



## Information Letter Series

### Current Status of Dairy Trade Policies and Potential Future Impacts on the US Dairy Supply Chain

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**Charles Nicholson<sup>1</sup>**

Department of Animal and Dairy Sciences and Department of Agricultural and Applied Economics, University of Wisconsin—Madison

#### Summary

*A previous Information Letter<sup>2</sup> evaluated the potential dairy supply chain impacts of representative possible changes to trade policy, labor access and spending on food and nutrition programs. Now that more specific policies have been implemented, an updated analysis of potential impacts focused on trade policy is merited. Analyses with a dynamic global dairy supply chain model indicate that the current US and retaliatory tariffs by China and Canada, combined with macroeconomic effects, will result in substantive decreases in farm milk prices, US dairy farm profitability, the value of US dairy product exports, the value of cheese sales, retail fluid milk prices and wholesale cheese prices. Compensatory payments to dairy farms will reduce the magnitude of reductions in farm income and the value of US dairy product exports, but will not fully offset these effects. The magnitudes of change reported here may differ from those as the trade policy of the US and other countries evolves, but the directions of impact on the US dairy supply chain of any tariffs retained for substantive periods of time should be similar.*

#### Introduction

During the first 100 days of the new Trump administration, it has implemented numerous policies that could affect the US agricultural economy, including the US dairy sector. Changes to trade policy—especially broad increases in US tariff rates—have been among the most visible initiatives and have occasioned retaliatory tariff increases by key US trading partners. The purpose of this Information Letter is to review the current status of trade policy—given numerous changes in recent months—and to discuss the impacts on the US

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<sup>1</sup> Dr. Nicholson's position is supported by the UW-Madison Dairy Innovation Hub.

<sup>2</sup> <https://dairymarkets.org/PubPod/Pubs/IL25-01.pdf>

dairy supply chain actors of current US and retaliatory tariffs. The previous Information Letter (IL25-01) noted that there is a high degree of uncertainty about future policies, and this is still the case. This uncertainty itself is highly undesirable because it inhibits decision-making by supply chain actors.

### **Current Status of Trade Policy and Discussion of Macroeconomic Factors**

The announcement and imposition of tariffs began in early February, with the new administration increasing tariffs on China, Canada, and Mexico—the three largest export destinations for US dairy products. This was followed by a period of announcements of retaliatory tariffs by those countries, some of which were temporarily suspended<sup>3</sup>. On March 6, 2025, the administration issued a fact sheet and executive order clarifying that imports from Canada and Mexico satisfying rules of origin under the United States-Mexico-Canada Agreement (USMCA) would be exempt from tariffs. This would, in principle, exempt US dairy product imports from either country (the value of which is larger for Canada) from the tariffs announced in February. The US and its USMCA trading partners employ a system of tariffs for dairy products that includes two elements, “Tariff Rate Quotas” (TRQs) and “Over-Quota Tariffs.” TRQs indicate the amount of product that can enter the country at zero (or low) tariff rates. Over-Quota Tariffs are the tariffs on any amount of product that exceeds the amount of the TRQ. The USMCA implemented a schedule that over time increases the amounts of the TRQs for some US dairy product exports to Canada, but generally did not change the Over-Quota Tariff rates.

In April, broad-based additional US tariffs with the stated goal of reducing the US trade deficit were put in place, with country-specific values ranging from 1% to 74%. On April 9, 2025, these tariffs were paused for 90 days, although 10% tariffs on nearly all countries will remain in effect. As of late April 2025, the only retaliatory tariffs affecting US dairy product exports have been imposed by China (125%) and Canada (25%). Mexico has not imposed retaliatory tariffs on the US, although it has not ruled out imposing them in the future. The European Union initially planned to impose retaliatory tariffs on US dairy products of 25% but removed these from their retaliatory tariff actions in mid-March after consultations among EU member states.

In addition to tariffs specifically affecting dairy products, the broader tariff regime is likely to have macroeconomic effects that could affect the competitiveness of US dairy product exports. The International Monetary Fund revised its forecasts of global economic growth downward and its forecasts of inflation upward in April 2025 compared to its January 2025 World Economic Outlook<sup>4</sup>, citing the imposition of historically high tariffs as a key development. The IMF report also noted that “The unpredictability with which these measures have been unfolding also has a negative impact on economic activity and the outlook and, at the same time, makes it more difficult than usual to make assumptions that would constitute a basis for an internally consistent and timely set of projections.”

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<sup>3</sup> A detailed timeline describing the many US changes and retaliation is available at:

<https://www.piie.com/blogs/realtime-economics/2025/trumps-trade-war-timeline-20-date-guide>.

<sup>4</sup> <https://www.imf.org/en/Publications/WEO/Issues/2025/04/22/world-economic-outlook-april-2025>.

Another factor that will affect the competitiveness of US dairy product exports is the evolution of the value of US dollar relative to other currencies. A “stronger” US dollar means that other countries need to pay more in their own currencies to obtain dollars, effectively increasing the price in that currency for a given dollar value of US dairy products. Economic theory suggests that US tariffs are likely to cause the dollar to strengthen. A recent report from the Tax Foundation<sup>5</sup> noted:

*Tariffs create an anticipated scarcity of dollars—or at least, greater difficulty acquiring dollars—in expectation of imports falling and fewer dollars being exchanged for foreign currency. As a result, the theory goes, the dollar appreciates relative to other currencies. A stronger dollar, in turn, gives people a greater incentive to keep imports flowing, even through the tariffs, and explains why tariffs might have a more muted effect on trade balances.*

The observed behavior of the US dollar relative to other currencies since the onset of the tariffs has been somewhat different than that predicted based on economic theory, with depreciation of the dollar relative to the Euro and roughly stable exchange rates with the currencies of China, Canada and Mexico. However, a number of organizations continue to forecast an appreciation of the dollar relative to the Canadian dollar and Mexican Peso, which would have a dampening effect on US dairy product exports.

### **Tariff Policy Options Analyzed**

Economic modeling analyses facilitate understanding the combined implications of US tariffs and retaliatory policies. The analyses in this Information Letter are forward-looking “what if” analyses of the policy status quo as of late April 2025, which may inform future discussions by dairy industry organizations about policy directions.

Five tariff policy scenarios are analyzed (Table 1). These scenarios differ primarily in the length of time that US and retaliatory tariffs are assumed to be in place, from 6 months to 48 months. Retaliatory tariffs by China (125%) and Canada (25%) are assumed to be maintained during the period in which US tariffs are in place. The retaliatory tariffs are in addition to those in place before February 2025, which were generally 10% for US dairy product exports to China and zero for many US dairy product exports to Canada within the TRQ amounts specified by the USMCA<sup>6</sup>. One scenario also assesses the impact of compensatory payments with tariffs assumed to be in place for 24 months. The scenarios assume a 5% reduction in feed costs and a 5% increase in farm equipment and dairy manufacturing costs based on tariffs applied to other US imports. All scenarios also assume a 2% increase in the value of the US dollar against other currencies and a 1% (i.e., an increase of one percentage point) increase in US interest rates for farm borrowing for the period in which tariffs are in place. The model does not explicitly include economic growth as a driver

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<sup>5</sup> <https://taxfoundation.org/blog/trump-tariffs-us-dollar-currency-appreciation/>

<sup>6</sup> For China, the tariffs already in place were the Most Favored Nation (MFN) rates, which were generally 10% for many but not all US dairy products. Thus, the effective *ad valorem* rate for many US dairy product to China would be 135%. A compendium of tariffs by USDA’s Foreign Agriculture Service in early March notes these MFN tariff rates: <https://www.fas.usda.gov/data/china-compendium-tariffs-united-states-agricultural-and-related-products>

of dairy product demand and thus assumes the same expected growth rates for per capita dairy product consumption for all of the scenarios, although slower economic growth could have a negative impact. All policy changes and related effects are assumed to be implemented in March 2025, and include the changes to milk pricing formulas that will be implemented in June 2025. These scenarios are compared to a Baseline scenario without tariff changes.

**Table 1. Assumptions Used in Analysis of Trade Policy Scenarios**

Scenario Assumption	Trade Policy Assumptions
US Tariffs on Dairy Product Imports <sup>a</sup>	25%
Retaliatory Tariff Rate on US Dairy Exports <sup>b</sup>	Canada 25% China 125%
Impact on Feed Costs	-5%
Impact on Farm Machinery Costs	5%
Impact on Fluid Milk Processor Unit Costs	5%
Impact on Cheese Manufacture Unit Costs	5%
Impact on US Dollar Value	2%
Impact on US Interest Rates	1%

<sup>a</sup> Excludes imports under the provisions of the USMCA.

<sup>b</sup> In addition to previously existing tariffs.

## Analytical Methods

This assessment of the impacts of potential policy changes uses a detailed empirical System Dynamics (SD) model of the U.S. dairy supply chain adapted from the commodity supply chain model described in Sterman (2000); a previous version is described in Nicholson and Stephenson (2015). This model has been developed and adapted to the US dairy industry during the past 15 years. The base year for the model is 2013, meaning that 2013 data on milk production and dairy product consumption and trade are used to initialize the model. The model simulates monthly outcomes from 2013 to the end of 2028. The model comprises modules that represent farm milk supply, farm milk pricing, dairy product processing, inventory management and trade, and dairy policies including (for the US) minimum regulated pricing under Federal Milk Marketing Orders (FMMO) and the Dairy Margin Coverage (DMC) program.

The milk supply components of the model are based on up to five farm-type categories based on size and production system based per region. In the US, farm types are based on number of cows and whether the farm is grazing. The number of cows for each farm size category is treated as a productive asset, and the evolution of cow numbers depends on heifers entering the herd (which depends on previous breeding decisions) and culling decisions (which can be voluntary or involuntary). The dairy-processing component of the dynamic model incorporates 23 products, 20 of which are “final” products (have explicit

demand curves) and 13 of which are “intermediate” products that are used in the manufacture of other dairy products. Non-storable products (fluid, yogurt, ice cream, and cottage cheese) are assumed to be manufactured in the month in which they are consumed. Storable products have inventories, and the value of inventory in each region relative to sales (called “inventory coverage”) is used in setting prices for these products.

To account for changes to trade policy, the model includes representations of the dairy sectors and trade policies for 15 aggregated regions, two for the US (California and Rest of US), and 13 non-US regions, including the ASEAN countries (10 countries), Oceania (Australia and New Zealand), the EU (28 countries), Russia, China, Mexico, India, Canada, former Soviet Union countries (11 countries), Middle East and North Africa (MENA; 19 countries), major South American milk producers (Brazil, Argentina, Uruguay), Other Net Importing Countries (described below) and Other Net Exporting Countries.

## Results

The proposed policies would have substantive impacts on dairy supply chain outcomes based on the assumed values of the model inputs for retaliatory tariff rates, impacts on feed costs, and impacts on processing costs (Table 2). All of the policy option scenarios would:

- Reduce the average all-milk price by \$0.22/cwt to \$1.29/cwt, with larger decreases the longer the tariff policies are in place, and with a compensation program compared to no compensation program;
- Reduce the average Class III milk price from \$0.34/cwt to \$2.08/cwt, with larger decreases the longer the tariff policies are in place, and with a compensation program compared to no compensation program;
- Reduce total annual average US milk production by 1% to 5%, with larger decreases the longer the tariff policies are in place, and with a compensation program compared to no compensation program;
- Reduce farm profitability as measured by average Net Farm Operating Income (NFOI) for a medium-sized dairy farm (about 250 cows) by between \$3,600 (with a duration of 24 months and compensation) and \$32,500 per year (for a duration of 48 months without compensation). Farm income for the 24-month duration without compensation is higher than for the 12-month duration because of dynamic milk supply and price response—decreased milk production in the first 24 months results in higher milk prices for months 25 to 48.
- Reduce the cumulative NFOI for all US dairy farms (i.e., the total for all farm sizes) during the next four years following policy implementation by between \$1.6 billion and \$7.3 billion, which is 5% to 20% of the NFOI for the Baseline scenario without additional tariffs.
- Reduce the average annual value of US dairy product exports during the next four years by \$1.1 billion to \$4.9 billion, which is 10% to 47% of the value for the Baseline scenario. It is worth noting that even a shorter period of tariffs reduces the future value of US dairy product exports. The simulated values of US dairy product exports



are permanently lower than they would be in the absence of the tariff policies, even if tariffs are only imposed for 6 months;

- Reduce the average annual value of US cheese sales (domestic and export) during the next four years by \$1.2 billion to 4.0 billion, or 2% to 8% of the value for the Baseline scenario;
- Reduce average retail prices for a gallon of milk by \$0.02 to \$0.10 (1% to 3%) and wholesale prices for American cheese by \$0.02 to \$0.14/lb (1% to 8.0%) compared to the Baseline scenario.

Taken together, these results suggest substantive negative effects of these policy options on US dairy farms and processors, albeit with some benefits from lower prices for dairy product consumers. In general, the longer the tariffs are in place, the larger the impacts on the US dairy supply chain.

### **Impacts of Compensatory Payments**

During the first Trump administration, compensatory payments were made to US dairy farms under the Market Facilitation Program, and similar programs have been mentioned as policy options for the second administration. In 2018 and 2019, dairy farmers received payments of \$0.20/cwt, with payments capped at \$250,00 per legal entity. An additional scenario thus assumes a considerably larger \$1.00/cwt compensatory payment without a cap for all US milk for a 24-month tariff duration. The key findings of these scenarios are that compensatory payments:

- Result in a \$0.52/cwt reduction in the average US All-milk price and a \$0.28/cwt reduction in the average Class III price compared to the Trade Policy 24 Months Duration scenario without compensatory payments because they support additional milk production;
- Increase Net Farm Operating Income (NFOI) by about \$4,000 per year for a medium-sized farm compared to the Trade Policy 24 Months without compensatory payments, but not fully compensate farms for the income lost due to the implemented policies;
- Increase Cumulative NFOI for all US farms by \$0.5 billion compared to the Trade Policy 24 Months without compensatory payments, but not fully compensate farms for the income lost due to the implemented policies. Cumulative NFOI for all US dairy farms would be \$1.9 billion lower than the Baseline during the next four years, even with \$1.00/cwt compensatory payments;
- Increase the average annual value of US Exports by \$200 million compared to the Trade Policy 24 Months without compensatory payments. This is due to lower product prices resulting from more milk production, but this does not fully compensate for the exports lost due to the implemented policies. The average annual value of US dairy product exports would be \$3.2 billion lower than the Baseline during the next four years, even with \$1.00/cwt compensatory payments;
- Decrease average annual revenues to US cheese manufacturers compared to the Baseline by \$200 million due to lower product prices (despite larger sales);

- Decrease average American Cheese prices by up to \$0.03/lb compared to the Tariff Policy 24 Months without compensatory payments;
- Incur program costs to the US government of \$5 billion while in place for 24 months.

These results suggest that a compensatory payment program will have some positive impacts on US dairy farm profitability and dairy product exports but will not fully compensate farmers or exporters for the other impacts of the combined policies.

### **Limitations**

One limitation noted in the previous Information Letter (IL25-01) is that this is partial equilibrium model and does not directly include other possible economy-wide changes of other administration policies or program changes that would affect the accuracy of the assumptions about impacts on wages and demand responses made for these analyses. Another limitation is that these analyses assume that all tariffs imposed in April to address the US trade deficit and then paused for 90 days will be resolved without reinstating those tariffs. If this is not the case, the impacts would have a larger magnitude but similar directions of change.

### **References Cited**

- Nicholson, C. F., and M. W Stephenson. 2015. Dynamic Market Impacts of the Dairy Margin Protection Program. *Journal of Agribusiness*, 32:165-192.
- Sterman, J. D. 2000. *Business Dynamics: Systems Thinking and Modeling for a Complex World*. Boston: Irwin/McGraw-Hill.

**Table 2. Simulation Model Estimates of the Impacts of Trade Policies, Four Duration Values and With Compensation**

<b>Modeled Outcome</b>	<b>Units</b>	<b>Baseline</b>	<b>Trade Policy 6 Months Duration</b>	<b>Trade Policy 12 Months Duration</b>	<b>Trade Policy 24 Months Duration</b>	<b>Trade Policy 24 Months Duration with \$1.00/cwt Compensation<sup>a</sup></b>	<b>Trade Policy 48 Months Duration</b>
<b>All Milk Price</b>	\$/cwt	20.92	20.70	20.58	20.46	19.94	19.63
Difference from Baseline			-0.22	-0.34	-0.46	-0.98	-1.29
% Difference from Baseline			-1.1%	-1.6%	-2.2%	-4.7%	-6.2%
<b>Class III Price</b>	\$/cwt	18.48	18.14	17.89	17.42	17.14	16.40
Difference from Baseline			-0.34	-0.59	-1.06	-1.34	-2.08
% Difference from Baseline			-1.9%	-3.2%	-5.7%	-7.3%	-11.3%
<b>Total US Milk Production</b>	bil lbs per year	269.1	266.5	263.1	257.3	262.5	255.7
Difference from Baseline			-2.6	-6.0	-11.8	-6.6	-13.4
% Difference from Baseline			-1.0%	-2.2%	-4.4%	-2.5%	-5.0%
<b>Net Farm Operating Income, Medium Farm</b>	\$/farm/year	208,685	198,428	193,199	201,526	205,049	176,143
Difference from Baseline			-10,257	-15,486	-7,159	-3,636	-32,542
% Difference from Baseline			-4.9%	-7.4%	-3.4%	-1.7%	-15.6%
<b>Cumulative NFOI, All Farms</b>	\$ bil (48 mos)	36.4	34.8	33.9	34.0	34.5	29.1
Difference from Baseline			-1.6	-2.5	-2.4	-1.9	-7.3
% Difference from Baseline			-4.5%	-6.9%	-6.7%	-5.1%	-20.1%
<b>Value of US Exports</b>	\$ billion/year	10.5	9.4	8.5	7.1	7.3	5.6
Difference from Baseline			-1.1	-2.0	-3.5	-3.2	-4.9
% Difference from Baseline			-10.5%	-19.3%	-32.8%	-30.6%	-46.6%
<b>Cheese Sales Revenues</b>	\$ billion/year	31.1	30.7	30.3	29.8	29.7	28.6
Difference from Baseline			-0.5	-0.9	-1.4	-1.5	-2.5
% Difference from Baseline			-1.5%	-2.7%	-4.5%	-4.8%	-8.1%



Modeled Outcome	Units	Baseline	Trade Policy 6 Months Duration	Trade Policy 12 Months Duration	Trade Policy 24 Months Duration	Trade Policy 24 Months Duration with \$1.00/cwt Compensation <sup>a</sup>	Trade Policy 48 Months Duration
<b>Retail Fluid Milk Price</b>	\$/gallon	3.36	3.34	3.33	3.32	3.27	3.26
Difference from Baseline			-0.02	-0.03	-0.04	-0.08	-0.10
% Difference from Baseline			-0.5%	-0.8%	-1.1%	-2.5%	-3.0%
<b>Wholesale American Cheese Price</b>	\$/lb	1.82	1.79	1.78	1.75	1.72	1.67
Difference from Baseline			-0.02	-0.04	-0.07	-0.10	-0.14
% Difference from Baseline			-1.3%	-2.2%	-3.8%	-5.3%	-8.0%

<sup>a</sup> The compensatory payment program would cost \$4.97 billion during 24 months.