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# China Dairy Supply and Demand

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## Abstract

China's dairy and infant formula markets have grown substantially over the past decade and are expected to continue to expand. At the same time, China's domestic dairy industry is in the midst of rapid modernization. According to projections in the China Ministry of Agriculture's National Dairy Industry Development Plan for 2016-2020, three-quarters of all dairy consumed in China will continue to be produced domestically. The remaining demand will be satisfied by imports. Major dairy exporters New Zealand and Australia have free trade agreements that lower tariffs on their dairy products entering China. The European Union's 2015 removal of quotas on dairy production increased global dairy supplies, and a larger portion of this surplus may be exported to China. The United States has a well-established trade relationship with China. The modernization of China's dairy industry has encouraged U.S. exports of feedstuffs and other intermediate inputs. However, U.S. dairy exports to China fell in total value and market share in 2015 and 2016. The decline may be attributed to a combination of bureaucratic issues and a stagnant U.S.-China exchange rate, while rates for the euro and Australian dollar have declined. A June 2017 memorandum of understanding that facilitates the registration of U.S. dairy facilities as eligible to export to China could lead to an increase in trade.

**Keywords:** China, dairy, trade, United States, New Zealand, Australia, European Union, alfalfa, free trade agreement, foreign direct investment, imports, exports

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# Introduction

China is a large and rapidly growing market for dairy products. Between 2016 and 2021, China's dairy and milk formula markets are expected to grow by 10 and 25 percent, respectively (Euromonitor, 2016). Feeding the growth is an amalgam of increased Chinese affluence, a new taste for dairy, and recently developed marketing channels that bring dairy products to an ever-wider swath of consumers.

To meet this demand, China's dairy industry is growing rapidly. But as China's consumption outpaces its domestic supply, exporters in New Zealand, Europe, Australia, and the United States are finding new opportunities in the China market. At the same time, Chinese dairy companies are investing overseas to ensure supplies of powdered milk, whey, cheese, and other dairy products.

In this report, we examine trends in China's dairy consumption, production, and trade. With more dairy products needed to satisfy the demands of Chinese consumers, this report discusses domestic and foreign-sourced dairy for China's future needs. In particular, we review policies in China, the United States, New Zealand, Australia, and Europe that affect China's dairy imports.

The Chinese Government projects that China's imports of dairy products will rise 50 percent during 2016-26 as consumption grows 27.1 percent and domestic production grows 19 percent over that period (MOA, 2017). Chinese dairy farms have grown in size, but feed requirements have been difficult to meet using domestic sources, thus increasing the need for intermediate inputs specific to dairy production (Sharma and Rou, 2014; Gale and Jewison, 2016; FAS, 2016d). To protect and bolster its dairy industry, China established a rigorous registration process for imported dairy. While all of China's trading partners have found that the registration process slows new exporters from accessing the China market, U.S. exporters have faced the greatest hardship (FAS, 2015b; FAS, 2016a; FAS, 2016b; FAS, 2017b).

## China's Dairy Market

Chinese consumption of dairy products is growing rapidly from a historically low base, making China the most dynamic segment of the global dairy market. Per capita milk and dairy consumption was already growing rapidly in cities before 2005; in the countryside, growth accelerated after 2005 (table 1) (NBS, 2017).

Table 1

**Rural and urban consumption of milk products in China (kg/household/year), 1990-2015**

	1990	2000	2005	2010	2015
Rural consumption of milk and processed products	1.10	1.06	2.86	3.55	6.30
Urban consumption of milk	4.63	9.94	17.92	13.98	17.1

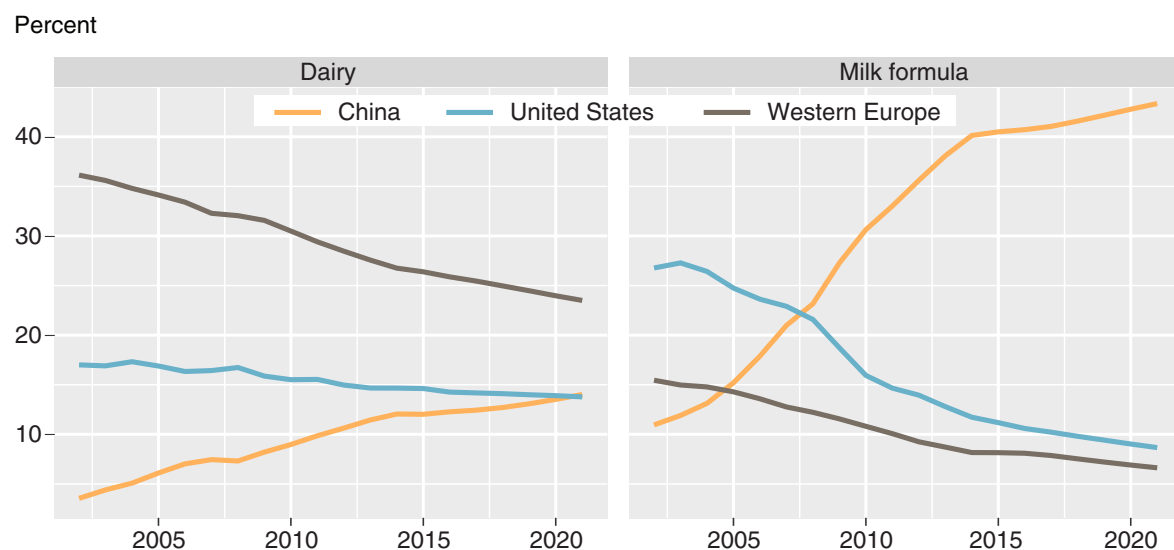
kg = kilogram

Source: National Bureau of Statistics of China (NBS), 2017.

China represents the primary source of demand growth in global dairy markets. Calculations using Euromonitor data show China's share of the world dairy market grew from less than 5 percent in 2002 to 12 percent in 2016 (fig. 1). By 2021, China's share is expected to equal that of the United States at 14 percent. China's growth is partly responsible for driving down Western Europe's share of the world market to less than 25 percent. China's share of the milk formula market has grown even faster, from less than 15 percent in 2002 to over 40 percent in 2016. In 2016, China's dairy market was the world's third largest, and its milk formula market was the largest; continued growth in both are expected<sup>1</sup> (Euromonitor, 2016).

Figure 1

**Dairy and milk formula markets as a percent of the world market**



Note: Dairy products include butter and margarine, cheese, drinking milk products, yogurt and sour milk products, and other dairy. Market sizes are quantified in retail value using fixed 2016 exchange rates in constant 2016 prices. Projections were constructed by Euromonitor (2016).

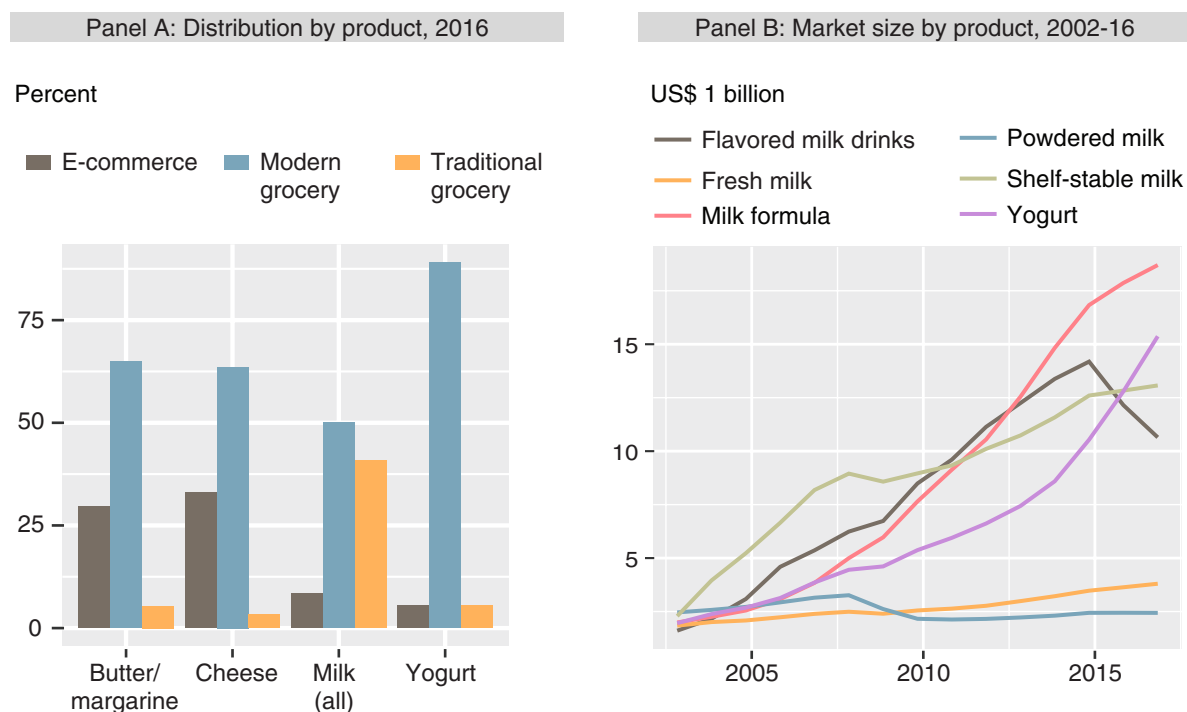
Source: USDA Economic Research Service calculations based on data from Euromonitor (2016).

<sup>1</sup> Trade dynamics focus on infant formula, specifically, and that is the commodity used in this analysis with Global Trade Information Services (GTIS) data. However, Euromonitor data group all formula for infants, growing kids, and special needs together as milk formula. It is likely that milk formula consists mostly of infant formula.

The lack of cold chain distribution has been a limiting factor in dairy consumption in China and has resulted in the concentration of market growth in larger cities. The expansion of modern retail—supermarkets, hypermarkets, and convenience stores—has been key to broadening dairy distribution. The lack of cold chain distribution also prompted the popularity of shelf-stable milk, produced using ultra-high-temperature (UHT) technology in early years, but growth has shifted to other products like flavored drinks in recent years. Product delivery through an advancing e-commerce platform may make dairy products accessible to a greater portion of the Chinese population (fig. 2, panel A) (FAS, 2015c; Euromonitor, 2016).

Between 2002 and 2016, growth in sales was fastest for milk formula (which includes infant formula) and yogurt, although growth in these products lagged behind the initial increases in milk consumption (fig. 2, panel B). Product development has accompanied the diversification of the retail structure (Durst, 2016). A larger supply of shelf-stable products allows communities outside the cold-storage infrastructure network to access the market (Suber, 2013; FAS, 2013). Dairy products are being designed to appeal to Chinese preferences, which include healthy, shelf-stable, single-servings geared toward children. Developing countries drive demand for flavored milk products, primarily because of their stability on the shelf and a new demand for healthy drinks. In 2016, China represented a majority of the global market for drinkable yogurt and drinkable flavored milk products (Euromonitor, 2016).

Figure 2  
**China's distribution type in 2016 (A) and growing variation in product type over time, 2002-16 (B)**



Notes: Cheese and butter are not included in Panel B because these products make up a very small segment of the Chinese dairy marketplace. Cheese consumption remains low, and butter has been incorporated into Chinese diets at a slow rate as other fats (such as rapeseed oil and palm oil) are used in cooking. In 2016, the cheese and butter markets in China were (US) \$674 million and (US) \$176 million, respectively.

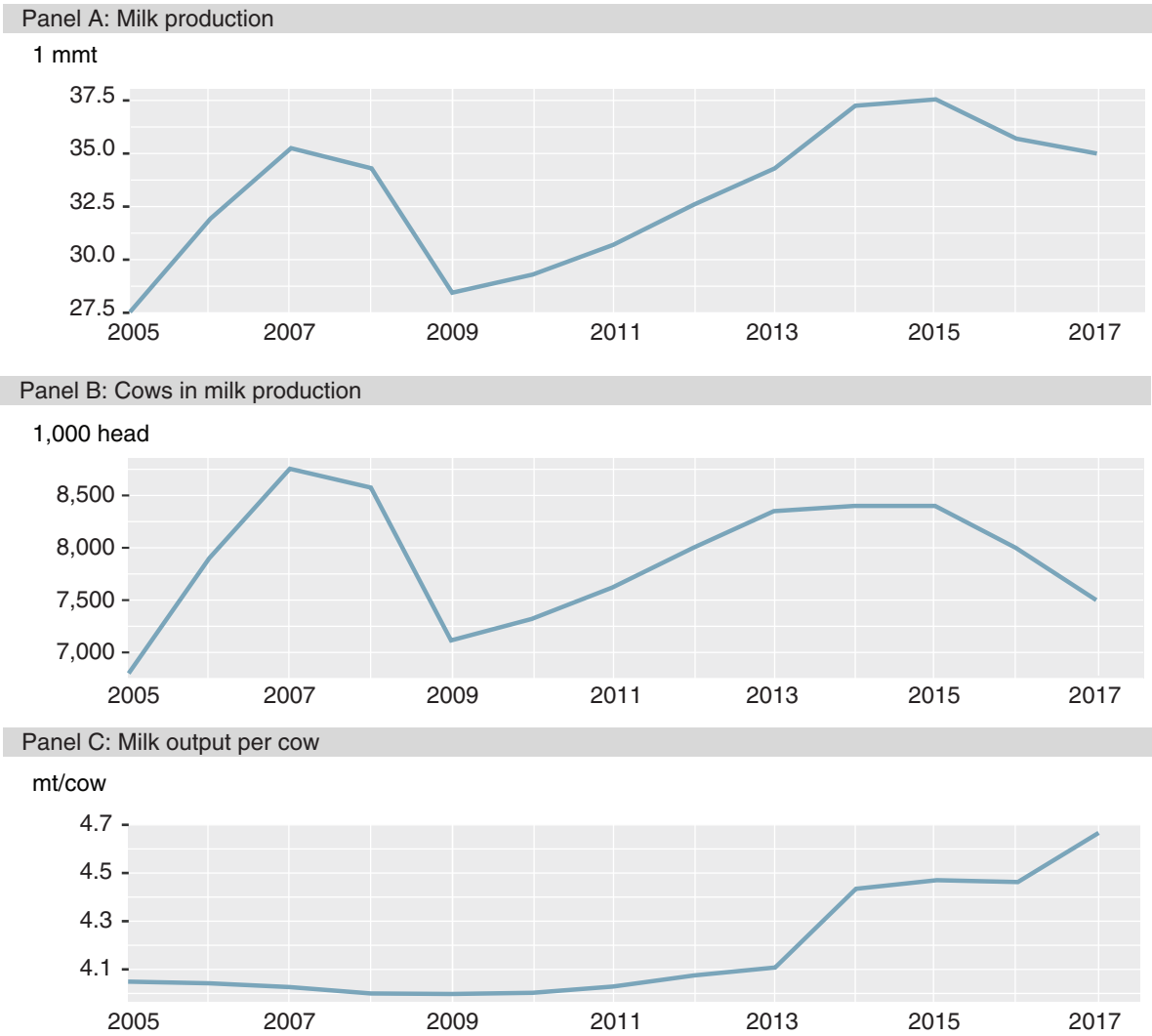
Source: Euromonitor (2016). Market sizes are quantified in retail value using fixed 2016 exchange rates in constant 2016 prices.

# China's Domestic Dairy Industry

In 2008, China's milk production was disrupted when milk adulterated with melamine caused the death of six babies and sickened thousands more in a scandal that severely eroded trust in domestically produced dairy products. Since then, China has taken steps to consolidate production and gain better control over the safety and quality of dairy products at the source.

It took 5 years for milk production and the size of the dairy herd to rebound to levels close to those before the melamine scandal (fig. 3) (FAS, 2017c). In 2009, the Government set new production targets for 2013: 48 million metric tons (mmt) of milk, a herd size of 15 million head, and output per cow of 5.7 mt (FAS, 2010). But in 2013, production totaled less than 35 mmt of milk by less than 8.5 million head. In 2016, output per cow remained under 5 mt, less than half the average U.S. dairy cow productivity of 10.3 mt per cow (FAS, 2017c).

Figure 3  
**China's milk production, herd size, output per cow, 2005-17**



mt = metric tons; mmt = million metric tons.  
 Source: USDA, Foreign Agricultural Service (FAS), Production, Supply and Distribution Database (PSD), 2017; USDA, Economic Research Service calculations for output per cow.

In response to the contamination scandal, the Chinese Government tightened regulation of the dairy industry (table 2). It also promoted the creation of dairy conglomerates to increase output and distribution efficiency and to make food safety standards more easily enforceable (Sharma and Rou, 2014; Gale and Jewison, 2016; FAS, 2017b). At the time of the contamination, small farms with less than 10 head were the dominant suppliers of milk. New government regulations restricted the market options for small dairy farmers and, in many instances, these farmers could no longer take their milk to the local milk station. In addition, many small farmers left the industry after 2008 as production costs rose faster than milk prices and off-farm wages grew. The Ministry of Agriculture (MOA) also required milk processors to have fixed supply bases, made up of newly established cooperatives of small farmers, or to be large-scale dairy farms whose construction had been subsidized by the local government. As a result of the restructuring prompted by the melamine scandal and the exit of small-scale producers from the supply chain, milk production has increased.

Table 2

**China policies affecting food safety, milk production, and dairy trade after 2008**

Year	Plan name	Focus
2009	China National Dairy Development Plan (2009-2013)	Set readjusted milk production targets
2009	China Dairy Industry Policy	New production facilities
2010	Notification to Further Strengthen Safety and Quality of Dairy Product Production	Food safety
2010	Program of Building Demonstration Farms for Standardized Livestock and Poultry Rearing	New production standards for animal rearing
2010	New Dairy Safety Standards, and Full Implementation of Infant Formula Labeling Request	Food safety: Nutrition ingredients and contents
2010	No. 99 Decree, lifts ban on dairy product imports from foot-and-mouth disease (virus) countries	Food safety: Introduce more imported dairy products
2010	Regulation on Sanitary Certificate of Import of Dairy Products	New production standards for animal rearing. Certify status of four animal diseases.
2011	Reduction of animal quarantine fees	New production standards for animal rearing. Importing new breeding animals.
2011	General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) requirement on U.S. dairy export health certificate	Food safety: Compliance with new health requirements
2011	No. 119 Announcement, requires all dairy processing plants to reapply for verification of processing qualification and re-obtain processing permits	Food safety: Stricter requirements with more testing of line item
2011	China's General Administration of Taxation announced plans to reduce the value-added tax (VAT) for pasteurized milk and UHT (ultra-high-temperature) milk	Food safety: Encourage more imported dairy
2011	China's General Administration of Industry and Commerce announced two new requirements for food distribution	Food safety: Tighter control on dairy distribution
2011	No. 10 Announcement, bans the purposeful addition of melamine in milk	Food safety
2012	Central Government subsidized the purchase of high-quality frozen bull semen	New production standards for animal rearing. Improve herd genetics.

—continued

Table 2

**China policies affecting food safety, milk production, and dairy trade after 2008—continued**

Year	Plan name	Focus
2012	Ministry of Finance provided an RMB500 (nearly \$82) payment to farmers for dairy cows that met certain yield tests	New production standards for animal rearing. Reward improved output per cow.
2012	China announced the reduction of the import tariff for special infant formula from 10 percent to 5 percent	Food safety: Encourage more imported milk formula
2013	Administrative Measure on Inspection and Quarantine of Import and Export of Dairy Products (AQSIQ Order 152, issued on January 24 and effective on May 1, 2013)	Food safety
2013	National Food Safety Standard of General Hygiene Regulations for Food Production	Food safety
2013	Administrative Measure of Registration of Overseas Manufacturers of Imported Foods” (AQSIQ Decree 145, issued on March 22 and effective on May 1, 2013)	Food safety and new production standards: Facility registration
2013	National Development and Reform Commission started an antimonopoly price investigation of infant formula companies selling product in China	Consumer protection: Curb illegal pricing practices
2013	Public Notice (2013 No. 133) on Strengthening Administration of Imported Infant Formula Powder	Food safety
2014	Notice Publishing the Implementation of Catalogue for Registration of Overseas Manufacturers of Imported Foods (2013 No. 62, announced on April 28 and effective on May 1, 2014)	Food safety and new production standards: Exporter registration
2015	China Food and Drug Administration (CFDA) implemented new registration requirements for domestic infant formula production	Food safety and new production standards: More consolidated market
2016	Administrative Measures for the Registration of Recipes for Formula Powder Products for Infants and Young Children (CFDA Decree 26)	Food safety and new production standards: Registering formula recipes

Source: Various government documents and news reports.

The greater attention to food safety coincided with, and partially drove, the consolidation of both dairy farming and processing. Consolidation increased the market share of two major dairy companies, China Mengniu Dairy Co. and Inner Mongolia Yili Industrial Group, which operate dairy farms and production facilities. In 2009, state-owned food conglomerate COFCO, China’s largest food import-export company, acquired a 20-percent stake in Mengniu. Yili remains a privately owned company. Mengniu’s annual report for 2016 lists 33 facilities, mostly located in Northern and North-Central China. Some of the farms include more than 10,000 head (Mengniu, 2017). In 2016, China’s MOA established the “D20” alliance of 20 top dairy companies. Its 2016-20 National Dairy Industry Development Plan set a target market share of 54 percent in 2020 for the D20 companies combined (MOA, 2016).

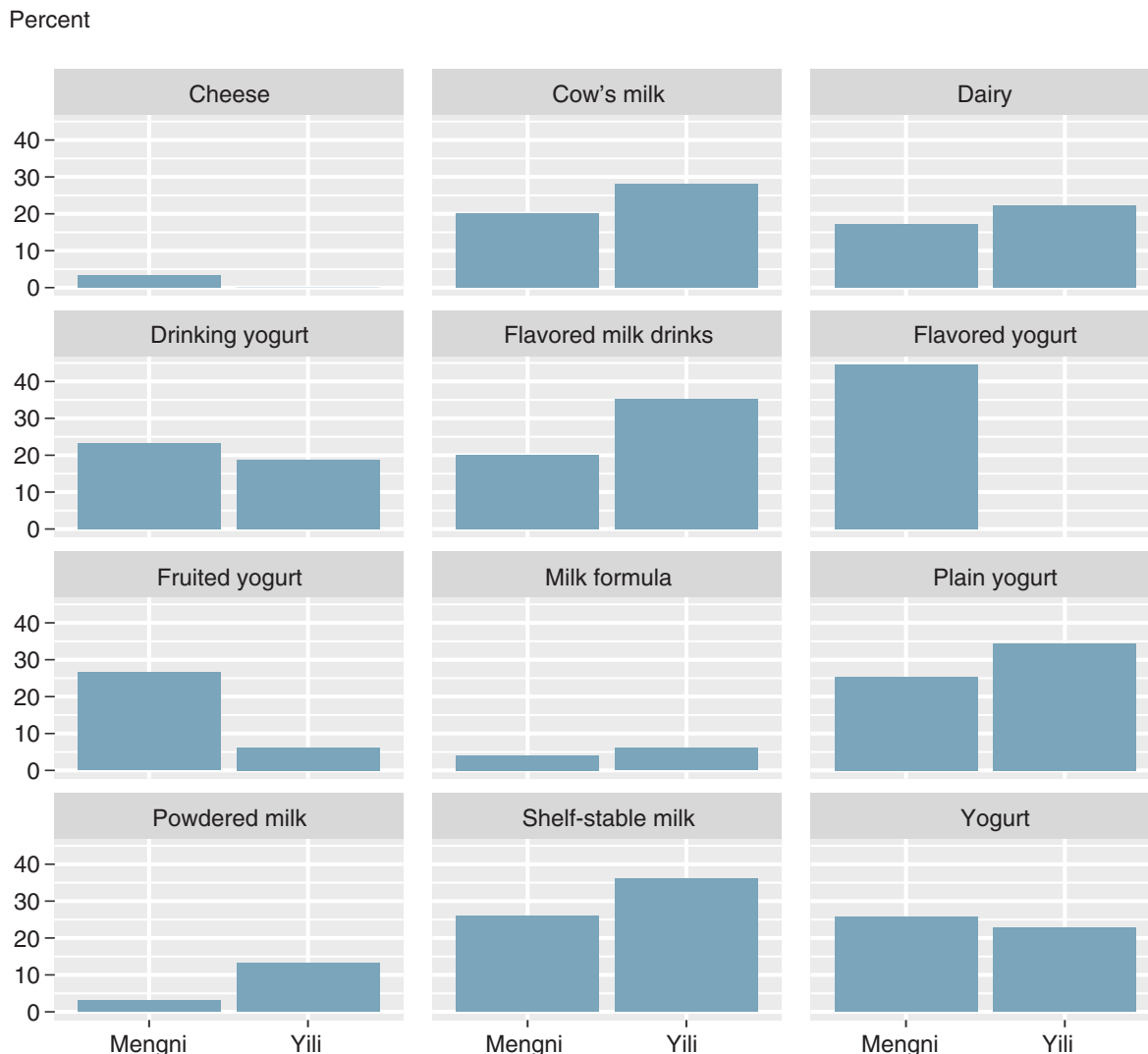
Mengniu and Yili maintain a majority share, or close to it, of the shelf-stable milk, yogurt, and flavored milk drink markets, which are expected to continue to grow (fig. 4) However, other Chinese companies dominate the market for fresh milk. In 2016, Shanghai’s Bright Food held over 13 percent of the fresh milk market, followed by Beijing Sanyuan Foods with 10.3 percent, and Sichuan New Hope, Nanjing Dairy, and Jiabao Group, each with around 5 percent (Ge, 2016; Euromonitor, 2016).



More stringent regulations also raised the threshold for exporters supplying the Chinese market. Between 2009 and 2012, China eased tariff burdens on imported dairy, but in 2013, 2014, and 2015, it required that overseas producers register their facilities and provide research and development information as a condition for exporting dairy products to China.

The MOA also initiated a campaign to revitalize China's dairy industry by focusing on expanding the domestic supply of forage, mainly alfalfa. A supply-side structural adjustment plan calls for diverting land from corn production to feed and forage crops in marginal corn-producing areas. This shift is partially aimed at improving feed supplies for dairy and beef cattle.

Figure 4  
**Mengniu and Yili market share by product in China, 2016**



Notes: Dairy includes all products except milk formula, which is made up of infant formula, growing-up formula, and special formula. Cow's milk encompasses powdered milk, flavored milk drinks, and shelf-stable milk. Yogurt includes plain yogurt, fruited yogurt, drinking yogurt, and flavored yogurt.

Source: Euromonitor, 2016.

## China's Dairy Trade and Trade for Industry Inputs

Demand for dairy products in China will likely continue to exceed domestic supply, and a quarter of the 2024 dairy market is expected to be satisfied by imported products (MOA, 2017). To facilitate trade, the Chinese Government launched the One Belt, One Road (OBOR) initiative in 2014, which aims to expand China's trade network through infrastructure investments. A related program, the Going Global initiative, which began in the 1990s and extended to agriculture during the first decade of the 21st century, supports overseas investment by Chinese companies. Additionally, China has engaged in new bilateral trade agreements (Farmers Daily, 2017). Together these developments are intended to increase China's access to international resources directly and through foreign partnerships.

The European Union (EU) is the leading dairy exporter to China, with close to 50 percent of the market value, having surpassed former leader New Zealand in 2015 and 2016 (table 3). In those same years, the United States moved from the third-largest exporter to China in 2014, with almost 10 percent of the market, to fourth place after Australia. New Zealand and Australia signed free trade agreements with China in 2008 and 2015, respectively, which reduce tariff rates on their dairy exports.

Table 3

**Value of daily product exports for China's major dairy suppliers, 2014-16**

	Value 2016 (USD bn)	Market share 2016 (%)	Value 2015 (USD bn)	Market share 2015 (%)	Value 2014 (USD bn)	Market share 2014 (%)
World	6.669		5.965		8.334	
European Union	3.25	48.7	2.73	45.8	2.32	27.9
New Zealand	2.22	33.3	1.96	32.8	4.33	52.0
Australia	0.46	6.9	0.42	7.1	0.39	4.7
United States	0.41	6.2	0.47	7.9	0.75	9.0

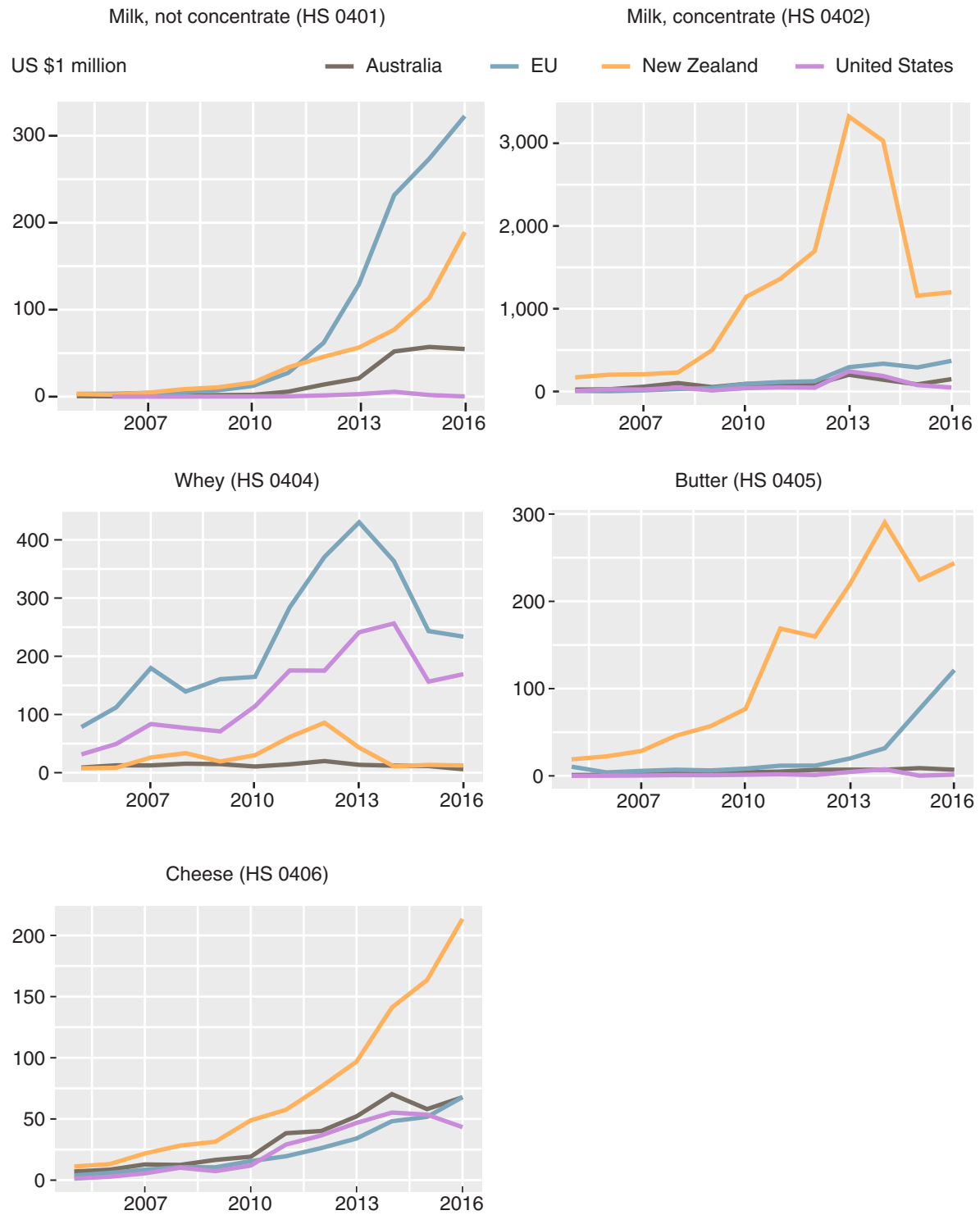
Note: USD bn = (US) \$1 billion; dairy products (with Harmonized System codes) include nonconcentrate milk (0401), concentrate milk (040210, 040221, 040229, 040291, 040299), yogurt (0403, 040310, 040390), butter (0405), cheese (0406), and infant formula (190110).

Source: Global Trade Information Services (GTIS), 2017; USDA, Economic Research Service calculations of value.

New Zealand leads the market for whole milk powder (WMP), the highest-value product (fig. 5) The United States supplies mainly skim milk powder (SMP) and whey, and it is also a significant supplier of cheese.

Imports of powdered products peaked in 2013 and have fallen sharply in more recent years, while growth in trade for milk (not concentrate), butter, cheese, and infant formula has not slowed (World Bank, 2017; GTIS, 2017). The decreases in trade value for milk powder and whey in 2015 and 2016 may reflect recovery of China's domestic milk output, a build-up of inventories, and falling international prices.

Figure 5  
**Dairy exports to China by type**



Note: Harmonized System (HS) codes follow each product in parentheses.  
 Source: Global Trade Information Services (GTIS), 2017.

Illustrating trends in the powdered dairy trade, WMP stocks increased in 2013, 2014, and 2015 (table 4). It is likely that Chinese importers overbought in those years, expecting to meet a level of demand that did not materialize, and the product ended up in storage. Thus, it took the dairy market a few years to catch up with China's economic slowdown. (China's economy fell from 10.6 percent growth in 2010 to below 8 percent in 2012, 6.9 percent in 2015, and 6.7 percent in 2016.) By 2017, ending stocks had been drawn down to levels last seen in 2012, suggesting that import growth could resume, which may result in a boost in export volume compared with 2015 and 2016.

Table 4

**China's yearly stockpile of dry whole milk powder (1,000 mt)**

	2010	2011	2012	2013	2014	2015	2016	2017
Beginning stocks	110	80	50	60	130	300	350	179
Ending stocks	80	50	60	130	300	350	179	50
Stock change	-30	-30	+10	+70	+170	+50	-171	-129

mt = metric tons

Source: USDA, Foreign Agricultural Service, Production, Supply and Distribution Database (PSD), 2017.

The development of the domestic dairy industry through improvements in genetics and forage has implications for trade. China's 2016-2020 National Dairy Industry Development Plan outlines four development priorities: (1) improved dairy cattle genetics (a strategic plan calls for self-sufficiency in breeding stock), (2) increased access to high-quality forage, (3) better management of milk production facilities, and (4) higher consumer confidence in Chinese dairy brands. By pursuing these four areas of development, Chinese dairy producers hope to increase productivity (Holstein Farmers, 2016; MOA, 2016).

China's prioritization of domestic dairy production is reflected in trade policies. Low-value-added commodities are subject to lower duties than high-value-added products like dairy. For example, China taxes dairy product imports at a relatively higher rate than inputs to the dairy industry such as feedstuffs, veterinary vaccines, and bull semen (table 5). The markets for vaccines, forages, and bull semen are dominated by U.S. products (fig. 6).

Table 5

**China's most favored nation (MFN) tariffs for commodities of interest**

Description (Harmonized System code)	Type	MFN rate 2015
Alfalfa meal and pellets (121410)	Feed	5.0%
Other forage products (121490)	Feed	9.0%
Bovine semen (051110)	Input	0.0%
Vaccines for veterinary medicine (300230)	Input	3.0%
Live pure-bred breeding cattle (0102)	Input	0.0%
Milking machines (843410)	Input	10.0%
Dairy machinery (843420)	Input	6.0%
Milk and cream of less than 1% fat, not concentrated or sweetened	Dairy	15.0%
Milk and cream of greater than 1% fat, not concentrated or sweetened	Dairy	15.0%
Milk and cream in solid forms (all fat levels) and concentrated milk and cream, unsweetened (excluding in solid form)	Dairy	10.0%

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Table 5

**China's most favored nation (MFN) tariffs for commodities of interest—continued**

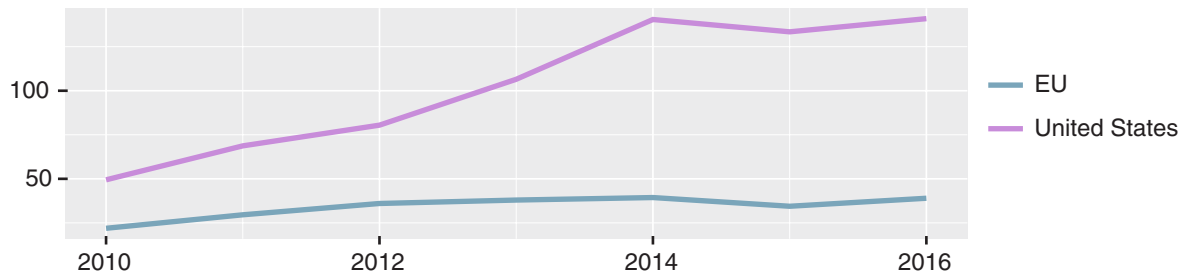
Description (Harmonized System code)	Type	MFN rate 2015
Sweetened milk and cream (excluding in solid form) and yogurt and dairy spreads	Dairy	10.0%
Buttermilk and products consisting of natural milk constituents	Dairy	20.0%
Whey and modified whey	Dairy	6.0%
Butter and other fats and oils derived from milk	Dairy	10.0%
Fresh cheese and cheese	Dairy	12.0%
Grated or powdered cheese	Dairy	12.0%
Blue-veined cheese	Dairy	15.0%

Source: United Nations Conference on Trade and Development (UNCTAD), 2017, and New Zealand Ministry of Foreign Affairs and Trade (MFAT), 2015b.

Figure 6  
**Exports of feedstuffs and industry inputs to China, 2010-16**

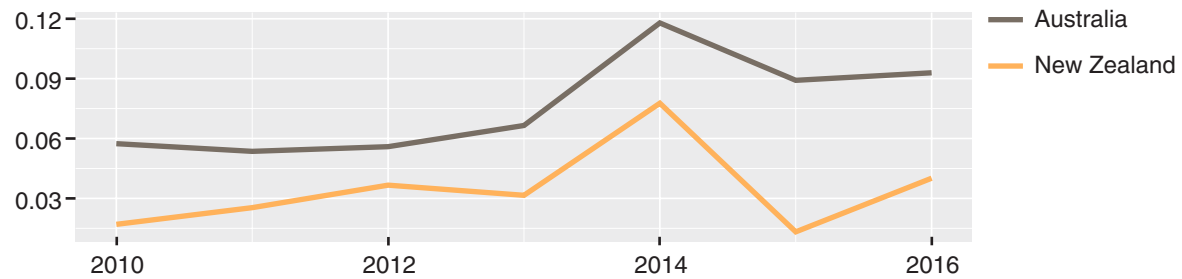
Veterinary vaccines (HS 300230)

US \$1 million



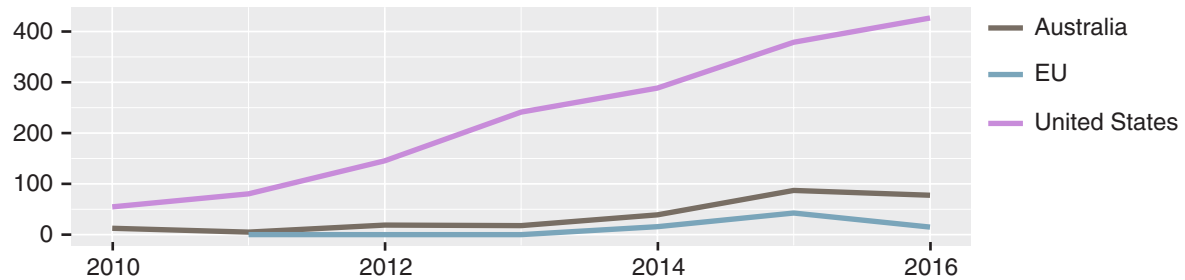
Live bovine (HS 0102)

US \$1 million



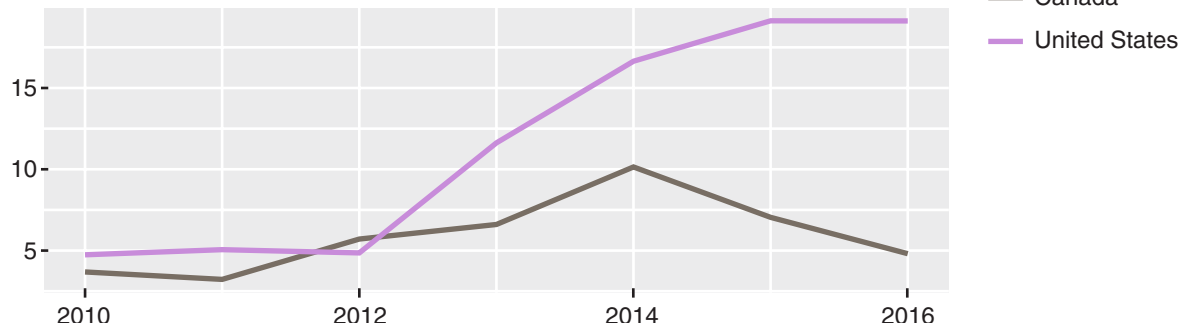
Alfalfa (HS 1214)

US \$1 million



Bovine semen (HS 051110)

US \$1 million



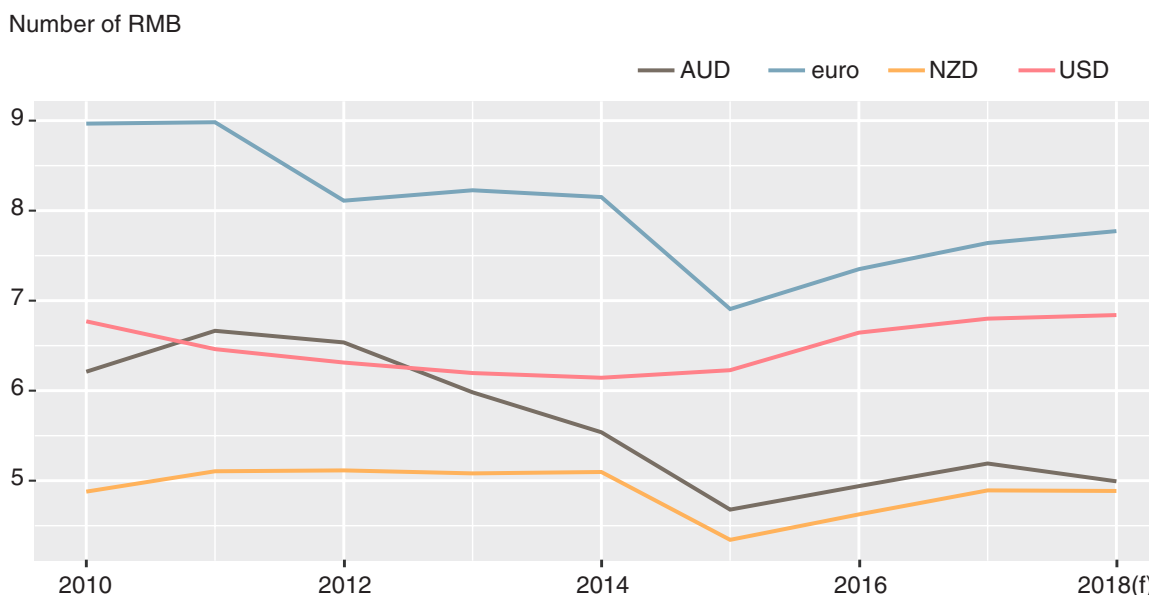
Note: HS = Harmonized System; alfalfa includes pellets (121410) and hay (121490).

Source: Global Trade Information Services (GTIS), 2017.

## Issues Specific to Trade with the United States

The U.S. dollar-yuan exchange rate has put U.S. exports at a disadvantage relative to those from Europe and Australia, where the exchange rates have been more favorable (fig. 7). However, the United States remains one of the principal suppliers of agricultural commodities to China. U.S. dairy exporters will likely benefit from the projected expansion of China's dairy market, and U.S. exporters of feedstuffs, particularly inputs to China's dairy industry, have already realized rapid growth in trade value. In the future, the relative value of U.S. exports will reflect the impact of both Chinese and U.S. policies.

Figure 7  
**Chinese yuan renminbi (RMB) exchange rates with the euro, U.S. dollar (USD), New Zealand dollar (NZD), and Australian dollar (AUD)**



Source: Organisation for Economic Co-operation and Development (OECD), 2017, for exchange rates until 2016; Oxford Economic Forecasting, 2014, for exchange rates for 2017 and 2018.

In May 2014, dairy exports to China came under the mandates of Decree 145, issued by China's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) (table 2). Decree 145 requires registration of overseas manufacturers, calling for foreign governments to assert that their dairy production meets Chinese standards and, in the case of infant formula, to provide research and development particulars (FAS, 2012; FAS, 2015b). The mandates raise costs and discourage exporters from entering the Chinese marketplace (FAS, 2016b).

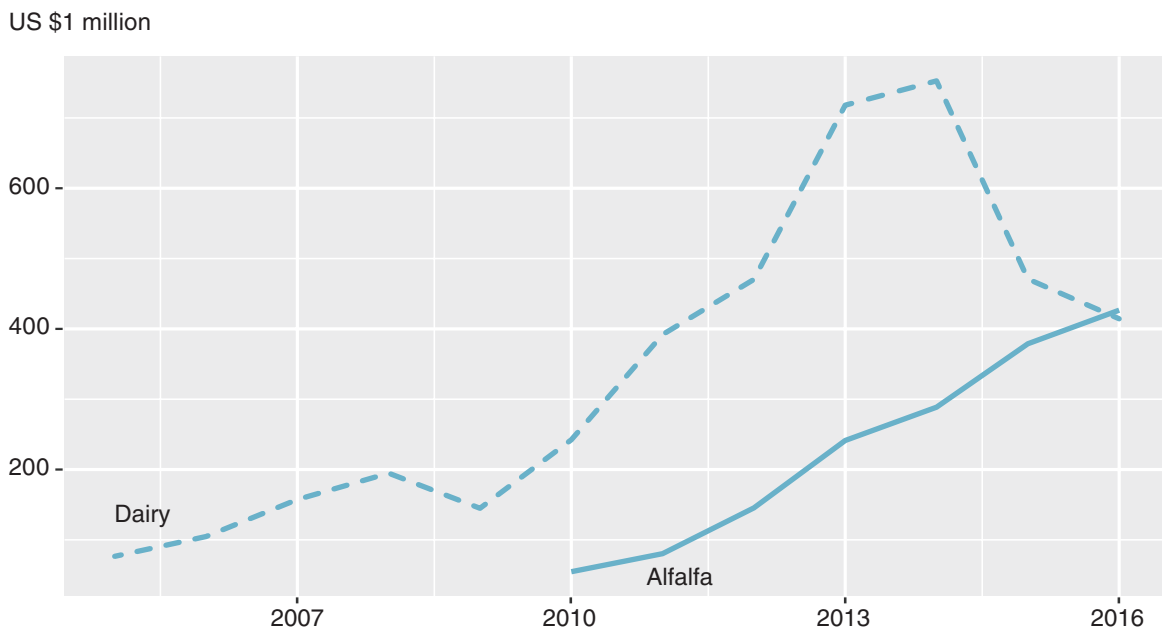
Article 14 of Decree 145 has caused particular problems for the U.S. Food and Drug Administration (FDA) by requiring attestation that the food product manufacturer is in compliance with the standards, laws, and regulations of China. The FDA does not commonly attest to foreign standards and was unable to meet the requirements of Article 14 as written. Therefore, China did not register all U.S. dairy facilities exporting to China between May 2014 and July 2017. A waiting list for registration grew to include approximately 130 U.S. dairy producers (FAS, 2012; FAS, 2015b; FAS, 2016b).

In June 2017, the impasse over dairy facility registration was addressed by a memorandum of understanding (MOU) signed by the United States and China. The MOU provides assurances to Chinese

authorities that U.S. food manufacturers and food products are in compliance with AQSIQ Decree 145 by involving a third-party certification body (FDA, 2017). USDA expects this compromise will give more U.S. dairy exporters access to the China market.

For 2014, China’s State Council Duty Committee temporarily reduced most favored nation (MFN) duties on selected imports important to China’s dairy industry. Tariffs on alfalfa hay were reduced from 9 percent to 7 percent, and tariffs on mixed natural forage grass other than alfalfa were reduced from 9 percent to 4 percent (FAS, 2014). In 2013, U.S. dairy exports were more than twice the value of alfalfa, and in 2016, their values were equal (fig. 8). Though likely coincidental and temporary, the equalization shows the impact that China’s policies have had on trade.

Figure 8  
**U.S. exports of alfalfa and dairy to China, 2010-16**



Note: The USDA, Foreign Agricultural Service definition of dairy products includes (with Harmonized System codes) nonconcentrate milk (0401), concentrate milk (040210, 040221, 040229, 040291, 040299), yogurt (0403, 040310, 040390), butter (0405), cheese (0406), lactose sugars (170211, 170219), infant formula (190110), and milk proteins (350110, 350220). Alfalfa includes pellets (121490) and hay (121410).  
 Source: Global Trade Information Services (GTIS), 2017.

Chinese overseas investment in dairy production has been primarily focused on Oceania, but there has been one instance of foreign direct investment (FDI) in the U.S. dairy industry. Yili entered into a joint venture with Dairy Farmers of America to build a plant in Kansas to produce dried dairy ingredients such as whole milk powder. The venture was announced in November 2014 and construction began in October 2015. Milk powder production was scheduled to start in fall 2017, which means that certification of the product for export to China will be covered by the MOU.

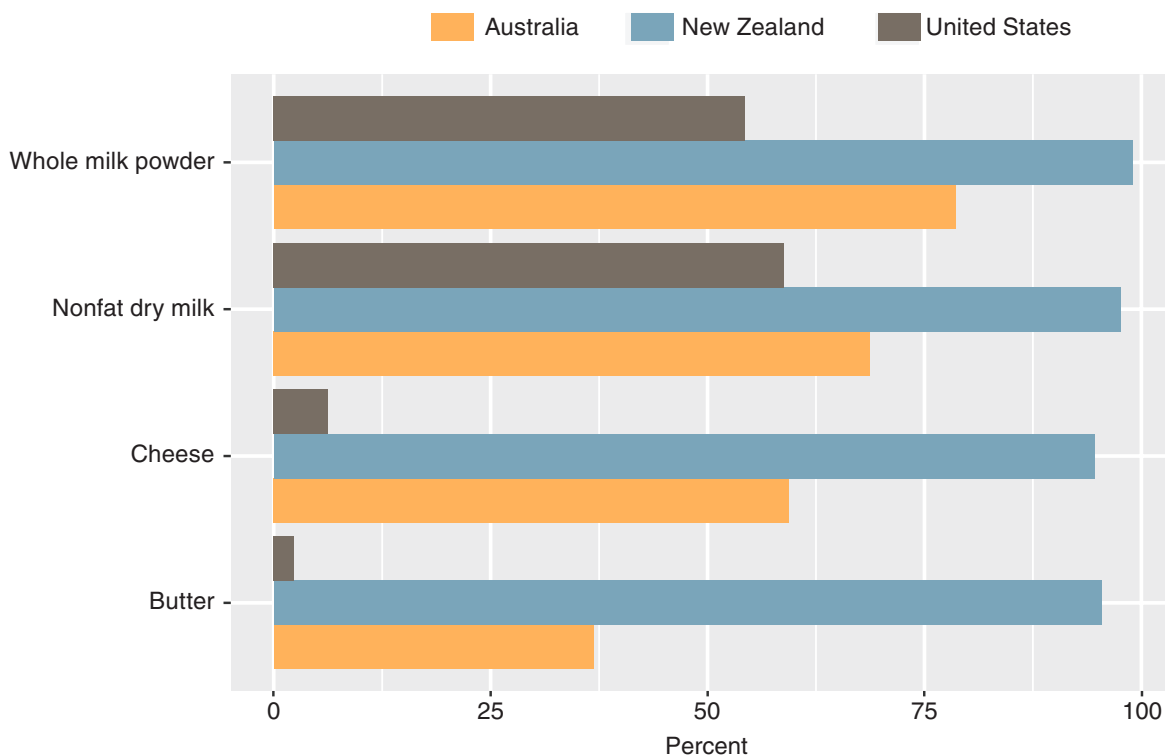


## Issues Specific to Trade with New Zealand and Australia

New Zealand produces 3 percent of the world's dairy products and exports 95 percent of its production, e.g., over 90 percent of whole milk powder, nonfat dry milk, cheese, and butter are exported (fig. 9) (DCANZ, 2017). That contrasts with the United States, which exports just over 50 percent of its nonfat dry milk and whole milk powder (FAS, 2017c). New Zealand has developed an export-focused dairy market and has taken steps to promote trade with China, its closest demand center.

Figure 9

### Dairy exports as a percentage of production for Australia, New Zealand, and the United States



Source: USDA, Foreign Agricultural Service (FAS), Production, Supply and Distribution Database (PSD), 2017.

The 2008 free trade agreement (FTA) between New Zealand and China will phase out Chinese duties on imports of dairy products from New Zealand. By 2015, New Zealand dairy products entering China were taxed at an average of less than one-third the rate of other most favored nations (MFNs) (table 6). In 2017, tariffs for all but one category have been eliminated, and over the next few years, tariffs on the remaining category will continue to be reduced until they are eliminated in 2019 (MFAT, 2015b).

Table 6

**Free trade agreement tariff changes for New Zealand exports to China after 2015**

Description	MFN rate	2015	2016	2017	2018	2019 on
Milk and cream of less than 1% fat, not concentrated or sweetened	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Milk and cream of greater than 1% fat, not concentrated or sweetened	15.0%	3.0%	1.5%	0.0%	0.0%	0.0%
Milk and cream in solid forms (all fat levels) and concentrated milk and cream, unsweetened (excluding in solid form)	10.0%	3.3%	2.5%	1.7%	0.8%	0.0%
Sweetened milk and cream (excluding in solid form) and yogurt and dairy spreads	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Buttermilk and products consisting of natural milk constituents	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Whey and modified whey	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Butter and other fats and oils derived from milk	10.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Fresh cheese and cheese	12.0%	2.4%	1.2%	0.0%	0.0%	0.0%
Grated or powdered cheese	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blue-veined cheese	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%

MFN = most favored nation

Source: New Zealand Ministry of Foreign Affairs and Trade (MFAT), 2015b.

To adhere to the guidelines set by Decree 145, New Zealand's Ministry for Primary Industries (MPI) and Department of Agriculture set up processes to confirm compliance with standards and requirements of an importing country. MPI's mission includes protecting New Zealand from biological risk and consumers from foodborne illness, and it also puts a high priority on developing export opportunities. MPI's animal product official assurance, issued electronically, attests to both New Zealand requirements and overseas country standards (MPI, 2017).

New Zealand's large production capacity and favorable trade situation likely support Chinese investment in New Zealand dairy production. Chinese overseas investments in dairy production and trade are disproportionately located in New Zealand. Chinese companies have made 10 large investments in the New Zealand dairy industry (table 7). One of the largest "green field" investments has been in an infant formula manufacturing and packing plant built by Yashili International Holdings, a subsidiary of Mengniu, which acquired a 75-percent stake in the company in 2013 for (US) \$1.6 billion. (A green field investment is one in which the foreign company builds a new facility, as opposed to a "brown field" investment, where the facility is already constructed.) Yashili opened the (NZ) \$212 million, 70,000 square meter Pokeno plant in 2015. It produces 55,000 mt per year of formula base powder and employs 125 people. Its location allows Yashili to have access to two New Zealand ports; Pokeno products are exported to Asian markets under the Alpha Gold and SuperAlpha brands (Dairy News, 2015). China's most recent FDI activity is state-owned China Animal Husbandry Group's construction of the Mataura Valley Milk processing plant in Gore. This facility is set to open in mid-2018 (Nicoll, 2016).

Table 7

**Chinese overseas investments in dairy production**

Location	Company	Investment	Investment type	Investment (\$)	Commodity
New Zealand	Shanghai Pengxin	Crafar Farms (7,892 hectares)	Brown field investment	NZ\$70 million	16,000 cattle
New Zealand	Shanghai Pengxin	Lochinver Farms (13,800 hectares)	Brown field investment	NZ\$70 million	5,800 cattle/60,000 sheep
New Zealand	Shanghai Pengxin	Synlait Farms	Brown field investment	NZ\$20 million	13,000 cattle
New Zealand	Bright Dairy	Synlait Milk	Firm acquisition (51% share)	US\$58 million	UHT (ultra-high-temperature) milk
New Zealand	Yili Industrial Group	Oceania Dairy Group	Firm acquisition (100% share)	NZ\$3 million	Milk powder
New Zealand	Pengxin/Mengniu	Miraka Processing Plant	Joint venture (Miraka)	NZ\$27 million	Milk powder and infant formula
New Zealand	Bright Dairy	Canterbury Processing Plant	Joint venture (Synlait Milk)	NZ\$82 million	50,000 mt milk power per year
New Zealand	Yili Industrial Group	South Canterbury Infant Formula Plant	Green field investment	NZ\$214 million	56,000 mt milk powder annual production capacity
New Zealand	Yashili	Pokeno Infant Formula Plant	Green field investment	NZ\$210 million	52,000 mt finished and semifinished milk annual production capacity
New Zealand	China Animal Husbandry Group	Mataura Valley Milk Plant	Green field investment	NZ\$200 million	46,000 mt finished milk annual production capacity
Australia	New Hope Group	Moxey Farms	Brown field/green field investments	A\$80 million	10,000 head dairy farm
Australia	New Hope Group	Australian dairy projects	Proposed fund	A\$500 million	General expansion of dairy output for Chinese consumption
Australia	Beijing Agricultural Investment Fund/ Yuhu Agriculture Investment Group	Beijing Australia Agricultural Resource Cooperative Development Fund	Proposed fund	A\$3 billion	General expansion of dairy output for Chinese consumption
Australia	Bright Foods Group	Mundella Foods/ Manassen Foods	Firm acquisition (100% share)	A\$530 million	Yogurt production
Australia	Moon Lake Investments	Milk powder plant	Brown field investment	A\$280 million	Milk processing and packaging
Australia	Blue Lake Dairy	Tasmania-based Van Diemen's Land Co	Green field investments	A\$65 million	25 farms; 30,000 cattle

—continued

Table 7

**Chinese overseas investments in dairy production—continued**

Location	Company	Investment	Investment type	Investment (\$)	Commodity
France	Synutra International	Carmaix Milk Drying Plant	Joint venture/ green field investment	US\$130 million	Annual production capacity, 100,000 mt of whey and milk powder per year
United States	Yili Industrial Group	Kansas Dairy Ingredient Plant	Joint venture/ green field investment	30% of US\$235 million	Dairy ingredients; 80,000 mt of milk powder per year
Israel	Bright Dairy	Tnuva Dairy	Firm acquisition (77.7% share)	US\$2.1 billion	Full supply chain

mt = metric ton

Source: Various news articles and government sources.

Chinese companies have also made investments in Australia (table 7). Australia has abundant pasture and other resources for dairy. Work has begun at Mundella Foods; Blue Lake Dairy is still constructing its facilities; and the Moon Lake Investments acquisition has been finalized. However, the majority of Chinese investments will be realized in the future through the New Hope Group and Beijing Agricultural Investment Fund/Yuhu Agricultural Investment Group (AFN, 2016; Evans, 2017; Sparkes, 2016). The 2015 FTA between Australia and China, which offers Australian dairy exports advantageous tariff rates in the coming years, will further facilitate trade (table 8).

China's FTAs with New Zealand and Australia include safeguard mechanisms that impose higher rates once a certain level of exports has been reached. For New Zealand, products with safeguards include milk powder, butter, cheese, and liquid milk. For Australia, only whole milk powder is subject to safeguards (MFAT, 2015a; Economist, 2014). As the FTAs' tenures extend, the trigger quantities increase, and safeguards will gradually be eliminated. None of the safeguards has been activated yet. Another matter for future FTA negotiations is sanitary and phytosanitary measures or technical barriers to trade (DFAT, 2017; MFAT, 2017).

Table 8

**Free trade agreement tariff changes for Australian exports to China after December 20, 2015**

Description	MFN rate	Dec. 20, 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Milk and cream of less than 1% fat, not concentrated or sweetened	15%	14%	12%	11%	9%	8%	6%	5%	3%	2%	0%	0%
Milk and cream of greater than 1% fat, not concentrated or sweetened	15%	14%	12%	11%	9%	8%	6%	5%	3%	2%	0%	0%
Milk and cream in solid forms (all fat levels) and concentrated milk and cream, unsweetened (excluding in solid form)	10%	9%	8%	8%	7%	6%	5%	4%	3%	3%	2%	1%
Sweetened milk and cream (excluding in solid form) and yogurt and dairy spreads	10%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0%	0%
Buttermilk and products consisting of natural milk constituents	20%	18%	16%	14%	12%	10%	8%	6%	4%	2%	0%	0%
Whey and modified whey	6%	5%	4%	2%	1%	0%	0%	0%	0%	0%	0%	0%
Butter and other fats and oils derived from milk	10%	9%	7%	6%	5%	3%	4%	3%	2%	1%	0%	0%
Fresh cheese and cheese	12%	11%	10%	8%	7%	6%	5%	4%	2%	1%	0%	0%
Grated or powdered cheese	12%	11%	10%	8%	7%	6%	5%	4%	2%	1%	0%	0%
Blue-veined cheese	15%	12%	9%	6%	3%	0%	0%	0%	0%	0%	0%	0%

MFN = most favored nation

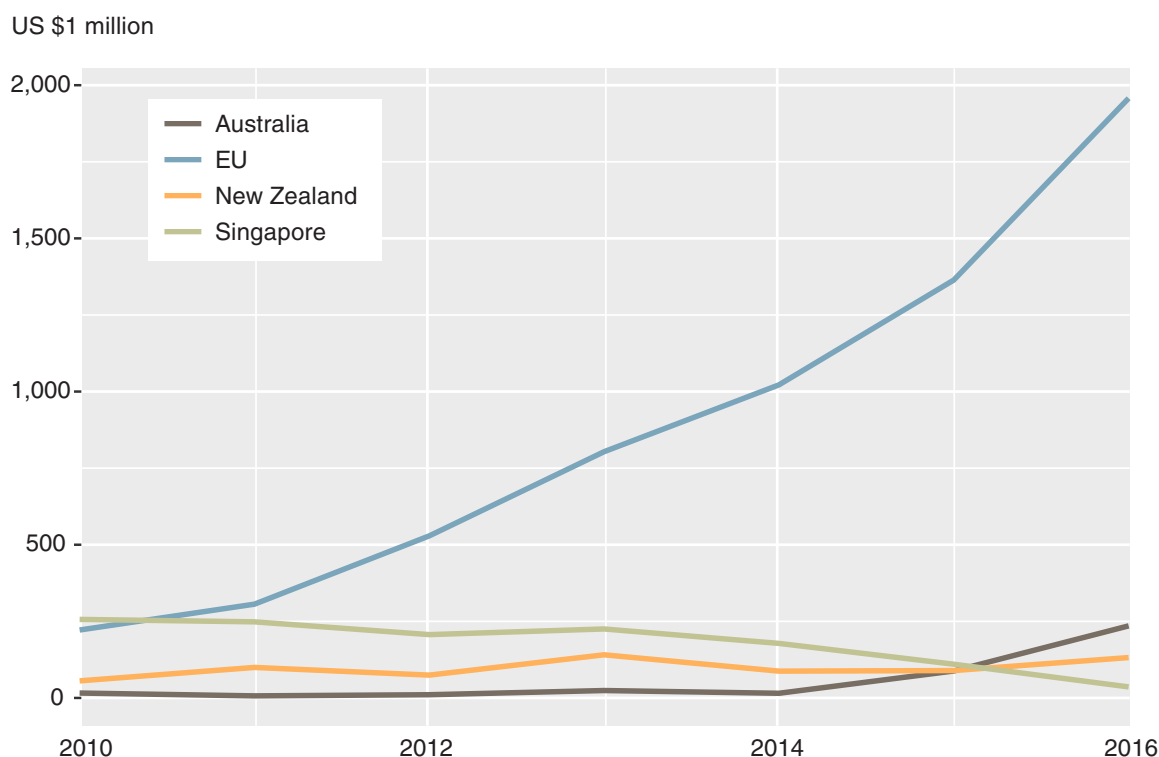
Source: Australia Department of Foreign Affairs and Trade (DFAT), China-Australia Explanatory Schedule of Chinese Tariff Commitments, 2017.

## Issues Specific to Trade with the European Union

In 2015 and 2016, the European Union (EU) was the largest dairy exporter to China. Lower prices and, in some cases, longstanding participation in China's dairy market, contribute to the EU's share of China's market. The euro-yuan exchange rate has made EU dairy relatively less expensive since 2010 (fig. 7) (FAS, 2016c; FAS, 2017a). Also contributing to lower milk prices were the large supplies that resulted from the EU lifting its dairy production quota and Russia imposing a ban on imports of dairy (among other products) from the EU, as well as the United States, Australia, Canada, Norway, and Ukraine. The ban will last until the end of 2017 (FAS, 2015a).

EU exports of milk (not concentrated), whey, powdered milk, cheese, and butter have grown (fig. 5). However, EU infant formula exports in 2016 were at least five times greater in terms of trade value, and the EU's infant formula exports to China have dwarfed those of all other exporters over the last several years (fig. 10).

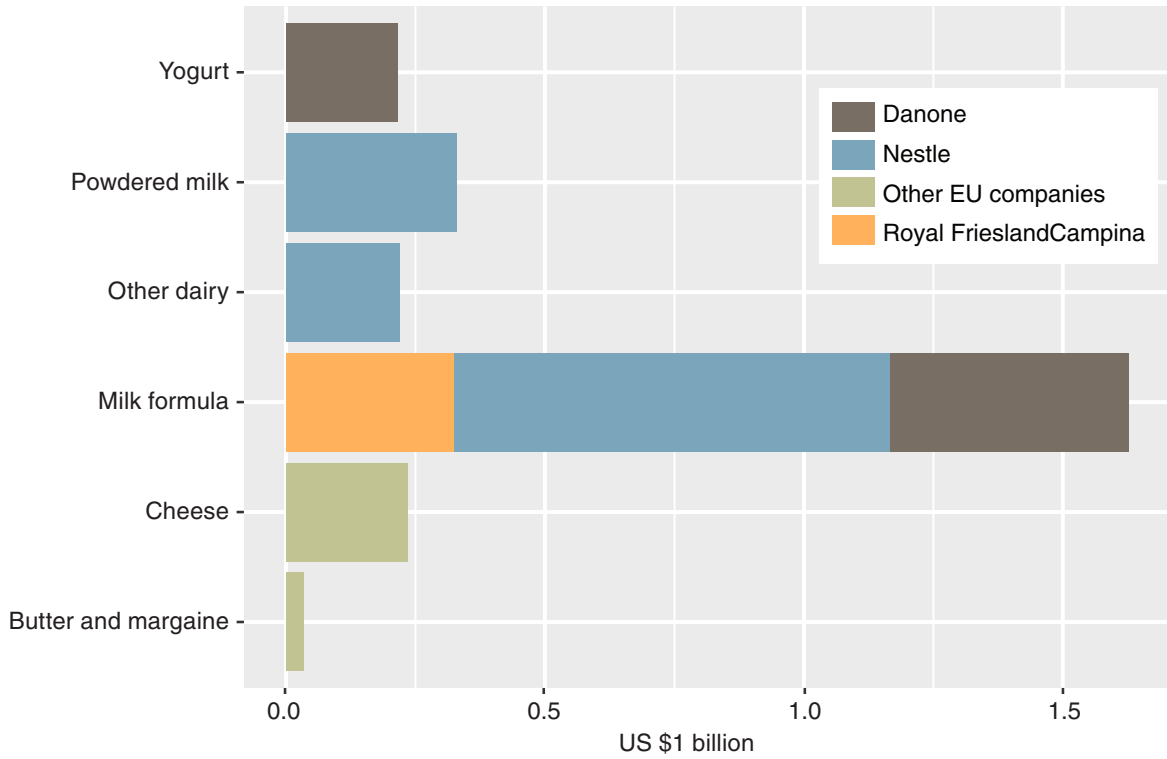
Figure 10  
**Infant formula exports to China, 2010-16**



Note: U.S. exports of infant formula ranged from (US) \$10 to \$28 million over the time frame.  
 Source: Global Trade Information Services (GTIS), 2017.

Of the major EU companies exporting dairy to China, three—Nestle, FrieslandCampina, and Danone—constituted 30 percent of the infant formula marketplace in 2016 and have kept a significant proportion of that market for the last 10 years. The projected growth in milk formula demand provides further growth opportunities for this market (Euromonitor, 2016).

Figure 11  
**European Union (EU) dairy companies' sales value in China, 2016**



Notes: Other EU companies include Bel, Lactalis, Unilever, and Savencia Fromage & Dairy. Savencia bought Bongrain in 2015. Milk formula includes infant formula and other powdered milk formulae.

Source: Euromonitor, 2016.

## Conclusion

China's dairy and infant formula markets are expected to grow, with a majority of the future supply produced domestically. Chinese companies, particularly Mengniu and Yili, hold majority market shares for fresh, shelf-stable, yogurt, and flavored drinkable dairy, which are the largest markets in China. Further expansion of China's domestic dairy industry provides a growing market for inputs such as forage and other feedstuffs. However, milk formula, which is also a large and growing market, is primarily controlled by foreign companies.

Dairy imports will continue to be necessary to support the expansion of the Chinese dairy market. New Zealand and Australia have taken steps to promote exports to China by entering into FTAs in 2008 and 2015, respectively. The United States is a major dairy producer and has an established trade network with China. Between June 2014 and June 2017, China's implementation of Decree 145, which required registration of dairy exporters and attestation by the FDA that U.S. dairy exports meet Chinese standards, limited the ability of U.S. dairy exporters to enter the Chinese market-place. In June 2017, China and the United States entered into an MOU to streamline the registration process and begin registering U.S. exporters. However, a relatively unfavorable exchange rate may continue to challenge U.S. competitiveness in this market, particularly in comparison to the EU.

In 2016, growth in China's dairy market was relatively small. This deceleration coincides with a general economic slowdown in China, likely due to its difficulty with a structural shift away from factories and exports and toward growth dependent on domestic consumption (Euromonitor, 2016). The economic downturn hurt Chinese producers and trading partners (FAS, 2017b). Although China's economic growth rate is expected to remain relatively flat, its dairy market is projected to continue to grow, possibly reflecting the nation's gradual transformation to consumption-dependent growth (BBC, 2016; Euromonitor, 2016).



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