Regulatory Economic Impact Analysis of the Recommended California Federal Milk Marketing Order

Agricultural Marketing Service, Dairy Program - Economics Division, February 2017

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I. PURPOSE OF THE REGULATORY IMPACT ANALYSIS

From September 22, 2015, to November 18, 2015, the Agricultural Marketing Service (AMS) held a hearing to consider and take evidence on proposals to establish a Federal Milk Marketing Order (FMMO) for the state of California. Based on the evidentiary record, USDA is recommending the establishment of a California FMMO. This analysis examines the economic impact the recommended California FMMO could have on the milk supply, product demand, product prices, and milk allocation both within California and throughout the United States.

The AMS Dairy Program Regional Econometric Model has been updated to include 2014 data and changes in both Federal and state policy (see below), and is based on the USDA Agricultural Baseline Projections to 2025 published in 2016.[1] Thus, the results presented here are not comparable to the results found in the *Preliminary Regulatory Impact Analysis of Proposals to Establish a California Federal Milk Marketing Order* (Preliminary Economic Impact Analysis).[2]

Comments regarding the Dairy Program Regional Econometric Model methodology and consumer impact assumptions can be submitted at Californiainfo@ams.usda.gov until May 15, 2017.

A. Scope of Analysis

The estimated impacts of promulgating a California FMMO are measured as deviations from the Regional Econometric Model baseline, which is aligned with the USDA Agricultural Baseline Projections to 2025. The USDA baseline and the Regional Econometric Model baseline incorporate the following policy changes: (1) the Dairy Product Price Support Program and the Dairy Export Incentive Program ended on February 7, 2014; (2) the Milk Income Loss Contract Program ended on September 1, 2014; and (3) the Margin Protection Program – Dairy began on September 1, 2014. National assumptions for the cost of feed are provided by the USDA Baseline Projections.

The Regional Econometric Model includes the permanent changes that the California Department of Food and Agriculture (CDFA) made in 2016 to its dry whey pricing formulas in the California State Order (CSO). Therefore the Regional Econometric Model estimates are slightly different from the USDA Agricultural Baseline to 2025 which does not include CDFA's permanent changes (see Appendix Table C1).

The Regional Econometric Model simultaneously forecasts annual regional milk production; regional fluid milk and national manufactured dairy product consumption; regional dairy class utilization; national

[1] U. S. Department of Agriculture, Office of the Chief Economist, World Agricultural Outlook Board, Interagency Agricultural Projections Committee- Long-term Projections Report OCE-2016-1. http://www.usda.gov/oce/commodity/projections/

[2] www.ams.usda.gov/caorder

dairy product prices; and regional farm milk prices sequentially from 2015 through 2025. The explanation of the operation and assumptions of the Regional Econometric Model is available on the AMS Dairy Program website.[3]

The Regional Econometric Model baseline operates under the following assumptions:

- Milk is produced in all 50 States. The states are grouped into 14 milk supply regions.
- Milk produced in each supply region is allocated to one or more of 12 marketing areas, or "pools" (10 existing FMMOs, California, and an unregulated pool).
- Regional cow numbers are functions of the all-milk price, feed costs, slaughter prices, non-farm earnings, and other variables.
- Milk production per cow is estimated as a function of all-milk prices, feed costs, and other variables.
- Milk marketings are estimated as milk production less farm use.
- The classified (class) prices are calculated by the FMMO end-product price formulas, which determine component values based on wholesale commodity prices for butter, nonfat dry milk, cheese and dry whey.
- The blend price at test reflects the total marketwide pool value and is calculated from the class prices, component levels, and class utilization of the respective FMMO.
- The all-milk price for the supply region reflects the historical relationship with the regulated blend price of the FMMO that most closely matches the geographic area of the supply region.
- Only the regulated prices for 11 of the pools are estimated (10 existing FMMOs and California). Prices for the unregulated pool are not estimated independently due to a lack of data.
- California State Order (CSO) statewide blend price data are used in the model baseline as the California statistical uniform price. Although the CSO uses an 8.7 percent solids nonfat test to compute its standardized CSO prices, in the model baseline and in this analysis, the statistical uniform solids nonfat percentage for California is set at 8.685 to keep the component tests consistent with those used in the FMMOs.
- Producer revenues are the product of milk marketings and the all-milk price.
- Milk movements among milk supply regions are functions of relative blend prices between FMMOs.
- Milk movements are summed to create pools for all FMMO marketing areas, California, and an unregulated pool.
- Regional demands for fluid milk per capita consumption are functions of the Class I price, income, and population under five years of age.
- Milk supplies for manufactured milk products are based on total pooled milk minus volumes demanded for Class I products.
- Classifications of manufactured milk within the pools are functions of ratios of the wholesale prices to their respective class prices and other variables.
- The unregulated pool is assumed to have the same average classified utilization as the 10 existing FMMOs.
- National demands for manufactured dairy per capita consumption are functions of respective prices, per capita income, and other factors.
- A two-step process is used to estimate ending stocks. First, average stock values of the monthly ending stocks from the last half or last quarter of each year are estimated as functions of the product price. Second, year-end stocks are estimated from average stocks.

[3] Regional Econometric Model documentation: www.ams.usda.gov/caorder

- Imports above the tariff rate quota and commercial exports for American cheese, other cheese, butter, nonfat dry milk and dry whey are estimated as a function of the difference between the domestic product price and the free-on-board international price.[4]
- Observed butterfat and other milk components tests are used for FMMOs where such data is available. Otherwise, default standards are used for comparisons.

The Regional Econometric Model generates long-term supply, demand, and price baseline projections consistent with USDA's official baseline projections. The model's baseline projections for 2015 are adjusted to reflect actual observed 2015 data. The model is not designed to consider movements of milk within a FMMO. The model is designed to estimate only the regulated price for the pools, except for the unregulated pool where there is no estimated price due to a lack of data. This implies that all pooled milk will be paid at FMMO minimum price levels. The effects of seasonal changes in production, consumption, and price cannot be analyzed on an annual basis.

The Regional Econometric Model structure used for this analysis is the same as the model used for the *Preliminary Regulatory Economic Impact Analysis of Proposals to Establish a California Federal Milk Marketing Order*. However, this analysis models the recommended decision which is different from any of the proposals analyzed. Furthermore, the model equations have been updated to include 2014 data and the model is based on the USDA Agricultural Baseline Projections to 2025 published in 2016. Thus, the results presented herein are not comparable to those found in the Preliminary Economic Impact Analysis.

B. Methods of Analysis

Baseline estimates are constructed assuming the CSO provisions as of June 1, 2016, remain in place.[5] If a California FMMO is established, it is assumed for modeling purposes that the FMMO regulations would supersede the CSO beginning January 1, 2017.

This analysis estimates the expected impacts resulting from adoption of the provisions contained in the proposed California FMMO. Deviations from the baseline of current CSO policy are identified and modeled. The analysis assumes that all other model parameters would remain unchanged during the comparison period. The impacts of the proposed California FMMO are then compared to the model's baseline projections for the period 2017 through 2025. The results of this comparison are found in Appendix B, Tables 1-18.

The following indicators are evaluated:

- Changes in the uniform price, all-milk price, and producer revenues, which indicate a farmer's ability and willingness to produce milk; and
- Changes in milk marketings, Class I use, and other class prices, which measure the adequacy of milk supplies to meet fluid needs and the effect on consumer expenditures for fluid and manufactured dairy products.

[4] Free-on-board international prices are exogenous to the model and do not change between the model baseline and the impact analysis of the proposed California FMMO. Thus changes in domestic prices from the baseline cause changes in imports and exports.

[5] Effective June 1, 2016, the CDFA made permanent the dry whey scale used in the CSO Class 4b price formula. The permanent dry whey scale is the same dry whey scale that was implemented on a temporary basis beginning August 1, 2015, and that was to have terminated July 31, 2016. This change was incorporated in the AMS model for the baseline and impact analysis as of January 1, 2016. The regional model remains consistent with the USDA Agricultural Baseline Projections to 2025, but is adjusted to account for this permanent policy change.

II. AN EXAMINATION OF THE RECOMMENDED DECISION

The recommended decision proposes a California FMMO that includes the following features:

- Uniform FMMO product classification provisions and end-product pricing formulas.[6]
- Performance based pooling standards tailored to the California market.
- Uniform FMMO definition of producer-handlers.
- Uniform FMMO accounting for fortification of fluid milk products.
- A provision to allow for an authorized deduction from producer payments for the administration of the California quota program by CDFA. The quota program would operate independent of the California FMMO.

This section highlights the differences between the existing CSO and the proposed California FMMO, and describes the methodology of determining the potential impact that could occur as a result of adopting the proposed California FMMO. Instances where certain features of the proposed California FMMO could not be modeled are noted.

A. Classification

The proposed California FMMO would adopt the uniform classification provisions of the 10 existing FMMOs.

The table below provides a basic comparison of CSO classes and the uniform FMMO classes.

CSO Class	Proposed California FMMO Class
Class 1	Class I
Class 2 & 3	Class II
Class 4b	Class III
Class 4a	Class IV

Under the proposed California FMMO, the classification of certain products would change to align with uniform FMMO classification:

- Reassigning buttermilk from CSO Class 2 to FMMO Class I.
- Reassigning half and half from CSO Class 1 to FMMO Class II.
- Reassigning eggnog from CSO Class 2 to FMMO Class I. This change is not accounted for in the model due to lack of available data.
- Reassigning nonfat solids and condensed solids used in fortifying fluid milk products from CSO Class 1 to FMMO Class IV.
- Reassigning the Class I skim volume increase due to fortifying fluid milk products from CSO Class 4a to FMMO Class I.
- There are numerous instances where the CSO classifies products based on product type and location of where the product is sold. The proposed California FMMO would classify all products based solely on product type. This change is not accounted for in the model due to lack of available data.

[6] "Uniform" in this and other similar cases refers to provisions that are uniform across all Federal milk marketing orders.

B. Pricing

The proposed California FMMO would replace current CSO classified price formulas with uniform end-product pricing formulas currently used in the 10 existing FMMOs. In this analysis, FMMO pricing formulas are used to calculate the Class I, II, III and IV prices. Therefore, the component and Class II, III, and IV prices under the proposed California FMMO are uniform with the existing FMMOs. In this analysis, Class I prices are computed using the same base price used in the existing FMMOs and adjusted based on the Class I differential of the county where the plant is located.

Under the proposed California FMMO, producer prices would be computed the same as current FMMOs under multiple component pricing using the protein, other solids, and butterfat prices from the Class III price formulas and a producer price differential. The producer price differential would be announced at the principle pricing point of Los Angeles County, California ($2.10), and adjusted based on the location of the plant using the uniform FMMO Class I differentials. The Class I price in this analysis is shown for the principle pricing point. California FMMO producer blend prices have been calculated at 3.5 percent butterfat and at test.[7]

C. Pooling

Currently the CSO requires almost all California Grade A milk received at a California plant to be pooled.

The proposed California FMMO contains performance-based pooling standards conceptually similar to the 10 existing FMMOs, but tailored for the California market. The recommended pooling provisions are designed to determine those producers whose milk is consistently available to supply the Class I market, and therefore should share in the revenues from the market. There would be no regulatory producer payment difference given to milk based on the location of the dairy farm where it was produced.

The proposed California FMMO would fully regulate all Class I distributing plants with route disposition into the marketing area of at least 25 percent of the milk received at the plant. Handlers have the option to pool their Class II, III and IV milk receipts if a minimum of 10 percent of the Grade A milk received at the plant is shipped to qualified pool distributing plants.

Additionally, during the months of April through February, milk pooled by handlers may not exceed 125 percent of the producer milk receipts the handler pooled during the previous month. For March, the limit would be 135 percent.

The pooling provisions in the proposed California FMMO are similar to those in the Upper Midwest FMMO, which, like California, has a high share of manufacturing milk. Under the current CSO, generally all milk is pooled and therefore no data is available to estimate the volume of milk handlers would opt not to pool on the proposed California FMMO. In order to incorporate those handler decisions into the Regional Econometric Model, a separate pooling analysis was conducted to estimate monthly volumes of

[7] The blend prices are a weighted average of the class prices, weighted by their utilization, for all FMMOs. The statistical uniform price is calculated as either the Class III price plus the producer price differential (PPD) (for FMMOs 1, 30, 32, 33, 124, and 126) or as 0.965 times the uniform skim price plus 3.5 times the uniform butterfat price (for FMMOs 5, 6, 7, and 131). Therefore using the actual test or the standardized 3.5 test can make a large difference in the resulting number. The utilization changes can also impact the results. Utilization is influenced by many factors such as blend prices and milk movements. See model documentation for further information.

milk not pooled. The methodology used January 2007[8] through April 2015 data on Upper Midwest manufacturers' monthly milk pooling decisions to evaluate how those decisions changed based on class-to-uniform price relationships.[9] This pooling analysis revealed that manufacturers in the Upper Midwest choose to pool less milk when their Class II, III, or IV price was high relative to the uniform price. The model assumes California manufacturers would respond to the same incentives in the same manner under the proposed California FMMO. The model also assumes, as in other FMMOs, milk not pooled on the California FMMO is included in the unregulated pool (see model documentation for more details).

The Regional Econometric Model is an annual model. However, pooling decisions are made monthly based on class-to-uniform price relationships. Therefore, the pooling analysis used observed monthly pooling decisions, historical monthly variations, and annual prices to estimate how much milk of each class is pooled and not pooled annually.

The pooling analysis estimated, on average, approximately 40 percent of milk normally pooled per year on the proposed California FMMO would not be pooled because of class–to-uniform price relationships. On a classified-use basis, the analysis estimated 51 percent of Class II, 31 percent of Class III, and 50 percent of Class IV milk normally pooled per year would not be pooled because of price.

The pooling analysis accounted for the Class I differential surface in the proposed California FMMO that has a $0.50 range, compared to the $0.20 range in the Upper Midwest FMMO.

D. Out-of-State Milk

The CSO does not have the authority to regulate interstate commerce; therefore milk produced outside of the state is ineligible to participate in the CSO.

The proposed California FMMO recommends performance-based pooling standards tailored to the California market. Milk meeting these standards would be eligible for pooling, regardless of its origin. Therefore, milk produced outside of California could become eligible to participate in the proposed California FMMO and receive the order's blend price. For the purpose of this analysis, volumes of out-of-state milk entering California are expected to remain at current levels.

The following assumptions are made in the model:

- The most recent three-year average of out-of-state milk movements is used for the forecast period.

[8] This analysis starts at 2007 because that is the first full year after the most recent pooling standards were enacted in the Upper Midwest FMMO.

[9] The following econometric relationships were found between milk not pooled and the monthly class-uniform price difference in the Upper Midwest FMMO ('milk not pooled' includes only milk that is 'normally' pooled):
Class II milk not pooled/Class II milk pooled = 0.979126 - (0.60639x (Uniform Price – Class II Price))
Class III milk not pooled/Class III milk pooled = 0.299307 - (0.5523x (Uniform Price – Class III Price))
Class IV milk not pooled/Class IV milk pooled = 1.269121 - (0.58097x (Uniform Price – Class IV Price))
There is greater than 99.99 percent statistical confidence that there is a positive relationship between the price difference and the amount of milk pooled, for each class. The 'R-squared' of the equations are 0.6630, 0.4392, and 0.4864 for the Class II, III, and IV equations, respectively.

- The model baseline accounts for out-of-state milk sold into California, but not regulated by the CSO, in the unregulated pool.[10]
- Under the proposed California FMMO, out-of-state milk movements into California are removed from the unregulated region and are pooled as Class I milk on a California FMMO.

E. Producer-Handlers

The proposed California FMMO would adopt the uniform FMMO producer-handler provisions contained in the 10 existing FMMOs. Under the proposed California FMMO, producer-handlers who have Class I packaged sales of less than 3 million pounds per month and who do not take delivery of more than 150,000 pounds of milk from other regulated handlers would be exempt from pricing and pooling provisions. Handlers not meeting this standard would not be granted producer-handlers status under the proposed California FMMO.

This analysis assumes smaller producer-handlers, referred to as Option 66 producer-handlers by the CSO, would meet the FMMO producer-handler provision and would therefore remain unregulated. The analysis also assumes current CSO producer-handlers exceeding the 3 million pound per month threshold, referred to as Option 70 producer-handlers by the CSO, would become fully regulated handlers, and accordingly all their milk would be priced and pooled under the proposed California FMMO.

F. Fortification Allowances

Currently, handlers regulated by the CSO receive a credit against their pooling obligations for fortifying fluid milk products with either condensed skim milk or nonfat dry milk.

Under the proposed California FMMO and in this analysis, California handlers would no longer receive credits for fluid milk fortification. Instead, accounting for fortification would be uniform with existing FMMOs. The classification of the fluid milk equivalent of the milk solids used to fortify fluid milk products would be classified as Class IV and the increased volume of Class I product due to fortification would be classified as Class I.

G. Transportation Allowances and Credits

Currently, the CSO provides for transportation credits to handlers on plant-to-plant milk movements and transportation allowances to producers for milk movements between farms and Class 1, 2 or 3 plants.

The proposed California FMMO does not contain a transportation credit or transportation allowance program. In this analysis, the values of the CSO transportation credit and allowance programs included in the baseline are not subtracted out of the marketwide pool value before calculating the uniform prices.

H. Quota

The California quota program is a state-administered program that entitles the quota holder to an additional $0.195 per pound of solids-not-fat (SNF) above the CSO overbase price. The money to pay the quota premium is deducted from the CSO marketwide pool before the CSO overbase price is calculated.

[10] Published CDFA data includes out-of-state Class 1 milk sold into California in its CSO Class 1 sales data. The Regional Econometric Model baseline removes those out-of-state Class 1 volumes from the California data for inclusion in the unregulated pool.

The proposed California FMMO finds that the quota program, including both regular and exempt quota, should remain entirely within the jurisdiction of CDFA and its proper recognition under the proposed California FMMO would be through an "authorized deduction"[11] from payments due to producers. Therefore in this analysis, the quota premium is not removed from marketwide pool before the California FMMO blend price is computed.

The proposed California FMMO recommends uniform producer prices. Separate quota and non-quota producer prices would not be announced and consequently they are not calculated in this analysis. In the proposed California FMMO and in this analysis, monies used to fund the California quota program would be collected from all California producers and transferred to quota-holders. No additional revenue would be added or subtracted from the California marketwide pool due to the quota payments. That is, the total revenue for California dairy producers and the average California all-milk price would be uniform, whether or not it is allocated between quota holders and non-quota holders.

III. ANALYSIS OF THE IMPACTS

A. Introduction

This section summarizes the estimated impacts from the adoption of the proposed California FMMO. These impacts are described as deviations from the Regional Econometric Model baseline as adapted from the USDA Agricultural Baseline Projections and adjusted for the California Class 4b dry whey pricing factors which were made permanent in 2016.

The economics and structure of the Regional Econometric Model used in this analysis are the same as for the Preliminary Economic Impact Analysis. However, the results presented here are not comparable to the results presented in the Preliminary Economic Impact Analysis for several reasons:

1. The proposed California FMMO recommends a package of provisions that are different than any of the four industry-submitted proposals examined in the Preliminary Economic Impact Analysis.
2. A new USDA baseline was published in February 2016, with estimates to 2025. The baseline utilized in the Preliminary Economic Impact Analysis was based on the USDA baseline to 2024 published in February 2015.
3. Model equations were re-estimated to include 2014 data. The structure and economics of the model remain fundamentally the same.
4. The dry whey pricing factors reflecting current CDFA policy are incorporated into the model baseline. These dry whey pricing factors were not permanent policy when the USDA baseline to 2025 was finalized.

B. Impacts on Dairy Farmers

To evaluate the impact of the proposed California FMMO on dairy farmers, changes in statistical uniform blend prices at 3.5 percent butterfat (3.5 percent BF) and at test are considered (Tables B1 and B2, respectively). Also, changes in dairy product prices (Table B3), all-milk prices (Table B4), milk production (Table B5), total milk marketings (Table B6), and producer revenue (Table B7) in the 14 supply regions are considered.

[11] An "authorized deduction" is a deduction from a handler's payment to a producer or cooperative association, authorized by the producer or the cooperative or by other legal authority that is not counted against the handler's obligation to pay a minimum value to the producer. Examples include payment of promotional assessments or for reasonable hauling charges.

The analysis shows that adoption of the proposed California FMMO would increase the California statistical uniform milk price at 3.5 percent BF in each year analyzed and by an average of $0.13 per hundredweight (cwt) over 2017 through 2025 (Table B1).[12]

The Upper Midwest and Southwest FMMO statistical uniform prices also increase in each year, with an average increase of $0.47 per cwt and $0.18 per cwt, respectively, over the forecast period. Five regions (Florida, Southeast, Central, Mideast, and Pacific Northwest) show variable impacts to their respective statistical uniform prices in each year, but are higher on average over the forecast period. In contrast, the Northeast, Appalachian, and Arizona FMMO statistical uniform prices average, $0.07, $0.05, and $0.21 per cwt lower, respectively, over the forecast period.

Under the proposed California FMMO, California blend prices at test for 2017-2025 show an average annual increase of $0.52 per cwt over the baseline (Table B2). **The impact on producer prices may be more clearly reflected by changes in blend prices at test (relative to the statistical uniform price) because these prices account for changes in component values and utilization.**

The Upper Midwest and Southwest FMMOs also show increased average blend prices at test, $0.50 and $0.28 per cwt, respectively. The remaining regions show blend price impacts ranging from -$0.21 to $0.13 per cwt, on average, over the forecast time period.

Driving the changes in classified milk prices are the changes in the dairy product prices due to adoption of the proposed California FMMO (Table B3). Cheddar cheese and dry whey prices increase on average $0.0618 and $0.0255 per pound, respectively, over 2017-2025. Conversely, butter and nonfat dry milk prices decrease an average of $0.2127 and $0.0073 per pound, respectively, over 2017-2025. The analysis reveals that reduced cheese production from California pool milk contributes to increased cheese and whey prices nationally, while more California milk going into butter and powder production leads to decreased prices for these products nationally.

Blend price increases are estimated in FMMOs with relatively higher Class III utilization (Upper Midwest, Southwest and Appalachian), while in 6 of the 7 remaining FMMOs, the average blend prices decrease (Central, Arizona, Northeast, Mideast, Pacific Northwest, Southeast), with Florida averaging no change. Blend prices are affected by class prices, fat test percentages, and the class utilization. Changes from the baseline in average utilizations are shown below. The utilization changes are averaged over the 2017-2025 forecast period.

Average Forecast Utilization Changes, 2017-2025

Federal Order	Utilizations			
	Class I	Class II	Class III	Class IV
FO 1	-0.06%	0.17%	-0.04%	-0.07%
FO 5	-2.56%	1.64%	0.88%	0.04%
FO6	-0.72%	0.61%	-0.15%	0.25%
FO 7	-1.39%	-0.08%	1.63%	-0.16%
FO 30	-0.29%	0.03%	0.14%	0.13%
FO 32	1.23%	-0.61%	0.48%	-1.10%
FO 33	-0.11%	0.06%	0.03%	0.01%

[12] In this analysis, the proposed California FMMO statistical uniform price is computed as the FMMO Class III price plus the California FMMO producer price differential (PPD).

FO 124	0.66%	-0.06%	-0.51%	-0.08%
FO 126	-1.85%	0.11%	1.48%	0.26%
FO 131	0.05%	-0.20%	1.23%	-1.08%
FO 51[13]	7.91%	-0.43%	-3.60%	-3.89%

Forecast changes from the baseline for fat, SNF protein and other solids tests by adoption of the proposed California FMMO are shown below. Changes in the average tests reflect changes in pool utilization, not in the average tests of producer milk. Forecast FMMO component test changes account for changes in the component tests of pooled milk. Forecast California component test changes account for both the ability of milk not to be pooled on the proposed California FMMO and the resulting change in class utilizations. Therefore, forecast California component test changes are not included in this table as they are not comparable to the other FMMOs.

Average Fat, SNF, Protein, and Other Solids Tests Changes, 2017-2025

Federal Order	Average Fat Test	Average SNF Test	Average Protein Test	Average Other Solids Test
FO 1	0.00%	-0.0003%	0.0000%	-0.0003%
FO 5	0.16%	-	-	-
FO6	0.10%	-	-	-
FO 7	0.03%	-	-	-
FO 30	0.03%	-0.0024%	0.0000%	-0.0024%
FO 32	-0.07%	0.0060%	0.0000%	0.0060%
FO 33	0.00%	-0.0004%	0.0000%	-0.0004%
FO 124	-0.02%	0.0010%	0.0000%	0.0010%
FO 126	0.04%	-0.0037%	0.0000%	-0.0037%
FO 131	0.04%	-	-	-

The analysis estimates that adoption of the proposed California FMMO increases the United States all-milk price in each year forecast, averaging $0.21 per cwt higher over the 2017-2025 period (Table B4). The analysis forecasts that California, Upper Midwest, the Former Western region (covering parts of Utah, Idaho, and Nevada), Southwest and Appalachian regions have higher all-milk prices, averaging $0.48, $0.47, $0.43, $0.26, and $0.13 per cwt higher, respectively, over the forecast period. The remaining regions show varying impacts to all-milk price in the years 2017-2025.

The higher milk prices forecast in this analysis encourage increased United States milk production with an annual average increase of 1.45 billion pounds above the baseline over 2017-2025 (Table B5). Five regions show higher milk production over all the forecast years, led by the Upper Midwest averaging 720 million pounds, followed by California with 350 million pounds; Southwest, the Former Western region, and Florida each averaged a 280, 190 and 10 million pound increase, respectively, over the baseline. The analysis estimates varying impacts to the remaining regions over the forecast period.

The impact of the proposed California FMMO on milk marketings (Table B6), which are defined as milk production less farm use of milk, follow the same pattern as estimated for milk production.

[13] The proposed California FMMO would be 7 CFR part 1051 (referred to in this table as FO 51).

The analysis estimates that adoption of a California FMMO would increase U.S. producer revenue by an average of $740 million per year (Table B7) over the 9-year forecast period. This impact reflects the combined impact of the various changes on prices and production forecasted from implementation of the proposed California FMMO. Adoption of FMMO classified prices in a California FMMO leads to higher classified prices in California which in turn leads to increased California milk production (Table B5). Adoption of the FMMO Class III price in California, which is higher than the current CSO Class 4b price, would reduce California cheese and whey production (Table B12) that is priced through the California FMMO. Forecasting California manufacturing milk uses that is not priced and pooled on the California FMMO is beyond the scope of this analysis.

The reduction of cheese and whey production that is priced and pooled through the California FMMO contributes to a national increase in their product prices and consequently an increase in the FMMO Class III price (Table B11). Further decreases are seen nationally in the Class III utilization (Table B13) from the increased FMMO Class III price (Table B9). The higher FMMO Class III price shifts milk supplies nationally from cheesemaking to increased butter and nonfat dry milk production. The increased national butter and nonfat dry milk production lead to decreased prices for these products nationally (Table B3). It is important to note that the changes in utilization forecasted should not be interpreted as reductions or increases in production. Rather, they are reduction or increases in the forecasted growth of production in the baseline[14].

The combined result of these impacts is an increase of $740 million in annual average U.S. producer revenue (Table B7). The model forecasts a decline in net exports of approximately $3.95 million annually through the forecast period (Tables B17 and B18). Since the net trade revenues for the United States is less than under the baseline, the total of the increased producer revenue comes from a combination of increased net domestic consumption and higher U.S. milk prices. Lower cheese production (Table B13) is offset by higher cheese prices (Table B3) while lower butter and nonfat dry milk prices (Table B3) are offset by higher production of those respective commodities (Table B13). The FMMO classified prices proposed to be adopted as part of the California FMMO would better reflect national prices for manufactured products and local prices for fluid milk products in which California handlers already compete.

Estimating who contributes to the increase in producer revenue is beyond the capabilities of the model. However, separate analyses were conducted using model forecasted prices and quantities to estimate the breakdown of the $740 million increase in producer revenue. The consumer impact analysis is explained in Part D. That analysis estimates an annual average increase in consumer expenditure (foreign and domestic) on domestically produced dairy products of $170.3 million. This accounts for increased domestic consumer expenditure of $94.4 million for domestic consumption of domestically produced goods and increased foreign consumer expenditure of $75.9 million in American exports. Additionally, it is estimated that $272 million of increased producer revenue can be attributed to a reduction in processor and manufacturer margins.

Lastly, the model assumes a constant blend price to all-milk price relationship which means that when a forecasted blend price increases, the corresponding all-milk price increase is forecasted at the historically observed relationship. Based on these assumptions, approximately $291 million of the forecasted increase in producer revenue is attributed to this assumed constant-price relationship.

[14] The AMS Dairy Program Regional Econometric Model estimates supply and demand through a simultaneous dynamic regional econometric model. The product supplies are balanced against demand for dairy products iteratively until an equilibrium is reached year-by-year.

However, it is unlikely that the full $291 million increase will actually occur. First, the forecasted increase in cheese prices (Table B3) and corresponding changes in minimum Class III prices (Table B11) is likely to drive changes in milk pooling decisions in heavy cheese producing regions such as the Southwest and Upper Midwest. It is probable that increases in minimum Class III prices will drive manufacturers to opt to increase the amount of manufacturing milk they choose to not pool, or lower over-order premiums in response to the increase in regulated prices. Compounding the issue is the lack of data on California manufacturers' decisions to not pool milk as the California industry has operated for decades under the CSO that generally required mandatory pooling of all milk. It is especially likely that the current blend to all-milk price relationship will change under a California FMMO because milk will no longer be required to be pooled, but how that relationship will change is unknown because of a lack of historic data. Additionally, it would be reasonable to expect some volume of milk pooled by cooperatives and delivered to nonpool plants would be paid for by the nonpool plant at less than minimum FMMO prices, as FMMOs allow for such practice. Consequently, an estimated $291 million of the $740 million increase in producer revenue is most likely due to blend price to all-milk price relationship being overestimated.

C. Impacts on Fluid Milk Processors and Dairy Product Manufacturers

To evaluate the impact of adoption of the proposed California FMMO on fluid milk processors and dairy product manufacturers, Dairy Product Prices (Table B3), FMMO Component Prices (Table B8), FMMO Class Prices at 3.5 percent BF (Table B9), CA to FMMO Class Prices at 3.5 percent BF (Table B10), FMMO Class Prices at Test (Table B11), and National Class Utilization (Table B13) are considered.

This analysis forecasts that the adoption of the proposed California FMMO increases national cheddar cheese and dry whey prices and decreases national prices for butter and nonfat dry milk for the analysis period of 2017-2025 (Table B3). The analysis observes marked increases in the protein price per pound, averaging $0.47 above the baseline, accompanied by sharp declines in the butterfat price, which decrease $0.26 per pound, on average (Table B8). Nonfat solids prices range from unchanged to $0.01 per pound lower while other solids prices increase, ranging from $0.02 to $0.04 per pound higher.

The estimated changes in dairy product prices result in reductions in some FMMO component prices, in turn leading to lower FMMO Class II and Class IV prices (Table B9). The Class III price is driven upward by the higher protein price. The impact of the proposed California FMMO on class prices in California is similar – average Class I and Class III prices increase over the baseline while Class II and Class IV decrease (Table B10).[15]

With adoption of the proposed California FMMO, the analysis estimates that Class I prices at test increase in each of the existing FMMOs, from a $0.73 per cwt average increase in the Southwest to an average $0.89 per cwt increase in the Upper Midwest (Table B11). Class III prices at test also increase in most FMMOs[16], ranging from an average increase of $0.01 per cwt in the Appalachian to $0.69 per cwt in the Upper Midwest. In addition to the Upper Midwest, four other FMMOs (Central, Mideast, Pacific Northwest and Southwest) also show an average increase in Class III prices at test greater than $0.60 per cwt. Class II prices are estimated to be lower on average for all FMMOs.

[15] This analysis compares the CSO Class 1 price to the FMMO Class I price; a weighted average of the CSO Class 2 and 3 prices to the FMMO Class II price; the CSO Class 4b price to the FMMO Class III price; and, the CSO Class 4a price to the FMMO Class IV price.

[16] The Arizona Class III price decreases due to its higher Class III fat test, which is more adversely affected than other regions by the lower butter price.

In California, the analysis estimates that over the forecast period, adoption of the California FMMO would, on average, increase the California Class I price at test by $0.16 per cwt, increase the California Class III price at test by $0.63 per cwt, and increase the California Class IV price at test by $1.37 per cwt (Table B11). However, the California Class II price at test is estimated to average $0.89 per cwt lower over the same time period. The California Class II price at test decreases even though the California Class I, III, and IV prices at test increase because of the change from the CSO price formulas to the FMMO price formulas.

Minimum class prices at test are the regulated prices fluid milk processors and dairy product manufacturers must pay and are the best assessment of handler impacts (Table B11). The changes in the underlying prices (fat, skim, and component prices) and the class prices at 3.5 percent BF are uniform in all FMMOs (Table B8 and B9). Impacts forecast in the individual FMMO specific class prices at test (Table B11) are attributed to the differences in component levels for each class between the orders.

For the proposed California FMMO, California milk used in Classes II, III and IV decrease by an average of 1.014, 8.555, and 4.930 billion pounds, respectively (Table B12). The decreases in these class utilizations reflect milk that would no longer be pooled on the proposed FMMO. At the national level, both Class I and Class III utilization decrease, averaging 316 and 238 million pounds lower, respectively (Table B13). National utilization of Classes II and IV increase an annual average of 784 million and 1.223 billion pounds, respectively. The national class utilization includes estimates for utilization of unregulated milk.

Class I revenues are estimated to increase in all FMMOs, including the proposed California FMMO, over the forecast period (Table B14). The largest average increase is in California with $114.6 million. The Northeast FMMO has the second largest increase with $62.2 million. The Arizona FMMO has the smallest average increase with $7.9 million. The difference in the magnitude of the average impact is influenced by the relative change in Class I prices and the relative change in the amount of Class I milk pooled.

D. Impacts on Consumer Retail Prices

The Regional Econometric Model does not directly forecast changes in consumer retail prices. Therefore, a separate analysis was conducted to estimate consumer expenditure changes using price and utilization factors that were forecasted by the model.

In the dairy marketplace, raw milk is processed and manufactured into a multitude of products. To evaluate the total impact to consumers, consumer expenditure changes were aggregated for butter, nonfat

dry milk, American cheese, other than American cheese, dry whey, frozen products, other Class II products[17] and fluid milk[18].

In a consumer expenditure analysis, retail, not wholesale, prices are normally considered. While the Regional Econometric Model forecasts farm milk (producer) prices and wholesale prices, retail prices could not be forecasted because limited public retail price data exists.

A review of published studies analyzing price transmission was conducted. The studies analyzed both farm-to-retail and wholesale-to-retail price transmission and indicate that a 100 percent same-year price pass-through from wholesale (and Class I milk) to retail is a reasonable analytical assumption and consistent with economic theory. A list of the selected studies can be found in Appendix D.

This pass-through assumption considerably simplifies the calculation of consumer expenditure changes from changes in wholesale price and quantity. The 100 percent pass-through assumption means that the retail price and quantity changes should be equal to the wholesale price and quantity changes calculated in the Regional Econometric Model.

Forecasted changes in wholesale product prices (Table B3) and regional changes in forecasted average classified utilization (Page 9) were considered to determine the impact to consumers. As explained earlier, Cheddar cheese and dry whey prices increase on average $0.0618 and $0.0255 per pound, respectively, over 2017-2025. Conversely, butter and nonfat dry milk prices decrease an average of $0.2127 and $0.0073 per pound, respectively, over 2017-2025.

Based on the assumptions outlined above, this analysis forecasts a $174.2 million annual average increase in domestic consumer expenditures. The impact is accounted for through an annual average increase of $94.4 million in domestic consumer expenditure on domestically produced products and an annual average increase of $79.8 million in domestic consumer expenditure on imports.[19] To the extent

[17] Other Class II total solids and frozen total solids use Consumer Price Indices (CPIs) in the model as their proxy prices. The CPIs were converted to a 2016 base year using the following calculated prices and conversion factors:

- The simple average of Dairy Market News (DMN) National Dairy Bi-Weekly market report in 2016 of ice cream, Greek yogurt and yogurt.
- A 40 percent market share for Greek yogurt based on the Yogurt Market (Product-Traditional, Australian, Icelandic, Greek, Non-dairy, and Kids; Packaged Containers – Cups, Pouch, Tubs, and Bottles)) – North America Industry Analysis, Size, Share, Growth, Trends, and Forecast 2016-2024 (see http://www.transparencymarketresearch.com/yogurt-market.html) and weighted the Greek yogurt by the 40 percent.
- A simple average of the bi-weekly ice cream and weighted yogurt prices were used to create an annual average for the respective products.
- The DMN ice cream prices are for a range of 48-64 ounces. This range was averaged at 56 ounces.
- Conversion factors for ice cream total solids were sourced from Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products (see http://www.carolinafarmstewards.org/wp-content/uploads/2015/05/Weights-Measures-and-Conversion-Factors-for-Agricultural-Commodities-and-Their-Products.pdf).
- Conversion factors for yogurt total solids were sourced from Evaluation the Effect of Milk Total Solids on the Relationship Between Growth and Activity of Starter Cultures and Quality of Concentrated Yogurt (see http://www.idosi.org/aejaes/jaes2(5)/20.pdf).

[18] The national fluid value includes the value of fluid milk in the unregulated pool which is assumed to be the national class I base price plus the $1.60 FMMO base differential.

[19] The increase in domestic consumer expenditures ($174.2 million) is slightly more than the forecasted increase in domestic producer revenue attributed to increased consumer expenditures ($170.3 million) that was described earlier in this analysis. The increase in producer revenue attributed to increases in consumer expenditures includes an increase of$94.4 million for domestic consumption of domestically produced goods and increased foreign consumer

reductions in processor margins can be passed onto consumers, increased consumer expenditures and decreased impacts to processors and manufacturers would result.

On a classified basis, it is estimated that consumer expenditures on Class IV products (butter and nonfat dry milk) would decrease by $607.9 million, consumer expenditures on Class III products (American cheese, other than American cheese and dry whey) would increase by $528.8 million, consumer expenditures on Class II products (frozen products and other Class II products) would increase by $11.88 million, and Class I (fluid milk) would increase by $241.5 million, on an annual average basis over the forecasted time period.

Consumer impacts due to changes to fluid milk prices have been estimated by region:

Fluid Milk Retail Price Impact[20]

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average
NE	$/Gal.	0.11	0.08	0.06	0.05	0.04	0.05	0.06	0.07	0.07	0.07
AP	$/Gal.	0.11	0.08	0.06	0.05	0.04	0.05	0.06	0.07	0.07	0.07
SE	$/Gal.	0.10	0.08	0.06	0.05	0.04	0.05	0.06	0.07	0.07	0.06
FL	$/Gal.	0.10	0.08	0.06	0.05	0.04	0.05	0.06	0.07	0.07	0.06
UM	$/Gal.	0.11	0.09	0.07	0.06	0.05	0.06	0.08	0.08	0.08	0.08
CE	$/Gal.	0.11	0.09	0.06	0.06	0.05	0.06	0.07	0.07	0.07	0.07
ME	$/Gal.	0.11	0.09	0.06	0.06	0.05	0.06	0.07	0.07	0.07	0.07
PN	$/Gal.	0.11	0.09	0.06	0.05	0.04	0.05	0.07	0.07	0.07	0.07
SW	$/Gal.	0.10	0.08	0.06	0.05	0.04	0.05	0.06	0.06	0.06	0.06
AZ	$/Gal.	0.11	0.08	0.06	0.05	0.04	0.05	0.06	0.07	0.07	0.07
CA	$/Gal.	0.05	0.04	0.02	0.01	0.00	0.00	0.01	0.01	0.00	0.01
UNREG	$/Gal.	0.05	0.04	0.01	0.00	-0.01	0.00	0.01	0.02	0.02	0.02
Average	$/Gal.	0.10	0.08	0.05	0.05	0.03	0.04	0.06	0.06	0.06	0.06

E. Impacts on International Trade

Because of the bulky and perishable nature of packaged fluid milk, most international trading of dairy products is in manufactured products. The analysis estimates decreased imports of butter (Table B15) and increased exports of butter and nonfat dry milk (Table B16) due to decreases in butter and nonfat dry milk prices (Table B3) if the proposed California FMMO is adopted.

expenditure of $75.9 million in American exports. These revenue streams are returned to the domestic dairy producer. Whereas increases in domestic consumer expenditures includes expenditures on imports instead of exports because the money spent by domestic consumers on imported dairy products is returned to dairy farmers of the importing country.

[20] Results assume milk contains 2 percent butterfat.

The model forecasts a decline in net exports of approximately $3.95 million annually through the forecast period (Tables B17 and B18). However, because international prices are held constant in the model, the forecasted trade impact should be interpreted as the upper limit. It is reasonable to assume that cheese and dry whey manufacturers in the United States will continue to export at the higher product prices, although in less quantity to close neighbors where transportation costs are favorable to the United States and where importers have a clear preference for cheese and dry whey produced in the United States.

F. Summary

This analysis finds that throughout 2017-2025, adoption of the proposed California FMMO could increase California blend prices at test, which would increase the California all-milk price and California milk production, in turn increasing California producer revenues. The increase in California production causes an increase in U.S. milk production, which has variable impact on product prices and blend prices across the United States.

IV. APPENDIX A: ABBREVIATIONS

AP:	Appalachian
AMS:	Agricultural Marketing Service
AZ:	Arizona
CA:	California
CDFA:	California Department of Food and Agriculture
CE:	Central
FL:	Florida
FMMO:	Federal Milk Marketing Order
FW:	Former Western
HIAK:	Hawaii and Alaska
ME:	Mideast
NE:	Northeast
PPD:	Producer Price Differential
SE:	Southeast
SW:	Southwest
UM:	Upper Midwest
UNREG:	Unregulated pool
UW:	Unregulated West
U.S.:	United States

V. APPENDIX B: TABLES

TABLE B1—Statistical uniform prices at 3.5% BF, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
NE Statistical Uniform Price	$/CWT	0.28	0.16	-0.05	-0.16	-0.29	-0.20	-0.14	-0.13	-0.13	-0.07	-0.29	0.28
AP Statistical Uniform Price	$/CWT	0.42	0.19	-0.05	-0.16	-0.31	-0.19	-0.11	-0.11	-0.10	-0.05	-0.31	0.42
FL Statistical Uniform Price	$/CWT	0.63	0.36	0.05	-0.07	-0.23	-0.09	0.05	0.08	0.10	0.10	-0.23	0.63
SE Statistical Uniform Price	$/CWT	0.46	0.33	0.12	0.00	-0.14	-0.06	0.00	0.00	-0.01	0.08	-0.14	0.46
UM Statistical Uniform Price	$/CWT	0.73	0.69	0.62	0.50	0.44	0.39	0.31	0.31	0.26	0.47	0.26	0.73
CE Statistical Uniform Price	$/CWT	0.41	0.34	0.16	0.03	-0.10	-0.06	-0.07	-0.10	-0.12	0.06	-0.12	0.41
ME Statistical Uniform Price	$/CWT	0.39	0.28	0.09	-0.03	-0.16	-0.12	-0.11	-0.11	-0.13	0.01	-0.16	0.39
PN Statistical Uniform Price	$/CWT	0.33	0.24	0.09	-0.01	-0.11	-0.07	-0.07	-0.07	-0.08	0.03	-0.11	0.33
SW Statistical Uniform Price	$/CWT	0.47	0.39	0.25	0.14	0.05	0.08	0.08	0.09	0.08	0.18	0.05	0.47
AZ Statistical Uniform Price	$/CWT	0.18	0.05	-0.15	-0.27	-0.40	-0.34	-0.32	-0.33	-0.33	-0.21	-0.40	0.18
CA Statistical Uniform Price	$/CWT	0.22	0.19	0.08	0.06	0.02	0.11	0.12	0.16	0.25	0.13	0.02	0.25

TABLE B2—Blend prices at test, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
NE Blend Price	$/CWT	0.25	0.13	-0.10	-0.22	-0.36	-0.27	-0.21	-0.20	-0.21	-0.13	-0.36	0.25
AP Blend Price	$/CWT	0.83	0.50	0.10	-0.07	-0.32	-0.16	0.03	0.11	0.18	0.13	-0.32	0.83
FL Blend Price	$/CWT	0.68	0.41	0.00	-0.14	-0.36	-0.22	-0.11	-0.11	-0.11	0.00	-0.36	0.68
SE Blend Price	$/CWT	0.40	0.22	-0.11	-0.25	-0.43	-0.24	-0.08	-0.02	0.04	-0.05	-0.43	0.40
UM Blend Price	$/CWT	0.83	0.77	0.68	0.54	0.45	0.40	0.31	0.29	0.24	0.50	0.24	0.83
CE Blend Price	$/CWT	0.33	0.15	-0.08	-0.25	-0.43	-0.38	-0.37	-0.40	-0.42	-0.21	-0.43	0.33
ME Blend Price	$/CWT	0.35	0.22	0.01	-0.16	-0.32	-0.28	-0.27	-0.29	-0.32	-0.12	-0.32	0.35
PN Blend Price	$/CWT	0.26	0.17	0.00	-0.13	-0.24	-0.20	-0.20	-0.20	-0.20	-0.08	-0.24	0.26
SW Blend Price	$/CWT	0.62	0.52	0.36	0.23	0.13	0.17	0.17	0.18	0.16	0.28	0.13	0.62
AZ Blend Price	$/CWT	0.15	0.06	-0.13	-0.25	-0.38	-0.31	-0.28	-0.27	-0.27	-0.19	-0.38	0.15
CA Blend Price	$/CWT	0.58	0.55	0.44	0.42	0.38	0.50	0.53	0.58	0.68	0.52	0.38	0.68

TABLE B3—Dairy product prices, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Cheddar Cheese	$/LBS	0.0796	0.0796	0.0784	0.0680	0.0651	0.0570	0.0453	0.0447	0.0388	0.0618	0.0388	0.0796
Butter	$/LBS	-0.1499	-0.1677	-0.2105	-0.2354	-0.2667	-0.2385	-0.2206	-0.2172	-0.2078	-0.2127	-0.2667	-0.1499
Nonfat Dry Milk	$/LBS	-0.0112	-0.0079	-0.0095	-0.0068	-0.0073	-0.0060	-0.0058	-0.0059	-0.0050	-0.0073	-0.0112	-0.0050
Dry Whey	$/LBS	0.0357	0.0337	0.0328	0.0280	0.0265	0.0228	0.0176	0.0174	0.0152	0.0255	0.0152	0.0357

TABLE B4—All-milk price, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
U.S. All-Milk Price	$/CWT	0.49	0.41	0.26	0.15	0.06	0.11	0.12	0.13	0.13	0.21	0.06	0.49
NE All-Milk Price	$/CWT	0.23	0.12	-0.09	-0.20	-0.33	-0.24	-0.19	-0.18	-0.18	-0.12	-0.33	0.23
AP All-Milk Price	$/CWT	0.78	0.48	0.10	-0.06	-0.30	-0.15	0.03	0.10	0.16	0.13	-0.30	0.78
FL All-Milk Price	$/CWT	0.63	0.39	0.00	-0.13	-0.34	-0.21	-0.11	-0.11	-0.11	0.00	-0.34	0.63
SE All-Milk Price	$/CWT	0.38	0.20	-0.10	-0.24	-0.41	-0.23	-0.08	-0.02	0.04	-0.05	-0.41	0.38
UM All-Milk Price	$/CWT	0.78	0.73	0.64	0.50	0.43	0.38	0.29	0.28	0.23	0.47	0.23	0.78
CE All-Milk Price	$/CWT	0.29	0.14	-0.07	-0.23	-0.38	-0.35	-0.33	-0.36	-0.38	-0.19	-0.38	0.29
ME All-Milk Price	$/CWT	0.33	0.21	0.01	-0.15	-0.30	-0.26	-0.25	-0.26	-0.29	-0.11	-0.30	0.33
PN All-Milk Price	$/CWT	0.24	0.16	0.00	-0.12	-0.23	-0.19	-0.19	-0.19	-0.19	-0.08	-0.23	0.24
SW All-Milk Price	$/CWT	0.56	0.46	0.34	0.21	0.12	0.15	0.15	0.17	0.15	0.26	0.12	0.56
AZ All-Milk Price	$/CWT	0.14	0.06	-0.12	-0.23	-0.36	-0.29	-0.26	-0.25	-0.25	-0.17	-0.36	0.14
CA All-Milk Price	$/CWT	0.55	0.53	0.41	0.39	0.35	0.46	0.48	0.53	0.62	0.48	0.35	0.62
FW All-Milk Price	$/CWT	0.50	0.48	0.37	0.35	0.31	0.41	0.43	0.48	0.56	0.43	0.31	0.56
UW All-Milk Price	$/CWT	0.23	0.10	-0.05	-0.18	-0.29	-0.26	-0.25	-0.27	-0.28	-0.14	-0.29	0.23
HIAK All-Milk Price	$/CWT	-0.15	-0.31	-0.49	-0.66	-0.83	-0.93	-1.00	-1.05	-1.08	-0.72	-1.08	-0.15

TABLE B5—Milk production, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
U.S. Milk Production	Bil. LBS	0.41	0.96	1.21	1.40	1.47	1.64	1.83	1.97	2.12	1.45	0.41	2.12
NE Milk Production	Bil. LBS	0.00	0.02	0.02	0.00	-0.02	-0.04	-0.04	-0.04	-0.04	-0.01	-0.04	0.02
AP Milk Production	Bil. LBS	0.03	0.03	0.00	-0.01	-0.01	-0.01	0.00	0.01	0.01	0.00	-0.01	0.03
FL Milk Production	Bil. LBS	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01
SE Milk Production	Bil. LBS	0.08	0.04	-0.02	-0.05	-0.08	-0.04	-0.01	0.00	0.01	-0.01	-0.08	0.08
UM Milk Production	Bil. LBS	0.00	0.30	0.54	0.73	0.86	0.95	1.01	1.05	1.08	0.72	0.00	1.08
CE Milk Production	Bil. LBS	0.00	0.03	0.04	0.03	0.01	-0.03	-0.06	-0.09	-0.12	-0.02	-0.12	0.04
ME Milk Production	Bil. LBS	0.08	0.07	0.01	-0.04	-0.08	-0.08	-0.08	-0.08	-0.09	-0.03	-0.09	0.08
PN Milk Production	Bil. LBS	0.01	0.02	0.02	0.01	0.00	-0.02	-0.02	-0.03	-0.04	-0.01	-0.04	0.02
SW Milk Production	Bil. LBS	0.02	0.13	0.21	0.27	0.31	0.34	0.38	0.41	0.45	0.28	0.02	0.45
AZ Milk Production	Bil. LBS	0.00	0.01	0.01	-0.01	-0.02	-0.03	-0.04	-0.05	-0.05	-0.02	-0.05	0.01
CA Milk Production	Bil. LBS	0.12	0.21	0.26	0.30	0.33	0.38	0.44	0.50	0.57	0.35	0.12	0.57
FW Milk Production	Bil. LBS	0.06	0.09	0.11	0.14	0.17	0.21	0.25	0.30	0.35	0.19	0.06	0.35
UW Milk Production	Bil. LBS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	0.00	-0.01	0.00
HIAK Milk Production	Bil. LBS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE B6—Milk marketings, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
U.S. Marketings	Bil. LBS	0.41	0.96	1.21	1.40	1.47	1.64	1.83	1.97	2.12	1.45	0.41	2.12
NE Marketings	Bil. LBS	0.00	0.02	0.02	0.00	-0.02	-0.04	-0.04	-0.04	-0.03	-0.01	-0.04	0.02
AP Marketings	Bil. LBS	0.03	0.03	0.00	-0.01	-0.01	-0.01	0.00	0.01	0.01	0.00	-0.01	0.03
FL Marketings	Bil. LBS	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01
SE Marketings	Bil. LBS	0.08	0.04	-0.02	-0.05	-0.08	-0.04	-0.01	0.00	0.01	-0.01	-0.08	0.08
UM Marketings	Bil. LBS	0.00	0.30	0.54	0.73	0.85	0.94	1.01	1.05	1.08	0.72	0.00	1.08
CE Marketings	Bil. LBS	0.00	0.03	0.04	0.03	0.01	-0.03	-0.06	-0.09	-0.12	-0.02	-0.12	0.04
ME Marketings	Bil. LBS	0.08	0.07	0.01	-0.04	-0.08	-0.08	-0.07	-0.08	-0.08	-0.03	-0.08	0.08
PN Marketings	Bil. LBS	0.01	0.02	0.02	0.01	0.00	-0.02	-0.02	-0.03	-0.04	-0.01	-0.04	0.02
SW Marketings	Bil. LBS	0.02	0.13	0.21	0.27	0.31	0.34	0.37	0.41	0.45	0.28	0.02	0.45
AZ Marketings	Bil. LBS	0.00	0.01	0.01	-0.01	-0.02	-0.03	-0.04	-0.04	-0.05	-0.02	-0.05	0.01
CA Marketings	Bil. LBS	0.12	0.21	0.26	0.30	0.33	0.38	0.44	0.50	0.57	0.35	0.12	0.57
FW Marketings	Bil. LBS	0.06	0.09	0.11	0.14	0.17	0.21	0.25	0.30	0.35	0.19	0.06	0.35
UW Marketings	Bil. LBS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	0.00	-0.01	0.00
HIAK Marketings	Bil. LBS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE B7—Producer revenue, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
U.S. Producer Revenue	Bil. $	1.12	1.06	0.78	0.60	0.42	0.58	0.63	0.71	0.77	0.74	0.42	1.12
NE Producer Revenue	Bil. $	0.07	0.04	-0.02	-0.06	-0.09	-0.07	-0.06	-0.06	-0.06	-0.04	-0.09	0.07
AP Producer Revenue	Bil. $	0.04	0.03	0.00	0.00	-0.02	-0.01	0.00	0.01	0.01	0.01	-0.02	0.04
FL Producer Revenue	Bil. $	0.02	0.01	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	0.02
SE Producer Revenue	Bil. $	0.03	0.01	-0.01	-0.02	-0.03	-0.02	-0.01	0.00	0.00	0.00	-0.03	0.03
UM Producer Revenue	Bil. $	0.33	0.38	0.39	0.36	0.37	0.37	0.35	0.36	0.35	0.36	0.33	0.39
CE Producer Revenue	Bil. $	0.05	0.03	-0.01	-0.04	-0.07	-0.07	-0.08	-0.09	-0.11	-0.04	-0.11	0.05
ME Producer Revenue	Bil. $	0.08	0.06	0.00	-0.04	-0.08	-0.08	-0.08	-0.08	-0.09	-0.03	-0.09	0.08
PN Producer Revenue	Bil. $	0.02	0.02	0.00	-0.01	-0.03	-0.03	-0.03	-0.03	-0.03	-0.01	-0.03	0.02
SW Producer Revenue	Bil. $	0.11	0.11	0.10	0.09	0.08	0.09	0.10	0.12	0.12	0.10	0.08	0.12
AZ Producer Revenue	Bil. $	0.01	0.00	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.03	-0.01	-0.03	0.01
CA Producer Revenue	Bil. $	0.26	0.27	0.23	0.23	0.22	0.29	0.32	0.36	0.42	0.29	0.22	0.42
FW Producer Revenue	Bil. $	0.10	0.10	0.09	0.09	0.09	0.12	0.14	0.16	0.19	0.12	0.09	0.19
UW Producer Revenue	Bil. $	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HIAK Producer Revenue	Bil. $	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE B8—FMMO component prices, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Butterfat Price	$/CWT	-0.18	-0.20	-0.25	-0.29	-0.32	-0.29	-0.27	-0.26	-0.25	-0.26	-0.32	-0.18
Nonfat Solids Price	$/CWT	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	0.00
Protein Price	$/CWT	0.45	0.47	0.52	0.52	0.55	0.49	0.43	0.42	0.39	0.47	0.39	0.55
Other Solids Price	$/CWT	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.04
Somatic Cell Adjuster	$/CWT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

TABLE B9—FMMO class prices at 3.5% BF, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Class I Price	$/CWT	0.91	0.64	0.28	0.14	-0.04	0.13	0.31	0.36	0.38	0.34	-0.04	0.91
Class I Fat Price	$/CWT	-0.18	-0.20	-0.25	-0.29	-0.32	-0.29	-0.27	-0.26	-0.25	-0.26	-0.32	-0.18
Class I Skim Price	$/CWT	1.60	1.39	1.21	1.18	1.13	1.18	1.29	1.33	1.30	1.29	1.13	1.60
Class II Price	$/CWT	-0.73	-0.78	-0.97	-1.06	-1.19	-1.06	-0.98	-0.97	-0.92	-0.96	-1.19	-0.73
Class II Skim Price	$/CWT	-0.10	-0.07	-0.08	-0.06	-0.06	-0.05	-0.05	-0.05	-0.04	-0.06	-0.10	-0.04
Class III Price	$/CWT	0.91	0.89	0.86	0.72	0.67	0.58	0.45	0.44	0.38	0.66	0.38	0.91
Class III Skim Price	$/CWT	1.60	1.66	1.81	1.78	1.87	1.65	1.43	1.41	1.30	1.61	1.30	1.87
Class IV Price	$/CWT	-0.73	-0.78	-0.97	-1.06	-1.19	-1.06	-0.98	-0.97	-0.92	-0.96	-1.19	-0.73
Class IV Skim Price	$/CWT	-0.10	-0.07	-0.08	-0.06	-0.06	-0.05	-0.05	-0.05	-0.04	-0.06	-0.10	-0.04

[1]Changes in the Class Fat Prices would be the same for each class of Fat.

TABLE B10—California FMMO class prices at 3.5% BF, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
CA Class I price	$/CWT	0.67	0.57	0.22	0.08	-0.10	0.07	0.19	0.18	0.11	0.22	-0.10	0.67
CA Class II price	$/CWT	-0.30	-0.36	-0.56	-0.64	-0.78	-0.66	-0.58	-0.57	-0.53	-0.55	-0.78	-0.30
CA Class III price	$/CWT	-0.03	-0.01	0.01	0.05	0.11	0.18	0.14	0.24	0.39	0.12	-0.03	0.39
CA Class IV price	$/CWT	-0.52	-0.58	-0.78	-0.86	-1.00	-0.88	-0.80	-0.79	-0.75	-0.77	-1.00	-0.52

TABLE B11—FMMO class prices at test, changes from the baseline

Order 1:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
NE Class I price	$/CWT	1.22	0.98	0.70	0.61	0.49	0.60	0.75	0.80	0.79	0.77	0.49	1.22
NE Class II price	$/CWT	-1.11	-1.20	-1.51	-1.65	-1.87	-1.67	-1.54	-1.52	-1.45	-1.50	-1.87	-1.11
NE Class III price	$/CWT	0.77	0.74	0.66	0.49	0.40	0.34	0.22	0.22	0.17	0.45	0.17	0.77
NE Class IV price	$/CWT	-0.91	-0.98	-1.23	-1.34	-1.52	-1.35	-1.25	-1.23	-1.18	-1.22	-1.52	-0.91
Order 5:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
AP Class I price	$/CWT	1.22	0.98	0.70	0.61	0.48	0.60	0.75	0.80	0.79	0.77	0.48	1.22
AP Class II price	$/CWT	-1.85	-2.03	-2.54	-2.81	-3.18	-2.84	-2.63	-2.59	-2.47	-2.55	-3.18	-1.85
AP Class III price	$/CWT	0.45	0.37	0.21	0.00	-0.14	-0.14	-0.22	-0.21	-0.25	0.01	-0.25	0.45
AP Class IV price	$/CWT	-1.04	-1.12	-1.41	-1.54	-1.74	-1.56	-1.44	-1.42	-1.35	-1.40	-1.74	-1.04
Order 6:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
FL Class I price	$/CWT	1.21	0.96	0.68	0.58	0.46	0.58	0.73	0.78	0.77	0.75	0.46	1.21
FLClass II price	$/CWT	-2.80	-3.09	-3.87	-4.30	-4.86	-4.35	-4.02	-3.96	-3.78	-3.89	-4.86	-2.80
FL Class III price	$/CWT	0.80	0.77	0.71	0.55	0.48	0.41	0.29	0.29	0.23	0.50	0.23	0.80
Fl Class IV price	$/CWT	-2.48	-2.74	-3.43	-3.81	-4.31	-3.85	-3.57	-3.51	-3.36	-3.45	-4.31	-2.48
Order 7:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
SE Class I price	$/CWT	1.21	0.96	0.67	0.58	0.45	0.57	0.72	0.77	0.77	0.74	0.45	1.21
SE Class II price	$/CWT	-1.85	-2.03	-2.54	-2.81	-3.18	-2.84	-2.63	-2.59	-2.47	-2.55	-3.18	-1.85
SE Class III price	$/CWT	0.69	0.64	0.55	0.37	0.28	0.23	0.12	0.12	0.07	0.34	0.07	0.69
SE Class IV price	$/CWT	-1.74	-1.91	-2.39	-2.64	-2.99	-2.67	-2.47	-2.43	-2.32	-2.40	-2.99	-1.74
Order 30:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
UM Class I price	$/CWT	1.31	1.07	0.82	0.74	0.64	0.74	0.87	0.92	0.91	0.89	0.64	1.31
UM Class II price	$/CWT	-1.81	-1.98	-2.48	-2.75	-3.11	-2.78	-2.57	-2.53	-2.42	-2.49	-3.11	-1.81
UM Class III price	$/CWT	0.95	0.93	0.90	0.76	0.70	0.61	0.47	0.47	0.40	0.69	0.40	0.95
UM Class IV price	$/CWT	-3.49	-3.87	-4.85	-5.40	-6.11	-5.46	-5.05	-4.98	-4.76	-4.89	-6.11	-3.49
Order 32:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
CE Class I price	$/CWT	1.26	1.02	0.75	0.66	0.55	0.66	0.80	0.85	0.84	0.82	0.55	1.26
CE Class II price	$/CWT	-1.54	-1.69	-2.11	-2.33	-2.64	-2.36	-2.18	-2.15	-2.05	-2.12	-2.64	-1.54
CE Class III price	$/CWT	0.92	0.90	0.86	0.71	0.65	0.57	0.43	0.42	0.36	0.65	0.36	0.92
CE Class IV price	$/CWT	-1.05	-1.14	-1.42	-1.56	-1.76	-1.57	-1.46	-1.44	-1.37	-1.42	-1.76	-1.05
Order 33:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
ME Class I price	$/CWT	1.25	1.01	0.74	0.65	0.54	0.65	0.79	0.84	0.83	0.81	0.54	1.25
ME Class II price	$/CWT	-1.36	-1.48	-1.85	-2.04	-2.31	-2.06	-1.91	-1.88	-1.79	-1.85	-2.31	-1.36
ME Class III price	$/CWT	0.91	0.89	0.85	0.70	0.64	0.55	0.42	0.41	0.35	0.63	0.35	0.91
ME Class IV price	$/CWT	-1.04	-1.12	-1.40	-1.54	-1.74	-1.55	-1.43	-1.41	-1.35	-1.40	-1.74	-1.04
Order 124:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
PN Class I price	$/CWT	1.24	1.00	0.72	0.63	0.51	0.63	0.77	0.82	0.82	0.79	0.51	1.24
PN Class II price	$/CWT	-1.76	-1.93	-2.42	-2.68	-3.03	-2.70	-2.50	-2.47	-2.35	-2.43	-3.03	-1.76
PN Class III price	$/CWT	0.94	0.92	0.87	0.72	0.66	0.57	0.43	0.42	0.35	0.65	0.35	0.94
PN Class IV price	$/CWT	-0.91	-0.98	-1.22	-1.33	-1.51	-1.34	-1.25	-1.23	-1.17	-1.22	-1.51	-0.91
Order 126:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
SW Class I price	$/CWT	1.19	0.94	0.66	0.56	0.43	0.55	0.70	0.75	0.75	0.73	0.43	1.19
SW Class II price	$/CWT	-1.66	-1.82	-2.27	-2.51	-2.84	-2.54	-2.35	-2.32	-2.21	-2.28	-2.84	-1.66
SW Class III price	$/CWT	0.92	0.90	0.85	0.70	0.64	0.56	0.42	0.41	0.35	0.64	0.35	0.92
SW Class IV price	$/CWT	-1.00	-1.08	-1.36	-1.48	-1.68	-1.50	-1.39	-1.37	-1.30	-1.35	-1.68	-1.00
Order 131:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
AZ Class I price	$/CWT	1.22	0.98	0.70	0.61	0.48	0.60	0.75	0.80	0.79	0.77	0.48	1.22
AZ Class II price	$/CWT	-2.21	-2.43	-3.05	-3.38	-3.82	-3.42	-3.16	-3.11	-2.97	-3.06	-3.82	-2.21
AZ Class III price	$/CWT	0.42	0.35	0.18	-0.04	-0.18	-0.18	-0.26	-0.25	-0.28	-0.03	-0.28	0.42
AZ Class IV price	$/CWT	-0.28	-0.28	-0.34	-0.35	-0.39	-0.35	-0.32	-0.32	-0.30	-0.33	-0.39	-0.28
Order 51:													
	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
CA Class I price	$/CWT	0.54	0.48	0.19	0.08	-0.06	0.05	0.12	0.09	-0.01	0.16	-0.06	0.54
CA Class II price	$/CWT	-0.33	-0.48	-0.89	-1.10	-1.38	-1.11	-0.94	-0.91	-0.82	-0.89	-1.38	-0.33
CA Class III price	$/CWT	0.42	0.44	0.50	0.55	0.64	0.71	0.68	0.79	0.95	0.63	0.42	0.95
CA Class IV price	$/CWT	1.83	1.64	1.32	1.31	1.15	1.30	1.37	1.19	1.22	1.37	1.15	1.83

TABLE B12—California class utilization, changes from the baseline[21]

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Class I	Mil. LBS	729	733	743	748	751	749	747	749	751	744	729	751
Class II	Mil. LBS	-943	-946	-975	-990	-1004	-1027	-1039	-1090	-1115	-1014	-1115	-943
Class III	Mil. LBS	-7581	-7712	-8086	-8351	-8611	-8792	-9076	-9319	-9469	-8555	-9469	-7581
Class IV	Mil. LBS	-4230	-4527	-4698	-4741	-4878	-5009	-5105	-5551	-5630	-4930	-5630	-4230

TABLE B13—National class utilization, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Class I	Mil. LBS	-326	-333	-294	-285	-266	-294	-332	-351	-359	-316	-359	-266
Class II	Mil. LBS	808	850	841	772	742	737	733	785	789	784	733	850
Class III	Mil. LBS	-993	-710	-709	-426	-371	-65	268	351	517	-238	-993	517
Class IV	Mil. LBS	928	1158	1380	1349	1371	1268	1166	1199	1189	1223	928	1380

TABLE B14—FMMO Class I revenue, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
NE Class I Revenue	Mil. $	102.7	81.6	57.0	49.0	38.9	47.8	58.9	62.3	61.4	62.2	38.9	102.7
AP Class I Revenue	Mil. $	35.6	28.2	19.9	17.0	13.1	16.2	20.1	21.4	21.2	21.4	13.1	35.6
FL Class I Revenue	Mil. $	24.4	19.3	13.5	11.5	9.0	11.2	13.9	14.8	14.6	14.7	9.0	24.4
SE Class I Revenue	Mil. $	36.1	27.8	19.5	16.7	13.1	16.5	20.7	22.1	22.0	21.6	13.1	36.1
UM Class I Revenue	Mil. $	37.6	30.7	23.4	21.0	17.9	20.7	24.4	25.7	25.3	25.2	17.9	37.6
CE Class I Revenue	Mil. $	54.5	41.3	28.6	24.2	19.2	23.6	29.1	30.8	30.2	31.3	19.2	54.5
ME Class I Revenue	Mil. $	69.6	49.1	29.4	20.9	11.9	15.4	20.0	19.3	16.0	28.0	11.9	69.6
PN Class I Revenue	Mil. $	23.1	17.0	10.6	7.8	4.6	5.6	7.0	6.5	4.9	9.7	4.6	23.1
SW Class I Revenue	Mil. $	45.4	35.1	24.2	20.5	15.8	20.2	25.2	27.0	26.8	26.7	15.8	45.4
AZ Class I Revenue	Mil. $	14.6	9.7	6.7	6.0	4.7	6.1	7.5	7.8	7.6	7.9	4.7	14.6
CA Class I Revenue	Mil. $	127.8	123.3	108.1	105.4	101.2	110.6	117.8	119.9	117.2	114.6	101.2	127.8

TABLE B15—U.S. dairy product imports, changes from the baseline[22]

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
American Cheese Imports	Mil. LBS	0.028	0.057	0.058	0.046	0.021	0.010	0.002	0.001	0.000	0.025	0.000	0.058
Other than American Cheese Imports	Mil. LBS	7.090	13.843	19.590	23.530	26.123	27.859	28.545	29.129	29.234	22.771	7.090	29.234
Butter Imports	Mil. LBS	-0.028	-0.232	-0.258	-0.252	-0.210	-0.315	-0.284	-0.314	-0.356	-0.250	-0.356	-0.028

TABLE B16—U.S. dairy product exports, changes from the baseline[23]

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
American Cheese Exports	Mil. LBS	-24.292	-25.762	-25.460	-21.909	-19.825	-16.802	-12.732	-12.096	-10.571	-18.828	-25.762	-10.571
Other than American Cheese Exports	Mil. LBS	-52.267	-54.401	-49.689	-42.588	-40.662	-34.616	-26.141	-26.133	-22.707	-38.800	-54.401	-22.707
Dry Whey Exports	Mil. LBS	-18.724	-17.876	-17.409	-14.761	-13.992	-11.898	-9.121	-9.046	-7.725	-13.395	-18.724	-7.725
Butter Exports	Mil. LBS	46.704	76.346	91.700	97.993	99.980	105.021	97.076	98.892	99.658	90.374	46.704	105.021
Nonfat Dry Milk Exports	Mil. LBS	88.675	56.924	63.159	45.070	41.784	31.069	26.363	28.395	26.425	45.318	26.363	88.675

[21] The changes in the California class utilization represent the changes in pooled milk. Currently under the CSO, almost all Grade A milk produced in California is required to pool. Under the recommended California FMMO, Class II, III, and IV milk is not required to pool. This difference in pooling requirements is one factor for forecasted changes in California class utilization.

[22] Products only with a change in quantity from the baseline are included.

[23] Products only with a change in quantity from the baseline are included.

TABLE B17—Value of U.S. dairy product imports, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Other Class II Total Solids Imports	Mil. Lbs.	-0.360	-0.387	-0.377	-0.329	-0.309	-0.303	-0.304	-0.313	-0.308	-0.332	-0.387	-0.303
Frozen Total Solids Imports	Mil. Lbs.	-0.057	-0.059	-0.058	-0.048	-0.045	-0.045	-0.045	-0.047	-0.047	-0.050	-0.059	-0.045
American Cheese Imports	Mil. Lbs.	2.001	2.048	2.021	1.748	1.636	1.419	1.117	1.102	0.956	1.561	0.956	2.048
Other than American Cheese Imports	Mil. Lbs.	53.712	68.983	82.388	87.612	93.250	95.194	92.734	95.315	94.173	84.818	53.712	95.315
Butter Imports	Mil. Lbs.	-4.160	-4.909	-6.118	-6.804	-7.616	-6.989	-6.462	-6.418	-6.223	-6.189	-7.616	-4.160
Nonfat Dry Milk Imports	Mil. Lbs.	-0.022	-0.016	-0.019	-0.014	-0.015	-0.012	-0.012	-0.012	-0.010	-0.015	-0.022	-0.010

TABLE B18—Value of U.S. dairy product exports, changes from the baseline

	Units	2017	2018	2019	2020	2021	2022	2023	2024	2025	Average	Min	Max
Other Class II Total Solids Exports	Mil. $	-0.733	-0.800	-0.793	-0.703	-0.670	-0.669	-0.680	-0.712	-0.711	-0.719	-0.800	-0.669
Frozen Exports	Mil. $	-0.245	-0.282	-0.305	-0.276	-0.283	-0.302	-0.327	-0.361	-0.380	-0.307	-0.380	-0.245
American Cheese Exports	Mil. $	-24.203	-25.139	-25.326	-22.733	-21.355	-18.963	-14.957	-14.733	-13.169	-20.064	-25.326	-13.169
Other than American Cheese Exports	Mil. $	-89.978	-96.015	-89.171	-77.390	-75.505	-65.268	-49.589	-50.717	-44.604	-70.915	-96.015	-44.604
Dry Whey Exports	Mil. $	10.282	9.649	9.236	7.422	6.769	5.414	3.990	3.777	2.922	6.607	2.922	10.282
Butter Exports	Mil. $	56.914	86.842	102.163	113.169	119.075	127.008	119.476	123.784	125.391	108.202	56.914	127.008
Nonfat Dry Milk Exports	Mil. $	90.928	61.955	71.373	52.888	51.110	39.574	34.428	38.383	36.713	53.039	34.428	90.928

VI. APPENDIX C: AMS BASELINE

TABLE C1: Dairy long-term projections, AMS adjusted baseline

Item	Units	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Milk production and marketings:													
Number of cows	Thousand	9,256	9,317	9,305	9,306	9,309	9,310	9,311	9,323	9,334	9,345	9,357	9,362
Milk per cow	Pounds	22,260	22,394	22,894	23,307	23,764	24,221	24,780	25,234	25,767	26,310	26,932	27,414
Milk production	Bil. lbs.	206.0	208.6	213.0	216.9	221.2	225.5	230.7	235.2	240.5	245.9	252.0	256.7
Farm use	Bil. lbs.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9
Marketings	Bil. lbs.	205.1	207.7	212.1	215.9	220.3	224.5	229.8	234.3	239.6	244.9	251.1	255.7
Supply and use, milkfat basis:													
Beginning commercial stocks	Bil. lbs.	11.2	11.2	13.3	12.2	12.7	13.2	13.0	12.8	12.5	12.4	12.4	12.4
Marketings	Bil. lbs.	205.1	207.7	212.1	215.9	220.3	224.5	229.8	234.3	239.6	244.9	251.1	255.7
Imports	Bil. lbs.	4.7	5.7	5.8	5.2	4.9	4.7	4.6	4.5	4.5	4.5	4.5	4.5
Commercial supply	Bil. lbs.	221.0	224.6	231.2	233.4	237.8	242.4	247.4	251.5	256.6	261.9	267.9	272.6
Domestic commercial use	Bil. lbs.	197.3	202.5	209.6	209.0	212.3	217.2	222.2	226.7	231.3	236.5	242.2	246.4
Commercial exports	Bil. lbs.	12.4	8.8	9.4	11.6	12.3	12.3	12.4	12.3	12.8	13.0	13.3	13.8
Ending commercial stocks	Bil. lbs.	11.2	13.3	12.2	12.7	13.2	13.0	12.8	12.5	12.4	12.4	12.4	12.4
Supply and use, skim solids basis:													
Beginning commercial stocks	Bil. lbs.	11.7	13.1	13.9	13.6	13.2	13.3	13.4	13.5	13.5	13.5	13.6	13.7
Marketings	Bil. lbs.	205.1	207.7	212.1	215.9	220.3	224.5	229.8	234.3	239.6	244.9	251.1	255.7
Imports	Bil. lbs.	6.3	5.9	6.1	5.8	5.7	5.7	5.6	5.6	5.6	5.6	5.6	5.7
Commercial supply	Bil. lbs.	223.1	226.7	232.1	235.3	239.2	243.6	248.8	253.4	258.7	264.1	270.2	275.1
Domestic commercial use	Bil. lbs.	170.9	175.4	179.0	181.4	184.6	187.6	190.7	194.0	197.7	201.4	205.4	207.7
Commercial exports	Bil. lbs.	39.1	37.3	39.6	40.7	41.3	42.6	44.6	45.9	47.4	49.1	51.2	53.6
Ending commercial stocks	Bil. lbs.	13.1	13.9	13.6	13.2	13.3	13.4	13.5	13.5	13.5	13.6	13.7	13.8
Prices:													
All milk	$/hundredweight	23.96	17.08	16.51	16.34	16.26	16.69	17.28	17.91	18.51	19.00	19.54	19.93
Cheese	$/lb.	2.16	1.65	1.63	1.60	1.57	1.59	1.64	1.69	1.75	1.81	1.86	1.89
Butter	$/lb.	2.14	2.07	1.89	1.57	1.47	1.50	1.56	1.62	1.62	1.63	1.65	1.65
Nonfat dry milk	$/lb.	1.77	0.90	0.99	1.20	1.27	1.32	1.37	1.43	1.49	1.52	1.58	1.62
Dry whey	$/lb.	0.65	0.38	0.29	0.35	0.36	0.37	0.40	0.42	0.45	0.47	0.49	0.53

VII. APPENDIX D: BIBLIOGRAPHY

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