shandwick. Snyder Cohn's engagement and agreed-upon procedures were to determine if the agencies had conformed to the financial and regulatory compliance requirements specified in their individual agreements with the Fluid Milk Board. 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 2016, the amount of exempted fluid milk assessments was approximately \$1,930,000. The Fluid 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 2016, the AMS Dairy Program's

oversight expenses totaled \$420,315, and the Federal Milk Market Administrators incurred \$132,765 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 – 2016 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 quantitative evaluation of the effectiveness of the dairy and fluid milk promotion programs. Due to prior data revisions, the results from the 2016 report are not comparable to previous reports.

Background on the Promotion Program

The National Dairy Promotion and Research Program is a coordinated research and promotion program that maintains and expands 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 marketings 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 64 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 Fluid 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

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 U.S. Secretary of Agriculture to receive a portion of the funds generated under the National Dairy Promotion and Research Program.

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

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 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 as indicators of program effectiveness.

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 BCRs corresponding to promotion in each of those markets for dairy producers and fluid milk processors; and
3. Provide a qualitative and quantitative analysis of dairy product imports and import assessments.

This project covers the time period of 1995 to 2016 and captures the joint efforts of DMI, MilkPEP, and the QPs. The shares of each promotion entity of demand-enhancing expenditures over this period are as follows: (1) DMI – 25.56 percent; (2) MilkPEP – 24.18 percent; and (3) QPs – 50.26 percent.

Summary of the Findings

The overall finding of this evaluation is that the National Programs have effectively increased the 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 impacts associated with the programmatic activities of producers, as well as on 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.

The BCRs expressed in terms of producer profit at the farm level were calculated to be \$4.11 for every dollar invested in demand-enhancing activities for fluid milk; \$4.81 for every dollar invested in demand-enhancing activities for cheese; and \$22.74 for every dollar invested in demand-enhancing activities for butter. The BCR of export promotion was \$8.10 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 4.78, meaning that, on average, producer profit increased by \$4.78 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 2016. Cheese products accounted for about just over 40 percent, by value, of those imports. Effective April 1, 2011, importers of dairy products paid assessments to the National Dairy Promotion and Research Program. Import assessment funds totaled between \$3.41 million and \$4.76 million per year between 2012 and 2016. The import assessment has amounted to about 1 percent of the total demand-enhancing expenditures made by DMI, MilkPEP, and the QPs.

Imported cheese levels were higher by roughly 1.4 million pounds due to promotion funds collected from importers. Unit values of cheese imports amounted to roughly \$3.16 per pound on average over the period 2012 to 2016. Hence, incremental revenue to importers solely from cheese attributable to the import assessment totaled roughly \$4.4 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 \$3.73 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 2016 are depicted in Table 3-1 and in Figure 3-1. On average, slightly more than \$365 million in total was spent annually by the respective entities over this period and between \$400 million and \$415 million since 2013. Historically, the nominal shares of promotional expenditures on average were 26 percent for DMI, 24 percent for MilkPEP, and 50 percent for QPs.

Table 3-1. Annual Dairy Management, Inc., Milk Processor Education Program, and Qualified Program Promotion Program Expenditures, 1995 to 2016¹

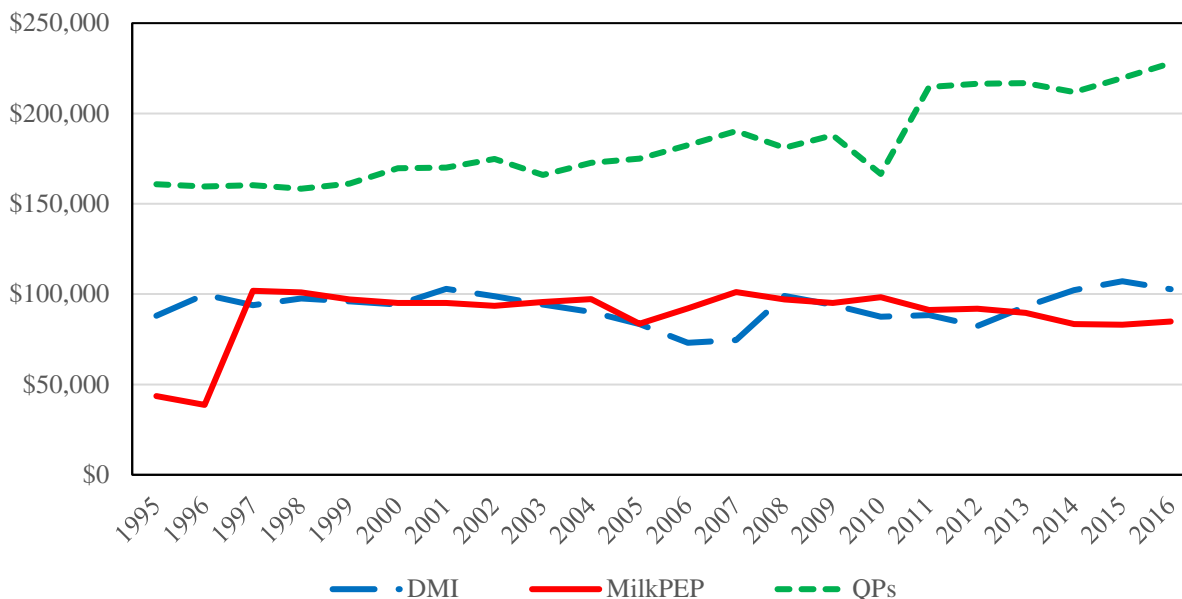
Year	DMI	MilkPEP	QPs	Total
1995	\$88,105	\$43,654	\$160,832	\$292,592
1996	\$99,674	\$38,690	\$159,600	\$297,964
1997	\$93,859	\$101,850	\$160,379	\$356,088
1998	\$97,570	\$100,901	\$158,348	\$356,819
1999	\$96,010	\$97,023	\$161,161	\$354,194
2000	\$94,260	\$95,158	\$169,654	\$359,072
2001	\$102,835	\$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

¹Thousands of dollars.

*QP data previously revised.

Source: Dairy Management, Inc., Milk Processor Education Program, and U.S. Department of Agriculture.

Figure 3-1. Annual Dairy Management, Inc., Milk Processor Education Program, and Qualified Program Promotion Expenditures, 1995 to 2016



Source: Dairy Management, Inc., Milk Processor Education Program, and U.S. Department of Agriculture.

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 2016 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 2016 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 \$34.9 million per quarter.

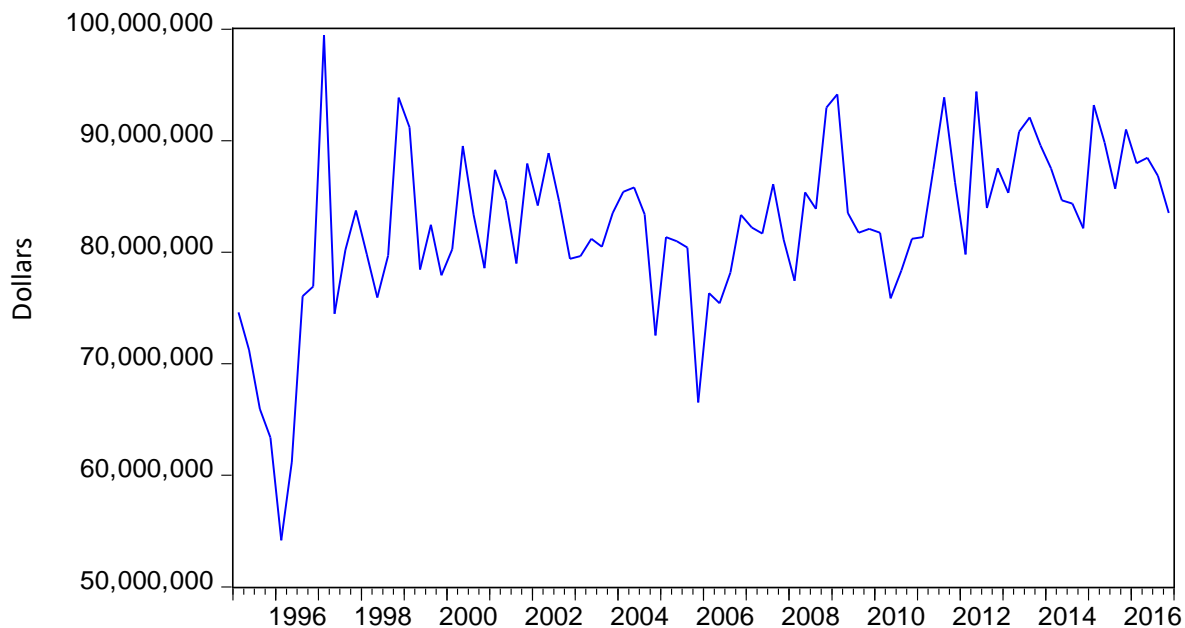
As exhibited in Figure 3-4, nominal seasonally adjusted demand-enhancing expenditures for cheese ranged from \$12.8 million to \$27.7 million between 1995 and 2004, averaging \$21.8 million per quarter. From 2005 to the third quarter of 2008, promotion expenditures associated with cheese were much smaller 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 to the end of 2016, 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 the entire period from 1995 to 2016, nominal seasonally adjusted demand-enhancing expenditures for cheese averaged \$16.4 million per quarter.

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 \$1.2 million per quarter over the period 1995 to 2016. 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 markets is important.

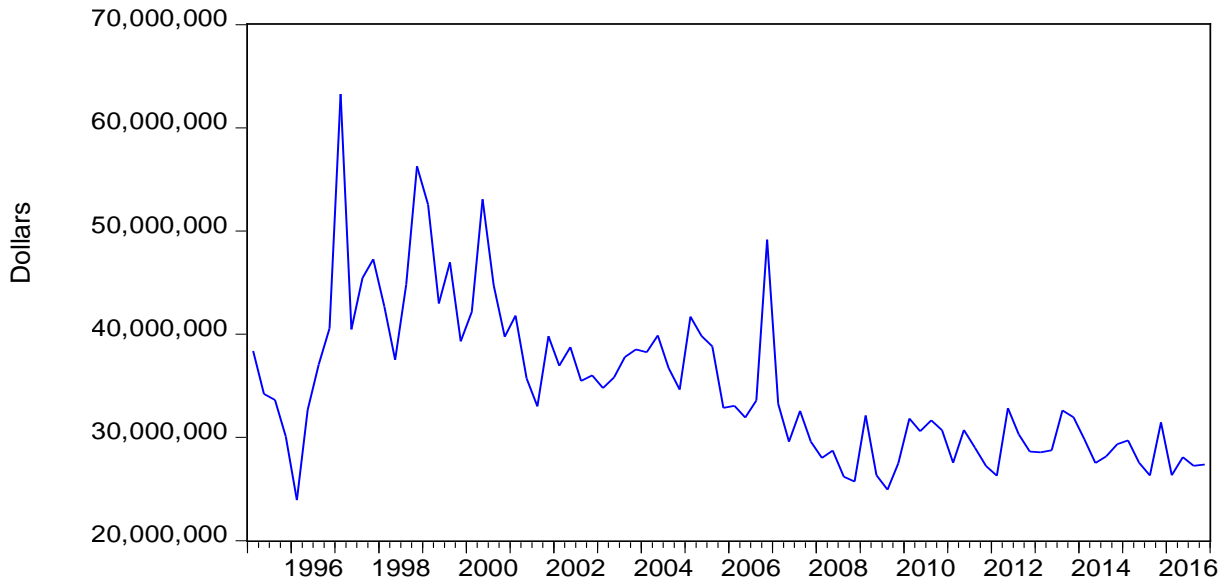
Figure 3-2. Quarterly All Dairy Product Promotion Expenditures (Nominal, Seasonally Adjusted) by DMI, MilkPEP, and QPs, 1995 to 2016*



*Includes expenditures for advertising, promotion, dairy foods and nutrition research, nutrition education, and market and economic research.

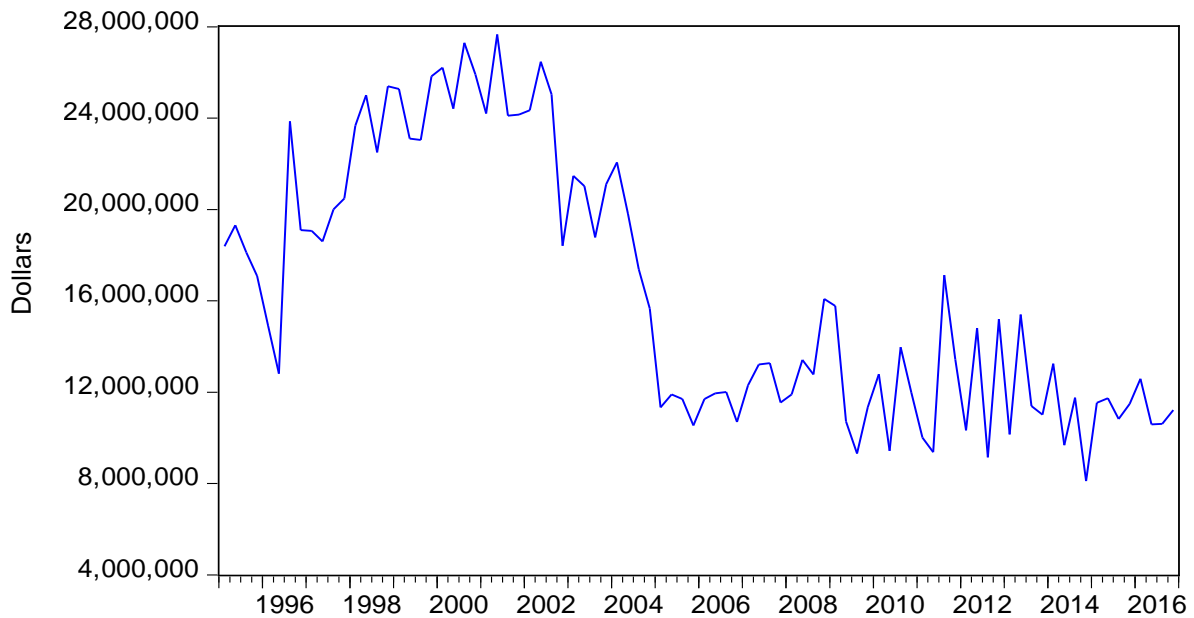
Source: Dairy Management, Inc., Milk Processor Education Program, Qualified Programs, and calculations by the authors.

Figure 3-3. Quarterly Fluid Milk Promotion Expenditures (Nominal, Seasonally Adjusted) by DMI, MilkPEP, and QPs, 1995 to 2016



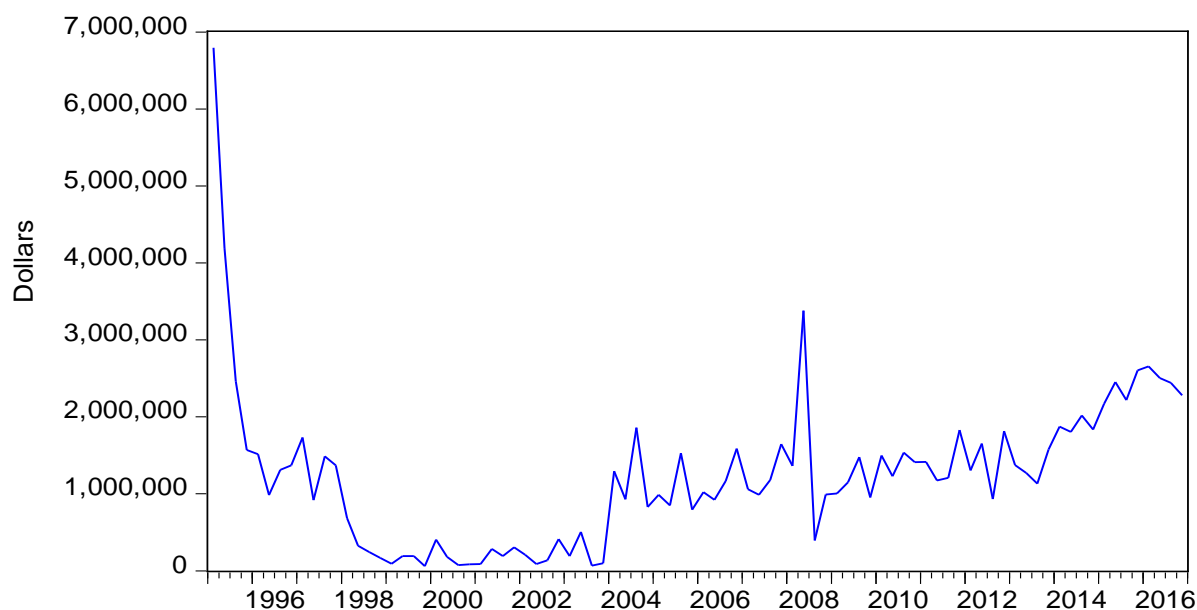
Source: Dairy Management, Inc., Milk Processor Education Program, Qualified Programs, and calculations by the authors.

Figure 3-4. Quarterly Cheese Promotion Expenditures (Nominal, Seasonally Adjusted) by DMI, and QPs, 1995 to 2016



Source: Dairy Management, Inc., Qualified Programs, and calculations by the authors.

Figure 3-5. Quarterly Butter Demand-Enhancing Expenditures (Nominal, Seasonally Adjusted) by DMI and QPs, 1995.1 to 2016.4



Source: Dairy Management, Inc., Qualified Programs, and calculations by the authors.

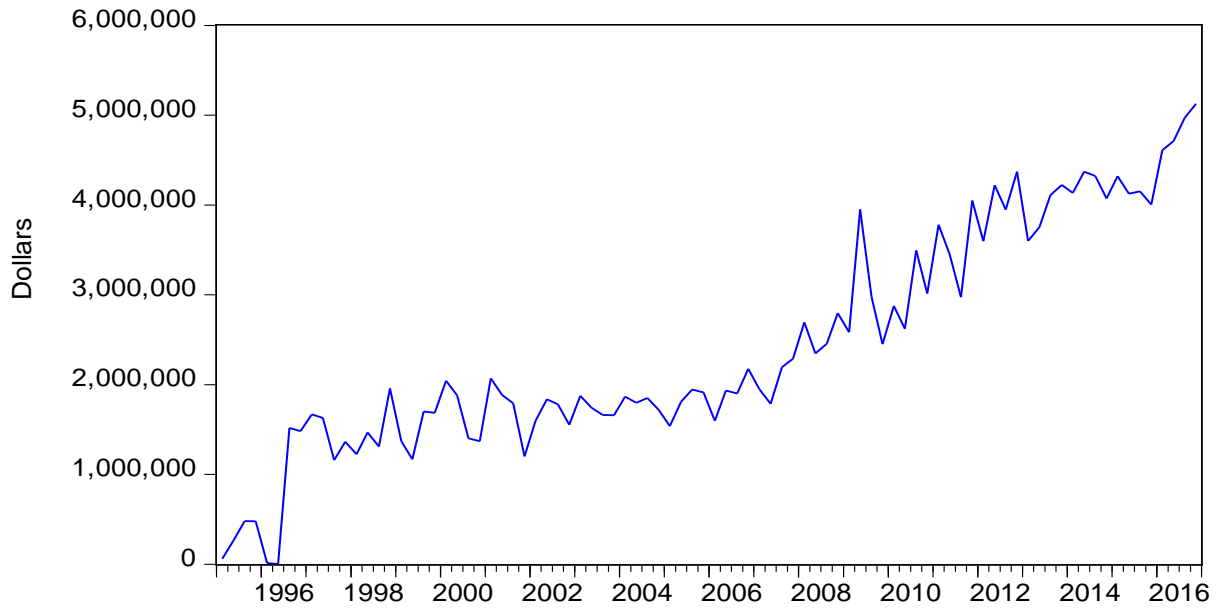
DMI also invests in dairy export promotion through the U.S. Dairy Export Council (USDEC). Nominal seasonally adjusted DMI expenditures directed to dairy export promotion on a quarterly basis ranged from just under \$800 to approximately \$5.1 million (Figure 3-6a). These expenditures trended upward from 1995 to 2016, averaging about \$2.4 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 \$1.9 million, averaging nearly \$1.1 million per quarter over the period of 1997 to 2016. 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 \$6.7 million per quarter, averaging \$3.4 million on a quarterly basis over the same period from 1995 to 2016 (Figure 3-6c).

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.”

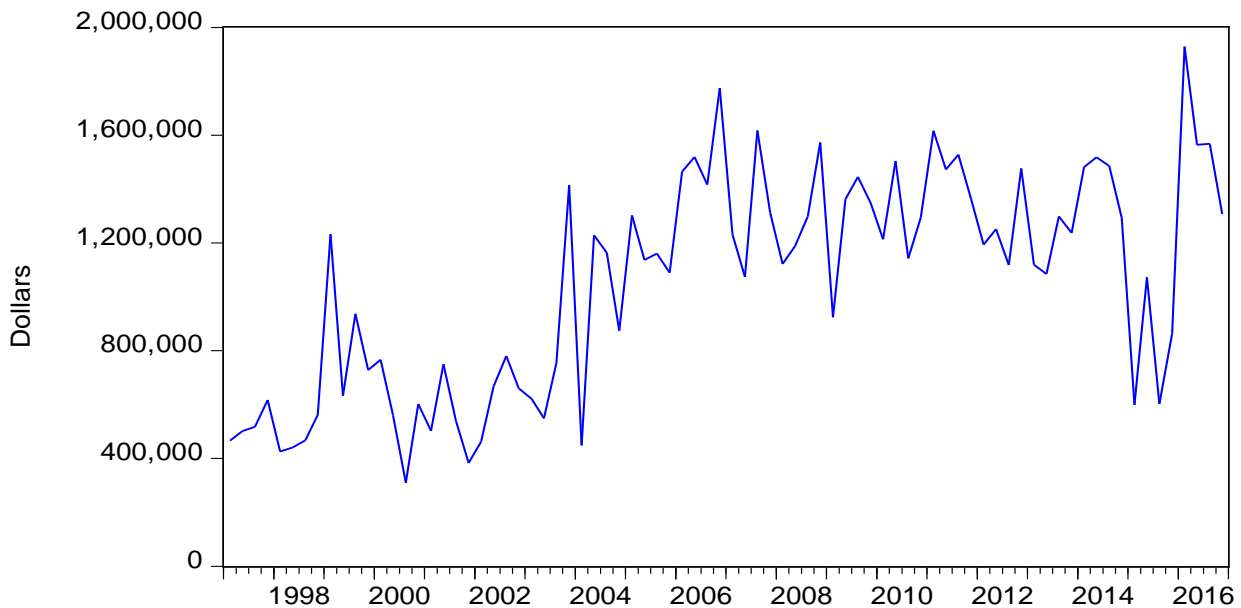
(Agricultural Marketing Service, 2011, “Rules and Regulations,” *Federal Register*, Volume 76, No. 53, page 14479).

Figure 3-6a. Quarterly Dairy Product Export Expenditures (Nominal, Seasonally Adjusted) by DMI, 1995.1 to 2016.4



Source: Dairy Management, Inc., and calculations by the authors.

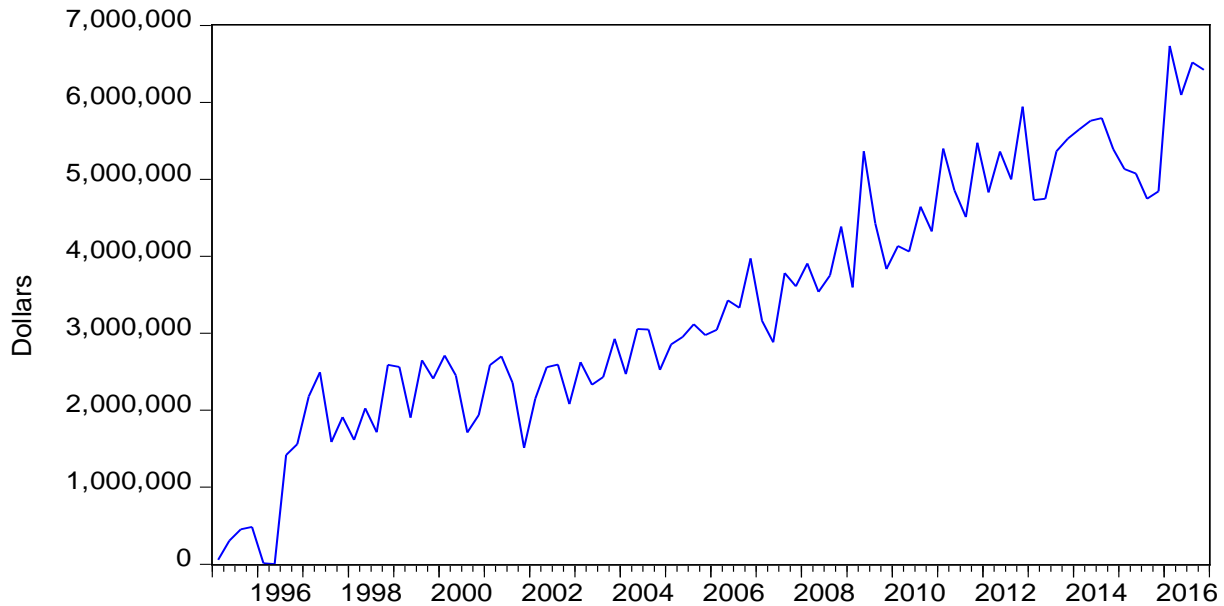
Figure 3-6b. Quarterly Dairy Product Export Expenditures (Nominal, Seasonally Adjusted) through the FMD/MAP Programs, 1997.1 to 2016.4*



*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: U.S. Department of Agriculture, Foreign Agricultural Service, and calculations by the authors.

Figure 3-6c. Quarterly Aggregate Dairy Product Export Expenditures (Nominal, Seasonally Adjusted) by DMI and the FMD/MAP Programs, 1995.1 to 2016.4



Source: Calculations by authors.

Two-thirds of the import assessment are allocated to the National Dairy Board. The remaining amount can be 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 2016. The total funds collected declined modestly from \$3.52 million to \$3.41 million between 2012 and 2014 and then rose to \$4.18 million in 2015 and \$4.76 million in 2016. The cumulative import assessment funds totaled \$20.34 million from September 2011 to December 2016. On a monthly basis, funds from the dairy import assessment ranged from \$210,086 to \$493,975, averaging \$317,787 over the period of September 2011 to December 2016 (Figure 3-7). The import assessment averaged about 1.0 percent of the total demand-enhancing expenditures made by DMI, MilkPEP, and the QPs between 2012 and 2016.

Trends in Dairy Use

Fluid milk consumption trended downward on a per capita basis between 1995 and 2016 (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 2016, the commercial per capita disappearance of cheese ranged from 6.4

pounds per quarter to 9.6 pounds per quarter, averaging about 7.9 pounds.

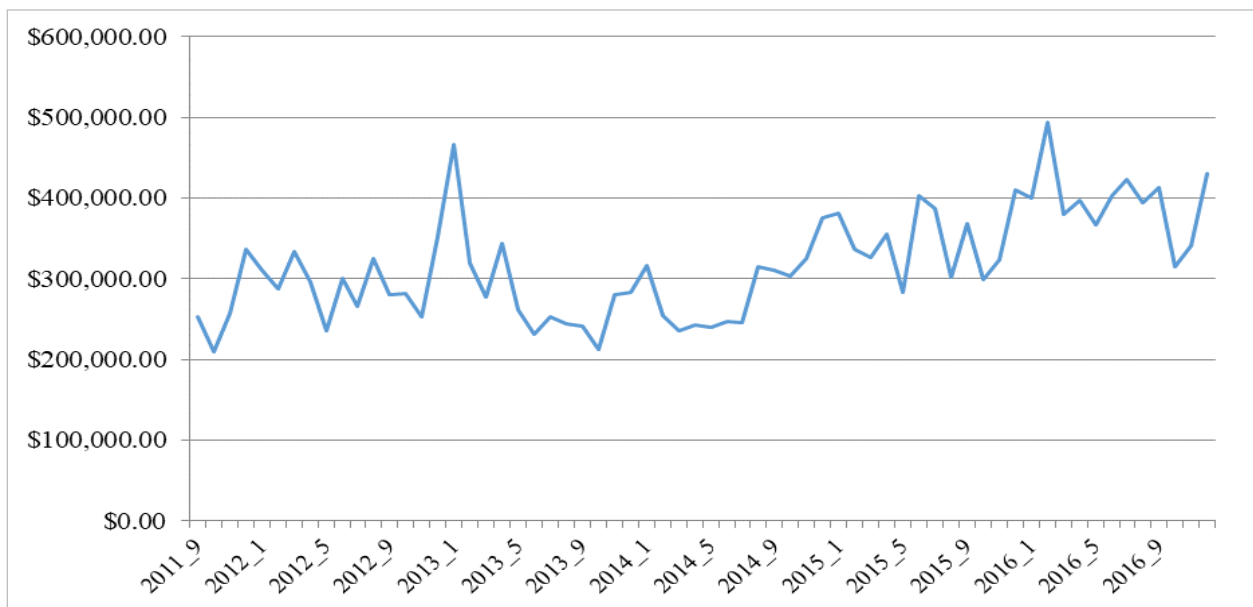
Over the same period, per capita butter consumption grew modestly and exhibited seasonal patterns as well (Figure 3-10). The commercial disappearance of butter on a per capita basis ranged from 0.9 pounds per quarter to 1.7 pounds per quarter, averaging roughly 1.2 pounds. U.S. butter consumption on a per capita basis was highest in the fourth quarter of 2016.

On average over 1995 to 2016, 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 2016, quarterly dairy exports on a fat basis averaged nearly 1,260 pounds and slightly more than 5,000 pounds on a skim-solids basis (Figure 3-13). 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 at 35.5 percent.

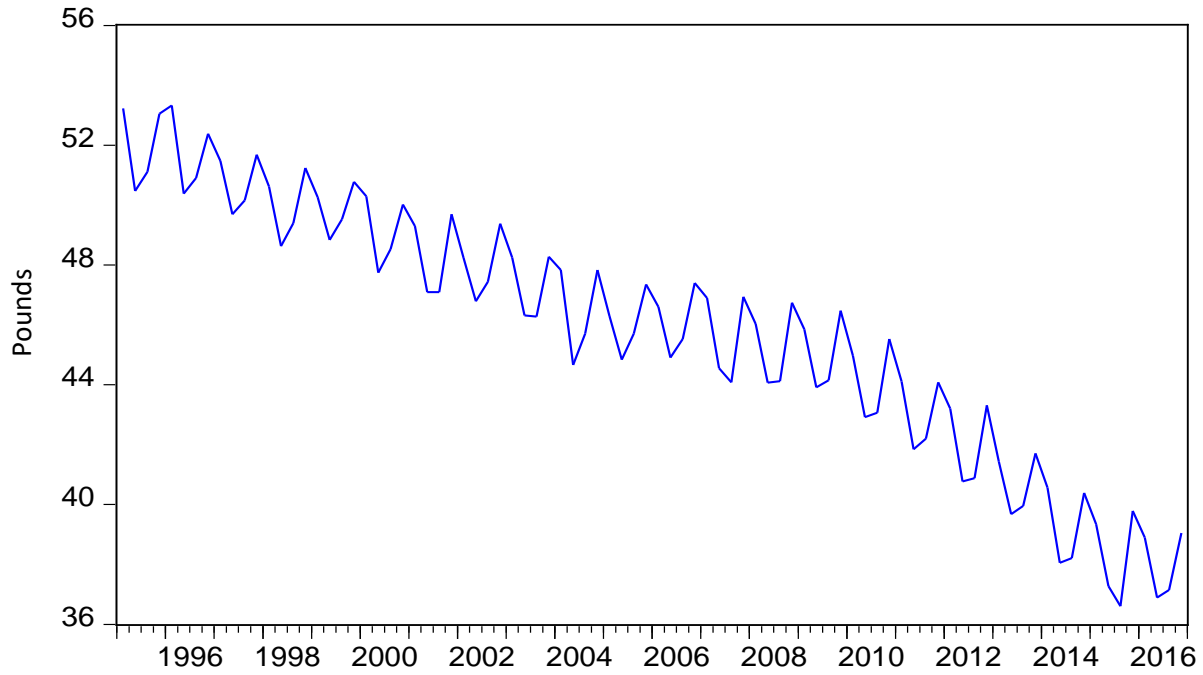
Given these trends, the analysis in the next section addresses the response of consumers to dairy promotion expenditures. Structural econometric models were developed to isolate the effects of those expenditures on demand for dairy products from those of other fundamental economic forces such as price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

Figure 3-7. Monthly Dairy Import Assessment Funds, September 2011 to December 2016



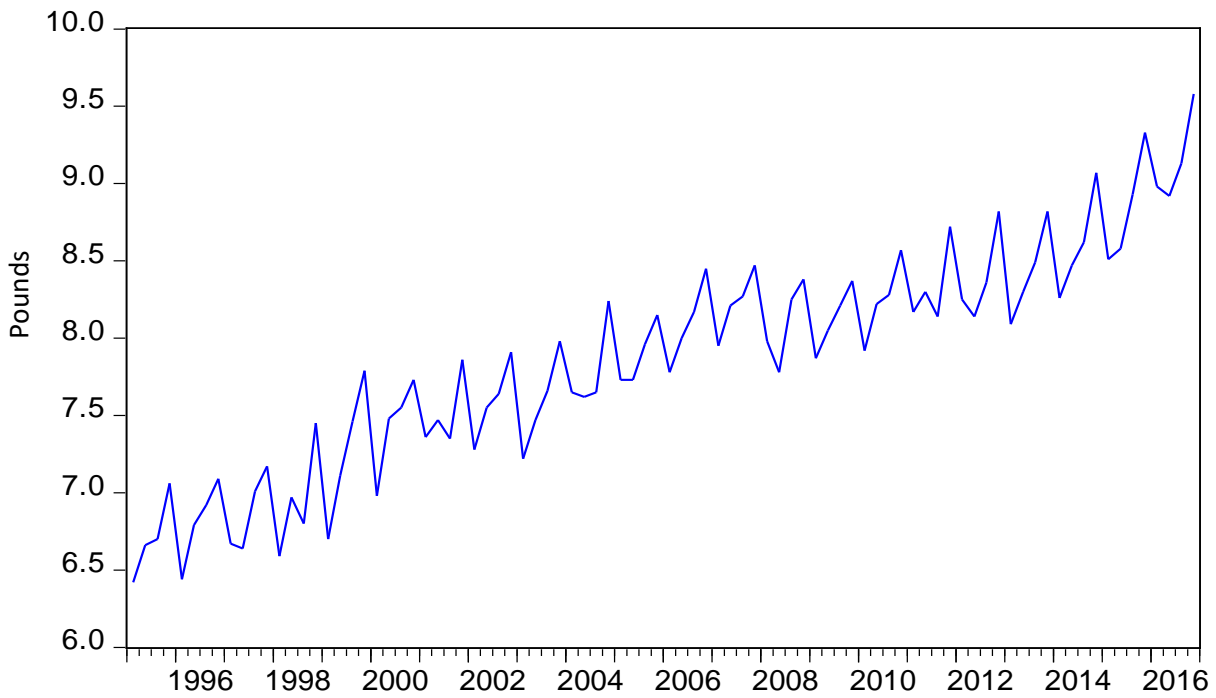
Source: U.S. Department of Agriculture

Figure 3-8. Quarterly Per Capita U.S. Consumption of Fluid Milk, 1995 to 2016



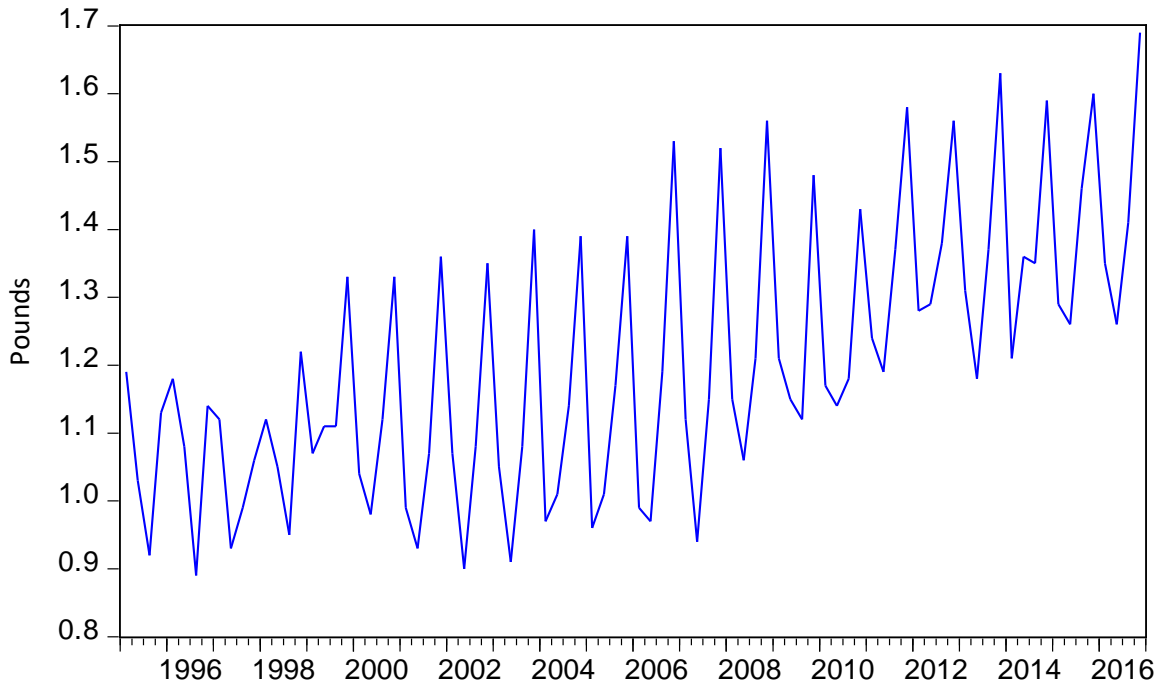
Source: U.S. Department of Agriculture.

Figure 3-9. Quarterly Per Capita U.S. Consumption of Cheese, 1995 to 2016



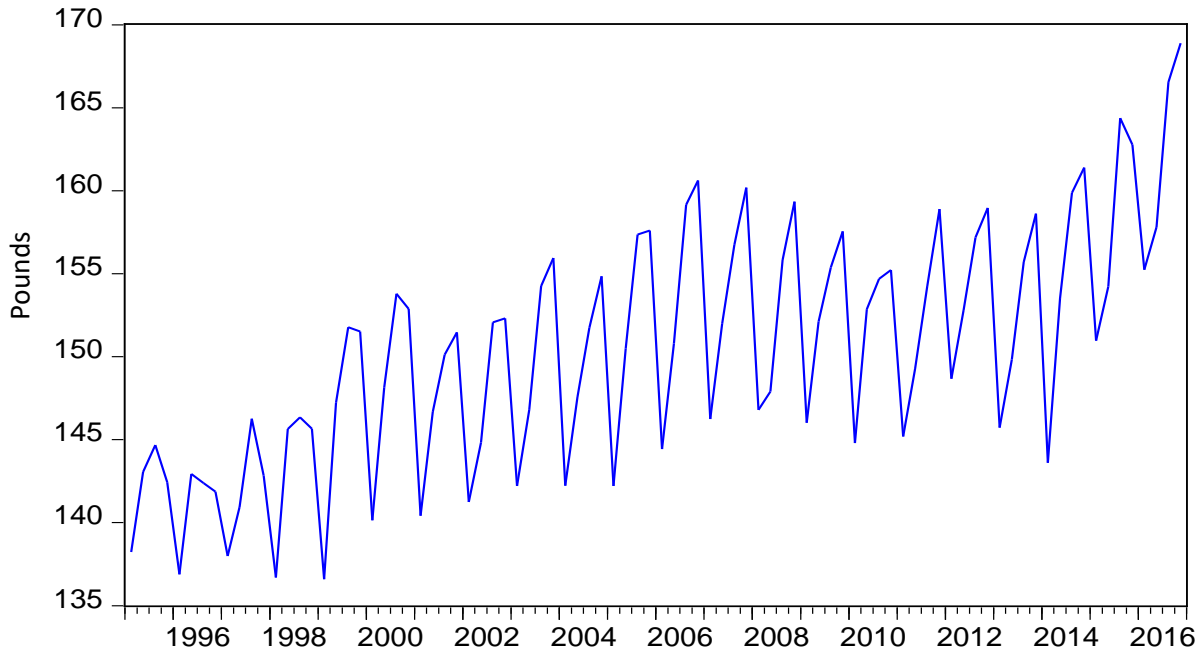
Source: U.S. Department of Agriculture.

Figure 3-10. Quarterly Per Capita U.S. Consumption of Butter, 1995 to 2016



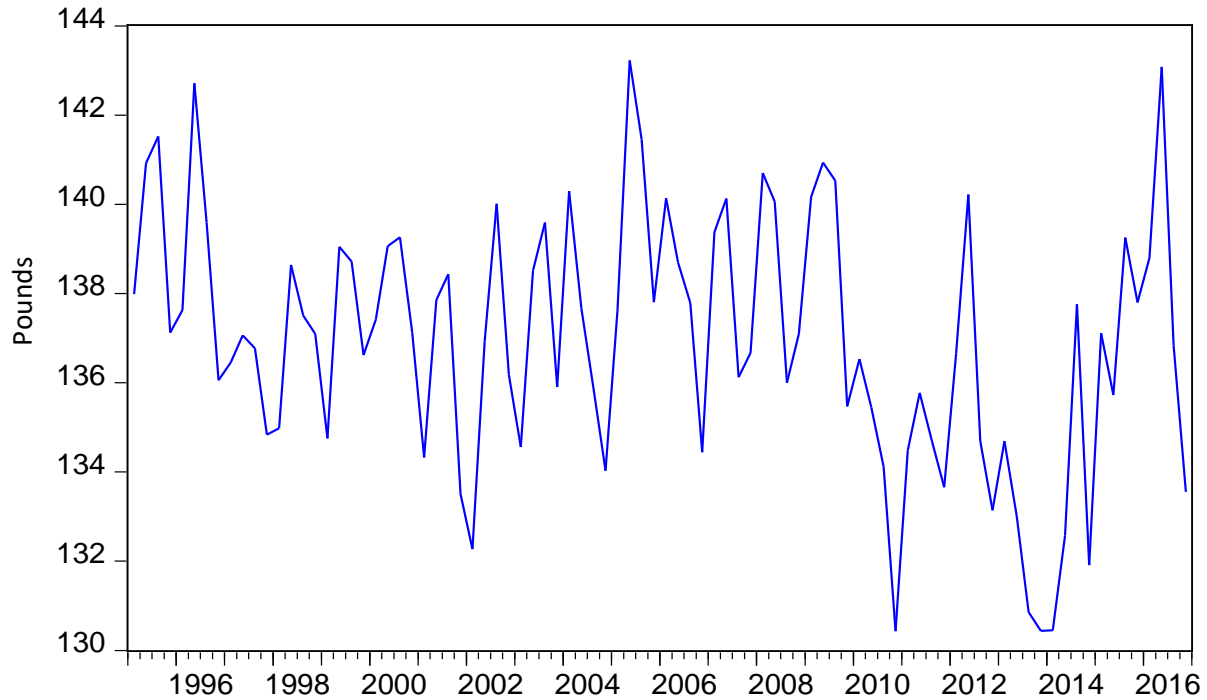
Source: U.S. Department of Agriculture.

Figure 3-11. Quarterly Per Capita U.S. Consumption of All Dairy Products on a Milk-Equivalent Fat Basis, 1995 to 2016



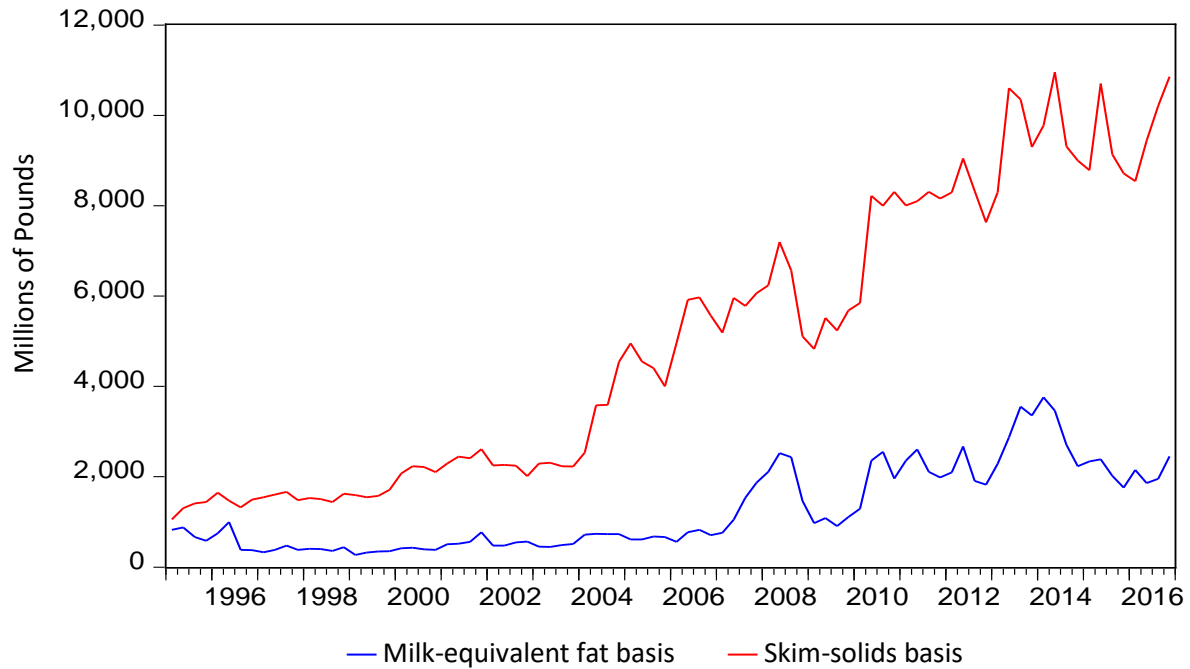
Source: U.S. Department of Agriculture and calculations by the authors.

Figure 3-12. Quarterly Per Capita U.S. Consumption of All Dairy Products on a Skim-Solids Basis, 1995 to 2016



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 2016



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

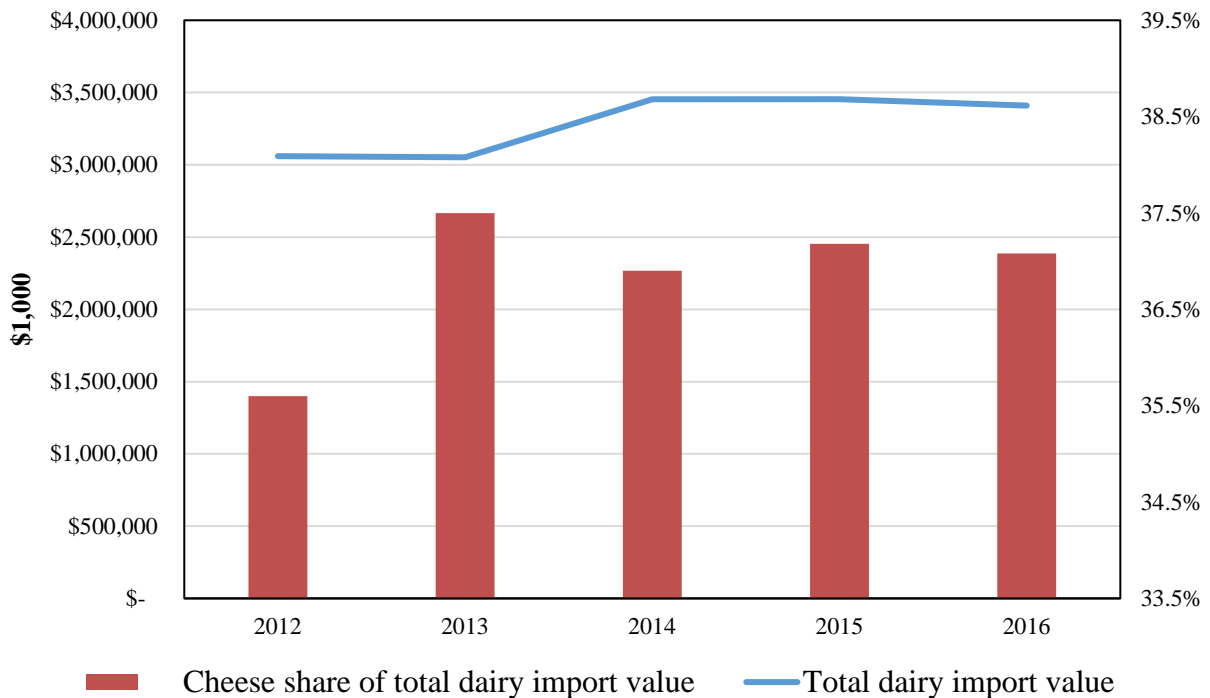
Table 3-2. U.S. Dairy Product Imports and Import Assessment Funds, 2012-2016¹

	2012	2013	2014	2015	2016
Value of All Dairy Imports (\$1,000)	\$3,059,069	\$3,051,985	\$3,452,772	\$3,453,239	\$3,410,837
Value of Cheese Imports (\$1,000)	\$1,093,017	\$1,145,000	\$1,274,723	\$1,290,771	\$1,262,980
Quantity of Cheese Imports, (metric tons (MT))	153,964	147,196	164,777	197,767	205,333
Unit Value of Cheese Imports (\$/MT)	\$7,099	\$7,779	\$7,736	\$6,526.73	\$6,150.89
Import Assessment Funds (\$)	\$3,522,145	\$3,415,218	\$3,411,353	\$4,175,783	\$4,756,864
Import Assessment per \$1,000 of dairy imports	\$1.15	\$1.12	\$0.99	\$1.21	\$1.39

¹ The import assessment went into effect April 1, 2011. Funds have been collected in each month from September 2011 to present.

Sources: Import Assessment data from USDA, Agricultural Marketing Service. Trade data from USDA, Foreign Agricultural Service.

Figure 3-14. U.S. Dairy Imports and Cheese Share of Dairy Import Value, 2012-2016



Source: U.S. Department of Agriculture, Foreign Agricultural Service.

Findings on Impacts of Promotion Expenditures on Dairy Demand

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 impact of marketing and promotion expenditures is a measure of the relative sensitivity of consumer demand to demand-enhancing expenditures. This measure, also known as the promotion expenditure elasticity, is defined as the percentage change in consumption given a 1-percent change in demand-enhancing expenditures, while 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. The analysis allows the promotion elasticities to vary over time with variation in expenditures. Some of the 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 2016 were 0.053, 0.019, and 0.067, respectively. The promotion elasticities for all dairy products on a skim-solids basis and on a fat basis for 2016 were 0.060 and 0.030 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 over 8 quarters and over 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 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 export promotion expenditures (SSB) was estimated to be 9 quarters. The SSB export promotion expenditure elasticity was estimated to be statistically significant at 0.072 over the sample period (Table 3-3). The lag length for the export promotion expenditures (FB) was estimated to be 6

² Key drivers of dairy demand were found to include lags of the ratio of the Oceania export butter price to the U.S. butter price on a fat basis; lags of 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; lags of the measure of real world income; seasonality; and inertia or stickiness of dairy exports in world markets.

quarters. The FB export promotion expenditure elasticity was estimated to be statistically significant at 0.107 (Table 3-3).

The analysis in this chapter covers the period of 1995 to 2016. The results are decomposed for comparison purposes into four similar time periods: (1) 1995-1999, (2) 2000-2004, (3) 2005-2010, and (4) 2011-2016. 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 2016 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.

Tables 3-4 provides 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.

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

Table 3-3. Estimated Dairy Demand Sensitivity to Promotion, Prices, and Income, 1995 to 2016

	Promotion Elasticities		Own-Price Elasticity	Income Elasticity
	1995 to 2016	2016 only		
Butter ¹	0.038	0.053	-0.087	0.269
Cheese ¹	0.026	0.019	-0.154	0.450
Fluid milk ¹	0.085	0.067	-0.112	-0.162
All dairy ¹				
Skim-solids basis	0.065	0.060	-0.064	0.088
Fat basis	0.032	0.030	-0.039	0.264
Exports ¹				
Skim-solids basis	0.072	0.072	-0.194	0.504
Fat basis	0.107	0.107	-0.180	0.912

¹Over the time period 1995.1 to 2016.4.

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.

As shown in Table 3-4, the average annual per capita consumption of fluid milk, cheese, and butter was higher by 10.8 percent, 4.6 percent, and 3.3 percent, respectively, over the period of 1995 to 2016 due to promotion efforts, all other exogenous factors held constant. The average annual per capita consumption of nonfat dry milk (NFDM) would have been 3.16 pounds per capita annually without promotion versus 3.18 pounds per capita as actually occurred with promotion over the 1995 to 2016 period, an increase of 0.8 percent.

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	2011 - 2016	With Promotion (lbs)	181.34	34.49	5.54	3.21
		No Promotion (lbs)	164.90	32.93	5.29	3.15
		Change (lbs)	16.43	1.55	0.25	0.06
		Percent Change	10.0%	4.7%	4.6%	1.9%
	2005 - 2010	With Promotion (lbs)	196.54	32.47	4.81	3.22
		No Promotion (lbs)	177.58	31.01	4.64	3.18
		Change (lbs)	18.97	1.46	0.16	0.04
		Percent Change	10.7%	4.7%	3.5%	1.3%
	2000 - 2004	With Promotion (lbs)	202.78	30.33	4.44	3.04
		No Promotion (lbs)	182.21	28.92	4.37	3.03
		Change (lbs)	20.49	1.42	0.07	0.01
		Percent Change	11.2%	4.9%	1.7%	0.4%
	1995 - 1999	With Promotion (lbs)	209.95	27.68	4.32	3.24
		No Promotion (lbs)	188.48	26.59	4.22	3.26
		Change (lbs)	21.47	1.09	0.11	-0.02
		Percent Change	11.4%	4.1%	2.6%	-0.6%
	1995 - 2016	With Promotion (lbs)	196.84	31.45	4.81	3.18
		No Promotion (lbs)	177.65	30.05	4.66	3.16
		Change (lbs)	19.19	1.39	0.15	0.03
		Percent Change	10.8%	4.6%	3.3%	0.8%

Source: Calculation by the authors.
NFDM = Nonfat Dry Milk

These results indicate that the overall downward trend of per capita fluid milk consumption between 1995 and 2016 was mitigated to some extent by the promotional efforts of the National Programs. Without the promotion programs, fluid milk consumption would have averaged 177.65 pounds per capita annually instead of 196.84 pounds per capita annually over the 1995-2016 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 the annual per capita consumption of cheese would have averaged 30.05 pounds without promotion versus the 31.45 pounds as actually occurred with promotion over the 1995 to 2016 period. For butter over that period, annual per capita consumption would have averaged 4.66 pounds without promotion versus the 4.81 pounds that actually occurred without promotion.

Average annual per capita consumption of fluid milk, cheese, and butter was higher by 10.0 percent, 4.7 percent, and 4.6 percent, respectively, due to promotion during the 2012 to 2016 period (Table 3-4). Annual exports of butter averaged 8.5 percent less than would have occurred without promotion while annual exports of NFDM and cheese averaged 2.7 percent and 4.7 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 for which there are adequate data to support a thorough quantitative analysis. The analytical results indicate that the average annual level of cheese imports was higher by roughly 1.4 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 2012 to 2016 due to promotion using import assessments. Hence, incremental revenue to importers solely from cheese attributed to the import assessment totaled \$4.4 million.

The average annual per capita consumption of cheese was also higher by 0.024 pounds (0.07 percent) as a result of the promotion funded by the importer assessment. Average annual consumption of other cheese was higher by 7.42 million pounds (0.11 percent) as a result of the import assessment.

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. By using profit over costs in the analysis, a more complete and realistic BCR is calculated for producers. The fluid milk processor BCR is calculated similarly to the producer BCR; the cost of milk is used as a proxy for the cost of

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.

production since data for fluid milk processors' cost of production are not available.

The level of the BCR is often mistakenly taken as an indication of the level of the market impact of a promotion program. A BCR from a 1-dollar investment that returns 5 dollars is the same (5 to 1) as the BCR for a 1 billion-dollar investment that returns 5 billion dollars. Although the BCR from these two investments is the same, the levels of their market impacts obviously are not the same. The more that is spent, the larger the market impact of the commodity program. As spending increases, however, each additional dollar spent has a declining effect, so that the total additional revenue achieved increases at a declining rate 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. Other metrics, such as impacts on consumption and exports, often are much more revealing and useful than the BCR as indications of market impact.

Based on a comparative analysis of the “promotion” and “no-promotion” scenarios as summarized in the previous section and illustrated in 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 1995 to 2016, 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 \$4.11 for every dollar invested in demand-enhancing activities; for cheese, \$4.81 for every dollar invested; and for butter, \$22.74 for every dollar invested. Dairy export promotion expenditures have increased the foreign demand for U.S. dairy products by \$8.10 for every dollar invested. For an aggregate of all dairy products, the net profit BCR is approximately \$4.78 for every dollar spent on dairy demand promotion.

Table 3-5. Calculated Benefit-Cost Ratio (BCRs), in Net Profit at the Producer Level Attributable to the National Programs, 1995 to 2016

Producers	
Product	BCR
All Dairy	4.78
Fluid milk	4.11
Cheese	4.81
Butter	22.74
Exports	8.10

Source: Calculations by the authors

Table 3-6. Calculated Benefit-Cost Ratio (BCRs), in Net Profit at the Fluid Milk Processor Level Attributable to the National Programs, 1995 to 2016

Fluid Milk Processors	
Product	BCR
Fluid Milk	3.73

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 processor 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 2016, 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 \$3.73 for every dollar invested in demand-enhancing activities for fluid milk processors. (Table 3-6).

Available expenditure data for the two participating entities in dairy promotion, DMI and MilkPEP, also allow 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 have largely 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 5.27, quite similar to the 4.78 return on investment shown in Table 3-5 for all dairy product promotion investments. The BCR for MilkPEP was calculated at 3.73, slightly below the 4.11 calculated for all fluid milk promotional spending in Table 3-5.

Concluding Remarks⁴

This report provides the independent evaluation of the effectiveness of the National Programs covering the period 1995-2016. The key findings regarding markets for milk and manufactured dairy products include the following:

- The National Programs have effectively increased the demand for promoted dairy products, especially cheese and butter, while moderating the decline in per capita fluid milk consumption. The gains in profit at the producer and fluid milk processor level were far larger than the costs of the National Programs.
- The overall BCR (using profit over costs) of the dairy producer promotion program was

⁴ A reference list is available upon request.

calculated to be 4.78. That is, for every \$1 spent on demand-enhancing activities, dairy producers received an additional \$4.78.

- The producer BCR for fluid milk promotion was calculated to be \$4.11 for every dollar invested in demand-enhancing activities. For cheese promotion, the BCR was calculated to be \$4.81 per dollar invested in cheese promotion and \$22.74 for every dollar invested in butter promotion. The BCR for dairy export promotion was calculated to be \$8.10 per dollar invested.
- Per capita consumption of fluid milk, cheese, and butter rose by annual averages of 10.8 percent, 4.6 percent, and 3.3 percent, respectively. Exports of butter and nonfat dry milk decreased by annual averages of 21.2 percent and 6.3 percent, respectively, but exports of cheese rose by an annual average of 5.9 percent.
- The United States imported between \$3.0 billion and \$3.5 billion in dairy products in each of the last 5 years. Cheese products accounted for slightly more than one-third, by value, of the dairy imports. Total import assessments collected ranged from \$3.41 million to \$4.76 million annually between 2012 and 2016. The import assessment has amounted to about 1.0 percent of the total demand-enhancing expenditures by DMI, MilkPEP, and the QPs.
- The promotion funds collected from importers boosted the annual average level of cheese imports by roughly 1.4 million pounds. Annual unit values of cheese imports amounted to about \$3.16 per pound on average over the period 2011 to 2016. Hence, the incremental revenue to importers solely from cheese attributable to the expenditure of the import assessments for cheese promotion totaled roughly \$4.4 million.
- The BCR for fluid milk processors attributed to the Fluid Milk Promotion Program was calculated to be \$3.73.
- With regard to methodology, the structural econometric models used for this analysis are statistically valid and largely consistent with prior studies evaluating generic commodity promotion. The simulation analysis was accomplished by aligning the annual AMAP Dairy Model with the observed data over the 1995 to 2016 period. The baseline period is 1995 to 2016, and the impact of promotion was obtained by removing demand-enhancing expenditures from the system (the counterfactual).

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 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;
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); and
5. 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 2016 was \$213 million (approximately 10 cents of the 15-cent producer assessment and 2.5 cents of the 7.5-cent assessment). This chapter provides the aggregate income and expenditure data of the Qualified Programs as well as a list of certified programs in 2016.

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. 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.

**2016 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 2016
Carryover from Previous Year ¹	\$78,256
Producer Remittances	213,084
Transfers from Other Qualified Programs	67,579
Transfers to Other Qualified Programs	(64,613)
Other Income	7,911
Total Adjusted Annual Income	<u>\$302,217</u>
Aggregate Expenditures	FY 2016
General and Administrative	\$9,916
Milk Advertising and Promotion	15,069
Cheese Advertising and Promotion	32,219
Butter Advertising and Promotion	7,628
Frozen Dairy Products Advertising and Promotion	4,220
Other Advertising and Promotion ²	5,461
Unified Marketing Plan ³	86,374
Dairy Foods and Nutrition Research	9,719
Public and Industry Communications	27,063
Nutrition Education	17,385
Market and Economic Research	2,106
Other	10,674
Total Annual Expenditures	<u>\$227,834</u>
 Total Available for Future Year Programs	 \$72,282

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

² Other includes "Real Seal," holiday, multi-product, calcium, foodservice, product donation 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. Unified Marketing Plan to fund national implementation programs.

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

2016 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

Colorado:

- Western Dairy Association

Connecticut:

- Connecticut Milk Promotion Board

Florida:

- Florida Dairy Farmers

Georgia:

- Georgia Agricultural Commodity Commission for Milk
- Southeast United Dairy Industry Association
- American Dairy Association of Georgia

Idaho:

- Idaho Dairy Products Commission
- Dairy Food Nutrition Council

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
- 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
- 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 Mideast

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

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.
- 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)

2016 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*]
 Aga, Dr. Diana [*Co, S*]
 Agralytica [*E*]
 Agribusiness-Connect Asia [*E*]
 American Academy of Pediatrics [*N*]
 American Butter Institute [*U*]
 American Dairy Association Indiana, Inc. [*U*]
 American Humane Association [*B*]
 American-Mexican Marketing [*E*]
 American Society for Nutrition [*N*]
 American Society of Animal Science [*B*]
 Arab Marketing Finance, Inc. [*E*]
 Armstrong-Johnston Archival Services [*B*]
 ASK-Comm Strategies, LLC [*C*]
 Association of National Advertisers, Inc. [*C*]
 Bader Rutter and Associates, Inc. [*C, E, S*]
 Baxter Communications, Inc. [*C*]
 Becky Dorner & Associates, Inc. [*N*]
 Belcher, Lisa [*Co, F*]
 Blazer, Claudia [*K*]
 Bodhi Road, Inc. (Fresh Company) [*B*]
 Bokma, Dr. Bob [*Co, E*]
 Bonci, Leslie [*N*]
 Bovina Mountain Consulting [*E, K*]
 Brand Crushin' [*U*]
 Burris, Cameron [*E, K*]
 C+R Research Services [*F, K*]
 Canadean – Kable Business Intelligence [*E, I*]

Catalyst International LLC [*E*]
 CEB, Inc. [*B*]
 Center for Food Integrity [*C*]
 Center for Food Safety & Regulatory Solutions [*E, I*]
 Center for High Performance [*B*]
 Centre National Interprofessionnel de l'Economie Laitere (CNIEL) [*E, K*]
 CFE Solutions, Inc. [*Co*]
 Chicago Council on Global Affairs [*K*]
 Cision US Inc. [*C*]
 CliftonLarson Allen LLP [*B*]
 College & Professional Sports Dieticians [*N*]
 Consumer Dynamics [*C*]
 Convergence LLC d/b/a GoConvergence [*C, F*]
 Cooperrider Associates [*N*]
 Cowboy Media Productions, LLC [*C, E*]
 Crowd Companies, LLC (Catalyst) [*C*]
 Culinary Institute of America [*I*]
 Culinary Sales Support, Inc. [*C, E*]
 D.L. Peterson Associates [*K*]
 Dairy Council of Utah/Nevada [*U*]
 Dairy Farmer of America, Inc. [*P*]
 Dairy Insights, LLC [*Co, E*]
 Dairy Max, Inc. [*U*]
 Datazio LLC [*B*]
 DH Consulting [*Co*]
 Digital SpeakEasy LLC [*C, S*]
 Domino's Pizza Enterprises – Japan [*E*]

Domino's Pizza Enterprises – Oceania [E]
 Domino's Pizza LLC [P]
 DuPuis Group [C, F]
 Earthwide Business Intelligence Limited [E]
 EAS Consulting Group [I]
 Edelman Public Relations Worldwide [C, E, K, 60]
 Erika Jones & Associates, Inc. [B]
 Esser, John [Co, I]
 Euromonitor International Ltd. [E]
 Fabrizo & Friends [C, E]
 Fair Oaks Dairy Adventure [C, U]
 fairlife, LLC [P]
 Farmer's Daughter Consulting [N]
 Fleishman-Hillard Inc. [C]
 Florida Dairy Farmers, Inc. [U]
 FoodMinds LLC [E, I]
 Foodsense, LLC [C, N]
 Foundation for Food Integrity [N]
 Foundation for the National Institutes of Health [N]
 General Mills, Inc. dba Medallion Labs [F, N]
 Girag & Associates [K]
 Global Dairy Platform, Inc. [C]
 Global Food & Nutrition, Inc. [E, I]
 GlobalData Plc (Canadean Consumer) [E, K]
 GNC Consulting, Inc. [B]
 Goodson, Amy [N]
 Gravity Marketing, LLC [K, S]
 Greater Talent Network, Inc. [C]
 HealthFocus International [N]
 Health & Nutrition Network [B]
 Helen Anderson Inc. [B]
 HGR Analytics, LLC [K]
 Hillstrom Communications, Inc. [C]
 Hruska, Cindy [B, E]
 IAX Design Research Group LLC [K]
 Idiom Brand Identity, Inc. [C, F]
 IFCN AG [K]
 Information Resources, Inc. [K]
 Inmar Analytics, Inc. [K]
 Innova Market Insights [K]
 International Dairy Foods Association [E, K]
 International Language Option [C, E]
 Intersport, Inc. [C]
 IntNet [E]
 J.C. Small Global Limited [Co, E]
 J.E. Sullivan Enterprise, LLC [E]
 J/D/G Consulting [Co, E]
 JE Julie Enyedy Consulting [Co]
 K.COE Isom, LLP [K, S]
 Keenan, Judy [Co]
 Kenney, Audrey [C, E]
 KEO Consulting [C]
 Kistner Eddy Executive Services, Inc. [B]
 Korn Ferry Hay Group, Inc. [B]
 Koski, Shannon [C, E]
 Kropp, Jeanne [Co]
 LexisNexis [K]
 Li, Tammy [Co]
 Locraft, Lauren [I]
 LPK Brands, Inc. [C, F]
 Lynn Stachura, LLC [K]
 Maine Dairy Promotion Board [U]
 Market Makers, Inc. [E]
 Marketecture [K]
 Marketing Concepts, Inc. [C, I]
 Marketing Connections S.A. [E]
 Maryland and Virginia Milk Producers [P]
 McCarl, Dr. Bruce [Co, S]
 McDonald's USA, LLC [P]
 McLeod, Watkinson & Miller [B]
 MMS Education Inc. [C, N, 60]
 Monster Worldwide, Inc. [B]
 Morgan Marzec [Co]
 Narasimmon Consulting LLC [Co]
 National Academy of Sciences [I]
 National Dairy Shrine [B]
 National Fluid Milk Processor Promotion Board [P]

National Football League Players Incorporated [60]
 National Football League Properties [60]
 National Marketing Institute [C]
 National Milk Producers Federation [E, K]
 National Osteoporosis Foundation [N]
 NDP Group, Inc. [K]
 New England Dairy and Food Council, Inc. [U]
 New Media Strategist [C]
 North American Artery c/o Hansen Global
 Event Management LLC [N]
 Novak Birch [C, E]
 NTT Data, Inc. [B, C]
 Nutrition Insights LLC [N]
 Nutritional Strategies Inc. [N]
 Nygaard Consulting LLC [E, K]
 OCLC – CONTENTdm [B]
 Opinions LTD [F, K]
 Orrani Consulting [E, K]
 P R Consultants Limited [E]
 Parody, Kristen [Co, E]
 Pasiakos, Dr. Stefan [N]
 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]
 Project Peanut Butter [I]
 Quadrant Nutrition LLC [E, N]
 Quaife, Tom [Co]
 Queue Marketing Communications Group [F, K]
 Radloff, Katherine [C, E]
 Raymond, Carl [C]
 RB International [Co]
 Ready Ink Communications [C, E]
 Rempfer Consulting, Inc. [I]
 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, Brian [60]
 SEOmox, Inc. [B]
 Shamrock Foods Company [P]
 Sheppard, Liz [B]
 Sheryl Stern Sachman & Associates, LLC [N]
 SIAM Professionals, LLC [Co, E]
 Sikand, Dr. Vandna [Co, E]
 SK Gerdes Consulting, LLC [E]
 Skylar Diggins [U]
 Social Enterprises, Inc. [C]
 Solution Partners Consulting, Inc. [F, K]
 Sorenson, Carla [C, E]
 Southeast Milk, Inc. [P]
 Southeast United Dairy Industry Association [U]
 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]
 Sustainability Agriculture Summit [S]
 Sustainable America [C]
 Taco Bell Corporation [P]
 Team Services LLC [60]
 Technomic, Inc. [K]
 Texas A&M AgriLife Research [K]
 The Centre for Food & Health Studies Ltd [N]
 The Economist Intelligence Unit, NA, Inc. [C]
 The Fresh Approach, Inc. [C]

The Ginger Network, LLC [C]
The Hartman Group [I, N]
The Keystone Center [S]
The Kroger Company [P]
The McCully Group [E, I]
TNS Custom Research, Inc. d/b/a Kantar
Worldpanel [K]
Tong, Dr. Phil [E, K]
TradeMoves, LLC [E, K]
Trusted Translations, Inc. [C]
Tsen, Shan [C]
Tseng, Annie [C, E]
Turim Innovation & Ideation, Inc. [K]
United Dairy Industry Association, Inc. [P, U]
Upfield Group [C]
Venga Global, Inc. [C, E]
Vennli, Inc. [K]
Watson Green, LLC [B, N, U]
Weber Shandwick China - Beijing Branch [C, E]
Weber Shandwick Worldwide [C]
Wellspring Insights & Innovation, Inc. [F, K]
Wescott Strategic Communications LLC [C]
World Wildlife Fund, Inc. [C]
Youth Improved Inc. d/b/a GenYouth [C, N, 60]
Zenith International Ltd. [E, I]
Zhou, Wenjia (Ellen) [C, E]
Zosspack Consulting [C, F]
Zuber, Tristan [Co, K]
Zuroweste, Rick [F]

2016 National Fluid Milk Processor Promotion Board Contracts Approved by USDA

Contractor Name [Contract Activities]:

A = Advertising and Marketing *B* = Business Development *K* = Knowledge and Insights
M = Medical Advisory

Abrams, Dr. Steven [<i>M</i>]	Liminal Research, LLC [<i>K</i>]
American Egg Board [<i>P</i>]	Lowe & Partners Worldwide Inc. dba
Barr, Dr. Susan [<i>M</i>]	SociedAD [<i>A</i>]
Bluetext, LLC [<i>B</i>]	Lowe Campbell Ewald [<i>A</i>]
Bridgewater Wealth and Financial Services, LLC [<i>B</i>]	Lowe Profero, LLC [<i>A</i>]
CMGRP, Inc. d/b/a Weber Shandwick [<i>A</i>]	McLeod, Watkinson & Miller [<i>B</i>]
Dairy Management Inc. [<i>P</i>]	Prime Consulting Group [<i>A</i>]
DoExtra CRM Solutions, LLC [<i>B</i>]	Protagonist, LLC [<i>K</i>]
EcoNet Ventures, LLC d/b/a Latinium Network [<i>K</i>]	Radius Global Market Research [<i>K</i>]
Economos, Dr. Christina [<i>M</i>]	Red Spark Consulting, LLC [<i>A</i>]
FCB Worldwide, Inc. (Foote, Cone & Belding) [<i>A</i>]	Rubin, Ronald [<i>B</i>]
Feeding America [<i>B</i>]	Saunders, Dr. Michael [<i>M</i>]
Food for Thought Consulting, Inc. [<i>K</i>]	Snyder-Cohn, PC [<i>B</i>]
Gail Golden Consulting, LLC [<i>B</i>]	Spectrum Group Productions, Inc. [<i>B</i>]
Hill, Dr. James [<i>M</i>]	The Marketing Arm, Inc. [<i>A</i>]
InTech Integrated Marketing Services, LLC [<i>B</i>]	ThinkVine Corporation [<i>K</i>]
International Dairy Foods Association [<i>B</i>]	United States Olympic Committee [<i>A</i>]
Ipsos-Insight, LLC [<i>K</i>]	Upshots, Inc. [<i>K</i>]
Johnson, Dr. Rachael [<i>M</i>]	
Leidy, Dr. Heather [<i>M</i>]	

2016 National Dairy Foods Research Centers

California Dairy Research Center

The California Dairy Foods Research Center is 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., Director
Dairy Innovation Center
San Luis Obispo, CA

California Dairy Research Foundation

Conca Pasin, Ph.D.
501 G Street, Suite 203
Davis, CA 95616

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, and thorough and comprehensive product research, and for dairy processing students. 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

Lloyd Metzger, Ph.D., Director
Midwest Dairy Foods Research Center
Box: 2104
Brookings, SD 57007

University of Minnesota, St. Paul

Peggy Lehtola
Midwest Dairy Foods Research Center
1334 Eckles Avenue
St. Paul, MN 55108

Iowa State University, Ames

Stephanie Clark, Ph.D.
Midwest Dairy Foods Research Center
2312 Food Sciences Building
Ames, IA 50011

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., Director
Northeast Dairy Center
118 Stockings Hall
Ithaca, NY 14853

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: <https://sdfrc.ncsu.edu/>.

North Carolina State University

MaryAnn Drake, Ph.D., Director
Southeast Dairy Foods Research Center
100 Schaub Hall, Box 7624
Raleigh, NC 27695

Mississippi State University

Sam Chang, Ph.D.
Food Science, Nutrition and Health Promotion
240 Wise Center Drive
Starkville, MS 39762

Western Dairy Center

The Western Dairy Center is located at the Utah State University, which is the lead institution. It is joined by Oregon State University and others 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

Donald J. McMahon, Ph.D., Director
Center for Dairy Research
8700 Old Main Hill
750 N 1200 E
Logan, UT 84322

Oregon State University

Lisbeth Goddik, Ph.D.
Food Science & Technology
Wigand Hall
3051 SW Campus Way
Corvallis, OR 97331

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 in turn are supported by expertise in dairy product research, sensory, analytical, 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 plant, sensory lab, and analytical lab, and an applications lab. For additional information, please visit: www.cdr.wisc.edu.

University of Wisconsin-Madison

John Lucey, Ph.D., Director
Wisconsin Center for Dairy Research
1605 Linden Drive
Madison, WI 53706

2016 Nutrition Competitive Research Activities

Lacy Alexander, PhD (Pennsylvania State University): *Milk and cheese consumption and human microvascular function* [ongoing 2016].

David Allison, PhD (University of Alabama at Birmingham): *Science dialogue mapping of knowledge and knowledge gaps related to the effects of dairy intake on human health* [commenced 2016].

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 2016].

Leila Barra, PhD (Exponent, Inc.): *Healthcare Costs and Savings Associated with Increased Dairy Consumption* [commenced 2016].

Bradley Bolling, PhD (University of Wisconsin-Madison): *Reduction of obesity-associated intestinal inflammation by low-fat dairy yogurt* [ongoing 2016].

Sarah L. Booth, PhD (Tufts University): *Menaquinone (Vitamin K2) content of dairy products* [ongoing 2016].

Richard Bruno, PhD, RD (Ohio State University): *Regulation of postprandial nitric oxide bioavailability and vascular function by Dairy Milk* [ongoing 2016].

Wayne Campbell, PhD (Purdue University): *Impact of Fluid Milk of Post-Meal Glycemia and Insulinemia in Overweight/Obese Adults with Normal or Impaired Glucose Tolerance or Type 2 Diabetes* [concluded 2016]; *Dietary protein intake and source and body composition in U.S. adults aged 50 years and older* [concluded 2016].

In-Young Choi, PhD (University of Kansas Medical Center): *Dairy intake and cerebral antioxidant defense in aging: a dietary intervention study* [commenced 2016].

Sharon Donovan, PhD, RD & Barbara Fiese, PhD (University of Illinois at Urbana - Champaign): *STRONG Kids 2: A Cells-to-Society Approach to Nutrition in Early Childhood* [ongoing 2016].

Michael Fenech, PhD (Commonwealth Scientific and Industrial Research Organisation (Australia)): *Whey protein isolate as a source of Vitamin B12 and to lower homocysteine and methylmalonic acid in the elderly* [ongoing 2016].

Foundation for the National Institutes of Health: *The Performance of Novel Cardiac Biomarkers in the General U.S. Population* [ongoing 2016].

Osama Hamdy, MD, PhD, FACE (Joslin Diabetes Center): *Dairy and type 2 diabetes: Research, outreach, and education* [commenced 2016].

Mathew Hayes, PhD (University of Pennsylvania): *Milk protein concentrate improves the metabolic effects of GLP-1-based pharmacotherapy in diabetic rat models* [ongoing 2016].

Kevin Heffernan, PhD (Syracuse University): *Efficacy of Whey Protein to Improve Cerebrovascular and Cognitive Function in Older Adults* [ongoing 2016].

Naiman A. Khan, PhD, RD (University of Illinois at Urbana - Champaign): *Diet quality & cognitive control function in early childhood: A pilot study* [commenced 2016].

Samuel Klein, MD (Washington University in St. Louis School of Medicine): *Diet and exercise intervention in Type 2 Diabetes* [ongoing 2016].

Jana Kraft, PhD (University of Vermont): *Researching the effects of consuming a diet comprising of milk fat on metabolic health markers* [ongoing 2016].

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 2016].

Ronald M. Krauss, MD (Children's Hospital Oakland Research Institute): *Effect of a modified lower carbohydrate, high fat DASH diet plan on plasma lipids, lipoprotein particle size and blood pressure in healthy adults* [concluded 2016]; *Effects of replacing sugar sweetened beverages with milk on metabolic risk factors in overweight and obese adolescents* [ongoing 2016]; *Effects of a modified high-fat Mediterranean dietary pattern on lipoprotein and inflammatory markers of CVD risk in adults* [commenced 2016].

Benoit Lamarche, PhD, FAHA (Laval University (Canada)): *Investigation of the impact of cheese consumption on HDL function* [ongoing 2016].

Luc JC van Loon, PhD (Maastricht University (Netherlands)): *Casein in milk as a functional ingredient for the prevention of sarcopenia* [concluded 2016].

Kevin C. Maki, PhD, CLS, FNLA, FTOS, FACN (Midwest Center for Metabolic and Cardiovascular Research): *A randomized, controlled crossover trial of acute cognitive, appetite, glucose and insulin responses to five milk or juice beverages or water in men and women* [concluded 2016].

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 2016].

Lynn L. Moore, D.Sc., MPH (Boston University School of Medicine): *Protein Effects on Metabolic Outcomes in Older Men* [concluded 2016]; *Yogurt, Blood Pressure and Cardiovascular Risk in Three Prospective Cohorts* [concluded 2016]; *Effects of animal and plant proteins on functional decline in older adults* [ongoing 2016]; *Effects of sodium and other dairy-related minerals on blood pressure and cardiovascular outcomes* [ongoing 2016].

Douglas Paddon-Jones, PhD (University of Texas Medical Branch at Galveston): *Whey Protein, Aging and Physical Inactivity* [ongoing 2016].

Peggy Papathakis, PhD, RD (California Polytechnic State University – San Luis Obispo): *Randomized controlled trial of the impact of treating moderately malnourished women in pregnancy with sub studies* [concluded 2016].

Stuart Phillips, PhD (McMaster University (Canada)): *Whey protein intake in the amelioration of skeletal muscle quantity and function during inactivity in older adults* [ongoing 2016].

Shivani Sahni, PhD (Harvard University - Hebrew Rehabilitation Center): *Dairy food intake, vitamin D status and bone measures* [commenced 2016].

Michael J. Saunders, PhD (James Madison University): *Tolerance to Intensified Cycle Training and Subsequent Adaptations: Influence of Chocolate Milk Dairy Protein Supplementation* [concluded 2016].

Karen Schmidt, PhD (Kansas State University): *Producing dairy protein ingredients for targeted markets* [commenced 2016].

Carolyn Scrafford, PhD, MPH (Exponent, Inc.): *Nutrition Evidence Library Review of Dairy and Health Outcomes* [commenced 2016].

Tonya Schoenfuss, PhD (University of Minnesota): *Evaluation of cheese with desirable fat and sodium attributes for school lunch snack choices* [concluded 2016]; *Improving sensory and functional properties of reduced sodium low—moisture part—skim mozzarella cheese via brine and make procedure modifications* [commenced 2016].

Ego Seemen, MD & Sandra Iuliano-Burns, PhD (University of Melbourne (Australia)): *Effect of Increased Dairy Consumption on Risk of Fracture and Overall Health in the Elderly* [ongoing 2016].

Mary Beth Spitznagel, PhD & John Gunstad, PhD (Kent State University): *Is Milk the Drink that Helps You Think? Dairy, Acute Glycemic Control, and Cognitive Function* [ongoing 2016].

Hans H. Stein, PhD (University of Illinois, Urbana-Champaign): *Amino acid digestibility and DIAAS values in dairy proteins and other sources of protein used in human consumption* [concluded 2016].

Hirofumi Tanaka, PhD (University of Texas): *Effects of Fluid Milk in Attenuating Hyperglycemia and Hypertriglyceridemia for Meal* [concluded 2016]; *Destiffening and hypotensive effects of whole milk and full-fat dairy products* [ongoing 2016].

Jeff Volek, PhD, RD (Ohio State University): *Controlled clinical study to determine novel health benefits of cheese consumption* [ongoing 2016].

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 2016].

Taylor Wallace, PhD, CFS, FACN (National Osteoporosis Foundation & George Mason University): *Dietary protein – fracture outcomes and markers of bone health: A systematic review and meta-analysis* [ongoing 2016]; *Protein intake and bone health – Phase II Systematic review and meta-analysis* [commenced 2016].

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 2016].

2016 Product Competitive Research Projects

Principal Investigator, Institution, Project Title and Status

Alirez Abbaspourrad, PhD (Cornell University): *Annatto-free Cheddar Cheese Whey* [commenced 2016].

Jayendra K. Amamcharla, PhD (Kansas State University): *Use of Nano-scale aqueous ozone to remove biofilms from selected dairy product contact surfaces* [ongoing 2016]; *Use of Micro and Nano bubbles in Spray drying* [ongoing 2016]; *Altering the microstructure to improve functionality of dairy powders using micro- and nano-bubbles* [commenced 2016].

Jayendra K. Amamcharla, PhD (Kansas State University) & Lloyd Metzger, PhD (South Dakota State University): *Understanding the effects of electromagnetic fluid conditioning on physical, chemical and functional properties of milk and dairy products* [concluded 2016].

Jayendra K. Amamcharla, PhD (Kansas State University) & Sanjeev Anand, PhD & Lloyd Metzger, PhD (South Dakota State University) & Julie M. Goddard, PhD (University of Massachusetts Amherst): *Use of novel surface modification techniques to reduce biofilms on plate heat exchanger plates* [concluded 2016].

Sanjeev Anand, PhD (South Dakota State University): *Improve the Microbial Quality of Milk Powders by Controlling Thermally Resistant Spore Formers and Spores* [concluded 2016]; *Understanding the process of spore germination or sporulation, and biofilm formation under simulated skim milk powder manufacturing conditions* [ongoing 2016]; *Evaluation of adherence ability and biofilm formation of HHRS to modified stainless steel surfaces* [ongoing 2016]; *Scale up of hydrodynamic cavitation as an in-line process combined with milk pasteurization for sporeformer control* [commenced 2016]; *Evaluating enzyme formulations for biofilm removal from dairy separation membranes* [commenced 2016].

David M. Barbano, PhD (Cornell University) & MaryAnne Drake, PhD (North Carolina State University): *The role of protein, protein ratio and fat content on consumer acceptance* [ongoing 2016]; *The role of milk heat treatment and fat content on consumer acceptability* [ongoing 2016]; *The role of vitamin premix on flavor and flavor stability of fluid milk* [ongoing 2016]; *The impact of milk and whey protein based ingredients on sensory and physical properties of beverages* [commenced 2016].

Maire Begley, PhD (Cork Institute of Technology (Ireland)): *Identification of microbially-derived anti-listerial compounds using high-throughput robotics* [commenced 2016].

Andreia Bianchini, PhD (University of Nebraska): *Application of interventions at farm level to reduce sporeformer bacteria* [ongoing 2016].

Dennis D'Amico, PhD (University of Connecticut): *Utilization of GRAS compounds as antimicrobial dip and coating treatments for controlling *Listeria monocytogenes* on high moisture cheese* [concluded 2016].

MaryAnne Drake, PhD (North Carolina State University): *Southeast Dairy Center Application Laboratory Program* [ongoing 2016]; *Consumer Evaluation of milks with different packaging and light exposure* [ongoing 2016]; *Consumer Testing of Pizza* [concluded 2016]; *Identification of the chemical flavor differences between milks ultra-pasteurized by indirect or direct heat* [commenced 2016]; *Food Safety Course for Artisan and Farmstead Cheesemakers* [ongoing 2016].

MaryAnne Drake, PhD (North Carolina State University) & Lloyd Metzger, PhD (South Dakota State University): *Exploring consumer perception of permeate-based sodium reduction with different permeate sources* [concluded 2016].

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 2016].

Kathleen Glass, PhD (University of Wisconsin-Madison): *Inhibition of Clostridium Botulinum in Reduced-Sodium Pasteurized Cheese Products* [concluded 2016]; *Control of Listeria monocytogenes in high-moisture cheese* [ongoing 2016].

Lisbeth Goddik, PhD (Oregon State University): *Impact of Milk Hauling and Receiving on Microbial Content in Raw Milk* [ongoing 2016].

Selvarani Govindasamy-Lucey, PhD (University of Wisconsin-Madison): *Increasing the shelf-life of export cheeses by prolonged low temperature storage* [ongoing 2016]; *Shelf-life Extension of Cream Cheeses for Export* [concluded 2016]; *Controlling cheese acidity by adjustment of the lactose to protein content of cheese milk* [ongoing 2016]; *Extending the shelf-life performance of natural Mozzarella cheese for export markets* [commenced 2016].

Frederico M. Harte, PhD (Pennsylvania State University): *Effect of salts on casein micelle* [ongoing 2016].

Kevin Keener, PhD (Iowa State University): *Controlling Listeria monocytogenes in soft cheeses with high voltage atmospheric cold plasma (HVACP) treatment* [commenced 2016].

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 2016].

John A. Lucey, PhD (University of Wisconsin-Madison): *Wisconsin Center for Dairy Research Applications Laboratory* [ongoing 2016]; *Next generation value-added milk protein ingredients to meet growing international demand for clinical foods* [ongoing 2016]; *Complimentary calcium fractionation techniques to increase co-product solids utilization and value* [ongoing 2016]; *Designing novel cheese with high levels of intact casein* [ongoing 2016].

Donald McMahan, PhD (Utah State University): *Western Dairy Center Technology Innovation Laboratory Program* [ongoing 2016].

Lloyd Metzger, PhD (South Dakota State University): *Development of Modified Milk Protein Concentrates as an Alternative to Rennet Casein* [concluded 2016]; *Midwest Dairy Foods Applications Laboratories Program* [ongoing 2016]; *Improve technology to manufacture lactose and dry acid whey* [ongoing 2016]; *Commercial feasibility of soluble soybean polysaccharide (SSPS) for enhancing lactose crystallization in lactose manufacturing and as a drying aid in acid whey manufacture* [ongoing 2016].

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* [commenced 2016].

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 2016].

Hasmukh Patel, PhD & Lloyd Metzger, PhD (South Dakota State University) & Cordelia Selomulya, PhD (Monash University (Australia)): *Single droplet drying technology for optimization of dairy ingredients for best quality and functionality* [ongoing 2016].

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 2016]; *Comparison of functionality and properties of liquid concentrates and dried dairy ingredients* [ongoing 2016].

Sonia Patel, MSc. (University of Minnesota): *Development of a shelf stable dairy based creamer* [commenced 2016].

Phillip S. Tong, PhD (California Polytechnic State University – San Luis Obispo): *California Dairy Center Application Laboratory Program* [ongoing 2016]; *Improving SMP/NFDM Processing, Microbiological Quality and Functionality through Process and Ingredient Technologies That Change Mineral Composition and Activity* [concluded 2016].

Michael Tunnick, PhD (USDA-Agricultural Research Service): *Long-term Shelf Life Studies of Whey Protein Concentrates (WPC 34 and WPC 80) Under Adverse Storage Conditions* [concluded 2016].

Martin Wiedmann, PhD, DVM (Cornell University): *Control of post-pasteurization contamination of Pasteurized Fluid Milk through improved sanitation* [ongoing 2016]; *Impact of bedding type in raw milk contamination with spore formers affecting dairy powder quality* [ongoing 2016]; *Understanding regulation of Listeria monocytogenes cell envelope composition to facilitate development and discovery of improved control strategies* [concluded 2016]; *Evaluation of variation in spore count methods and determination of optimal parameters for standardization of milk powder spore testing* [commenced 2016].

Bongkosh Vardhanabhuti, PhD (University of Missouri) & Lloyd Metzger, PhD (South Dakota State University): *Whey Protein ingredient with improved emulsification properties* [ongoing 2016].

Qixin Zhong, PhD (University of Tennessee): *Delivery system of lactose to improve the quality of milk for lactose-intolerant consumers* [ongoing 2016].

2016 Sustainability Competitive Research Activities

Principal Investigator, Institution, Project Title and Status

Andrew Henderson, PhD (University of Texas Health Science Center at Houston): *National Nutrient Optimization & Dairy* [concluded 2016]; *The Environmental Performance of Dairy Products in the Sustainable Food Systems* [concluded 2016].

Richard A. Erdman, PhD (National Research Council & University of Maryland): *Nutrient Requirements of Dairy Cattle, 8th Edition* [concluded 2016].

Olivier Joliet, PhD (University of Michigan): *Dairy's Nutritional Benefit and Environmental Impact – Phase II* [commenced 2016].

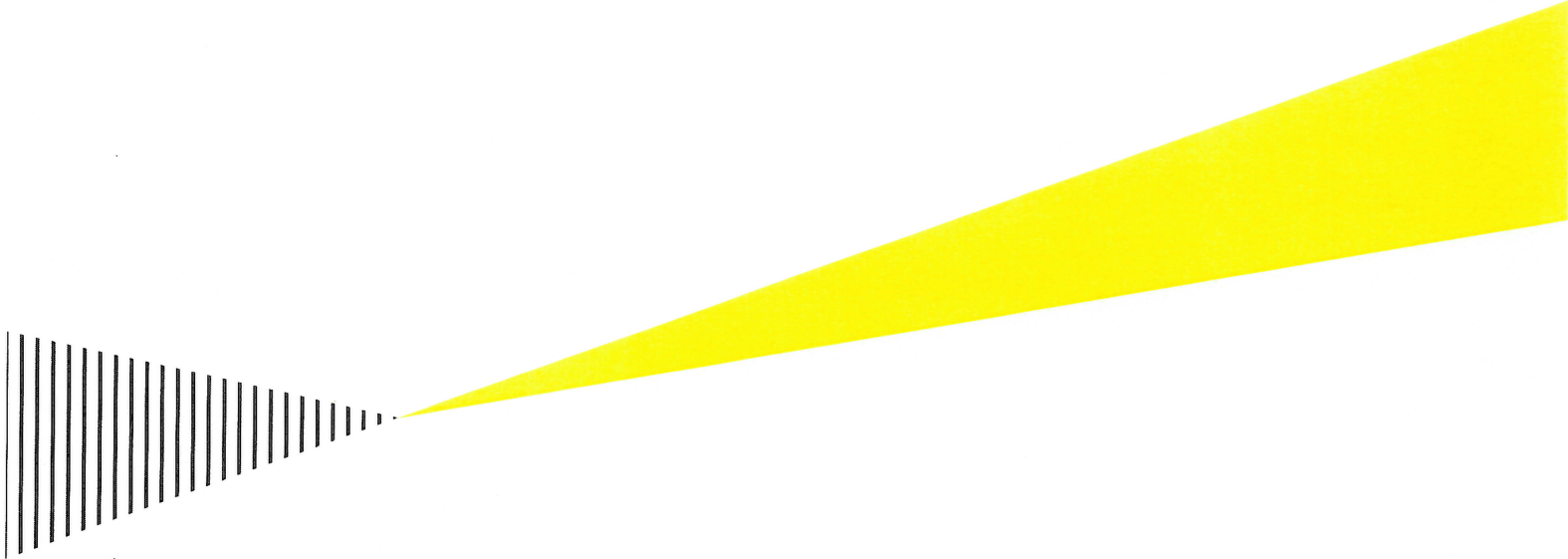
Mary Beth de Ondarza, PhD (Paradox Nutrition, LLC): *Advantages and limitations of dairy efficiency measures and the effects of nutrition and feeding management interventions II* [ongoing 2016].

Greg Thoma, PhD (University of Arkansas): *Life cycle environmental assessment of yogurt production and consumption in the USA* [concluded 2016].

FINANCIAL STATEMENTS

National Dairy Promotion and Research Board
Years Ended December 31, 2016 and 2015
With Reports of Independent Auditors

Ernst & Young LLP



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National Dairy Promotion and Research Board

Financial Statements

Years Ended December 31, 2016 and 2015

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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 balance sheets as of December 31, 2016 and 2015, and the related statements of activities 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.



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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, 2016 and 2015, 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 10, 2017, 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 10, 2017



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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 balance sheets as of December 31, 2016 and 2015, and the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements, and have issued our report thereon dated May 10, 2017.

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.



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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, non-compliance 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 non-compliance 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 10, 2017

National Dairy Promotion and Research Board

Balance Sheets

	December 31	
	2016	2015
Assets		
Cash and cash equivalents	\$ 44,147,015	\$ 36,777,894
Domestic assessments receivable, net of allowance for doubtful accounts of \$40,000 and \$40,222 in 2016 and 2015, respectively	11,409,390	10,816,240
Import assessments receivable	430,718	409,921
Fixed assets, net of accumulated depreciation of \$267,251 and \$263,705 in 2016 and 2015, respectively	1,005	4,551
Total assets	\$ 55,988,128	\$ 48,008,606
Liabilities and net assets		
Current liabilities:		
Due to related party – Dairy Management Inc., current portion	\$ 16,594,851	\$ 14,267,161
Accounts payable	165,887	87,697
Accrued expenses and other liabilities	623,014	417,102
Total current liabilities	17,383,752	14,771,960
Due to related party – Dairy Management Inc., less current portion	7,328,132	–
Unrestricted net assets:		
Designated	26,914,373	25,719,200
Undesignated	4,361,871	7,517,446
Total unrestricted net assets	31,276,244	33,236,646
Total liabilities and net assets	\$ 55,988,128	\$ 48,008,606

See accompanying notes.

National Dairy Promotion and Research Board

Statements of Activities

	Year Ended December 31	
	2016	2015
Revenues		
Domestic assessments	\$ 106,470,203	\$ 103,732,399
Import assessments	3,725,635	3,242,449
Select funding	5,985,277	5,810,619
Interest income	1,481	1,268
Total revenues	116,182,596	112,786,735
Expenses		
Programs:		
Domestic and export marketing	103,270,962	104,242,120
United States Department of Agriculture	577,762	501,181
Total programs	103,848,724	104,743,301
General and administrative:		
Dairy Management Inc. general and administrative	3,091,014	3,933,600
Dairy Management Inc. additional pension contribution	10,216,336	-
General and administrative	986,924	879,489
Total general and administrative	14,294,274	4,813,089
Total expenses	118,142,998	109,556,390
(Decrease) increase in net assets	(1,960,402)	3,230,345
Net assets at beginning of year	33,236,646	30,006,301
Net assets at end of year	\$ 31,276,244	\$ 33,236,646

See accompanying notes.

National Dairy Promotion and Research Board

Statements of Cash Flows

	Year Ended December 31	
	2016	2015
Operating activities		
Change in net assets	\$ (1,960,402)	\$ 3,230,345
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation	3,546	6,867
Changes in assets and liabilities:		
Assessments receivable	(613,947)	(283,221)
Due to related party – Dairy Management Inc.	9,655,822	10,556,956
Accounts payable	78,190	(159,261)
Accrued expenses and other liabilities	205,912	(34,195)
Net cash provided by operating activities	7,369,121	13,317,491
Net increase in cash and cash equivalents	7,369,121	13,317,491
Cash and cash equivalents at beginning of year	36,777,894	23,460,403
Cash and cash equivalents at end of year	\$ 44,147,015	\$ 36,777,894

See accompanying notes.

National Dairy Promotion and Research Board

Notes to Financial Statements

December 31, 2016

1. Organization

The 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.

The United States Department of Agriculture (USDA) approved a joint venture between NDB and the United Dairy Industry Association (UDIA) to form Dairy Management Inc. (DMI) effective January 1, 1995. The purpose of DMI, a related 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 the USDA.

NDB funds DMI on a cost-reimbursement basis. 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 costs of the Board of Directors and CEO. Marketing program costs, which include expenses associated with implementing the marketing programs of NDB and UDIA, are funded by NDB and UDIA.

2. Summary of Significant Accounting Policies

Basis of Presentation

The financial statements are prepared on the accrual basis of accounting in conformity with United States generally accepted accounting principles (GAAP). These principles require management to make estimates and judgments that affect the reported amounts of assets and liabilities and 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.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued)

Financial Instruments

The carrying values of cash and cash equivalents, assessments receivable, , investments, 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.

Cash and Cash Equivalents

Cash equivalents include all liquid investments with a maturity of three months or less at the date of acquisition.

Fair Value Measurements

Accounting Standards Codification Topic 820, *Fair Value Measurement*, establishes a three-level valuation hierarchy for disclosure of fair value measurements for financial instruments measured at fair value. The valuation hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows:

Level 1 – Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 – Inputs to the valuation methodology include quoted prices for similar assets or liabilities in active markets and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instruments.

Level 3 – Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued)

NDB did not hold any investments at December 31, 2016. NDB has classified \$4,499,089 (see Note 3) of investments in U.S. federal agency securities, which are included in cash and cash equivalents as of December 31, 2015, as Level 1.

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, 2016 and 2015, the net NDB assessment was \$0.0533 and \$0.0532, 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 2016 and 2015 was \$1,352,000 and \$1,051,000, 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 the USDA and, accordingly, is not subject to federal taxation.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

3. Cash and Cash Equivalents

Cash and cash equivalents consist of the following as of December 31:

	2016	2015
Cash	\$ 44,147,015	\$ 32,278,805
U.S. federal agency securities	–	4,499,089
	\$ 44,147,015	\$ 36,777,894

4. Assessments Receivable

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. In accordance with Public Law 98-180, NDB forwards unpaid assessments to the USDA for collection and other legal proceedings. As of December 31, 2016 and 2015, cumulative unpaid assessments of \$734,324 and \$987,545, respectively, were at the USDA pending further action. Such amounts are not included in assessments receivable as of December 31, 2016 or 2015, 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.

5. Related-Party Transactions

NDB has funded DMI program and core costs as follows:

	2016	2015
Program costs	\$ 69,138,195	\$ 73,256,929
Core costs (including additional pension contribution of \$10,216,336 in 2016)	47,440,117	34,918,791
Total funding to DMI	\$ 116,578,312	\$ 108,175,720

Dairy Research Institute (DRI) was incorporated in 2010 for the purpose of engaging in dairy scientific research and sustainability advancement. Of the program funding that NDB reimbursed DMI, \$87,506 and \$78,636 for 2016 and 2015, respectively, was reimbursed to DMI for DRI's operations.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

5. Related-Party Transactions (continued)

The U.S. Dairy Export Council (USDEC) was incorporated effective January 1, 1996. The purpose of USDEC is to improve the marketing conditions for the U.S. dairy industry with respect to the export of U.S. dairy products by promoting the acceptability, consumption, and purchase of U.S. dairy products in international markets. Of the program funding that NDB reimbursed DMI, \$13,156,010 and \$11,210,150 for 2016 and 2015, respectively, was reimbursed to DMI for USDEC's operations.

6. Transactions With Other Industry Organizations

NDB reimburses the USDA for the cost of administrative oversight and compliance audit activities. Expenses incurred under this arrangement amounted to \$577,762 and \$501,181 for 2016 and 2015, respectively.

7. Net Assets

During 2016 and 2015, NDB's Board of Directors designated a portion of net assets for cash reserves. Total designations of net assets are as follows:

	<u>2016</u>	<u>2015</u>
Designated net assets:		
Cash reserves	\$ 1,800,000	\$ 1,800,000
Subsequent years program activity	25,114,373	23,919,200
Total designated net assets	<u>26,914,373</u>	<u>25,719,200</u>
Undesignated net assets	4,361,871	7,517,446
Total net assets	<u>\$ 31,276,244</u>	<u>\$ 33,236,646</u>

8. Guarantees

NDB has guaranteed DMI's \$10 million revolving bank line of credit with CoBank, which will expire on June 30, 2017. Borrowings made, if any, under the line of credit accrue interest and are payable monthly at the prevailing prime interest rate. There were no borrowings on the line of credit as of December 31, 2016.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

8. Guarantees (continued)

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 balance of the note payable at December 31, 2016, was \$20,900,000. 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. The early repayment is reflected in the schedule below.

The following is a schedule of future expected principal payments of the CoBank note as of December 31, 2016:

2017	\$ 8,095,629
2018	3,414,500
2019	3,414,500
2020	3,414,500
2021	2,560,871
	<u>\$ 20,900,000</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, totaling \$7,080,945 at December 31, 2016.

9. Subsequent Events

NDB evaluated events occurring between January 1, 2017 and May 10, 2017, which is the date when the accompanying financial statements were available to be issued. NDB did not have any subsequent events to recognize or disclose.

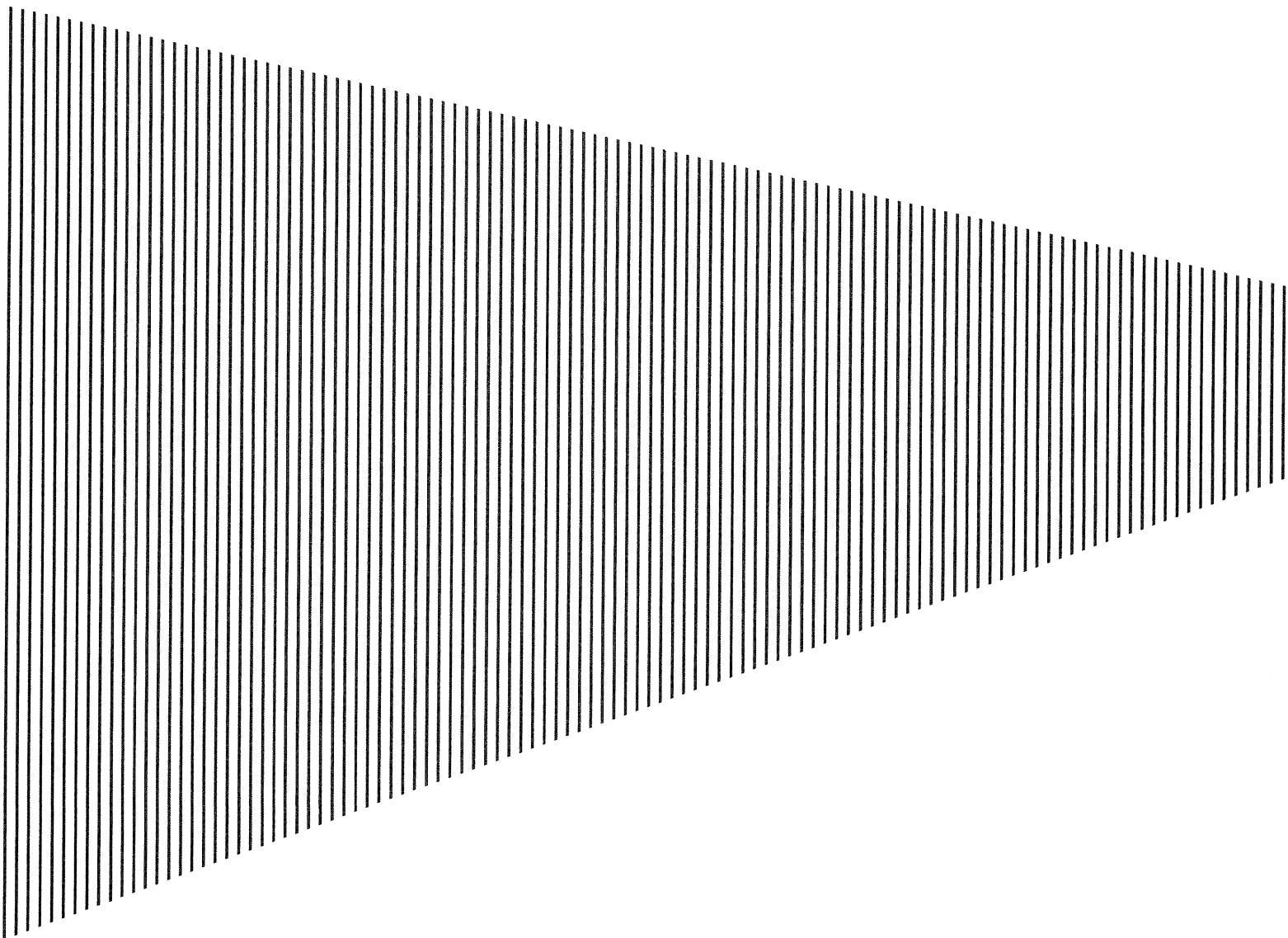
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**National Fluid Milk Processor
Promotion Board**

Financial Statements
and
Independent Auditor's Report

Years Ended December 31, 2016 and 2015

**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, 2016 and
2015

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, 2016 and 2015, 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, 2016 and 2015, 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, 2017 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, 2017

National Fluid Milk Processor Promotion Board

Statements of Financial Position

December 31	2016	2015
Assets		
Current assets:		
Cash and cash equivalents	\$ 12,105,692	\$ 15,699,111
Assessments receivable, net	9,234,246	9,861,661
Future year costs	1,258,642	429,558
Prepaid expenses	76,607	51,773
Total current assets	22,675,187	26,042,103
Property and equipment, net	23,153	39,325
Total assets	\$ 22,698,340	\$ 26,081,428
Liabilities and net assets		
Current liabilities:		
Accounts payable and accrued expenses	\$ 6,792,808	\$ 8,970,285
Coupon liability	600,050	454,755
Capital lease, current portion	6,517	5,857
Total current liabilities	7,399,375	9,430,897
Other liabilities:		
Capital lease, net of current portion	13,916	20,433
Total liabilities	7,413,291	9,451,330
Commitments		
Net assets:		
Board designated for contingencies	2,500,000	2,500,000
Undesignated	12,785,049	14,130,098
Total net assets	15,285,049	16,630,098
Total liabilities and net assets	\$ 22,698,340	\$ 26,081,428

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Statements of Revenues, Expenses and Changes in Net Assets

For the years ended December 31	2016	2015
Revenues:		
Assessments	\$ 94,655,494	\$ 96,748,571
Late payment charges	33,606	35,059
Interest income	25,707	29,218
Other	125,420	8,983
Total revenues	94,840,227	96,821,831
Expenses:		
Program expenses:		
Meals at home	70,721,256	66,799,393
Built with chocolate milk	11,410,196	13,724,202
Strategy and market research	2,726,387	2,574,874
Total program expenses	84,857,839	83,098,469
Other expenses:		
California grant	8,667,970	9,017,207
Administrative	2,084,271	2,158,986
USDA oversight	445,092	374,945
USDA compliance audit	127,566	112,500
Loss on disposal of property and equipment	-	210
Interest expense	2,538	3,132
Total other expenses	11,327,437	11,666,980
Total expenses	96,185,276	94,765,449
Excess of revenues over expenses (expenses over revenues)	(1,345,049)	2,056,382
Net assets - beginning	16,630,098	14,573,716
Net assets - ending	\$ 15,285,049	\$ 16,630,098

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Statements of Cash Flows

For the years ended December 31	2016	2015
Cash flows from operating activities:		
Excess of revenues over expenses (expenses over revenues)	\$ (1,345,049)	\$ 2,056,382
Adjustments to reconcile excess of revenues over expenses (expenses over revenues) to net cash provided by (used in) operating activities:		
Depreciation	16,172	23,944
Loss on disposal of property and equipment	-	210
(Increase) decrease in:		
Assessments receivable	627,415	(802,882)
Future year costs	(829,084)	(409,733)
Prepaid expenses	(24,834)	(2,581)
Increase (decrease) in:		
Accounts payable and accrued expenses	(2,177,477)	46,907
Coupon liability	145,295	176,055
Net cash provided by (used in) operating activities	(3,587,562)	1,088,302
Cash flows from investing activities:		
Payments made for property and equipment	-	(4,213)
Cash flows from financing activities:		
Payments made on capital lease	(5,857)	(5,264)
Net increase (decrease) in cash and cash equivalents	(3,593,419)	1,078,825
Cash and cash equivalents - beginning	15,699,111	14,620,286
Cash and cash equivalents - ending	\$ 12,105,692	\$ 15,699,111
Supplemental disclosure of cash flow information:		
Cash paid during the year for:		
Interest	\$ 2,538	\$ 3,132

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2016 and 2015

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, 2016 and 2015

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 2016 and 2015, 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 has been established for those assessments which management has determined as uncollectible. The total allowance for uncollectible accounts at December 31, 2016 and 2015 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, 2016 and 2015

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, 2016 and 2015

Note 2: Cash and cash equivalents:

At December 31, 2016 and 2015, 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, 2016 and 2015.

Note 3: Property and equipment:

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

	<u>2016</u>	<u>2015</u>
Furniture and fixtures	\$ 30,261	\$ 30,261
Leasehold improvements	134,790	134,790
Office equipment	<u>119,758</u>	<u>119,758</u>
	284,809	284,809
Less: accumulated depreciation	<u>(261,656)</u>	<u>(245,484)</u>
	<u>\$ 23,153</u>	<u>\$ 39,325</u>

Depreciation expense for the years ended December 31, 2016 and 2015 was \$16,172 and \$23,944, 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, 2016 and 2015

Note 4: Capital lease: (continued)

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

2017	\$	8,395
2018		8,395
2019		<u>6,996</u>
Total minimum lease payments		23,786
Less amount representing interest		<u>(3,353)</u>
Present value of minimum lease payments	\$	<u>20,433</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, 2016 and 2015 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, 2016 and 2015, the Board did not exceed this limitation.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2016 and 2015

Note 7: Program administration:

During 2016 and 2015, 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:

<u>Agency</u>	<u>Expiration</u>
Foote, Cone, & Belding	Until Terminated
Campbell-Ewald	Until Terminated
Commonground/MGS	Terminated 2015
CMGRP, Inc. d/b/a Weber Shandwick	Until Terminated

In November 2015, the Board terminated their agreement with Commonground/MGS. As such, Commonground/MGS programs were then transferred to Campbell-Ewald.

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, 2016 and 2015. In addition, the Board has two master service agreements with two 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, 2017. 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, 2016 and 2015, the Board incurred \$52,897 and \$66,699, respectively, under this agreement.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2016 and 2015

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, 2017. 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 \$28,808 and \$41,649 for the years ended December 31, 2016 and 2015, respectively.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2016 and 2015

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:

2017	\$ 161,011
2018	165,841
2019	170,816
2020	175,941
2021	181,219
Thereafter	<u>67,875</u>
Total	<u>\$ 922,703</u>

The Board incurred \$156,321 and \$149,359 of rental expense during the years ended December 31, 2016 and 2015, 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 \$572,658 and \$487,445 during 2016 and 2015, 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, 2017. The costs of accounting services were \$375,000 and \$386,283 during 2016 and 2015, respectively. A principal of Bridgewater serves as the Chief Financial Officer of the Board, for which Bridgewater is compensated. At December 31, 2016 and 2015, the total amount due to Bridgewater was \$-0- and \$8,828, respectively.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2016 and 2015

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 \$153,461 and \$130,785 for the years ended December 31, 2016 and 2015, respectively.

Note 12: Concentration:

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

Payments to two agencies represented approximately 81% of total program expenses for the year ended December 31, 2015. Accounts payable to these two agencies represented approximately 51% of total accounts payable at December 31, 2015.

Note 13: Subsequent events:

Subsequent events have been evaluated through March 28, 2017, 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, 2016

	Unexpended/ Amended Budget (Unaudited)	Current Year Actual	Actual Over (Under) Budget
Revenues:			
Assessments	\$ 94,400,000	\$ 94,655,494	\$ 255,494
Late payment charges	-	33,606	33,606
Interest income	-	25,707	25,707
Other	125,000	125,420	420
Total revenues	94,525,000	94,840,227	315,227
Expenses:			
Program expenses:			
Program - current year	85,436,365	83,808,347	(1,628,018)
Program - prior years	2,317,297	1,049,492	(1,267,805)
Total program expenses	87,753,662	84,857,839	(2,895,823)
Other expenses:			
California grant	8,968,000	8,667,970	(300,030)
Administrative	2,316,047	2,084,271	(231,776)
USDA expenses	525,000	572,658	47,658
Interest expense	2,538	2,538	-
Total other expenses	11,811,585	11,327,437	(484,148)
Total expenses	99,565,247	96,185,276	(3,379,971)
Excess of revenues over expenses (expenses over revenue)	\$ (5,040,247)	\$ (1,345,049)	\$ 3,695,198

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, 2016

	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	\$ 71,081,365	\$ 70,119,691	\$ (961,674)	\$ 1,111,987	\$ 601,565	\$ (510,422)	\$ 70,721,256
Built with chocolate milk	11,555,000	11,280,398	(274,602)	584,093	129,798	(454,295)	11,410,196
Strategy and market research	2,800,000	2,408,258	(391,742)	621,217	318,129	(303,088)	2,726,387
Total program expenses	\$ 85,436,365	\$ 83,808,347	\$ (1,628,018)	\$ 2,317,297	\$ 1,049,492	\$ (1,267,805)	\$ 84,857,839

National Fluid Milk Processor Promotion Board

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

For the year ended December 31, 2016

	Current Year Amended Budget (Unaudited)	Current Year Actual	Actual Over (Under) Budget
Board meeting expenses	\$ 250,000	\$ 180,536	\$ (69,464)
Staff salaries and benefits:			
Staff salaries and benefits	1,730,400	1,750,751	20,351
Program management salary allocation	(1,470,000)	(1,395,969)	74,031
Total staff salaries and benefits	<u>260,400</u>	<u>354,782</u>	<u>94,382</u>
Finance and administration:			
Contract staff	160,000	160,000	-
Consultants - HR, IT, strategic	25,400	26,968	1,568
Financial services	375,000	375,000	-
Total finance and administration	<u>560,400</u>	<u>561,968</u>	<u>1,568</u>
Other operating expenses:			
Audits	71,000	61,370	(9,630)
Consulting services	10,000	-	(10,000)
Depreciation	16,555	16,172	(383)
Dues and memberships	11,000	10,000	(1,000)
Employee development	21,000	20,431	(569)
IDFA professional & office support	52,000	51,515	(485)
Insurance	42,452	36,855	(5,597)
Legal	410,000	367,741	(42,259)
Miscellaneous	3,500	846	(2,654)
Office facilities	153,840	156,321	2,481
Office supplies and expense	20,000	20,440	440
Payroll service and pension administration	7,100	7,663	563
Postage and delivery	9,800	11,342	1,542
Recruiting expense	25,000	60	(24,940)
Staff travel	280,000	198,992	(81,008)
Telephone	27,000	27,237	237
Unallocated administrative	85,000	-	(85,000)
Total other operating expenses	<u>1,245,247</u>	<u>986,985</u>	<u>(258,262)</u>
Total administrative expenses	<u>\$ 2,316,047</u>	<u>\$ 2,084,271</u>	<u>\$ (231,776)</u>

See Independent Auditor's Report

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

For the year ended December 31, 2016

Cash receipts from operations:	
Assessments	\$ 95,282,909
Late payment charges	33,606
Interest income	25,707
Other	125,420
Cash receipts from operations	<u>95,467,642</u>
Cash disbursements for operations	(99,055,204)
Cash disbursements for investing activities:	
Payments made on capital lease	<u>(5,857)</u>
Excess of disbursements over receipts	(3,593,419)
Cash and cash equivalents - beginning	<u>15,699,111</u>
Cash and cash equivalents - ending	<u><u>\$ 12,105,692</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, 2016 and 2015, 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, 2017.

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, 2017

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, 2016 and 2015, 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, 2017. 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, 2016 and 2015;
- 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;



**To the Board of Directors
National Fluid Milk Processor
Promotion Board**

Page two

- 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, 2017