Analyzing the Impact of the CPTPP and Japan-EU EPA on US Dairy Exports to Japan

For the U.S. Dairy Export Council

January, 2019

MEROS CONSULTING

Meros Consulting
Ono Building 2Fl,
1-19-3, Kanda Awajicho, Chiyoda-ku
Tokyo 101-0063 JAPAN

+81-3-3526-2075

www.merosconsulting.com

Analyzing the Impact of the CPTPP and Japan-EU EPA on US Dairy Exports to Japan

For the U.S. Dairy Export Council

January, 2019

Prepared by Chisa Ogura, Ayako Kuroki, Tina Peneva and Lucia Vancura

Meros Consulting

Ono Building 2Fl, 1-19-3, Kanda Awajicho, Chiyoda-ku

Tokyo 101-0063 JAPAN

+81-3-3526-2075

www.merosconsulting.com

For further information, please contact: Chisa Ogura, cogura@merosconsulting.com

The Impact of the CPTPP and Japan-EU EPA on US Dairy Exports to Japan

Executive Summary

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) entered into force on December 30, 2018, and the Japan-EU Economic Partnership Agreement (JEEPA) will enter into force on February 1, 2019.[1] All the major dairy countries exporting to Japan, except the US, are included in one of these two agreements.

This study investigates how the CPTPP and JEEPA will impact the Japanese market for dairy imports in **four key categories (cheese, whey, lactose and skim milk powder**) by analyzing how these provisions are likely to shift trade during the three different stages of implementation (first 5 years, first 10 years and full implementation), particularly given the phase-in of the market access expansion and the reality that, in some sectors, new access is limited.

US dairy exports to Japan in 2017 were about $291 million, accounting for around 5% of total US dairy exports, and the country is the fourth largest market destination for US dairy products. Almost half of the export value is cheese, and one fourth is whey. The other major products exported to Japan include lactose and SMP.

Japan is the second largest net importer of cheese in the world, after the UK, and imported $1.163 billion in cheese in 2017. Since Japan's two largest dairy suppliers, Australia and New Zealand, have limited capacity to increase their supply, Japan has expanded imports, especially from the US and EU. Although the population in Japan is shrinking by 0.4 percent per annum, the strong per capita consumption growth of 4.0 percent per annum is more than making up for the depopulation. Japan's decreasing domestic cheese production is also resulting in a strong opportunity for exporting countries. Japan's cheese imports are expected to show a 1.6-fold expansion over the next 10 years under CPTPP/JEEPA. If the US has the same market access as its competitors, US share could grow from 13% in 2017 to 24% in 2027, and US cheese export value to Japan could show a 3.3-fold expansion.

However, our analysis shows that the CPTPP and JEEPA will put the US at a significant disadvantage against other dairy suppliers and the US will lose critical market share, if the US remains without a comparable agreement with Japan.

Over 5 years

- The tipping point will come by Year 5 (2022) at the latest, when US dairy exports will start to feel significant impact. By Year 5, US dairy exports to Japan could fall by $90 million from the baseline projection, a 19 percent decline compared to the baseline.
- Throughout the first five years from Year 1 (2018) to Year 5 (2022), the accumulated negative impact on US dairy exports to Japan would be $185 million. The cheese sector accounts for 44% of the overall impact. Compared to the cheese sector, the ingredient sector (lactose, food whey and whey protein) will feel impact more quickly, which accounts for 56% of the overall impact. We do not expect any impact on SMP trade.

[1] Year 1 tariff reductions or eliminations for the CPTPP started on December 30, 2018 and those for JEEPA are scheduled to take place on February 1, 2019. In Japan, at the beginning of the Japanese fiscal year on April 1, 2019, Year 2 of both the CPTPP and JEEPA begins.

Meros Consulting
ONO Building, 2 Fl., 1-19-3 Kanda Awajicho, Chiyoda-ku, Tokyo JAPAN
Tel: +81 (0) 3-3526-2075
Email: inquiries@merosconsulting.com
www.merosconsulting.com

Over 10 years

- By 2027 (Year 10), almost half of US dairy exports to Japan are likely to be replaced by CPTPP/JEEPA countries.
- Over the 10 years from 2017 to 2027, the accumulated negative impact on US dairy exports to Japan would increase to $1.3 billion. During that period, cheese will account for 79% of the overall impact.

Upon final CPTPP/JEEPA implementation

- The accumulated negative impact on US dairy exports to Japan would expand to $3.3 billion over the 16 years from 2017 to 2033, and to $5.4 billion over the 21 years from 2017 to 2038.

Cheese

- The cheese sector would feel the most significant overall negative impact.
- The 29.8 percent tariff on most cheese products will be phased out within 16 years.
- By Year 5, the tariff will expand to an almost 10 percentage point difference, which could cause a 25 percent drop in US share. US annual cheese exports to Japan could fall by $62 million, which would be approximately 354 million lbs of milk equivalent. This shift could happen earlier if users see a likelihood of a delay in US-Japan bilateral negotiations.
- By Year 10, when the tariff difference will increase to almost 20 percentage points, importers will have difficulty justifying the price differences for most bulk cheeses, and thus only specific US cheese products will remain in the market. In this case, US annual cheese exports to Japan could fall by 80 percent.

Ingredients

- Compared to the cheese sector, the ingredient sector, especially US lactose and food whey, will feel an impact even more quickly.
- The extremely high duty (a 29.8-percent ad-valorem tariff plus a specific tariff of JPY 99 to 687 per kilogram) for **whey for food** will be phased out over a period of 6 to 21 years. Since this duty substantially makes import of whey for food non-feasible except from the government trade and under limited tariff rate quotas, the tariff reduction under CPTPP/JEEPA was welcomed by importers as the trade liberalization of food whey. While the importers are expecting a sizable demand increase for imported food whey, the US would lose its competitiveness in this market and would no longer be considered as a supplier of food whey.
- Japan imported $48 million in **whey protein** from the US in 2017. There could be some impact from the elimination of the 2.9 percent duty.
- Since the 8.5 percent duty on **lactose** will be eliminated on the date of enforcement, many Japanese lactose buyers have already started to seriously look for European suppliers. Thus, the lactose sector will feel the most immediate impact in the short-term (1-2 years). The US has a 57% share of Japanese imports of lactose on a volume basis, but could lose up to 30% of this market by Year 5.
- Both agreements keep Japan's state trading scheme for **skim milk powder (SMP)** and butter, but provide additional tariff rate quotas of 85,000 metric tons of milk equivalent. Since most SMP imports will remain under the control of the state trading system, despite the CPTPP and JEEPA, in general, no impact on SMP trade is expected.

EU countries are aggressively pursuing increased market share, and the US could lose its position in market without quick action. Progress on a strong US-Japan bilateral agreement is critical for the US dairy industry to quickly regain competitiveness in this established and expanding market.

Table of Contents

List of Figures

List of Tables

1. Introduction and Analytical Method

1.1. Project Background

This report was prepared by Meros Consulting as an analysis of the possible impact of the Comprehensive and Progressive Trans Pacific Partnership (CPTTP) / TPP 11 and the Japan-EU EPA (JEEPA) on exports of dairy products from the US to Japan.

On October 4, 2015, negotiations were concluded for the Trans-Pacific Partnership (TPP) with participation of 12 countries (Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, US, and Vietnam). The TPP was set to become the world's largest free trade agreement, covering 40% of the global economy and providing comprehensive market access through elimination and reduction of tariff and non-tariff barriers across all trade in goods and services. However, in January 2017, US President Donald Trump announced US withdrawal from the TPP. In November of the same year, the remaining 11 countries agreed on the early entry into force of the TPP, renamed the CPTPP/TPP 11. The 11 countries signed the agreement in March 2018 and the agreement went into force on December 30, 2018.

Four months after the completion of the CPTPP negotiations, in July 2018, Japan and the EU signed the JEEPA after 4 years and 3 months of negotiation. The JEEPA covers about 40% of world trade and is expected to become the largest free trade zone in the world. The JEEPA will go into effect on the 1st of February 2019.

Considering that the subsequent Japanese tariff reductions will occur on April 1st of each year, the tariff reduction schedule of both agreements will happen simultaneously. Year 1 will be from the date of effectuation until the end of March 2019, and Year 2 will start on April 1, 2019 in both agreements. In this way, Year 1 will only be a few months long.

While Japan's dairy sector has been protected by relatively high tariffs compared to other agricultural products, under the CPTPP and the JEEPA, certain dairy products will be subject to an elimination and reduction of tariffs. In particular, tariff elimination for hard-type natural cheese and certain kinds of whey products, as well as the setting up of new TRQs for whey and other products, are unprecedented in Japan's EPA/FTA history. The CPTPP and the JEEPA encompass major dairy exporting countries including Australia, New Zealand, Germany, Denmark, etc., and it is expected that these two major free trade agreements will have a dramatic impact on Japan's dairy market.

During the US-Japan summit meeting held in September 2018, President Trump and Prime Minister Shinzo Abe agreed to start bilateral trade negotiations. Although some Japanese industry players believe that the level of market access for imported dairy products in the bilateral trade agreement would not exceed those agreed under CPTPP and JEEPA, some

expect that the trade deal between the two countries could have better terms than that of the CPTPP and JEEPA, including market access for farm products. The negotiations were intended to commence in January 2019.

While the US-Japan bilateral trade agreement could put the US back on equal footing with the other major dairy exporters included in the CPTPP and JEEPA, until it is in place there is no doubt that the US will be in a disadvantageous position in the newly opened Japanese market.

1.2. Project Objectives

The objective of the study is to investigate how the CPTPP and the JEEPA provisions will impact the Japanese market for dairy imports by conducting an analysis of their impact and how these provisions are likely to shift trade in different stages of implementation, particularly given the phase-in of the market access expansion and the reality that in some sectors (e.g. powder) new access is very limited.

In order to identify the specific tipping point where US exports may take a downturn, and to estimate the level of the severity, quantitative estimation of the impact of the CPTPP and JEEPA on US dairy exports to Japan were conducted for the three stages of implementation:

a) 5 years into implementation
b) 10 years into implementation
c) Full implementation

The dairy exports covered for the analysis included:

1. Cheese (by major tariff code category)
2. Whey
3. Lactose
4. Skim Milk Powder (SMP)

1.3. Research Methodology

1.3.1. Basic Approach

Our methodology for analysis of the possible impact of the CPTPP and JEEPAon Japan's dairy imports has been to approach the problem both quantitatively and qualitatively by taking into consideration factors such as the results of existing econometric analysis, past examples of the relationship between price increases of dairy products and import quantities, Japanese population decline and aging, as well as the views of Japanese industry stakeholders, to make the

best numerical assumptions regarding domestic dairy demand and imports.

Most of the provisions of the CPTTP and JEEPA in the dairy sector are tariff rate quotas, and based on our experience, standard econometric methods for analysis of the impact of free trade agreements (e.g. the Global Trade Analysis Project (GTAP) model) do not provide satisfactory results. GTAP is one of the most popular approaches for modeling impacts of regional free trade agreements (FTAs). However, when it comes to analyzing the impact of CPTPP and JEEPA on individual dairy products, this method has serious limitations. For example:

- In the GTAP model, all measures, including specific duties, are converted and expressed as ad valorem duties. However, trade analysts struggle to find a way to convert TRQs and non-tariff barriers accurately into an ad valorem duty. Therefore, it is difficult to accurately evaluate the impact of these agreements on dairy products using the GTAP model because of the non-tariff barriers such as TRQs, safeguards and tying. TRQs cannot be perfectly summarized as ad valorem duties due to their complicated nature and the limited availability of good quality information such as quota fill rates that are necessary for the analysis.
- In GTAP, the substitution coefficient for consumers preferring domestic products over imported products is uniformly set across all countries. This is not realistic in the real world.
- It is difficult to incorporate the changing dynamics of consumption patterns into the analysis (e.g. cheese consumption is growing rapidly).
- The impact of fluctuations in domestic industry support policies cannot be evaluated.

For these reasons, we have instead approached the problem both quantitatively and qualitatively.

1.3.2. Methodology

In order to make the best numerical assumption on the impact of the CPTPP and JEEPA on Japan's dairy imports, we have taken the following steps.

Figure 1 Key Steps for the Analysis

1. Baseline Scenario

- The full implementation of the CPTPP will take up to 21 years. Meros will create a baseline projection of overall demand and import demand for each category [Cheese by major tariff code category, Whey, Lactose, SMP, and Butterfat] for the next 5 years, 10 years, 15 years and 20 years.
- **Factors to be considered include**: Current import trends, population decline and aging, consumer trends, domestic production/subsidies of raw milk and its usage for cheese, SMP/Butter

2. CPTPP and EU-Japan FTA's Impact on Overall Demand

- Meros will examine the impact of the CPTPP and JEEPA on overall demand, based on past studies as well as thorough numerical analysis and trade interviews. We will make a best estimate based on our findings.
  - In 3 stages: 5 years into implementation, 10 years into implementation, at full implementation
  - In 2 types: CPTPP only, CPTPP plus JEEPA
- **Factors to be considered include:** The results of the agreement (Tariffs, special safeguards, TRQs, state-trading regimes, others), price sensitivity

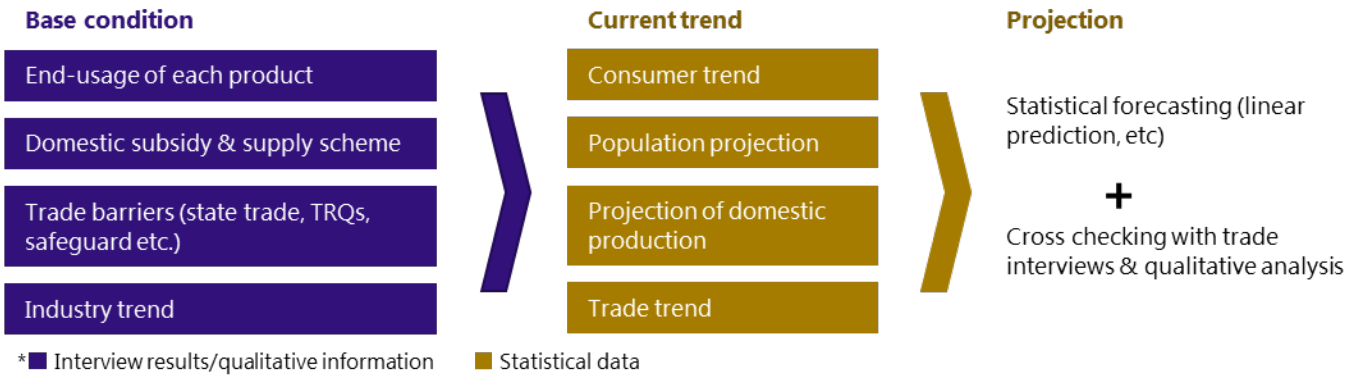
3. CPTPP and EU-Japan FTA's Impact on US Exports

- Meros will analyze the impact of the CPTPP and JEEPA on US exports of Cheese (by major HS category), Whey, Lactose, SMP and Butterfat.
  - In 3 stages: 5 years into implementation, 10 years into implementation, at full implementation
  - In 2 types: CPTPP only, CPTPP plus EU-Japan FTA
- **Factors to be considered include**: Substitutability of country of origin/products, price sensitiveness/tipping point for changing the supplier, supply capacity of supplying countries, etc.

(1) Baseline Scenario

Meros made a baseline demand projection based on the following data, with backup input from interviewees to confirm the usage and market trends.

Figure 2 Analytical Framework for Baseline Scenario



(2) CPTPP and JEEPA's Impact on Overall Demand

Due to the better market access offered through these two agreements, it is likely that overall demand for dairy products will increase. The overall impact of the TPP has often been discussed using econometric approaches, as shown in section 1.4 ("Reviews of Past Projections").

We have considered the results of these impact assessments. However, in this project we have estimated a realistic impact on the domestic dairy market, based on the detailed contents of the actual agreements, including tariffs, special safeguards, TRQs, state-trading regimes, as well as the overall price sensitivity which was estimated through statistical data of past trends as well as trade interview results.

(3) CPTPP and JEEPA's Impacts on US Dairy Exports to Japan

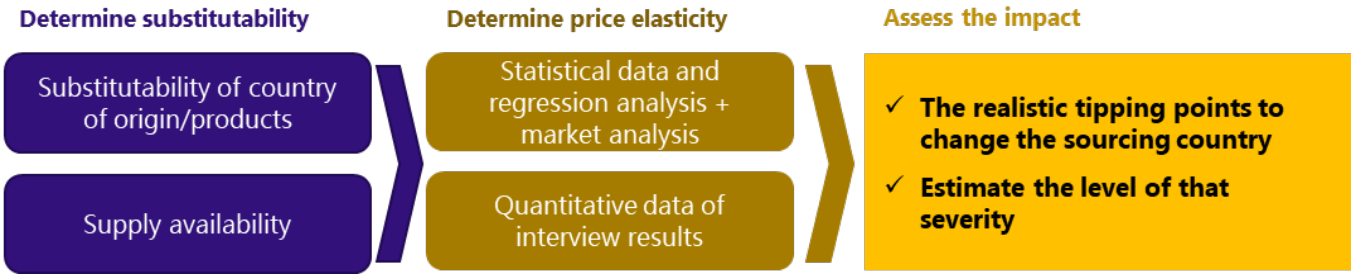
In order to examine the CPTPP and JEEPA's impact on US exports, we first needed to determine the following points through interviews and data:

- **substitutability** of country of origin/products (Is it possible to source the same products from other countries, like EU, Australia, New Zealand?)
- **supply availability** of major suppliers (Do these countries have enough supply of the particular products to be substituted for US products?)

Second, we needed to determine what **price differences** will encourage importers to consider switching the supplying country. One tool we used is regression analysis of trade statistics. The most relevant one is examining the impact of the Russian ban on EU products. Since 2014, Russia has imposed import restrictions on a range of EU agricultural products including dairy products as a retaliatory measure for sanctions placed on Russia for its involvement in Ukraine. This caused a price drop of EU dairy products and some of the EU's surplus dairy products flowed to Japan, putting US dairy products in direct competition with these products. However, the Russia case is not enough on its own. The Russian import ban significantly impacted US dairy exports to Japan. On the other hand, NZ and Australia were not significantly impacted due mainly to their relatively established status in the Japanese market. We needed further market analysis to better determine what a realistic price sensitivity would be.

Therefore, we also gathered quantitative data regarding price sensitivity through industry interviews. Interviewees were asked to discuss their view on the impact of CPTPP and JEEPA on their business by indicating specific numbers. For our final assessment of the impact on US trade, we used a combination of sources for analysis.

Figure 3 Impact Assessment



1.3.3. Planning the Project

Meros' first step was to confirm the background and objectives of the project, as well as the analytical framework with USDEC.

On July 31st, we had a kick off meeting with the USDEC team in DC to learn more about the background and the expected outcomes of the study, as well as to confirm the key products that need to be covered. We also explained our methodology of combining quantitative and qualitative analysis to provide an economic impact assessment.

In September, we met with USDEC's Japan office team twice to introduce the project to the team, to arrange introductions to importers, and to obtain their feedback about our understanding of the market dynamics and our methodology.

Meros developed an interview contact list for interviews from contacts recommended by the Japan office as well as some of our own contacts.

1.3.4. Desktop Research

Desktop analysis is the initial foundation of our research. Our desktop analysis focused mainly on statistical analysis of Japan's dairy production, imports and consumption, as well as existing analysis of the possible impacts of the CPTPP and JEEPA.

Desktop research included:

- Japanese import statistics
- Export statistics of NZ, Australia, the EU and US (to analyze the specific products which were not categorized by current Japanese import statistics)
- Consumption statistics
- Production statistics
- Existing studies about the impact of the CPTPP and JEEPA

1.3.5. Interviewing

In-depth field interviewing is a critical part of our work, as it allows us to meet industry players and experts face-to-face and gather up-to-date, first-hand information and data about the target topic. In this project, the interviews focused on obtaining first-hand opinions about the projected change in dairy imports.

Meros conducted 12 interviews as shown in the table below.

Interviewees	No.
Importers	7
Experts	3
Industry associations	2
TOTAL	**12**

Before interviewing, we prepared in-depth interview guides for each type of interviewee, as well as background materials on the Japanese dairy market to be used as a reference for the interviews. All interviews were conducted face-to-face.

1.3.6. Analysis and Report Write-up

All findings were summarized into an economic analysis of the possible impact of the CPTPP and JEEPA.

In Section 2, we provide a Japanese dairy market overview. In Section 3 to 6, we examine the possible impact of the CPTPP and JEEPA on Japanese dairy trade as well as on US dairy exports to Japan in 4 categories: Cheese (by major tariff code category), Whey, Lactose and Skim Milk Powder (SMP). In Section 7, we aggregate these impacts and provide overall conclusions.

1.4. Reviews of Past Projections

There are several existing studies on the possible impact of the TPP and other trade agreements on the Japanese agriculture and dairy sector. Some of these studies were conducted before the original TPP agreement was concluded, and most of them were conducted before the US withdrew from the agreement. The exception is the study from Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF), which published an impact assessment of TPP11 in 2017, revising its 2015 estimation.

The table on the next page is a summary of the existing analysis on the impact of the TPP and JEEPA on Japan's dairy sector.

Table 1 Existing Studies on the Possible Impact of FTA/EPAs on Japanese Agricultural Sector

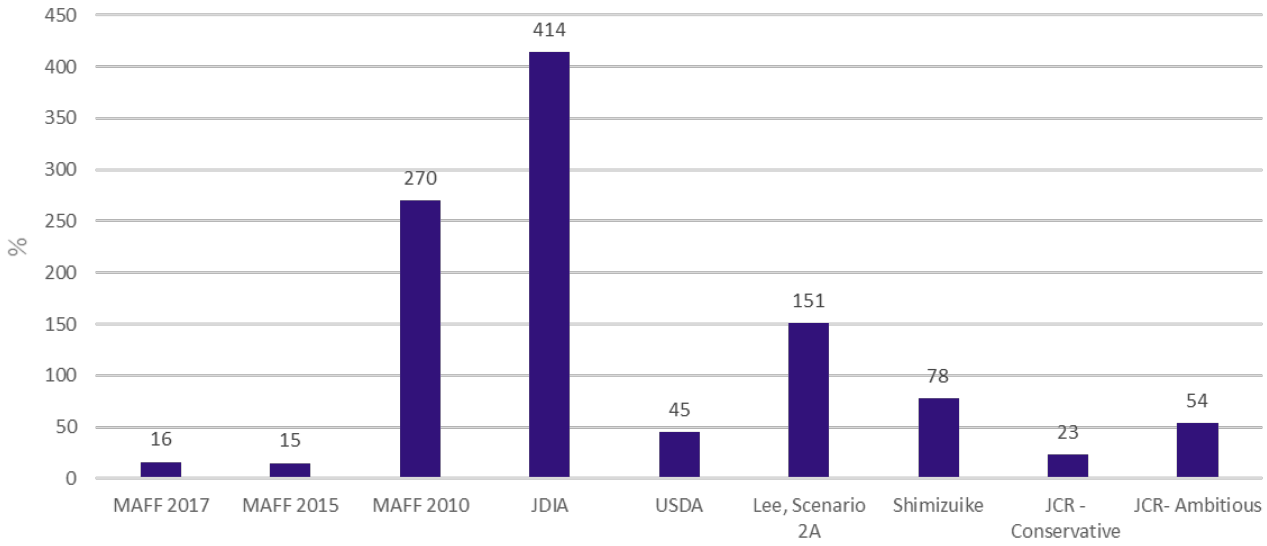
Writer	Name of the Study	Target year	Model/way of thinking	Remarks
MAFF 2017	MAFF, 2015 "Influence on the production value of agricultural, forestry and fishery products (TPP 11)"	-	Assumes that domestic raw milk prices for SMP/butter, cheese and fresh cream will decrease to import price level due to tariff elimination.	Revision of the 2015 estimation.
Shimizuike	Y. Shimizuike 2017 "A study on the influence of tariff changes on Japanese dairy industry, based on basic TPP agreement"	2035	Assumes that 50% of demand for domestic SMP for uses excluding fermented milk will be replaced with imported whey, and that 100% of domestic natural cheese for processed cheese, and 2/3 of natural cheese for direct consumption (excluding fresh-type cheese) will be substituted by imported natural cheese.	Analyzes in detail the level of tariff reduction, elimination period, different usages, price trends to determine the possible impact by each product category.
JRC (EU)	Joint Research Centre (JRC), the European Commission's science and knowledge service's 2016 "Cumulative economic impact of future trade agreements on EU agriculture"	2025	GTAP CGE Model MAGNET (Modular Applied General Equilibrium Tool)	Covers 12 trade negotiations including JEEPA and TPP. Adopts 2 scenarios: conservative scenario and ambitious scenario.
MAFF 2015	MAFF, 2015 "Influence on the production value of agricultural, forestry and fishery products"	-	Assumes that domestic raw milk prices for SMP/butter, cheese and fresh cream will decrease to import price level due to tariff elimination.	Based on the assumption that there will be no impact on production volume, due to various impact mitigation measures.
USDA	M. Burfisher et al. 2014, "Agriculture in the Trans-Pacific Partnership"	2025	GTAP CGE Model	Mainly analyzes the influence on the US exports of agricultural products.
Lee	H. Lee and K. Itakura, 2013, "The Implications of Region-wide FTAs for Japan and Emerging Asia"	2030	GTAP CGE Model	Examines RCEP and TPP's implications for Japan
JDIA	Japan Dairy Association 2011, "Basic stance of the Japanese dairy industry toward TPP"	-	Complete substitution scenario	Takes the same approach as MAFF but adds an analysis by each product category.
MAFF 2010	MAFF 2010, "Reduction in production etc. by product"	-	Complete substitution scenario	Based on the assumption that all products in the same price range as imported goods will be substituted.

Sources: Meros Consulting

Each study has a different assumption/methodology. MAFF (2010, 2015, 2017), Shimizuike (2017) and Lee and Itakura (2013) measured the possible impact in terms of influence on domestic dairy production value. USDA (2014) analyzed the percentage change in value of agricultural imports and JRC (2016) calculated the increase in EU export value to Japan as a result of JEEPA. JDIA (2011) conducted an impact assessment based on market value.

The following figure shows the possible impact of (CP) TPP and JEEPA on Japanese dairy imports, based on the assessment made in each study. Except for JRC (2016) and USDA (2014) which analyzed the possible changes in agricultural import/export value, estimation was made assuming that the decrease in production value will be compensated for by increased imports. The results show a wide variability regarding the possible impact.

Figure 4 Possible Impact of FTA/EPAs on Japanese Dairy Imports based on Existing Studies



Sources: Meros Consulting

2. The Japanese Dairy Market Overview

2.1. US Dairy Export to Japan

Japan is the fourth largest market destination for US dairy products. The export value in 2017 was about $291 million, accounting for around 5 percent of total US dairy exports. Almost half of the export value is cheese, and one fourth is whey. The other major products exported to Japan include lactose and skim milk powder (SMP).

Table 2 Top 5 Partners of US Dairy Export

Unit: million USD

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Jan- Sep 2017	Jan- Sep 2018
1	Mexico	935	637	836	1,166	1,227	1,429	1,644	1,280	1,218	1,312	997	1,031
2	Canada	376	333	386	444	470	569	591	554	630	637	491	481
3	China	179	137	237	362	415	706	695	451	386	577	421	402
4	**Japan**	**208**	**131**	**204**	**277**	**285**	**303**	**409**	**273**	**206**	**291**	**219**	**211**
5	Korea	100	76	131	224	225	301	415	305	231	280	218	226
	Others	1,954	919	1,895	2,312	2,502	3,406	3,342	2,375	2,028	2,286	1,646	1,845
	TOTAL	3,753	2,235	3,689	4,786	5,123	6,715	7,096	5,240	4,700	5,383	3,992	4,196

Sources: USDA FAS GATS

Table 3 US Major Dairy Export Products to Japan

HS Code	Product Category	2008	2012	2017	2017	Jan - Sep 2017	Jan – Sep 2018
		Value (million USD)			Qty (000mt)		
0406	**Cheese**	**45**	**124**	**143**	**32**	**26**	**27**
0404, 3501, 350220	**Whey, etc**	**53**	**65**	**71**	**142**	**113**	**84**
0404	Whey	49	51	41	138	111	81
350220	Whey protein	4	12	29	4	2	3
3501	Casein, etc	1	1	1	0	0	0
170211 and 19	**Lactose**	**33**	**65**	**42**	**46**	**35**	**34**
0402	**SMP, etc**	**36**	**21**	**27**	**13**	**9**	**7**
2105	**Ice Cream**	**1**	**1**	**5**	**1**	**1**	**1**
0405	**Butter, etc**	**32**	**5**	**1**	**0**	**0**	**1**
0403 and 0401	**Others**	**0**	**0**	**0**	-	-	-

Sources: USDA FAS GATS

2.2. Japanese Imports of Dairy Products

2.2.1. Major Dairy Products Imported to Japan

The CPTPP and JEEPA include all major countries exporting dairy products to Japan, except the US. Although the Japan-Australia FTA has been in effect since 2015 and Australia already has better access to the Japanese market, the implementation of the CPTPP and JEEPA and the preferential tariff conditions given to other major dairy export countries could have a significant negative impact on US dairy exports.

Table 4 Japanese Major Dairy Imports from the US and the World, 2017

Unit: million USD

HS Code	Product Category	US	World	US share
	TOTAL	**300**	**1,982**	**15%**
0406	**Cheese**	**145**	**1,163**	**13%**
0404, 3501, 350220	**Whey & casein**	**81**	**399**	**20%**
350220	Whey protein, milk albumin	48	157	30%
0404	Whey	33	133	25%
3501	Casein & caseinate	0	110	0%
0402	**SMP, WMP, etc**	**23**	**142**	**16%**
170211, 19	**Lactose**	**46**	**103**	**45%**
201690121, 122, 291	**Prepared Edible Fats (PEF), etc**	**0**	**101**	**0%**
0405	**Butter**	**0**	**48**	**1%**
2105	**Ice Cream**	**4**	**26**	**16%**
0403	**Buttermilk, etc**	**0**	**0**	**54%**
0401	**Milk and cream**	**0**	**0**	**0%**
190110	**Infant formula**	**0**	**0**	**0%**

Sources: ITC Trade Map

Japan's major dairy import products include **cheese**, **whey & casein**, **lactose**, skim milk powder (**SMP**), prepared edible fats (**PEF)** and **butter**.

Cheese

Cheese is the largest imported dairy product for Japan, accounting for 59% of total dairy import value. Japan is the second largest net importer of cheese in the world after the UK; Japan imported $1.163 billion worth of cheese in 2017. Although the population in Japan is shrinking by 0.4 percent per annum, the strong per-capita consumption growth of 4.0 percent per annum is more than making up for the depopulation. Japan's decreasing domestic cheese production is also resulting in a strong opportunity for exporting countries. Considering that the UK cheese market is not expanding, the Japanese cheese market remains the most appealing market globally, as it is an established market with solid growth.

The US currently has a 13% share of Japan's cheese imports, and cheese is the US's most important dairy export product

to Japan. US cheese exports to Japan expanded rapidly from 7,000 mt in 2009 to 51,000 mt in 2014 due to the increasing cheese demand in Japan. The US lost some share to the EU in 2015 and 2016 due to the Russian import ban on EU dairy products, which caused an overflow of EU dairy products in the export market and a significant price drop in EU products. However, US cheese exports have been recovering in 2017 and 2018.

As an important item for both exporting and importing countries, market access for cheese was one of the key issues in negotiating both the CPTPP and JEEPA. The current tariff rate imposed on bulk natural cheese outside the tie-in quota[2] is 29.8%, which will be phased out under both the CPTPP and JEEPA.

Whey & casein

Another key product area is whey and casein, including high-protein whey (milk albumin). The US has 20% of the Japanese market in these categories.

The most important impact of the CPTPP and JEEPA agreements on the Japanese whey market will be the trade liberalization of food whey. Except for some limited tariff quotas allocated for whey mineral concentrate and whey for infant formula, Japan's whey trade has until now been regulated by the state trading system. However, after the tariff reductions the state trading system will no longer have such a central role. Thus, importers are expecting a sizable demand increase for imported food whey, especially given the decline in domestic whey supply that has accompanied the declining domestic cheese production. Because it is not party to CPTPP or JEEPA, the US would lose competitiveness in this market and would no longer be considered as a supplier of food whey.

Japan is also eliminating the duties for whey protein and casein on the date of implementation of the agreements, although the tariff rate is relatively low: 2.9% for whey protein and 5.4% for casein.

SMP and Butter

The Japanese government has maintained the state trading scheme for skim milk powder (SMP) and butter in both the CPTPP and JEEPA. The import volume is determined by the government based on its demand and supply forecasts. The government agreed to provide new tariff rate quotas for SMP and butter in both the CPTPP and JEEPA, but this is not expected to have any significant impact on US trade since the quota volume is limited and the state trading scheme will remain as the major trading channel.

Lactose

Lactose is the fourth largest category among Japan's dairy imports, and the current duty of 8.5% will be eliminated under

[2] The duty-free quota for natural cheese, given to Japan's processed cheese manufacturers. It requires the manufacturers to blend Japanese domestic natural cheese with imported cheese at a 1:2.5 ratio to produce processed cheese products.

the CPTPP and JEEPA on the date of entry into force. The US is the leading supplier of lactose to the Japanese market, accounting for 45% of the market on a value basis. Japanese importers expect some impact on US trade due to the tariff elimination.

2.2.2. The Position of Imports in Japanese Dairy Supply

The Japanese dairy supply in 2016 was estimated at around 12.1 million mt (milk equivalent), of which 11.7 million mt was for human consumption.

Domestic milk supply accounted for 62% of the supply for human consumption. Domestic milk supply is controlled by a so-called "voluntary quota system". Roughly half of the production is allocated for the drinking milk market including fresh milk, yogurt and various milk-based beverages, and the rest is for processing cream, cheese, skim milk powder (SMP), butter and others. Priority is given to products with short shelf life; raw milk is supplied first to drinking milk and fresh cream producers, and then to SMP, butter and cheese. SMP and butter are buffers for any excess supply of domestic raw milk and the government maintains strict trade controls on major dairy categories including SMP and butter through various tariff rate quotas and the state trading scheme.

Imports accounted for 38% of the supply for human consumption, of which 70% was cheese. Since cheese is one of the few products not strictly controlled by the government through the state trading system, cheese has become the largest category in terms of Japanese dairy imports.

Japan's whole milk supply has been tight and is expected to become even tighter as the dairy sector keeps shrinking. Year-on-year decline in dairy milk production was often sharper than the government's forecast and the production and stock of domestically produced SMP and butter has decreased more than domestic demand, leading the government to import these products under a so-called emergency quota.

Figure 5 Japan's Dairy Supply (2016)

Unit: million mt, milk equivalent

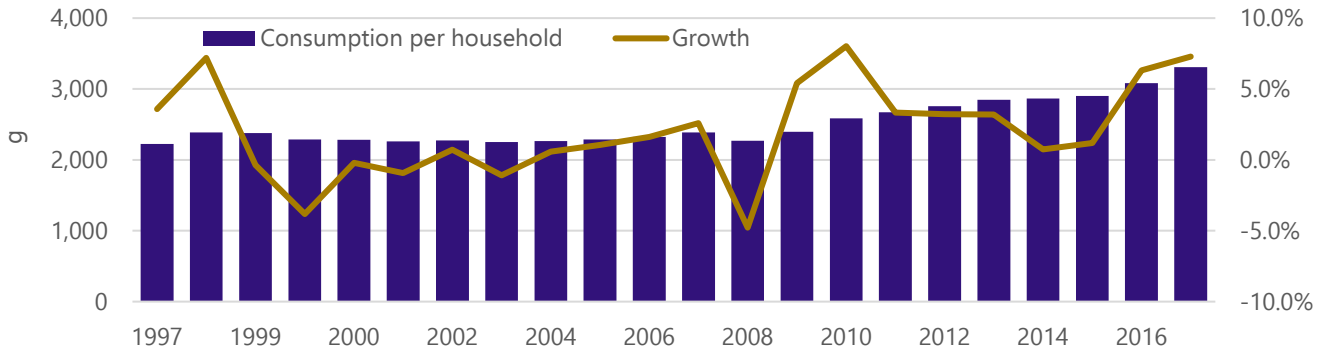
Source: Meros Consulting

2.3. Dairy Consumption Trend by Category

2.3.1. Cheese

Cheese consumption in Japan has been increasing steadily. Cheese consumption per household has recorded a continuous increase over the last 10 years, except for 2008 when international dairy prices surged due to serious drought in New Zealand and also when the financial crisis slowed consumption rates for dairy products. Per household consumption has recorded an average year-on-year increase of 3.7% over the last 5 years. Per capita consumption has grown from about 2 kilograms (4.4 lbs) 10 years ago to 2.5 kilograms (5.5 lbs) in 2017.

Figure 6 Cheese Consumption per Household



Source: Ministry of Internal Affairs and Communications, Family Income and Expenditure Survey

The dynamic shift in consumer preference and eating habits, expanding cheese usage in the food processing sector due to declining import prices and aggressive sales strategies by cheese manufacturers have all contributed to the increasing consumption. One of the main reasons for the increase, as pointed out by an industry expert, is the increasing consumption of dairy products among the older population. The main reason for this popularity is the functional characteristics the dairy products have, such as high calcium and protein content. Cheese usage in the food service sector, such as in family restaurant chains, is also expanding. Another market driver has been the constantly developing food processing sector, which has incorporated cheese into new prepared food products.

Industry experts have different opinions about the estimated increase of cheese consumption in the future. One of the importers we spoke to expected domestic cheese demand to continue increasing at least for the next 5 years, and to become flat at some point between 5 years and 10 years from now. An industry association expert we interviewed believed the trend will continue at least for the next decade, and even up to two decades. Although almost all interviewees admitted that it would be difficult for cheese consumption per capita in Japan to reach a double-digit level like in the US or the EU, there is still plenty of room for increase considering the current per capita consumption is at only 2.5 kilograms per capita.

2.3.2. Yogurt

An increase in consumption is shown in **yogurt** too. Reflecting the changes in the eating habits of Japanese consumers, especially the tendency to eat more "Western" style breakfast, together with increased awareness toward healthy foods, household expenditure on yogurt has increased dramatically over the past 10 years. This has led dairy manufacturers to produce more yogurt product varieties, and production of yogurt has shown a steady increase during the same period. A key market driver has been functional yogurt products with health benefits. As around half of the SMP is used in yogurt and the yogurt drink sector, the expansion of the yogurt category increased the demand for imported SMP. We estimate that only 20% of yogurt production is based on domestic fresh whole milk, and the other 80% is based on domestic and imported SMP.[3] Some dairy experts think the prospects of yogurt demand/production are still strong, while others think the growth may have peaked out as the production contracted slightly in 2016-17.

2.3.3. Drinking Milk

Contrary to the trends analyzed above, **fresh milk** consumption has been continuously declining over the past two decades. Changing and diversifying eating habits, a much wider variety of convenient beverages available in the market and a growing tendency to skip breakfast are some of the key reasons behind the decline. Fresh milk consumption per household has decreased by 32% over the past two decades, but the contraction rate is gradually decreasing in recent years. Decrease in per capita consumption has also slowed since 2010 and has shown a 1.3% increase from 24.1 liters in 2016 to 24.4 liters in 2017. While the increase is negligible, the industry considers it as a positive sign for a recovery in the fresh milk segment.

Consumption of other products such as **milk-based beverages** and **processed milk products** has been gradually declining.

Figure 7 Fresh Milk Consumption per Household

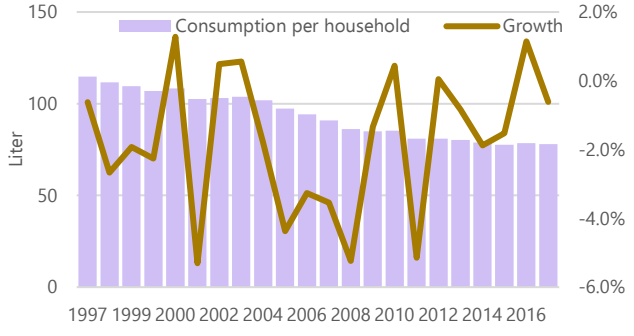
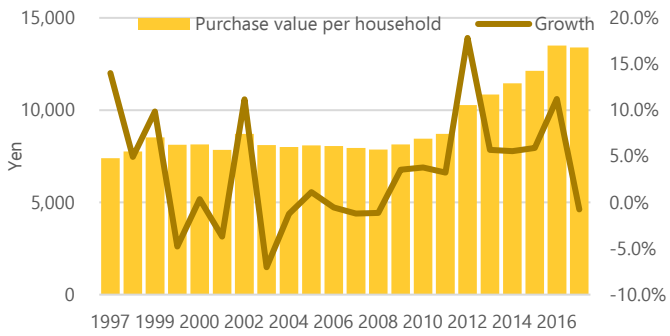


Figure 8 Yogurt Consumption per Household



Source: Ministry of Internal Affairs and Communications, Family Income and Expenditure Survey

[3] The production volume of yogurt and yogurt drinks was 1,072 mt in 2017. The usage of fresh raw milk for yogurt production was 18.6% of the total ingredients volume, while SMP (in powder) was 12.3% in 2016 (ALIC). We used the conversion rate of SMP to raw milk as 6.48.

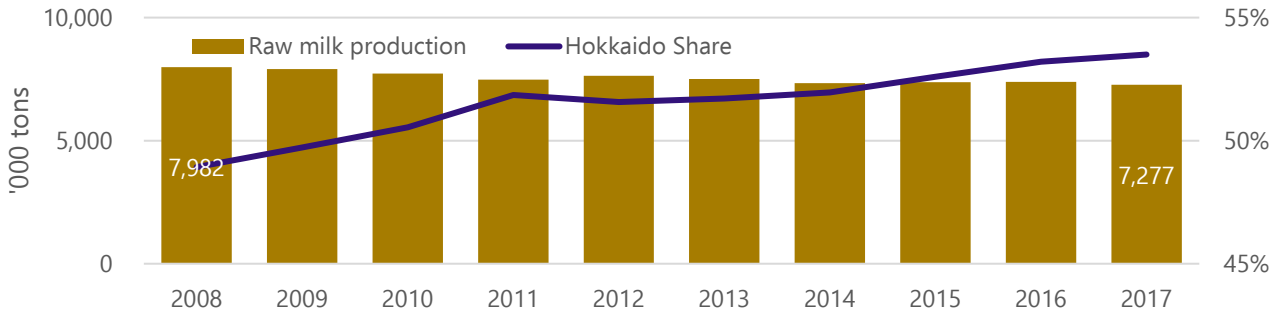
2.4. Domestic Dairy Supply Situation

2.4.1. Raw Milk Production Trends

Long-term declining trend since 1996

Raw milk production has been on a long-term decline since 1996, when it peaked at 8.7 million mt. The continued scaling down of the dairy industry outside of Hokkaido has largely contributed to the decline, which resulted in an average 2% decline in raw milk production from non-Hokkaido areas. Currently, raw milk production in Hokkaido accounts for more than half of the total raw milk production in Japan. While Hokkaido raw milk production has the key advantage of relatively large-scale operations and improved productivity, production has been declining on an average of 0.3% per year in the past decade.

Figure 9 Raw Milk Production



Source: MAFF

The fundamental reason behind the decline in milk production has been the shrinking number of dairy cows in Japan, at about 2% annually. One of the causes for this decline was the soaring price of beef cattle calves, which encouraged dairy operators to transplant fertile ovum of beef cattle or to inseminate sperm of beef cattle into dairy cows to produce beef calves, resulting in a decrease in the number of next generation milk cows. Because of an increasing number of farmers exiting the beef cattle breeding business due to their advancing age, the number of beef cattle calves being shipped to the market has been shrinking, pushing up the price to historically high levels over the past few years. The beef cattle calf price reached more than US$7,000 per head in 2017, more than double the price in 2009 and thus rocketing beef cattle calf prices.

A Slight Hope of Recovery

Recently industry experts have seen some slight hope for recovery of the industry. Through August of 2018, national milk production outpaced the 2017 levels thanks to the increased number of milk cows and higher per-cow productivity in Hokkaido. As a result, the industry initially predicted a 3% increase in raw milk production in the prefecture compared to last year. However, the strong earthquake that hit Hokkaido last September has negatively affected raw milk production.

The limited supply of pastures and dent corn due to the continuing rain during the summer period has also negatively impacted dairy production growth. Following these outcomes, the industry revised the growth forecast to 1% growth. Nonetheless, there may be indications for growth again in the longer term.

The price surge of beef cattle calves slowed last year, indicating less incentive to use dairy cows to breed beef cattle and a good environment for recovering the next generation of milk cows. The total number of dairy heifers, which had been recording 0% to negative growth until 2016, has shown a 2% increase from 2017 to 2018. Expanded use of sperm screening technology to distinguish male and female cattle has also been contributing to the recovery of the heifer inventory.

Another important factor for the recovery of dairy farming in Japan is the relatively young age of dairy farmers – around 56 years old, compared to the total farmer average age of 67 years old. While other agricultural sectors are facing an imminent crisis due to lack of successors among the younger generation, the dairy sector still has a little more time to prepare for how to deal with the aging problem.

In sum, there are various views in the industry regarding the future of the dairy farming sector. Some experts we interviewed believe that raw milk production could reverse its downward trend, while others find it difficult to see a long-term increase. However, overall, no one expects significant growth. The Ministry of Agriculture, Forestry and Fishery (MAFF), which tends to set ambitious goals, has made a goal to push raw milk production to 7.5 million mt by 2025, which means even they expect no more than 1% growth per year.

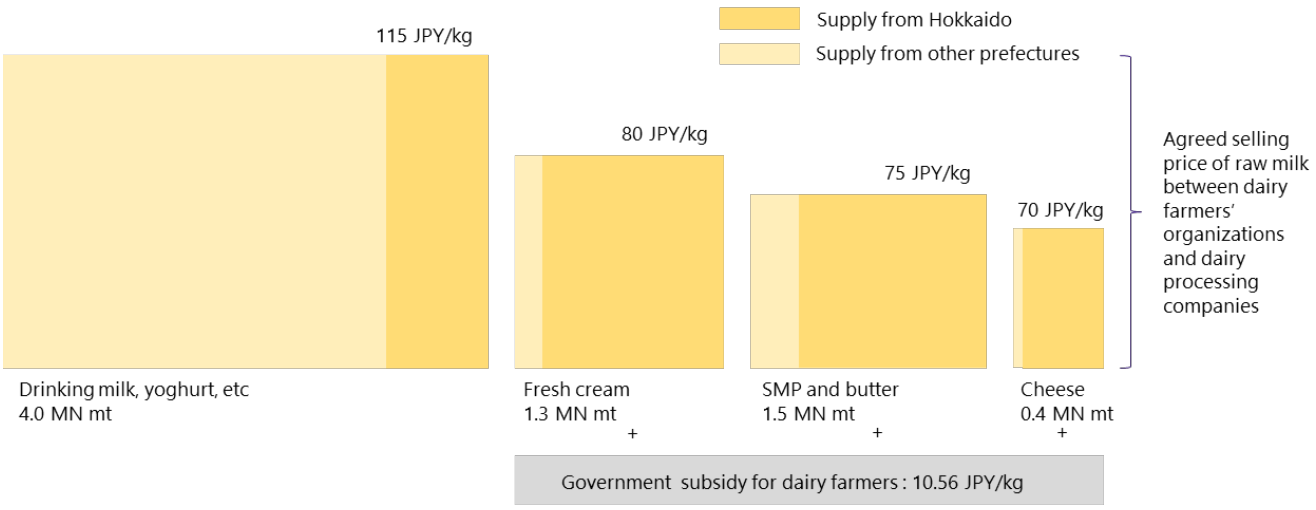
2.4.2. Raw Milk Supply to Cheese and Domestic Natural Cheese Production

Raw milk supply for cheese production

All of our interviewees agreed that the raw milk supply for cheese production will decline and that this in turn will cause decline in domestic natural cheese production. Raw milk supply for cheese processing has been relatively stable at around 450,000 mt but has started to decline over the last four years.

The milk price and the raw milk usage allocation are determined by negotiation between dairy farmer organizations and the major dairy processors through a so-called "voluntary quota system". Raw milk price is defined according to four different categories: 1) drinking milk and yogurt, 2) fresh cream, 3) SMP and butter and 4) cheese. The raw milk price for cheese has been the lowest among these four categories, reflecting the fact that domestic cheese manufacturers are competing with imported products. Thus, dairy farmer organizations tend to allocate less raw milk supply for cheese. On the other hand, the margin for drinking milk for dairy processors is very low, so dairy processors prefer to have more raw milk supply for cheese due to the increasing cheese demand. As such, dairy farmer organizations sell raw milk for cheese to dairy processors as a "reward" depending on the amount of raw milk they purchased for drinking milk.

Figure 10 Price Structure of Domestic Raw Milk Supply (2017)



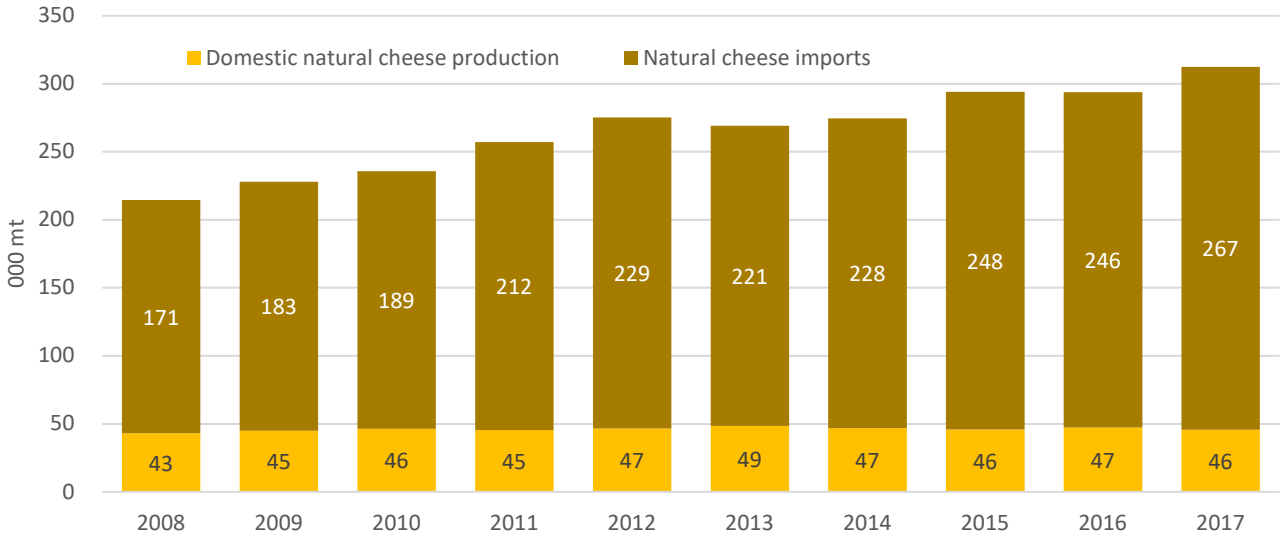
Source: Ministry of Agriculture, Forestry and Fisheries

In order to support raw milk supply for the processing industry, the government has been providing subsidies for milk supply for cheese and SMP/butter at different rates. The higher subsidy for milk supply for cheese compared to that for SMP/butter was one reason why the agreed milk price for cheese was the lowest. As part of the measures implemented by the Ministry of Agriculture, Forestry and Fisheries to mitigate the negative impact of TPP, revision has been made to the subsidy scheme. The new scheme included cream and other liquid dairy products as subjects of the subsidy, as well as unified the unit price of the subsidy, which previously was different between cheese and SMP/butter. The industry stakeholders interpreted the new revision as abolishing the incentives for cheese processing, as cheese was going to be treated as the same as cream, butter, etc. The elimination of the preferential subsidy rates for cheese made it more difficult for farmer organizations to offer a low raw milk price for cheese.

Domestic Natural Cheese production

Domestic cheese production has not been able to keep up with the strong increase in consumption due to the limited raw milk supply. Dairy manufacturers have dealt with the situation by increasing imports. Imports of natural cheese have grown by 56% over the last 10 years, while the increase in domestic production has been limited to 6%.

Figure 11 Japan's Natural Cheese Supply



Source: MAFF

3. The Impact of CPTPP and JEEPA on Cheese Imports

3.1. Cheese Tariff Lines and Subdivided Categories under CPTPP and JEEPA

Japan's tariff schedule for cheese is categorized into nine tariff lines under the Harmonized System code (HS) 0406. Taking the sensitivity of cheese trade into consideration, the Japanese government subdivided the product categories into 13 tariff lines under the CPTPP and JEEPA. The table on the next page summarizes the subdivided categories.

In that table, we categorized cheese products into the following five categories:

#1 Ripened natural cheese (cheddar, gouda, monterey jack, parmesan, etc.)

#2 Fresh natural cheese (cream cheese, mozzarella, etc.)

#3 Powdered cheese

#4 Blue-veined cheese

#5 Processed cheese

Among the US cheese exports to Japan, **#1 Ripened natural cheese** and **#2 Fresh natural cheese** were the two most important categories and accounted for 94% of US exports to Japan in 2017. Therefore, we analyze these two markets in detail.

We do not discuss categories #3, #4, and #5 in detail, for the following reasons:

- **#3 Powdered Cheese** has two tariff lines. Major exporters of this category are the US and Denmark. However, products from Denmark under this category include mainly seasoned powder used for snack manufacturing, while US products include packaged cheese powder. All importers we interviewed emphasized that they do not expect any impact on their trade in this category from the CPTPP and JEEPA.
- Since the import volume of **#4 Blue-veined Cheese** is very limited and mostly from Europe, we do not focus on this category as well.
- Due to the high tariff rate (40%), currently there are almost no US exports of **#5 Processed Cheese** to Japan. Most of the current processed cheese imports to Japan consist of a processed cream cheese in retail packs from France.

Table 5 Cheese Categories Under CPTPP and JEEPA Tariff Schedule

Cheese category	HS	Cheese type	Condition	2017 (volume in 000 mt)			Current duty	CPTPP	JEEPA
				US	World	US %			
#1 Ripened natural cheese (cheddar, monterey jack, parmesan, camembert)	040690090	Hard (cheddar, gouda, monterey jack, etc)		18	127	14%	29.8%	Phase out in 16 yrs	Phase out in 16 yrs
		Soft (camembert, etc)						No reduction	EU TRQ
	040690010	Mainly cheddar & gouda	Intended to use for processed cheese	2	38	6%	1:25 Tie-in quota	No change	No change
#2 Fresh natural cheese (cream, MFCC, mozzarella, etc)	040610090	Cream cheese	Cream cheese (fat - less than 45%)	5	86	6%	29.8%	Phase out in 16 yrs	Phase out in 16 yrs
		MFCC	Cream cheese (fat - more than 45%)					No change	EU TRQ
		Mozzarella, etc	Intended to use for shred cheese					1:3.5 Tie-in quota	
		Mozzarella, etc						No change	
	040610020	Mozzarella	IQF	4	4	99%	22.4%	Phase out in 16 yrs	
	040610010	Cream cheese, mozzarella, etc	Intended to use for processed cheese	0.4	4	10%	1:25 Tie-in quota	No change	No change
#3 Powdered cheese	040620200	Natural cheese		1.8	3	61%	26.3%	Phase out in 16 yrs	Phase out in 16 yrs
	040620100	Processed cheese		0.07	2	3%	40.0%	Phase out in 16 yrs	EU TRQ
#4 Blue-veined cheese	040640090	Blue cheese		0.02	1	2%	29.8	50% tariff reduction in 11 yrs	EU TRQ
#5 Processed cheese	040630000	Processed cheese		0	7	0%	40.0%	TRQ (300-450mt)	EU TRQ

Sources: Japan Customs, The provisions of CPTPP and JEEPA

3.2. Ripened Natural Cheese (Cheddar, Gouda, Monterey Jack, etc.)

3.2.1. Sub-categories under Ripened Natural Cheese

Ripened natural cheese, including cheddar, gouda, monterey jack, parmesan, camembert, comprises the largest import category among the overall cheese imports. Total import volume is around 165,000 mt, and the US holds around a 12% share.

Table 6 Cheese Categories Under CPTPP and JEEPA Tariff Schedule

Cheese category	HS	Cheese category	Condition	2017 (000 mt)			Current duty	CPTPP	JEEPA
				US	World	US %			
#1 Ripened natural cheese (cheddar, gouda, monterey jack, camembert)	040690090	Hard (cheddar, gouda, monterey jack, etc)	-	18	127	14%	29.8%	Phase out in 16 yrs	Phase out in 16 yrs
		Soft (camembert, etc)						No reduction	EU TRQ
	040690010	Mainly cheddar & gouda	Intended to use for processed cheese	2	38	6%	1:2.5 Tie-in quota	No change	No change

Sources: Japan Customs, The provisions of CPTPP and JEEPA

Japan allocates a duty-free quota for natural cheese imported for the purpose of blending into domestic processed cheese products. The official requirement is that processed cheese manufacturers must blend domestic natural cheese with imported cheese at a 1:2.5 ratio to produce processed cheese products (referred to as **1:2.5 Tie-in Quota** hereafter, under HS 040690010).

As domestic dairy manufacturers focus more on producing natural cheese products for retail or for direct consumption, domestic natural cheese production for processed cheese is continuously declining, and cheese imports under the 1:2.5 Tie-in Quota are shrinking. Over the last couple of years, leading Japanese cheese manufacturers that have facilities for natural cheese production from raw milk and for processed cheese from natural cheese, have almost completely stopped selling the domestic natural cheese they produce to other processed cheese manufacturers and are using domestic natural cheese only for their own processed cheese production.

On the other hand, the specialty processed cheese manufacturers, who do not have facilities to make natural cheese from raw milk, have been expanding their production capacity to cope with the increasing demand for processed cheese in Japan. For example, some Japanese companies have announced expansion of their production. However, these companies cannot utilize the 1:2.5 Tie-in Quota, and are just relying on out-of-quota imports which are subject to the current duty of 29.8%.

Therefore, the volume imported through 1:2.5 Tie-in Quota is declining. Only 38,000 mt (23% of the total ripened natural cheese imports) was imported under the 1:2.5 Tie-in Quota in 2017, and the amount from the US was around 2,200 mt. The Tie-in Quota will remain unchanged both under the CPTPP and JEEPA.

The remaining 70% of the ripened natural cheese imports with a total volume of 127,000 mt (of which, imports from the US are around 17,700 mt) are categorized under one HS code 040690090. However, Japan subdivided this ripened natural cheese category into two sub-categories: **Hard Type** (including cheddar, gouda, monterey jack, steppen, parmesan, etc.), and **Soft Type** (including camembert) for CPTPP and JEEPA. For Hard Type cheese, Japan will eliminate the current 29.8% tariff in 16 years under CPTPP and JEEPA. Since Japan has a sizable domestic production of camembert cheese, Japan did not provide any additional market access under CPTPP for Soft Type products. However, Japan included Soft Type cheese in the EU-specific cheese tariff rate quota (TRQ)[4] under JEEPA and the in-quota tariff rate will be eliminated in 16 years.

3.2.2. Estimated Supply Mix of Ripened Natural Cheese

Since the current Japanese import and production statistics do not track volumes by sub-categories, Meros prepared estimates of the import and production volumes of ripened natural cheese by type in order to analyze the current competitive situation as well as the potential impact of the CPTPP and JEEPA. The estimates are based on the export statistics of trade partners, historical production statistics[5], reports, news articles, and the trade interviews we conducted for this project. We analyzed the market situation of the following five cheese categories:

- **Hard**
  1. Cheddar (cheddar & colby)
  2. Gouda (gouda & gouda type)
  3. Other hard/semi-hard
  4. Monterey jack
- **Soft**
  5. Camembert and other soft

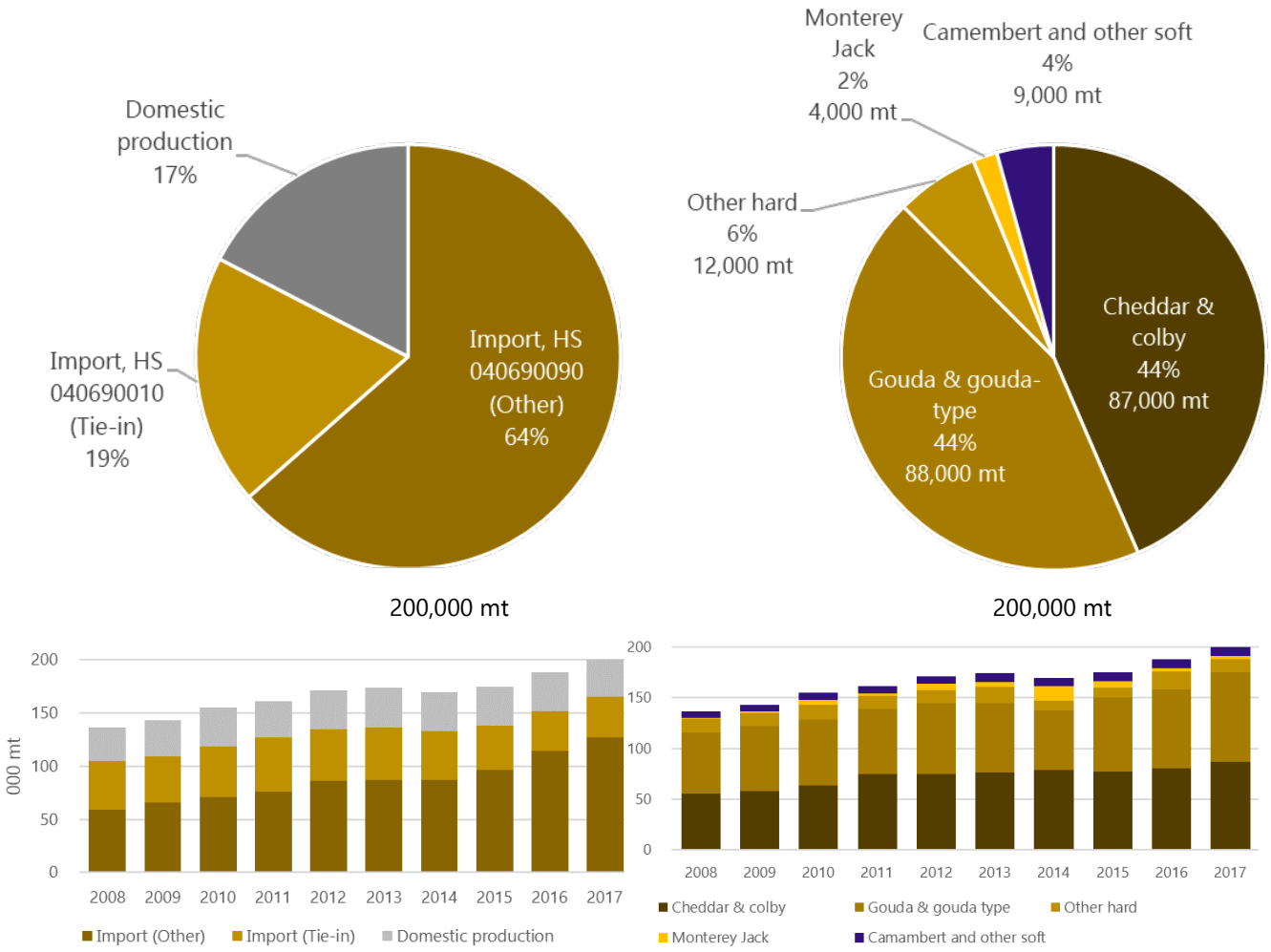
[4] JEEPA set an EU-specific cheese quota, which starts at 20,000 mt, increasing annually to 31,000 mt by Year 16 with volume re-evaluated by Japan from Year 17. In-quota tariffs phase to zero by Year 16. Out-of-quota tariffs unchanged. The cheese included into this TRQ is: cream cheese (45% or more fat), ripened soft cheese (camembert, etc.), blue-veined cheese, powdered processed cheese, shredded cheese and processed cheese.

[5] Cheese production volume by type is available in MAFF statistics up until 2008.

Based on our estimates shown in the table on the next page, the total market for ripened natural cheese was around 200,000 mt in 2017. Imports accounted for 83%, and domestic production accounted for 14% of the market (down from 21% in 2008). While the overall demand has been increasing, the share of domestic production has continued to shrink. . The overall demand for ripened natural cheese increased by 45% during the last 10 years, and the imports filled almost the entire gap created by this growth.

By type, cheddar and gouda each had a 44% share of the market. Other hard/semi-hard types accounted for 6%, and American monterey jack accounted for 2%. Soft type cheese accounted for only 4% of the market with an estimated volume of 9,000 mt, of which 6,000 mt is domestic production and 3,000 mt is mainly imported camembert from France and Denmark. One Japanese company started operating a newly expanded camembert production facility in 2018, which will add another 1,000 mt of domestic production. We examine cheddar, gouda and monterey jack in more detail in the following chapters.

Figure 12 Estimated Supply (Import & Domestic) of Ripened Natural Cheese (2017)



Source: Estimated by Meros Consulting

Table 7 Estimated Supply of Ripened Natural Cheese

Unit: 000mt

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR of last 5 yrs
TOTAL		**137**	**143**	**155**	**162**	**171**	**174**	**170**	**174**	**188**	**200**	**4%**
Domestic	**Sub-total**	**32**	**34**	**36**	**35**	**36**	**38**	**36**	**36**	**36**	**35**	**-2%**
By type	Cheddar	12	13	14	13	14	14	13	13	13	13	-2%
	Gouda & gouda type	15	16	18	17	17	18	17	17	17	16	-2%
	Camembert	5	5	5	5	5	6	6	6	6	6	0%
By usage	Processed cheese	23	25	26	25	25	26	24	24	23	22	-4%
	Direct consumption	9	9	10	10	11	12	12	12	13	13	2%
Import	**Sub-total**	**105**	**109**	**119**	**127**	**135**	**137**	**133**	**138**	**152**	**165**	**5%**
By type	Cheddar & colby	44	45	50	62	61	63	65	64	67	74	4%
	Gouda & gouda type	45	48	48	47	52	50	42	55	61	72	9%
	Other hard/semi-hard	13	13	14	13	13	16	10	10	17	13	-6%
	Monterey jack	1	2	5	3	6	5	14	7	4	4	-8%
	Camembert and other soft	1	2	2	2	3	2	2	2	3	3	2%
By HS	Tie-in	46	43	48	51	49	50	46	41	37	38	-6%
	Others	59	66	71	76	86	87	87	96	114	127	10%

Source: Estimated by Meros Consulting

3.2.3. The Competitive Situation in Imports of Ripened Natural Cheese

US exports to Japan in the ripened natural cheese category are mainly **cheddar** (about 16,000 mt) and **monterey jack** (about 4,000 mt). There are some other US products exported to Japan, like parmesan and gouda, but we do not focus on these as the volume is very limited.

Table 8 Estimated Competitive Situation in Imports of Ripened Natural Cheese

	TOTAL	Domestic	Import	NZ	Australia	US	Ireland	Netherland	Denmark	Germany	Other
Cheddar & Colby	**87**	**13**	**74**	26	23	**16**	8	-	-	-	1
Gouda & gouda-type	**88**	**16**	**72**	18	10	**-**	-	28	10	1	9
Monterey jack	**4**		**4**	-	-	**4**	-	-	-	-	-
Other hard/semi-hard	**12**		**12**	2	1	**-**	-	1	-	7	1
Camembert & other soft	**9**	**6**	**3**	-	-	**-**	-	-	-	-	3

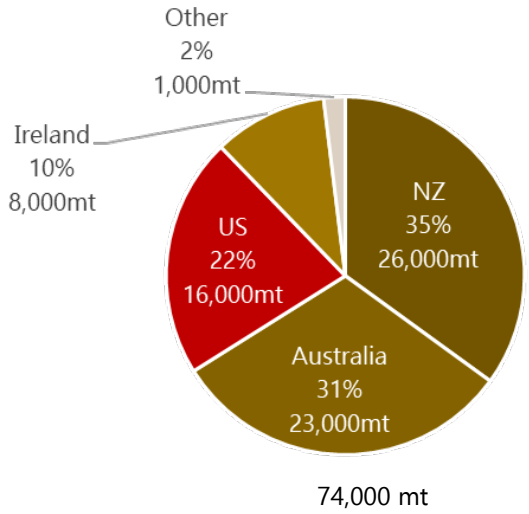
Source: Estimated by Meros Consulting

Cheddar and Colby

Major Suppliers

In the cheddar and colby category, the US is mainly competing with NZ, Australia and Ireland. NZ and Australia were the only major suppliers of cheddar cheese until 10 years ago. Dairy manufacturers started to switch from NZ and Australia to the US in 2010 when the import price difference between Oceanian products and US products rose to more than 10%. The importers we interviewed mentioned that this 10% price difference made US products more attractive for processed cheese manufacturers. Less than 10% price difference is usually not enough to consider switching to US products, because the moisture content of US cheddar is higher compared to Oceanian products.

Figure 13 Estimated Share of Export Suppliers of Cheddar & Colby (2017)



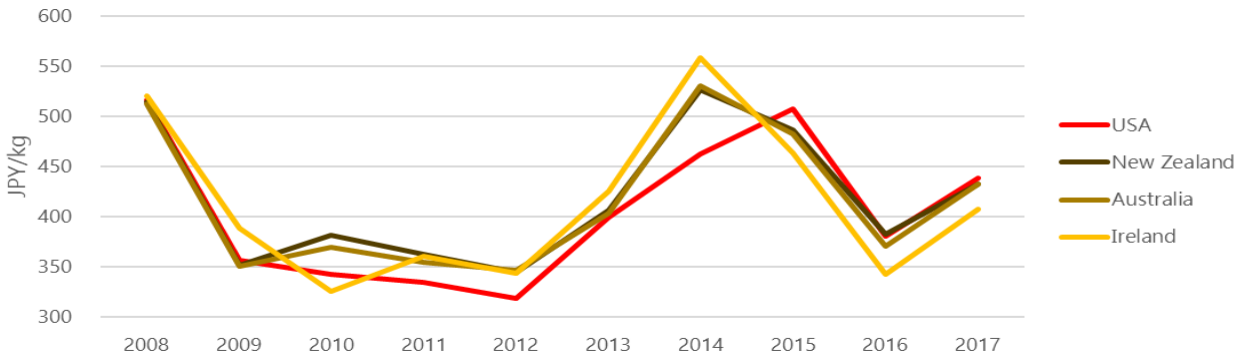
74,000 mt

Source: Estimated by Meros Consulting

The US has rapidly expanded its exports since then, and it became the largest cheddar supplier to Japan in 2014. At that time, US cheddar was 14% cheaper than Oceanian cheddar, and the import volume reached 22,000 mt. However, the US cheddar price surged in 2015 in response to the raw milk price increase in the US, spurred in 2014 by high export demand not only from Japan, but also from Mexico, Korea, China, and others. Currently, there is almost no price difference between the US and Oceanian products.

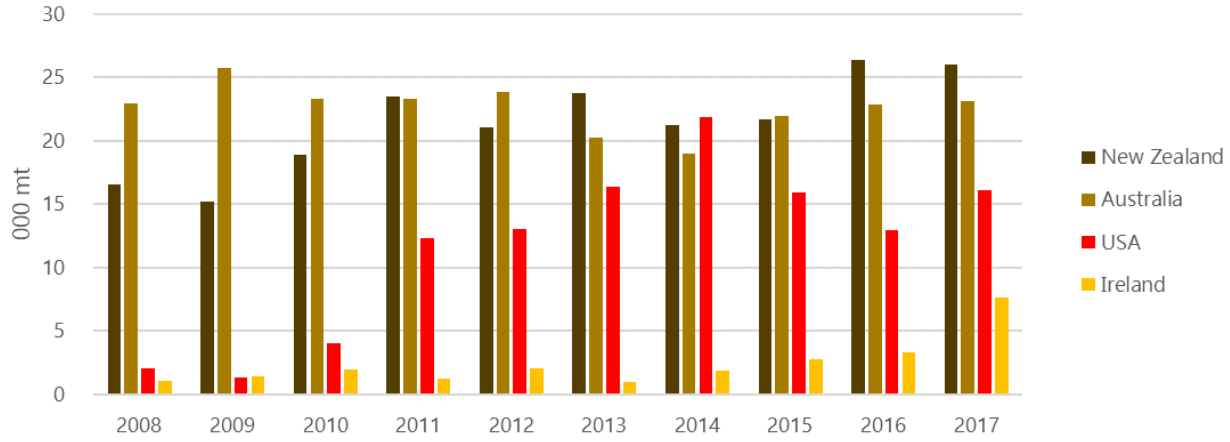
In contrast, Ireland's cheddar price dropped in 2015 and the Japanese import price of Irish cheddar became 9% cheaper than US cheddar, due to the excess supply of cheese caused by the Russian import ban on EU cheese from Aug 2014, as well as the abolition of the EU milk quota from March 2015. Thus, imports from Ireland increased rapidly in 2016 and 2017 to reach 8,000 mt.

Figure 14 Price Comparison of Cheese Imported under HS 040690090



Source: Japan Customs

Figure 15 Volume Comparison of Cheddar Cheese Imports



Source: Estimated by Meros Consulting

Major Usage

According to our interviews with major importers, 80% of cheddar cheese is used for producing processed cheese. Cheddar cheese for processed cheese manufacturing can be categorized into two types: 1) cheddar with specific functions and 2) cheddar used as a bulking agent. For the former, manufacturers cannot switch that easily from Oceania to US, since Oceania cheese suppliers have been working with the Japanese importers for a long time to develop specialized products that meet the specific conditions set by Japanese manufacturers. In contrast, it is easier to switch suppliers of cheddar cheese usedas a bulking agent.

The remaining 20% of imported cheddar cheese is shredded or cut and distributed to retail and food service sectors, as well as to other food processors. Shredders do not care about moisture content, and they tend to switch to cheaper products quite easily.

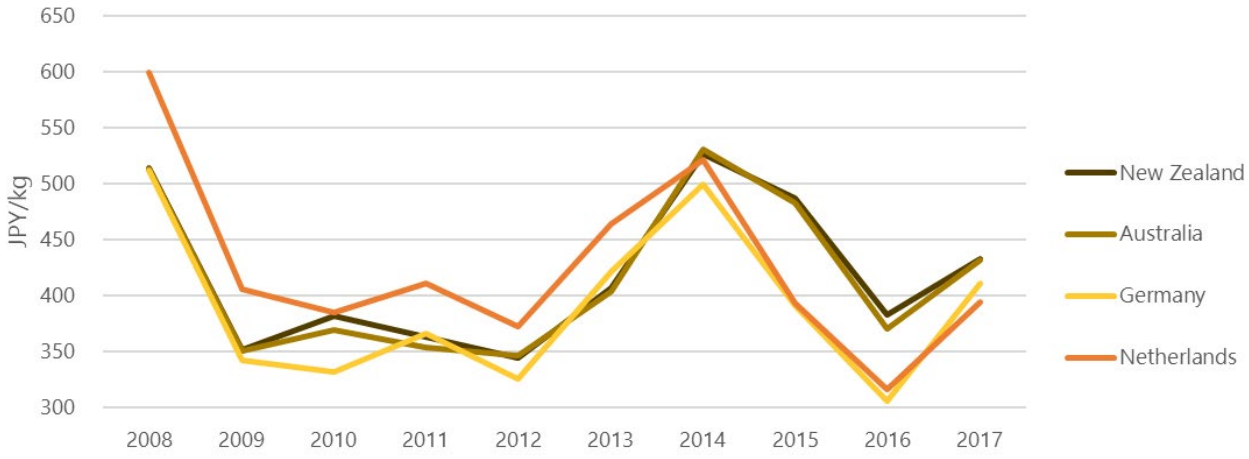
Monterey Jack

Monterey jack is imported only from the US, and is mainly used for shredded cheese, but sometimes for processed cheese as well. It is competing with other natural cheese varieties for shredded cheese, including mozzarella, cheddar and gouda. An importer we interviewed mentioned that monterey jack originally entered the Japanese market because of attractive pricing. While it has gained a certain level of recognition, the importers believe that the price is still its core competitive asset.

Gouda & Gouda Type

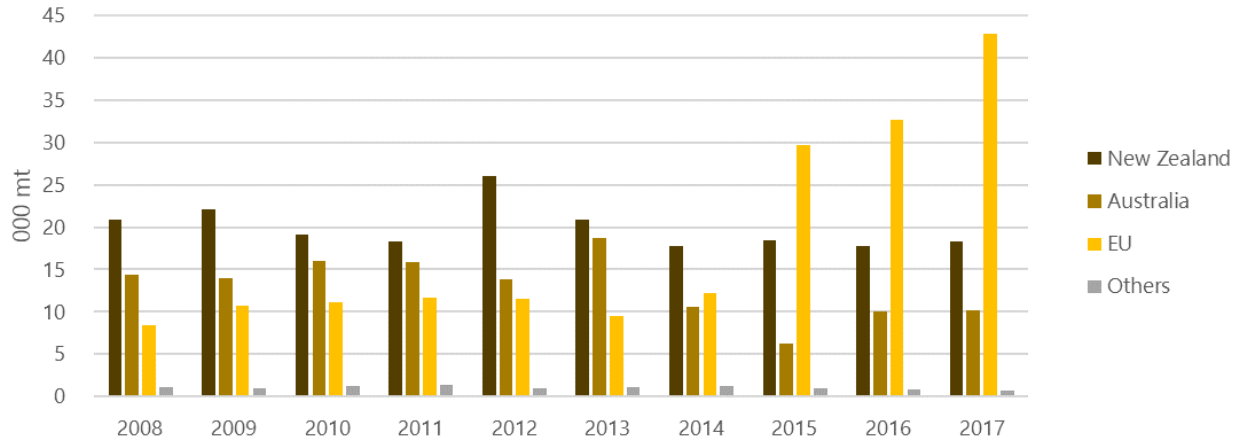
Gouda and gouda type cheeses mainly come from NZ, Netherlands, Australia and Denmark. With the limited supply from NZ and Australia, imports from the EU increased sharply during the last three years.

Figure 16 Price Comparison of Cheese Imported under HS 040690090



Source: Japan Customs

Figure 17 Volume Comparison of Gouda Cheese Imports



Source: Estimated by Meros Consulting

3.2.4. Quantitative Analysis of the Impact of the CPTPP and JEEPA on Ripened Natural Cheese

In this section, we start by analyzing the category-based quantitative impact of the CPTPP and JEEPA (**by volume**) in Year 5, Year 10 and at the point of full implementation. We do this through the following three steps as explained in section 1.3.2:

1. Baseline projection of Japanese imports by category
2. Positive impact of the CPTPP & JEEPA on the overall Japanese imports by category
3. Negative impact of the CPTPP & JEEPA on the US exports to Japan by category

Then, we analyze the negative impact of the CPTPP & JEEPA on US trade **by value** in Year 5, Year 10 and at the point of full implementation based on the 2013-2017 average price. Finally, we provide our assessment of the accumulated impact by value to show what the aggregate loss to the US dairy market would be over 5 years, over 10 years, and then upon final CPTPP/JEEPA implementation.

We use a similar approach for the analysis of other categories, but depending on the category we have adjusted the approach slightly to reflect the actual situation based on comments from the industry interviews. These differences are explained in detail in each section.

Key Results of the Quantitative Analysis of the Impact of the CPTPP and JEEPA on Ripened Natural Cheese

The following table shows our results of the impact of the CPTPP and JEEPA on US exports of ripened natural cheese.

Table 9 Impact of CPTPP and JEEPA on US Exports of Hard-type Ripened Natural Cheese to Japan

Unit: 000mt

	Baseline		CPTPP/JEEPA		**US Lost Volume Total**	**US Lost Value as 2013-17 average price** (million US$)	**Accumulated US Lost Value at 2013-27 average price** (million US$)
	TOTAL	US	TOTAL	US			
Base year - 2017	163	20	163	20	**-**	**-**	**-**
Year 5 - 2022	204	43	214	32	**-11**	**-43**	**-57**
Year 10 - 2027	251	61	286	6	**-55**	**-218**	**-797**
Year 16 - 2033	278	72	329	0	**-72**	**-283**	**-2,332**

Source: Prepared by Meros Consulting

Table 10 on the next page shows our baseline projection as well as the projected impact of CPTPP & JEEPA. In the rest of this section, we explain the methodology for this quantitative analysis in more detail.

Table 10 The Overall Projection of Ripened Natural Cheese Category

		Population	Per Capita Supply/ Demand	Supply											
					Import								Domestic		
					TOTAL	*Hard (Cheddar, Gouda, Monterey Jack)*					*Soft (Camembert, etc)*				
				TOTAL		***Sub-total***	*US*	*Aus, NZ, Canada*	*EU*	*Others*	***Sub-total***	*EU*	**TOTAL**	For processed cheese	For direct consumption
		millions	kg/cap	000mt											
	2008	128	1.07	**137**	**105**	**103**	3	79	19	2	**1**	1	**32**	23	9
	2013	127	1.37	**174**	**137**	**134**	22	88	22	2	**2**	2	**38**	26	12
Base Year	2017	127	1.58	**200**	**165**	**163**	20	81	61	1	**3**	3	**35**	22	13
CAGR '08-'17		-0.1%	4.4%	**4.3%**	**5.2%**	**5.2%**	22.2%	0.4%	13.8%	-10.7%	**6.7%**	6.7%	**1.0%**	-0.5%	4.2%
CAGR '13-'17		-0.1%	3.7%	**3.5%**	**4.9%**	**5.0%**	-2.0%	-2.0%	28.4%	-17.6%	**1.7%**	1.7%	**-1.9%**	-4.0%	2.0%
Baseline projection															
Year 5	2022	124	1.92	**239**	**208**	**204**	43	90	69	2	**3**	3	**31**	18	14
Year 10	2027	121	2.34	**283**	**255**	**251**	61	90	97	3	**4**	4	**28**	14	14
Year 16	2033	117	2.63	**308**	**283**	**278**	72	90	114	3	**5**	5	**25**	11	14
CAGR '17-'22		-0.4%	4.0%	**3.6%**	**4.7%**	**4.7%**	16.9%	2.0%	2.6%	22.2%	**4.7%**	4.7%	**-2.1%**	-4.0%	0.8%
CAGR '22-'27		-0.5%	4.0%	**3.5%**	**4.2%**	**4.2%**	7.2%	0.0%	7.2%	4.2%	**4.2%**	4.2%	**-2.2%**	-4.0%	0.0%
CAGR '27-'33		-0.6%	2.0%	**1.4%**	**1.7%**	**1.7%**	2.6%	0.0%	2.6%	1.7%	**1.7%**	1.7%	**-2.0%**	-4.0%	0.0%
Impacts of CPTPP and JEEPA															
Year 5	2022	124	2.00	**248**	**217**	**214**	32	90	90	2	**3**	3	**31**	18	14
Year 10	2027	121	2.53	**307**	**291**	**286**	6	90	190	0	**4**	4	**16**	3	14
Year 16	2033	117	2.99	**349**	**333**	**329**	0	90	239	0	**5**	5	**16**	2	14
CAGR '17-'22		-0.4%	4.8%	**4.4%**	**5.6%**	**5.6%**	10.3%	2.0%	8.2%	13.8%	4.7%	4.7%	-2.1%	-4.0%	0.8%
CAGR '22-'27		-0.5%	4.8%	**4.3%**	**6.0%**	**6.0%**	-	0.0%	16.2%	-	4.2%	4.2%	-12.1%	-30.4%	0.0%
CAGR '27-'33		-0.6%	2.8%	**2.2%**	**2.3%**	**2.3%**	-	0.0%	3.9%	-	1.7%	1.7%	-0.6%	-4.0%	0.0%

Source: Meros Consulting

Note: Blue cells indicate our assumptions for the baseline projection

1. Baseline Projection of Japanese Imports of Ripened Natural Cheese

We created a baseline projection of Japanese Imports of Ripened Natural Cheese. This included the following three steps:

i. Develop an overall demand forecast by category
ii. Develop a forecast on import volume by country and by category
iii. Develop a forecast on the demand for imports by category

i. Develop an overall demand forecast by category

- ☐ As a first step, we aggregated the import volume and the domestic production volume to get the total supply volume by category.
- ☐ Secondly, we divided the total supply volume by population to get per capita demand. In order to reflect the impact of the accelerating depopulation over the next two decades, we made a demand projection based on per-capita consumption.
- ☐ As a next step, we determined the projected future growth rate of per-capita demand based on the past trends as well as the insights from expert interviews and other available resources.
  - ✓ In the case of the Ripened Natural Cheese sector, based on our discussion with industry experts as well as the past statistical record, we assumed 4% growth in per capita consumption for the next 10 years and 2% growth after that.
- ☐ Finally, we multiplied the per-capita demand forecast with the population forecast to get overall demand. We used the population forecast prepared by the National Institute of Population and Social Security Research, 2017, Medium birthrate & Medium death rate.

Some of the major comments from our interviewees include:

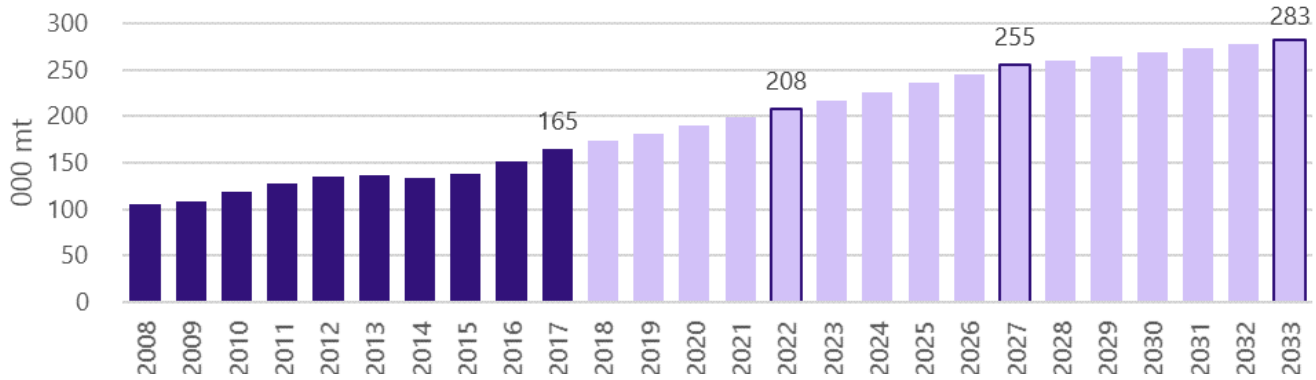
- *Domestic demand for cheese is likely to keep increasing at least for the next 5 years. Whether it will continue for 10 years is questionable and demand is likely to become flat at some point between 5 years and 10 years from now. Demand is increasing as [cheese varieties] are increasingly used for toppings at family restaurant chains etc.*
- *Demand for cheese is increasing. For natural cheese, the industrial sector is expanding. With the increased popularity of prepared food products, there is a room for more dairy products to go into this sector.*
- *The recent increase in cheese consumption has largely been driven by the increased consumption of dairy products among the older population.*
- *The trend for increased cheese consumption should continue for the next 20 years, considering that this trend has continued for the last two decades. Still, the annual per capita consumption of cheese in Japan is only 2.5kg, which is much smaller than 8kg in Spain and 22kg in France. There is a limit to what extent dairy consumption can grow in the Japanese context.*

ii. Develop a forecast for the import demand by category

- ☐ Since domestic supply of dairy products is limited due to the declining milk supply, as well as the "voluntary" milk supply control system, industry members and experts have a relatively clear picture of what future domestic dairy production will look like. Thus, we made the forecast of domestic supply first. In most cases, our projection is flat or slightly declining, based on the industry experts' comments and other available resources.
  - ✓ In the case of the Ripened Natural Cheese sector, we assumed domestic ripened natural cheese production for processed cheese will decline by -4% per year. We expect a 1,000 mt increase of domestic ripened natural cheese production for direct consumption with the planned capacity growth of one manufacturer's camembert factory this year, but we do not expect any increase after that.
- ☐ We subtracted the domestic supply volume from the overall demand calculated as explained above in order to get the demand for imports.

Our baseline projection shows the demand for imports could increase to 208,000 mt by Year 5; 255,000 mt by Year 10; and 283,000 mt by Year 16.

Figure 18 The Baseline Projection of Ripened Natural Cheese Imports



Source: Prepared by Meros Consulting

Some of the major comments from our interviewees include:

- *Currently, the domestic production of natural cheese is about 45,000 mt, of which 25,000 mt is for retail and 20,000 mt is for shredded and processed cheese. The 25,000 mt for retail is unlikely to change much as there are certain products that have already established their status in the market. The 20,000 mt for processed cheese will shrink anyway, due to the limited raw milk supply.*
- *Domestic cheese production will drop. Maybe 5% decline in domestic cheese production during the next 5 years. It depends on raw milk production, because Japan needs to put more focus on drinking milk.*
- *Both cheddar and gouda imports are expected to grow for both processed cheese and shredded cheese sectors.*

iii. Develop a forecast on import volume by country and by category

- ☐ In the case of Ripened Natural Cheese, CPTPP and JEEPA provide different conditions for Hard (cheddar, gouda, monterey jack, etc.) and Soft (camembert, etc.), so we show our projections separately. Actually, the soft cheese sector is too small to have significant impact on the overall analysis.
  - ✓ Thus, we have assumed the same shares of hard and soft as now.
- ☐ All of our interviewees agreed that the dairy supply from the two largest suppliers to the Japanese market, Australia and New Zealand, is not likely to increase further. Japanese dairy imports from Australia and New Zealand have been almost flat for the last decade, and this tendency hasn't changed even after the Australia-Japan EPA entered into force. The Australian milk supply is declining. Although the milk supply from New Zealand is slightly increasing, the country has been focusing more on China and other Asian markets and not increasing exports to Japan. All industry experts we interviewed mentioned that the EU and the US have more potential to expand further, and the future increase in demand is highly likely to be supplied by those two suppliers. Thus, we projected export volume from Australia and New Zealand will remain at the same level as the current export volume, with some exceptions which we will explain in each category.
  - ✓ In the case of the Ripened Natural Cheese sector, we assumed that supply from Australia and New Zealand will increase by 2% till Year 5, and by 0% after that. This reflects the comments from importers we interviewed as well as the past export trend.
- ☐ We deducted the projected Aus/NZ import volumes from the forecasted import demand, then allocated the remaining volume between the US and EU based on the 5-year average share (2013-2017).

Thus, the baseline projection shows the US exports of ripened natural cheese to Japan could increase from 20,000 mt in 2017 to 43,000 mt by Year 5 (2022), to 61,000 mt by Year 10 (2027) and to 72,000 mt by Year 16 (2033).

2. Positive Impact of the CPTPP & JEEPA on Japanese Imports of Ripened Natural Cheese

The next step is to reflect the positive impact from CPTPP and JEEPA on the import demand forecast.

Under the CPTPP and JEEPA, the 29.8% tariff for hard-type cheese under the Ripened Natural Cheese category will be eliminated within 16 years from effectuation.

The CPTPP excluded soft-type cheese from the tariff reduction, but JEEPA included soft-type cheese in the new cheese tariff rate quota for EU countries. The TRQ will start at 20,000 mt, increasing annually to 31,000 mt by Year 16 with the volume re-evaluated by Japan from Year 17. In-quota tariff will be reduced to zero by Year 16. Out-of-quota tariffs will remain unchanged. Cheese products included in this TRQ are: cream cheese (45% or more fat), ripened soft cheese (camembert, etc.), blue-veined cheese, powdered processed cheese, shredded cheese and processed cheese.

Table 11 CPTPP/JEEPA Tariff Schedule for Ripened Natural Cheese

CPTPP

HS	Product	Current	2018 Dec-2019 Mar	2022	2027	2033
			Year 1	Year 5	Year 10	Year 16
040690010	Intended for use as materials for processed cheese	1:2.5 tie-in quota	No change			
040690090	Other mature cheese, hard (cheddar, gouda, etc.)	29.8 %	27.9	20.4	11.1	0.0
	Other mature cheese, soft (camembert, etc)	29.8 %	No change			

JEEPA

HS	Product	Current	2019 Feb-Mar	2022	2027	2033
			Year 1	Year 5	Year 10	Year 16
040690010	Intended for use as materials for processed cheese	1:2.5 tie-in quota	No change			
040690090	Other mature cheese, hard (cheddar, gouda, etc.)	29.8 %	27.9	20.4	11.1	0.0
	Other mature cheese, soft (camembert, etc) in EU TRQ	29.8 %	27.9	20.4	11.1	0.0
	Other mature cheese, soft (camembert, etc)	29.8 %	No change			

Source: The provisions of CPTPP and JEEPA

In order to reflect the positive impact of the CPTPP and JEEPA on import demand forecast by category, we took the following steps:

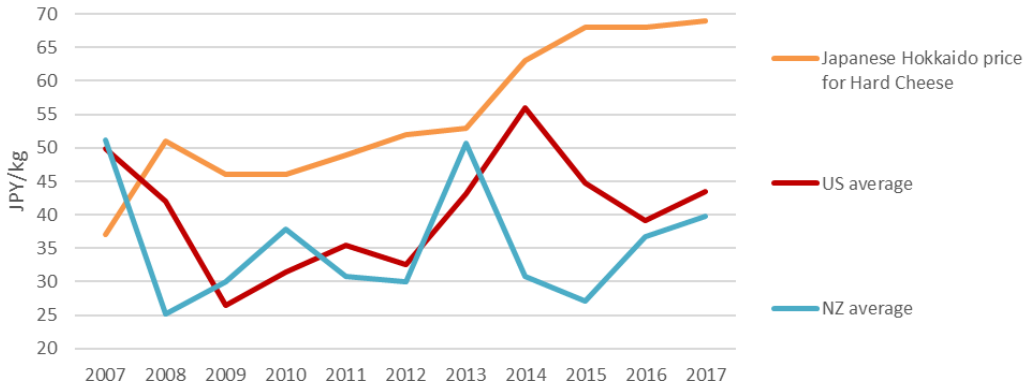
- ☐ Although cheese imports showed strong growth regardless of price fluctuation, we see some relationship between price and demand in retail consumption statistics. It is expected that the tariff reduction/elimination on dairy products will have a positive impact on the overall import volume.
- ☐ Most dairy products are price inelastic (meaning that a 10% price drop won't create 10% demand increase.). A study of household cheese purchasing data showed that the price elasticity of natural cheese is around 0.4-0.5,[6] meaning that a 10% price drop will stimulate a 4-5% demand increase. One of our interviewees also mentioned a similar rate (5% price drop could increase demand by 2-3%). Thus, we made a projection that includes this positive impact, given the phase-out of the tariff reduction and the reality that in some sectors new access is limited.
  - ✓ In the case of Hard-type ripened natural cheese, we assumed that a roughly 9.4 percent point decline in the tariff by year 4 will stimulate hard-type cheese demand by 4.7%, an 18.7 percent point decline in the tariff by Year 10 will stimulate demand by 9.4%, and a 29.8% tariff elimination by Year 16 will stimulate

[6] Katsushi Wakabayashi, 2010, *Impact of Habit Formation on Natural Cheese Consumption* https://www.jstage.jst.go.jp/article/nokei/82/1/82_1/_pdf

demand by 14.9%.

- ☐ Another expected impact of the CPTPP/JEEPA tariff reduction is a further decline in domestic hard-type cheese production, as the tariff reduction will make the 1:2.5 tie-in quota less attractive. As the price of domestically produced natural cheese for processed cheese production is not available, since these products are not commonly traded, we just compared the price of raw milk as a reference. There has been around a 40-50% price difference in raw milk between Japan and major dairy suppliers over the last decade, and such price differences have even expanded over the last couple of years. If we assume that Japanese hard-type cheese will continue to be 50% more expensive compared to internationally traded products, by the Year 10 when the tariff declines to 11.1%, there will be no benefit to utilize the 1:2.5 tie-in quota. This will encourage hard cheese imports to replace domestic production.
  - ✓ Thus, we assume that 80% of domestic cheese production for processed cheese will be replaced by imports of hard-type cheese (cheddar and gouda) by Year 10.

Figure 19 Raw Milk Price Differences between the US, NZ and Japan for cheese



Source: ALIC

We do not expect any impact of the CPTPP on soft type cheese, as a tariff remains. We also do not expect any significant impact from the JEEPA, since the TRQ size allocated for EU products, including soft type, is small compared to the forecasted overall demand increase.

Table 12 Impact of the CPTPP and JEEPA on Japanese Imports of Ripened Natural Cheese

Unit: 000mt

	TOTAL	Hard (Cheddar, Gouda, Monterey Jack, etc.)	Soft (Camembert, etc.)
Base year - 2017	**165**	163	3
Year 5 - 2022	**217**	214	3
Year 10 - 2027	**291**	286	4
Year 16 - 2033	**333**	329	5

Source: Prepared by Meros Consulting

Major comments regarding the impact of CPTPP and JEEPA on overall cheese imports include:

- *The JEEPA is likely to accelerate the increase in demand for cheese. If the price goes down by 5%, demand is likely to increase by 2-3%.*
- *As a result of CPTPP and JEEPA, there will be both substitution of domestic cheese by imported cheese and increase in demand.*
- *It is difficult to say to what extent cheese demand will increase. Cheese consumption tends to be affected by economic conditions and price. When the economy is slow, people tend to eat out less and this impacts cheese demand. After the Lehman shock, cheese imports decreased by 50,000 tons, for example.*
- *The substitution of domestic products will happen at the point when the import price becomes lower than the domestic price. According to the past average price, this is likely to happen in 8 years at the latest, but when it will actually happen will depend on the import price. An analysis (Prof. Shimizuike's research) has been conducted based on the raw milk price and the price ranges from 30 Yen/kg (including tariff) to 50 Yen/kg. If the import price becomes as low as 30 Yen/kg, substitution of domestic cheese by imported cheese (ingredients for processed cheese) may occur in the first year.*
- *Major domestic cheese producers have already stopped selling cheese to other companies. They focus on using their own natural cheese for their own production of processed cheese. Three to four years ago, they were still selling their domestic natural cheese to other players, but they have stopped doing this recently. Supply is becoming very tight. They will continue making natural cheese for processed cheese in order to import natural cheese under the tie-in quota while it still makes sense to use the quota. However, once the tariff becomes low enough to make the tie-in quota unattractive, they are likely to stop producing natural cheese for processed cheese production.*
- *The general expectation is that domestic production is likely to go down to about 30,000 mt (25,000mt for retail and only 5,000 mt for processing cheese) in the next 10 years and then remain at 30,000 tons.*

3. Negative Impact of CPTPP & JEEPA on US Exports of Ripened Natural Cheese

The third step is to determine the negative impact of the CPTPP and JEEPA on US exports of ripened natural cheese.

- ☐ We examined the substitutability of US products with other suppliers in order to determine the negative impact from the CPTPP and JEEPA.
- ☐ There is some relationship between unit price and import share by supplier, but this relationship is often not very clear in the statistics. Ireland's cheese price suddenly became 9% cheaper than US products in 2015 and US share in Japanese cheddar cheese import declined from 33.5% to 25.0% (25% decline in share). There was almost the same situation in 2016 (Ireland's price was 10% cheaper than the US price, and US share declined by 22.4%). However, the decline of the Irish cheese price did not have any impact on New Zealand and

Australian cheddar cheese exports to Japan. In 2017, Ireland's cheese price remained low compared to the US/New Zealand/Australia, but imports from the US increased only slightly.

- ☐ All importers agreed that the CPTPP and JEEPA will impact US supply, but the level of impact they expect varies. One importer mentioned that they expect even a 4% tariff difference (Year 2 level) could cause a 20-30% reduction in US share. Another importer expects that a 4-5% tariff difference will not have any impact, but there may be some impact once the tariff difference becomes more than 10%.
- ☐ Generally speaking, a 4-5% price difference is not a strong incentive for a user to switch suppliers considering the cost of such a transaction, as well as the relationship they have created with the supplier. However, one of our interviewees mentioned that some users, particularly bulk volume users, may switch suppliers even with a 2-3% price difference. Most of our interviewees agreed that at the point when users see a 10% price difference, some users could start to switch suppliers. When the price difference increases to almost 20%, importers will have difficulty justifying the price differences for most bulk products, and thus only specific products will remain in the market.
- ☐ Although it will always depend on the market situation, we made the following assumptions for the hard-type ripened natural cheese sector based on product substitutability suggested by importers and experts. We also took into account the phase-out of the tariff reduction and the reality that in some sectors new access is limited (including TRQs, safeguard, etc.).
  - ✓ We assume a 9.4% tariff reduction by Year 5 will create a 9.4% price drop in competitors' products, and this will generate a 35% drop in US share.
  - ✓ Then, we assume that a 18.7% tariff reduction by Year 10 will create a 18.7% price drop in competitors' products and this will cause a 90% drop in US share.
  - ✓ We assume that a 29.8% tariff reduction by Year 16 will cause complete replacement of US products by competing countries.

Based on the above method, we calculated the US lost volume in Year 5, Year 10 and Year 16 as shown in Table 9 on page 29.

Some of major comments on the impact of the CPTPP and JEEPA on US cheese exports include:

- *The US competes with all other suppliers in the cheddar market. The reason why the US was able to take some share from Australia and NZ is attractive pricing.*
- *Australia and NZ do not have much capacity to export more to Japan but European countries do. If there is a 4% difference in the tariff rate, 20-30% of the US cheddar may be substituted by European cheddar.*

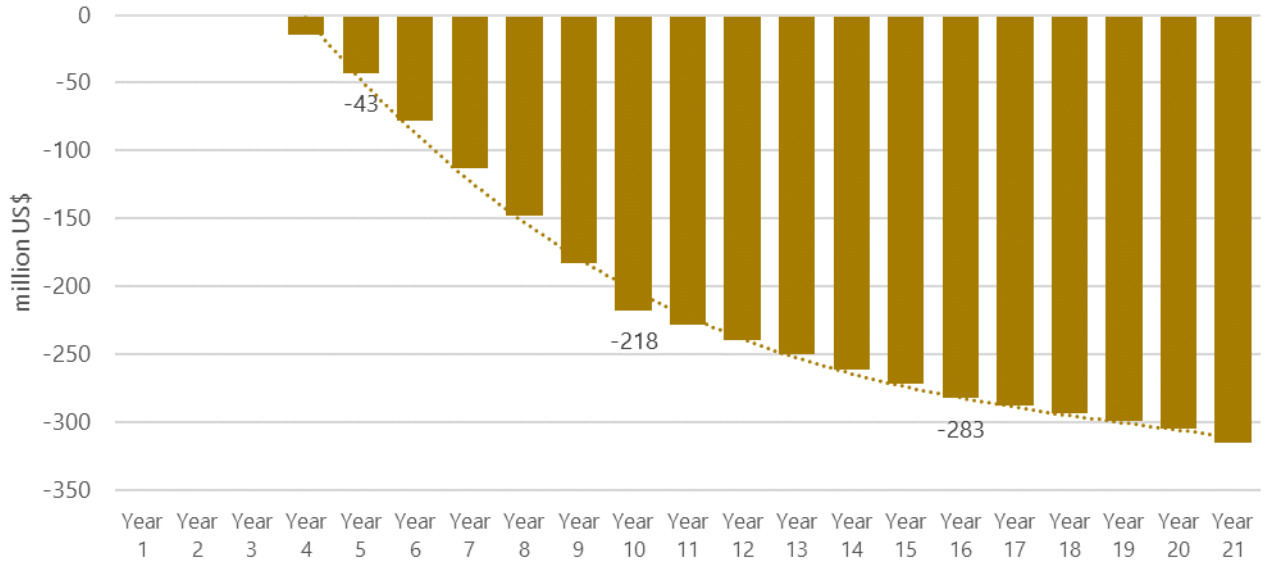
4. Negative Impact of the CPTPP & JEEPA on the US exports to Japan by value

Finally, we also calculated the US lost value at the 2013-2017 average price (3,952 USD/mt for ripened natural cheese) in Year 5, Year 10 and Year 16 as shown in Table 9 on page 29.

For the last step, we prepared our forecast of accumulated impact to show what the loss to the US dairy market would be over 5 years and then over 10 years and then upon final CPTPP/JEEPA implementation.

- ☐ We calculated the accumulated impact by making an approximation curve which smoothly connects the single-year impact (Year 5, Year 10 and Year 16) in order to assess the impact in every individual year as shown in the figure below. The assumption we made was:
  - ✓ In the case of cheese, we do not expect any significant impact until Year 4 (2021) when the tariff difference between US products and competitors expands to 7.5 percent points.

Figure 20 Forecasted Annual Changes in Impact on US Ripened Natural Cheese Trade



Source: Prepared by Meros Consulting

3.3. Fresh Natural Cheese (Mozzarella, Cream Cheese, etc)

3.3.1. Sub-categories under Fresh Natural Cheese

Fresh natural cheese, including mozzarella and cream cheese, is the second largest category of Japanese cheese imports. The import volume was about 94,000 mt in 2017, and the US holds about a 10% market share.

Table 13 Cheese Categories Under CPTPP and JEEPA Tariff Schedule

Cheese category	HS	Cheese category	Condition	2017 (000 mt)			Current duty	CPTPP	JEEPA
				US	World	US %			
Fresh natural cheese (cream, MFCC, mozzarella, etc)	0406100 90	Cream cheese	Cream cheese (fat - less than 45%)	5	86	6%	29.8%	Phase out in 16 yrs	Phase out in 16 yrs
		MFCC	Cream cheese (fat - more than 45%)					No change	EU TRQ
		Mozzarella, etc	Intended to use for shred cheese					1:3.5 Tie-in quota	
		Mozzarella, etc						No change	
	0406100 20	Mozzarella	IQF	4	4	99%	22.4%	Phase out in 16 yrs	EU TRQ
	0406199 19	Cream cheese, mozzarella, etc	Intended to use for processed cheese	0.4	4	10%	1:2.5 Tie-in quota	No change	No change

Sources: Japan Customs, The provisions of CPTPP and JEEPA

Within this category, **IQF (Individually Quick Frozen) mozzarella** imported under HS 040610020, the volume of which is around 4,300 mt, is important for the US dairy industry, since the US has almost a 100% share of the market. The products are used mainly for the home-delivery and take-away pizza industry. The tariff rate for IQF mozzarella is 22.4%, which is a little lower than other products (29.8%) as the result of trade negotiations under the WTO.

Japan allocates the **tie-in duty free quota** for fresh natural cheese under HS 040619919 just as it does for ripened natural cheese. Since the usage of mozzarella and cream cheese for processed cheese is limited, the current import volume under the tie-in quota is only 4,000 mt.

The other 90% of the fresh natural cheese imports with a total volume of 86,000 mt (of which US volume is around 5,200

mt) are categorized under one HS code – HS040610090, but Japan subdivided it into four sub-categories in the CPTPP and JEEPA, including:

1. **cream cheese (fat – less than 45%)**
2. **cream cheese (fat – more than 45%)**
3. **others (mozzarella, etc.) intended to use for shred cheese (1:3.5 tie-in quota)**
4. **other fresh natural cheese (mozzarella, etc.)**.

The tariff for subcategory 1, cream cheese (fat – less than 45%) will be eliminated in 16 years in both the CPTPP and JEEPA.

In the CPTPP, Japan did not provide any additional access to subcategory 2: cream cheese (fat more than 45%) which is basically Middle Fat Cream Cheese (MFCC) used as a replacement for butter, and subcategory 4: other fresh natural cheese. However, the CPTPP will provide market access to block mozzarella cheese intended for producing shredded cheese and subcategory 3: others intended for use for shred cheese) through a tie-in quota, which means that fresh natural cheese can be imported duty-free but only when it is blended with domestic natural cheese at a 1:3.5 ratio to make shredded cheese.

JEEPA provided market access to fresh natural cheese products included in the categories 2, 3 and 4. They are subject to a EU-specific cheese TRQ, which we have explained in the soft-type cheese section in #1 Ripened Natural Cheese.

3.3.2. Estimated Supply Mix of Fresh Natural Cheese

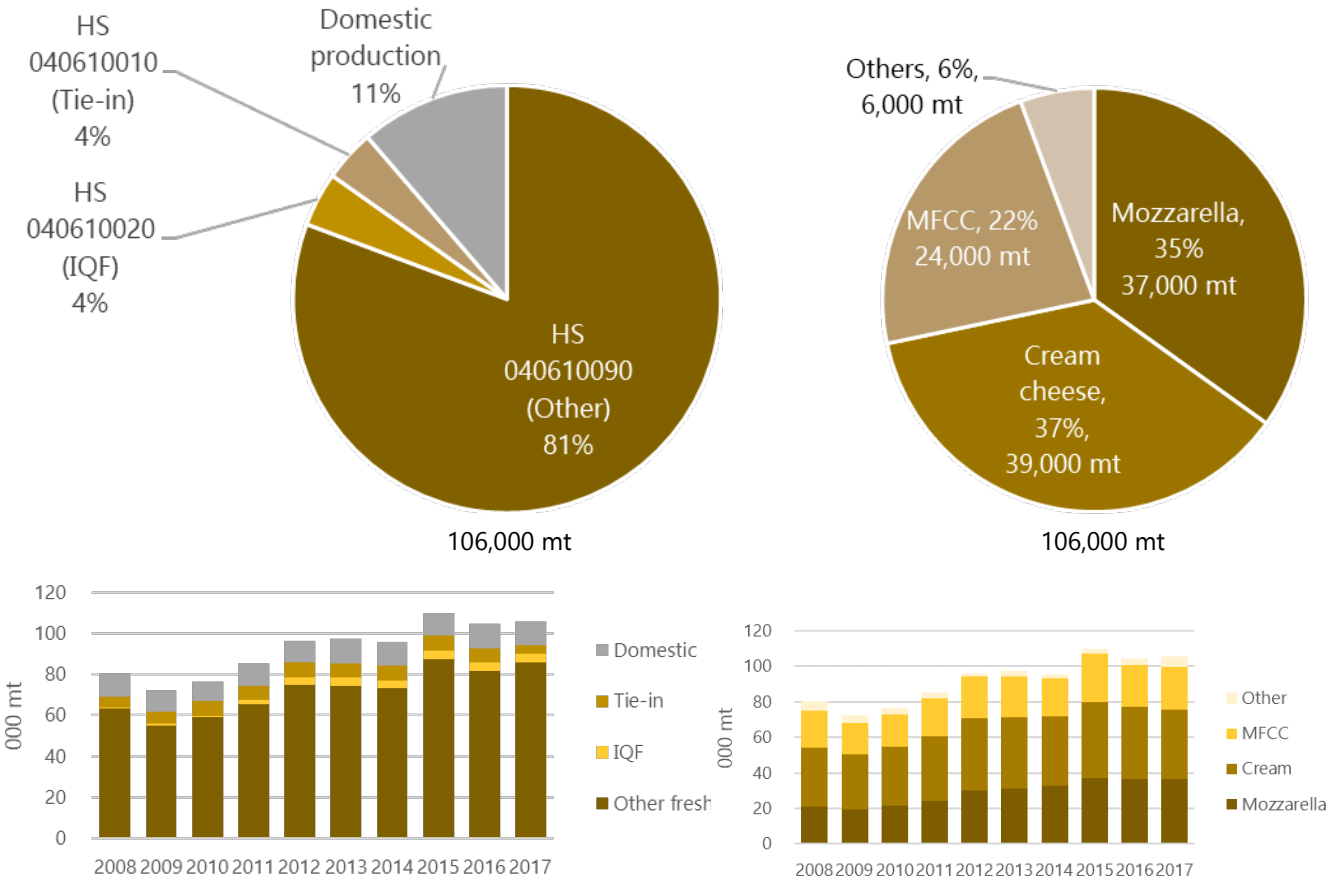
The table on the next page shows our estimates of the fresh natural cheese market based on four different cheese types:

- Mozzarella
- Cream cheese
- MFCC
- Others

We estimate the total supply volume of the Fresh Natural Cheese category at around 106,000 mt in 2017. Imports accounted for 89% of the total supply, and domestic production accounted for 11%. The overall supply of fresh natural cheese increased by 31% over the last 10 years, and it was mainly imports which filled this increase in demand.

By type, **Cream cheese** is the largest product category in the market, and the supply was around 39,000 mt in 2017. **Mozzarella** is the second largest product, and the supply volume was around 37,000 mt the same year. **Middle Fat Cream Cheese (MFCC)**, with an estimated volume of 24,000 mt, is a unique category imported to Japan from Australia under the same HS code as cream cheese and mozzarella, but it is basically a substitute for milkfat, not competing with other cheese.

Figure 21 Estimated Supply (Import & Domestic) of Fresh Natural Cheese (2017)



Source: Estimated by Meros Consulting

Table 14 Estimated Supply of Fresh Natural Cheese

Unit: 000mt

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	CAGR of last 5 yrs
TOTAL		**80**	**72**	**77**	**85**	**96**	**97**	**96**	**110**	**105**	**106**	**2%**
Domestic	**Sub-total**	**11**	**11**	**10**	**11**	**10**	**12**	**12**	**11**	**12**	**12**	**0%**
	Mozzarella	2	2	2	2	3	4	4	4	4	4	0%
	Cream	4	4	4	4	4	4	4	4	4	4	0%
	Others	5	5	2	5	3	4	4	3	4	4	0%
Import	**Sub-total**	**69**	**62**	**67**	**74**	**86**	**86**	**84**	**99**	**93**	**94**	**2%**
By type	Mozzarella	19	17	19	22	27	27	29	33	33	33	5%
	Cream	29	27	29	32	36	36	35	39	36	35	-1%
	MFCC/Ingredient Mascarpone	21	18	18	21	22	22	20	27	23	24	1%
	Others	0	0	0	0	0	0	0	0	0	2	-
By HS	IQF	1	1	1	2	3	4	4	4	5	4	3%
	Tie-in	5	6	7	7	7	7	7	7	7	4	-13%
	Others	63	55	59	66	75	75	73	87	81	86	4%

Source: Estimated by Meros Consulting

3.3.3. The Competitive Situation in the Imports of Fresh Natural Cheese

US exports to Japan in this category are mainly **IQF mozzarella** (about 4,000 mt), **bulk mozzarella** (about 4,000 mt), and **cream** cheese (about 2,000 mt).

Table 15 Estimated Competitive Situation in Imports under Fresh Natural Cheese

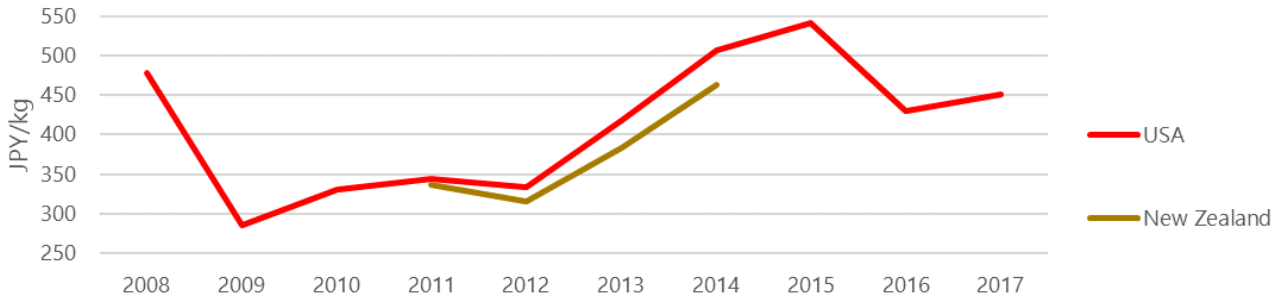
	TOTAL	Domestic	Import	NZ	Australia	US	Ireland	Netherland	Denmark	Germany	Other
IQF mozzarella	**4**	**-**	**4**	-	-	**4**	-	-	-	-	-
Bulk mozzarella	**29**	**-**	**29**	5	10	**4**	-	-	2	5	3
Fresh mozzarella	**4**	**4**	**-**	-	-	**-**	-	-	-	-	-
Cream (excl. MFCC)	**39**	**4**	**35**	10	16	**2**	-	-	2	-	5
MFCC/Ingredient Mascarpone	**24**	**-**	**24**	1	23	**-**	-	-	-	-	-
Other	**6**	**4**	**2**	-	-	**-**	-	-	-	-	2

Source: Estimated by Meros Consulting

IQF Mozzarella

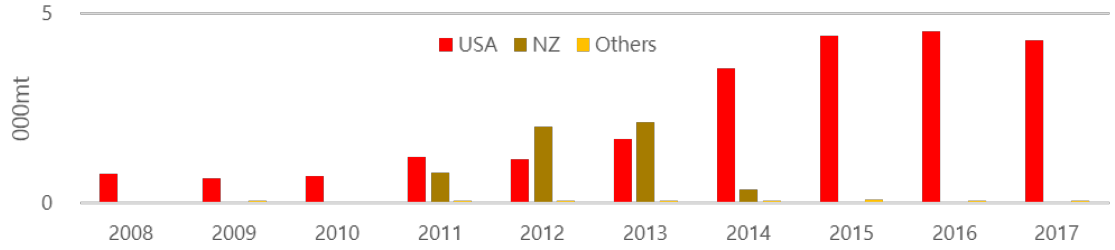
IQF mozzarella is imported only from the US, and is mainly used for delivery pizza chains and retailers. The tariff rate for IQF mozzarella is 22.4%, which is a little lower than bulk mozzarella (29.8%); US exports have been benefiting from this relatively low tariff. A New Zealand company invested in a facility to make IQF mozzarella about 10 years ago, and exported the product to Japan between 2011-2014 (peaking at 2,100 mt in 2013), but New Zealand lost the market to the US due to price and quality and is now currently focusing on China. The Japanese market expanded rapidly between 2011 and 2015, with the expansion of pizza chains. Imports then stagnated starting in 2016 due to the stagnation of pizza chain growth in 2016 and 2017.

Figure 22 Price Comparison of Cheese Imported under HS 040610020



Source: Japan Customs

Figure 23 Volume Comparison of IQF Mozzarella Cheese Imports



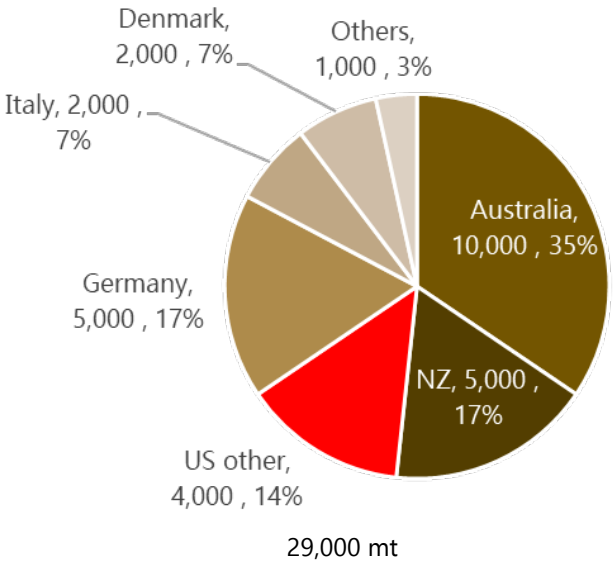
Source: Japan Customs

Bulk Mozzarella

In the bulk mozzarella category, the US was the third largest supplier in the market in 2017, competing with Australia, NZ, Germany and several other EU countries. Australia has been the leading supplier for the last decade. NZ started to expand its share in 2012 and 2013. The US became the second largest supplier in 2015, and soon after, Germany expanded its supply in 2016 and 2017.

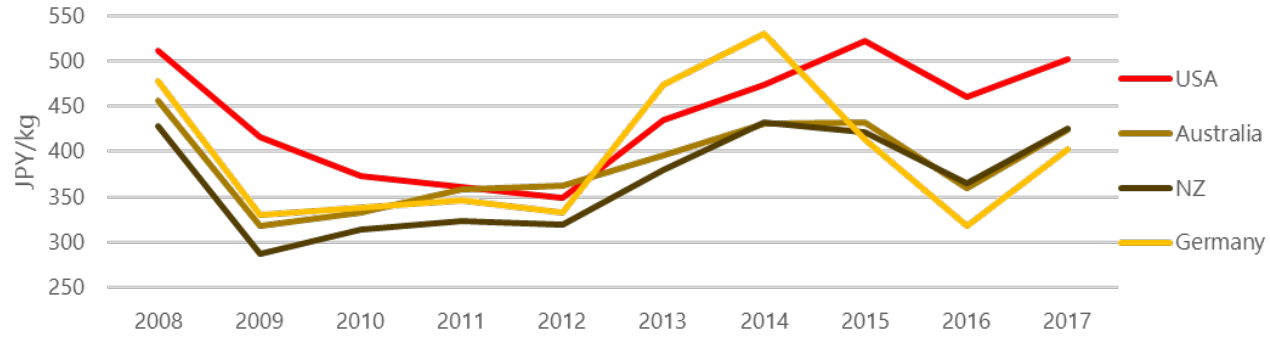
The key driver for such change in major supplying countries was the relative price fluctuation. The use of mozzarella for processed cheese manufacturing is very limited (around 2-5% of supply), and the majority is for shredding/cutting for retail and food service sectors. As such, the export volume of each supplying country tends to reflect changes in price relatively easily. Some of the importers we interviewed mentioned that German products are competing strongly with US products on price.

Figure 24 Estimated Share of Export Suppliers of Bulk Mozzarella (2017)



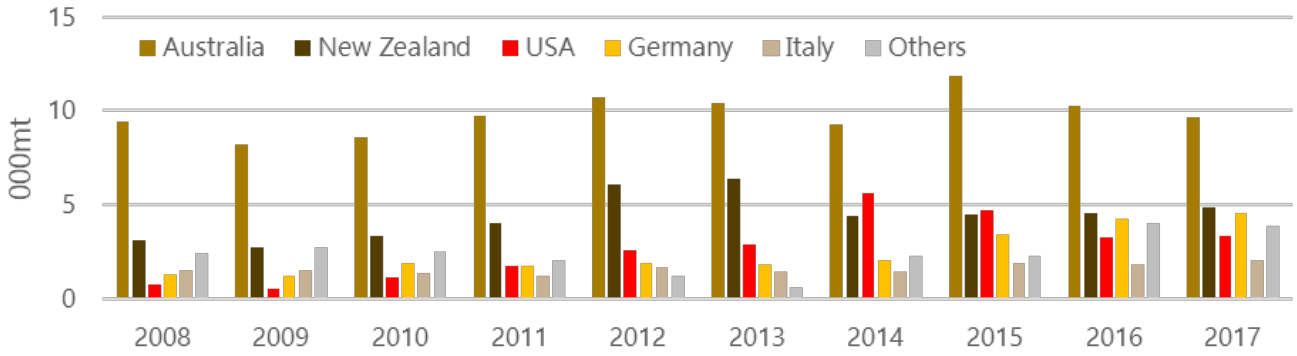
Source: Estimated by Meros Consulting

Figure 25 Price Comparison of Cheese Imported under HS 040610090 (mainly mozzarella and cream cheese)



Source: Japan Customs

Figure 26 Volume Comparison of Bulk Mozzarella Cheese Imports



Source: Estimated by Meros Consulting

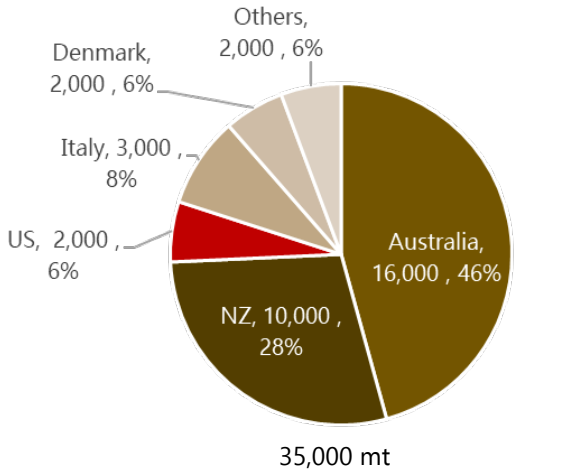
Cream cheese

Cream cheese supply is dominated by Australia and New Zealand.

Only a limited volume of US cream cheese comes to Japan, and it is primarily sold in the retail sector. According to interviews with major importers, bulk cream cheese exports from the US to Japan are limited.

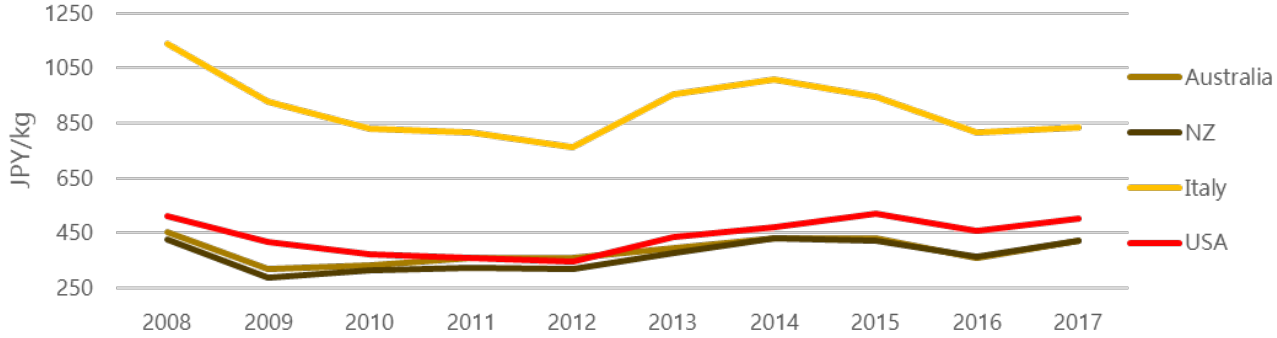
Products from Italy are primarily mascarpone, which is mainly used for tiramisu, a coffee flavored Italian dessert, at food service chains and food processing companies.

Figure 27 Estimated Share of Export Suppliers of Cream cheese (excl. MFCC) (2017)



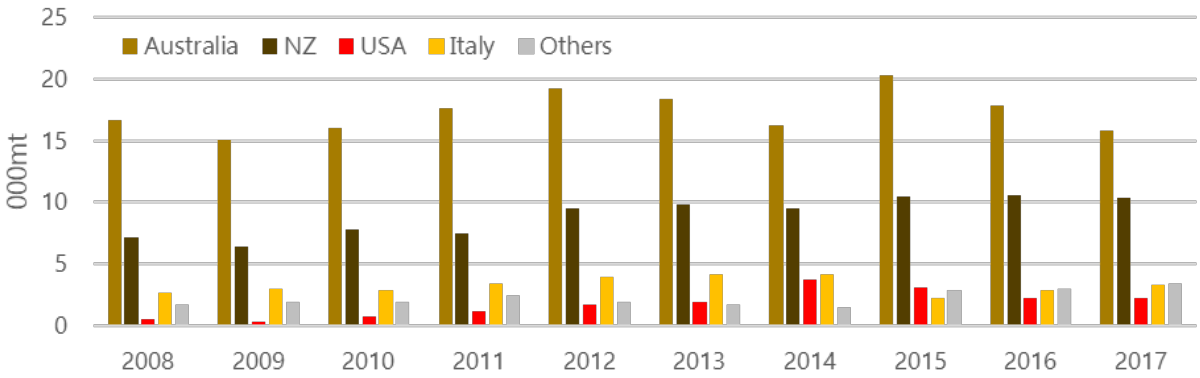
Source: Estimated by Meros Consulting

Figure 28 Price Comparison of Cheese Imported under HS 040610090



Source: Japan Customs

Figure 29 Volume Comparison of Cream Cheese (excl. MFCC) Imports



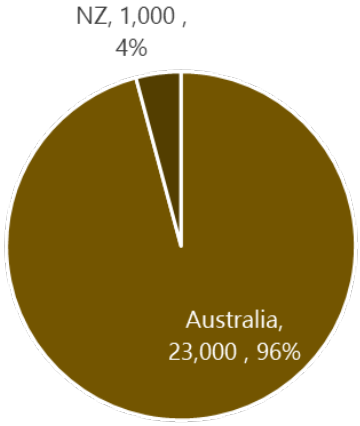
Source: Estimated by Meros Consulting

MFCC / Ingredient Mascarpone

Meros estimates that 24,000 mt of MFCC/Ingredient Mascarpone was imported under HS040610090 category in 2017.

Australia has a competitive advantage in the supply of middle fat cream cheese (MFCC) which was invented specifically for the Japanese market. MFCC is basically a substitute for milkfat for Japanese food manufacturers, like ice cream and confectionery producers., because of the constraints in keeping a stable and reasonable supply of butter/milkfat caused by the state trading system.

Figure 30 Estimated Share of Export Suppliers of MFCC (2017)

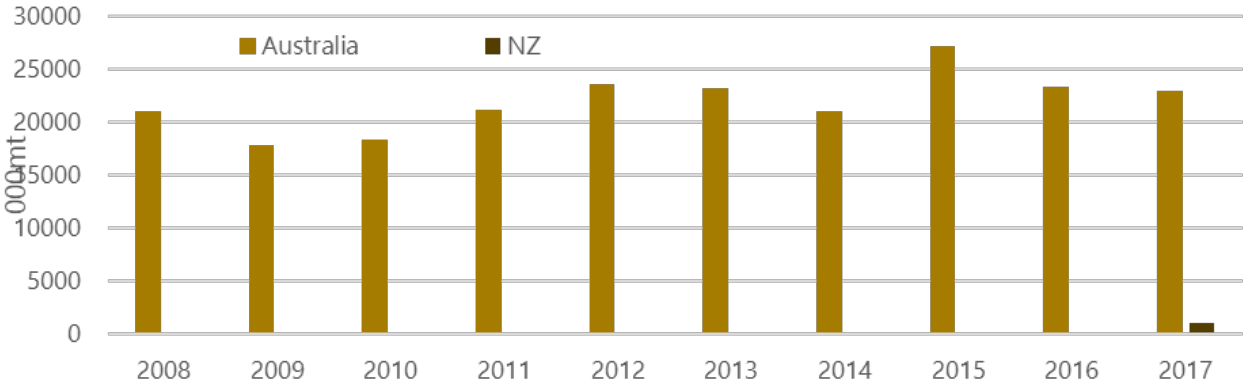


24,000 mt

Source: Estimated by Meros Consulting

One New Zealand manufacturer invested in a so-called "ingredient-grade mascarpone" production line in 2016, and started to export to Japan in January 2017. Ingredient-grade mascarpone is a very sweet, high-fat product invented for the Japanese industry, which is utilized by ice cream and other confectionery manufacturers as a dairy ingredient. This product can be considered a new innovative substitute to milkfat, avoiding Japan's butter/milkfat and sugar trade restrictions.

Figure 31 Volume Comparison of MFCC Imports



Source: Estimated by Meros Consulting

3.3.4. Quantitative Analysis of the Impact of CPTPP and JEEPA

Here, we have analyzed the category-based impact quantitatively in the same manner as ripened natural cheese.

1. Baseline projection of Japanese imports by category
2. Positive impact of the CPTPP & JEEPA on overall Japanese imports by category
3. Negative impact of the CPTPP & JEEPA on US exports to Japan by category
4. Negative impact of CPTPP & JEEPA on the US exports to Japan by value

Key Results of Quantitative Analysis on the Impact of CPTPP and JEEPA on Fresh Natural Cheese

The following table shows our results of the impact of the CPTPP and JEEPA on US exports of fresh natural cheese. We examined the impact in three different sub-categories, since the tariff reduction schedules/conditions are different by sub-category.

Table 16 Impact of CPTPP and JEEPA on US Exports of Fresh Natural Cheese to Japan

Unit: 000mt

	Bulk Mozzarella					IQF Mozzarella				
	Baseline		CPTPP/JEEPA		**US Lost Volume**	Baseline		CPTPP/JEEPA		**US Lost Volume**
	TOTAL	US	TOTAL	US		TOTAL	US	TOTAL	US	
Base year - 2017	28	3	28	3	**-**	4	4	4	4	**-**
Year 5 - 2022	36	7	40	3	**-4**	5	5	5	5	**0**
Year 10 - 2027	45	11	50	3	**-8**	6	6	6	4	**-2**
Year 16 - 2033	50	13	55	3	**-9**	6	6	7	1	**-6**

	Cream					**US Lost Volume TOTAL**	**US Lost Value as 2013-17 average price** (million US$)	**Accumulated US Lost Value at 2013-27 average price** (million US$)
	Baseline		CPTPP/JEEPA		**US Lost Volume**			
	TOTAL	US	TOTAL	US				
Base year - 2017	35	2		2	**-**	**-**	**-**	**-**
Year 5 - 2022	35	3	**-19**	2	**-1**	**-3**	**-19**	**-25**
Year 10 - 2027	34	3	**-45**	1	**-2**	**-8**	**-45**	**-199**
Year 16 - 2033	33	2	**-69**	0	**-2**	**-10**	**-69**	**-554**

Source: Prepared by Meros Consulting

Table 17 on the next page shows our baseline projection as well as the projected impact of the CPTPP & JEEPA.

In the rest of this section, we explain the methodology for this quantitative analysis in detail.

Table 17 The Overall Projection of the Fresh Natural Cheese Category

		Population	Per Capita Supply	Supply																
				TOTAL	Import															Domestic
						Mozzarella, etc (bulk)				*Mozzarella (IQF)*			*Cream Cheese*					*MFCC*	*Others*	
						Sub-total	*US*	*Aus, NZ, Canada*	*EU*	*Sub-total*	*US*	*NZ*	*Sub-total*	*US*	*Aus, NZ, Canada*	*EU*	*Others*	*Sub-total*	*Sub-total*	
		millions	Kg/cap	000 mt																
	2008	128	0.63	**80**	**69**	**17**	1	13	3	**1**	1	0	**29**	0	24	4	0	**21**	**2**	**11**
	2013	127	0.76	**96**	**86**	**22**	3	15	3	**4**	2	2	**36**	2	28	5	0	**23**	**1**	**11**
Base Year	2017	127	0.83	**105**	**94**	**28**	3	15	9	**4**	4	0	**35**	2	26	6	1	**24**	**2**	**11**
CAGR 8-17		-0.1%	3.1%	**3.0%**	**3.5%**	**5.7%**	18.2%	1.7%	13.8%	**20.7%**	20.9%	-	**2.3%**	18.2%	1.0%	5.2%	6.5%	**1.5%**	**3.8%**	**-0.5%**
CAGR 13-17		-0.1%	2.2%	**2.1%**	**2.4%**	**6.6%**	3.7%	0.0%	26.8%	**2.8%**	26.3%	-	**-0.5%**	3.7%	-1.9%	3.7%	14.6%	**0.9%**	**31.3%**	**-0.4%**
Baseline projection																				
Year 5	2022	124	0.91	**114**	**102**	**36**	7	16	11	**5**	5	0	**35**	3	27	5	0	**23**	**2**	**12**
Year 10	2027	121	1.01	**122**	**110**	**45**	11	16	16	**6**	6	0	**34**	3	27	5	0	**23**	**2**	**12**
Year 16	2033	117	1.07	**125**	**113**	**50**	13	16	19	**6**	6	0	**33**	2	26	5	0	**22**	**2**	**12**
CAGR '17-'22		-0.4%	2.0%	1.6%	1.6%	**5.0%**	17.3%	2.0%	4.1%	**3.0%**	3.2%	-	**0.1%**	3.1%	0.9%	-3.3%	-13.3%	**-0.6%**	**-3.4%**	**1.9%**
CAGR '22-'27		-0.5%	2.0%	1.5%	1.7%	**4.7%**	8.2%	0.0%	8.2%	**3.0%**	3.0%	-	**-0.5%**	-0.5%	-0.5%	-0.5%	-0.5%	**-0.5%**	**0.0%**	**0.0%**
CAGR '27-'33		-0.6%	1.0%	0.4%	0.4%	**1.6%**	2.5%	0.0%	2.5%	**1.0%**	1.0%	-	**-0.6%**	-0.6%	-0.6%	-0.6%	-0.6%	**-0.6%**	**0.0%**	**0.0%**
Impacts of CPTPP and JEEPA																				
Year 5	2022	124	0.96	**119**	**107**	**40**	3	24	11	**5**	5	0	**37**	2	27	8	0	**23**	**2**	**12**
Year 10	2027	121	1.08	**131**	**119**	**50**	3	28	16	**6**	4	2	**38**	1	27	11	0	**23**	**2**	**12**
Year 16	2033	117	1.16	**136**	**124**	**55**	3	30	19	**7**	1	6	**38**	0	26	13	0	**22**	**2**	**12**
CAGR '17-'22		-0.4%	2.9%	2.6%	2.6%	7.0%	0.0%	10.3%	4.1%	3.0%	3.2%	-	1.1%	-2.7%	0.9%	4.9%	-13.3%	-0.6%	-2.5%	1.9%
CAGR '22-'27		-0.5%	2.4%	1.9%	2.1%	4.7%	0.0%	3.6%	8.2%	4.4%	-4.1%	-	0.4%	-23.6%	-0.5%	6.4%	-0.5%	-0.5%	0.9%	0.0%
CAGR '27-'33		-0.6%	1.3%	0.7%	0.7%	1.6%	0.0%	1.3%	2.5%	1.7%	-	19.4%	0.2%	-	-0.6%	2.8%	-0.6%	-0.6%	0.7%	0.0%

Source: Meros Consulting

Note: Blue cells indicate our assumptions for the baseline projection

1. Baseline Projection of Japanese Imports of Fresh Natural Cheese

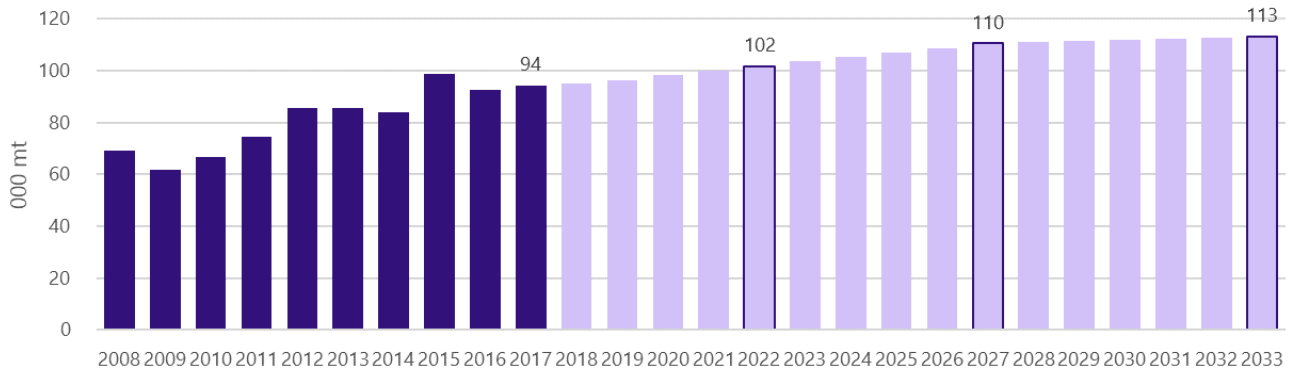
We started by making the baseline projection for overall supply and demand. Based on discussion with industry experts and past trade data, we made the following assumptions regarding the future growth of per capita consumption, as well as domestic supply of fresh natural cheese.

- ✓ We assumed **2% growth in per capita fresh natural cheese consumption** for the next 10 years, and 1% growth after that. The growth rate is smaller compared to ripened natural cheese, since the retail and industrial market growth for cream cheese is relatively small.

- ✓ We expect a 1,000 mt increase in domestic production of fresh natural cheese for direct consumption due to plant capacity expansion, **but we do not expect any increase of domestic production after that**.

Thus, our projection shows the demand for imports of fresh natural cheese would increase to 102,000 mt by Year 5, to 110,000 mt by Year 10, and to 113,000 mt by Year 16.

Figure 32 Baseline Projection of Fresh Natural Cheese Imports



Source: Prepared by Meros Consulting

To make the baseline projection for imports by category, we made the following assumptions:

- ✓ For **MFCC,** all importers we interviewed did not see any possibility for the MFCC market to expand in the mid-term and longer-term future. Thus, we assumed that the supply volume per capita will remain at the same level as the last 5-year average for the next 16 years.

- ✓ **Cream cheese** is mainly used in confectionery and bakery industries, as well as at home for making cheese cakes or other desserts; neither usages are expanding. Thus, we assumed that the supply volume per

capita will also remain at the same level as the last 5-year average for the next 16 years.

- ✓ We also assumed that the imports of **other fresh natural cheese** will remain at the same level as in 2017.

- ✓ For **IQF mozzarella**, we assumed modest growth, due to limited growth in the home-delivery pizza industry. We made the assumption of 3% annual growth over the next 10 years, and 1% per year growth after that.

We deducted MFCC, cream cheese, other fresh natural cheese and IQF mozzarella from the projected overall fresh natural cheese import demand to get the demand for bulk mozzarella cheese. The key driver for growth in the fresh natural cheese sector will be **bulk mozzarella** cheese. The current increase in demand for mozzarella is driven by the growth of retail sales of shredded cheese as well as by growth in demand from the food service sector, such as family restaurant chains.

To make the baseline projection for imports by category and by country, we made the following assumption:

- ✓ For bulk mozzarella cheese, we assumed that **supply from Australia and New Zealand will increase by 2% until Year 5, and by 0% after that**. This is the same approach we took for the projection of ripened natural cheese. This reflects the comments from importers we interviewed as well as the past export trend.

We then allocated the rest of the import demand between suppliers, based on the average share over 2013-2017.

The baseline projection shows US exports of fresh natural cheese to Japan could increase from 10,000 mt in 2017 to 15,000 mt by Year 5 (2022) and 21,000 mt by Year 10 (2027).

2. Positive Impact of the CPTPP & JEEPA on Japanese Imports of Fresh Natural Cheese

Second, we projected the positive impact of the CPTPP and JEEPA on Japanese overall imports of fresh natural cheese.

The CPTPP will eliminate the 22.4% tariff for IQF mozzarella and the 29.8% tariff for cream cheese (fat less than 45%) within 16 years. CPTPP will also provide a new duty-free tie-in tariff rate quota for natural cheese for blending to Japanese cheese shredders, which requires the shredders to blend domestic natural cheese with imported cheese at a 1:3.5 ratio to produce shredded cheese. However, given the limited supply of domestic cheese, this new TRQ cannot be expected to stimulate imports significantly. Yet, some shift can be expected from the existing 1:2.5 tie-in quota to this new quota. CPTPP won't reduce the tariff for MFCC.

JEEPA will provide a new EU tariff-rate quota, which we discussed in the previous section for IQF mozzarella and other fresh natural cheese, and the tariff within quota will be eliminated within 16 years.

Table 18 CPTPP/JEEPA Tariff Schedule for Fresh Natural Cheese

CPTPP

HS	Product	Current	2018 Dec-2019 Mar	2022	2027	2033
			Year 1	Year 5	Year 10	Year 16
040610010	Intended for use as materials for processed cheese	1:2.5 tie-in quota	No change			
040610020	Mozzarella IQF	22.4%	21.0%	15.4%	8.4%	0.0%
040610090	Mozzarella, etc, intended for use for shred cheese	29.8%	1:3.5 Tie-in quota			
	Cream cheese (fat – less than 45%)	29.8%	27.9%	20.4%	11.0%	0.0%
	MFCC (fat – more than 45%)	29.8%	No change			
	Other fresh natural cheese	29.8%	No change			

JEEPA

HS	Product	Current	2019 Feb-Mar	2022	2027	2033
			Year 1	Year 5	Year 10	Year 16
040610010	Intended for use as materials for processed cheese	1:2.5 tie-in quota	No change			
040610020	Mozzarella IQF in EU TRQ	22.4%	21.0%	15.4%	8.4%	0.0%
	Other mozzarella IQF		No change			
040610090	Other in EU TRQ	29.8%	27.9%	20.4%	11.0%	0.0%
	Other	29.8%	No change			

Source: The provisions of CPTPP and JEEPA

We made the following assumptions based on the discussion with interviewees and the past trade data:

- ✓ For bulk mozzarella, we assumed the 1:3.5 tie-in quota for shredded cheese and tariff decline within the new EU quota will stimulate demand by 5% in Year 5, 10 and 16.

- ✓ For IQF mozzarella, we assumed that the 7.0 percent point tariff decline by year 5 would not impact the import volume. But, we assumed the 14.0 percent point tariff decline by Year 10 will stimulate demand by 7%, and the tariff elimination by Year 16 will stimulate demand by 11.2%. We do not expect that domestically shredded cheese, which mainly relies on imported natural cheese, will take market share from IQF mozzarella.

Some of the comments regarding IQF mozzarella include:

- *Considering the specific features of IQF mozzarella (listed below), it is questionable if the decrease of the 7 percent point tariff difference will create a shift from IQF to domestic shredded cheese.*
  - *It does not require any processing other than some repackaging.*
  - *It can be scooped with a cup and directly put on a pizza.*
  - *Recipe is different for each end-client (pizza chain & retailers), designed specifically for that particular client. It is not easy for them to change.*
- *If the price of domestically produced shredded cheese comes down to a very low level, it may impact the demand for US IQF. But we do not expect such a shift, since it is not easy to switch from IQF to domestic shredded products. It is pretty costly to shred & pack at domestic shredders.*

✓ For Cream cheese (fat less than 45%), we assumed that the 9.4 percent point tariff decline by Year 4 will stimulate demand by 4.7%, 18.7 percent point tariff decline by Year 10 will stimulate demand by 9.4%, and the 29.8% tariff elimination by Year 16 will stimulate demand by 14.9%.

✓ For MFCC, we do not expect any impact from the CPTPP and JEEPA.

Table 19 Impacts of CPTPP and JEEPA on Japanese Imports of Fresh Natural Cheese

Unit: 000mt

	TOTAL	Bulk Mozzarella	IQF Mozzarella	Cream	MFCC	Others
Base year - 2017	**94**	28	4	35	24	2
Year 5 - 2022	**107**	40	5	37	23	2
Year 10 - 2027	**119**	50	6	38	23	2
Year 16 - 2033	**124**	55	7	38	22	2

Source: Prepared by Meros Consulting

3. Negative Impact of the CPTPP & JEEPA on US Exports of Fresh Natural Cheese

The next step was to determine the negative impact of the CPTPP and JEEPA on US exports of fresh natural cheese.

As in the ripened natural cheese sector, there is some relationship between unit price and import share by supplier, but such a relationship is often not very clear in the statistics. We made the following assumptions:

✓ For bulk mozzarella, the impact of the 1:3.5 tie-in quota and the new EU quota is not clear. Thus, we assumed US exports could remain at the same level as in 2017.

- ✓ For IQF mozzarella, we assumed that the 7% tariff reduction by Year 5 won't hurt US exports, but the 14% tariff reduction by Year 10 will create a 30% drop in US share, and the 22.4% tariff reduction by Year 16 will generate a 90% drop in US share.

- ✓ For cream cheese, we assumed a 9.4% tariff reduction by Year 5 will create a 9.4% price drop in competitors' products, and this will generate a 35% drop in US share. Then, we assumed that a 18.7% tariff reduction by Year 10 will create a 18.7% price drop in competitors' products, and this will cause a 90% drop in US share. We assumed that a 29.8% tariff reduction by Year 16 will cause complete replacement of US products by competing countries.

Some of the major comments include:

- *Once there was some IQF supplied from NZ but it couldn't compete with the US due to the price, and NZ withdrew from the Japan market. But it is still producing IQF for China so there is a possibility that it will once again enter the Japan market.*
- *Regarding bulk block mozzarella, US competes directly with Oceania and European countries for the shredded cheese segment. In particular, EU countries are the main competitors.*
- *The new TRQ for soft cheese from the EU (20,000 mt - 31,000 mt) is not tight, considering that the total import volume under this category is currently about 20,000 mt. I don't think the TRQ will be a burden.*

Based on the above method, we calculated the US lost volume in Year 5, Year 10 and Year 16, as shown in Table 16 on page 47.

4. Negative impact of CPTPP & JEEPA on the US exports to Japan by value

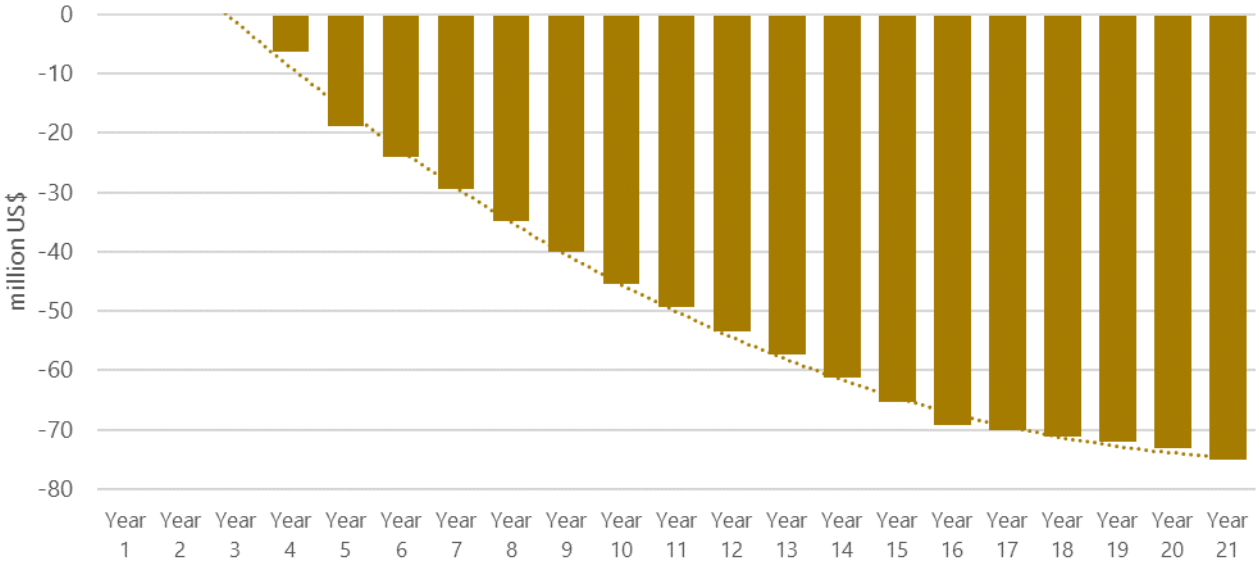
Finally, we also calculated the US lost value at the 2013-2017 average price (3,966 USD/mt for fresh natural cheese) as shown in Table 16 on page 47.

For the last step, we prepared our forecast of accumulated impact to show what the loss to the US natural cheese market would be over 5 years and then over 10 years, and then upon final CPTPP/JEEPA implementation. The assumption we made was:

- ✓ In the case of cheese, we do not expect any significant impact until Year 4 (2021) when the tariff difference between US products and competitors expands to 7.5 percent points.

The figure on the next page shows the forecasted annual changes in impact on US fresh cheese trade. The accumulated impact is also shown in Table 16 on page 47.

Figure 33 Forecasted Annual Changes in Impact on US Fresh Natural Cheese Trade



Source: Prepared by Meros Consulting

4. The Impact of the CPTPP and JEEPA on Whey Imports

4.1. Whey Tariff Lines and Subdivided Categories under CPTPP and JEEPA

The Japanese tariff schedule for whey imports is categorized into 38 lines under HS 0404 (Whey and whey products, protein less than 80%), 1 line under HS 350220 (Milk albumin) and 2 lines under HS 3501 (Casein). Considering the sensitivity of WPC 34 which is considered to be able to replace SMP, the Japanese government subdivided some of the product categories of whey (protein less than 80%) based on the amount of protein (less than 25%, 25-45%, more than 45%).

In this report, we divided whey products into the following categories:

- #1 Whey protein (WPC 80 and WPI, categorized under HS 350220, Milk albumin)
- #2 Whey and whey products, protein less than 80% (categorized under HS 0404)
  - #2-1 Feed TRQ
  - #2-2 Mineral Concentrate Whey TRQ
  - #2-3 Infant Formula TRQ
  - #2-4 Other Whey & Whey Products for Food Processing
- #3 Casein (categorized under HS 3501)

For US trade, **#1 Whey Protein** (WPC 80 and WPI, HS 350220 Milk albumin) is the most important category, considering the export value. The current tariff is 2.9%, which will be eliminated in both the CPTPP and JEEPA. There are almost no US exports of **#3 Casein** to Japan, so we will not discuss this category.

#2 Whey and whey products, **protein less than 80%** is the second important category for US trade. The impact of the CPTPP and JEEPA should be examined carefully, since the conditions agreed upon are complicated. The basic implication of the CPTPP and JEEPA agreements on the Japanese whey market is the trade liberalization of food whey. Whey trade has been regulated by state trade through the Simultaneous Buy and Sell (SBS) tendering system operated by the Agriculture & Livestock Industries Corporation (ALIC), except for the three separate tariff quotas allocated for feed whey, whey mineral concentrate and whey for infant formula. Under ALIC's SBS tender system, no one can predict when the tender will take place or what the mark-up will be. As such, food manufacturers cannot expect a stable and predictable supply of whey through the ALIC SBS tender system, which makes them hesitate to utilize whey. Since the out-of-quota tariff (i.e. outside the three separate TRQs and ALIC SBS) is too high (29.8% + 99, 425 or 687 JPY/kg), out-of-quota whey

imports have been limited. The significance of the CPTPP and JEEPA is that they will make the out-of-quota import feasible by lowering the tariff, and almost all importers mentioned that it will bring a significant impact to the market. Since the condition for feed whey imports will be the same (#2-1 Feed TRQ), we will mainly discuss food whey (#2-2, #2-3 and #2-4).

Table 20 Whey Categories in Japanese Tariff Schedule

Whey category	HS	Whey type	Condition	2017 (volume in 000 mt)			Current duty	CPTPP	JEEPA
				US	World	US %			
#1 Whey Protein (Albumin)	350220	WPC80, WPI	-	5	17	31%	2.9%	0%	0%
#2 Whey	040410141 040410181 040410182	Various whey	Whey for feed TRQ	16	37	44%	0% 45,000 mt	No change	No change
	040410119	Whey, protein less than 80%	ALIC SBS Tender	0.4	6	6%	SBS Tender (25%/35% + markup)	No change	No change
	040410122	Whey mineral concentrate	Whey mineral concentrate TRQ	0.5	10	5%	25% 14,000 mt	Additional TRQ Australia 4->5,000mt (mineral concentrate) NZ 1,300->1,700mt (three categories total)	Additional TRQ EU 6,200->9,400 mt (three categories total)
	040410142 040490116 040490126 040490136	Whey for infant formula TRQ	Whey for infant formula TRQ	1.6	8	20%	10% 25,000 mt		
	040410, not defined	Whey permeate	Whey permeate	-	na	-	29.8% + 425 JPY/kg		
	040490117 040490127 040490137	Whey + derivatives	Other dairy TRQ	-	4.5	0%	25%/35%	No change	No change
	Various	Whey, protein <25%	Other	0.2	1.0	22%	29.8% + 99, 425 or 687 JPY/kg	Eliminated in 16 yrs	Reduced to 7.5%/10.5% + 12 JPY in Year 11
		Whey, 25%> < 45%	Other					Eliminated in 21 yrs	
		Whey, protein >45%	Other					Eliminated in 6 yrs	Eliminated in 6 yrs
	Various	Whey + derivatives	Other	0.2	0.7	32%	29.8% +400-1,023 JPY/kg	No change	Included in above
#3 Casein	350110000	Casein	-	0	5	0%	0%	No change	No change
	350190000	Caseinate, etc.	-	0	9	0%	5.4%	0%	0%

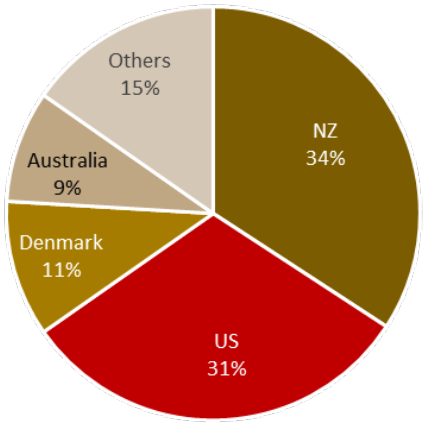
Sources: Japan Customs, the provisions of the CPTPP and JEEPA

4.2. Whey Protein

4.2.1. Current Supply and Competitive Situation

Demand for whey protein suddenly started to increase in 2015, driven by an increasing consumer interest in protein, which stimulated consumption of whey protein powder, protein bars, protein drinks, etc. There is no domestic supply of whey protein, so imports of whey protein have grown by 15-20% per year.

Figure 34 Share of Export Suppliers of Whey Protein (2017)



17,000 mt

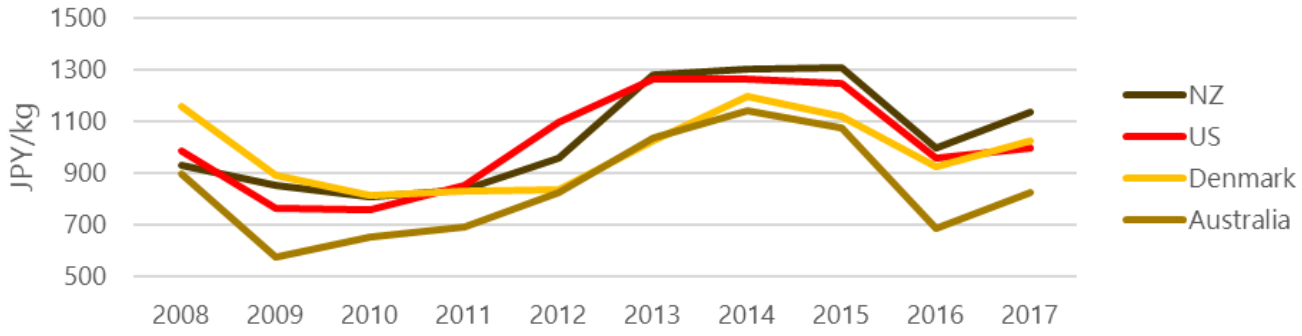
Source: Japan Customs

Protein powder used to be a niche product consumed primarily by serious male athletes and bodybuilders. However, it started attracting women and seniors over the last couple of years, largely impacted by the expanding interest in low-carb and high-protein diets. One leading player in the market expanded its sales targets to seniors with scientific evidence of the health benefits of daily intake of protein powder, as well as to women with the marketing message of "shape & beauty". Japanese companies have continued to expand their production of protein powder. The protein bar and protein energy drink markets are expected to show double-digit growth for the next couple of years. One of the exporters we interviewed mentioned that the whey protein market is expected to grow, as people have become more interested in healthy foods and low-carb meals. The Tokyo Olympic Games in 2020 are also inspiring interest in healthy foods.

Japan's imports of whey protein were 17,000 mt in 2017. Based on interviews with importers, 75-80% of whey protein is for protein powder products. Other usage includes baby formula, drinks and bars.

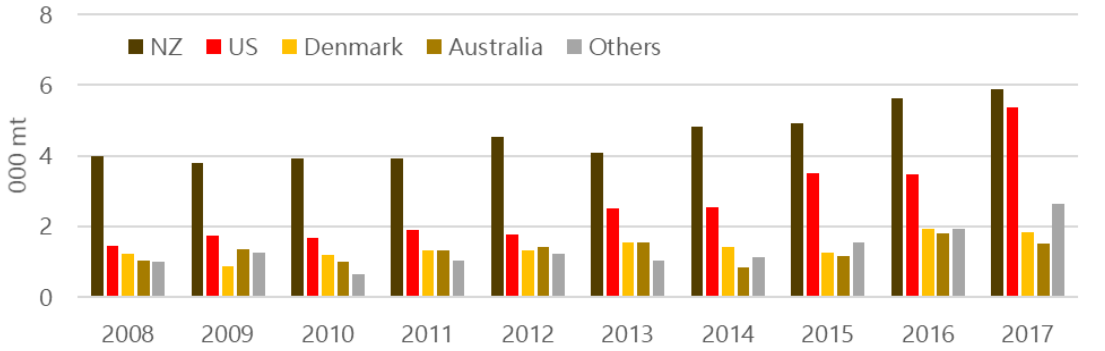
New Zealand has been the largest exporter of whey protein to Japan, competing directly with the US. According to comments from the importers we interviewed, New Zealand can supply ion exchange whey protein, which is less off-flavor, and this is attractive to some producers of protein products, such as protein drinks. Yet, most importers believe that the US is the leading supplier of whey protein in the world, backed by its advanced technology. An importer mentioned that European products are not preferred by Japanese protein powder producers due to the yellowish color caused by the differences in technology. Still, exports from Denmark and other European countries are also gradually expanding.

Figure 35 Price Comparison of Whey Protein Imported Under HS350220



Source: Japan Customs

Figure 36 Volume Comparison of Whey Protein Imported Under HS350220



Source: Japan Customs

4.2.2. Quantitative Analysis of the Impact of CPTPP and JEEPA on Whey Protein

Here, we analyzed the category-based impact quantitatively, in the same manner that we approached ripened natural cheese.

1. Baseline projection of Japanese imports by category
2. Positive impact of the CPTPP & JEEPA on overall Japanese imports by category
3. Negative impact of the CPTPP & JEEPA on US exports to Japan by category

Key Results of Quantitative Analysis of the Impact of the CPTPP and JEEPA on Whey Protein

The following table shows our results of the impact of the CPTPP and JEEPA on US exports of whey protein.

Table 21 Impacts of CPTPP and JEEPA on US Exports of Whey Protein to Japan

Unit: 000mt

	Baseline		CPTPP/JEEPA		**US Lost Volume Total**	**US Lost Value as 2013-17 average price** (million US$)	**Accumulated US Lost Value at 2013-27 average price** (million US$)
	TOTAL	US	TOTAL	US			
Base year - 2017	17	5	17	5	-	-	-
Year 5 - 2022	34	13	34	12	**-1**	**-6**	**-22**
Year 10 - 2027	42	17	42	16	**-1**	**-8**	**-57**
Year 16 - 2033	46	19	46	18	**-1**	**-9**	**-108**

Source: Prepared by Meros Consulting

Table 22 on the next page shows our baseline projection as well as the projected impact of the CPTPP & JEEPA.

In the rest of this section, we explain the methodology for this quantitative analysis in detail.

Table 22 The Overall Projection of Whey Protein Category

		Population	Supply/Demand per capita	Import				
				TOTAL	*US*	*Aus, NZ, Canada*	*EU*	*Others*
		millions	kg/cap	000mt				
	2008	128	0.07	**9**	1	5	2	0
	2013	127	0.08	**11**	2	6	2	0
Base Year	2017	127	0.14	**17**	5	7	4	0
CAGR '08-'17		-0.1%	8.0%	**8.0%**	15.8%	4.5%	8.7%	0.7%
CAGR '13-'17		-0.1%	12.8%	**12.7%**	21.0%	7.1%	16.6%	-3.1%
Baseline Projection								
Year 5	2022	124	0.27	**34**	13	9	11	1
Year 10	2027	121	0.35	**42**	17	9	15	1
Year 16	2033	117	0.39	**46**	19	9	17	1
CAGR '17-'22		-0.4%	15.0%	**14.6%**	19.0%	5.0%	21.4%	20.8%
CAGR '22-'27		-0.5%	5.0%	**4.5%**	6.1%	0.0%	6.1%	4.5%
CAGR '27-'33		-0.6%	2.0%	**1.4%**	1.8%	0.0%	1.8%	1.4%
Impacts of CPTPP and JEEPA								
Year 5	2022	124	0.27	**34**	12	9	12	1
Year 10	2027	121	0.35	**42**	16	9	16	1
Year 16	2033	117	0.39	**46**	18	9	18	1
CAGR '17-'22		-0.4%	15.0%	**14.6%**	17.8%	5.0%	22.7%	20.8%
CAGR '22-'27		-0.5%	5.0%	**4.5%**	6.1%	0.0%	6.1%	4.5%
CAGR '27-'33		-0.6%	2.0%	**1.4%**	1.8%	0.0%	1.8%	1.4%

Source: Meros Consulting

Note: Blue cells indicate our assumptions for the baseline projection

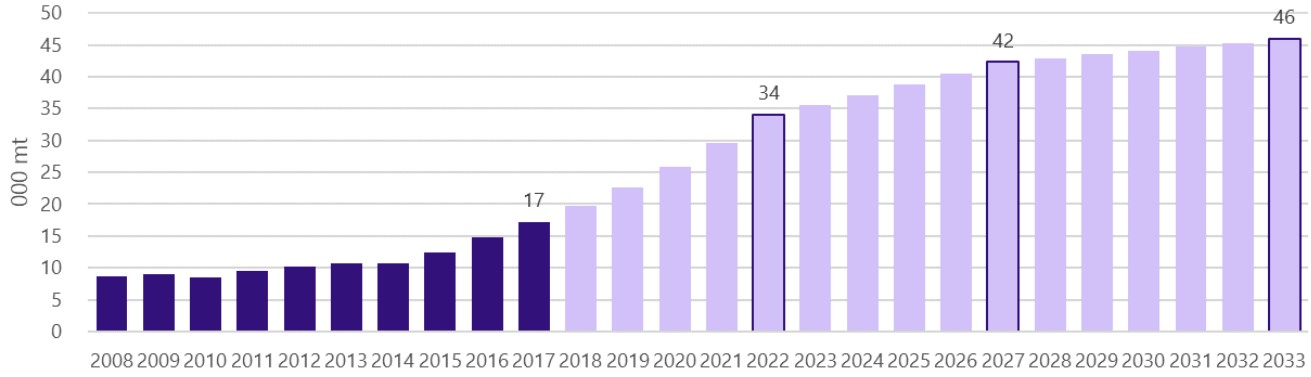
1. Baseline projection for Japanese Imports of Whey Protein

First, we made the baseline projection for the overall demand and supply. We made the following assumptions regarding the future growth of per capita consumption and domestic supply of whey protein:

- ✓ Based on discussions with importers, we project double-digit growth (15%) in per capita whey protein consumption for the next 5 years, 5% growth during the 5 years after that, and 2% growth after that.

Thus, we projected Japanese whey protein imports will expand to 34,000 mt by Year 5, and to 42,000 mt by Year 10.

Figure 37 Baseline Projection of Whey Protein Imports



Source: Prepared by Meros Consulting

To make the baseline projection for imports by category and by country, we made the following assumption:

- ✓ Based on discussions with importers, we assume that **supply from Australia and New Zealand will increase by 5% till Year 5, and by 0% after that**.

Then, we allocated the rest of the import demand to other suppliers, based on the average share between 2013-2017.

The baseline projection shows that US exports of whey protein to Japan could increase from 5,000 mt in 2017 to 13,000 mt by Year 5 (2022) and to 17,000 mt by Year 10 (2027).

2. Positive Impact of the CPTPP & JEEPA on Japanese Imports of Whey Protein

The CPTPP and JEEPA both eliminate the current 2.9% tariff immediately at the date of effectuation. However, all importers we interviewed commented that they do not expect any significant increase in demand from the elimination of the 2.9% tariff. Thus, we expect that there will not be any impact on overall Japanese imports of whey protein.

3. Negative Impact of CPTPP on US Exports of Whey Protein

Most of our interviewees do not expect any significant impact from the 2.9% tariff reduction on supplying countries. However, one of them pointed out the possibility of substituting at least some share of US products with New Zealand or EU products, unless US suppliers bring down their price to deal with the situation. Still, it is unlikely that US supply will be replaced entirely by other suppliers.

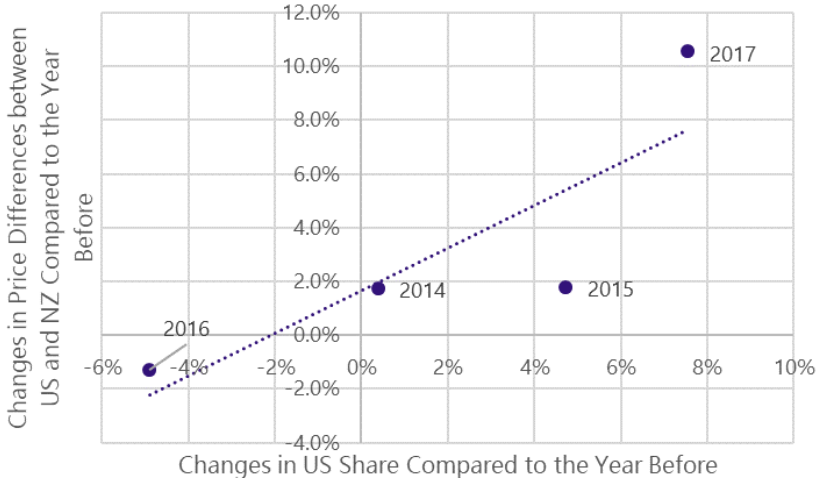
Some of the comments from the interviews include:

- *In regard to the immediate reduction of the 2.9% tariff for high-protein whey (milk albumin), we are hoping that the US manufacturers/exporters can deal with the situation by bringing down the price of their products to compensate for the tariff difference, although this may be wishful thinking.*
- *The impact will also depend on to what extent US albumin manufacturers will be able to reduce the price (so that they can compete with other suppliers).*
- *There might be some increase in imports from other CPTPP/JEEPA participating countries. Right now, Europe does not have the capacity to export more whey protein products, but it has potential in a longer term. Dairy production in NZ is not growing so there is a low possibility that the US will be completely substituted by NZ.*
- *For suppliers of WPC 80, the impact will likely be small. But for suppliers of WPI, which is relatively expensive, 2.9% may matter.*

Looking at the statistics for the last 5 years, there is some relationship between the price of US/NZ products and the US share in the total Japanese imports of whey protein (see the figures in Section 4.2.1). Our projection on US lost volume in Year 5, Year 10 and Year 16 is shown in the table on page 60.

- ✓ Considering this relationship, we expect that a 2.9% tariff difference could bring **around a 5% reduction in US share**.

Figure 38 Relationship of the Changes in Price Difference between US/NZ Products and the Changes in US Share.



Source: Japan Customs

4. Negative Impact of the CPTPP & JEEPA on the US exports to Japan by value

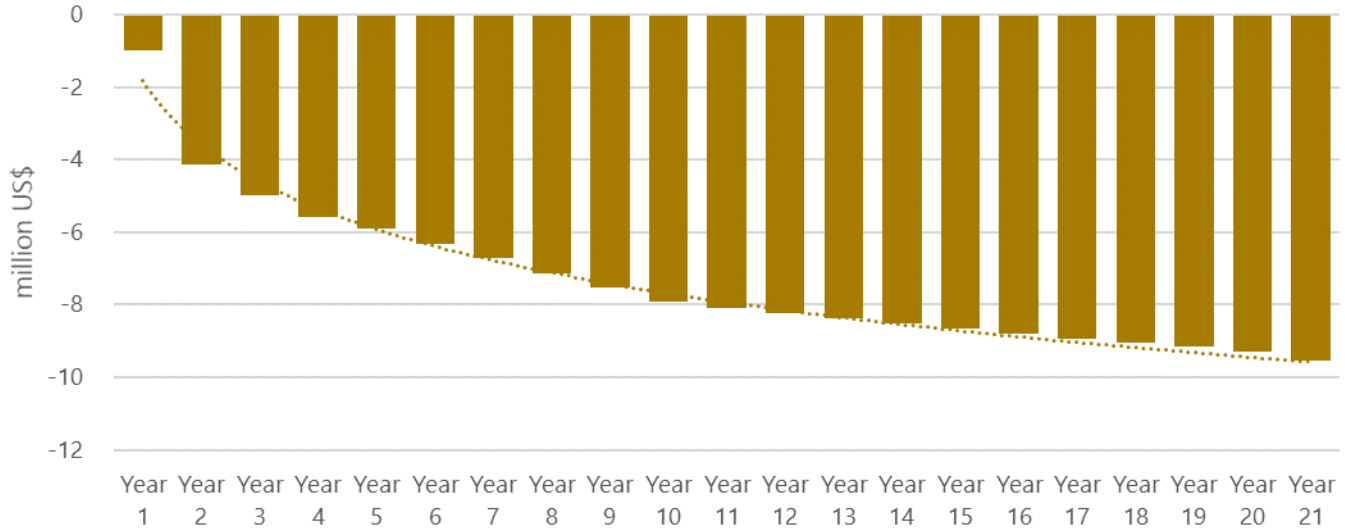
Finally, we also calculated the US lost value at the 2013-2017 average price (9,237 USD/mt for whey protein) as shown in Table 21 on page 60.

For the last step, we prepared our forecast of accumulated impact to show what the loss to the US whey protein market would be over 5 years and then over 10 years and then upon final CPTPP/JEEPA implementation. We calculated the accumulated impact by making an approximation curve which smoothly connects the single-year impact (Year 5, Year 10 and Year 16) in order to assess the impact in every individual year as shown in the figure below. The assumption we made was:

- ✓ In the case of ingredients, we do expect only a very small impact in Year 1 (2018), because Year 1 is only from implementation until the end of the Japanese fiscal year on March 31. This makes Year 1 a very short year. We expect the impact will be apparent from Year 2, which starts on April 1, 2019.

The figure below shows the forecasted annual changes in impact on US whey protein trade. The accumulated impact is also shown in the table on page 60.

Figure 39 Forecasted Annual Changes in Impact on US Whey Protein Trade



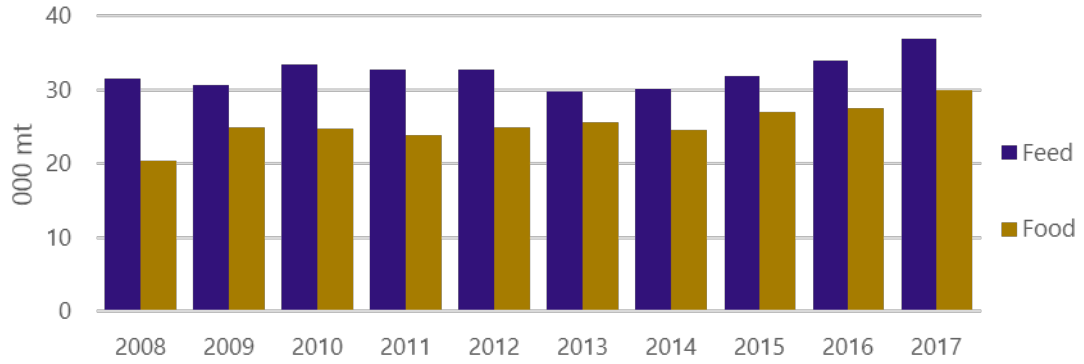
Source: Prepared by Meros Consulting

4.3. Food Whey

4.3.1. Sub-categories under whey, protein less than 80%

Whey categorized under HS0404 includes whey, protein less than 80%. Under this category, three HS codes (040410141, 040410181, 040410182) are allocated specifically for the tariff rate quota for feed whey, which will remain as it is after the implementation of CPTPP/JEEPA. Demand for feed whey fluctuates, but it is expected to be flat or even decrease due to the shrinking livestock sector. This section mainly covers whey for food use.

Figure 40 Japanese Imports of Feed and Food Whey



Source: Japan Customs

Table 23 Whey Categories Under CPTPP and JEEPA Tariff Schedule

Whey category	HS	Whey type	Condition	2017 (000 mt)			Current duty	CPTPP	JEEPA
				US	World	US %			
#2 Whey	040410141 040410181 040410182	Various whey	Whey for feed TRQ	16	37	44%	0% 45,000 mt	No change	No change
	040410119	Whey, protein less than 80%	ALIC SBS Tender	0.4	6	6%	SBS Tender (25%/35% + markup)	No change	No change
	040410122	Whey mineral concentrate	Whey mineral concentrate TRQ	0.5	10	5%	25% 14,000 mt	Additional TRQ Australia 4->5,000mt (mineral concentrate) NZ 1,300->1,700mt (three categories total)	Additional TRQ EU 6,200->9,400 mt (three categories total)
	040410142 040490116 040490126 040490136	Whey for infant formula TRQ	Whey for infant formula TRQ	1.6	8	20%	10% 25,000 mt		
	040410, not defined	Whey permeate	Whey permeate	-	na	-	29.8% + 425 JPY/kg		
	040490117 040490127 040490137	Whey + derivatives	Other dairy TRQ	-	4.5	0%	25%/35%	No change	No change

Whey category	HS	Whey type	Condition	2017 (000 mt)			Current duty	CPTPP	JEEPA
				US	World	US %			
	Various	Whey, protein <25%	Other	0.2	1.0	22%	29.8% + 99, 425 or 687 JPY/kg	Eliminated in 16 yrs	Reduced to 7.5%/10.5% + 12 JPY in Year 11
		Whey, 25%> < 45%	Other					Eliminated in 21 yrs	
		Whey, protein >45%	Other					Eliminated in 6 yrs	Eliminated in 6 yrs
	Various	Whey + derivatives	Other	0.2	0.7	32%	29.8% +400-1,023 JPY/kg	No change	Included in above

Sources: Japan Customs, The provisions of CPTPP and JEEPA

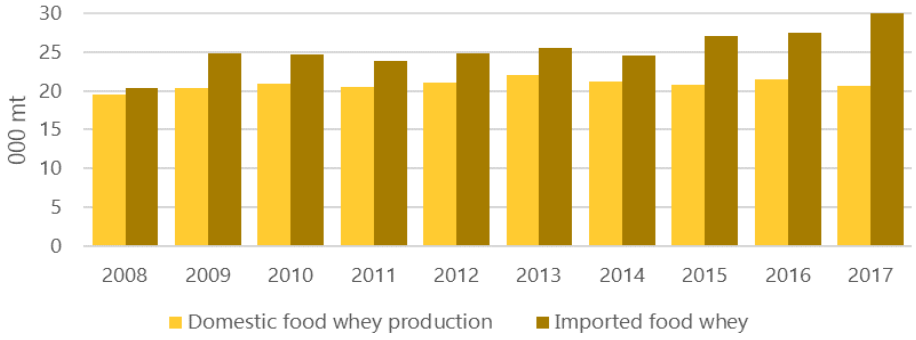
The majority of food whey imports comes through tariff rate quotas (TRQs), including the **TRQ for whey mineral concentrate**, **TRQ for whey for infant formula** and **TRQ for other dairy products**. The CPTPP and JEEPA will both provide additional TRQ for whey mineral concentrate, whey for infant formula and permeate.

Other than the TRQs, food whey trade is basically regulated under the state trade through the **Simultaneous Buy and Sell (SBS) tendering system** operated by ALIC. The tariff rate outside the TRQs/state trade is too high to actually import any products. However, the CPTPP will eliminate the out-of-quota tariff for whey within 6-21 years, depending on the protein contents. JEEPA will reduce the tariff for whey with protein contents less than 45%, and will eliminate the tariff for whey with protein contents more than 45% within 6 years.

4.3.2. Current Supply and Competitive Situation of Imported Food Whey

Because the domestic whey supply is limited and unstable, major cheese manufacturers have stopped selling whey to other users. As a result, imports of mineral condensed whey are increasing. Mineral condensed whey has a strong salty taste, so manufacturers prefer to avoid using it if possible, but it can easily be imported under the TRQ, and not through ALIC SBS.

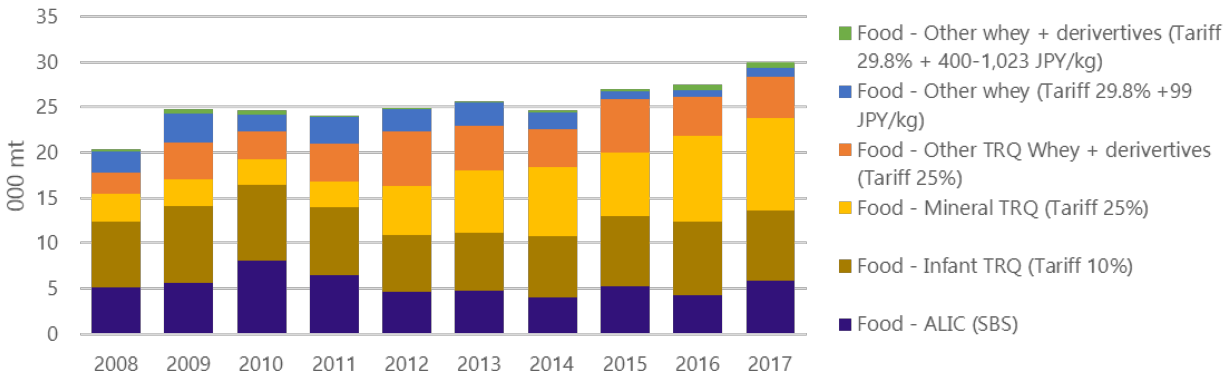
Table 24 Supply of Food Whey (Domestic and Imports)



Source: Japan Customs and Estimations by Meros Consulting

Major food whey suppliers are Australia, Korea, Germany, Singapore and the US. Korea and Singapore import whey from Oceania and other suppliers and process it into some other formats which have better trade access conditions for the Japanese market. The US used to be the major supplier of whey, but other suppliers such as Australia and EU countries expanded their share significantly over the years due to lower prices, as well as the increasing tendency of Japanese manufacturers to utilize the mineral condensed whey TRQ.

Figure 41 Supply of Imported Food Whey



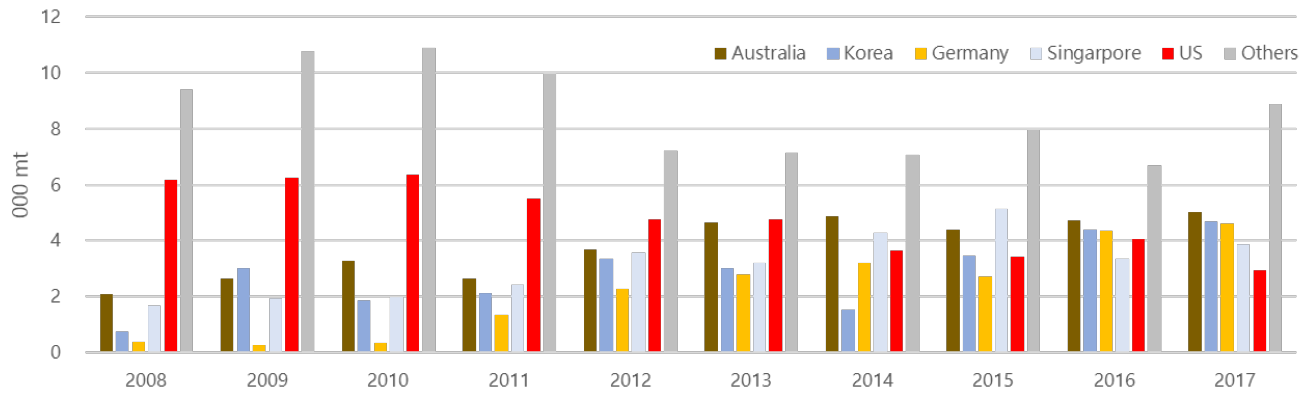
Source: Japan Customs

Table 25 Supply Mix of Imported Food Whey (2017)

	TOTAL	Australia	Korea	Germany	Singapore	US	Others
Food - Mineral TRQ (Tariff 25%)	**10.2**	4.1	1.5	3.4	-	**0.5**	0.7
Food - Infant TRQ (Tariff 10%)	**7.8**	-	1.5	0.0	1.8	**1.6**	2.9
Food - ALIC (SBS)	**5.9**	0.8	-	0.8	-	**0.4**	4.0
Food - Other TRQ whey + derivatives (Tariff 25%)	**4.5**	0.2	1.4	-	1.9	**-**	1.0
Food - Other whey (Tariff 29.8% +99 JPY/kg)	**1.0**	-	-	0.4	-	**0.2**	0.4
Food - Other whey + derivatives (Tariff 29.8% + 400-1,023 JPY/kg)	**0.7**	-	0.3	-	0.2	**0.2**	0.0
TOTAL	**30.0**	**5.0**	**4.7**	**4.6**	**3.9**	**2.9**	**8.9**

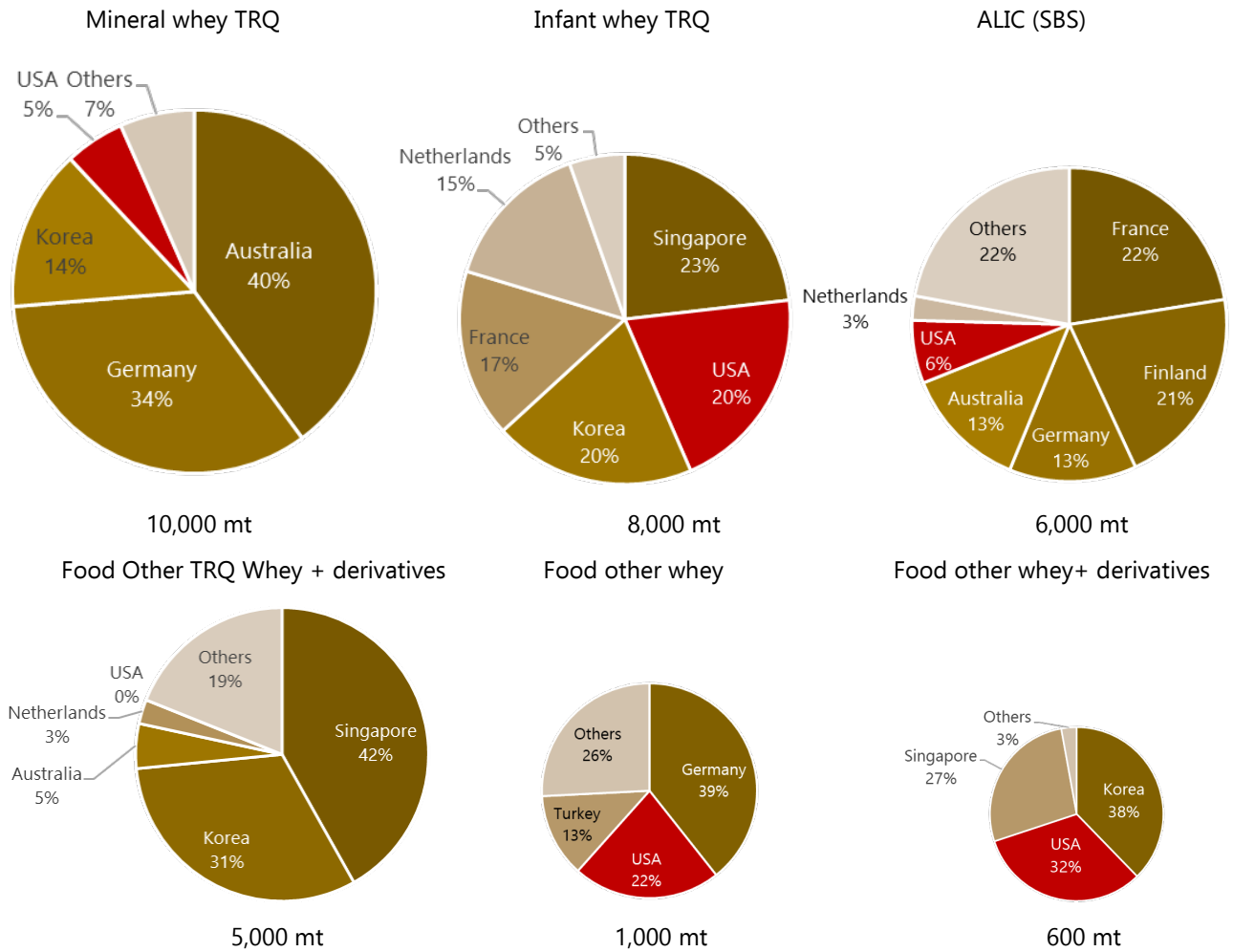
Source: Japan Customs

Figure 42 Supply of Imported Food Whey



Source: Japan Customs

Figure 43 Supply of Imported Food Whey (2017)



Source: Japan Customs

ALIC tenders are held from time to time when the government decides that there is a need to import, considering the supply and demand situation. In addition to the tariff (25% or 35%), ALIC also collects mark-ups on the SBS deal, which are shown in the table below. The major whey types imported through this tender are whey with protein contents from 7.5% to less than 15%.

Table 26 ALIC SBS Tender Results (2016 and 2017)

Volume (mt)

2016 (aggregation of two tenders)						
Category		IA	I	II	III	IV
Protein	TOTAL	less than 7.5%	7.5- less than 15%	15%- less than 30%	30% - less than 45%	45% - less than 80%
TOTAL	**4,500**	**83**	**4,092**	**0**	**325**	**0**
Australia	941	0	825	0	116	0
Germany	785	83	702	0	0	0
France	750	0	750	0	0	0
US	**523**	**0**	**466**	**0**	**57**	**0**
Spain	496	0	496	0	0	0
Others	1,005	0	853	0	152	0

2017 (aggregation of three tenders)						
Category		IA	I	II	III	IV
Protein		less than 7.5%	7.5- less than 15%	15% -less than 30%	30% - less than 45%	45% - less than 80%
TOTAL	**6,700**	**148**	**5,505**	**306**	**741**	**0**
Finland	1,625	0	1,625	0	0	0
France	1,611	0	1,611	0	0	0
Australia	795	0	547	0	248	0
Germany	645	148	398	0	99	0
US	**605**	**0**	**586**	**0**	**19**	**0**
Others	1,420	0	739	306	375	0

Price (JPY/kg)

	1-Mar	5-Jul
Buying price	175	189
Selling price	422	422
Price differences	**247**	**233**

	26-Sep	27-Apr	28-Feb
Buying price	231	235	237
Selling price	374	308	432
Price differences	**143**	**73**	**194**

Source: ALIC

4.3.3. Quantitative Analysis of the Impact of CPTPP and JEEPA on Whey, protein less than 80% (Food use)

Here, we analyzed the category-based impact quantitatively, in the same process we used with other products.

1. Baseline projection of Japanese imports by category
2. Positive impact of CPTPP & JEEPA on overall Japanese imports by category
3. Negative impact of CPTPP & JEEPA on US exports to Japan by category

Key Results of the Quantitative Analysis of the Impact of the CPTPP and JEEPA on Food Whey

The following table shows our results of the impact of the CPTPP and JEEPA on US exports of food whey.

Table 27 Impact of the CPTPP and JEEPA on US Exports of Food Whey to Japan

Unit: 000mt

	For Infant				For Other				US Lost Volume	US Lost Value as 2013-17 average price (million US$)	Accumulated US Lost Value at 2013-27 average price (million US$)
	Baseline		CPTPP/JEEPA		Baseline		CPTPP/JEEPA				
	TOTAL	US	TOTAL	US	TOTAL	US	TOTAL	US			
Base year - 2017	8	2	8	2	22	1	22	1	-	-	-
Year 5 - 2022	7	2	7	0	28	4	34	0	**-5**	**-11**	**-39**
Year 10 - 2027	7	2	7	0	34	5	45	0	**-7**	**-13**	**-100**
Year 16 - 2033	6	2	6	0	37	5	50	0	**-7**	**-14**	**-183**

Source: Prepared by Meros Consulting Note: All numbers are rounded to the nearest whole number

Table 28 on the next page shows our baseline projection as well as the projected impact of CPTPP & JEEPA.

In the rest of this section, we explain the methodology for this quantitative analysis in detail.

Table 28 The Overall Projection of the Food Whey Category

		Popul ation	Per-capita demand /supply	Supply											
				TOTAL	Imports										Domestic production
					TOTAL	For Infant Formula					For Other Food				
						Sub-TOTAL	US	Aus, NZ, Canada	EU	Others	Sub-TOTAL	US	Aus, NZ, Canada	EU	Others
		Millions	Kg/cap	000mt											
	2008	128	0.31	40	20	7	2	1	3	1	13	4	3	4	2	20
	2013	127	0.37	48	26	6	2	0	3	2	19	3	6	5	5	22
Base Year	2017	127	0.40	51	30	8	2	0	3	3	22	1	6	10	6	21
CAGR '08-'17		-0.1%	2.8%	2.7%	4.4%	0.7%	-4.9%	-	0.4%	16.6%	6.0%	-11%	6.2%	9.9%	12.1%	0.6%
CAGR '13-'17		-0.1%	1.7%	1.6%	4.1%	5.2%	-0.9%	-	-0.4%	16.5%	3.7%	-19%	-0.5%	16.7%	2.1%	-1.6%
Baseline Projection																
Year 5	2022	124	0.44	55	35	7	2	0	3	2	28	4	6	14	6	20
Year 10	2027	121	0.49	59	41	7	2	0	3	2	34	5	6	18	6	18
Year 16	2033	117	0.52	60	44	6	2	0	2	2	37	5	6	21	6	17
CAGR '17-'22		-0.4%	2.0%	1.6%	3.3%	-2.1%	3.2%	-	-1.3%	-5.9%	5.0%	21.2%	0.0%	7.0%	0.0%	-1.1%
CAGR '22-'27		-0.5%	2.0%	1.5%	3.0%	-0.9%	-0.9%	-	-0.9%	-0.9%	3.9%	6.2%	0.0%	6.2%	0.0%	-1.6%
CAGR '27-'33		-0.6%	1.0%	0.4%	1.1%	-0.8%	-0.8%	-	-0.8%	-0.8%	1.4%	2.1%	0.0%	2.1%	0.0%	-1.4%
Impact of CPTPP and JEEPA																
Year 5	2022	124	0.49	61	41	7	0	0	5	2	34	0	6	23	6	20
Year 10	2027	121	0.53	64	51	7	0	0	4	2	45	0	6	33	6	13
Year 16	2033	117	0.59	69	57	6	0	0	4	2	50	0	6	39	6	13
CAGR '17-'22		-0.4%	4.0%	3.6%	6.4%	-2.1%	-	-	9.7%	-5.9%	8.9%	-	0.0%	18.7%	0.0%	-1.1%
CAGR '22-'27		-0.5%	1.7%	1.2%	4.6%	-0.9%	-	-	-0.9%	-0.9%	5.6%	-	0.0%	8.0%	0.0%	-8.1%
CAGR '27-'33		-0.6%	2.0%	1.3%	1.7%	-0.8%	-	-	-0.8%	-0.8%	2.1%	-	0.0%	2.7%	0.0%	-0.4%

Source: Meros Consulting

Note: Blue cells indicate our assumptions for the baseline projection

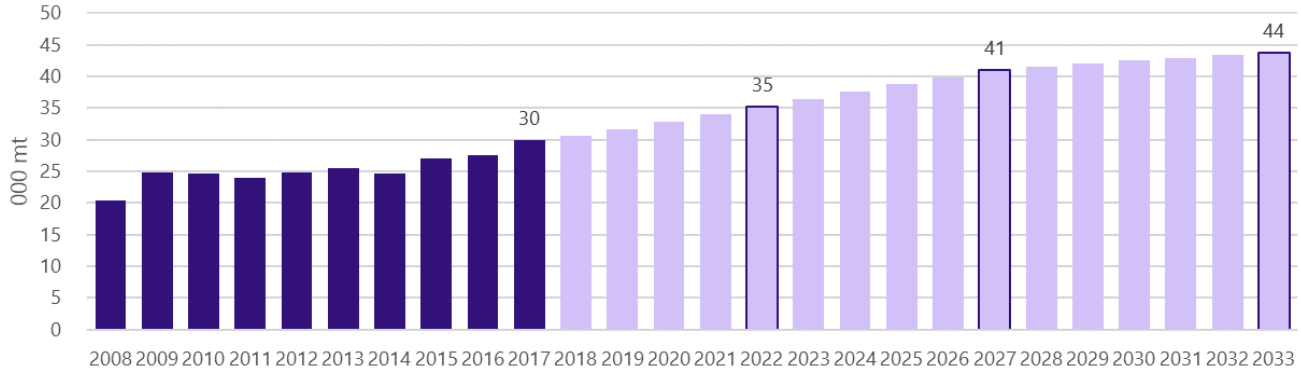
1. Baseline projection of Japanese Imports of Food Whey

We started by making a baseline projection for overall demand and supply. We made the following assumptions regarding the future growth of per capita consumption and domestic supply of food whey:

- ✓ Based on discussions with importers and past trends, we project 2% growth in per capita whey consumption for the next 10 years, and 1% growth after that.
- ✓ Domestic whey production will decline along with the projected decline in the cheese sector.

Thus, we projected that Japanese whey imports will expand to 35,000 mt by Year 5 (2022), 41,000 mt by Year 10 (2027) and 44,000 mt by Year 16 (2033).

Figure 44 Baseline Projection of Food Whey Imports



Source: Prepared by Meros Consulting

To make the baseline projection on imports by category and by country, we made the following assumptions:

- ✓ For imports for infant formula, we made a projection using the expected birth rates. Based on this projection, Japanese imports of whey for infant formula are expected to decline from 8,000 mt in 2017 to 6,000 mt by Year 16 (2033).
- ✓ We assumed that the supply from Australia, NZ and Canada will remain at the same level as in 2017.

The baseline projection shows the US exports of food whey to Japan could increase from 3,000 mt in 2017 to 5,000 mt by Year 5 (2022) and to 7,000 mt by Year 10 (2027).

2. Positive Impact of the CPTPP & JEEPA on Japanese Imports of Food Whey

The CPTPP/JEEPA tariff reduction scheme for food whey imports is summarized in the table below.

Table 29 CPTPP/JEEPA Tariff Schedule for Food Whey

CPTPP

HS	Product	Current	TRQ/SG	2018 Dec-2019 Mar	2022	2027	2038
				Year 1	Year 5	Year 10	Year 21
040410119	Whey, protein less than 80% ALIC SBS Tender	25%/35% + markup	No change				
040410122	Whey mineral concentrate	TRQ 25% 14,000mt	TPP TRQ Australia 4,000 -> 5000mt NZ 1,300->1,700 mt Year 11	25%	5%	0%	0%
040410142 040490116 040490126 040490136	Whey for infant formula TRQ	TRQ 10% 25,000mt		0%	0%	0%	0%
040410, not defined	Whey permeate	29.8% + 425 JPY/kg		0%	0%	0%	0%
040490117 040490127 040490137	Whey + derivatives, Dairy TRQ	25%/35%	No change				
Various	Whey, protein <25%	29.8% + 99, 425 or 687 JPY/kg	SG	35%/25%+ 40JPY/kg	25.6%/18.3%+ 29.33JPY/kg	14%/10%+ 16JPY/kg	0%
	Whey, 25%> < 45%		SG	35%/25%+ 40JPY/kg	28%/20%+ 32JPY/kg	19.2%/13.7%+ 22JPY/kg	0%
	Whey, protein >45%		-	35%/25%+ 40JPY/kg	5%+ 8JPY/kg	0%	0%
Various	Whey + derivatives	29.8% +400-1,023 JPY/kg	No change				

JEEPA

HS	Product	Current	TRQ	2019 Feb-Mar	2022	2027	2038
				Year 1	Year 5	Year 10	Year 21
040410119	Whey, protein less than 80% ALIC SBS Tender	25%/35% + markup	No change				
040410122	Whey mineral concentrate	TRQ 25% 14,000mt	JEEPA TRQ 6,200 mt -> 9,000 mt Year 6th	25%	5%	0%	0%
040410142 040490116 040490126 040490136	Whey for infant formula TRQ	TRQ 10% 25,000mt		0%	0%	0%	0%
040410, not defined	Whey permeate	29.8% + 425 JPY/kg		0%	0%	0%	0%
040490117 040490127 040490137	Whey + derivatives, Dairy TRQ	25%/35%	No change				
Various	Whey, protein <25%	29.8% + 99, 425 or 687 JPY/kg	SG	25-35%+ 40JPY/kg	18%/25.2%+ 28.8JPY/kg	9.3%/13%+ 14.8JPY/kg	7.5%/10.5% +12JPY/kg
	Whey, 25%> < 45%		SG	25-35%+ 40JPY/kg	18%/25.2%+ 28.8JPY/kg	9.3%/13%+ 14.8JPY/kg	7.5%/10.5% +12JPY/kg
	Whey, protein >45%		-	25-35%+ 40JPY/kg	5-7%+ 8JPY/kg	0%	0%
Various	Whey + derivatives	29.8% +400-1,023 JPY/kg	SG	Included in above			

Source: The provisions of CPTPP and JEEPA

Almost all importers we interviewed perceived the **"liberalization" of food whey trade** very positively. Since the ALIC SBS tender is unstable and unpredictable, this liberalization makes it much easier for food manufacturers to utilize imported whey for food. There is a safeguard scheme, but the overall reaction toward the safeguard is that the tariff rates for when the safeguard is activated are already low enough to import anyway, so it will not be a significant barrier to trade.

Major comments include:

- *ALIC's SBS is very unstable. When ALIC thinks that there isn't enough supply of SMP, they occasionally open a bid. As such, a company cannot predict when and how much whey they can purchase through the SBS. The "liberalization" will change the trade dynamics completely. Manufacturers are now preparing for imports from Europe, NZ, AUS, Canada etc. as the CPTPP and JEEPA will come into effect next spring.*
- *We may not use the ALIC tender system any more, after CPTPP/JEEPA are effectuated.*
- *For importers/manufacturers, the main supply source will be imports from CPTPP/JEEPA countries which will be supplemented by ALIC tender if they see a merit.*
- *We may still use the ALIC tender as a kind of "insurance", while we will mainly rely on EU products imported through JEEPA.*
- *The impact of the safeguard is not clear, but I think the threshold is not too tight. And, the safeguard tariff is already lower than the current tariff, so it is possible to import whey even with the safeguard tariff rate.*

The newly allocated **TRQs for mineral condensed whey and whey for infant formula** will also bring a positive impact on trade. However, the newly allocated TRQs are small compared to the current trade volume under the existing TRQs. Thus, we do not expect any significant increase of mineral condensed whey and whey for infant formula imports. Some importers expect that some of the current demand for mineral condensed whey will be replaced by normal whey as the tariff rate becomes lower in the process of the tariff reduction.

Major comments include:

- *Although we haven't heard the details of the allocation system for the new TRQ, we think mineral condensed whey and whey for infant formula TRQs will be filled.*
- *Because the domestic whey supply is limited and unstable, major cheese manufacturers have stopped selling whey to other users. Thus, imports of mineral condensed whey are increasing. It has a very salty taste so manufacturers would like to avoid using it if possible, but it can easily be imported under the TRQ. If the tariff on desalted normal whey is reduced, manufacturers will switch to normal whey from mineral condensed whey.*

None of the interviewees expected any notable impact from the new **TRQ for whey permeate**.

Major comments include:

- *Currently, whey permeate is not being used much, and market growth will depend on whether it can be a substitute*

for lactose. Since the lactose market is already mature, it doesn't make much sense to substitute it for something else. I don't expect any strong incentive to shift from lactose to whey permeate.

- *Still, permeate is cheaper than lactose so there could be some manufacturers who would want to use it for solidification purposes. But I don't think there will be any significant impact from the new TRQ.*
- *Whey permeate is not defined as a dairy product" under the Ministerial Order on Milk and Dairy Component Standards and it cannot be presented as a "dairy product" on the product label. Instead, it needs to be displayed as "permeate" or "a product made from lactose as the main raw material" so it is cumbersome for the manufacturers to use it.*

The possibility to expand whey usage is a debatable topic. One expert mentioned that 25% of domestic SMP production (from a total production of 122,000 mt in 2017) could be replaced by whey. One importer came up with a similar number, saying that food whey imports could double within 3 years of the effectuation of CPTPP and JEEPA. However, another importer did not think that WPC 34-35 can replace SMP. They pointed out that due to the price increase of WPC 34-35 over the last two years, there is no merit in replacing SMP with WPC 34-35 anymore. Thus, they expect more modest growth of food whey imports.

Major comments include:

- *WPC 34-35 has a possibility to replace SMP, given the unstable supply of domestic SMP.*
- *Currently, 50% of SMP is used for yogurt production. Whey protein does not solidify with acid so plain yogurt (50% of yogurt production) cannot be made with whey. Sweet and cheap yogurt (the other half of yogurt production) can be made with whey as it is solidified using gelatin.*
- *Imports of food whey (especially WPC 35) may more than double as it will become easier to import and it can substitute for SMP as it is cheaper. Within 3 years or so, imports may double.*
- *Whey 34-35 was once a substitute for SMP but it's now more expensive than SMP. This tendency is a very recent thing, like over the last 1-2 years. If it was 2-3 years ago, WPC 34-35 would be a good substitute for SMP. But we don't see any more demand for that purpose, since the price situation has changed.*

In summary, we made the following assumptions based on the discussion above:

- ✓ If we use a whey price of 200 JPY/kg, the ad valorem tariff converted rate for food whey will be around 45% in Year 1, 30-36% in Year 5, 17-25% in Year 10 and 0-14% in Year 21. Considering that the ad valorem tariff converted rate for the ALIC tender tariff in 2017 was around 60-80%, the CPTPP/JEEPA tariff in Year 5 would equal around a 30-40 percent point tariff reduction. We assume that CPTPP/JEEPA will stimulate food whey demand by 20% in Year 5, by 30% in Year 10, by 35% in Year 16, and by 40% in Year 21.

- ✓ We do not expect any increase in demand for whey for infant formula, based on the limited demand for

infant formula due to the declining number of births.

Table 30 Impact of CPTPP and JEEPA on Food Whey Imports to Japan

Unit: 000mt

	Whey for Infant Formula	Other Food Whey
Base year - 2017	8	22
Year 5 - 2022	7	34
Year 10 - 2027	7	45
Year 21 - 2038	6	50

Source: Prepared by Meros Consulting

3. Negative Impact of CPTPP & JEEPA on US Exports of Food Whey

Since there will be no benefit to using US whey products after the effectuation of the CPTPP/JEEPA, we simply projected that there will be no more food whey imports from the US.

Some of the major comments from the interviewees include:

- *For whey, there is a feeling that the US has been left behind in this trend of growing demand for imported whey as it is no longer part of the TPP. Manufacturers are now preparing for imports from Europe, NZ, AUS, Canada etc. as the CPTPP and JEEPA will come into effect next spring.*
- *The US can continue using the ALIC tender system, but it is a disadvantage for the US as the ALIC tender system is unstable (no one knows when it will take place or what the mark-up will be). There is no recognition that the US is particularly superior in the WPC 34-35 segment. Not many US producers are making WPC 34 anyway and supply from the US is not very stable. So, there is no benefit for us to utilize the ALIC tender for US products.*
- *American WPC 34-35 is expensive, and the supply is unstable as there are not many manufacturers. So it is often not the choice of importers/manufacturers and there is no benefit for manufacturers to use it other than they may be familiar with it.*
- *For importers/manufacturers, the main supply source will be imports from CPTPP/JEEPA countries which will be supplemented by ALIC tenders if they see an advantage.*
- *The new tariff quota set up for mineral condensed whey, whey for baby milk powder and permeate will have a negative impact on US exports.*
- *There could be possible impact from a new labeling regulation for the procurement of ingredients including food whey. New country-of-origin labeling regulations for the ingredients in processed food products were introduced last year. Under the new regulations, by 2022, manufacturers are expected to label the country of origin of the major ingredient used in processed products. Once the manufacturers introduce this new label, it is expected that they will be reluctant to switch the sources of the ingredient. Thus, I think that it will be important for the US to quickly show progress on bilateral negotiations with Japan.*

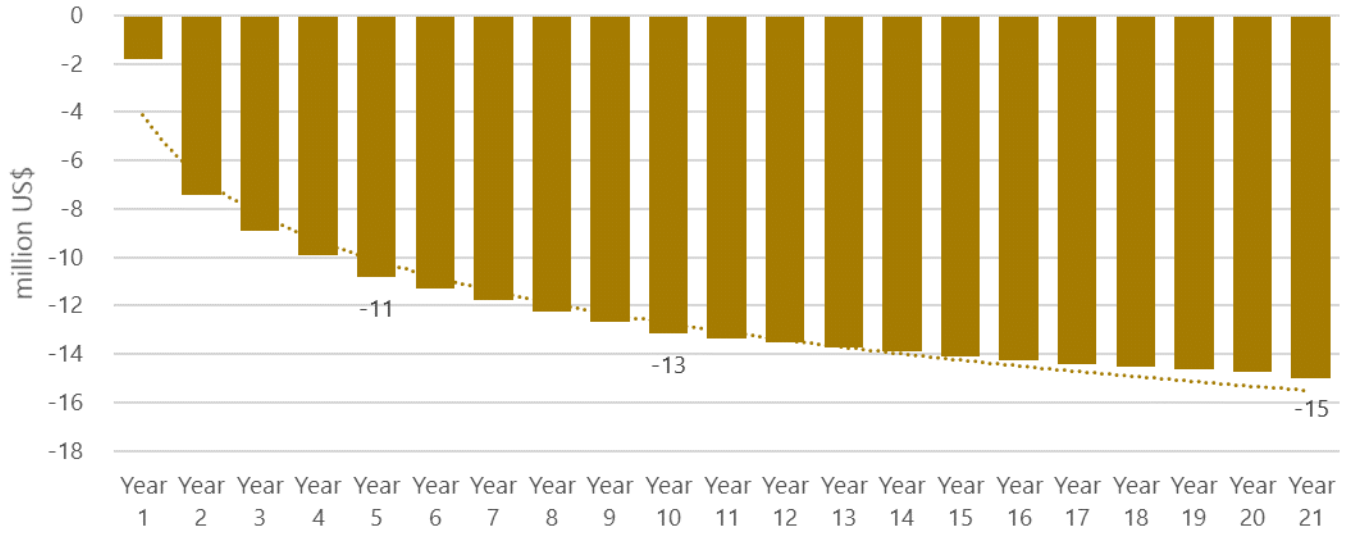
4. Negative Impact of the CPTPP & JEEPA on the US exports to Japan by value

Finally, we also calculated the US lost value at the 2013-2017 average price (2,003 USD/mt for whey) as shown in the Table 27 on page 70.

We prepared our forecast of accumulated impact to show what the loss to the US whey protein market would be over 5 years, 10 years, and upon final CPTPP/JEEPA implementation. We calculated the accumulated impact by making an approximation curve which smoothly connects the single-year impact (Year 5, Year 10 and Year 16) in order to assess the impact in every individual year as shown in the figure below. We made these assumptions:

- ✓ In the case of ingredients, we expect only a very small impact in Year 1 (2018), because the first year is very short, lasting only from implementation until the end of the Japanese fiscal year on March 31, 2019. We expect the impact will be apparent from Year 2, which starts on April 1, 2019.

Figure 45 Forecasted Annual Changes in Impact on US Food Whey Trade



Source: Prepared by Meros Consulting

5. The Impact of the CPTPP and JEEPA on Lactose

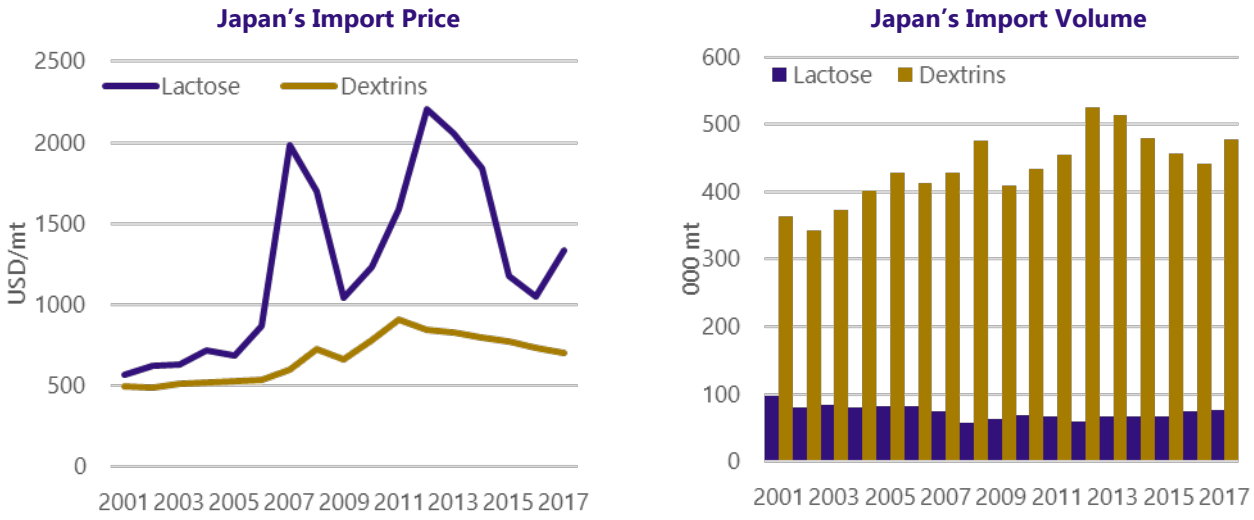
5.1. Lactose

5.1.1. Current Supply and Competitive Situation

Japan imported 77,000 mt of lactose in 2017. Lactose imports in the early 2000's were around 80,000-100,000 mt, which dropped to around 60,000 mt in 2007 due to a significant price rise that year, and some manufacturers substituted lactose with dextrin and glucose. The volume gradually recovered after that. There is no domestic production of lactose.

In Japan, lactose is used mainly in seasonings & broth powder/cubes (around 25% of the total usage) and confectionery (mainly chocolate, around 25%). Other sectors using lactose include dairy drinks, infant formula, pharmaceutical, culture fluid, mixed dairy powder, feed, etc. Lactose has a characteristic of having moderate sweetness and flavor. It is also a convenient bulking agent, since it does not distort the original taste. However, all importers we interviewed mentioned that the most important feature of lactose for food manufacturers is its reasonable price. Globally, it has high demand in the infant formula market in China and SE Asian countries and as a protein modifier (when the protein content of SMP becomes too high, lactose is used to bring down the protein content to meet the protein level defined by CODEX). The importers we interviewed pointed out that Japanese food manufacturers cannot compete with infant formula manufacturers in China and SE Asian countries who can offer a higher price for lactose, because lactose is an essential ingredient in infant formula recipes. Food manufacturers, in contrast, can substitute lactose with dextrin or other ingredients when necessary.

Figure 46 Comparison of Lactose and Dextrin Imports

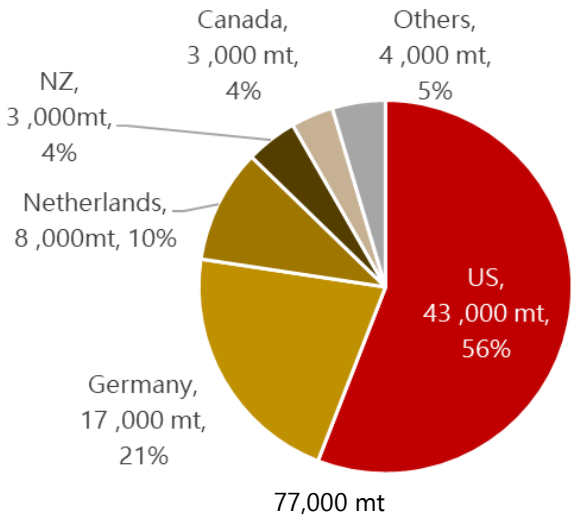


Source: ICT Trade Map

The US has been the leading supplier of lactose, but Europe has also become a major lactose exporter over the past 4-5 years, especially Germany. Japanese lactose imports from Europe used to be mainly high-end pharmaceutical lactose, which has a market size of about 10,000 mt. The EU started to increase its raw milk production about 5 years ago after it abolished the production quota and started to invest heavily in dairy processing facilities. Currently, EU has the capacity to export lactose to New Zealand and Australia, where they need lactose as a protein content modifier for SMP and do not have any excess product to export.

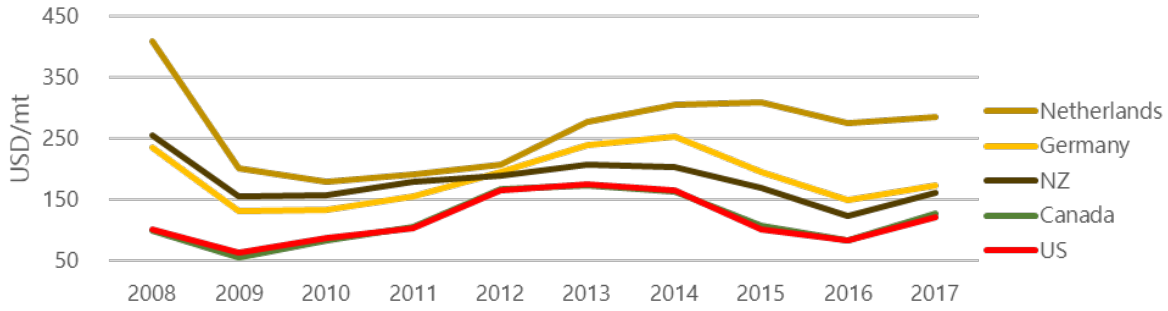
The HS codes for lactose are HS 170211 (lactose & lactose syrup containing 99% more lactose) and HS 170219 (lactose & lactose syrup, other). HS 170211 accounted for 98% of Japan's lactose imports.

Figure 47 Share of Export Suppliers of lactose (2017)



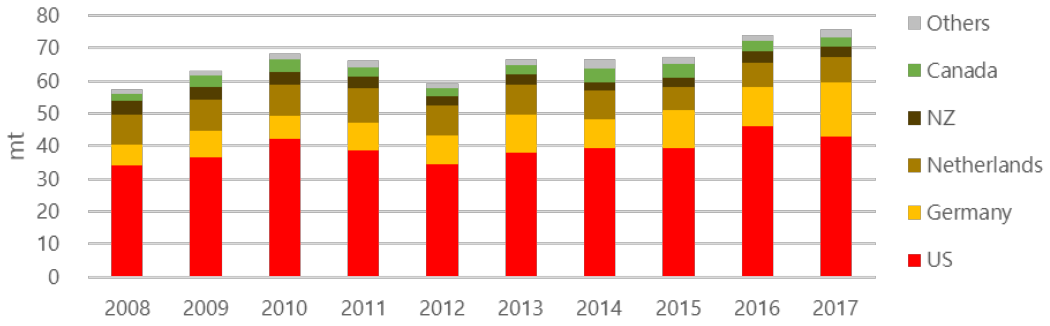
Source: Japan Customs

Figure 48 Price Comparison of Lactose Imports (HS 170211)



Source: Japan Customs

Figure 49 Volume Comparison of Lactose Imports (HS 170211)



Source: Japan Customs

The average European lactose price is higher than the US price in trade statistics, but this is because it includes high-end products for pharmaceutical usage. The importers we interviewed confirmed that if one compares food-grade lactose products, the price offered by EU suppliers is almost the same or sometimes even cheaper than US products.

One importer commented as follows:

- *Price negotiation for lactose takes place quarterly. This Q4, EU lactose supply is relatively limited due to the heat wave during the summer. Plus, in Q4, EU generally put priority on butter over cheese due to high demand for butter during the Christmas season, meaning that there will be lower supply of lactose. Thus, normally, the EU puts a higher price for lactose for Q4. Nevertheless, Germany's price for this Q4 remained low. I think suppliers lowered the price in anticipation of the entry into force of the JEEPA. "*

5.1.2. Quantitative Analysis of the Impact of the CPTPP and JEEPA on Lactose

We analyzed the category-based impact quantitatively in the same manner as explained for previous product categories.

1. Baseline projection of Japanese imports by category
2. Positive impact of the CPTPP & JEEPA on overall Japanese imports by category
3. Negative impact of the CPTPP & JEEPA on US exports to Japan by category

Key Results of the Quantitative Analysis on the Impact of CPTPP and JEEPA on Lactose

The following table shows our results of the impact of the CPTPP and JEEPA on US exports of lactose.

Table 31 Impact of the CPTPP and JEEPA on US Exports of Lactose to Japan

Unit: 000mt

	Baseline		CPTPP/JEEPA		**US Lost Volume**	**US Lost Value as 2013-17 average price** (million US$)	**Accumulated US Lost Value at 2013-27 average price** (million US$)
	TOTAL	US	TOTAL	US			
Base year - 2017	77	43	79	32	-	-	-
Year 5 - 2022	76	43	77	31	**-11**	**-12**	**-42**
Year 10 - 2027	74	42	75	30	**-11**	**-12**	**-102**
Year 16 - 2033	71	40	79	32	**-11**	**-11**	**-172**

Source: Prepared by Meros Consulting

Table 32 on the next page shows our baseline projection as well as the projected impact of CPTPP & JEEPA. In the rest of this section, we explain the methodology for this quantitative analysis in detail.

Table 32 The Overall Projection of the Lactose Category

		Population	Supply/Demand per capita	Import				
				TOTAL	*US*	*Aus, NZ, Canada*	*EU*	*Others*
		millions	kg/cap	000mt				
	2008	128	0.5	61	34	7	20	1
	2013	127	0.6	70	38	6	25	1
Base Year	2017	127	0.6	77	43	6	26	1
CAGR '08-'17		-0.1%	2.7%	2.6%	2.6%	-1.0%	3.4%	10.8%
CAGR '13-'17		-0.1%	2.4%	2.3%	3.1%	1.1%	1.0%	6.9%
Baseline Projection								
Year 5	2022	124	0.6	76	43	7	24	1
Year 10	2027	121	0.6	74	42	7	24	1
Year 16	2033	117	0.6	71	40	6	23	1
CAGR '17-'22		-0.4%	0.0%	-0.4%	0.0%	1.8%	-1.6%	0.3%
CAGR '22-'27		-0.5%	0.0%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%
CAGR '27-'33		-0.6%	0.0%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%
Impacts of CPTPP and JEEPA								
Year 5	2022	124	0.6	79	32	7	39	1
Year 10	2027	121	0.6	77	31	7	38	1
Year 16	2033	117	0.6	75	30	7	37	1
CAGR '17-'22		-0.4%	1.0%	0.6%	-6.0%	2.8%	8.2%	1.3%
CAGR '22-'27		-0.5%	0.0%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%
CAGR '27-'33		-0.6%	0.0%	-0.6%	-0.6%	-0.6%	-0.6%	-0.6%

Source: Meros Consulting

Note: Blue cells indicate our assumptions for the baseline projection

1. Baseline projection of Japanese Imports of Lactose

We started by making a baseline projection for the overall supply and demand. We made the following assumption regarding the future growth of per capita consumption of lactose:

- ✓ We assumed that Japanese lactose imports per capita will remain at the same level as in 2017, based on comments from our interviewees.

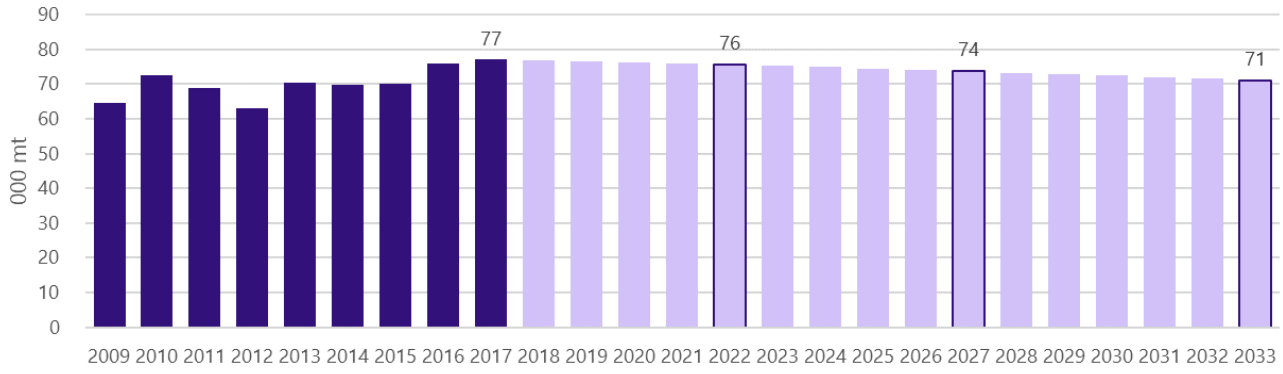
All importers we interviewed felt that the Japanese lactose market will stay stable at around 70,000 mt.

Comments include:

- *The Japanese lactose market is unlikely to become larger than 70,000 mt. Overall, the market is mature, so I think it will be stable. Due to the recent trend of low carb products, consumption of sweetened dairy drinks is declining. The soup broth market is expanding, but dextrin is a cheaper ingredient in terms of sweeteners.*
- *The size of the lactose market is expected to stay at around 70,000 mt or less. The confectionery sector, especially chocolate, is showing growth (4-5% growth/year), but we see more growth in high-cacoa chocolates, not milk chocolate that utilizes lactose.*

Thus, the total import volume is projected to shrink slightly to 76,000 mt by Year 5 (2022) and to 74,000 mt by Year 10 (2027), as the population decreases.

Figure 50 Baseline Projection of Lactose Imports



Source: Prepared by Meros Consulting

To make the baseline projection on imports by category and by country, we made the following assumption:

- ✓ We assumed that the current suppliers' shares will remain the same.

Thus, the forecast shows that US exports will be 43,000 mt by Year 5 and 42,000 mt by Year 10.

2. Positive Impact of the CPTPP & JEEPA on Japanese Imports of Lactose

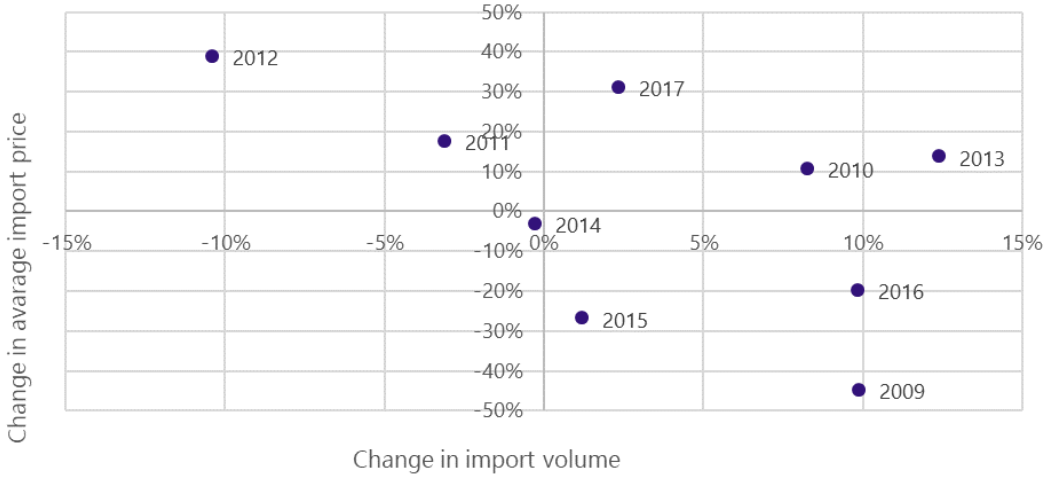
The CPTPP and JEEPA both eliminate the current 8.5% tariff immediately at the date of effectuation. Although all importers we interviewed agreed that we cannot expect any significant increase in demand from the elimination of the 8.5% tariff, some said it may stimulate a slight demand increase.

Some of the major comments were:

- *In general, I don't think there will be any significant impact from the tariff reduction on lactose trade. The market is very mature.*
- *The overall lactose market will not be affected much as the unit value is already quite low, and there will not be many other innovative usages developed.*
- *The current 8.5% tariff is already low compared to some other dairy products, as Japan does not produce lactose. Thus, I don't expect any major impact of the tariff reduction. Having said that, as lactose is a price-driven commodity, it may be possible that demand will increase up to 10% if the tariff is abolished, but it really depends on the world's lactose price.*

While the sudden price increase in 2007 caused a significant drop of import volume, trade statistics do not show a clear relationship between the year-on-year price changes and year-on-year volume changes over the last 10 years. The volume changes over the last 10 years have been very moderate, even though the price has fluctuated widely. As shown in the figure below, price decline generally stimulated a slight increase in import volume (in 2009, 2015 and 2016).

Figure 51 Relationships between Y-o-Y Import Price Changes and Y-o-Y Changes in Import Volume



Source: Japan Customs

Thus, taking the average of importers' views, we assumed that a 8.5% decline in price could generate an increase of imports by 5%.

Table 33 Impact the CPTPP and JEEPA on Japanese Lactose Imports

Unit: 000mt

	Baseline projection	CPTPP/JEEPA impact
Base year - 2017	77	77
Year 5 - 2022	76	79
Year 10- 2027	74	77
Year 16 - 2033	71	75

Source: Prepared by Meros Consulting

3. Negative Impact of CPTPP & JEEPA on US Exports of Lactose

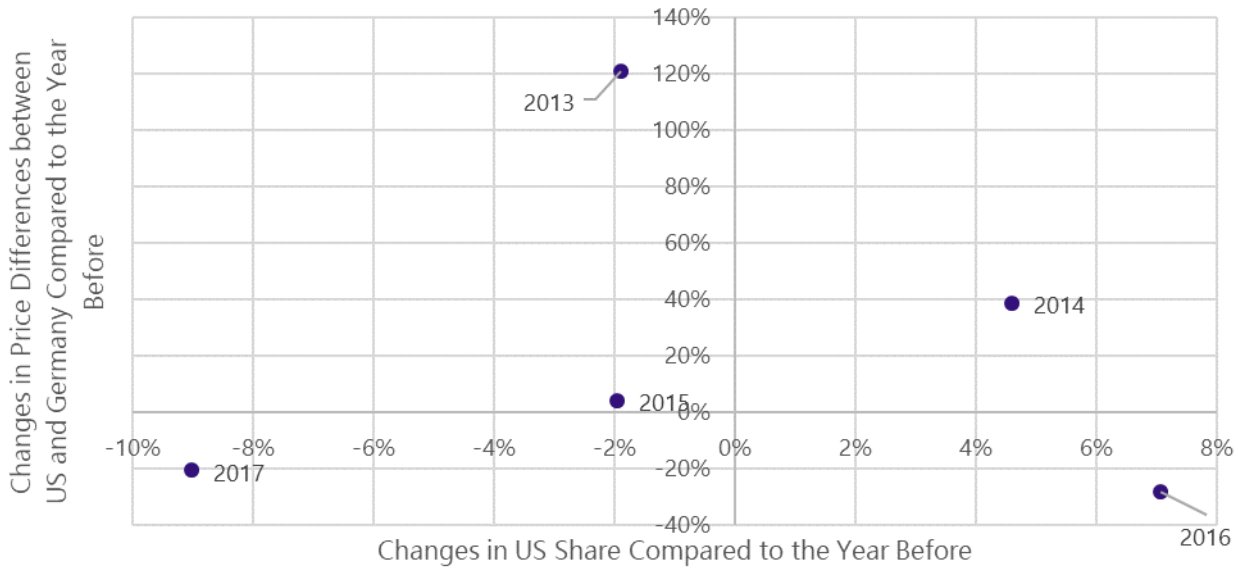
Most of our interviewees expect some impact from the 8.5% tariff reduction on supplying countries. All of them raised the possibility of replacing some share of the US market with EU and New Zealand products, unless US suppliers bring down their price to deal with the situation. Considering the supply availability, all agreed that it is unlikely that US supply will be replaced completely by other suppliers. The degree of substitution they expect varies from 17% up to 50% of the current US share.

Some of the comments include:

- *Canada, NZ and the EU (Germany) are already becoming threats for the US. Lactose from these countries is already entering the Japanese market. Companies like broth manufacturers tend to buy a large volume so a 8.5% reduction could be quite significant. What American suppliers can do is probably lower the selling price in order to compensate for the difference in tariff conditions caused by CPTPP/JEEPA. I have heard that because of the China-US trade war and the tariff increase for US dairy products, one exporter is already pushing Chinese importers to switch to NZ products. 80% of the lactose in China is from the US, and US suppliers are now forced to reduce the price to compensate for the tariff differences. In the same way, if US exporters won't compensate for the price differences caused by CPTPP/JEEPA, their exports could be affected significantly. Still, at least 50% of US supply will remain unchanged, since Japanese manufacturers are sensitive to quality.*
- *Lactose for food use is price-driven so there is a possibility that US imports will drop by as much as 50%. But whether other suppliers can substitute for the US is another question. Imports from the US are about 40,000 mt, so if there is a 50% decrease, 20,000 mt will need to be purchased from other suppliers – EU or NZ, which is a little questionable, especially in the short-term.*
- *Currently the US has about a 60% market share, and Europe (Germany, Netherlands and France) has a 30% market share for lactose. The US's share may come down to about 50% within 3 years or so, due to the tariff elimination of lactose coming from European countries. In the longer term, its share can go down even further. However, the quality of European lactose is low compared to the US (it has a yellowish color) so the US lactose could come back once the planned US-Japan bilateral agreement comes into effect. Europe is more interested in China and SE Asia markets anyway.*

In trade statistics, the relationship between the changes in price differences between the US and its competitors and the changes in US share in lactose imports is not clear, as shown in the figure below. The significant increase in EU exports of lactose to Japan has been quite recent, especially in the last year. Also, because the EU price shown in the Japanese trade statistics includes pharmaceutical grade products, it is not reasonable to compare it directly to the US price.

Figure 52 Relationship of Changes in Price Differences between US/German Products and Changes in US Share



Source: Japan Customs

- ✓ Taking importers' comments into account, we assumed that 30% of US exports will be substituted by other suppliers.

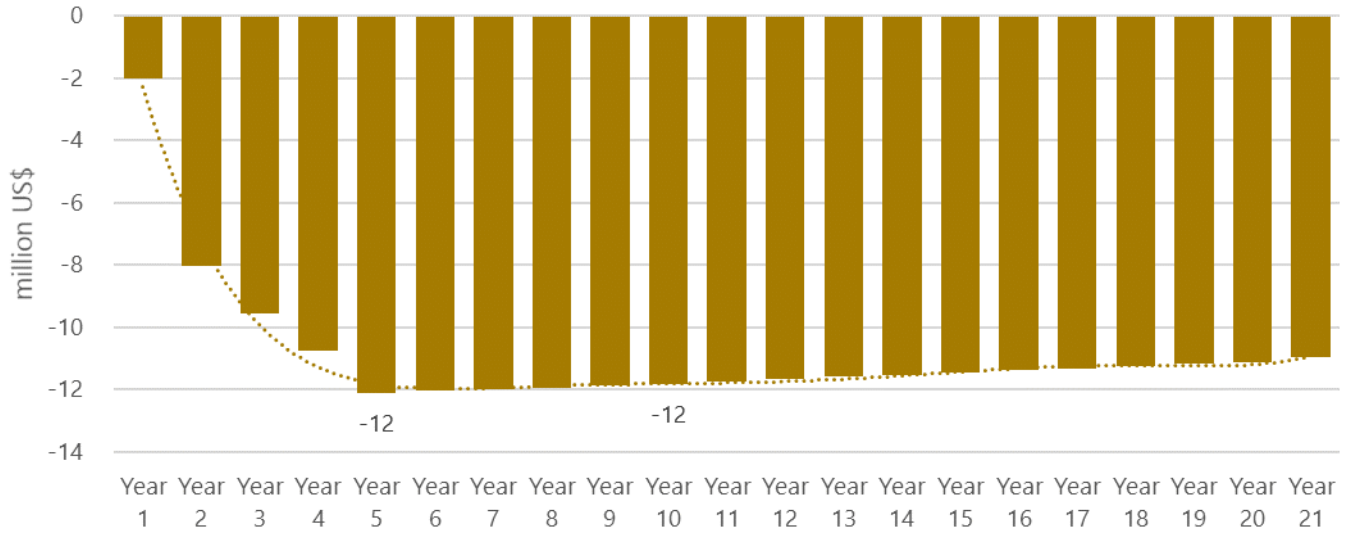
4. Negative Impact of the CPTPP & JEEPA on the US exports to Japan by value

Finally, we calculated the US lost value at the 2013-2017 average price (1,062 USD/mt for lactose) as shown in Table 31 on page 80.

We prepared our forecast of accumulated impact to show what the loss to the lactose market would be over 5 years, 10 years, and upon final CPTPP/JEEPA implementation. We calculated the accumulated impact by making an approximation curve which smoothly connects the single-year impact (Year 5, Year 10 and Year 16) in order to assess the impact in every individual year as shown in the figure below. The assumption we made was:

- ✓ In the case of ingredients, we expect only a very small impact in Year 1 (2018), because Year 1 is very short, lasting only from implementation until the end of the Japanese fiscal year on March 31. We expect the impact will be apparent from Year 2, which starts on April 1, 2019.

Figure 53 Forecasted Annual Changes in Impact on US Lactose Trade



Source: Prepared by Meros Consulting

6. The Impact of CPTPP and JEEPA on SMP for Food

6.1. Skim Milk Powder (SMP) for Food

Japan imported 59,000 mt of skim milk powder (SMP) in 2017, of which 31,000 mt was for food and 28,000 mt was for feed. The duty for SMP for feed is already zero; thus we discuss only SMP for food in this chapter.

6.1.1. SMP Tariff Line

Japan's SMP imports mainly fall into three categories: state trading by the Agriculture & Livestock Industries Corporation (ALIC), TRQ for the school lunch program, and out-of-quota imports. The import volume for state trading is determined by ALIC based on the domestic production and stock situation, including additional emergency imports. Based on WTO Uruguay Round commitments, Japan imports 137,000 mt (raw milk basis) of dairy products, including SMP, butter, whey etc. under the state trading system.

Figure 54 Japan's SMP Import Schemes

State Trade by ALIC	TRQ (Private Trade)	Out-of-quota Trade (Private Trade)
Tariff: 25%, 35% + Markup	Tariff: 0 % (School Lunch Program) - 35%	Tariff: 21.3% + 396 Yen/kg
Current Access (137,000 mt raw milk base) + additional emergency imports	TRQ (School Lunch Program: 7,264 mt etc.)	Unlimited

Sources: Meros Consulting, based on Ministry of Agriculture, Forestry and Fisheries (MAFF)

For the CPTPP and JEEPA, the Japanese government has kept the state trading scheme for SMP and butter, while it has agreed to provide a small volume of new TRQs. The TRQs for SMP in the CPTPP is 20,659 mt in the first year, which will increase to 24,102 mt in Year 6 on a raw milk basis (3,188 mt ->3,719 mt, product base). For JEEPA, a 12,857 mt quota for SMP, butter, whole milk powder, etc. will be set up, which will increase to 15,000 mt in year 6 (raw milk base).

Table 34 SMP Categories (for Food Use) Under CPTPP and JEEPA Tariff Schedule

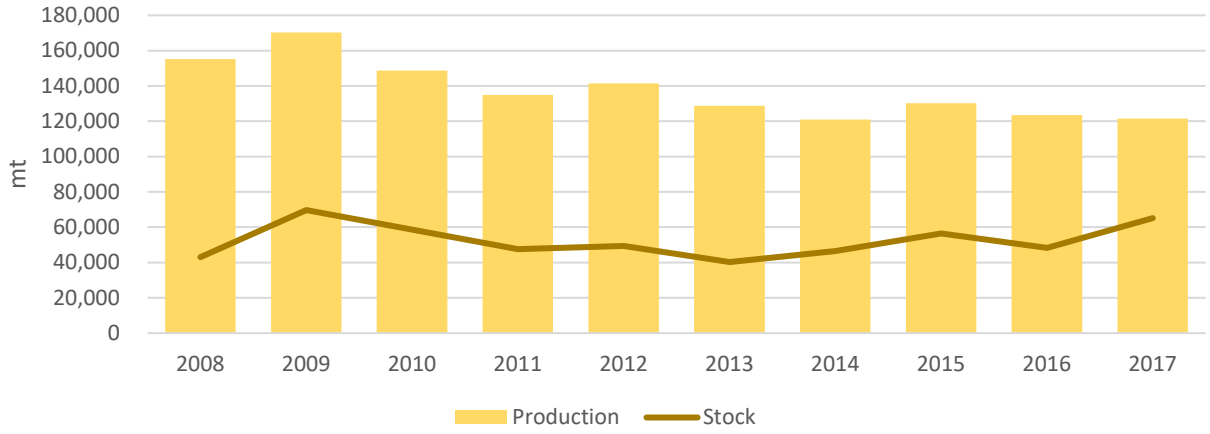
SMP category	HS	Description	2017 (mt)			Current duty	CPTPP	JEEPA
			US	World	US %			
TRQ (School Lunch)	040210211	School Lunch Program quota	0	1,689	0	Duty free (up to 7,264 tons)	Maintained	Maintained
State trading	040210221	Imported by ALIC	4,108	25,364	16%	25%	Maintained	Maintained
TRQ (Others)	040210222	For the Pooled quota for SMP other than for School Lunch	149	345	43%	25%	Maintained	Maintained
Out-of-quota	040210229	Out-of-quota import	0	3,491	0	21.3%+396Yen/kg	Maintained	Maintained
New TRQ	-	Private trading	-	-	-	-	SMP: 20,659 mt → 24,102 mt (Year 6), raw milk base (3,188 mt → 3,719 mt, product base), tax within quota 25%,35% + 130yen/kg → 25%,35% in the 11th year	SMP, butter, whole milk powder, butter milk powder & sweet condensed milk: 12,857 mt → 15,000 mt (Year 6), tax within quota 25%,35% + 130yen/kg → 25%,35% in the 11th year

Sources: Japan Customs, the provisions of CPTPP and JEEPA

6.1.2. Current Supply Situation

In Japan, SMP is largely supplied domestically, and domestic production accounts for 80-90% of the total supply. The domestic production of SMP was 122,000 tons in fiscal year 2017, down 1.6% from the previous year. The production has been on a long-term decline due to shrinking raw milk supply. More recently, production has also been limited by relatively solid demand for fresh drinking milk.

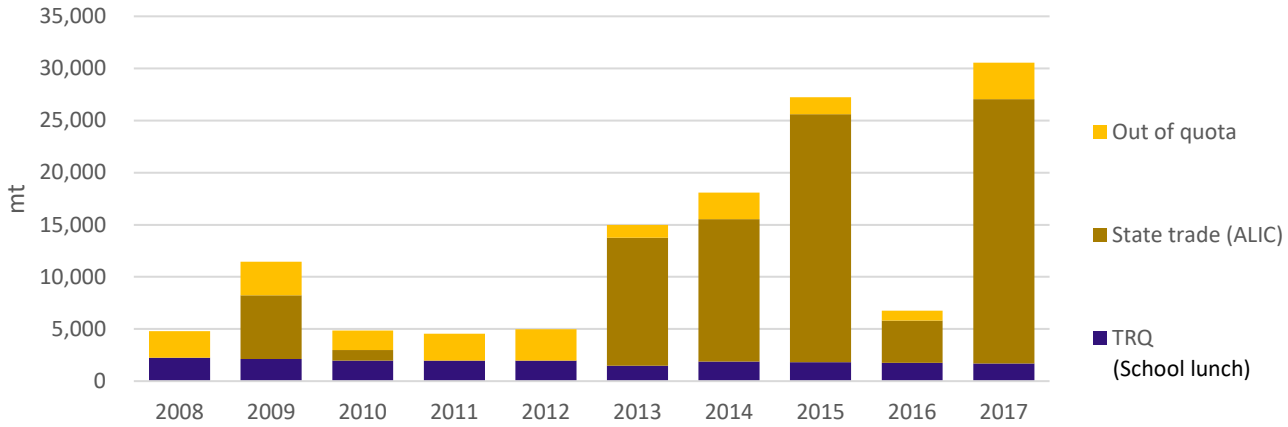
Figure 55 Japan's SMP Production and Stock Situation



Source: MAFF
*Fiscal year

In 2017, Japan imported just over 30,000 mt of SMP (194,000 mt, raw milk basis) including state trading, TRQ for the school lunch program, and out-of-quota imports. Imports are increasing, reflecting the low domestic supply and stock situation.

Figure 56 Japan's SMP Imports for Food Use



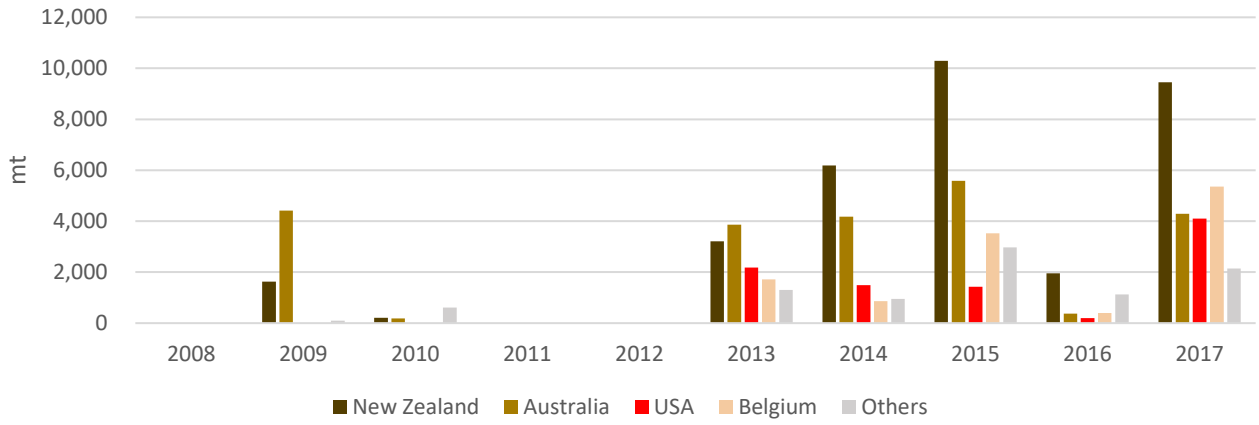
Source: Japan Customs
*HS 040210221, 040210211, 040210229

State trading is largely impacted by the domestic stock situation. ALIC imports SMP when the market requires it – that is, in times of domestic product shortage. SMP imports under the state trading system have increased since 2013, reflecting the low domestic stock of SMP; ALIC has overseen additional imports for SMP three years in a row since 2014. In 2017, 25,000 mt was imported, including 16,000 mt of additional imports under the state trading system. Imported SMP is largely used for yogurt and milk-based beverages, and imports have increased due to increasing consumption of yogurt.

SMP for the school lunch program is imported in fixed volumes within a quota of 7,264 mt, mainly for making bread, but the actual imports have been around 2,000 mt over the last 10 years. SMP imported under the TRQ for the school lunch program has historically been supplied by New Zealand and Australia only. Out-of-quota tariff rates are high, so that imported product cannot enter Japan at prices lower than the domestic product. Out-of-quota imports, which fill the gaps in the domestic demand for edible grade product, have fluctuated but have been in the range of 3,000-5,000 mt over the last decade. The US has also been a minor player in the out-of-quota import category.

The US has been the third largest player in the state trading category, following New Zealand and Australia. In 2017, 4,108 mt of US SMP was imported through ALIC tenders. After the CPTPP and JEEPA effectuation, the US can still export SMP to Japan through the state trading system. However, the volume imported under this category is unstable, as it is only imported in times of domestic product shortage. There was no SMP imported under the state trading system between 2002-2005, 2007-2008 and in 2011-2012.

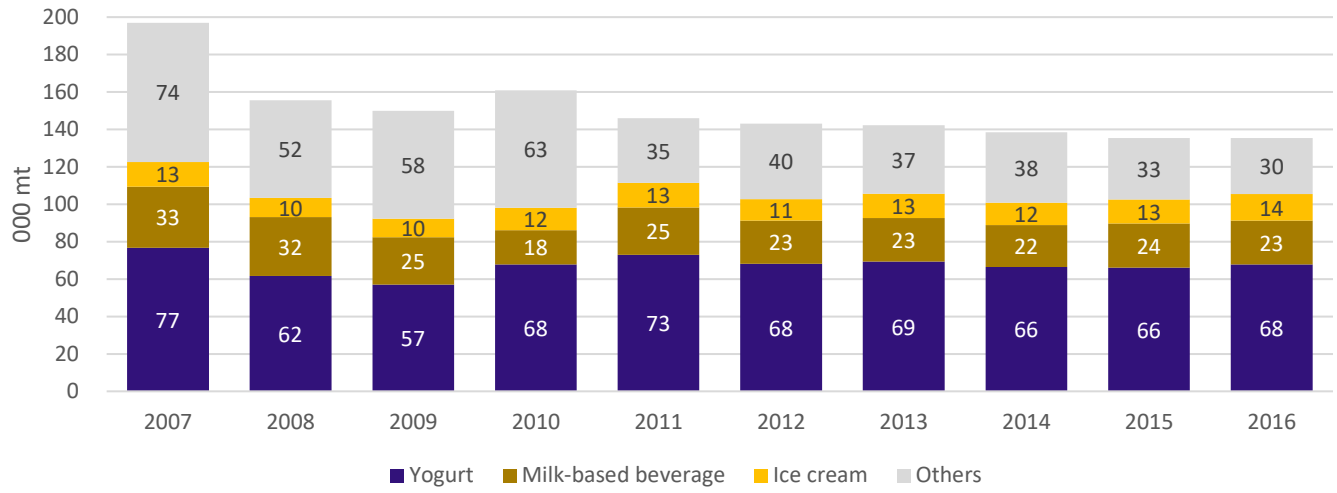
Figure 57 SMP Imports under the State Trading System by Country



Source: Japan Customs

In Japan, SMP is mainly used for producing yogurt, milk-based beverages, ice cream and various other food products. In 2016, about 50% of the SMP supply was used for yogurt production, followed by milk-based beverages (17%), ice cream (10%) and others (23%). Increase in the use of SMP is recorded in some categories such as ice cream. However, overall demand for SMP in the food processing sector is shrinking, decreasing on average by 3.8% over the last decade from 197,000 mt in 2007 to 135,000 mt in 2016. Demand for SMP in the yogurt processing sector has recorded positive growth in some years, but over the long-term SMP usage in the yogurt sector has not shown strong growth.

Figure 58 SMP Usage by Product Category



Source: ALIC

6.1.3. Quantitative Analysis of the Impact of the CPTPP and JEEPA on SMP

Most of our interviewees believe that the new TRQs for SMP and butter which will be set up under the CPTPP and JEEPA won't have any impact on Japan's SMP imports. Considering that the SMP import volume (raw milk basis) in 2017 was 194,000 mt, adding 24,100 mt (SMP only) under CPTPP and 15,000 mt (including SMP, butter etc.) under JEEPA to the current quota of 137,000 mt is not likely to have a significant impact on the overall SMP demand nor the supply balance.

Some of the comments include:

- *Japan's imports of SMP increased with the increased demand for yogurt products, but the use of raw material (SMP) is defined by what kind of lactic acid bacteria is used in that specific product, so changing the raw material is not easy.*
- *Demand for domestic SMP may decrease due to increased imports of WPC 35 due to lower tariff under the CPTPP and JEEPA.*
- *SMP from Europe is unstable in terms of quality as there are government interventions and sometimes it is kept on hold for a while. As such, it is mainly traded face-to-face and is not a commodity-type product. European exporters may negotiate to increase the price as the tariff will be reduced.*

The US has mainly been exporting SMP through the state trading system. As such, the new TRQ is unlikely to have any major impact on US exports. Around 4,000 mt of SMP from the US is expected to continue to be imported under the state trading system, although the volume is likely to fluctuate significantly depending on the year.

7. Conclusions

7.1. Aggregated Quantitative Analysis on the Impact of the CPTPP and JEEPA

7.1.1. Cheese and ingredients total

Our analysis shows that the CPTPP and JEEPA will put the US at a significant disadvantage against other dairy suppliers and the US will lose critical market share. In sum, our forecast shows the following accumulated impact on the loss of the US dairy market over 5 years, 10 years, and upon final CPTPP/JEEPA implementation.

Over 5 years

- The tipping point will come by Year 5 (2022) at the latest, when US dairy exports will start to feel significant impact. By Year 5, US dairy exports to Japan could fall by $90 million from the baseline projection, a 19 percent decline compared to the baseline.

- Throughout the first five years from Year 1 (2018) to Year 5 (2022), the accumulated negative impact on US dairy exports to Japan would be $185 million. The cheese sector accounts for 44% of the overall impact, with the ingredient sector (lactose, food whey and whey protein) accounting for the other 56% of overall impact. Compared to the cheese sector, the ingredient sector will feel the impact more quickly. We do not expect any impact on SMP trade.

Over 10 years

- By 2027 (Year 10), almost half of US dairy exports to Japan are likely to be replaced by CPTPP/JEEPA countries.

- Over the 10 years from 2017 to 2027, the accumulated negative impact on US dairy exports to Japan would increase to $1.3 billion. During that period, cheese will account for 79% of the overall impact.

Upon final CPTPP/JEEPA implementation

- The accumulated impact on US dairy exports to Japan would expand to $3.3 billion over the 16 years from 2017 to 2033, and to $5.4 billion over the 21 years from 2017 to 2038.

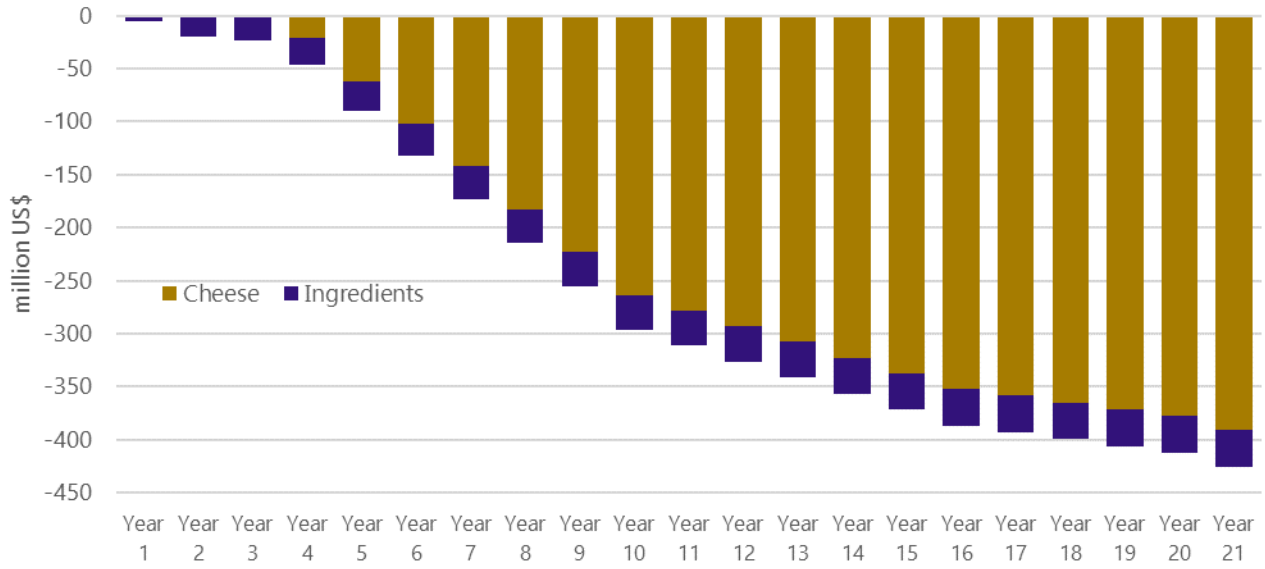
Table 35 Accumulated Impact of CPTPP/JEEPA on US Exports of Dairy Products to Japan in Value

Unit: million US$

	Total	Cheese sector			Ingredient sector			
		Sub-total	Ripened natural	Fresh natural	Sub-total	Whey Protein	Food Whey	Lactose
Year 5 - 2022	**-185**	**-82**	-57	-25	**-103**	-22	-39	-42
Year 10 - 2027	**-1,255**	**-995**	-797	-199	**-259**	-57	-100	-102
Year 16 - 2033	**-3,348**	**-2,886**	-2,332	-554	**-462**	-108	-183	-172
Year 21 - 2038	**-5,386**	**-4,749**	-3,833	-916	**-637**	-154	-256	-227

Source: Meros Consulting

Figure 59 Forecasted Annual Changes in Impact on US Dairy Trade



Source: Meros Consulting

Some of our major findings by category are summarized below.

7.1.2. Cheese

Overall market potential

- Japan is the second largest net importer of cheese in the world, after the UK, and imported $1.163 billion in cheese in 2017. Although the population in Japan is shrinking by 0.4 percent per annum, the strong per capita consumption growth of 4.0 percent per annum is more than making up for the depopulation. Japan's decreasing domestic cheese production is also resulting in a strong opportunity for exporting countries. Considering that the UK cheese market is not expanding, the Japanese cheese market remains the most appealing market globally, as it is an established market with solid growth.

- Since Japan's two largest dairy suppliers, Australia and New Zealand, have limited capacity to increase their supply, Japan has increased imports, especially from the US and EU. Japan's cheese imports are expected to show a 1.6-fold expansion over the next 10 years under the CPTPP/JEEPA, because of strong per capita consumption growth in both retail and food service sectors, a decline in domestic production, and the stimulation of demand due to the tariff reduction. If the US has the same market access as competitors, US share could grow from 13% in 2017 to 24% in 2027, and US cheese export annual sales in 2027 could show a 3.3-fold increase to $466 million.

As of April 1, 2019

- As of April 1, 2019, the tariff difference between the US and competitors will already expand to 3.8 percentage points. Some manufacturers currently using US dairy products are already showing interest in exploring European suppliers. If buyers have reason to expect that the tariff gap between the US and competitors will increase further in 2020 – as the CPTPP and JEEPA outline, the incentive to switch will be high, which makes it critical to show US progress on a strong US-Japan bilateral trade deal over the next year.

Over 5 years

- By Year 5, the tariff will expand to a 9.4 percentage point difference, which could cause a 25 percent drop in US share. US cheese exports to Japan could fall to $62 million less than now, which would be approximately 354 million lbs[7] of milk equivalent. This shift could happen earlier if users see a likelihood of a delay in US-Japan bilateral negotiations.

- Since the tariff reduction schedule is relatively slow (elimination over 16 years), throughout the first five years from Year 1 (2018) to Year 5 (2022), the accumulated impact on US dairy exports to Japan would be $82 million.

Over 10 years

- By Year 10, when the tariff difference will increase to almost 20 percentage points, importers will have difficulty justifying the price differences for most bulk cheeses, and thus only specific cheese products[8] will remain in the market. In this case, US annual cheese exports to Japan could fall by 80 percent, worth $263 million in annual value, or approximately 1.5 billion lbs of milk equivalent.

- Over the 10 years from 2017 to 2027, the accumulated negative impact on US dairy exports to Japan would increase to $1.3 billion.

[7] Conversion rate to raw milk as 22.79 lb/kg

[8] For example, retail packaged products, like powdered cheese; bulk mozzarella which is excluded from the CPTPP and is included, but under a tight quota, in JEEPA.

Upon final CPTPP/JEEPA implementation

- The accumulated negative impact on US cheese exports to Japan would expand to $2.9 billion over the 16 years from 2017 to 2033.

By sub-categories

- **Hard-type ripened natural cheese** (cheddar and monterey jack) will experience the largest negative impact on sales volume and value. The second largest impact will be seen in **fresh natural cheese**.
- **IQF mozzarella** cheese is a strategic category for the US industry, since the US has an almost 100% share of the market. However, with the CPTPP/JEEPA tariff reductions, the US may start to lose share to New Zealand by Year 10, and could lose 90% of the market by Year 16.
- Importers we spoke with believe that JEEPA got slightly better access in terms of cheese compared to the CPTPP, since the TRQ allocated for EU cheese imports includes **processed cheese.**

Table 36 Baseline Projection and Projected Impact of the CPTPP & JEEPA on Japanese Cheese Imports

Unit: 000mt

		Total imports	By country				
			US	*US share*	Australia, NZ, Canada	EU	Others
	2008	187	**7**	4%	138	37	4
	2013	236	**30**	13%	157	44	5
Base Year	2017	273	**32**	12%	146	92	3
Baseline projections							
Year 5	2022	324	**60**	19%	157	102	4
Year 10	2027	382	**82**	21%	156	138	5
Year 16	2033	412	**95**	23%	154	158	5
Impact of CPTPP and JEEPA							
Year 5	2022	339	**45**	13%	165	126	3
Year 10	2027	425	**16**	4%	170	237	2
Year 16	2033	473	**6**	1%	175	291	2

Source: Meros Consulting

Note: The other cheese projections are based on the following assumptions.

- Powdered cheese consumption per capita will remain as same as in the baseline year.
- Blue-veined cheese consumption per capita will increase by 4.0%/year till Year 10 and will increase by 2.0% after that.
- Processed cheese consumption per capita will increase by 3.0%/year will Year 10 and will increase by 1.0% after that

7.1.3. Whey

- The most important impact of the CPTPP and JEEPA agreements on the Japanese whey market will be the trade liberalization of **food whey**. Except for some limited tariff quotas allocated for whey mineral concentrate and whey for infant formula, Japan's whey trade has until now been regulated by the state trading system. However, after the tariff reductions, the state trading system will no longer have such a central role. Thus, the importers are expecting a sizable increase in demand for imported food whey, especially given the decline in domestic whey supply that is following the declining cheese production. The US would lose competitiveness in this market and would no longer be considered as a supplier of food whey.

- Japan imported $48 million in **whey protein** (WPC80 and WPI) from the US in 2017. There will be some impact from the elimination of the 2.9 percent duty, with a decline of about $6 million in annual export value by Year 5.

- The accumulated impact on US whey (food whey and whey protein) exports to Japan would expand to $61 million over the 5 years from 2017 to 2022, to $157 million over the 10 years from 2017 to 2027, and to $410 million over the 21 years from 2017 to 2038 upon final CPTPP/JEEPA implementation in food whey.

7.1.4. Lactose

- The US has a 57% share of Japanese imports of lactose on a volume basis, but could lose up to 30% of this market, worth $12 million in annual sales value by Year 5, due to the immediate elimination of the 8.5 percent tariff.

- Since CPTPP and JEEPA call for elimination of the tariff upon the date of implementation, many Japanese lactose buyers have already started to explore working with European suppliers. Thus, the lactose sector will feel the fastest impact in the short-term (1-2 years).

- The accumulated impact on US lactose exports to Japan would expand to $42 million over the 5 years from 2017 to 2022, and to $102 million over the 10 years from 2017 to 2027.

7.1.5. Skim Milk Powder (SMP)

- Since most SMP imports will remain under the control of the state trading system, despite the CPTPP and JEEPA, in general no impact on SMP trade is expected.

7.2. Conclusions in Sum

The CPTPP and JEEPA will put the US at a significant disadvantage compared to other dairy suppliers, and the US is likely to lose critical market share if the US remains without an agreement with Japan.

The cheese sector would feel the most significant overall negative impact. Although the tariff reduction schedule is relatively slow (elimination over 16 years) and the major tipping point will be seen at Year 5 when the tariff reductions reach almost 10 percentage points, Japanese cheese importers are already expressing anxiety as they consider non-US suppliers. Thus, the US needs to show progress on a strong US-Japan bilateral agreement in the short-term to instill confidence that the US will soon be on a similar tariff reduction schedule. Otherwise the actual tipping point may come sooner.

Cheese is one of the very few food categories in Japan which still shows a strong increase in per capita demand despite Japan's decreasing and aging population. EU countries are aggressively pursuing increased market share, and the US could lose position in this established and expanding market without quick action.

Compared to the cheese sector, the ingredient sector, especially lactose and food whey, will feel impact even more quickly. Importers have already started to see the impact among their customers, because of buyers' expectations that both provisions will enter into force very soon. End users have begun to consider the US as a less price competitive supplier in these products.

Progress on a strong US-Japan bilateral agreement is critical for the US dairy industry to quickly regain competitiveness in the market.