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Higher Profits Support Increased Fluid Milk Production

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Report Highlights:

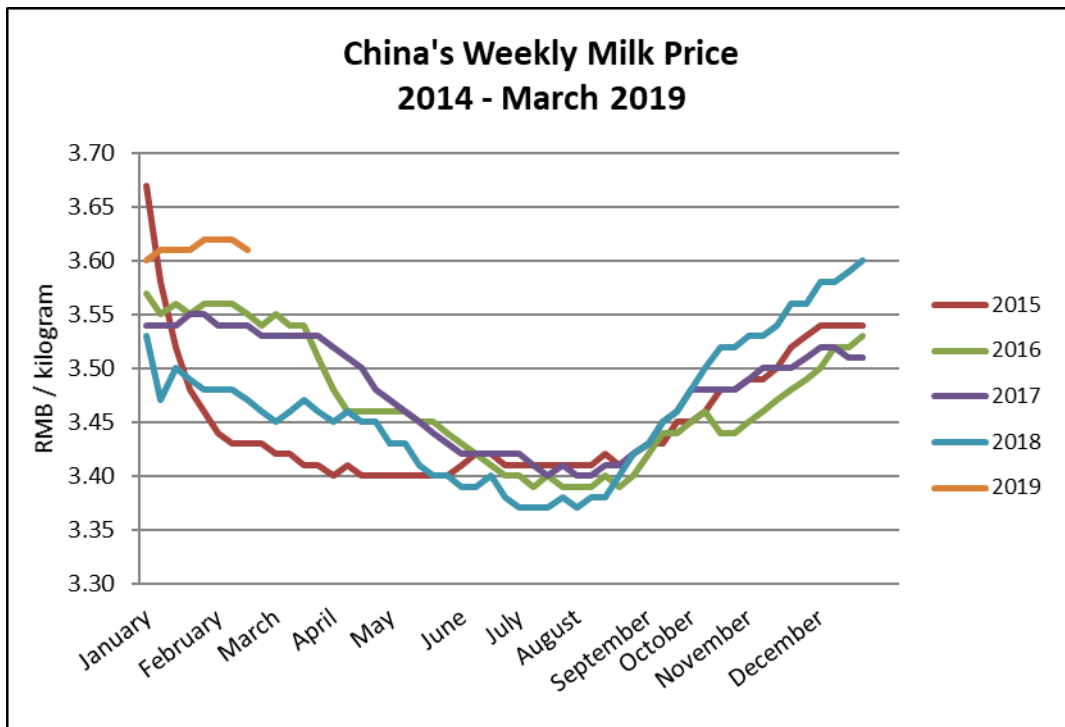
In 2019, China's fluid milk production will increase 2.3 percent due to higher profits earned by the dairy farmers. These higher profits are generally due to the increased profitability of the large scale modern farms. However, consumption growth will continue to outstrip domestic supply, driving increased imports of fluid milk, whole milk powder (WMP), and skim milk powder (SMP). This report includes production, supply, and demand estimates for cheese and butter for the first time. High input and production costs limit domestic production of both cheese and butter. However, Chinese imports of cheese in 2020 are forecast to reach a record high 119,000 metric tons.

Production:

Increased profits drive increased fluid milk production

Higher domestic prices, combined with the cumulative changes from the consolidation and modernization of China's dairy industry, have stimulated Chinese fluid milk production. China's 2019 milk production is forecast at 33 million metric tons, a 2.3 percent year-on-year increase.

Although the milk price continues to follow the same cyclical pattern, in the last four months of 2018, domestic milk prices rose to the highest they have been in four years, prompting farmers to increase production.



Source: China's Ministry of Agriculture and Rural Affairs

Small dairy farms continue to close, relocate, or consolidate operations, resulting from strict environmental protection regulations. Dairy farms near Beijing, Tianjin and Shanghai have been reduced by 50 percent, 46 percent, and 51 percent respectively in 2019. Dairy cattle inventories of less than 300 heads are down to 56,000 (industry data), which in 2011, was at a peak of 114,000. Overall, China is following the international trend of consolidation, resulting in increased farm scale and per-cattle milk yields.

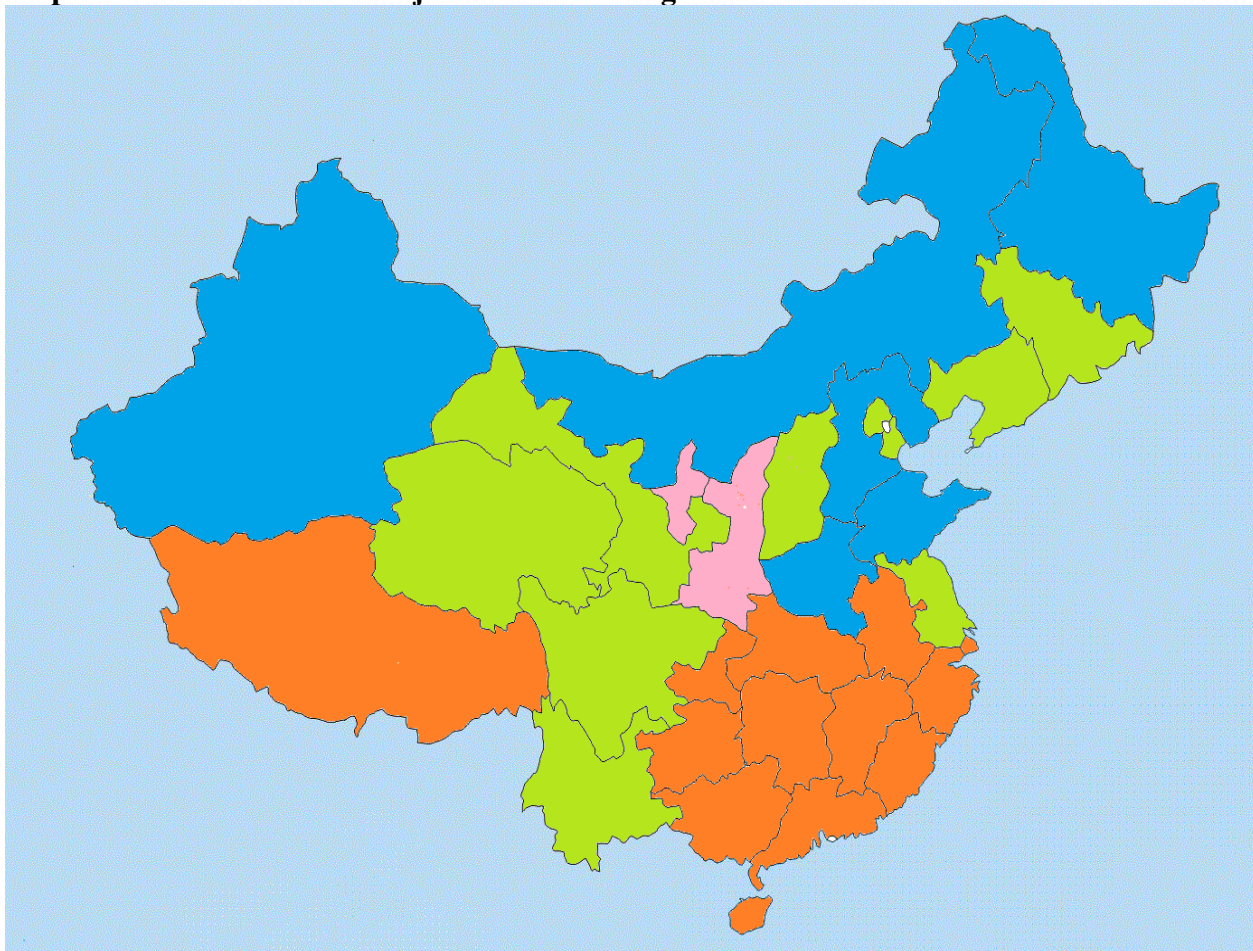
Consolidated dairy farm operations now account for a larger portion of overall milk production and exert a greater influence on the overall dairy market. These large-scale farms are using more sophisticated feed management techniques to control milk production, reducing the surplus created during the winter and increasing output during the summer. With higher milk prices, farmers can afford

to increase use of concentrated feed to realize efficiency gains. Overall, milk quality has improved, commanding higher prices from the processors.

These changes have contributed to a higher domestic fluid milk price, returning the per-animal profit margin to a more sustainable level of 3,000 RMB/head. This stronger milk price has also led to slight increases in the overall dairy herd to 6.25 million head, representing a 0.8 percent annual increase. Post forecasts the milk price in 2019 will continue increasing but at a moderate rate. Despite higher costs for dairy cattle breeding and increased feed costs (due to tariffs on U.S. soybeans and alfalfa), the increased milk price and the dairy cattle milk yield will more than offset changes to these input costs.

China's dairy cattle breeding farms and dairy processing companies are separate businesses and the dairy processing companies are in a dominant position in the market. The top 8 dairy processing companies collect over 70 percent milk in China, allowing them to constrain increases in milk prices to lower their production costs.

Map of Mainland China's Major Production Regions



Source: Industry

Major Production Region	Dairy Cattle Inventory(Unit: 1,000 heads)
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North China		60
Pink area		1500
Green area		1300
Orange area		60

China's milk production is mainly concentrated in the north and includes four major milk production areas, marked in blue on the above map. The milk production from these areas accounts for about 66 percent of total milk production in China. Among them, Inner Mongolia is the largest milk production area in China, with an inventory of about 2.35 million head and annual milk production of about 6.93 million tons. Most large dairy companies have farms in the north. For example, the largest dairy company in China, YiLi, has six subsidiaries that specialize in milk production—five of which are located in the north.

The dairy cattle inventory in southern China makes up approximately 12 percent of China's total dairy cattle inventory, accounting for 10 to 15 percent of milk production. As the main milk consumption region, totaling more than 55 percent milk demand from the south, supplies are complemented with WMP and SMP. This imbalanced supply and demand situation will continue to exist into the future.

China's milk price is also influenced by international WMP and SMP prices. International WMP and SMP prices are much cheaper than the domestic milk price, so dairy processors will frequently use WMP and SMP as fluid milk substitutes in their production. China is the largest WMP importer and the second largest SMP importer in the world. Both WMP and SMP imports are anticipated to rise in 2019.

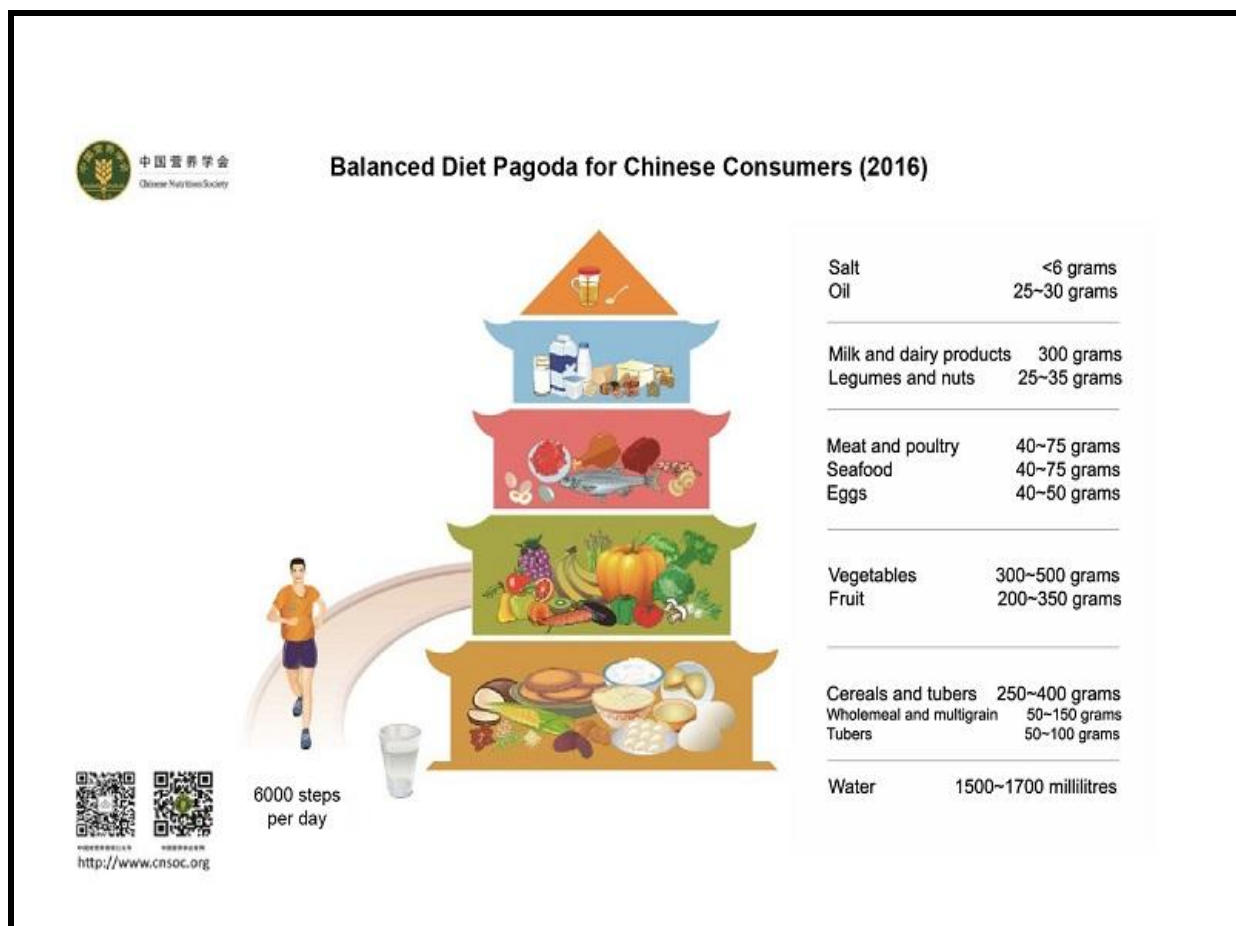
Dairy cattle imports will increase in 2019, but at higher prices. China mainly imports cattle for genetic improvement. Australia and New Zealand are the two largest live animal exporters to China. The dairy cattle price in both countries rose in 2019 because the Australian dairy cattle herd is affected by the 2018 drought and New Zealand's supplies remained flat with increased demand from China driving prices by 20 percent this year.

Consumption

Consumption will increase 2.5 percent in 2019 to reach 33.7 million tons

Pasteurized milk and yogurt consumption are driving dairy consumption growth, reducing consumption of Ultra-High Temperature (UHT) milk. To date, pasteurized milk consumption accounts for 14 percent market share in China, versus approximately 99 percent market share in developed countries like Canada, the United States, and Japan. As Chinese consumer's income rise, they are seeking out higher quality dairy products. Pasteurized milk and yogurt consumption have become the majority of this demand growth, especially in first and second tier cities. According to industry data, pasteurized milk and yogurt consumption will maintain double digit growth rates in China over the next three years. For example, YiLi accounts for approximately 37 percent and 17 percent of the market share in UHT and pasteurized milk, respectively. YiLi's biggest investment in 2019 was to expand its pasteurized milk production base in China. China's per capita milk consumption increased from 18 kg in 2007 to about 36 kg in 2018, but it is still less than one-third of the world average. In 2016, the Chinese Nutrition Society and the National Health and Family Planning Commission released new dietary guidelines, setting recommended dairy consumption at 300

grams per day, the equivalent of 109.2 kg per year. However, it is estimated that less than 30 percent of the population consume the recommended amount of dairy. This low dairy intake is attributed to the lack of dairy not part of the traditional Chinese diet. In addition, the milk price is relatively high (the average price is about 12.5 RMB per kg or about \$2.00 USD). However, with urbanization, “healthy” initiatives and growing incomes, China’s per capita milk consumption will continue to rise, especially in the third and fourth tier cities.

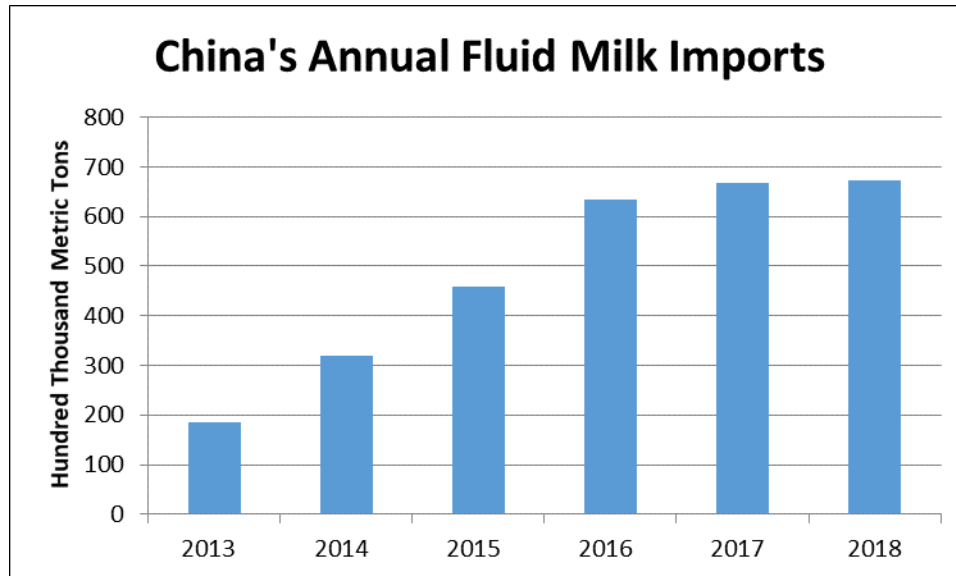


Source: Chinese Nutrition Society

Trade

Imports of fluid milk will continue to rise in 2019

Post forecasts 2019 imports will increase to 700,000 tons, representing a 4 percent increase over 2018.

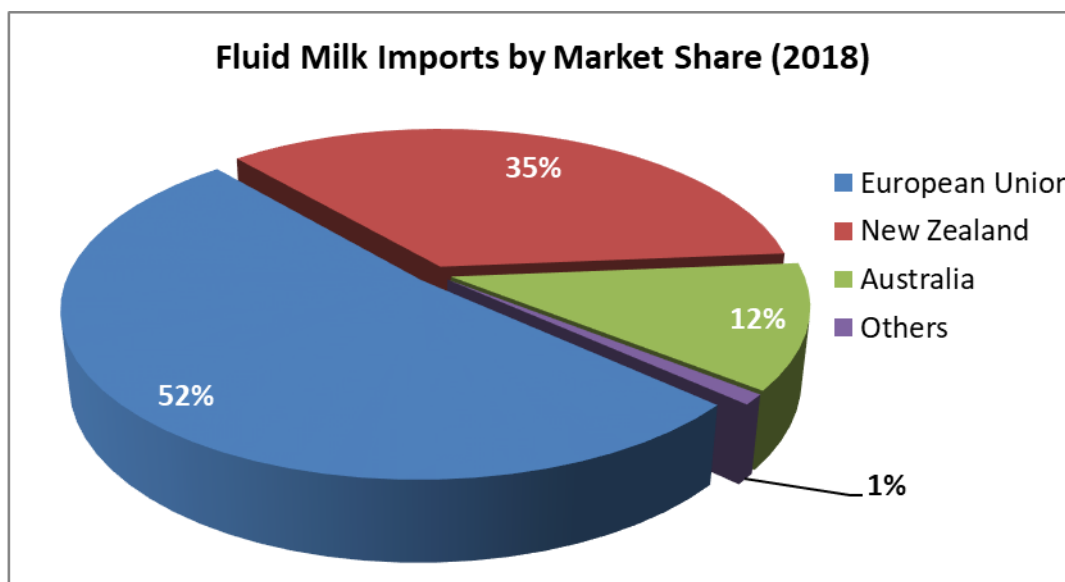


Source: GTA

The primary fluid milk import to China is UHT milk. Although import volumes will continue to rise, the growth has slowed considerably. Driven by consumer safety concerns over domestic milk, imports of fluid milk experienced explosive growth from 2008 to 2016. However, for 2017 – 2018 imports of UHT milk, growth was stagnant due to consumer preference for healthier alternatives such as pasteurized milk versus UHT milk.

The primary marketing channel for imported UHT milk is e-commerce. Due to widespread adoption of e-commerce in first and second-tier cities, consumption of UHT milk has experienced rapid growth but is approaching a saturation point, according to industry. While growth in third and fourth-tier cities is presently constrained by the lack of cold chain logistics, industry anticipates long-term UHT milk import demand to be driven by growth in third and four-tier cities.

EU countries, led by Germany, account for over 50 percent of the fluid milk import market share in China. In 2018, Germany alone accounted for over 25 percent of the fluid milk import market. New Zealand is also a major fluid milk importer and accounts for 35 percent of the market. Due to favorable tariff treatment under the New Zealand-China Free Trade Agreement, imports from New Zealand will continue to grow. While Australia also enjoys preferential tariff treatment under its free trade agreement, Australian imports to China are expected to decrease in the near-term as Australia's dairy herd recovers from drought conditions.



Source: GTA

To meet increasing domestic demand, more countries are expected to gain market access to China. In November 2018, Russia signed a protocol on dairy products with China, followed by registration of 11 Russian dairy establishments, covering milk, yogurt, cream, cheese and whey, among other products.

Import Policy

Overseas producers must comply with Decree 145, administered by the Certification and Accreditation Administration (CNCA), now within China Customs. Since the implementation of Decree 145 in 2014, many U.S. companies have noted delays in getting their dairy plants and products registered. For further background information please see the following GAIN report [Registration of Overseas Food Manufacturing Facilities](#) and visit the U.S. FDA website for registration guidance [here](#).

Policy:

On June 16, 2018, the People's Republic of China's Ministry of Finance (MOF), State Council Tariff Commission (SCTC) announced a revised list of U.S. products subject to an additional 25-percent tariff in response to the U.S. 301 investigation. 517 products on the list are food and agriculture-related products, which entered into force on July 6, 2018, the same day the U.S. tariffs related to the 301 investigation were enacted. The dairy products included in this list are milk, cream, WMP, SMP, yogurt, whey and modified whey, butter, and cheese. For details, please refer to GAIN Report [CH18034](#) China Responds to U.S. 301 Announcement with Revised Product List.

Fluid Milk Production Supply and Demand Table

Dairy, Milk, Fluid	2017	2018	2019
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China	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Cows In Milk	7600	6400	7200	6200	6900	6250
Cows Milk Production	30386	30386	29750	30750	29600	31500
Other Milk Production	1500	1500	1500	1500	1500	1500
Total Production	31886	31886	31250	32250	31100	33000
Other Imports	668	668	680	673	750	750
Total Imports	668	668	680	673	750	750
Total Supply	32554	32554	31930	32923	31850	33750
Other Exports	23	23	20	27	20	20
Total Exports	23	23	20	27	20	20
Fluid Use Dom. Consum.	12810	12810	12700	12700	12270	13000
Factory Use Consum.	19721	19721	19210	20196	19560	20730
Feed Use Dom. Consum.	0	0	0	0	0	0
Total Dom. Consumption	32531	32531	31910	32896	31830	33730
Total Distribution	32554	32554	31930	32923	31850	33750
(1000 HEAD), (1000 MT)						

WHOLE MILK POWDER

Production

Production will decrease by 0.5 percent in 2019

Post forecasts production will decrease to 600,000 metric tons, about 0.5 percent lower than 2018. Converting domestically produced fluid milk to WMP is not profitable due to the availability of lower-priced WMP from the international market. Domestic production costs per ton for WMP are 10,000 RMB (\$1,500 USD) higher than imported products. However, due to differences between consumption and production seasons, farmers have no choice but to convert surplus milk into WMP. Chinese farms have been trying to cope with this issue by adjusting feeding regimes to decrease milk production in the first half of the year and increase the production in the latter half of the year.¹

The continued increase in imported WMP also limits domestic production. Milk production is expected to increase in major dairy producing countries during 2019, except Australia, and thus imports of WMP are expected to similarly rise in 2019. Imported WMP also enjoys a longer shelf life than domestic WMP - 2 years versus 1 year.

¹ See [FAS GAIN Report CH18067](#) for a more in-depth discussion of China's production seasonality issue.

The leading dairy processing companies in China continue to expand, both domestically and overseas. For example, Yili, announced that it will expand its existing plant in New Zealand by adding pasteurized milk, UHT milk and WMP capacity. In early 2019, Yili also acquired the second largest dairy cooperative in New Zealand-Westland Cooperative Dairy Company Limited. The bulk of production from these facilities is expected to be exported to China.

Consumption

Consumption will increase by 1.5 percent in 2019

Post forecasts 2019 consumption will increase by 1.5 percent to about 1.6 million tons. WMP is mainly used in reconstituted milk and yogurt production, UHT milk production, and milk beverages. Following increasing incomes and urbanization, consumption of these dairy products will continue to rise, especially yogurt. In 2017, Chinese yogurt sales were \$17 billion USD, surpassing fluid milk sales.

Trade

Imports will continue to grow in 2019

The 2019 import forecast remains unchanged at 600,000 tons in 2019, about 15.1 percent higher than 2018. Currently, New Zealand dominates the import market with an 88 percent market share followed by Australia with a 1.6 percent market share. Starting from 2019, New Zealand's WMP imports enjoyed zero tariffs and as a result, exports from New Zealand will continue to rise in 2019. But as the expanded operations in New Zealand have begun to encounter increasing environmental protection concerns, it appears that New Zealand production has almost reached a production ceiling with little room for future growth.

In Australia, a serious drought in 2018 caused significant losses to the dairy herd. As a result, exports from Australia will continue to be depressed in 2019. The EU and United States are both potential future suppliers to the China market. However, due to the retaliatory tariffs imposed in July 2018, U.S. dairy imports face an uphill battle.

In general, imported WMP helps to balance supply and demand during the summer months when the domestic industry is in short supply of WMP. With 85 – 90 percent of China's milk production concentrated in the North, the south of China accounts for 55 percent of the demand, creating a regional imbalance. In addition, during the hot summer months, China's WMP production decreases. Imported WMP from Oceania helps to balance these supply and demand imbalances.

China exports negligible amounts of whole milk powder. Exports to China's major markets of North Korea, Myanmar, and Hong Kong will be steady at a cumulative 2,000 MT.

Whole Milk Powder Production Supply and Demand Table

Dairy, Dry Whole Milk Powder Market Begin Year	2017		2018		2019	
	Jan 2017		Jan 2018		Jan 2019	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
China						
Beginning Stocks	150	150	50	100	0	50
Production	1350	975	1300	970	1335	965
Other Imports	470	470	460	521	500	600
Total Imports	470	470	460	521	500	600
Total Supply	1970	1595	1810	1591	1835	1615
Other Exports	2	2	2	2	2	2
Total Exports	2	2	2	2	2	2
Human Dom. Consumption	1918	1493	1808	1539	1833	1563
Other Use, Losses	0	0	0	0	0	0
Total Dom. Consumption	1918	1493	1808	1539	1833	1563
Total Use	1920	1495	1810	1541	1835	1565
Ending Stocks	50	100	0	50	0	50
Total Distribution	1970	1595	1810	1591	1835	1615

(1000 MT)

NONFAT DRY MILK

Production

2019 production of SMP will be 15,000 tons, 25 percent lower than 2018. China produces little SMP, due to the widespread availability of cheaper SMP from international markets.

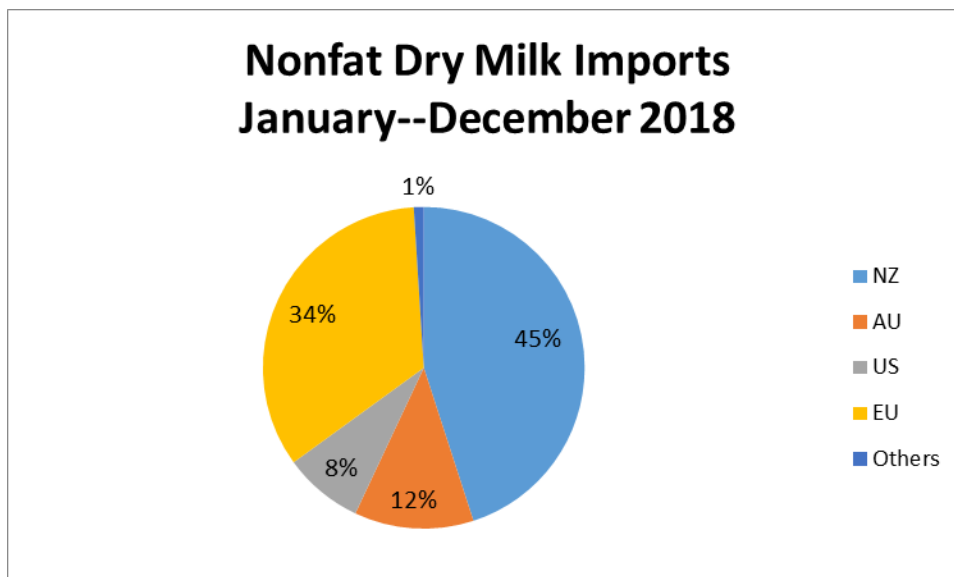
Consumption

2019 consumption of SMP will be 320,000 tons, representing an 8.5 percent increase from 2018. The increased consumption is driven by the competitive international SMP price. As SMP and WMP utilization are largely interchangeable in China, because current SMP prices are about RMB 7,000 cheaper per ton, Chinese producers will increase their usage of SMP. According to industry, SMP is used even more widely than WMP in ice cream and milk-based nutrition beverages for the elderly.

Trade

2019 imports will be 305,000 tons, representing an 11 percent increase from 2018. China has little SMP production and thus relies on imports to meet demand in the food processing and infant formula sectors. New Zealand is the leading exporter of SMP, but facing environmental pressures, New Zealand is

moving towards exporting products higher up the value chain. As a result, imports from New Zealand have limited growth potential. Exports from Australia will also be reduced in 2019 due to the herd recovery. Exports from the EU and the United States will continue to grow, even though U.S. products face an additional 25-percent tariff.



Source: GTA

Nonfat Dry Production Supply and Demand Table

Dairy, Milk, Nonfat Dry Market Begin Year	2017		2018		2019	
	Jan 2017		Jan 2018		Jan 2019	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
China						
Beginning Stocks	0	0	0	0	0	0
Production	30	30	20	20	15	15
Other Imports	247	247	255	280	280	305
Total Imports	247	247	255	280	280	305
Total Supply	277	277	275	300	295	320
Other Exports	1	1	0	1	0	0
Total Exports	1	1	0	1	0	0
Human Dom. Consumption	276	276	275	299	295	320
Other Use, Losses	0	0	0	0	0	0
Total Dom. Consumption	276	276	275	299	295	320
Total Use	277	277	275	300	295	320
Ending Stocks	0	0	0	0	0	0
Total Distribution	277	277	275	300	295	320

1000 MT)

CHEESE

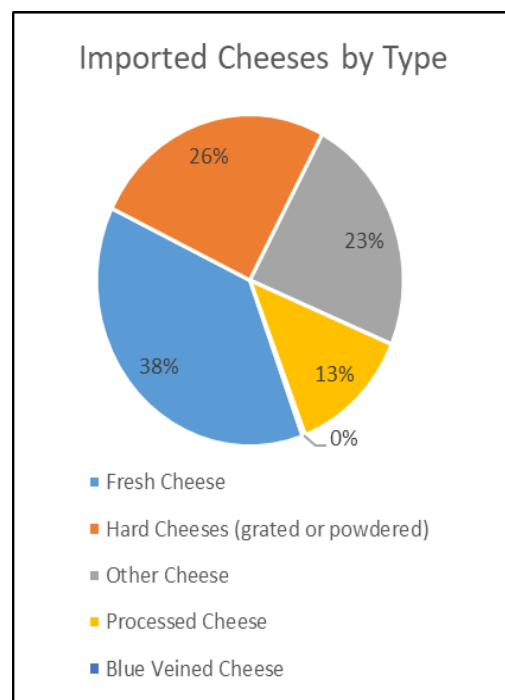
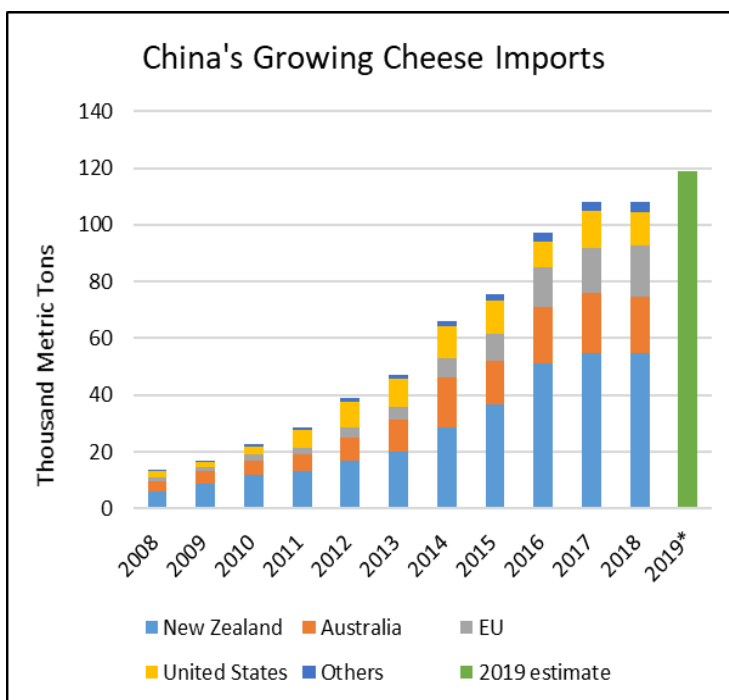
Production

China is expected to produce roughly 40,000 metric tons of cheese in 2019. Based on industry reports, a portion of this production includes the reprocessing of imported natural cheeses. The current processed cheese standards require processed cheeses to contain at least 15 percent natural cheese. Overall, the dairy processing industry is concentrated and the cheese processing sector is even more so. Five companies represent over 90 percent of the cheese domestically produced in China.

Industry reports that Chinese producers have had difficulty meeting the current National Food Safety Standards for cheeses, limiting production. However, in May 2019, China released draft revisions to these standards and is currently soliciting comments.² The domestic industry reports that these revisions should make it easier to meet the standards, therefore allowing production increases.

Trade

Chinese imports are forecast at 119,000 MT in 2019, representing a 10 percent year on year increase. Strong growth from Australia, New Zealand, and the EU will offset declines from the United States and other countries. China's largest cheese imports are mozzarella, cheddar, and cream cheese.



In July

2018, China levied an additional 25 percent import tariff on U.S. dairy exports, halting growth from the previous 12-month period.

² See FAS GAIN Reports [CH19037](#) and [CH19038](#) for the proposed standards for Cheese and Processes Cheese, respectively.

China Import Statistics for Cheese									
Partner Country	2013	2014	2015	2016	2017	2018	2018 YTD	2019 YTD	% change
New Zealand	20,015	28,825	36,779	51,116	54,887	54,975	24,678	27,753	12%
Australia	11,167	17,336	15,277	19,968	21,107	19,696	6,765	8,518	26%
EU	4,602	6,641	9,734	14,079	15,943	17,938	6,482	7,116	10%
United States	10,010	11,635	11,658	8,956	12,905	12,018	7,062	3,698	-48%
Others	1,522	1,536	2,133	3,060	3,193	3,651	2,111	1,075	-49%
Total Imports	47,316	65,973	75,581	97,179	108,035	108,278	47,098	48,160	2%

Consumption

Cheese consumption in China is growing quickly. One industry expert reports that in 2019, sales of cheese were approximately \$790 million and would increase to \$1.5 billion within the next five years. Current per capita consumption is still far below Western diets—estimated at 0.02 kg versus 1.46 kg in Japan and 6.89 kg in the United States—but is growing. While Chinese consumers strongly associate yogurt and fresh milk with health and nutrition, cheese enjoys a less strong association. Cheese is widely promoted as a convenient source of protein, but the salt and fat content are important considerations for many Chinese consumers.

The majority of cheese in China is consumed outside the home. Fast food restaurants, pizza restaurants, hotels, and the baking industry account for most cheese consumption. In particular, the baking industry accounts for almost all cream cheese consumption. Although high-end grocery stores now stock a wide variety of fresh cheeses from across the globe, home consumption is still limited.

However, Chinese consumers, especially the younger generation, appreciate new flavors and convenient packaging. For example, one Chinese producer advertises “cheese lollipops” as an easy snack for children. Despite the relatively high costs of dairy products in China, consumers in first and second-tier cities are willing to pay a premium for products marketed as “health foods.”



Source: Industry

Production Supply and Demand Table for Cheese

Dairy, Cheese China	2019	2019
	USDA Official	New Post
Beginning Stocks	-	0
Production	-	40
Other Imports	-	0
Total Imports	-	119
Total Supply	-	159
Other Exports	-	0
Total Exports	-	0
Domestic Cons.	-	159
Total Use	-	159
Ending Stocks	-	0
Total Distribution	-	159

Units: 1,000 metric tons

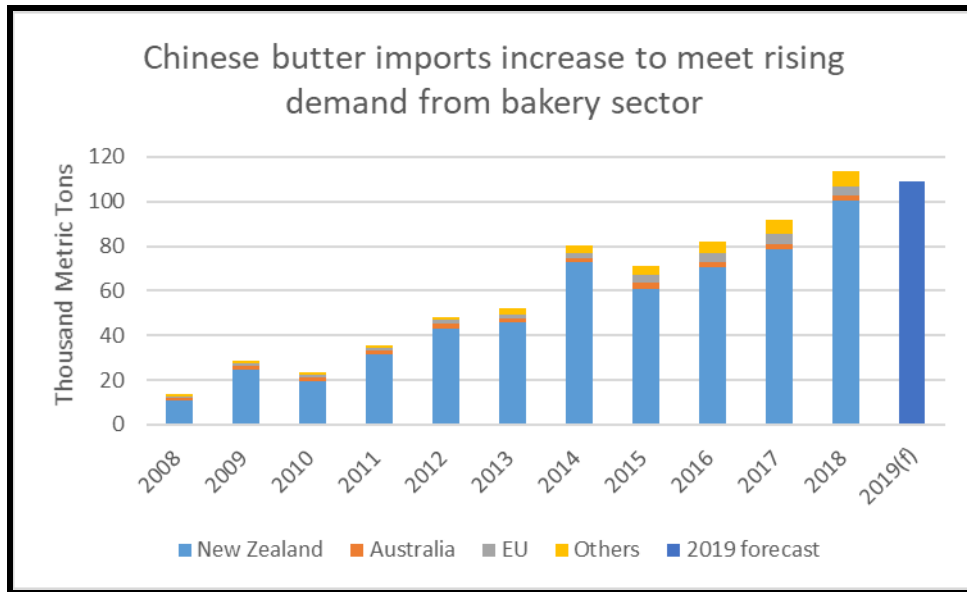
BUTTER

Production

Although China does not provide official statistics on butter production, industry estimates that 10,000 MT of butter are produced domestically in China. All of that production is consumed domestically by China's baking industry. Like many other dairy products, China's domestic butter production is limited by the relatively high cost of fluid milk and availability of low-priced, high quality imports. While there is some butter sold under a Chinese brand in the retail channel, this butter is actually imported butter that has been repacked under a Chinese brand. The majority of China's butter sold at retail is produced from frozen blocks of imported butter.

Trade

China is the world's fifth largest butter importer, with only EU countries importing more. China's butter imports in 2018 hit a record high of 113,000 metric tons. In 2019, imports are forecast to fall 4 percent due to reduced supplies from New Zealand. In the first five months of the year, imports from New Zealand were down over 30 percent.



Source: GTA

China Import Statistics for Butter, Anhydrous Milkfat, and Dairy spreads							
Partner Country	2013	2014	2015	2016	2017	2018	2018 Market Share
New Zealand	45,670	72,951	60,929	70,807	78,837	100,444	89%
Australia	1,827	1,512	2,613	1,996	1,956	1,965	2%
EU	1,825	2,193	3,503	4,129	4,699	4,518	4%
Others	2,979	3,749	4,214	4,933	6,074	6,403	6%
World Total	52,301	80,405	71,259	81,865	91,566	113,330	

Source: GTA

Consumption

China's butter is consumed almost entirely by the baking and HRI industries. As China's baking industry has boomed, the increased production of western-style pastries has driven demand for butter.

Production Supply and Demand Table for Butter

Dairy, Butter China (1000 MT)	2019 USDA Official	2019 New Post
Beginning Stocks	-	0
Production	-	10
Other Imports	-	0
Total Imports	-	109
Total Supply	-	119
Other Exports	-	0
Total Exports	-	1
Domestic Cons.	-	119
Total Use	-	120
Ending Stocks	-	0
Total Distribution	-	120

Note: “New Post” data reflects Post’s assessments and are NOT official USDA data.

ICE CREAM

Production

According to Chinese industry statistics, China surpassed the United States to become the largest ice cream producer in the world. In 2015, one industry report estimated that Chinese ice cream production was over 3 million metric tons. China’s largest dairy producers, including YiLi, Mengniu, and Bright Dairy, all have popular domestic ice cream brands.

Trade

China is a net exporter of ice cream, with 31,000 MT exported in 2018, compared to 22,000 MT in imports. Indonesia accounts for over 75 percent of China’s ice cream exports. Imported ice cream is marketed as a luxury good in China and is several times more expensive than comparable products in western countries.

Consumption

Consumption of ice cream, considered an indulgence, is driven by increasing disposable income. According to China's National Bureau of Statistics, average annual Chinese salaries tripled from roughly USD \$3,000 in 2006 to USD \$10,000 in 2016. Although per capita consumption is still much lower than in the United States, estimated at roughly 3 liters per person compared to nearly 20 liters in the United States, in 2016, domestic consumption was estimated at 4.3 billion liters and growing fast.

China Ice Cream Show, Source: China Daily



Commodities:

Dairy, Milk, Fluid

Dairy, Dry Whole Milk Powder

Dairy, Butter

Dairy, Cheese

Dairy, Milk, Nonfat Dry