



Agricultural Marketing Service
U.S. 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

2018 Program Activities

November 2020

Contact Information

Promotion, Research, and Planning Division
USDA, Agricultural Marketing Service, Dairy Program
Stop 0233, Room 2958-South
1400 Independence Avenue SW
Washington, DC 20250-0233
<http://www.ams.usda.gov/dairy>

Oral Capps, Jr., Ph.D.
Executive Professor, Regents Professor and Co-Director of Agribusiness, Food and Consumer Economics Research Center
Texas A&M University
Department of Agricultural Economics
2124 TAMU
College Station, TX 77843
(979) 845-5911
Email: AFCERC@tamu.edu
<http://AFCERC.tamu.edu>

National Dairy Promotion and Research Board
Dairy Management Inc.
10255 West Higgins Road, Suite 900
Rosemont, IL 60018
(847) 803-2000
<http://www.dairy.org>

National Fluid Milk Processor Promotion Board
1250 H Street NW, Suite 950
Washington, DC 20005
(202) 737-0153
<http://www.milklife.com>

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

Mention of a trade name or brand name does not constitute endorsement or recommendation by USDA over other similar products not named.

November 2020

Contents

Contact Information	1
Executive Summary	4
Chapter 1: The Dairy and Fluid Milk Processor Promotion Programs	7
Chapter 2: USDA Activities	18
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	21
Chapter 4: Qualified State, Regional, or Importer Dairy Product Promotion, Research, or Nutrition Education Programs	43
Additional Information: 2018 Approved Contracts, National Dairy Foods Research Centers, Research Activities, and Audits	68

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, 2018, 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 \$412.3 million in 2018. The Dairy Board portion of assessments totaled \$117.9 million and the Qualified Dairy Product Promotion, Research, or Nutrition Education Programs (QPs) totaled \$294.4 million. Expenditures by the Dairy Board and many of the QPs are integrated through a joint process of planning and program implementation to work together on the national, regional, State, and local level. The Dairy Board continued to develop and implement programs to expand the human consumption of dairy products by focusing on partnerships and innovation, product positioning with consumers, and new places for dairy product consumption.

During 2018, the Dairy Board continued its commitment to “sustainable nutrition.” Sustainable nutrition is the intersection of agriculture, food production, nutrition and health, and understanding how food nourishes the population while contributing to a healthy economy and environment. Building on the sustainable nutrition initiative, the Dairy Board launched the U.S. Dairy Stewardship Commitment. Through this program, the U.S. dairy community can document and demonstrate progress in important areas including animal care, environmental stewardship, and community impacts and contributions. The Stewardship Commitment will help show consumers and customers how the dairy industry is working collectively to continuously improve and transparently report its social, economic, and environmental impact.

In 2018, the U.S. Dairy Export Council (USDEC) unveiled its newly developed “Next 5 Percent” plan. The plan aims to increase U.S. dairy export volume from 15 to 20 percent of total U.S. milk solids production by 2022. The plan focuses on building U.S. dairy’s visibility and credibility as a value-added and consistent global supplier.

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

Fluid Milk Processor Promotion Program

Mandatory assessments collected under the Fluid Milk Act totaled \$89.0 million in 2018. 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.

In 2018, the Fluid Milk Board launched its *Pour More Milk* campaign, a program raising awareness around the importance of milk in childhood nutrition. According to the American Academy of Pediatrics, one out of two kids are falling short on the nutrients they need to grow strong and having milk with meals and water in between can help remedy this deficit. The *Pour More Milk* campaign focused on moms, encouraging them to serve more milk so their kids get the nutrients they need.

The Fluid Milk Board continued its partnership during the 2018 Winter Olympic games with the United States Olympic Committee, naming white milk as an official sponsor of the Olympic Games through 2020. The Fluid Milk Board promoted a variety of messages and ads highlighting milk's 8 grams of protein per 8-ounce serving. Through these messages, the Fluid Milk Board sought to educate the general market and Hispanic consumers on the importance of protein in the morning and milk's essential nutrients. The Fluid Milk Board also continued its efforts to position chocolate milk as an authentic recovery beverage of choice for adult exercisers, by partnering with famous and elite athletes serving as influencers, through its *Built with Chocolate Milk* campaign.

The Fluid Milk Order requires the Fluid Milk Board to return 80 percent of the funds received from California fluid milk processors to the California Milk Processor Board. Per the Fluid Milk Order requirement, \$7.8 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, orders, USDA guidelines, and policies. USDA reviewed and approved all board budgets, contracts, and advertising materials. USDA employees attended all board and committee meetings, monitored all board activities, and were responsible for obtaining an independent evaluation of the programs. Additional USDA responsibilities include nominating and appointing board members, amending the orders,

conducting referenda, assisting with noncompliance cases, and conducting periodic program management reviews. The boards reimbursed the U.S. Secretary of Agriculture (Secretary), as required by the acts, for all of USDA's costs of program oversight and for the independent analysis discussed in Chapter 3. Chapter 2 details USDA's oversight activities.

Independent Analysis

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

In addition, Chapter 3 presents the combined effects of 2017 promotion activities on the consumption of fluid milk, cheese, butter, all dairy products, and dairy exports and includes benefit-cost ratios (BCRs) for dairy producers, dairy importers, and fluid milk processors. For every dollar invested in demand-enhancing activities, the BCRs for producers were as follows: (1) fluid milk – \$3.37, (2) cheese – \$3.63, and (3) butter – \$15.67. The BCR for fluid milk processors attributed to fluid milk promotion activities is \$3.39.

Chapter 1

The Dairy and Fluid Milk Promotion Programs

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

1. National Dairy Promotion and Research Board

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

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

Total Dairy Board income and expenses are provided in the annual independent audit report. The Dairy Board's administrative budget continued to be within the 5-percent-of-revenue limitation required by the Dairy Order. An independent auditor's report for 2018 can be found in the Additional Information section of this report.

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

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

DMI serves the Dairy Board and the UDIA Board and facilitates the integration of promotion funds through a joint process of planning and program implementation so that the programs on the national, regional, State, and local level work together. The Dairy Board and UDIA Board must separately approve the DMI budget and annual plan before these plans can be implemented. During 2018, 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 2018. 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 2018, the Dairy Board and UDIA Board met jointly six times.

DMI hosted dairy director regional planning forums across the country to review and create marketing strategies for the unified dairy promotion plan in 2018. 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 2018.

National Dairy Council

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

In 2018, NDC published more than 30 scientific papers related to the health and nutrition benefits of dairy. NDC's published research included the role that eating yogurt plays in reducing inflammation in women, protein's association with physical function in older adults, and an evaluation of the link between whole and fat-free milk to cardiovascular risk factors in healthy adults. NDC's research highlighting dairy's role in reducing chronic inflammation was published in the British Journal of Nutrition and presented at the American Academy of Family Physicians' Family Medicine Experience, reaching more than 5,000 family doctors.

NDC's product research aims to identify innovation and technical advancements to improve the shelf life and quality of cheese and milk powders to meet growing export demand. Coordinating environmental, nutrition, and product research and extension activities, NDC also works with third-party experts to ensure dairy is a sustainable, nutritious and safe food source meeting consumers' needs. In 2018, NDC completed 19 research projects to grow sales for cheese, powder and other dairy products globally.

During 2018, NDC held its seventh annual new product competition. The competition provides an opportunity for undergraduate and graduate students to work in teams to develop a new dairy or dairy-based product and present the product at the American Dairy Scientists Association annual meeting. Through the competition, students research how dairy products and ingredients can meet consumer needs for taste, functionality, health, and wellness. The competition also provides insights into the opportunity for employment in the dairy industry related to product formulation. In 2018, NDC chose six winning teams from Clemson University, The Ohio State University, the University of Massachusetts Amherst, Kansas State University, and two entries from Cornell University. The winning teams' product descriptions can be found at www.usdairy.com.

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 the Nation's youth with resources necessary to improve their personal health, 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 physical activity daily. Students and schools join the program by signing up at www.fueluptoplay60.com. Through enrollment, students and schools gain 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" can be tailored to individual school health and wellness needs. Students are 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. Since the program's inception in 2009, FUTP60 has reached more than 38 million students in more than 73,000 schools.

In 2018, FUTP60 partnered with Chelan Fresh™ to increase student access to nutritious foods, serving an additional 1.3 million meals in 11 States through a donation of portable breakfast/salad bar carts offering dairy foods, fruits and vegetables, and whole grains. FUTP60 also partnered with General Mills and Land O'Lakes to create dairy-focused recipes for schools.

Through its continued partnership with Discovery Education, FUTP60 provided virtual dairy farm field trips featuring 360-degree video and farm images, classroom guides, and lesson plans. More than 2 million students nationwide learned about where their food comes from, and the people, science, and technology behind food production.

GenYOUth Foundation

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

During 2018, GenYOUth continued its partnership with the PepsiCo Foundation to fight student hunger. Together, they expanded the school breakfast programs in an additional 25 schools across 18 States. The expanded breakfast program provided approximately 2.25 million nutritious school breakfasts to students throughout the school year.

GenYOUth also continued its Adventure Capital (AdCap) program in 2018. AdCap is an entrepreneurship program designed to empower students to create and pitch ideas, and earn funding, for improving nutrition and physical activity in their schools and communities. In 2018, the largest AdCap challenge to date was held in Missouri in collaboration with No Kid Hungry Missouri. Winning pitches from a variety of high schools included: a snack cart program for after-school students; a healthy after-school cooking program; and providing refrigerated storage for students who need to stay after school and want access to a healthy meal at the end of the day. Fourteen student teams were each awarded a \$1,000 grant for their ideas.

U.S. Dairy Export Council

DMI's export enhancement and ingredient programs are implemented by the U.S. Dairy Export Council (USDEC). USDEC has representatives in 11 offices worldwide, providing 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.

In 2018, U.S. dairy exports represented nearly 16 percent of total U.S. milk solids production. Suppliers shipped 2.188 million tons of milk powders, cheese, butterfat, whey products and lactose in 2018, and total dairy exports added up to 1.993 million tons (4.394 billion lbs.) of total milk solids. The value of U.S. exports was \$5.59 billion, 2 percent more than the prior year.

This progress was achieved as part of USDEC's newly developed plan to achieve the "Next 5 Percent" in global demand. The plan aims to increase U.S. dairy export volume from 15 to 20 percent of total U.S. milk solids production by 2022. The plan furthermore aims to build U.S. dairy's visibility and credibility as a value-added and consistent global supplier. As part of its "Next 5 Percent" plan, USDEC hired seven new staff members in strategic locations across Asia, the Middle East/North Africa, and Latin America to help create markets for U.S. cheese, ingredients, and other dairy products.

During 2018, USDEC partnered with 11 stakeholder organizations including culinary institutions, retailers, and foodservice organizations. One of the partnerships, with Pan American Dairy Federation (FEPALE), encouraged collaboration in promoting trade. Another partnership, with Jiangnan University, helped educate on dairy product and ingredient usages in culinary applications and encourage U.S. dairy export growth in China. The partnerships created in 2018 helped USDEC reach potential customers, including chefs and foodservice formulators, about the benefits of U.S. dairy and establish relationships to grow future demand.

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 late 2018, the Innovation Center launched the U.S. Dairy Stewardship Commitment, a voluntary pledge through which the U.S. dairy community documents and demonstrates progress in important areas including animal care, environmental stewardship, and community impact and contributions. The U.S. Dairy Stewardship Commitment brings together initiatives developed by the Innovation Center over the last 10 years and shows consumers and customers how the dairy industry is working collectively to continuously improve and transparently report its social, economic, and environmental impact. Within the first 2 months of its launch, 15 dairy cooperatives and processors, representing 60 percent of U.S. milk production, voluntarily adopted the Stewardship Commitment. Materials and information related to the U.S. Dairy Stewardship Commitment can be found at www.commitment.usdairy.com.

Food Safety

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

Between 2011 and 2018, more than 3,500 dairy company, co-op, and artisan/farmstead dairy farm employees participated in food safety training workshops. Dairy processors funded the development and implementation of these workshops. In addition, 10 research projects were underway in 2018 to address *Listeria* through the Innovation Center's Listeria Research Consortium.

Dairy Sustainability Alliance

The Dairy Sustainability Alliance (Alliance), originally the Sustainability Council, continued in 2018. The Alliance represented over 100 member organizations in 2018, including crop and dairy farmers, processors, manufacturers, retailers, suppliers, and representatives from nonprofits, trade organizations, government, and academia. The Alliance is committed to advancing dairy sustainability and social responsibility, by providing a forum where member organizations can share knowledge, collaborate on issues affecting the dairy industry at large, and accelerate progress toward common sustainability goals. The Alliance seeks to improve, measure, and communicate dairy's role in a sustainable food system.

Industry and Image Relations

Undeniably Dairy

In 2018, DMI continued *Undeniably Dairy*, a national, multi-year, multi-dimensional campaign to provide a platform for the entire dairy community to engage and speak with one voice and “reintroduce” dairy to consumers. The campaign aims to bring dairy’s story to life by showcasing the nutrient-rich profile of dairy foods, along with a farm-to-table look at the commitment the industry has to responsible production and positive local community impact. The *Undeniably Dairy* campaign is based on four key pillars to grow trust in relevant and relatable ways:

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

A digital consumer study of 2018 *Undeniably Dairy* programming and content showed consumers who were exposed to *Undeniably Dairy* digital and podcast stories were 12 percent more likely to agree farmers care for the land and the environment and were 25 percent more likely to agree farmers treat cows humanely. The *Undeniably Dairy* logo was placed on Domino’s and Pizza Hut pizza boxes and reached over 8 million customers each week. Domino’s and Pizza Hut also placed the *Undeniably Dairy* logo and messaging on their websites, social media channels, and ordering apps.

The *Undeniably Dairy* campaign includes a strong digital and social media presence while also creating opportunities for people to connect face-to-face with farmers – both on the farm and in their own backyards. In 2018, *Undeniably Dairy* highlighted the people who produce the foods that end up on consumer tables, from farmers to chefs, and everyone in between, through “Stories of Devotion.” These stories were shared in media articles, podcasts, and videos. In addition to traditional and online storytelling, the campaign featured painted murals that appeared in high-profile locations from coast to coast to tell dairy’s story. Murals were created on the walls of a famed New York City restaurant, on the walkway to the pits at the Indianapolis 500, and on the side of a multi-story dairy processor’s visitor center. In addition, 21 dairy farmers from across the United States participated in two food festivals in New York City in October 2018 where they reminded thousands of dairy-loving attendees about the joy of dairy, shared their stories of devotion, and answered questions while serving samples of grilled cheese and chocolate milk.

Dairy Partnerships

The Dairy Board has a strategy of forming targeted partnerships with foodservice leaders to drive sales. These partnerships help ensure dairy’s relevance with menu innovation and new product creation and result in more than \$1.5 billion annually in dairy-centric partner advertising and marketing support. In 2018, the Dairy Board partnered with foodservice leaders such as Domino’s®, McDonald’s®, Pizza Hut®, and Taco Bell® by supporting product and technology innovation to grow dairy sales. More cheese was included on and in the crust of pizzas, in tacos, and a new cheese taco shell was created. New products included ice cream specialties,

reformulated chocolate milk for kids, nacho fries, and cheese on chicken sandwiches. Partners also included *Undeniably Dairy* messaging in their digital ordering platforms.

The Dairy Board continues to work with leading fluid milk processors to help meet the challenges facing the fluid milk category. In 2018, the Dairy Board partnered with Dairy Farmers of America®, Darigold®, fairlife®, Kroger®, and Shamrock Farms®, offering category insights and expertise to spur new thinking and investments in infrastructure, product development, packaging innovation, and marketing.

In 2018, the Dairy Board convened category leaders, including MilkPEP, State and regional promotion organizations, processors and dairy companies, and cooperatives to lead a conversation with retailers and fill a void related to the fluid milk and dairy category. Through the Milk Revitalization Alliance, retailers are learning about opportunities to protect and grow dairy sales through category and shopper insights, product and packaging innovation, and the right mix of dairy products through dairy case management to optimize milk sales opportunities.

II. National Fluid Milk Processor Promotion Board

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

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

The Fluid Milk Board elects four officers: Chair, Vice-Chair, Secretary, and Treasurer. Fluid Milk Board members are assigned by the Chair to the Fluid Milk Board's occasion-based program committees. The program committees are responsible for setting program priorities, planning activities and projects, and evaluating results. In addition, the Fluid Milk Board has a Finance Committee to review all program authorization requests for funding sufficiency, the Fluid Milk Board's independent financial audit, and the work of the board's accounting firm. The Fluid Milk Board met three times in 2018.

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 2018 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 2018. 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.

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

Fluid Milk Programs

I. Milk Life Committee – General Market and Hispanic

MilkPEP's *Milk Life* consumer campaign continued to focus on fluid milk and its nutritional benefits, including high-quality protein and its ability to help power the potential of each day. The *Milk Life* campaign also continued its efforts to improve consumers' perceptions of milk and focused on kids as a primary strategic objective.

Milk Life's 2018 efforts drove \$93.4 million in incremental milk gallon sales, representing 2.69 gallons sold for every marketing dollar spent. In addition to spending on television promotions, MilkPEP employed new tactics in 2018, including search engine optimizations, radio, social media hyper-targeting, shopper media, and a digital advertising campaign that drove an additional 4.18 gallons sold for every marketing dollar spent.

MilkPEP launched the *Milk It!* Campaign in 2018 to engage kids directly. In its first full year, the *Milk It!* campaign focused on speaking directly to kids by reaching them online through kid connections and engagements through 15 influencers kids trust. The 15 high-profile influencers included Disney kid influencers and showcased how milk helps them do awesome things and encouraged their fans to do the same. More than 40 pieces of influencer content drove 30.3 million impressions and 14 million engagements. *Milk It!* also partnered with Playwire to redesign three of their top performing games in a *Milk It!* theme and garnered over 2 million plays with 1.7 million unique users during the 3-month activation. *Milk It!* also sponsored the Nickelodeon Kids Choice Sports Awards, including commercials, billboards, and a custom vignette featuring milk, and was viewed by 2 million kids.

The first quarter of 2018 focused on the 2018 Winter Olympics campaign and the connection between drinking milk and becoming an athlete. MilkPEP partnered with high-profile

Olympians to represent Team Milk and developed two commercials with Olympic skier Maddie Bowman. The commercials were leveraged across television, online, video, and retail in-store channels. All Winter Olympics content outperformed the 2016 MilkPEP Summer Olympics campaigns with a 60-percent increase in content likeability and a 25-percent increase in message memorability. MilkPEP's digital efforts netted 9.1 gallons of fluid milk sold per marketing dollar spent. According to MilkPEP research, after watching milk's Olympic content, moms' perceived healthfulness of milk increased by 9 percent and their willingness to serve milk increased by 12 percent. Additionally, MilkPEP's Team Milk roster of Olympic athletes and hopefuls provided the opportunity for 24 brands, and for State and regional promotion organizations, to partner with over 33 athletes nationwide, creating a national buzz for brands in their local markets.

Through research, MilkPEP discovered moms' attitudes towards milk continues to neutralize, so MilkPEP employed new data-driven, emotional, and functional tactics in 2018 to engage moms in the *Milk Life* campaign. In 2018, MilkPEP launched its *Pour More Milk* campaign to raise awareness around the importance of milk in childhood nutrition. According to the American Academy of Pediatrics, one out of two kids are falling short on the nutrients they need to grow strong, and having milk with meals, and water in between, can help remedy this deficit. The *Pour More Milk* campaign focused on encouraging moms to serve more milk so their kids get the nutrients they need. These efforts earned more than 127 million impressions and 2.09 gallons sold for every marketing dollar spent.

MilkPEP continued its Hispanic promotional efforts in 2018, as part of the industry's outreach to the growing Hispanic population, through greater synchronization with its general market consumer campaign. In 2018, MilkPEP developed a plan to drive Hispanic fluid milk consumption through a powerful network of Hispanic milk advocates. These efforts drove an increase in Hispanic moms' milk consumption by 1.78 incremental gallons sold per marketing dollar spent, an increase of 25 percent over 2017.

MilkPEP built and launched a new and robust shopper marketing campaign in 2018, aligning with MilkPEP's strategic imperatives to "Win with Kids," "Invest in Growth," and "Help Build Brands." The campaign kicked off during the 2018 Winter Olympic Games with a News America partnership featuring legendary figure skater and mom, Kristi Yamaguchi. Additionally, MilkPEP launched shopper efforts around back-to-school time, Halloween, and the holiday seasons. MilkPEP partnered with shopper media partners, including iBotta, Chicory, and Cluep to gain shopper insights. These insights were shared with milk brands to help shape and strengthen MilkPEP's future strategic marketing plans.

In 2018, MilkPEP, continued its partnership for the fourth year with Feeding America and the National Dairy Council to promote the *Great American Milk Drive*, an initiative designed to deliver nutrient-rich gallons of milk to families who struggle with food insecurity. Milk is one of the most requested, yet least donated, items at America's food banks because it is perishable. As a result, Feeding America is only able to provide, on average, less than 1 gallon of milk per person per year. MilkPEP's *Great American Milk Drive* program encouraged consumers across the United States to donate milk to families in need through online or in-store donations and increased the awareness and need for more milk in food banks. In 2018, the program secured 381,000 gallons of milk from consumer donations. To date, the program has received over 1.9

million gallons of donated milk and donated 31 million servings of milk to children and families in need across the country.

II. Built with Chocolate Milk Committee

MilkPEP's *Built with Chocolate Milk* program has helped to reposition low-fat chocolate milk from a kid's treat to a recovery beverage for adult exercisers. *Built with Chocolate Milk*'s promotions continued in 2018 and included promotional efforts focused on athletes, digital activations, and strategic partnerships. The campaign appealed to adult exercisers through activations in basketball, hockey, and other endurance sports. To further engage adult audiences, MilkPEP promoted the benefits of recovering and rebuilding muscles with low-fat chocolate milk after strenuous exercise with professional athletes representing *Built with Chocolate Milk* in tennis, basketball, hockey, and IRONMAN.

Built with Chocolate Milk continued its relationship with NBA star Klay Thompson for the second and final year. Klay Thompson, a shooting guard for the Golden State Warriors, reached millions of basketball fans through television advertisements, engaging in social conversations on game days, and publishing posts on his personal social media accounts. MilkPEP also activated 7 creative Klay Thompson features through Reddit to yield clickthrough rates nearing 0.26 to 0.49 percent, exceeding Reddit's benchmark of 0.15 to 0.20 percent.

Built with Chocolate Milk established a new relationship with professional tennis player Sloane Stephens, champion of the 2017 U.S. Open. MilkPEP ran television spots on the Tennis Channel during the French Open, Wimbledon, and U.S. Open, as well as on ESPN's homepage. The television spots and ESPN homepage yielded 29 million impressions and Instagram activations garnered 764,000 impressions. Print ads featuring Sloane Stephens appeared in a variety of magazines including ESPN Magazine and Women's Health.

In 2018, MilkPEP renewed its partnership with professional NHL player, father, and former Olympian Zach Parise. Partnering with Zach Parise allowed MilkPEP to repurpose creative assets from 2014 for the winter games and utilize Zach for a media tour and online takeover of the *Built with Chocolate Milk* Instagram account. The *Built with Chocolate Milk* campaign also worked with Jimmy Nguyen, a long-standing member of Team Chocolate Milk and Olympic skeleton hopeful.

In 2018, the *Built with Chocolate Milk* campaign continued its existing relationship with Mirinda (Rinny) Carfrae—the campaign's longest standing elite athlete partnership. A three-time IRONMAN champion, Rinny authentically conveys the chocolate milk recovery message to the endurance consumer. In 2018, Rinny brought a new lens to the program as a first-time mom. Rinny demonstrated to consumers how she balances motherhood, training, and recovery with the help of chocolate milk. Additionally, MilkPEP featured Rinny as a new mom in a Mother's Day video featuring messages about adults and kids exercising together.

In 2018, Team Chocolate Milk members remained equally as passionate about the campaign as the elite professional athletes. Overall, the endurance athletes continued to act as chocolate milk ambassadors nationwide, wearing branded gear on race day, engaging actively on social media, and educating other everyday athletes on the benefits of recovering with chocolate milk.

In a new initiative for 2018, *Built with Chocolate Milk* partnered with four of the top health and wellness brands in the Hearst portfolio to create a year-long video-, article-, and social media-driven digital promotion about chocolate milk's benefits with strategically chosen influencers. This partnership promoted chocolate milk as a recovery beverage of choice by influential spokespersons including: CrossFit champion and Fittest Man on Earth, Rich Froning, featured in Men's Health; Working mom, IRONMAN, and former Army Captain Michele Gonzalez, featured in Running World; Team Chocolate Milk athlete and brain injury-surviving cyclist Allison Tetrick, featured in Bicycling; and Muay Thai fighter, model, and body positivity activist Mia Kang, featured in Women's Health. This partnership was highly successful and yielded 1.5 million video views and more than 1 million social media views, and the average time spent visiting content pages ranged from 2-6 minutes, far exceeding Hearst's benchmark of 1 minute.

The year 2018 saw *Built with Chocolate Milk* advertise on Spotify for the first time, with the campaign running spots on workout playlists, which allowed for relevant messaging to reach the target audience of adult exercisers. The Spotify platform proved successful with clickthrough rates ranging from 0.16 to 0.47 percent, far above Spotify's benchmark of 0.08 percent.

For the seventh consecutive year, the *Built with Chocolate Milk* campaign continued its partnership with the Rock 'n' Roll Marathon and featured chocolate milk in the "Official Recovery Beverage of the Marathon" series. Each of the 18 Rock 'n' Roll races in 2018 featured more than 153,000 chocolate milk samples, tents, and signage. Eighteen milk brands participated in the Rock 'n' Roll partnership and donated chocolate milk samples for use in their local markets.

In 2018, the *Built with Chocolate Milk* campaign maintained its partnership with USA Swimming as the "Official Recovery Beverage of USA Swimming." The campaign continued to highlight the important role chocolate milk plays in recovery, and chocolate milk samples were handed out at large swim meets across the country. Additionally, MilkPEP ran chocolate milk print advertisements in more than 1 million issues of Splash magazine and featured television spots within USA Swimming programming during key swimming events throughout the year. This partnership will continue throughout the 2020 Summer Olympics.

Chapter 2

USDA Activities

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

The AMS Dairy Program ensures that the collection, accounting, auditing, and expenditures of promotion funds are consistent with the enabling legislation 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 that contracts expending assessment funds be approved by the Secretary. During 2018, the AMS Dairy Program reviewed and approved 545 Dairy Board and DMI agreements, amendments, and annual plans. During 2018, DMI retained the certified public accounting firm of Ernst & Young to audit the records of the following contractors: American-Mexican Marketing S.A. de C.V.; fairlife LLC; Inmar, Inc.; Lowe & Partners Worldwide, Inc.; and MMS Education, Inc. 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 established USDA policies. In 2018, the AMS Dairy Program reviewed and approved 79 USDEC agreements, amendments, and annual plans.

Organic Exemption

On December 31, 2015, a final rule was published, with an effective date of February 29, 2016, to amend the organic exemption regulations to allow persons 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 2018, the amount of exempted assessments was \$1,605,815. The Dairy Order requires organic producers to reapply annually to continue to receive the exemption.

USDA Dairy Promotion and Research Program Expenses

Per the enabling legislation, the Dairy Board reimburses the AMS Dairy Program for the cost of administrative oversight and compliance audit activities. In 2018, the AMS Dairy Program’s oversight expenses totaled \$650,275, and verification audits conducted on behalf of the Dairy Board by the Federal Milk Market Administrators resulted in \$214,693 in expenses.

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 2018, 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 2018 in Chapter 4.

National Fluid Milk Processor Promotion Board Oversight

Program Development

The Fluid Milk Board contracted with Arc USA Chicago and the Interpublic Group Agencies of 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.

Contracts

The Fluid Milk Act and Fluid Milk Order require that budgets and contracts expending assessments be approved by the Secretary. During 2018, the AMS Dairy Program approved 98 Fluid Milk Board agreements, amendments, and annual plans. The Fluid Milk Board retained the certified public accounting firm of Snyder, Cohn, Collyer, Hamilton & Associates, P.C., in 2018 to audit the records of: Campbell Ewald, Arc USA Chicago and CMGRP, Inc. d/b/a Weber Shandwick. No material exceptions were found.

Collections

The Fluid Milk Act specifies that each fluid milk processor marketing more than 3 million pounds of fluid milk per month pay an assessment on fluid milk processed and marketed commercially in consumer-type packages. The current rate of assessment is 20 cents per hundredweight of fluid milk products marketed.

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 2018, the amount of exempted fluid milk assessments was approximately \$1,566,514. The Fluid Order requires organic fluid milk processors to reapply 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 2018, the AMS Dairy Program’s oversight expenses totaled \$477,105, and verification audits conducted on behalf of the Fluid Milk Board by the Federal Milk Market Administrators resulted in \$115,578 in expenses.

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 – 1995 to 2018

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 2018 quantitative evaluation of the effectiveness of the dairy and fluid milk promotion programs.

Background on the Promotion Program

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

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

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

Objectives of the Evaluation Study

The National Programs are evaluated with two key questions in mind: (1) Have the demand-enhancing activities conducted by dairy producers, importers, and fluid milk processors actually

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

increased the demand for fluid milk and manufactured dairy products?; and (2) Did those who paid for the promotions conducted actually benefit from them?

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

The level of the BCR is often taken as an indication of the impact of a program. For example, a \$1 investment that returns \$5 in incremental revenue generates a BCR of 5 to 1. However, a 5-to-1 BCR also results from a \$5 billion return from a \$1 billion investment. Despite resulting in the same BCR, the magnitude of the impact from the \$1 billion investment is obviously much greater than that of the \$1 investment. 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. Consequently, metrics other than the BCR, such as the level of impact on consumption and exports, are more revealing and useful indicators of the magnitude of program impact and effectiveness than the BCR.

The objectives of this report are fourfold, namely to:

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: (a) the quantity and price effects of the National Programs in U.S. fluid milk, cheese, butter, and all dairy product markets, and on dairy exports; and (b) the BCRs corresponding to promotion in each of those markets (and exports) for dairy producers and fluid milk processors;
3. Provide a qualitative and quantitative analysis of dairy product imports and import assessments; and
4. Update the benefit-cost analysis of the National Programs.

This project covers the period of 1995 to 2018 and captures the joint efforts of DMI, MilkPEP, and QPs. The shares of each promotion entity in the total demand-enhancing expenditures over this period are as follows: (1) DMI — 25.74 percent; (2) MilkPEP — 23.84 percent; and (3) QPs — 50.43 percent.

Summary of the Findings

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

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

overhead, technical support, and industry relations.

Over the period from 1995 to 2018, the BCRs expressed in terms of producer profit at the farm level were calculated to be \$3.37 for every dollar invested in demand-enhancing activities for fluid milk, \$3.63 for every dollar invested in demand-enhancing activities for cheese, and \$15.67 for every dollar invested in demand-enhancing activities for butter. For other non-specific promotion activities, the BCR was calculated to be \$7.20 for every dollar invested. Over the same period, the BCR of export promotion was \$6.74 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.

Importers of dairy products have paid assessments to the Dairy Research and Promotion Program since August 2011. Total import assessment funds varied between \$3.41 million and \$4.18 million per year between 2012 and 2018. The import assessment represents approximately 1 percent of the total demand-enhancing expenditures made by DMI, MilkPEP, and the QPs.

Imported cheese levels were higher by 1.18 million pounds due to promotion funds collected from importers. Unit values of cheese imports amounted to roughly \$3.18 per pound on average over the period between 2012 and 2018. Hence, incremental revenue to importers solely from cheese attributable to the import assessment (on cheese) totaled roughly \$3.74 million.

Available expenditure data from DMI and MilkPEP also allows for the calculation of separate BCRs at the farm level for the two groups. The BCR associated with DMI spending was estimated to be 5.31, quite similar to the 4.78 return on investment for all dairy product promotion investments. The BCR for MilkPEP was estimated to be 3.39, slightly above the 3.37 calculated for all fluid milk promotional spending.

The BCR of fluid milk at the processor level was estimated to be 5.94 over the period 1995 to 2018. Importantly, this measure captures the gross return on investment for fluid milk market participants beyond the farm level. Any additional costs incurred by these market participants from handling the larger volume of fluid milk that occurs due to MilkPEP promotion are excluded because we simply do not know the magnitude of these additional costs. Further, others in the marketing channel besides fluid milk processors capture a portion of this return too. But we have no knowledge of the portion captured by processors versus other milk market participants beyond the farm gate. As such, we exercise caution due to these caveats in providing this estimate of the BCR attributed to the promotion of fluid milk at the processor level.

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 their 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 2018 are depicted in Table 3-1 and in Figure 3-1. On average, slightly less than \$370 million in total were spent annually by the respective entities over this period and between \$400 million and \$415 million since 2013.

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

Nominal seasonally adjusted, demand-enhancing expenditures by DMI, MilkPEP, and QPs for all dairy products (fluid and manufacturing) combined on a quarterly basis from 1995 to 2018 are exhibited in Figure 3-2. These demand-enhancing expenditures varied from \$54.2 million to \$99.4 million per quarter, averaging \$82.5 million.

Nominal seasonally adjusted demand-enhancing expenditures for fluid milk from DMI, MilkPEP, and QPs on a quarterly basis from 1995 to 2018 are exhibited in Figure 3-3. Over that period, nominal seasonally adjusted quarterly promotion program expenditures for fluid milk ranged from roughly \$23.5 million to \$63.3 million per quarter. On average over the same period, nominal seasonally adjusted demand-enhancing expenditures for fluid milk were \$34.2 million per quarter.

As exhibited in Figure 3-4, over the period 1995 to 2018, nominal seasonally adjusted demand-enhancing expenditures for cheese averaged \$16.0 million per quarter, ranging from \$8.1 million to \$27.7 million. 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 million during this period. From the fourth quarter of 2008 through the end of 2018, nominal quarterly expenditures on cheese marketing and promotion activities ranged from \$8.1 million to \$17.1 million, averaging \$11.8 million per quarter.

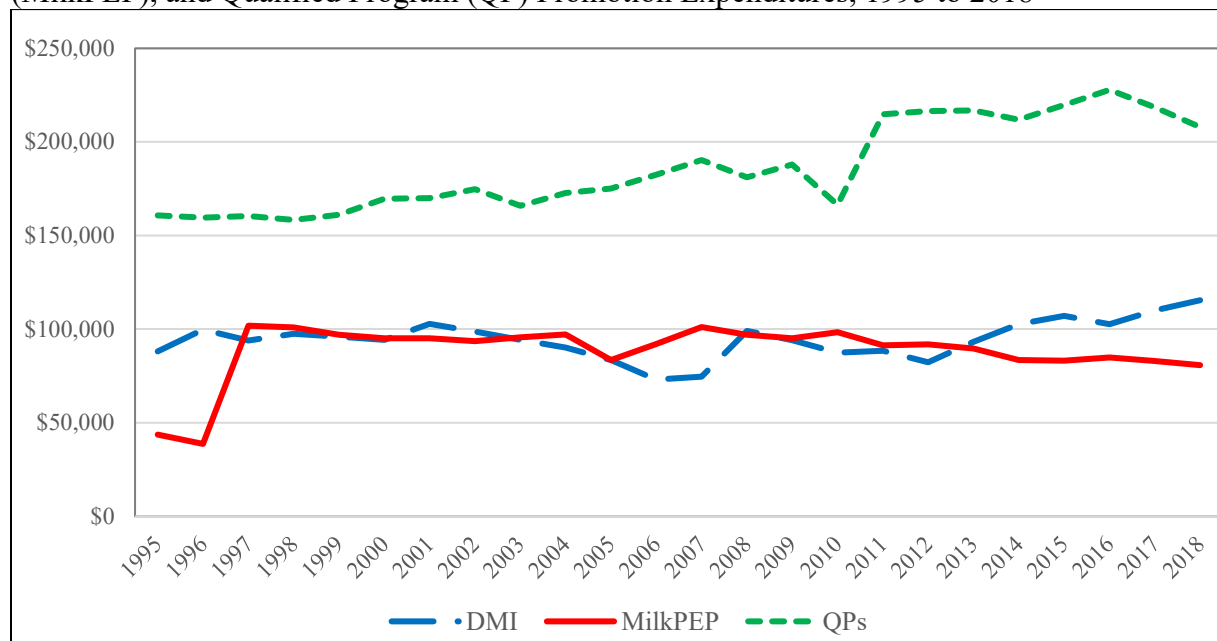
Table 3-1. Annual Dairy Management Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Program (QP) Promotion Expenditures, 1995 to 2018¹

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	\$390,736
2013	\$93,184	\$89,633	\$216,844	\$399,662
2014	\$102,728	\$83,426	\$211,919	\$398,074
2015	\$107,133	\$83,098	\$219,660	\$409,891
2016	\$102,712	\$84,858	\$227,834	\$415,404
2017	\$110,005	\$82,910	\$218,548	\$411,462
2018	\$115,442	\$80,817	\$207,903	\$404,163

¹Thousands of dollars.

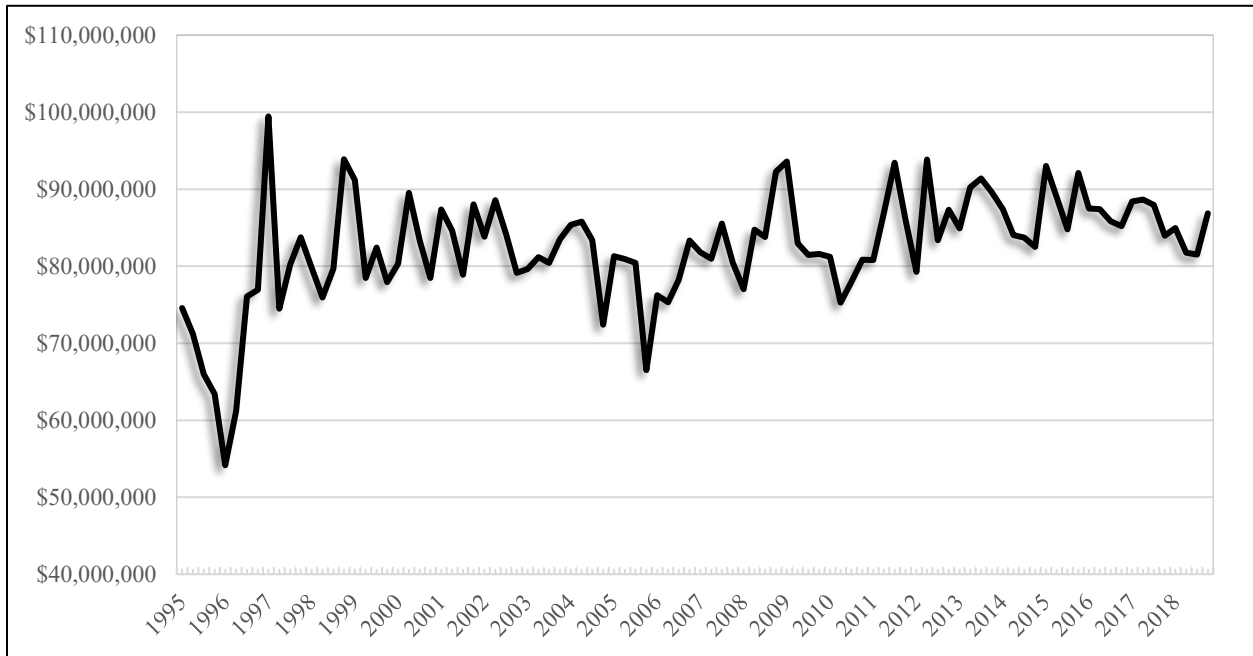
Source: Data from DMI, MilkPEP, and the U.S. Department of Agriculture.

Figure 3-1. Annual Dairy Management Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Program (QP) Promotion Expenditures, 1995 to 2018



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

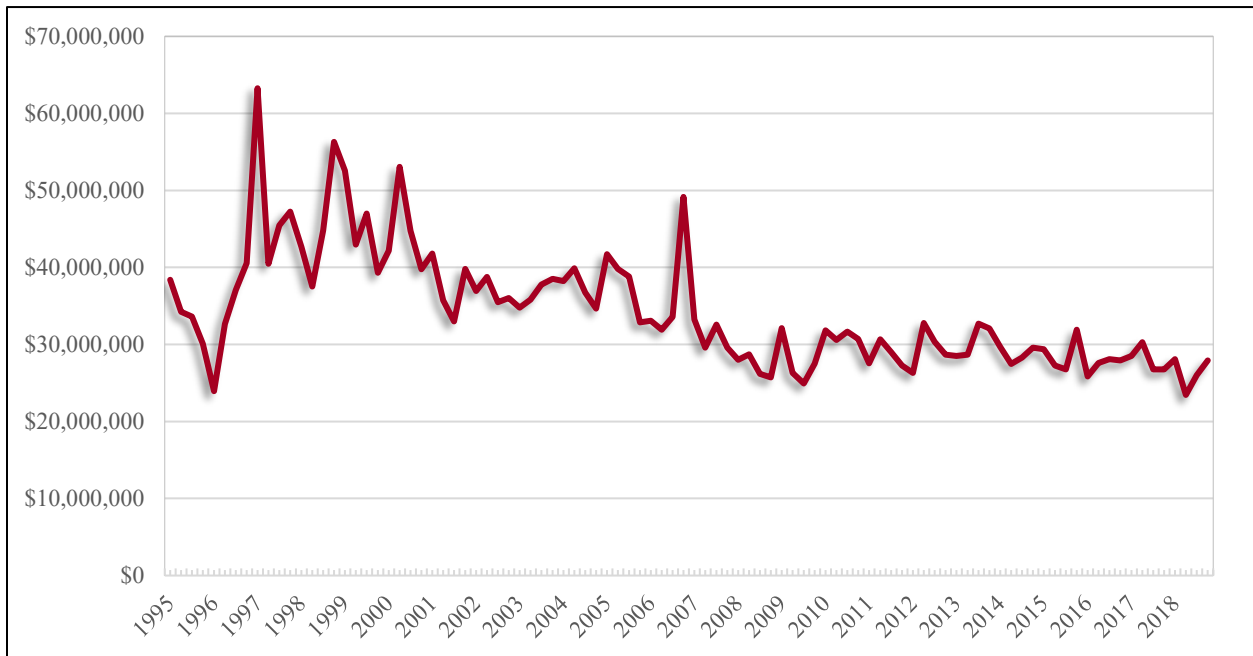
Figure 3-2. Quarterly All-Dairy Product Promotion Expenditures (Nominal, Seasonally Adjusted) by Dairy Management Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Programs (QPs), 1995 to 2018*



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

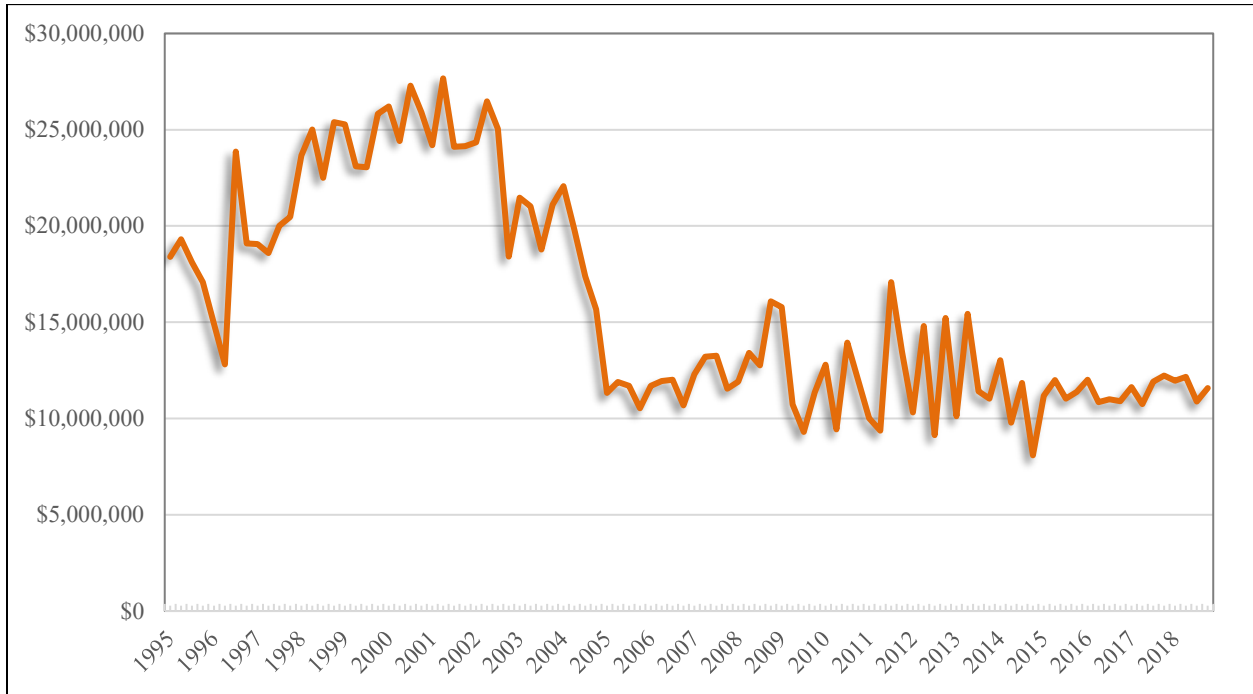
Source: Data from DMI, MilkPEP, and QPs. Calculations by the authors.

Figure 3-3. Quarterly Fluid Milk Promotion Expenditures (Nominal, Seasonally Adjusted) by Dairy Management Inc. (DMI), Milk Processor Education Program (MilkPEP), and Qualified Programs (QPs), 1995 to 2018



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

Figure 3-4. Quarterly Cheese Promotion Expenditures (Nominal, Seasonally Adjusted) by Dairy Management Inc. (DMI) and Qualified Programs (QPs), 1995 to 2018



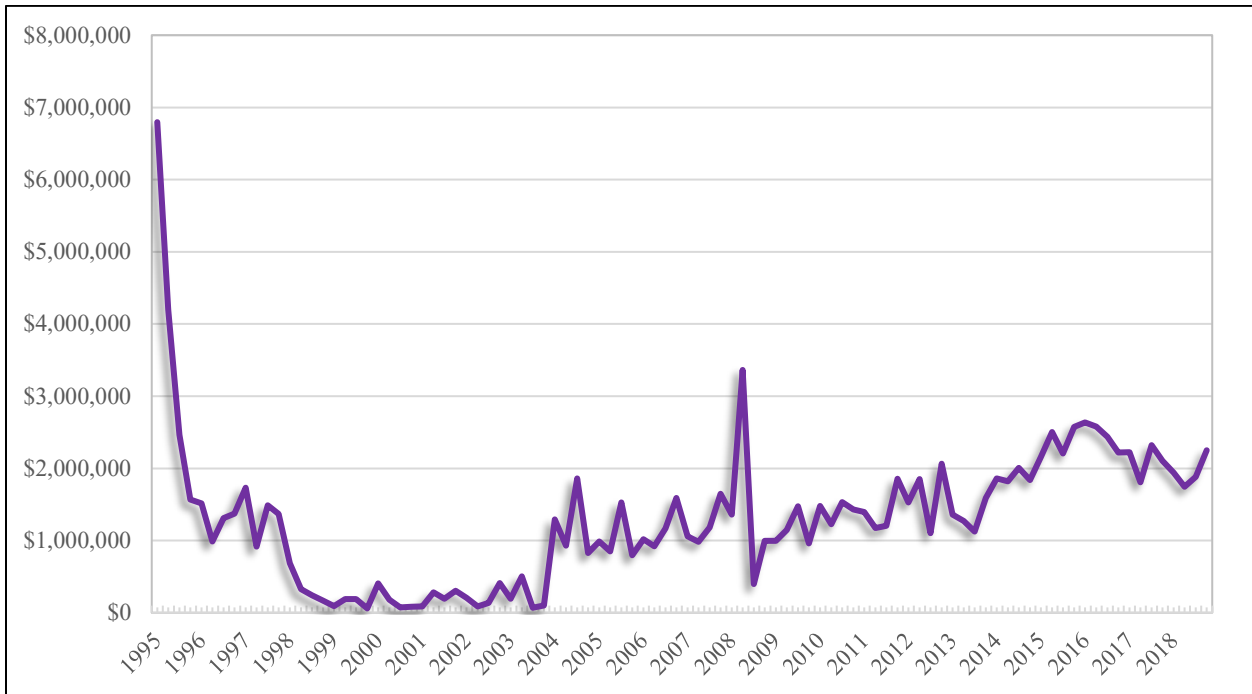
Source: Data from DMI and QPs. Calculations by the authors.

As shown in Figure 3-5, nominal seasonally adjusted demand-enhancing quarterly expenditures on marketing and promotion of butter ranged from close to \$60,000 to \$6.8 million, averaging slightly more than \$1.3 million per quarter over the period 1995 to 2018. Marketing and promotion expenditures for butter are a fraction of the expenditures for fluid milk and cheese.

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

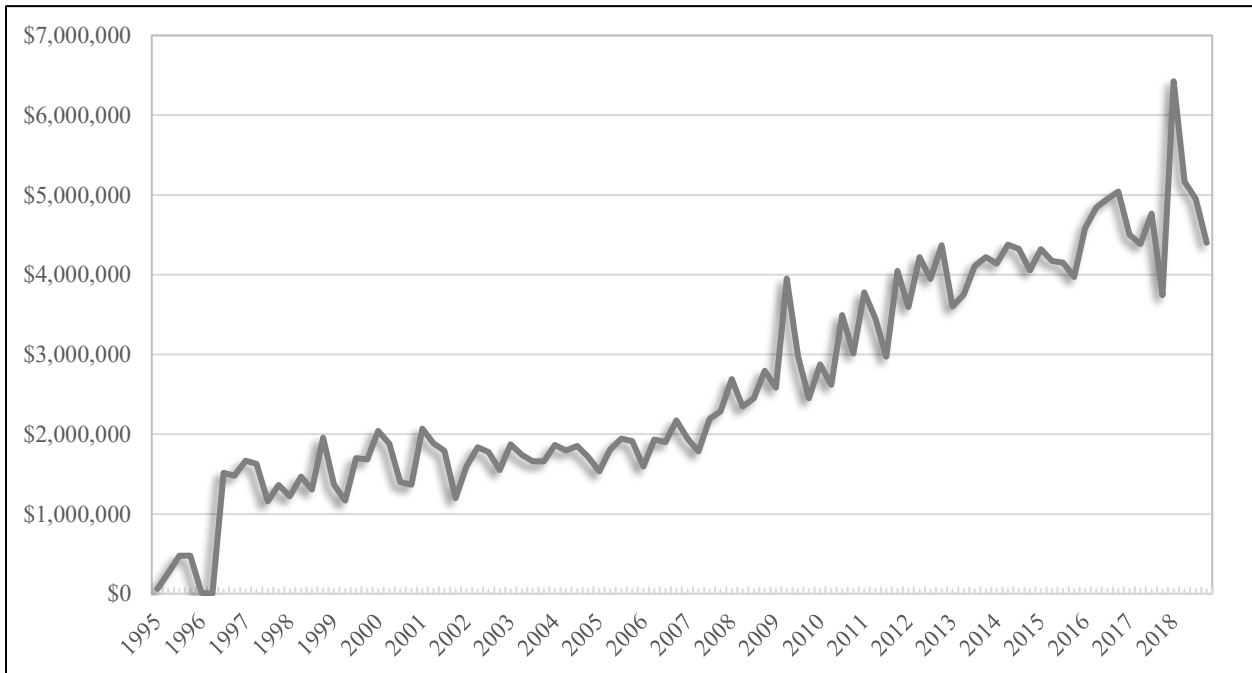
DMI also invests in dairy export promotion through the U.S. Dairy Export Council (USDEC). Nominal seasonally adjusted DMI expenditures directed to dairy export promotion on a quarterly basis ranged from just under \$800 to approximately \$6.4 million (Figure 3-6a). These expenditures trended upward from 1995 to 2018, averaging about \$2.6 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 varied from just under \$310,000 to about \$1.8 million, averaging nearly \$1.1 million per quarter over the period of 1997 to 2018. The funds are awarded through USDA FAS’s 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 \$7.9 million per quarter, averaging \$3.6 million on a quarterly basis over the same period from 1995 to 2018 (Figure 3-6c).

Figure 3-5. Quarterly Butter Demand-Enhancing Expenditures (Nominal, Seasonally Adjusted) by Dairy Management Inc. (DMI), and Qualified Programs (QPs), 1995 to 2018



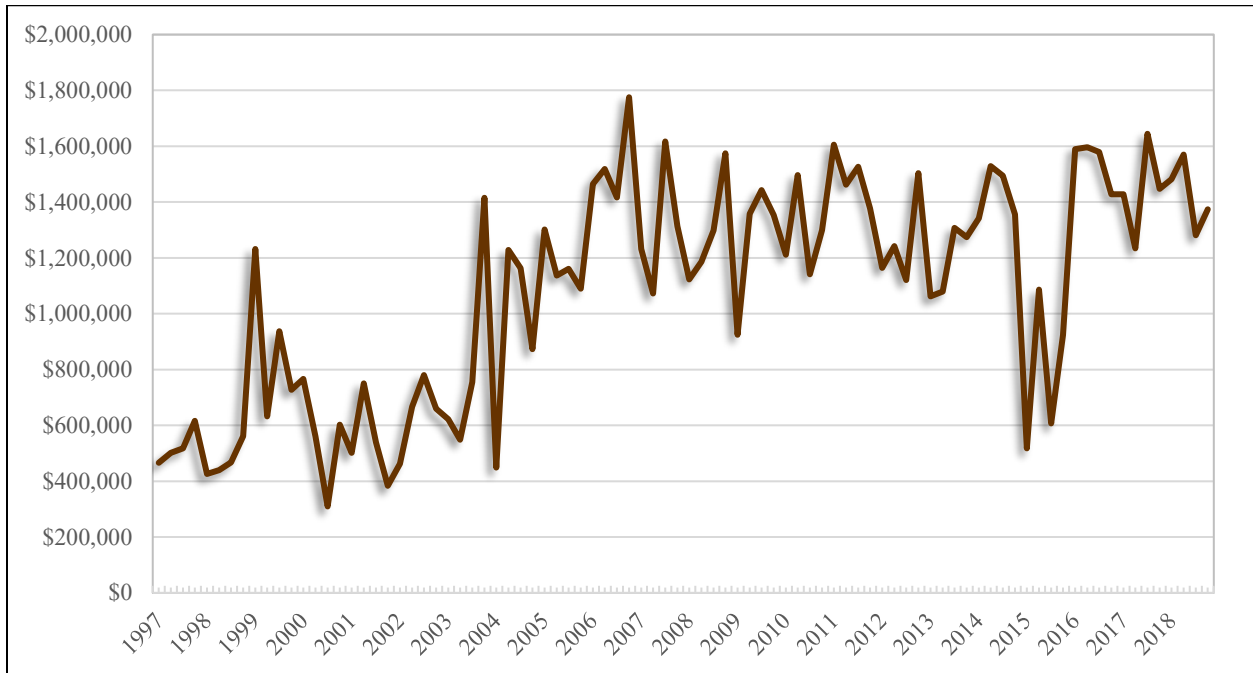
Source: Data from DMI and QPs. Calculations by the authors.

Figure 3-6a. Quarterly Dairy Product Export Expenditures (Nominal, Seasonally Adjusted) by Dairy Management Inc. (DMI), 1995 to 2018



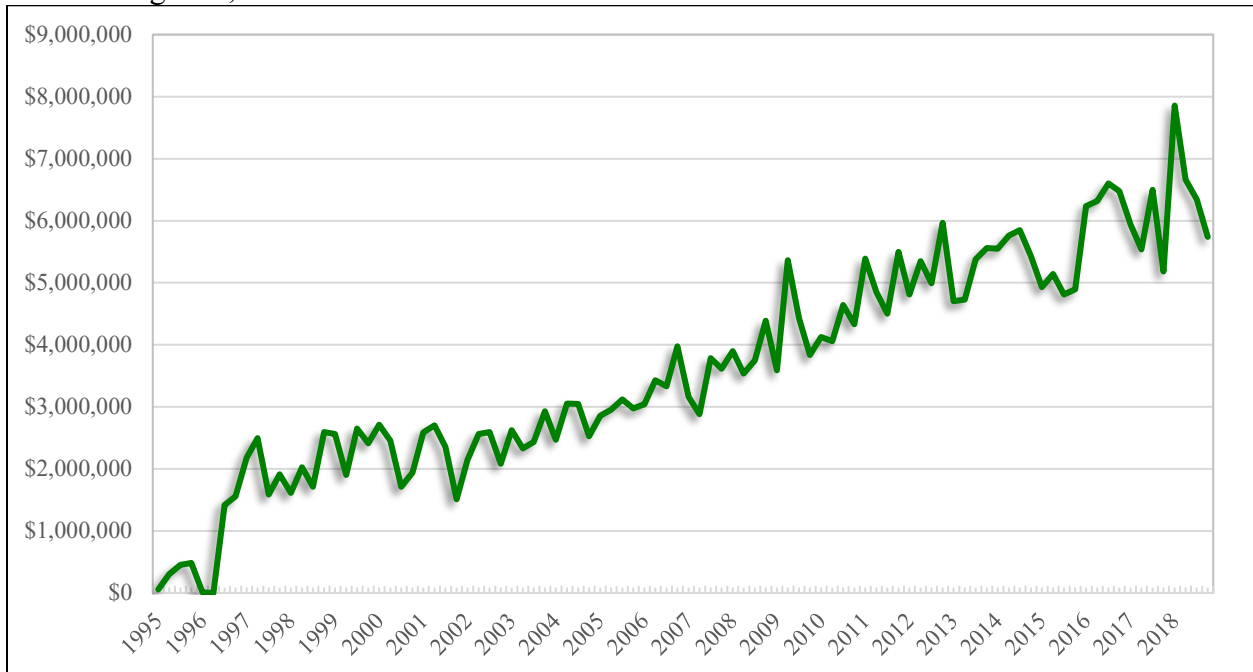
Source: Data from DMI. Calculations by the authors.

Figure 3-6b. Quarterly Dairy Product Export Expenditures (Nominal, Seasonally Adjusted) through the Foreign Market Development/Market Access Programs, 1997 to 2018*



*Data were not available prior to 1997. Also, only annual data were available for 1997 and 1998. Quarterly interpolations were made for these years.
 Source: Data from U.S. Department of Agriculture, Foreign Agricultural Service. Calculations by the authors.

Figure 3-6c. Quarterly Aggregate Dairy Product Export Expenditures (Nominal, Seasonally Adjusted) by Dairy Management Inc. (DMI) and the Foreign Market Development/Market Access Programs, 1995 to 2018



Source: Calculations by authors.

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

“This rule requires importers to calculate assessments due based upon documentation concerning the cow’s milk solids content of the imported products. Products shall be assessed at the rate of \$0.01327 per kilogram of cow’s milk solids”
(Agricultural Marketing Service, 2011, “Rules and Regulations,” *Federal Register*, Volume 76, No. 53, page 14479).

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

Import assessment funds totaled between \$3.41 million and \$4.18 million per year from 2012 to 2018, averaging \$3.7 million. The cumulative import assessment funds totaled \$26.95 million from September 2011 to December 2018. On a monthly basis, funds from the dairy import assessment ranged from \$210,086 to \$492,219, averaging \$306,229 over the period of September 2011 to December 2018 (Figure 3-7). The import assessment averaged just under 1.0 percent of the total demand-enhancing expenditures made by DMI, MilkPEP, and the QPs between 2012 and 2018.

Trends in Dairy Use

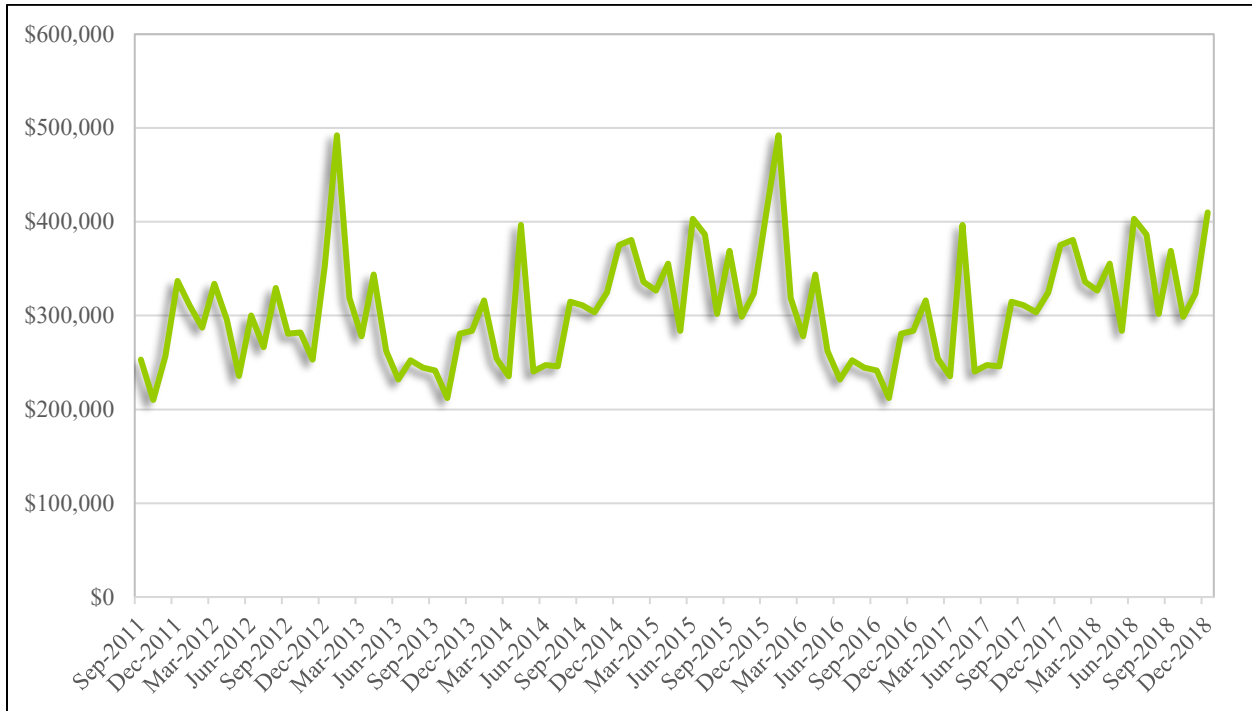
Per capita fluid milk consumption trended downward between 1995 and 2018 (Figure 3-8). In 2018, per capita consumption of fluid milk ranged from 34.64 pounds per person to 37.45 pounds per person, down from 50.44 pounds per person to 53.20 pounds per person in 1995. Seasonality also is evident in per capita U.S. consumption of fluid milk. 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. per capita milk consumption has declined roughly 30 percent since 1995 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 2018, the commercial per capita disappearance of cheese ranged from 6.4 pounds per quarter to 9.8 pounds per quarter, averaging about 7.9 pounds. Over the same period, per capita butter consumption grew modestly and exhibited seasonal patterns as well (Figure 3-10). The commercial disappearance of butter on a per capita basis ranged from 0.9 pounds per quarter to 1.8 pounds per quarter, averaging slightly more than 1.2 pounds.

On average over the period 1995 to 2018, the per capita commercial disappearance of all dairy products on a fat basis amounted to 150 pounds per quarter, ranging from 134 pounds to 170 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).

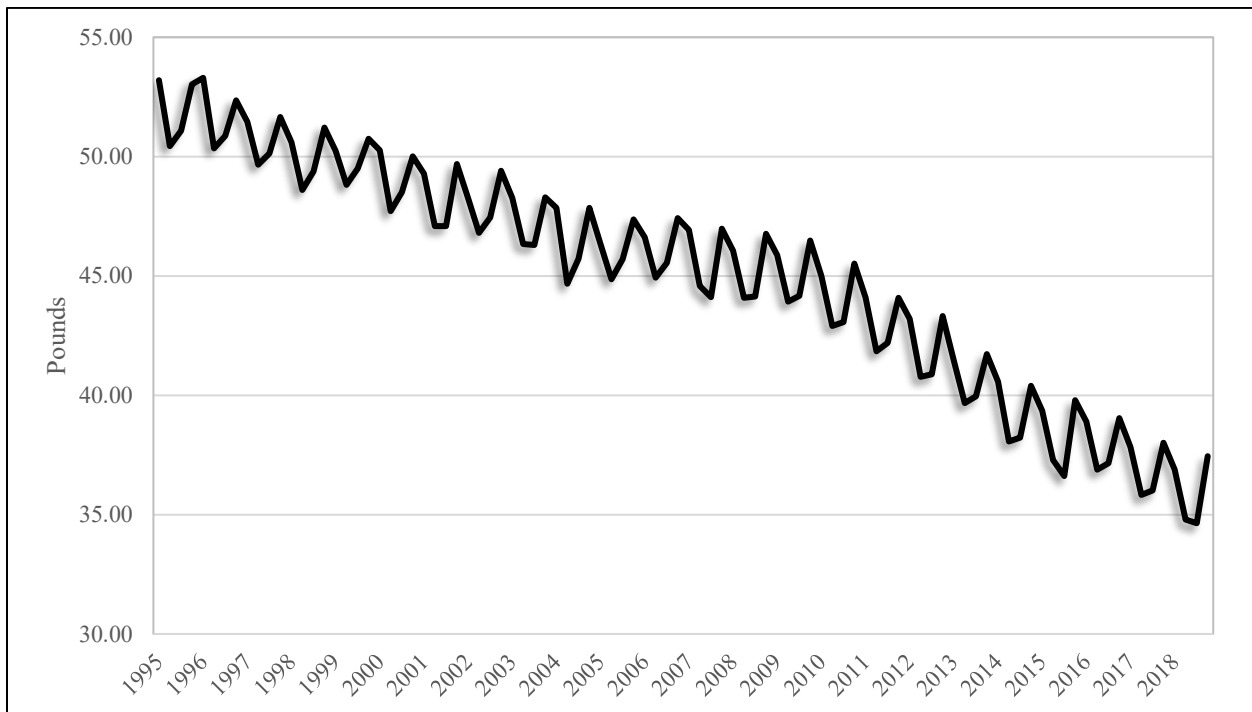
Between 1995 and 2018, quarterly dairy exports on a fat basis averaged nearly 1,350 pounds and close to 5,500 pounds on a skim-solids basis (Figure 3-13).

Figure 3-7. Monthly Dairy Import Assessment Funds, September 2011 to December 2018



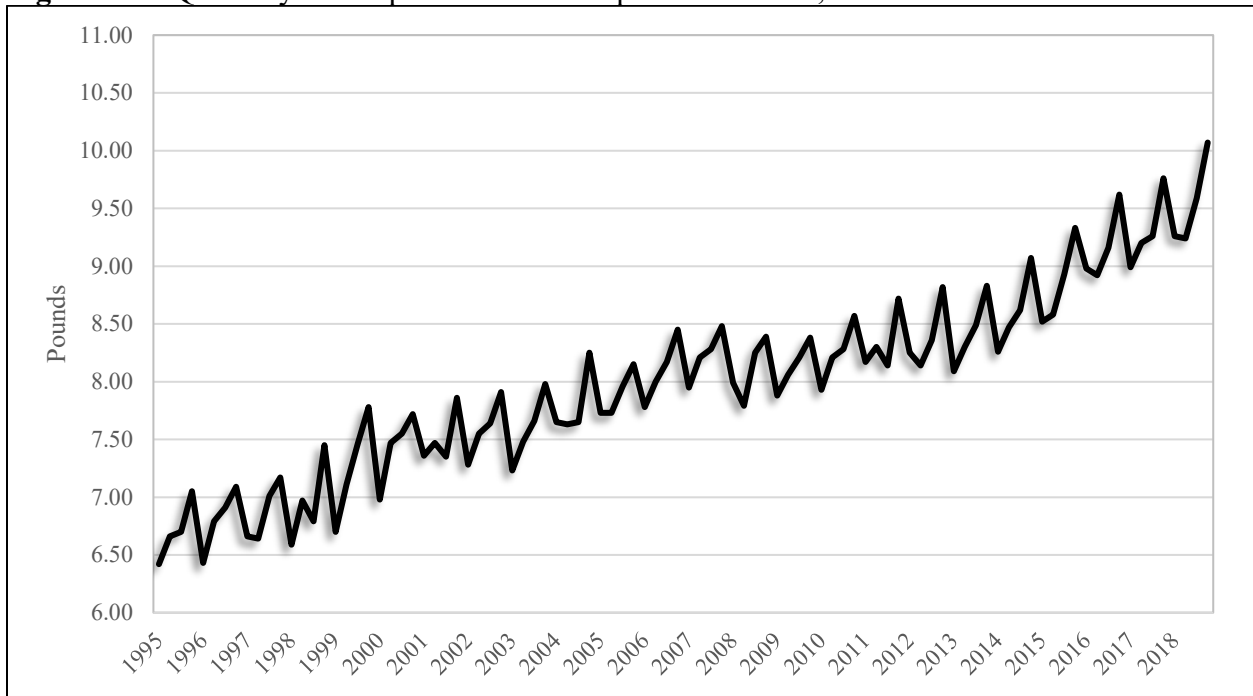
Source: U.S. Department of Agriculture

Figure 3-8. Quarterly Per Capita U.S. Consumption of Fluid Milk, 1995 to 2018



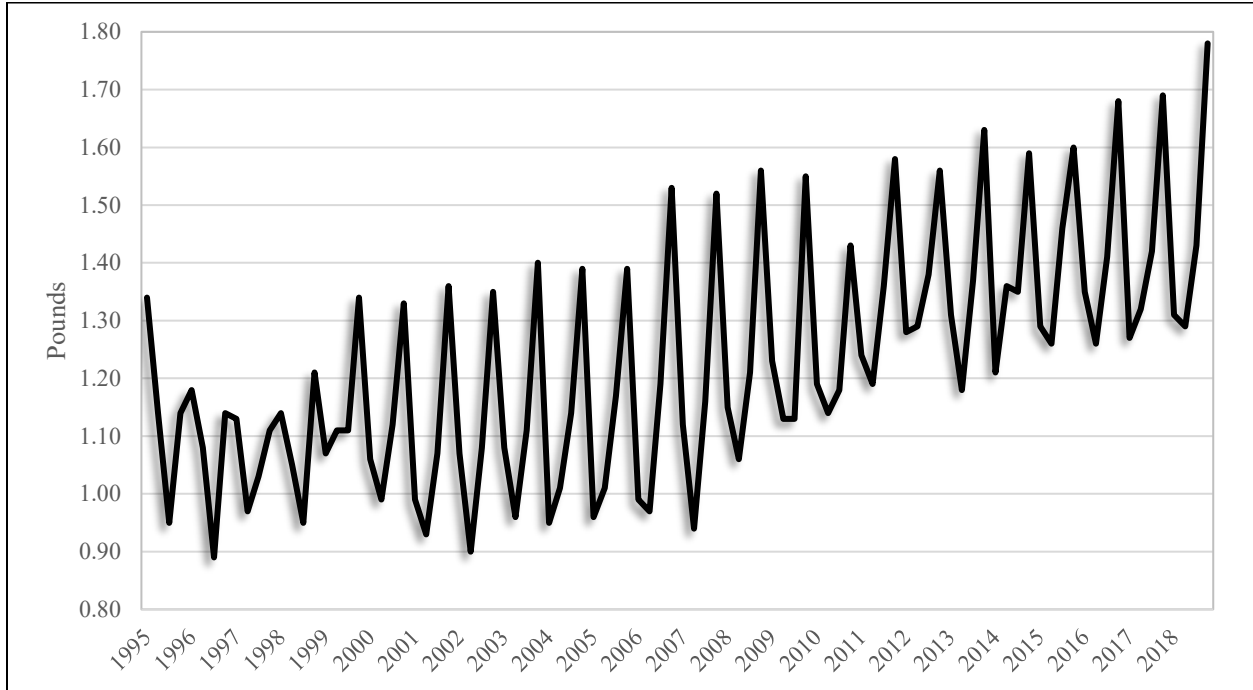
Source: U.S. Department of Agriculture.

Figure 3-9. Quarterly Per Capita U.S. Consumption of Cheese, 1995 to 2018



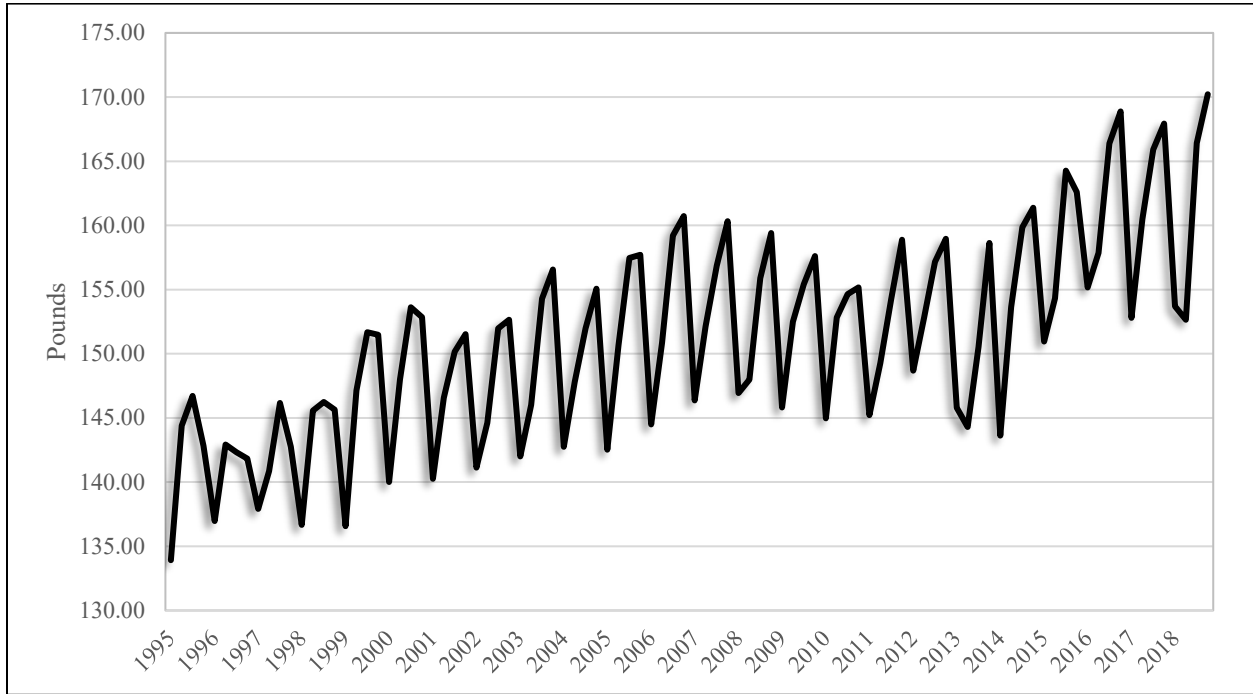
Source: U.S. Department of Agriculture.

Figure 3-10. Quarterly Per Capita U.S. Consumption of Butter, 1995 to 2018



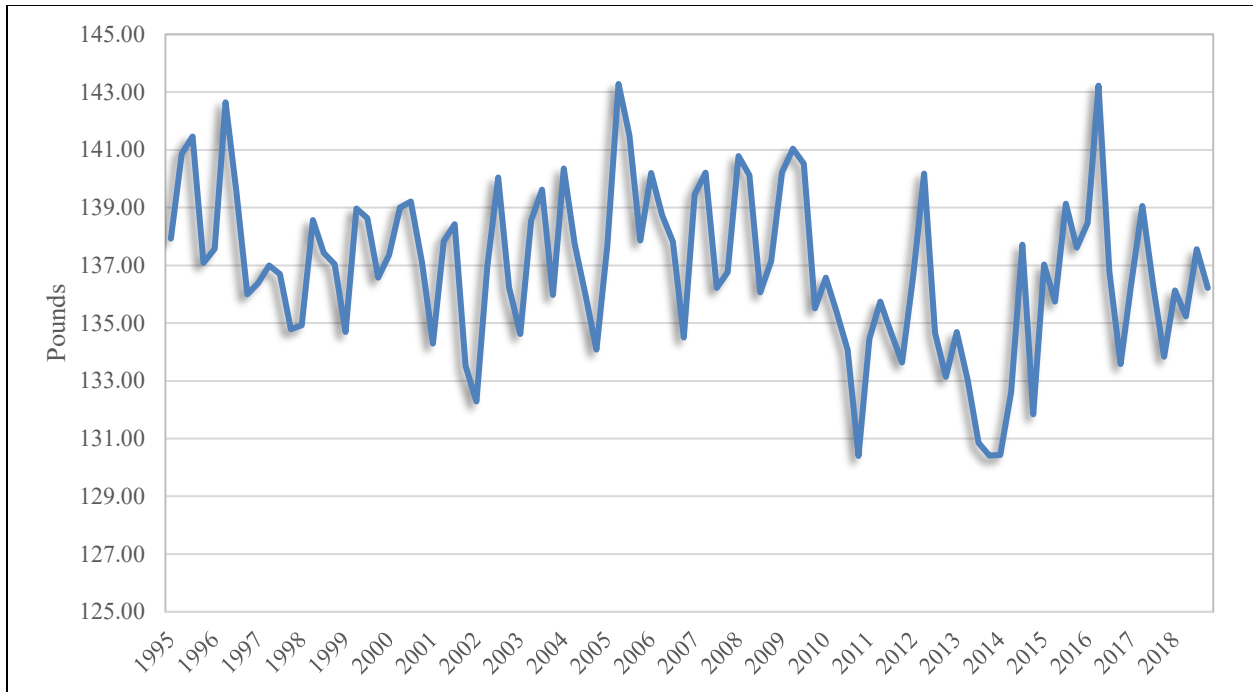
Source: U.S. Department of Agriculture.

Figure 3-11. Quarterly Per Capita U.S. Consumption of All Dairy Products on a Milk-Equivalent Fat Basis, 1995 to 2018



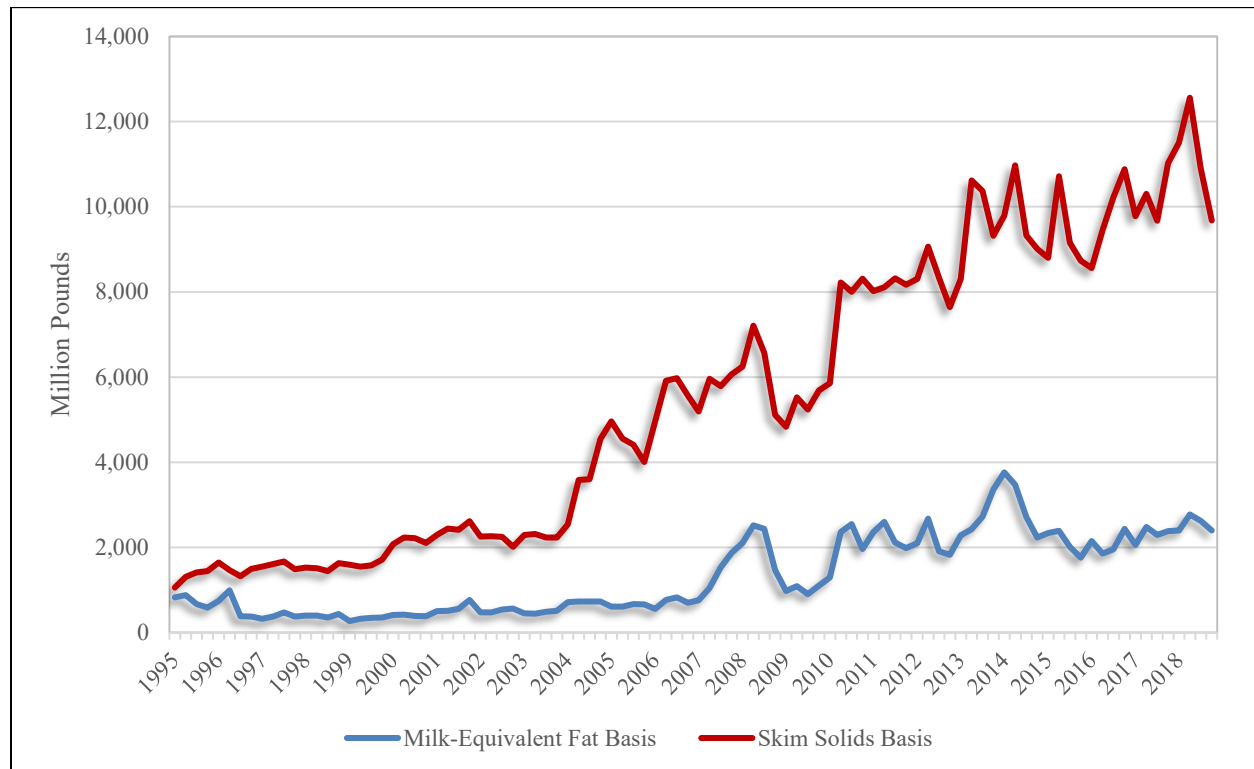
Source: U.S. Department of Agriculture and calculations by the authors.

Figure 3-12. Quarterly Per Capita U.S. Consumption of All Dairy Products on a Skim-Solids Basis, 1995 to 2018



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 2018



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

The United States imported between \$3.1 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 and 2018 at 37.6 percent and lowest in 2012 and 2017 at 35.8 percent.

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

Findings on Impacts of Promotion Expenditures on Dairy Demand

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

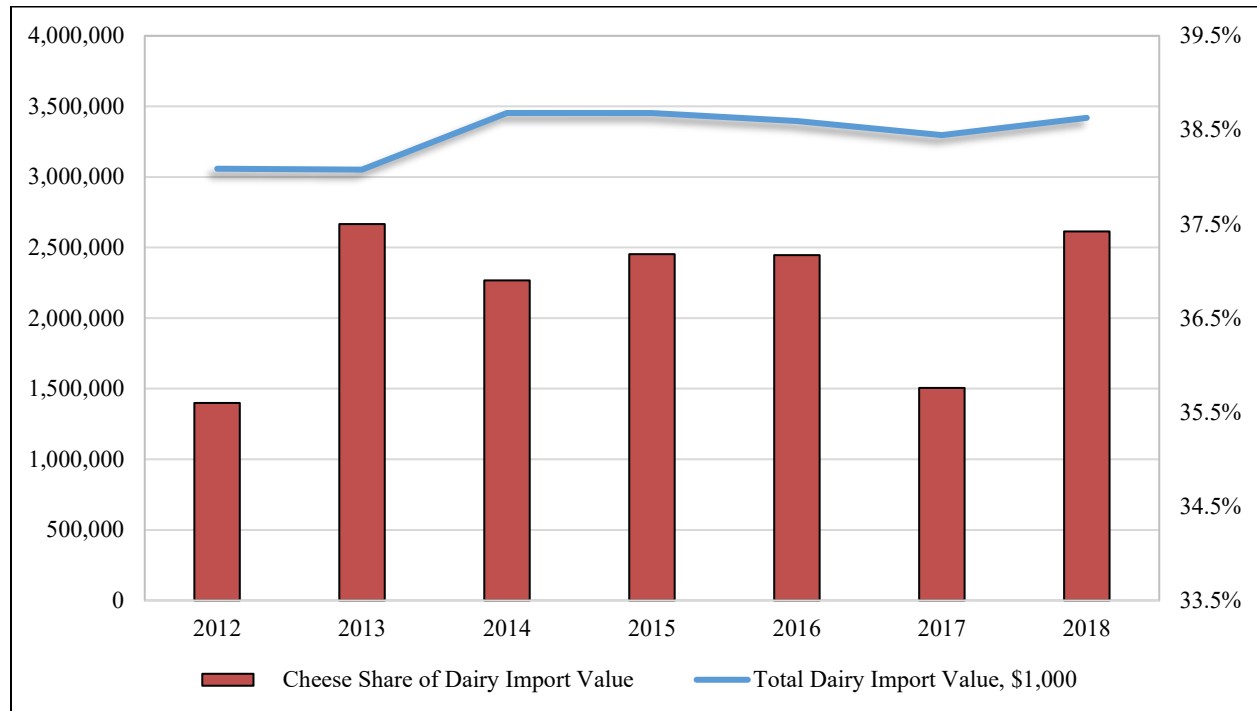
Table 3-2. U.S. Dairy Product Imports and Import Assessment Funds, 2012 to 2018¹

	2012	2013	2014	2015	2016	2017	2018
Value of All Dairy Imports (\$1,000)	\$3,059,069	\$3,051,985	\$3,452,772	\$3,453,239	\$3,397,211	\$3,297,323	\$3,418,570
Value of Cheese Imports (\$1,000)	\$1,093,017	\$1,145,000	\$1,274,747	\$1,290,771	\$1,262,797	\$1,179,030	\$1,279,283
Quantity of Cheese Imports, (metric tons)	153,964	147,196	164,778	197,767	205,286	182,401	176,211
Unit Value of Cheese Imports (\$/MT)	\$7,099	\$7,779	\$7,736	\$6,527	\$6,151	\$6,464	\$7,260
Import Assessment Funds (\$)	\$3,527,145	\$3,441,461	\$3,564,781	\$4,175,783	\$3,441,461	\$3,564,781	\$4,175,783
Import Assessment per \$1,000 of dairy imports	\$1.15	\$1.12	\$0.99	\$1.21	\$1.01	\$1.08	\$1.22

¹ The import assessment went into effect August 1, 2011. Funds have been collected in each month from September 2011 to present. The table shows funds collected from January 2012 to December 2018.

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

Figure 3-14. U.S. Dairy Imports and Cheese Share of Dairy Import Value, 2012 to 2018



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

Estimation of Dairy Consumption and Export Changes Due to Promotion Program Expenditures

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

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

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

- Demand-enhancing expenditures have a significant positive impact on domestic consumption of dairy products. (Domestic consumption is defined as domestic commercial disappearance plus imports.)
- The promotion elasticities for butter, cheese, and fluid milk for 2018 were 0.036, 0.014, and 0.074, respectively. The promotion elasticities for all dairy products on a skim-solids basis and on a fat basis for 2018 were the same at 0.061.

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 market for fluid milk for up to 8 quarters, and the market for butter for up to 12 quarters. For the aggregate of all dairy products, the effect persisted for 6 quarters on both a fat and skim-solids basis.

To measure the effects of DMI export promotion enhancement expenditures on U.S. dairy commercial exports, two U.S. dairy export demand models were specified and estimated using two different data series for dairy exports supplied by USDA: (1) dairy exports on milk-equivalent skim-solids basis (SSB), and (2) dairy exports on a milk-equivalent fat basis (FB). The results indicated that when U.S. dairy prices were low (high) relative to Oceania dairy export prices, the United States exported more (fewer) dairy products.² The lag length for SSB export promotion expenditures was estimated to be 9 quarters. The SSB export promotion expenditure elasticity was estimated to be statistically significant at 0.055 over the sample period (Table 3-3). The lag length for the FB export promotion expenditures was estimated to be 6 quarters. The FB export promotion expenditure elasticity was estimated to be statistically significant at 0.099 (Table 3-3).

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

Table 3-3. Estimated Dairy Demand Sensitivity to Promotion, Prices, and Income, 1995 to 2018

	Promotion Elasticities		Own-Price Elasticity	Income Elasticity
	1995 to 2018	2018 only		
Butter ¹	0.030	0.036	-0.121	0.276
Cheese ¹	0.018	0.014	-0.137	0.518
Fluid milk ¹	0.096	0.074	-0.075	-0.441
All dairy ¹				
Skim-solids basis	0.067	0.061	-0.063	0.089
Fat basis	0.067	0.061	-0.066	0.425
Exports ¹				
Skim-solids basis	0.055	0.055	-0.201	0.650
Fat basis	0.099	0.099	-0.294	0.611

¹Over the time period 1995.1 to 2018.4.

The analysis covers the period of 1995 to 2018. The results are decomposed for comparison purposes into four similar time periods: (1) 1995 to 2000, (2) 2001 to 2006, (3) 2007 to 2012, and (4) 2013 to 2018. The analysis starts in 1995 and ignores any promotion effects that would have occurred prior to 1995. 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 2018 period. Then the impact of promotion was obtained by removing demand-enhancing expenditures from the model. The model was first simulated over history to generate a “with promotion” scenario representing the effects of the dairy programs over actual history. A second “no promotion” scenario (the counterfactual scenario) was then generated by setting promotion expenditures to zero. The “zero promotion” scenario results represent the levels of prices and quantities that would have existed if the National Programs had not been created and, thus, dairy promotion had not been done.

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

Because no 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.

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 (pounds)	Cheese Per Capita Consumption (pounds)	Butter Per Capita Consumption (pounds)	Nonfat Dry Milk Per Capita Consumption (pounds)	
Period	2013 - 2018	With Promotion (lbs)	173.22	35.92	5.64	2.98
		No Promotion (lbs)	158.88	34.46	5.41	2.93
		Change (lbs)	17.33	1.47	0.23	0.05
		Percent Change	11.1%	4.3%	4.2%	1.8%
	2007 - 2012	With Promotion (lbs)	193.53	32.95	5.08	3.25
		No Promotion (lbs)	173.22	31.55	4.93	3.20
		Change (lbs)	20.30	1.40	0.15	0.05
		Percent Change	11.7%	4.4%	3.0%	1.4%
	2001 - 2006	With Promotion (lbs)	200.86	30.99	4.49	3.21
		No Promotion (lbs)	177.87	29.75	4.43	3.21
		Change (lbs)	22.99	1.24	0.06	0.00
		Percent Change	12.9%	4.2%	1.4%	0.0%
	1995 - 2000	With Promotion (lbs)	209.35	28.02	4.35	3.13
		No Promotion (lbs)	184.70	27.09	4.31	3.16
		Change (lbs)	24.66	0.93	0.04	-0.03
		Percent Change	13.3%	3.4%	0.9%	-1.0%
	1995 - 2018	With Promotion (lbs)	194.24	31.97	4.89	3.14
		No Promotion (lbs)	172.92	30.71	4.77	3.12
		Change (lbs)	21.32	1.26	0.12	0.02
		Percent Change	12.3%	4.1%	2.5%	0.5%

Source: Calculation by the authors.

That is, the simulated differences between the values of the endogenous variables from the “with promotion” scenario and those from the “no promotion” scenario provide direct measures of the historical effects of the dairy promotion expenditures (and only those expenditures) on U.S. dairy markets and exports.

As shown in Table 3-4, the average annual per capita consumption of fluid milk, cheese, and butter was higher by 12.3 percent, 4.1 percent, and 2.5 percent, respectively, over the period of 1995 to 2018 due to promotion efforts, all other exogenous factors held constant. The average annual per capita consumption of nonfat dry milk (NFD) would have been 3.12 pounds per capita annually without promotion versus 3.14 pounds per capita as actually occurred with promotion over the 1995 to 2018 period, an increase of 0.5 percent.

These results indicate that the overall downward trend of per capita fluid milk consumption between 1995 and 2018 was mitigated to some extent by the promotional efforts of the National Programs. Without the promotion programs, fluid milk consumption would have averaged 172.92 pounds per capita annually instead of 194.24 pounds per capita annually over the 1995 to 2018 period as actually occurred with promotion. Hence, promotion expenditures associated with the National Programs’ spending on fluid milk reduced the rate of decline in per capita consumption.

The results also indicate that the annual per capita consumption of cheese would have averaged 30.71 pounds without promotion versus the 31.97 pounds as actually occurred with promotion over 1995 to 2018. For butter, annual per capita consumption would have averaged 4.77 pounds without promotion versus the 4.89 pounds that actually occurred with promotion over the same period.

Average annual per capita consumption of fluid milk, cheese, and butter were higher by 11.1 percent, 4.3 percent, and 4.2 percent, respectively, due to promotion during the 2013 to 2018 period (Table 3-4). Annual exports of butter averaged 15.4 percent less than would have occurred without promotion while annual exports of nonfat dry milk and cheese averaged 1.1 percent and 4.3 percent higher, respectively, due to promotion.

The average annual per capita consumption of cheese was also higher by 0.018 pounds (0.05 percent) as a result of the promotion funded by the importer assessment. What then is the impact of the assessment on imports of dairy products? Given that cheese occupies a notable share of imported dairy products, we focus attention on the incremental amount of imports of cheese attributed to the importer assessment. Over the period between 2012 to 2018, total cheese consumption in the United States amounted to 90.4 billion pounds. Because of the assessment from importers, total domestic cheese consumption was higher by 45.2 million pounds. To arrive at this figure, we multiply 90.4 billion pounds by the percentage change in cheese consumption as a result of the importer assessment (0.05 percent as noted previously). Further, because cheese imports are roughly 2.6 percent of domestic consumption (United States Department of Agriculture), then due to promotion funds collected from importers, imported cheese levels were higher by 1.18 million pounds. Further, unit values of cheese imports amounted to roughly \$3.18 per pound on average over the period between 2012 to 2018. Hence, incremental revenue to importers solely from cheese attributed to the import assessment was \$3.74 million on average.

Dairy Promotion Program Benefit-Cost Analysis

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

Based on a comparative analysis, results for the "promotion" and "no-promotion" scenarios as summarized in the previous section (see Table 3-4) demonstrate that the National Programs have effectively increased the demand of promoted dairy products.

As exhibited in Table 3-5, over the period 1995 to 2018, the gains in profit at the producer level were far larger than the expenditures on demand-enhancement programs. The BCRs for producers for fluid milk were calculated to be \$3.37 for every dollar invested in dairy demand promotion; for cheese, \$3.63 for every dollar invested; and for butter, \$15.67 for every dollar invested. For other non-specific dairy promotion activities, the BCR was calculated to be \$7.20

for every dollar invested. Dairy export promotion expenditures increased foreign demand for U.S. dairy products by \$6.74 for every dollar invested. For the aggregate of all dairy products, the net profit BCR is \$4.78 for every dollar invested.

Table 3-5. Calculated Benefit-Cost Ratio (BCR), in Net Profit at the Producer Level Attributable to the National Programs, 1995 to 2018

Producers	
Product	BCR
All Dairy	4.78
Fluid milk	3.37
Cheese	3.63
Butter	15.67
Exports	6.74
Other Non-Specific Dairy Promotion	7.20

The fluid milk processor BCR cannot be calculated as simply as the producer BCR since the cost-of-production data are not available. To calculate the fluid milk BCR, the milk cost is used as a proxy for cost-of-production since milk would be the largest input cost. Over the period 1995 to 2018, 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 \$3.39 for every dollar invested in demand-enhancing activities for fluid milk processors.

Available expenditure data for the two participating entities in dairy promotion, DMI and MilkPEP, also allow for the calculation of separate BCRs at the farm level 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. By contrast, MilkPEP promotion expenditures have targeted fluid milk exclusively. The scenario simulation results indicate that the BCR associated with DMI spending was 5.31, 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 3.39, slightly above the 3.37 calculated for all fluid milk promotional spending in Table 3-5.

The BCR for fluid milk at the processor level was estimated to be 5.94 over the period between 1995 and 2018. Importantly, this measure captures the *gross* return on investment for fluid milk market participants beyond the farm level. Any additional costs incurred by these market participants from handling the larger volume of fluid milk that occurs due to MilkPEP promotion are excluded because we simply do not know the magnitude of these additional costs. Further, others in the marketing channel besides fluid milk processors capture a portion of this

incremental total value, too. But we have no knowledge of the portion captured by processors versus other milk market participants beyond the farm gate. As such, we exercise caution due to these caveats in providing this estimate of the BCR attributed to the promotion of fluid milk at the processor level over the 1995 to 2018 period.

Concluding Remarks³

This report provides an independent evaluation of the effectiveness of the National Programs covering the period 1995-2018. The key findings regarding markets for milk and manufactured dairy products over that period include the following:

- The National Programs have effectively increased the demand for promoted dairy products, especially cheese and butter, and moderated the decline in per capita fluid milk consumption.
- The gains in profit at the producer and fluid milk processor level from promotion were far larger than the costs of the National Programs. The overall BCR (using profit over costs) of the dairy producer promotion program was calculated to be 4.78. That is, for every \$1 spent on demand-enhancing activities, dairy producers received an additional \$4.78.
- Exports of butter and nonfat dry milk were smaller by annual averages of 26.2 percent and 10.1 percent, respectively, but exports of cheese were higher by an annual average of 5.8 percent.
- Promotion funds collected from importers boosted the annual average level of cheese imports by 1.18 million pounds. Annual unit values of cheese imports amounted to about \$3.18 per pound on average over the period from 2012 to 2018. Hence, the incremental revenue to importers solely from cheese attributable to the expenditure of the import assessments for cheese promotion totaled roughly \$3.74 million.
- The BCR for fluid milk promotion was calculated to be \$3.37 for every dollar invested in demand-enhancing activities. For cheese promotion, the BCR was calculated to be \$3.63 per dollar invested in cheese promotion and \$15.67 for every dollar invested in butter promotion. The BCR for dairy export promotion was calculated to be \$6.74 per dollar invested.
- The BCR for fluid milk processors attributed to the Fluid Milk Promotion Program was calculated to be 3.39.

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

³ A reference list is available upon request.

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

The aggregate revenue from the assessment directed to the Qualified Programs in 2018 was \$294 million (approximately 10 cents of the 15-cent producer assessment and 2.5 cents of the 7.5-cent import assessment). This chapter provides the aggregate income and expenditure data of the Qualified Programs as well as a list of certified programs in 2018.

**2018 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 2018
Carryover from Previous Year ¹	\$75,345
Producer Remittances	218,955
Transfers from Other Qualified Programs	67,858
Transfers to Other Qualified Programs	(78,386)
Other Income	<u>10,650</u>
Total Adjusted Annual Income	<u>\$294,422</u>
Aggregate Expenditures	FY 2018
General and Administrative	\$11,329
Milk Advertising and Promotion	13,399
Cheese Advertising and Promotion	32,664
Butter Advertising and Promotion	6,360
Frozen Dairy Products Advertising and Promotion	3,671
Other Advertising and Promotion ²	6,242
Unified Marketing Plan ³	81,202
Dairy Foods and Nutrition Research	8,749
Public and Industry Communications	21,419
Nutrition Education	15,424
Market and Economic Research	2,383
Other	<u>5,396</u>
Total Annual Expenditures	<u>\$208,238</u>
Total Available for Future Year Programs	\$89,934

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

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

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

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

2018 Qualified State, Regional or Importer Dairy Product Promotion, Research or Nutrition Education Programs

Alabama:

- American Dairy Association of Alabama, Inc.

Arizona:

- Dairy Council of Arizona

California:

- California Milk Advisory Board
- Dairy Council of California

Connecticut:

- Connecticut Milk Promotion Board

Florida:

- Florida Dairy Farmers, Inc.

Georgia:

- Georgia Agricultural Commodity Commission for Milk
- Southeast United Dairy Industry Association, Inc., doing business as (d/b/a) Dairy Alliance
- American Dairy Association of Georgia

Idaho:

- Idaho Dairy Products Commission
- Dairy Food Dairy West

Illinois:

- Illinois Milk Promotion Board

Indiana:

- American Dairy Association of Indiana, Inc.
- Indiana Dairy Industry Development Board

Kansas:

- Kansas Dairy Commission

Kentucky:

- American Dairy Association of Kentucky, Inc.

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, Inc.
- 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, Inc.

Missouri:

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

Nebraska:

- Nebraska Dairy Industry Development Board

Nevada:

- Nevada Farm Bureau Dairy Producers Committee

New Hampshire:

- Granite State Dairy Promotion

New Jersey:

- New Jersey Dairy Industry Advisory Council

New York:

- American Dairy Association & Dairy Council, Inc., d/b/a American Dairy Association Northeast
- Milk for Health on the Niagara Frontier, Inc.
- 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, Inc.

North Dakota:

- North Dakota Dairy Promotion Commission

Ohio:

- American Dairy Association Midwest

Oregon:

- Oregon Dairy Products Commission

Pennsylvania:

- Allied Milk Producers' Cooperative, Inc.
- Mid-Atlantic Dairy Association d/b/a American Dairy Association Northeast
- Pennsylvania Dairy Promotion Program d/b/a American Dairy Association Northeast

Puerto Rico, Commonwealth of:

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

South Carolina:

- American Dairy Association of South Carolina

South Dakota:

- American Dairy Association of South Dakota

Tennessee:

- American Dairy Association of Tennessee, Inc.
- Tennessee Dairy Promotion Committee

Texas:

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

Utah:

- Utah Dairy Commission

Vermont:

- Vermont Dairy Promotion Council

Virginia:

- American Dairy Association of Virginia, Inc.

Washington:

- Washington State Dairy Council d/b/a Dairy Farmers of Washington
- Washington Dairy Products d/b/a Dairy Farmers of Washington

Wisconsin:

- Wisconsin Milk Marketing Board, Inc.

Qualified Importer Programs:

Cheese Importers Association of America
Global Dairy Platform
Wisconsin Milk Marketing Board, Inc.

2018 Dairy Management Inc. and United States Dairy Export Council Contracts Approved by USDA

Contractor Name [Contract Activities]:

B = Business Development	C = Communications	Co = Consultants
F = Fluid Milk Revitalization	60 = Fuel Up to Play 60	E = Exports
N = Nutrition and Wellness	I = Ingredients	K = Knowledge and Insights
P = Partnerships	S = Sustainability	U = Unified Marketing Plan

<p>Academy of Nutrition and Dietetics [N] ACE Secretarial Solutions [B] Advantage Point Internationale, LLC [C] Agribusiness-Connect Asia [E] ALG Worldwide Logistics [B] Alchain, Maribel [Co] American Academy of Pediatrics [N] American Butter Institute [U] American College of Sports Medicine [N] American Dairy Association Indiana, Inc. [U] American Dairy Science Association [K] American-Mexican Marketing [E] American Registry of Professional Animal Scientists [K] American Society for Bone and Mineral Research [N] American Society for Nutrition [N] Animal Agriculture Alliance – College Aggies Online [B] Arab Marketing Finance, Inc. [E] ASK-Comm Strategies, LLC [C] Bader Rutter and Associates, Inc. [C, E, S] Baker Communications [B] Baxter Communications, Inc. [C] Bodhi Road, Inc. (Fresh Company) [B] Bokma, Dr. Bob [Co, E] Bryant Christie [Co] Burson-Marsteller Korea [E] C+R Research Services [F, K] Cady, Roger [Co] California Dairy Research Foundation [K] Campus Kitchen [B] Catalina Marketing Corporation [C] CEB, Inc. [B] Center for Food Integrity [C]</p>	<p>Center for Food Safety & Regulatory Solutions [E, I] Centre National Interprofessionnel de l'Economie Laitere (CNIEL) [E, K] CFE Solutions, Inc. [Co] Cheese Chef John Esser [I] Cheese Market News [K] Cheese Reporter [K] Chicago Council on Global Affairs [K] CliftonLarson Allen, LLP [B] College & Professional Sports Dieticians [N] Commonwealth Agriculture Strategies [K] ConferenceDirect, LLC [B] Copyright Clearance Center [B] Costco Wholesale Corporation [B, K] Covance Laboratories, Inc. [I] Cowboy Media Productions, LLC [C, E] Crimson Hexagon [C] Crowd Companies, LLC (Catalyst) [C] CSS360, LLC [B] Culinary Institute of America [I] Current Marketing – Brandwitch Consumer Research [Co] CustomED [C] D.L. Peterson Associates [K] Dairy Council of Utah [U] Dairy Farmers of America [P] Dairy Girl Network [B] Dairy Insights, LLC [Co, E] Dairy Max, Inc. [U] Darigold, Inc. [P] Digital SpeakEasy, LLC [C, S] Discovery Education, Inc. [C] Domino's Pizza Enterprises – Japan [E] Domino's Pizza Enterprises – Oceania [E]</p>
---	---

Domino's Pizza, LLC [P]
 Drake, Dr. MaryAnne [K]
 DuPuis Group [C, F]
 Dutcher & Associates, LLC [C]
 Dynamic Signal [B]
 Earthwide Business Intelligence Limited [E]
 EAS Consulting Group [I]
 Eat Well Global, Inc. [N]
 Edelman Public Relations Worldwide [C, 60]
 Elsevier B.V. [K]
 Ernst & Young Global Limited [B]
 Exponent, Inc. [K]
 fairlife, LLC [P]
 Feeding America [P]
 Fleishman-Hillard, Inc. [C]
 Florida Dairy Farmers, Inc. [U]
 Food & Culinary Professionals DPG [I]
 Food Nutrition Magazine [I]
 Food Research and Action Center [N]
 FoodMinds, A Division of Padilla Speer
 Beardsley, Inc. [E, I]
 Foodsense, LLC [C, N]
 Foundation for Food Integrity [N]
 Getty Images [C]
 Girag & Associates [K]
 Global Dairy Platform, Inc. [C]
 Global Food & Nutrition, Inc. [E, I]
 GlobalData Plc (Canadean Consumer) [E, K]
 Green Insights [K]
 Hartman Group [K]
 Hebrew Rehabilitation Center [K]
 Hillstrom Communications, Inc. [C]
 Hruska, Cindy [B, E]
 Hutchinson Cancer Research Center [K]
 Idea Couture [F]
 IDEA Health & Fitness [C]
 Image Base, Inc. [B]
 Information Resources, Inc. [K]
 Ink Factory [C]
 Inmar Analytics, Inc. [K]
 Innerspace Studio [C]
 Innova Market Insights [K]
 Interbrand [C]
 International Dairy Federation [K]
 International Dairy Foods Association [E, K]
 International Scientific Association for
 Probiotics and Prebiotics [N]
 Interpublic Marketing Services Ltd. Beijing
 Branch (Weber Shandwick Shanghai) [E]
 IntNet (South Korea) [E]
 Ipsos Insights, LLC
 J.C. Small Global Limited [Co, E]
 JF Pontzer, LLC [C]
 Joslin Diabetes Center Inc. [N]
 K&M Printing [B]
 Kantar, LLC d/b/a Kantar TNS [C]
 Kantar Retail d/b/a Kantar Worldpanel [K]
 Keenan, Judy [Co]
 Kemps [P]
 KJ Marketing Consulting [60]
 Kolade, Osho [K]
 Kopman, Chris [Co]
 Koski, Shannon [C, E]
 Land O'Lakes, Inc. [P]
 Levinson & Associates [B]
 Lee, Jay [Co]
 LexisNexis [K]
 Lowe & Partners Worldwide Inc. dba
 Campbell Ewald New York [Co]
 Maine Dairy Promotion Board [U]
 Market Makers, Inc. [E]
 Market Solutions, LLC [C]
 Marketing Concepts, Inc. [C, I]
 McDonald's USA, LLC [P]
 McLeod, Watkinson & Miller [B]
 McClelland, Alyssa [Co]
 Meros Consulting [E]
 MMS Education, Inc. [C, N, 60]
 Moss, Melinda [Co]
 National Academy of Sciences [I]
 National Dairy Shrine [B]
 National Football League Players Inc. [60]
 National Football League Properties [60]
 National Milk Producers Federation [E, K]
 National Osteoporosis Foundation [N]
 New England Dairy & Food Council, Inc. [U]
 Next Course Co [B]
 Nokose, Inc. [K]
 Novak Birch [C, E]
 NPD Group, Inc. [K]
 NTT Data, Inc. [B, C]

Nutrition Insights, LLC [N]
 Nutritional Strategies, Inc. [N]
 Nygaard Consulting, LLC [E, K]
 O'Donohue, Katherine [Co]
 Orrani Consulting Ltd. [E, K]
 P R Consultants Limited [E]
 P&K Research [I]
 Parody, Kristen [Co, E]
 Pelzer Communications Resources, Inc. [C]
 Philip, Preeti [Co]
 Pizza Hut, LLC [P]
 Pizza Hut Restaurants Asia Pte. Ltd. [E]
 PR Consultants Limited [E]
 Protagonist/ExactCast [C]
 Quadrant Nutrition, LLC [E, N]
 Quaife, Tom [Co]
 Qualtrics [K]
 Quantis [S]
 Quarterra LLC [E]
 RB International [Co]
 Ready Ink Communications [C, E]
 Results Direct [C, E]
 Rise Interactive Media & Analytics, LLC [C]
 River Global LLC [E]
 Rogers, Paul [Co, E]
 Ruby Do, Inc. [C]
 Salesforce.com, Inc. [B]
 Schonrock Consulting [Co, E]
 School Nutrition Association [N]
 School Nutrition Foundation [N]
 Shainwright Consulting & Research Group [E]
 Shamrock Foods Company [P]
 Sheppard, Liz [B]
 Sheryl Stern Sachman & Associates, LLC [N]
 Shutterstock [B]
 Significant Outcomes [E]
 Social Deviant [C]
 Sorenson, Carla [Co]
 Southeast United Dairy Industry Association
 d/b/a The Dairy Alliance [U]
 Southeast Milk, Inc. [P]
 sparks & honey, LLC [C, K]
 Spectrum Sustainability [K]
 Spire Research and Consulting [Co, E]
 Spredfast [K]
 Sports, Cardiovascular and Wellness Nutrition
 [N]
 SRW Marketing, Inc. [I, N]
 Stiefer, David L. [Co, E]
 Story Consulting [Co, E]
 Strategy Muse [K]
 Suber Global [E]
 Tableau Software [B]
 Taco Bell Corporation [P]
 Taylor, Tammy [Co]
 Team Services, LLC [60]
 Technomic, Inc. [K]
 Texas A&M AgriLife Research [K]
 The Center for Generational Kinetics [N]
 The Context Network, LLC [S]
 The Economist Intelligence Unit, NA, Inc. [C]
 The Family Room Strategic Consulting Group,
 LLC [K]
 The Foundation for the National Institutes of
 Health [N]
 The Fresh Approach, Inc. [C]
 The Kroger Company [P]
 The McCully Group [E, I]
 The Mixing Bowl [I]
 The Richards Group, Inc. [F, C]
 Think Healthy Group, Inc. [C]
 TNS Custom Research, Inc. d/b/a Kantar
 Worldpanel [K]
 Tong, Dr. Phillip [E, K]
 TradeMoves, LLC [E, K]
 Tractus Asia Limited [E]
 Trusted Translations, Inc. [B]
 United Dairy Industry Association, Inc. [P, U]
 United Dairymen of Arizona [U]
 USDA Agriculture Research Service, Western
 Human Nutrition Research Center [K]
 Washington Dairy Products Commission [U]
 Watson Green, LLC [B, N, U]
 We Are All Human Foundation [B]
 Weber Shandwick Worldwide [C]
 World Wildlife Fund, Inc. [C]
 Youth Improved Inc. d/b/a GenYouth [N, 60]
 Yum! Restaurants International, Inc. [P]
 Zenith International Ltd. [E, I]
 Zosspack Consulting [F]

2018 National Fluid Milk Processor Promotion Board Contracts Approved by USDA

Contractor Name [Contract Activities]:

A = Advertising and Marketing
M = Medical Advisory

B = Business Development K = Knowledge and Insights
P = Partnerships

Abrams, Dr. Steven [M]	I Heart Nap Time, LLC [A]
A Better Life, Inc. [A]	Information Resources, Inc. [B]
Ace Metrix, Inc. [K]	InTech Integrated Marketing Services [B]
Academy of Nutrition and Dietetics Foundation [K]	International Dairy Foods Association [B]
Arc USA Chicago [A]	Interpublic Group of Companies, Inc. [A]
American Egg Board [P]	Ipsos-Insight, LLC [K]
Barr, Dr. Susan [M]	James Madison University [K]
Brier, Michele V. [B]	Joanne Davis Consulting, Inc. [K]
Bluetext, LLC [B]	Johnson, Dr. Rachael [M]
Calabasas Pediatrics [A]	JR15, Inc. [A]
Campbell Ewald [A]	LH Nutrition, LLC [A]
CMGRP, Inc., d/b/a Weber Shandwick [A]	Latin Marketing Entertainment Corp. [A]
Collective Bias [A]	Leidy, Dr. Heather [M]
Competitor Group, Inc. [P]	Liminal Research, LLC [K]
Crazy Cool Media, LLC [A]	Lindsay, Stone & Briggs [K]
Crème de la Crumb, LLC [A]	Lorena Garcia Group, Inc. [A]
Dairy Management, Inc. [P]	Lowe & Partners Worldwide Inc. d/b/a SociedadAD [A]
DoExtra CRM Solutions, LLC [B]	Lowe Campbell Ewald [A]
Dream Tree Foundation [A]	May, Gavin [A]
EcoNet Ventures, LLC d/b/a Latinium Network [K]	Mullen Lowe Profero, LLC [A]
Economos, Dr. Christina [M]	National High School Athletic Coaches Association [P]
Edwatds, Tiffany [A]	Next Step Consulting Services [M]
Escobar, Su-Nui [A]	Nguyen, Jimmy [A]
Feeding America [P]	Oh Sweet Basil, LLC [A]
Food for Thought Consulting, Inc. [K]	One Funny Mother, Inc. [A]
Gail Golden Consulting, LLC [B]	Parise, Zach [A]
Giorgio Rapticavoli, Inc. [A]	Popular Pays, Inc. [A, B]
Glass, Alicia [A]	Prime Consulting Group [A]
Grand Sports Management, LLC [A]	Protagonist, LLC [K]
Gundell Company Inc. [A]	Radius Global Market Research [K]
Hass Avocado Board [P]	Red Spark Consulting, LLC [A]
Hartman Group [B]	Richards, Doyin [A]
Hill, Dr. James [M]	Rinny Runs Endurance Sports, Inc. [A]
Hutchins, Emily [A]	Roundarch Isobar, Inc [A]
Hype Agency [A]	Rubin, Ronald [B]

Saunders, Dr. Michael [M]
SCA Promotions, Inc. [B]
Shapiro, Dr. Ilan [A]
Snyder-Cohn, PC [B]
Spectrum Group Productions, Inc. [B]
Tennis4Sloane, Inc. [A]
Tetrick, Alison [A]
The Colony Group, LLC [B]
The Marketing Arm, Inc. [A]
ThinkVine Corporation [K]
Thompson, Klay [A]
United States Olympic Committee [A, P]
United States Swimming, Inc. [P]
United States Triathlon of Colorado [P]
Victory Marketing Agency, LLC [B]
Watkinson Miller, PLLC [B]
Whistle Sports, Inc. [A]
Whitman Insight Strategies, LLC [K]
Wilkin, Claudette Aimee [A]
Zuroweste Marketing Consulting [K]

2018 National Dairy Foods Research Centers

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

California Dairy Foods Research Center

The California Dairy Foods Research Center is located at the Dairy Innovation Institute at California Polytechnic State University–San Luis Obispo and 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. Adjacent to the Dairy Innovation Institute is the Cal-Poly University dairy farm, where fresh milk is available for research and development activities. For additional information, please visit www.dptc.calpoly.edu.

- **California Polytechnic State University–San Luis Obispo**
David W. Everett, Ph.D., Center Director
- **California Dairy Research Foundation**

Midwest Dairy Foods Research Center

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

- **South Dakota State University–Brookings**
Lloyd Metzger, Ph.D., Center Director
- **University of Minnesota–St. Paul**
Peggy Lehtola, Center Assistant Director
- **Iowa State University–Ames**
Stephanie Clark, Ph.D., Center Associate Director
- **Midwest Dairy Foods Research Center-Affiliated Universities:**
University of Nebraska - Lincoln
Kansas State University

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 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, Hazard Analysis and Critical Control Points, and dairy processing, including artisan dairy production, with certificate programs in fluid milk processing, cheesemaking, and yogurt production. Facilities available at Cornell University include the Food Processing and Development Laboratory, Cornell Dairy Processing Plant, the Food Safety Laboratory, and the Sensory Evaluation Center. For additional information, please visit www.foodscience.cals.cornell.edu/research.

- **Cornell University**
David M. Barbano, Ph.D., Center Director
Martin Wiedmann, Ph.D., DR. Med. Vet., Center Associate Director
- **University of Vermont**

Southeast Dairy Foods Research Center

The Southeast Dairy Foods Research Center has been in operation since 1988. Facilities are located at North Carolina State University, which is the lead institution, joined by Mississippi State University (Starkville). The Southeast Dairy Foods Research Center conducts research, educates scientists, and develops and applies new technologies for processing milk and its components into dairy products and ingredients with improved health, safety, and 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., Center Director
- **Mississippi State University–Starkville**

Western Dairy Center

The Western Dairy Center is located at the Utah State University, which is the lead institution. It is joined by affiliated universities through the Build University-Industry Linkages through Learning and Discovery Program (BUILD). The Western Dairy Center research focus includes cheese flavor and functionality; cheese technology; fermented products, including cheese and yogurt; ultra-high-temperature and extended-shelf-life fluid milk beverages; milk protein chemistry, including coagulation, denaturation, and separation; milk fractionation and use of membrane separation in dairy foods; anaerobic digestion of dairy processing waste; whey protein extrusion; application of genetics, genomics, and metabolomics to lactic acid bacteria; whey and

milk utilization; and microstructure of dairy. For additional information, please visit www.usu.edu/westcent.

- **Utah State University–Logan**
Donald J. McMahon, Ph.D., Center Director
- **Western Dairy Center-Affiliated Universities:**
Brigham Young University
Oregon State University
Texas A&M University
University of Idaho
Washington State University
Weber State University

Wisconsin Center for Dairy Research

Building on Wisconsin’s tradition as “the Dairy State,” the Wisconsin Center for Dairy Research was established in 1986 to provide the foremost scientific expertise in dairy research, technical support, and education. The Wisconsin Center for Dairy Research is located within a licensed operating dairy plant on the University of Wisconsin-Madison campus. The Wisconsin Center for Dairy Research offers expertise in five main program areas: cheese, dairy ingredients and functionality, cultured products and beverages, quality/safety, and dairy processing. Each of these areas in turn is supported by expertise in dairy product research, sensory research, analytical research, 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., Center Director
Mark Johnson, Ph.D., Assistant Director

2018 Nutrition Competitive Research Activities

Lacy Alexander, PhD (Pennsylvania State University): *Milk and Cheese Consumption and Human Microvascular Function* [ongoing 2018].

David Allison, PhD and Andrew Brown, PhD (Indiana University-Bloomington): *Science Dialogue Mapping of Knowledge and Knowledge Gaps Related to the Effects of Dairy Intake on Human Health* [ongoing 2018].

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 2018]; *An Enhanced Protein (Dairy) Weight Loss Intervention for Dynapenic Obesity: Impact on Muscle Quality and Composition” – Additional Experiments* [commenced 2018].

Leila Barraji, D.Sc. (Exponent, Inc.): *Health Care Costs and Savings Associated with Increased Dairy Consumption among Adults in the United States.* [ongoing 2018].

Christopher Blesso, PhD (University of Connecticut): *Milk Phospholipids for the Prevention of Atherosclerosis* [ongoing 2018].

Richard Bruno, PhD, RD (Ohio State University): *Regulation of Postprandial Nitric Oxide Bioavailability and Vascular Function by Dairy Milk* [concluded 2018].

In-Young Choi, PhD (University of Kansas Medical Center): *Dairy Intake and Cerebral Antioxidant Defense in Aging: A Dietary Intervention Study* [ongoing 2018].

David Clark, PhD (Bovina Mountain Consulting): *Review and Prepare Summary Papers on the Influence of Dairy Consumption on Child (12-60 Months) With Maternal Nutrition* [commenced 2018].

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 2018].

Adam Drewnowski, PhD, Victor and Colin Rehm, PhD, MPH (Nutriscore), and Victor Fulgoni, PhD (Nutrition Impact): *Replacing Dairy Fat With Pufas: A Food Level Modeling Study of Diet Quality and Nutrient Intake* [commenced 2018]; *Towards A New Nutrient Density Score: An NRF Nutrient Profiling Tool for Global Use* [commenced 2018].

Rajavel Elango, PhD (The University of British Columbia, School of Population and Public Health (co-funding with Dairy Farmers of Canada)): *Dietary Protein Quality Assessment of Milk in School-Age Children to Meet the Nutritional Need for the Most Limiting Amino Acid, Lysine, When Combined with Cereals* [commenced 2018].

Darcy Freedman, PhD, MPH (Case Western University): *Modeling the Future of Food in Your Neighborhood Study* [commenced 2018].

Foundation for the National Institutes of Health: *The Performance of Novel Cardiac Biomarkers in the General U.S. Population* [ongoing 2018].

Osama Hamdy, MD, PhD, FACE (Joslin Diabetes Center): *Dairy and Type 2 Diabetes: Research, Outreach, and Education* [ongoing 2018].

Andrea R. Josse, PhD (York University): *Assessing Diet Quality and the Use Of Dairy Foods in Meals and Snacks During and After A Lifestyle Modification Intervention in Overweight and Obese Adolescent Girls* [Commenced 2018].

Naiman A. Khan, PhD, RD (University of Illinois at Urbana - Champaign): *Diet Quality & Cognitive Control Function in Early Childhood: A Pilot Study* [concluded 2018]; *Cross-Sectional and Longitudinal Predictors of Cognitive Control and Early Academic Abilities among Preschool Children* [commenced 2018].

Jana Kraft, PhD (University of Vermont): *Full-Fat Yogurt and Glucose Tolerance* [ongoing 2018].

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* [concluded 2018].

Ronald M. Krauss, MD (Children's Hospital Oakland Research Institute): *Effects of a Modified High-Fat Mediterranean Dietary Pattern On Lipoprotein and Inflammatory Markers Of CVD Risk in Adults* [ongoing 2018]; *A Randomized Study of the Effect of Replacing Sugar-Sweetened Soda by Reduced Fat Milk on Cardiometabolic Health in Male Adolescent Soda Drinkers* [ongoing 2018].

Benoit Lamarche, PhD, FAHA (Laval University (Canada)): *Investigation of the Impact of Cheese Consumption on HDL Function* [concluded 2018].

Kevin C. Maki, PhD (Midwest Biomedical Research, a division of MB Clinical Research & Consulting): *Scientific Literature Review on the Naturally-Occurring Hormone Contents of Foods* [commenced 2018].

Andrew Mente PhD, MA ((McMaster University (co-funding with Dairy Farmers of Canada))): *Dairy Consumption and Cardiovascular Disease in Diverse Populations* [commenced 2018].

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* [concluded 2018].

Daniel Moore, PhD (University of Toronto): *Anabolic Potential of Dairy and Dairy Products For Active Children and Adolescents* [commenced 2018].

Lynn L. Moore, D.Sc., MPH (Boston University School of Medicine): *Protein Effects on Metabolic Outcomes in Older Adults* [concluded 2018]; *Cardiometabolic Effects of Butter and Other Fats and Oils in Framingham Offspring Study Adults* [commenced 2018]; *Yogurt and*

Total Dairy Intake Among Women: Effects On Weight Change and Fracture Risk During Critical Life Stages [commenced 2018].

Paul Moughan, PhD (Massey University (New Zealand)): *Determination of True Ileal Amino Acid Digestibility In Dietary Protein Sources Commonly Consumed By Humans: Toward An International Database of the Protein Quality of Human Foods* [concluded 2018]; *A Study of The Role for Dairy Proteins in Optimally-Costed Diets for Adult Humans – A Linear Programming Approach* [commenced 2018].

Kristin Nieman, PhD (Katalyses LLC): *Dairy and Inflammation: A systematic review of the evidence* [commenced 2018].

Stephen Ritchie, PhD (University of Alabama): *Functionalized Mesh Materials for Listeria Mitigation in Milk and Milk-Derived Products Processed in Dairy Plants* [ongoing 2018].

Shivani Sahni, PhD (Harvard University - Hebrew Rehabilitation Center): *Dairy food intake, vitamin D status and bone measures* [ongoing 2018].

Jeffery Schwimmer, MD (University of California, San Diego): *In Children with Obesity, the Intake of Dairy-Derived Odd Chain and Branched Chain Fatty Acids is Inversely Associated with the Risk for Nonalcoholic Fatty Liver Disease* [ongoing 2018].

Mary Beth Spitznagel, PhD (Kent State University): *The Influence of Glucoregulatory Function in Postprandial Cognition Following Dairy Milk: A Secondary Data Analysis* [commenced 2018].

Lyn Steffen, PhD, MPH, RD (University of Minnesota): *Dairy Consumption, Dietary Patterns and Cardiac Phenotypes* [ongoing 2018].

Hirofumi Tanaka, PhD (University of Texas): *Destiffening and hypotensive effects of whole milk and full-fat dairy products* [concluded 2018].

Jeff Volek, PhD, RD (Ohio State University): *Controlled clinical study to determine novel health benefits of cheese consumption* [concluded 2018].

Elena Volpi, MD, PhD (University of Texas Medical Branch at Galveston): *A Phase I randomized clinical trial of in-hospital and post-hospital whey protein vs. isonitrogenous collagen protein vs. isocaloric placebo maltodextrin supplementation to improve recovery from hospitalization for an acute medical illness in previously independent community dwelling older adults* [commenced 2018].

Taylor Wallace, PhD, CFS, FACN (Think Healthy Group Inc., and George Mason University): *Protein intake and bone health – Phase II Systematic review and meta-analysis* [concluded 2018]; *Dairy consumption across menopause transition into later life - impact on bone mineral density and risk of fractures in women enrolled in the SWAN cohort* [commenced 2018]; *Effect of dairy, calcium and vitamin D intakes on bone health across the lifespan: a systematic review and consensus report* [commenced 2018].

Gareth Wallis, PhD (University of Birmingham (United Kingdom)): *Exploring novel uses for lactose constituents in sports nutrition* [ongoing 2018].

Connie Weaver, PhD (Purdue University): *Guidelines for Enhancing Design and Analysis of Prospective Cohort Studies Related to Bone Health for Use in Nutrition and Health Research* [concluded 2018]; *The Effect of Dairy vs. Plant-Based Beverages on Bioavailability of Calcium and Vascular Function* [commenced 2018].

Robin White, PhD (Virginia Polytechnic Institute and State University): *Nutritional and Environmental Consequences of Dairy Removal from US Agriculture* [ongoing 2018].

2018 Product Competitive Research Projects

Principal Investigator, Institution, Project Title and Status

Alirez Abbaspourrad, PhD (Cornell University): *Annatto-free Cheddar Cheese Whey Powder: Enzymatically-triggered microcapsules as a novel method to partition color to Cheddar cheese and obtain white whey powder* [ongoing 2018].

Jayendra K. Amamcharla, PhD (Kansas State University): *Use of Nano-scale aqueous ozone to remove biofilms from selected dairy product contact surfaces* [concluded 2018]; *Altering the microstructure to improve functionality of dairy powders using micro- and nano-bubbles* [ongoing 2018]; *Development and evaluation of selective methods for rapid detection of Bacillus endospores in nonfat dry milk* [commenced 2018].

Jayendra K. Amamcharla, PhD (Kansas State University) & Lloyd Metzger, PhD (South Dakota State University): *Understanding the effects of various intrinsic and extrinsic factors on the stability of lactose-rich co-product* [ongoing 2018].

Samuel Alcaine, PhD (Cornell University): *Evaluation of Protective Bacterial Cultures for the Effective Control of Listeria in High Risk Cheese* [ongoing 2018]; *Evaluation of commercial bio-protective cultures and their ability to inhibit the outgrowth of eukaryotic spoilers in cheese* [ongoing 2018]; *Create Nationwide Food Safety Resources and provide support for Artisan/Farmstead Dairy Producers* [ongoing 2018]; *Designed Survival of Protective and Probiotic Cultures through HPP for Novel Dairy Products* [concluded 2018].

Sanjeev Anand, PhD (South Dakota State University): *Scale up of hydrodynamic cavitation as an in-line process combined with milk pasteurization for sporeformer control* [ongoing 2018]; *To identify quorum inhibitor based anti-biofilm molecules for developing new generation membrane-biofilm cleaners for the dairy industry* [ongoing 2018]; *Understanding the Process of Spore Germination or Sporulation, and Biofilm Formation under Simulated Skim Milk Powder Manufacturing Conditions* [concluded 2018].

David M. Barbano, PhD (Cornell University) & MaryAnne Drake, PhD (North Carolina State University): *The Impact of Milk and Whey Protein Based Ingredients on Sensory and Physical Properties of Beverages* [ongoing 2018]; *The Role of Protein, Protein Ratio, and Fat Content on Consumer Acceptance* [ongoing 2018].

David J. Baumler, PhD (University of Minnesota): *Evaluation of Intense Pulsed Light Technologies for Non-Thermal Processing to Kill Bacterial Spores in Dry Milk Powders* [commenced 2018].

Maire Begley, PhD (Cork Institute of Technology (Ireland)): *Identification of microbially-derived anti-listeria compounds using high-throughput robotics* [concluded 2018].

Andreia Bianchini, PhD (University of Nebraska): *Application of interventions at farm level to reduce sporeformer bacteria* [ongoing 2018].

Mindy Brashears, PhD (Texas Tech University): *Inhibition of Listeria monocytogenes on Cheese using Lactic Acid Bacteria as a Biocontrol System Intervention* [concluded 2018].

Stephanie Clark, PhD & Tong Wang, PhD (Iowa State University): *Technology for novel and scalable isolation of dairy phospholipids (PL) and its stabilization against lipid auto-oxidation* [ongoing 2018].

Michael Culhane, PhD (Dairy Advance Business Consulting): *Optimizing Research Strategies for Whey Protein Technology Development* [commenced 2018].

Dennis D'Amico, PhD (University of Connecticut): *Determining the efficacy of glycolipids to control Listeria monocytogenes in Queso Fresco* [ongoing 2018].

Robert Dando, PhD (Cornell University): *Eliminating Photosensitive Absorption Bands from LED Light Engines to Preserve Dairy Quality* [commenced 2018].

MaryAnne Drake, PhD (North Carolina State University): *Southeast Dairy Center Application Laboratory Program* [ongoing 2018]; *Identification of the Chemical Flavor Differences Between Milks Ultra-Pasteurized by Indirect or Direct Heat* [concluded 2018]; *Consumer Perceptions of Lactose Free Milk* [ongoing 2018]; *Sensory Analysis of White And Chocolate Milk on Child Acceptance* [concluded 2018]; *Determination of the Impact of Anticake Agents on Consumer Perception of Cheddar Cheese Shreds* [concluded 2018]; *The Role of Vitamin Premix on Flavor and Flavor Stability of Fluid Milk* [concluded 2018]; *Evaluation of Methods to Reduce Astringency in Clear Acidic Protein Beverages* [concluded 2018]; *The Role of Packaging on the Flavor of Fluid Milk* [ongoing 2018]; *Consumer Perception of Sustainability and its Relation to Labeling Dairy Foods and Ingredients* [commenced 2018]; *MCC Purity and Functionality for Ingredient Applications* [commenced 2018]; *Comparison of the Efficiency Of Ceramic and Polymetric Microfiltration Removal of Whey Protein From Sweet Whey* [commenced 2018].

Susan E. Duncan, PhD (Virginia Polytechnic Institute and State University): *Color Temperature Guidance for Optimizing LED Lighting in Retail Dairy Cases* [concluded 2018].

David W. Everett, PhD (California Polytechnic State University – San Luis Obispo): *California Dairy Center Application Laboratory Program* [ongoing 2018]; *Improving the Flavor of Cheese Made from Powdered Milk Using Buttermilk* [commenced 2018].

Kathleen Glass, PhD (University of Wisconsin-Madison): *Inhibition of Clostridium Botulinum In Reduced-Sodium Pasteurized Cheese Products – Validation of Model 2* [ongoing 2018]; *Control of Listeria Monocytogenes in High-Moisture Cheese* [ongoing 2018]; *Safety of Reduced Sodium Processed Cheese* [ongoing 2018].

Julie Goddard, PhD (Cornell University): *Mining value added, naturally derived, sweeteners from dairy co-product streams* [commenced 2018].

Lisbeth Goddik, PhD (Oregon State University): *Impact of Milk Hauling and Receiving on Microbial Content in Raw Milk* [concluded 2019]; *A Comprehensive Approach to Reducing the Risk Of E. Coli in Bloomy Rind Cheeses: Product Reformulation and HPP* [ongoing 2018].

Selvarani Govindasamy-Lucey, PhD (University of Wisconsin-Madison): *Controlling Cheese Acidity by Adjustment of the Lactose to Protein Content of Cheese Milk* [ongoing 2018]; *Extending the Shelf-Life Performance of Natural Mozzarella Cheese for Export Markets* [ongoing 2018]; *High Quality Block Gouda by Dry Salting Method* [ongoing 2018].

Federico Harte, PhD (Pennsylvania State University): *High Pressure Jet Spray Drying to Create Novel Dairy Powders* [ongoing 2018]; *Prototype to Study the Effect of Ionic Environments on Casein Micelle Integrity* [concluded 2018].

Shinya Ikeda, PhD (University of Wisconsin-Madison): *Inhibiting the Formation of Poorly Soluble Skin Layers on High Milk Protein Powders* [ongoing 2018].

Helen Joyner, PhD (University of Idaho): *Enhancing the Functionality of Milk Protein Concentrate through Direct Steam Injection Cooking* [commenced 2018].

Mark Johnson, PhD (University of Wisconsin-Madison): *Improving the Functionality and Quality of Large Cheese Blocks* [ongoing 2018]; *Use of Extrusion Technology for Snack Cheeses* [ongoing 2018].

Kevin Keener, PhD (Iowa State University): *Controlling Listeria Monocytogenes in Soft Cheeses with High Voltage Atmospheric Cold Plasma (HVACP) Treatment* [ongoing 2018].

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 2018].

John A. Lucey, PhD (University of Wisconsin-Madison): *Wisconsin Center for Dairy Research Applications Laboratory* [ongoing 2018]; *Designing Novel Cheese with High Levels of Intact Casein* [ongoing 2018]; *Separation and Characterization of Phospholipids From Whey Protein Phospholipid Concentrate (WPPC), And Other Dairy Feed Streams* [ongoing 2018]; *Impact of Microfiltration Retentates on Cheese Quality* [ongoing 2018]; *New Membrane Technology to Make High-Value Dairy Ingredients* [ongoing 2018]; *Controlled Pilot-Plant-Scale Evaluations of Charged Spiral-Wound Ultrafiltration Membranes* [ongoing 2018].

Sergio Martinez-Monteagudo, PhD (South Dakota State University): *Development of a Two-Step Process for the Production of Food Ingredients from Whey Permeate* [commenced 2018].

Lloyd Metzger, PhD (South Dakota State University): *Midwest Dairy Foods Applications Laboratories Program* [ongoing 2018]; *Explore Technologies to Reduce Microbial Load in Dairy Powders At/Before Packaging Step* [ongoing 2018].

Carmen Moraru, PhD (Cornell University): *Use of Forward Osmosis as a Non-Thermal Method of Concentration for the Manufacture of High-Quality Milk Concentrates and Powders* [ongoing 2018].

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 2018].

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 2018].

Scott A. Rankin, PhD and George Huber, PhD (University of Wisconsin-Madison): *Catalytic Conversion of Lactose-Rich Co-Products Into Value-Added Components* [ongoing 2018].

Tonya Schoenfuss, PhD (University of Minnesota): *Improving Sensory and Functional Properties of Reduced Sodium Low—Moisture Part—Skim Mozzarella Cheese Via Brine and Make Procedure Modifications* [ongoing 2018].

Karen Schmidt, PhD (Kansas State University): *Producing Dairy Protein Ingredients for Targeted Markets* [concluded 2018].

Clint Stevenson, PhD and MaryAnne Drake, PhD (North Carolina State University): *Food Safety Course for Artisan and Farmstead Cheesemakers* [ongoing 2018].

Martin Wiedmann, PhD, DVM (Cornell University): *Impact of Bedding Type in Raw Milk Contamination with Spore Formers Affecting Dairy Powder Quality* [concluded 2018]; *Evaluation of Variation in Spore Count Methods and Determination of Optimal Parameters for Standardization of Milk Powder Spore Testing* [concluded 2018].

Bongkosh Vardhanabhuti, PhD (University of Missouri) & Lloyd Metzger, PhD (South Dakota State University): *Whey Protein Ingredient with Improved Emulsification Properties* [concluded 2018].

Haotian Zheng, PhD (California Polytechnic State University - San Luis Obispo): *The Milk Fat Globule Membrane Generates Flavor in Cheese Made from Recombined Milk* [ongoing 2018].

Qixin Zhong, PhD (University of Tennessee): *Delivery System of Lactose to Improve the Quality of Milk for Lactose-Intolerant Consumers* [concluded 2018].

2018 Sustainability Competitive Research Activities

Principal Investigator, Institution, Project Title and Status

Diana Aga, PhD (University of Buffalo) and Chintala, Rajesh (Innovation Center for Dairy): *Understanding and Guidance on the Fate and Transport of Pharmaceuticals, Endocrine Disrupting Compounds (Edcs), Herbicides, and Pathogens in Dairy Manure* [concluded 2018].

Olivier Jolliet, PhD (University of Michigan): *Dairy's Nutritional Benefit and Environmental Impact – Phase II* [ongoing 2018].

Ermias Kebreab, PhD (University of California - Davis): *Interactions Between Dairy Cattle Nutrition and Management Interventions Versus Enteric and Manure Emissions and Nitrogen Excretion – Model Assessment* [concluded 2018]; *Quantitative Assessment for Feed Additives Enteric Methane Mitigation Protocol* [commenced 2018].

Johannes Lehmann, PhD (Cornell University): *Feasibility Assessment of Dairy Biochar as a Value-Added Potting Mix in Horticulture and Ornamental Gardening* [concluded 2018].

Meredith Niles, PhD (University of Vermont): *Assessing Dairy Farmer Decisions and Barriers for Adopting Sustainable Manure Management Systems* [ongoing 2018].

Mary Beth de Ondarza, PhD (Paradox Nutrition): *Advantages and Limitations of Dairy Efficiency Measures and the Effects of Nutrition and Feeding Management Interventions II* [concluded 2018].

FINANCIAL STATEMENTS

National Dairy Promotion and Research Board
Years Ended December 31, 2018 and 2017
With Reports of Independent Auditors

Ernst & Young LLP



National Dairy Promotion and Research Board

Financial Statements

Years Ended December 31, 2018 and 2017

Contents

Report of Independent Auditors..... 1

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*..... 3

Financial Statements

Statements of Financial Position..... 5

Statements of Activities and Changes in Net Assets 6

Statements of Cash Flows..... 7

Notes to Financial Statements..... 8



Ernst & Young LLP
155 North Wacker Drive
Chicago, IL 60606-1787

Tel: +1 312 879 2000
Fax: +1 312 879 4000
ey.com

Report of Independent Auditors

The Board of Directors
National Dairy Promotion and Research Board

We have audited the accompanying financial statements of National Dairy Promotion and Research Board, which comprise the statements of financial position as of December 31, 2018 and 2017, and the related statements of activities and changes in net assets and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

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

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of National Dairy Promotion and Research Board as of December 31, 2018 and 2017, 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 3, 2019, 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 3, 2019

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

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

We have audited, in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of National Dairy Promotion and Research Board, which comprise the statements of financial position as of December 31, 2018 and 2017, and the related statements of activities and changes in net assets and cash flows for the years then ended, and the related notes to the financial statements, and have issued our report thereon dated May 3, 2019.

Internal Control Over Financial Reporting

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

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

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

Compliance and Other Matters

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

Purpose of This Report

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

Ernst + Young LLP

May 3, 2019

National Dairy Promotion and Research Board

Statements of Financial Position

	December 31	
	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 27,383,133	\$ 37,988,171
Domestic assessments receivable, net of allowance for doubtful accounts of \$40,000 in 2018 and 2017	10,834,609	10,772,223
Import assessments receivable	373,824	382,786
Other current assets	50,086	–
Total current assets	38,641,652	49,143,180
Total assets	\$ 38,641,652	\$ 49,143,180
 Liabilities and net assets		
Current liabilities:		
Accounts payable	\$ 298,908	\$ 263,108
Accrued expenses and other liabilities	268,323	497,932
Amount due to related party – Dairy Management Inc.	7,445,844	16,214,547
Total current liabilities	8,013,075	16,975,587
 Net assets without donor restrictions:		
Designated	22,675,707	19,148,520
Undesignated	7,952,870	13,019,073
Total net assets without donor restrictions	30,628,577	32,167,593
Total liabilities and net assets	\$ 38,641,652	\$ 49,143,180

See accompanying notes.

National Dairy Promotion and Research Board

Statements of Activities and Changes in Net Assets

	Year Ended December 31	
	2018	2017
Revenues		
Domestic assessments	\$ 107,875,040	\$ 107,428,437
Import assessments	2,966,188	3,393,646
Select funding	6,803,518	6,533,055
Interest income	209,873	—
Total revenues	117,854,619	117,355,138
Expenses		
Programs:		
Domestic and export marketing	114,202,743	110,545,613
QP program support	100,000	100,000
Total programs	114,302,743	110,645,613
General and administrative:		
Dairy Management Inc. general and administrative	3,653,052	3,981,938
General and administrative	674,419	721,225
Total general and administrative	4,327,471	4,703,163
Other operating expenses:		
United States Department of Agriculture oversight	763,421	770,434
Dairy Management Inc. additional pension contribution	—	344,579
Total other operating expenses	763,421	1,115,013
Total expenses	119,393,635	116,463,789
Change in net assets without donor restrictions	(1,539,016)	891,349
Net assets without donor restrictions, beginning of year	32,167,593	31,276,244
Net assets without donor restrictions, end of year	\$ 30,628,577	\$ 32,167,593

See accompanying notes.

National Dairy Promotion and Research Board

Statements of Cash Flows

	Year Ended December 31	
	2018	2017
Operating activities		
Change in net assets	\$ (1,539,016)	\$ 891,349
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Depreciation	–	1,005
Changes in assets and liabilities:		
Assessments receivable	(53,424)	685,099
Other current assets	(50,086)	–
Accounts payable	35,800	97,221
Accrued expenses and other liabilities	(229,609)	(125,082)
Amount due to related party – Dairy Management Inc.	(8,768,703)	(7,708,436)
Net cash used in operating activities	<u>(10,605,038)</u>	<u>(6,158,844)</u>
Net decrease in cash and cash equivalents	(10,605,038)	(6,158,844)
Cash and cash equivalents, beginning of year	37,988,171	44,147,015
Cash and cash equivalents, end of year	<u>\$ 27,383,133</u>	<u>\$ 37,988,171</u>

See accompanying notes.

National Dairy Promotion and Research Board

Notes to Financial Statements

December 31, 2018 and 2017

1. Organization

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

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

2. Summary of Significant Accounting Policies

Basis of Presentation

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

Cash and Cash Equivalents

Cash and cash equivalents include checking, overnight sweep, certificates of deposit, and interest-bearing demand deposit accounts with financial institutions. NDB considers investments with an original maturity of 90 days or less to be cash equivalents.

NDB has cash balances in a financial institution that exceed federal depository insurance limits. Pursuant to guidelines published by USDA's Agricultural Marketing Service, NDB's cash balances are reviewed daily by the financial institution in which the balances are held and are fully collateralized by U.S. Treasuries at the Federal Reserve Bank of St. Louis.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued)

Net Assets

NDB follows the reporting requirements of GAAP which require that resources be classified for reporting purposes based on the existence or absence of donor-imposed restrictions. This is accomplished by classification of fund balances into two classes of net assets: without donor restrictions and with donor restrictions. Descriptions of the two net asset categories and the types of transactions affecting each category follow:

- *Without Donor Restrictions* – Net assets that are not subject to donor-imposed restrictions. This net asset category principally consists of unspent assessment revenues that are recognized in the month in which milk is marketed.

Prior to 2016, NDB’s Board of Directors designated a portion of net assets without donor restrictions for cash reserves. In addition, designated net assets without donor restrictions also include funding required to cover subsequent year budget deficits as well as carryover funding for projects not completed prior to year-end. The amounts designated to cover subsequent year budgets were approved by the board during the fourth quarters of 2018 and 2017. The carryover funding was approved by the board during the first quarters of 2019 and 2018. Total designations of net assets without donor restrictions are as follows:

	2018	2017
Designated net assets		
Cash reserves	\$ 1,800,000	\$ 1,800,000
Subsequent year program activity	20,875,707	17,348,520
Total designated net assets	22,675,707	19,148,520
Undesignated net assets	7,952,870	13,019,073
Total net assets without donor restrictions	<u>\$ 30,628,577</u>	<u>\$ 32,167,593</u>

- *With Donor Restrictions* – Net assets subject to donor-imposed restrictions that will be met either by actions of NDB or the passage of time. NDB has no net assets with donor restrictions at December 31, 2018 or 2017.

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, domestic assessments receivable, import assessments receivable, other current assets, accounts payable, accrued expenses and other liabilities, and amount due to related party are reasonable estimates of fair value due to the short-term nature of these financial instruments.

Assessments

Domestic assessment revenue is generated by a mandatory assessment of \$0.15 per hundredweight on all milk produced and marketed in the U.S. 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, 2018 and 2017, the net NDB assessment was \$0.0536 and \$0.0535, 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.

Income Taxes

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

Recent Accounting Pronouncements

Accounting Pronouncement Adopted

During 2018, NDB adopted Accounting Standards Update (ASU) 2016-14 – *Not-for-Profit Entities (Topic 958): Presentation of Financial Statements of Not-for-Profit Entities*. This guidance is intended to improve the net asset classification requirements and the information presented in the financial statements and notes about a not-for-profit entity's liquidity, financial performance, and cash flows. The ASU requires presentation of two classes of net assets versus the previously required three. The guidance also enhances disclosures for board-designated amounts, composition of net assets without donor restrictions, liquidity, and expenses by both their natural and functional classification. The adoption and retrospective application of ASU 2016-14 did not impact NDB's classification of net assets.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued)

Accounting Pronouncement Not Yet Adopted

In June 2018, the FASB issued ASU 2018-08, *Not-for-Profit Entities (Topic 958): Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made*. This ASU provides a more robust framework to determine when a transaction should be accounted for as a contribution or as an exchange transaction and provides additional guidance about how to determine whether a contribution is conditional. This ASU is effective January 1, 2019 and will be applied on a modified prospective basis. Upon NDB's adoption of this ASU, assessment revenues are accounted for as unconditional contributions. The impact to the financial statements upon adoption is not material.

Reclassifications

Certain amounts in the 2017 statement of activities and changes in net assets, have been reclassified to conform to current year presentation. Commensurate with the adoption of ASU 2016-14, NDB reassessed the allocation of functional expenses between program expenses and general and administrative expenses. As a result of this reassessment, a reclassification was made between program expenses and general and administrative expenses. This adjustment resulted in no impact to total expenses or changes in net assets for fiscal year 2017.

3. Related-Party Transactions

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

NDB funded DMI program and core costs as follows:

	<u>2018</u>	<u>2017</u>
Program costs	\$ 81,691,180	\$ 76,868,916
Core costs	36,164,615	38,003,214
Total funding to DMI	<u>\$ 117,855,795</u>	<u>\$ 114,872,130</u>

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

3. Related-Party Transactions (continued)

U.S. Dairy Export Council (USDEC) was incorporated in 1996 to improve the marketing conditions for the U.S. dairy industry with respect to the export of U.S. dairy products by promoting their acceptability, consumption, and purchase in international markets. DMI is the primary source of USDEC's funding. Of the program funding, NDB reimbursed DMI \$12,710,157 and \$11,945,636 for 2018 and 2017, respectively, for USDEC's program and operational expenses.

Youth Improved, Inc. was incorporated in 2009 and obtained a certificate of registration in 2001 to operate under the trade name GENYOUth Foundation (GENYOUth). GENYOUth was formed for the purpose of encouraging, monitoring, and assisting organizations in implementing youth-oriented health programs in schools and promoting healthy diet and exercise programs. DMI is the primary source of GENYOUth's unrestricted contributions, which are used to fund its operating costs. NDB reimbursed DMI \$1,841,081 and \$1,839,396 for 2018 and 2017, respectively, in support of GENYOUth.

Dairy Research Institute (DRI) was incorporated in 2010 for the purpose of dairy scientific research and sustainability advancement and operates under the oversight and control of DMI. NDB reimbursed DMI \$81,378 and \$80,360 for 2018 and 2017, respectively, for DRI's program and operational expenses.

4. Functional Classification of Expenses

NDB's primary program activities involve providing funding in support of domestic and international dairy promotion as part of the UMP. Additionally, expenses reported as general and administrative and other operating are incurred in support of these primary program activities.

Expenses by functional classification for the year ended December 31, 2018 consist of the following:

	Program Services		Support Activities		Total Expenses
	Domestic and Export Marketing	QP Program Support	General and Administrative	Other Operating	
Program support	\$ 114,202,743	\$ 100,000	\$ -	\$ -	\$ 114,302,743
DMI – general and administrative	-	-	3,653,052	-	3,653,052
USDA oversight	-	-	-	763,421	763,421
Collection and compliance	-	-	358,134	-	358,134
Other	-	-	316,285	-	316,285
	\$ 114,202,743	\$ 100,000	\$ 4,327,471	\$ 763,421	\$ 119,393,635

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

4. Functional Classification of Expenses (continued)

Expenses by functional classification for the year ended December 31, 2017 consist of the following:

	Program Services		Support Activities		Total Expenses
	Domestic and Export Marketing	QP Program Support	General and Administrative	Other Operating	
Program support	\$ 110,545,613	\$ 100,000	\$ —	\$ —	\$ 110,645,613
DMI – general and administrative	—	—	3,981,938	—	3,981,938
USDA oversight	—	—	—	770,434	770,434
Collection and compliance	—	—	387,125	—	387,125
Other	—	—	334,100	344,579	678,679
	\$ 110,545,613	\$ 100,000	\$ 4,703,163	\$ 1,115,013	\$ 116,463,789

5. Financial Assets and Liquidity Resources

As of December 31, 2018 and 2017, financial assets and liquidity resources available within one year for general expenditures were as follows:

	2018	2017
Financial assets		
Cash and cash equivalents	\$ 27,383,133	\$ 37,988,171
Domestic assessments receivable, net	10,834,609	10,772,223
Import assessments receivable	373,824	382,786
Other current assets	50,086	—
Total financial assets and liquidity resources available within one year	\$ 38,641,652	\$ 49,143,180

As part of its liquidity management, NDB has a defined practice to structure its financial assets to be available as its general expenditures come due. In addition, NDB invests cash in excess of daily operating needs in overnight investments and certificates of deposit.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

6. Assessments Receivable

Domestic and import assessments receivable are recorded at the estimated net amounts to be received based on the amount of milk marketed and the average payment per hundredweight when collectability is reasonably assured. Domestic and import assessments receivable for which collectability is not reasonably assured are not recorded as revenue until such payments are ultimately received. Additionally, in accordance with Public Law 98-180, NDB forwards unpaid assessments to USDA for collection and other legal proceedings. As of December 31, 2018 and 2017, cumulative unpaid assessments of \$1,421,166 and \$1,216,853, respectively, were at USDA pending further action. Such amounts are not included in assessments receivable as of December 31, 2018 or 2017, 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 documentation as outlined within the Dairy Promotion and Research Order.

7. Guarantees

NDB has guaranteed DMI's five-year note payable with CoBank, which was initiated in October 2016 to fund the deficiency in plan assets upon termination of the UDIA-sponsored multi-employer pension plan. The note payable balance was \$2,397,881 and \$5,455,986 at December 31, 2018 and 2017, respectively. The terms of the note agreement require quarterly principal payments and monthly interest payments, based on the outstanding loan balance, at an annual interest rate of 3.93%.

The following is a schedule of future expected principal payments of the CoBank note as of December 31, 2018:

2019	\$ 871,957
2020	871,957
2021	653,967
	<u>\$ 2,397,881</u>

DMI has entered into separate loan agreements with a number of the other participating employers, under the same terms as its loan with CoBank. The notes receivable balance related to these loan agreements totaled \$2,397,881 and \$5,114,987 at December 31, 2018 and 2017, respectively.

National Dairy Promotion and Research Board

Notes to Financial Statements (continued)

8. Subsequent Events

NDB evaluated events occurring between January 1, 2019 and May 3, 2019, which is the date when the accompanying financial statements were available to be issued. No events subsequent to December 31, 2018 have been identified that require recognition or disclosure in the financial statements.

About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

© 2019 Ernst & Young LLP.
All Rights Reserved.

ey.com

Independent Auditors' Report on Compliance

The 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 statement 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 (NDB), which comprise the balance sheets as of December 31, 2018 and 2017, 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, with an unmodified opinion thereon, dated May 3, 2019.

In connection with our audit, nothing came to our attention that caused us to believe that NDB failed to comply with the items listed below insofar as they relate to accounting matters. However, our audit was not directed primarily toward obtaining knowledge of such noncompliance. Accordingly, had we performed additional procedures, other matters may have come to our attention regarding NDB's noncompliance with the below referenced items, insofar as they relate to accounting matters.

- Provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of 2018 financial statement amounts, as described below:
 - *Dairy Promotion and Research Order*, revised as of May 22, 2012, Section 1150.154, which requires that funds shall not be used for the purpose of influencing government policy or action, which is defined in *USDA Guidelines for Agricultural Marketing Service (AMS) Oversight of Commodity Research and Promotion Programs*, Section VII, *Influencing Legislation and/or Government Policy*, as any action the principal purpose of which is to bring about a change in existing policy or regulation or affect the outcome of proposed policy or regulation, except those actions that are specifically provided for.
 - *Dairy Promotion and Research Order*, revised as of May 22, 2012, Section 1150.153(b)(1), which requires that a qualified program must conduct promotion, research and nutrition education activities, as defined in Sections 1150.114, 1150.115, and 1150.116, which are intended to increase consumption of milk and dairy products generally.

- *NDB Policy Guidelines*, which require the NDB Board to approve capital and operating budgets.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section II, *Budget Approval*, which requires the U.S. Department of Agriculture (USDA) to review and approve all budgets. When submitting budgets for approval, NDB is required to include detailed information regarding administrative expenses and other costs. Budget submissions are required to include five specific components that are listed in this section.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section II, *Budget Approval*, which requires NDB’s Board to review and approve NDB’s annual budget before submitting to AMS for its approval prior to obligating any funds.
- *NDB Policy Guidelines*, which require that a written contract signed by the Board and contractor and approved by USDA is required for all work performed. No payment is to be authorized until the contract is signed by both parties and approved by the USDA.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section V, *Financial, Compliance, and Program Accountability*, Subsection D, *Annual Financial Audits*, which requires NDB’s Board to have independent audits performed annually in accordance with *Government Auditing Standards*. In addition, funds are to be used only for projects and other expenses authorized in a budget approved by the USDA.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section V, *Financial, Compliance, and Program Accountability*, Subsection F, *Independent Evaluation*, which requires NDB’s Board to conduct an independent evaluation of the effectiveness of the promotion programs every five years and to make the report available to assessment payers and the AMS.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section V, *Financial, Compliance, and Program Accountability*, Subsection G, *Travel Expense Claims*, which requires NDB’s Board to establish travel policies and procedures, approved by AMS, including the individual(s) designated to approve travel. Policies and procedures are required to address and incorporate 12 specific items that are listed in the subsection.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section V, *Financial, Compliance, and Program Accountability*, Subsection H, *Credit Card Use*, which requires NDB’s Board to establish procedures for the use of such cards and have internal controls in place and approved by AMS.

Credit card procedures established by NDB's Board are required to include ten specific procedures listed in the subsection.

- USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs, Section XI, *Administration*, Subsection B, *Investment of Funds*, which requires NDB's Board to follow AMS' investment policy, as described in Directive 2210.2, *Investment of Public Funds*, dated May 1, 1998, included in Appendix 3 of *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, which requires investments to be short-term, risk-free, and interest-bearing instruments with maturity periods of one year or less; federally insured or fully collateralized; and fully secured.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section XI, *Administration*, Subsection F, *Prohibited Expenditures*, which states that NDB's Board may not spend assessment funds for spouse and family expenses, open bars, influencing government policy or action, and personal expenses.
- *USDA Guidelines for AMS Oversight of Commodity Research and Promotion Programs*, Section XI, *Administration*, Subsection G, *Board Donations*, which states that NDB's Board is required to develop a written policy statement regarding donations utilizing funds derived from assessments. In general, the NDB Board is precluded from making financial and gift contributions to any organization. The written policy established by NDB's Board is required to include five specific areas, as listed in the subsection.
- Establishment and maintenance of effective internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the 2014 financial statements would be prevented, detected, and corrected on a timely basis.

This report is intended solely for the information and use of management and the Board of Directors of National Dairy Promotion and Research Board and the U.S. Department of Agriculture and is not intended to be and should not be used by anyone other than the specified parties.

Ernst + Young LLP

May 3, 2019

**National Fluid Milk Processor
Promotion Board**

Financial Statements
and
Independent Auditor's Report

Years Ended December 31, 2018 and 2017

Part I

Financial Statements and Independent Auditor's Report for the Years Ended December 31, 2018 and 2017

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

Table of Contents

Independent Auditor's Report	1-2
Financial Statements:	
Statements of Financial Position	3
Statements of Revenues, Expenses and Changes in Net Assets	4
Statements of Cash Flows	5
Notes to Financial Statements	6-14
Supplementary Information:	
Schedules of Actual Compared to Budget:	
Revenues and Expenses (Budget Basis)	16
Program Expenses (Budget Basis)	17
Administrative Expenses (Budget Basis)	18
Schedule of Cash Receipts and Disbursements	19

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, 2018 and 2017, 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, 2018 and 2017, 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 April 1, 2019 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
North Bethesda, Maryland
April 1, 2019

National Fluid Milk Processor Promotion Board

Statements of Financial Position

December 31	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 12,275,887	\$ 13,906,998
Assessments receivable, net	8,563,992	8,831,113
Future year costs	1,650,563	3,726,203
Prepaid expenses	75,008	75,689
Other receivables	19,271	-
Total current assets	22,584,721	26,540,003
Property and equipment, net	27,034	37,202
Total assets	\$ 22,611,755	\$ 26,577,205
Liabilities and net assets		
Current liabilities:		
Accounts payable and accrued expenses	\$ 10,901,612	\$ 12,531,651
Coupon liability	592,516	449,604
Capital lease, current portion	6,664	7,252
Total current liabilities	11,500,792	12,988,507
Other liabilities:		
Capital lease, net of current portion	-	6,664
Total liabilities	11,500,792	12,995,171
Commitments		
Net assets:		
Board designated for contingencies	2,500,000	2,500,000
Undesignated	8,610,963	11,082,034
Total net assets	11,110,963	13,582,034
Total liabilities and net assets	\$ 22,611,755	\$ 26,577,205

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Statements of Revenues, Expenses and Changes in Net Assets

For the years ended December 31	2018	2017
Revenues:		
Assessments	\$ 89,007,314	\$ 91,664,161
Late payment charges	35,844	22,811
Interest income	48,133	49,032
Other	818	236,118
	89,092,109	91,972,122
Expenses:		
Program expenses:		
Meals at home	67,307,924	68,960,076
Built with chocolate milk	11,085,494	11,309,361
Strategy and market research	2,423,790	2,640,281
Total program expenses	80,817,208	82,909,718
Other expenses:		
California grant	7,843,127	8,201,379
Administrative	2,309,019	1,964,224
USDA oversight	477,105	473,949
USDA compliance audit	115,578	123,989
Interest expense	1,143	1,878
Total other expenses	10,745,972	10,765,419
Total expenses	91,563,180	93,675,137
Excess of expenses over revenues	(2,471,071)	(1,703,015)
Net assets - beginning	13,582,034	15,285,049
Net assets - ending	\$ 11,110,963	\$ 13,582,034

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Statements of Cash Flows

For the years ended December 31	2018	2017
Cash flows from operating activities:		
Excess of expenses over revenues	\$ (2,471,071)	\$ (1,703,015)
Adjustments to reconcile excess of expenses over revenues to net cash provided by (used in) operating activities:		
Depreciation and amortization	12,784	11,102
(Increase) decrease in:		
Assessments receivable	267,121	403,133
Future year costs	2,075,640	(2,467,561)
Prepaid expenses	681	918
Other receivables	(19,271)	-
Increase (decrease) in:		
Accounts payable and accrued expenses	(1,630,039)	5,738,843
Coupon liability	142,912	(150,446)
Net cash provided by (used in) operating activities	(1,621,243)	1,832,974
Cash flows from investing activities:		
Payments made for property and equipment	(2,616)	(25,151)
Cash flows from financing activities:		
Payments made on capital lease	(7,252)	(6,517)
Net increase (decrease) in cash and cash equivalents	(1,631,111)	1,801,306
Cash and cash equivalents - beginning	13,906,998	12,105,692
Cash and cash equivalents - ending	\$ 12,275,887	\$ 13,906,998
Supplemental disclosure of cash flow information:		
Cash paid during the year for:		
Interest	\$ 1,143	\$ 1,878

See Accompanying Notes

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2018 and 2017

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, 2018 and 2017

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 2018 and 2017, an allowance for doubtful accounts of \$-0- has been established for those amounts where the late charges are being appealed.

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

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

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

Assessments receivable - An allowance for uncollectible accounts is established for those assessments which management has determined as uncollectible. The total allowance for uncollectible accounts at December 31, 2018 and 2017 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, 2018 and 2017

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, 2018 and 2017

Note 2: Cash and cash equivalents:

At December 31, 2018 and 2017, 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 (net assets without donor restriction) at December 31, 2018 and 2017.

Note 3: Property and equipment:

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

	<u>2018</u>	<u>2017</u>
Furniture and fixtures	\$ 30,261	\$ 30,261
Leasehold improvements	159,941	159,941
Office equipment	<u>122,374</u>	<u>119,758</u>
	312,576	309,960
Less: accumulated depreciation	<u>(285,542)</u>	<u>(272,758)</u>
	<u>\$ 27,034</u>	<u>\$ 37,202</u>

Depreciation expense for the years ended December 31, 2018 and 2017 was \$12,784 and \$11,102, respectively.

Note 4: Capital lease:

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, 2018 and 2017

Note 4: Capital lease: (continued)

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

2019 minimum lease payment	\$	6,996
Less amount representing interest		<u>(332)</u>
Present value of minimum lease payment	\$	<u>6,664</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 5.25%. 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 2021. The amount outstanding on the line of credit at December 31, 2018 and 2017 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, 2018 and 2017, the Board did not exceed this limitation.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2018 and 2017

Note 7: Program administration:

During 2018 and 2017, the Board entered into agreements with various organizations to develop programs for advertising, promotion, consumer education and certain minority initiatives in connection with the national fluid milk campaign. The funding levels vary for the various organizations and are subject to approval. The organizations and the expiration dates of the agreements are as follows:

Agency	Expiration
Foote, Cone, & Belding	Terminated 2017
Campbell-Ewald	Until Terminated
CMGRP, Inc. d/b/a Weber Shandwick	Until Terminated
Arc USA Chicago	January 31, 2020

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, 2018 and 2017. In addition, the Board has three master service agreements with three contractors which allow for scopes of work to be attached on an as needed basis by the Board.

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

The duration of the office services agreement was from October 1, 2007 through September 30, 2008 and was subsequently extended multiple times through December 31, 2019. Under this agreement, IDFA provides certain administrative services and resources to the Board. Fees for these services are based on predetermined amounts totaling \$3,370 and \$4,370 per month plus out-of-pocket costs and hourly charges for additional services for years ended December 31, 2018 and 2017, respectively. During the years ended December 31, 2018 and 2017, the Board incurred fees in the amount of \$40,870 and \$54,270, respectively, under this agreement.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2018 and 2017

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, 2019. 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
- Other services as requested

Fees for these services are based on hourly rates of \$360 plus out-of-pocket costs. Total costs incurred under this agreement were \$16,699 and \$17,931 for the years ended December 31, 2018 and 2017, respectively.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2018 and 2017

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:

2019	\$ 170,816
2020	175,941
2021	181,219
2022	<u>67,875</u>
Total	<u>\$ 595,851</u>

The Board incurred \$165,841 and \$161,012 of rental expense during the years ended December 31, 2018 and 2017, 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 \$592,683 and \$597,938 during 2018 and 2017, respectively.

Note 10: Related party activity:

Accounting services for the Board are performed by The Colony Group, LLC (The Colony Group). The agreement is effective through December 31, 2022. The costs of accounting services were \$386,250 during 2018 and 2017. A principal of The Colony Group serves as the Chief Financial Officer of the Board, for which The Colony Group is compensated. At December 31, 2018 and 2017, the total amount due to The Colony Group was \$-0-.

National Fluid Milk Processor Promotion Board

Notes to Financial Statements

December 31, 2018 and 2017

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 \$141,645 and \$118,882 for the years ended December 31, 2018 and 2017, respectively.

Note 12: Concentration:

Accounts payable to two vendors represented approximately 80% of total accounts payable at December 31, 2018. Payments to these vendors represented approximately 91% of total program expenses for the year ended December 31, 2018.

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

Note 13: Subsequent events:

Subsequent events have been evaluated through April 1, 2019, 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, 2018

	Unexpended/ Amended Budget (Unaudited)	Current Year Actual	Actual Over (Under) Budget
Revenues:			
Assessments	\$ 90,000,000	\$ 89,007,314	\$ (992,686)
Late payment charges	-	35,844	35,844
Interest income	-	48,133	48,133
Other	-	818	818
Total revenues	<u>90,000,000</u>	<u>89,092,109</u>	<u>(907,891)</u>
Expenses (refunds):			
Program expenses (refunds):			
Program - current year	83,538,250	80,946,139	(2,592,111)
Program - prior years	1,294,969	(128,931)	(1,423,900)
Total program expenses, net	<u>84,833,219</u>	<u>80,817,208</u>	<u>(4,016,011)</u>
Other expenses:			
California grant	8,100,000	7,843,127	(256,873)
Administrative	2,184,750	2,309,019	124,269
USDA expenses	575,000	592,683	17,683
Interest expense	2,000	1,143	(857)
Total other expenses	<u>10,861,750</u>	<u>10,745,972</u>	<u>(115,778)</u>
Total expenses, net	<u>95,694,969</u>	<u>91,563,180</u>	<u>(4,131,789)</u>
Excess of expenses over revenues	<u><u>\$ (5,694,969)</u></u>	<u><u>\$ (2,471,071)</u></u>	<u><u>\$ 3,223,898</u></u>

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, 2018

	Current Year Amended Budget (Unaudited)	Expended Current Year Actual	Actual Over (Under) Budget	Prior Year Unexpended Budget (Unaudited)	Expended (Refunds) Prior Year Actual	Actual Over (Under) Budget	Total Program Activity
Meals at home	\$ 68,656,000	\$ 67,636,324	\$ (1,019,676)	\$ 923,177	\$ (328,400)	\$ (1,251,577)	\$ 67,307,924
Built with chocolate milk	11,322,000	11,062,224	(259,776)	277,346	23,270	(254,076)	11,085,494
Strategy and market research	2,500,000	2,247,591	(252,409)	94,446	176,199	81,753	2,423,790
Unallocated/opportunistic	1,060,250	-	(1,060,250)	-	-	-	-
Total program expenses	\$ 83,538,250	\$ 80,946,139	\$ (2,592,111)	\$ 1,294,969	\$ (128,931)	\$ (1,423,900)	\$ 80,817,208

See Independent Auditor's Report

National Fluid Milk Processor Promotion Board

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

For the year ended December 31, 2018

	Current Year Amended Budget (Unaudited)	Current Year Actual	Actual Over (Under) Budget
Board meeting expenses	\$ 200,000	\$ 208,063	\$ 8,063
Staff salaries and benefits:			
Staff salaries and benefits	1,664,000	1,573,725	(90,275)
Program management salary allocation	(1,350,000)	(1,043,903)	306,097
Total staff salaries and benefits	<u>314,000</u>	<u>529,822</u>	<u>215,822</u>
Finance and administration:			
Contract staff	160,000	160,000	-
Consultants - HR, IT, strategic	84,000	123,752	39,752
Financial services	386,250	386,250	-
Total finance and administration	<u>630,250</u>	<u>670,002</u>	<u>39,752</u>
Other operating expenses:			
Audits	65,000	60,079	(4,921)
Depreciation	10,000	12,784	2,784
Dues and memberships	16,000	17,000	1,000
Employee development	20,000	22,560	2,560
IDFA professional & office support	50,000	38,156	(11,844)
Insurance	40,000	40,214	214
Legal	410,000	291,412	(118,588)
Miscellaneous	2,500	525	(1,975)
Office facilities	160,000	165,841	5,841
Office supplies and expense	21,000	13,833	(7,167)
Payroll service and pension administration	6,000	5,628	(372)
Postage and delivery	10,000	10,369	369
Recruiting expense	-	360	360
Staff travel	205,000	199,288	(5,712)
Telephone	25,000	23,083	(1,917)
Total other operating expenses	<u>1,040,500</u>	<u>901,132</u>	<u>(139,368)</u>
Total administrative expenses	<u>\$ 2,184,750</u>	<u>\$ 2,309,019</u>	<u>\$ 124,269</u>

See Independent Auditor's Report

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

For the year ended December 31, 2018

Cash receipts from operations:	
Assessments	\$ 89,255,164
Late payment charges	35,844
Interest income	48,133
Other	818
Cash receipts from operations	<u>89,339,959</u>
Cash disbursements for operations	(90,961,202)
Cash disbursements for investing activities:	
Purchase of property and equipment	(2,616)
Cash disbursements for financing activities:	
Payments made on capital lease	<u>(7,252)</u>
Excess of disbursements over receipts	(1,631,111)
Cash and cash equivalents - beginning	<u>13,906,998</u>
Cash and cash equivalents - ending	<u><u>\$ 12,275,887</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, 2018 and 2017, 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 April 1, 2019.

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**

Page two

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
North Bethesda, Maryland
April 1, 2019

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, 2018 and 2017, 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 April 1, 2019. 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, 2018 and 2017;
- 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
North Bethesda, Maryland
April 1, 2019

Snyder Cohn, PC
CPAs and Trusted Advisors
11200 Rockville Pike, Suite 415
North Bethesda, MD 20852
www.snydercohn.com
301-652-6700