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Dairy and Products Annual

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Report Highlights:

Milk production is forecast at 9.5 million metric tons in 2019, down 1.6 percent from last year due to unfavorable seasonal conditions in dairy producing regions. Cheese and butter production is expected to be stable at 350,000 metric tons as processors focus on exports, with imports also continuing to increase. Skim milk powder (SMP) is expected to increase by 10 percent to 220,000 MT while whole milk powder (WMP) production is forecast to increase by almost 6 percent. Demand for infant formula is expected to rise, especially from China.

Post: Canberra

Commodities:

Dairy, Butter

Dairy, Cheese

Dairy, Dry Whole Milk Powder

Dairy, Milk, Fluid

Dairy, Milk, Nonfat Dry

EXECUTIVE SUMMARY:

Australia produces less than two percent of global milk production, but is a significant exporter of dairy products. Fluid milk production is forecast at 9.5 million metric tons (MMT), down 1.6 percent from last year, due to unfavorable seasonal conditions in southern dairy regions. Cheese and butter production is expected to be stable at 350,000 metric tons (MT) and 70,000 MT respectively. Dairy processors are seeking to shift to producing higher-value cheese products for exports, with imports continuing to increase. In 2019, production of skim milk powder (SMP) is expected to increase by 10 percent. Production of whole milk powder (WMP) production is expected to increase due to higher demand for infant formula.

In recent years, dairy farmers have been affected by lower incomes and higher debt, partly due to corporate restructuring and unfavorable weather. Producer confidence in the industry remains low and there have been significant processor turnover and company closures. A major change was the takeover of industry leader Murray Goulburn by the Canadian dairy company Saputo in early 2018. However, the industry still faces significant challenges, such as very high grain and hay prices because of the drought in eastern Australia. In addition, water prices have more than doubled since last year, while many farms have suffered financially from a prolonged period of depressed milk prices. A recent survey of dairy farmers found that one in five was considering leaving the industry in the future. Dairy exports are expected to be stable or decline slightly as a result of lower milk production.

SEASONAL OUTLOOK

In 2018, eastern Australia has so far received very low rainfall and experienced above average temperatures (chart 1). Australia, as a whole, has experienced its driest September on record in 2018 and the outlook for the next three months is for worsening conditions according to the Bureau of Meteorology (BOM). These drought conditions in eastern Australia have contributed to very low soil moisture and poor pasture growth. The BOM's 3-month forecast to January 2019 suggests that low rainfall patterns will continue into next year (chart 2). Currently, all of New South Wales (NSW), two thirds of Queensland, parts of Victoria and all of South Australia are experiencing drought conditions. Soil moisture levels across large areas of eastern Australia have limited pasture growth rates and fodder production capacity.

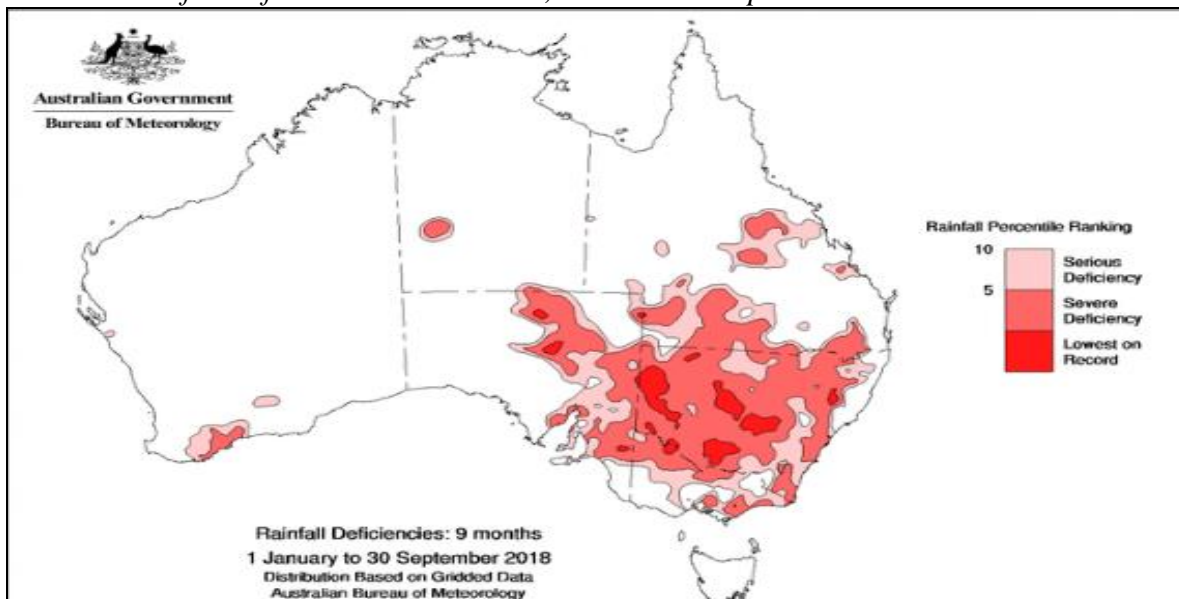
Table 1: Feed prices for livestock industries, October 2018

Region	Grain prices (A\$/MT)			Hay prices (A\$/MT)	
	Wheat	Barley	Sorghum	Cereal Hay	Lucerne Hay
North Queensland	495	615	455	-	-
Darling Downs	480	465	440	600	600
North NSW	475	465	440	600	750
Central NSW	410	400	425	550	600
Victoria/Gippsland	480	495	585	550	600
Southwest Victoria	440	425	595	350	420
South Australia	400	370	505	400	500
Tasmania	505	515	620	250	350

Source: Dairy Australia (October, 2018)

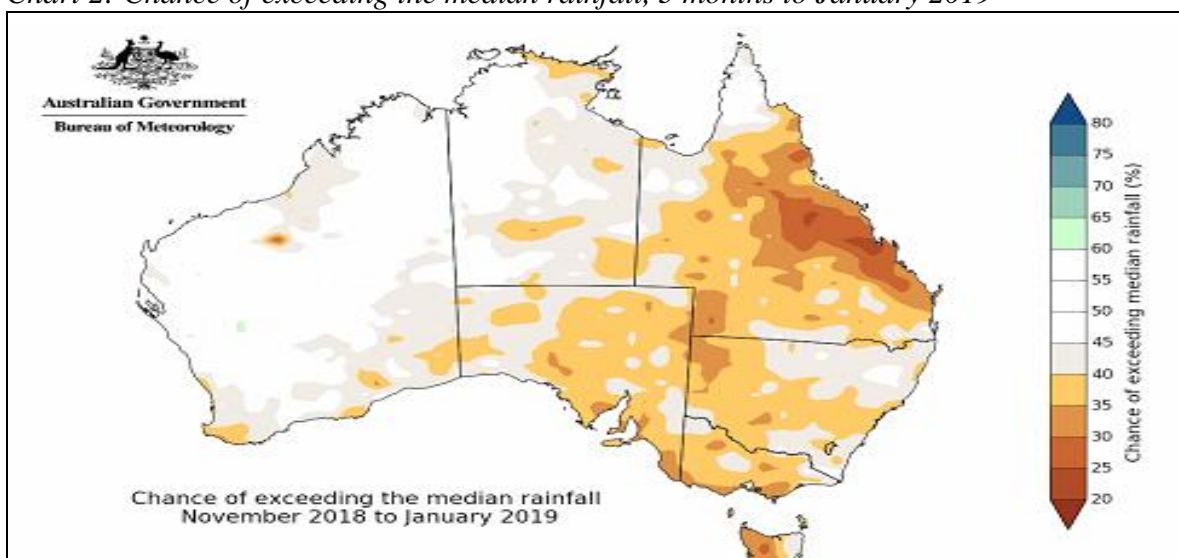
Dairy production mainly occurs in high rainfall areas in coastal regions, with inland production supported by irrigation. In Victoria and Tasmania, where over 60 percent of production occurs, milk production is supported by relatively high rainfall and pasture growth. In other states, rainfall and pasture growth and producers rely more on supplementary feed. Australian dairy farmers are likely to face higher input costs for feed grain, fodder and water in 2019. This will place pressure on farm returns and is likely to accelerate structural adjustment in some regions. If drought conditions spread deeper south, Australia could experience further declines in milk production.

Chart 1: Rainfall deficiencies in Australia, 9 months to September 2018



Source: Bureau of Meteorology (October, 2018)

Chart 2: Chance of exceeding the median rainfall, 3 months to January 2019



Source: Bureau of Meteorology (October, 2018)

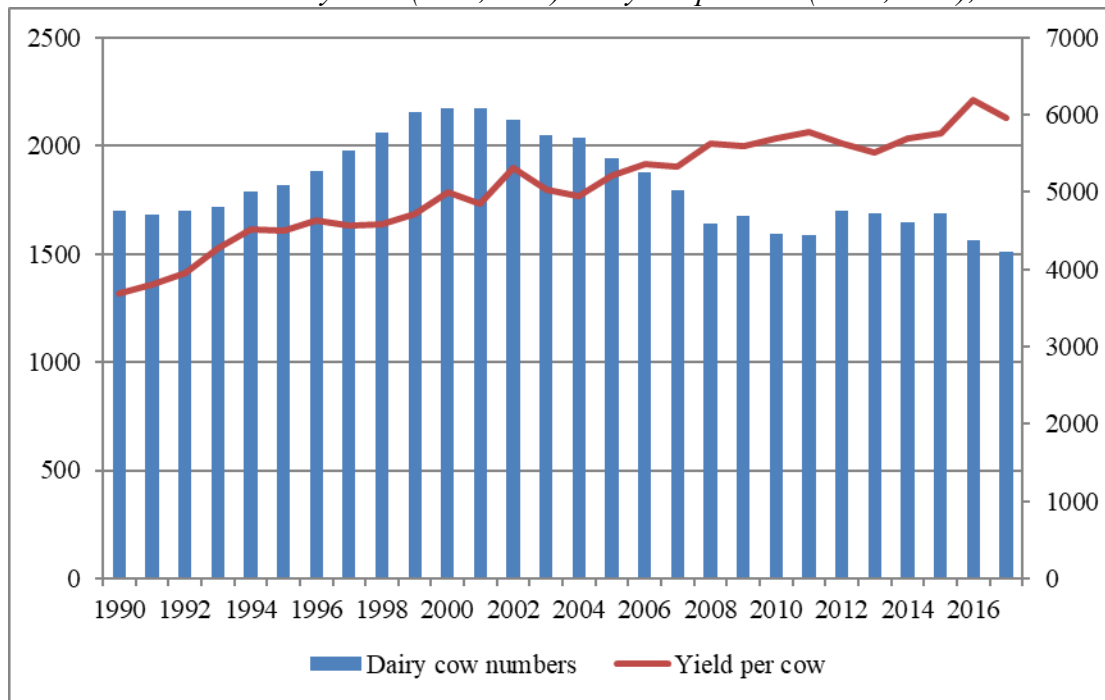
FLUID MILK

Production

In 2019, Australian milk production is forecast to decline by 1.6 percent, due to the likely continuation of unfavorable seasonal conditions in most dairy regions. Poor rainfall since May 2018 has resulted in lower pastoral growth and rising water costs. Meteorologists forecast these conditions will continue into next year. The southern dairy regions account for most of Australia's dairy exports. There is a spring peak in production during the spring months from September to November. The dominant breed of dairy cow is the Holstein-Friesian, which accounts for around 75 percent of the dairy herd, followed by Jersey cows. Most dairy farms maintain a herd of cows for milking and a small number of other cattle, including heifers and bulls, for herd replacement and breeding.

In 2018, around 30 percent of milk production was used to produce drinking milk, including fresh and long life, and around a quarter of milk production was used to manufacture butter and skim milk powder. In recent years, dairy processors have diverted production towards more value-added products such as cheese, cream, and infant formula. National dairy production levels are typically below total capacity, particularly for milk powders, due to the seasonal nature of milk production. Manufacturing facilities are primarily located in Victoria.

Chart 3: Australian dairy herd ('000, LHS) and yield per cow (liters, RHS), 1990-2017



Source: Department of Agriculture and Dairy Australia.

Dairy herd numbers are expected to be stable at 1.5 million head in 2019 (chart 3). In recent years, the dairy industry has experienced falling profitability, significant seasonal variations, low milk prices, and higher costs for water, feed grains, and hay. These factors have contributed to culling of dairy cows to capitalize on relatively high beef prices and live cattle exports. This trend has resulted in lower industry profitability and increased farmer exits from the industry. Dairy Australia has estimated that one in five farmers could leave the industry in the near future.

Consumption

Australia's per capita consumption of drinking milk is around 105 liters, which is high compared to other developed countries. Domestic consumption in 2019 is forecast at 2.55 MMT, the same as the previous year. The share of drinking milk consumed domestically varies significantly by State. Almost all raw milk produced in Queensland is used to produce fresh drinking milk and over half of raw milk in NSW and Western Australia is also used for this purpose. In Victoria, 7 percent and Tasmania 11 percent of raw milk is consumed domestically as drinking milk and the remainder is used to produce cheese, butter, milk powder, and other products. The proportion of the dairy herd in each state is shown in table 2. Domestic milk consumption by product type in 2017 is shown in table 3. The utilization of milk by product category is shown in chart 4.

Table 2: Australian dairy herd number by state, 2017 ('000 head)

State	Dairy cows ('000)	Share of total milk production (%)	Average dairy cows per farm (head)
Victoria	995	64.0	256
New South Wales	165	12.4	250
Tasmania	145	9.3	330
Queensland	87	4.6	212
South Australia	65	5.4	270
Western Australia	55	4.2	372
Total	1,512	100	261

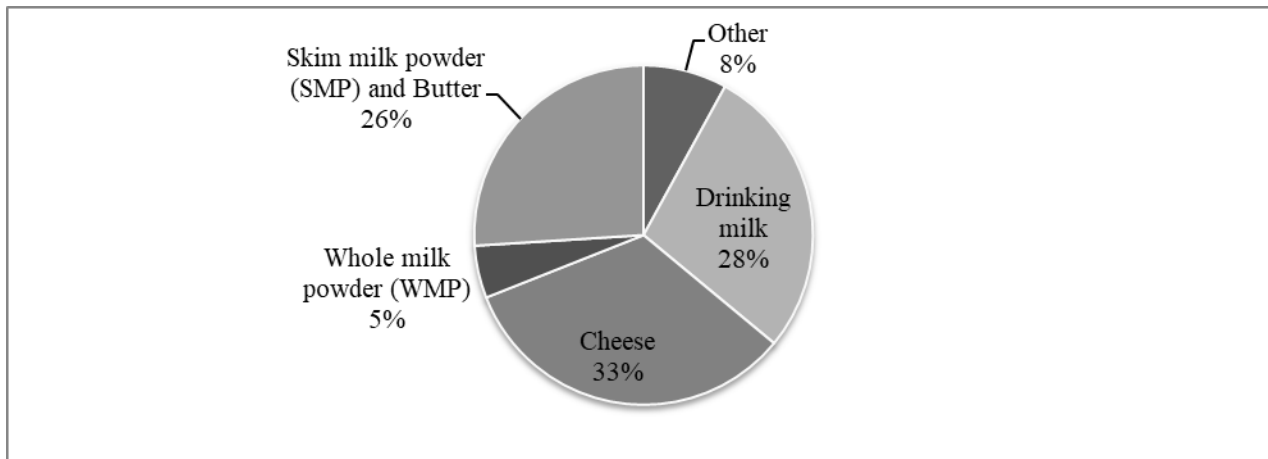
Source: Dairy Australia and ACCC (2018)

Table 3: Australian domestic milk consumption, 2015-2017 (million liters)

Type	2015		2016		2017	
	Branded milk	Private label	Branded milk	Private label	Branded milk	Private label
Regular	183	419	202	413	274	431
Reduced fat	158	244	148	241	165	191
Low fat	40	6	34	6	31	5
Flavored	104	5	114	5	115	3
UHT	131	67	122	65	118	71
Total	616	741	620	760	714	701

Source: Dairy Australia (2018)

Chart 4: Australian milk end-use by volume of raw milk, 2017 (%)



Note: Drinking milk includes fresh and long-life milk. The 'other' category includes yoghurt, dairy desserts, and whey protein. Butter and Skim Milk Powder (SMP) are co-products. Source: Dairy Australia

Trade

Australian fluid milk exports in 2019 are forecast to grow to 250 million liters driven by high export prices. Fluid milk exports for the period 2012 to 2018 are shown in table 4.

Table 4: Australian exports of fluid milk, 2012-2018 (million liters)

	2012	2013	2014	2015	2016	2017	2018 (a)
World	83	92	135	152	176	199	98
China	13	20	48	59	65	78	35
Singapore	28	27	31	34	38	38	21
Malaysia	2	2	2	13	13	14	9
Hong Kong	15	14	15	13	13	14	7
Philippines	3	5	9	7	13	17	9
Other	22	24	30	26	34	38	17

Note: (a) First 6 months of 2018, Source: Dairy Australia (2018)

An increasing number of producers, such as A2 Milk, have formed joint ventures to help their expansion into the Chinese market, aided by online marketing. Australia's biggest health food manufacturer, Freedom Foods, sells long-life milk to Chinese consumers online via Alibaba's Tmall platform and JD.com and in supermarkets through its Arnolds Farm brand. Demand from Chinese consumers for Australian dairy products has grown significantly, but arbitrary government regulations have restrained larger expansion.

Australian exports of live dairy cattle have slowed in recent years and the relative decline in the first 6 months of 2018 suggests that the industry may be moving into a period of herd rebuilding in 2019. Overall, China has been the main market for Australian exports of dairy cattle, followed by Indonesia and Vietnam (Table 5).

Table 5: Australian exports of live dairy cattle, 2011-2018 ('000)

	2011	2012	2013	2014	2015	2016	2017	2018
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	(a)							
World	73,935	114,558	123,665	115,189	104,079	105,217	100,434	40,540
China	53,195	55,912	66,530	95,924	81,787	87,248	68,612	31,372
Indonesia	1,665	2,472	3,289	12,598	1,977	2,450	16,069	2,200
Vietnam	331	496	0	1,917	5,410	2,459	958	0
Pakistan	2,676	5,156	11,059	1,312	3,892	3,391	6,665	3,020

Source: Global Trade Atlas (2018)

Production, Supply and Demand Data Statistics:

Table 6: Production, supply and distribution of fluid milk ('000 MT)

Dairy, Milk, Fluid	2017		2018		2019	
	January 2017		January 2018		January 2019	
Market Begin Year	January 2017		January 2018		January 2019	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Cows In Milk	1,512	1,512	1,525	1,525	1,525	1,525
Cow's Milk Production	9,462	9,462	9,650	9,650	9,500	9,500
Other Milk Production	0	0	0	0	0	0
Total Production	9,462	9,462	9,650	9,650	9,500	9,500
Other Imports	5	5	5	5	5	5
Total Imports	5	5	5	5	5	5
Total Supply	9,467	9,467	9,655	9,655	9,505	9,505
Other Exports	214	214	245	245	250	250
Total Exports	214	214	245	245	250	250
Fluid Use Domestic Consumption	2,530	2,530	2,550	2,550	2,550	2,550
Factory Use Consumption	6,723	6,723	6,860	6,860	6,705	6,705
Feed Use Domestic Consumption	0	0	0	0	0	0
Total Domestic Consumption	9,253	9,253	9,410	9,410	9,255	9,255
Total Distribution	9,467	9,467	9,655	9,655	9,505	9,505

Note: (a) 'New Post' data reflect author's assessments and are not official data; (b) Data for fluid milk is reported in 1,000 metric tons and one liter of cows' milk weighs around 1.03 kg.

CHEESE

Production

Cheese production is forecast at 350,000 MT in 2019, 3 percent below the estimate for 2018. Production of cheese accounted for about one third of milk utilization in 2018. Demand for cheese in Australia is comparatively mature and exports account for 50 percent of production. Cheddar cheese is the market leader (Table 7).

Table 7: Australian cheese production by variety, 2011 to 2018 ('000 MT)

	2011	2012	2013	2014	2015	2016	2017	2018 (a)
Cheddar	155	161	158	152	179	172	172	90
Semi-hard	68	67	57	45	44	50	53	25
Hard grating	14	14	15	14	10	5	6	3
Fresh	95	99	102	96	105	111	97	47
Mould ripened	7	6	6	6	6	7	8	4
Total	339	347	338	311	344	344	337	169

Note: (a) First 6 months of 2018, Source: Dairy Australia (2018)

Consumption:

Post forecasts cheese consumption at 300,000 MT in 2019, 1.3 percent below the estimate for the previous year. Average per capita consumption in 2017 was 14 kilograms, according to industry sources. Cheddar cheese remains the most popular variety with around half of the market, followed by a wide range of non-cheddar cheese varieties. Cheddar's share has fallen slightly with rising demand for specialty cheeses and fresh cheese varieties such as feta. Almost half of Australian cheese sales are made by major supermarket chains, with specialty cheeses mainly sold by independent specialty stores. There has been a consistent trend towards sliced cheese in preference to block cheese for reasons of consumer convenience. Major domestic buyers of dairy products include retailers, cafes, restaurants, fast food companies, and food manufacturers.

Trade:

Cheese exports are forecast at 175,000 MT in 2019, the same as the previous year. More than 50 percent of Australia's cheese exports go to Japan and are comprised mainly of fresh and cream cheese varieties for processing. Other major markets include China, Malaysia, South Korea, and Singapore. The non-cheddar share of total export sales has grown from 60 percent in the 1990s to more than 75 percent in 2017 (see Table 8).

Given the limited liquid milk supplies, processors have given priority to cheese production and exports. The significant price premium processors receive in the Japanese market encourages them to focus on exports rather than supplying domestic customers such as the food service sector. Some major supermarkets are increasing imports of cheese because of the shortfall in domestic supplies. Cheese imports from New Zealand and the United States are mainly lower value processed and block cheeses, while those from Europe tend to be higher value specialty cheeses, such as Gouda, parmesan and brie.

Table 8: Australian cheese exports, 2011-2018 ('000 MT)

	2011	2012	2013	2014	2015	2016	2017	2018 (a)
World	168	163	163	151	171	167	171	86
Japan	91	99	88	77	94	83	85	44
China	6	9	12	17	16	20	22	10
South Korea	7	7	6	5	8	8	10	5
Malaysia	8	6	7	8	8	8	9	4
United States	1	2	2	2	6	6	3	2
Other	55	40	48	62	39	42	42	21

Note: (a) First 6 months of 2018, *Source:* Global Trade Atlas (2018)

Australia is now a major importer of cheese as well as an exporter. Imports are forecast at 115,000 MT in 2019, the same as the previous year. Imports from New Zealand totaled 62,000 MT in 2017, with the United States accounting for 29,000 MT. Cheese imports from New Zealand and the United States are mainly cheddar cheese. Imports of mozzarella cheese from the United States have also been increasing for use in the Australian pizza industry. In 2017, the value of U.S. cheese exports to Australia increased by 77 percent reaching US\$119 million. Exchange rate trends appear to have weakened the competitiveness of U.S. cheese exports in 2018.

Table 9: Australian cheese imports, 2011-2018 ('000 MT)

	2011	2012	2013	2014	2015	2016	2017	2018 (a)
World	72	74	69	79	89	88	116	56
New Zealand	47	45	38	42	54	51	62	30
United States	9	11	11	18	15	13	29	13
Italy	3	3	4	4	5	4	4	2
Other	13	15	16	15	15	20	21	11

Note: (a) First 6 months of 2018, *Source:* Global Trade Atlas (2018)

Under the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, also known as TPP11, Australian cheese exporters will gain increased market access to Japan, including the elimination of tariffs on certain cheese products, tariff reductions, and new quota allocations for a variety of cheese products.

Production, Supply and Demand Data Statistics:

Table 10: Production, supply and distribution of cheese ('000 metric tons)

Dairy, Cheese	2017		2018		2019	
Market Begin Year	January 2017		January 2018		January 2019	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	49	49	51	51	45	
Production	348	348	360	350	350	
Other Imports	116	116	115	115	115	
Total Imports	116	116	115	115	115	
Total Supply	513	513	526	516	510	
Other Exports	171	171	175	175	175	
Total Exports	171	171	175	175	175	
Human Domestic Consumption	291	291	296	296	300	
Other Use, Losses	0	0	0	0	0	
Total Domestic Consumption	291	291	296	296	300	
Total Use	462	462	471	471	475	
Ending Stocks	51	51	55	45	35	
Total Distribution	513	513	526	516	510	

Note: 'New Post' data reflect author's assessments and are not official data

BUTTER

Production

Butter production is forecast to be stable at 70,000 MT in 2019, the same as the previous year. Post notes that the estimate for 2018 was revised below the official estimate for that year due to a sharp decline in production. Output has been significantly constrained by higher domestic demand for full cream milk, as well as lower fluid milk production. Some processors have switched to butterfat to produce other product streams, including cheese. Rising domestic demand and prices have led to an increase in imports of butter mainly from New Zealand.

Consumption

Butter consumption is forecast at 130,000 MT in 2019, slightly above the estimate of 129,000 MT for the previous year. Annual per capita consumption of butter in Australia is around 5 kilograms and has increased in recent years. A switch in consumer tastes in Australia towards full cream milk products has contributed to higher domestic demand for butter. Domestic sales are mainly through retail and foodservice outlets.

Trade

Post forecasts butter exports to continue to decline to 10,000 MT in 2019, down 29 percent from 2018 as a result of lower domestic supply and higher demand in Australia. Butter imports are forecast to reach 50,000 MT in 2019, up from an estimated 40,000 MT in 2018.

Table 11: Australian exports of butter, 2011-2018 ('000 MT)

	2011	2012	2013	2014	2015	2016	2017	2018 (a)
World	41	53	49	43	34	31	16	7
Singapore	5	4	5	6	5	3	2	1
Malaysia	3	3	2	3	4	3	2	2
Thailand	3	2	3	3	3	4	2	1
China	1	2	2	1	2	2	2	1
Other	37	38	33	26	16	15	6	2

Note: (a) First 6 months of 2018. Source: Global Trade Atlas (2018)

Table 12: Australian imports of butter, 2011-2018 ('000 MT)

	2011	2012	2013	2014	2015	2016	2017	2018 (a)
World	18	21	21	23	21	29	34	21
New Zealand	17	19	19	20	19	26	30	19
Other	1	2	2	3	2	3	4	2

Note: (a) First 6 months of 2018. Source: Global Trade Atlas (2018)

Production, Supply and Demand Data Statistics:

Table 13: Production, supply and distribution of butter ('000 metric tons)

Dairy, Butter	2017		2018		2019	
Market Begin Year	January 2017		January 2018		January 2019	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	85	85	92	92		59
Production	103	103	110	70		70
Other Imports	35	35	37	40		50
Total Imports	35	35	37	40		50
Total Supply	223	223	239	202		179
Other Exports	16	16	16	14		10
Total Exports	16	16	16	14		10
Domestic Consumption	115	115	129	129		130
Total Use	131	131	145	143		140
Ending Stocks	92	92	94	59		39
Total Distribution	223	223	239	202		179

Note: 'New Post' data reflect author's assessments and are not official data.

SKIM MILK POWDER

Production

Post forecasts production of skim milk powder (SMP) at 220,000 MT in 2019, up 10 percent on the estimate for the previous year. Milk powder is categorized as either of SMP or WMP, depending on the fat content. Skim milk powder is made by removing cream from whole milk and then evaporating and drying the skim milk. SMP is a by-product of butter production and has a lower level of fat than whole milk powder.

Consumption

Post forecasts domestic consumption of skim milk powder at 80,000 MT in 2019, the same as the estimate for the previous year. Skim milk powder is mainly used as a food ingredient and to manufacture infant formula for infants and children above the age of two, which is increasingly exported in response to rising demand in China and the region. Lower fat milk powder is preferred for this age category since it is considered healthier than whole milk powder. Less than one third of skim milk powder is consumed on the domestic market and the remainder is exported.

Trade

Post forecasts skim milk powder exports at 160,000 MT in 2019, down 3 percent from 2018. Exported skim milk powder is typically used in overseas markets where fresh milk supplies are not readily available, due to either limited local production or restricted access to cold storage facilities. Major markets for milk powder and infant formula include China, Indonesia, Singapore, and Malaysia (see Table 14).

Table 14: Australian exports of skim milk powder, 2011-2018 ('000 MT)

	2011	2012	2013	2014	2015	2016	2017	2018 (a)
World	140	168	119	164	201	163	157	78
Indonesia	24	23	21	33	43	38	35	16
China	13	12	15	16	20	17	31	15
Singapore	17	20	13	14	16	14	14	5
Other	86	113	70	101	122	94	77	42

Note: (a) First 6 months of 2018, *Source:* Global Trade Atlas (2018)

SMP imports in 2019 are forecast at 20,000 MT. Imports of milk powder (including infant formula) and butter are mostly used as food ingredients in the manufacturing sector.

Production, Supply and Demand Data Statistics:

Table 16: Production, supply and distribution of skim milk powder ('000 MT)

Dairy, Milk, Nonfat Dry	2017		2018		2019	
Market Begin Year	January 2017		January 2018		January 2019	
Australia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	53	53	45	45		10
Production	224	224	235	200		220
Other Imports	8	8	10	10		20
Total Imports	8	8	10	10		20
Total Supply	285	285	290	255		250
Other Exports	157	157	165	165		160
Total Exports	157	157	165	165		160
Human Domestic Consumption	83	83	84	80		80
Other Use, Losses	0	0	0	0		0
Total Domestic Consumption	83	83	84	80		80
Total Use	240	240	249	245		240
Ending Stocks	45	45	41	10		10
Total Distribution	285	285	290	255		250

Note: 'New Post' data reflect author's assessments and are not official data.

WHOLE MILK POWDER

Production

Post forecasts production of WMP at 90,000 MT in 2019, partly due to higher prices for producers. This represents an increase of 6 percent on the previous year. Whole milk powder (WMP) is produced by partially removing water from pasteurized milk. Skim milk powder (SMP) is the product resulting from the partial removal of fat and water from pasteurized milk. Whole milk powder is manufactured by evaporating milk with some of the cream removed. The evaporated milk is then concentrated and dried either by roller or spray process to form a powder.

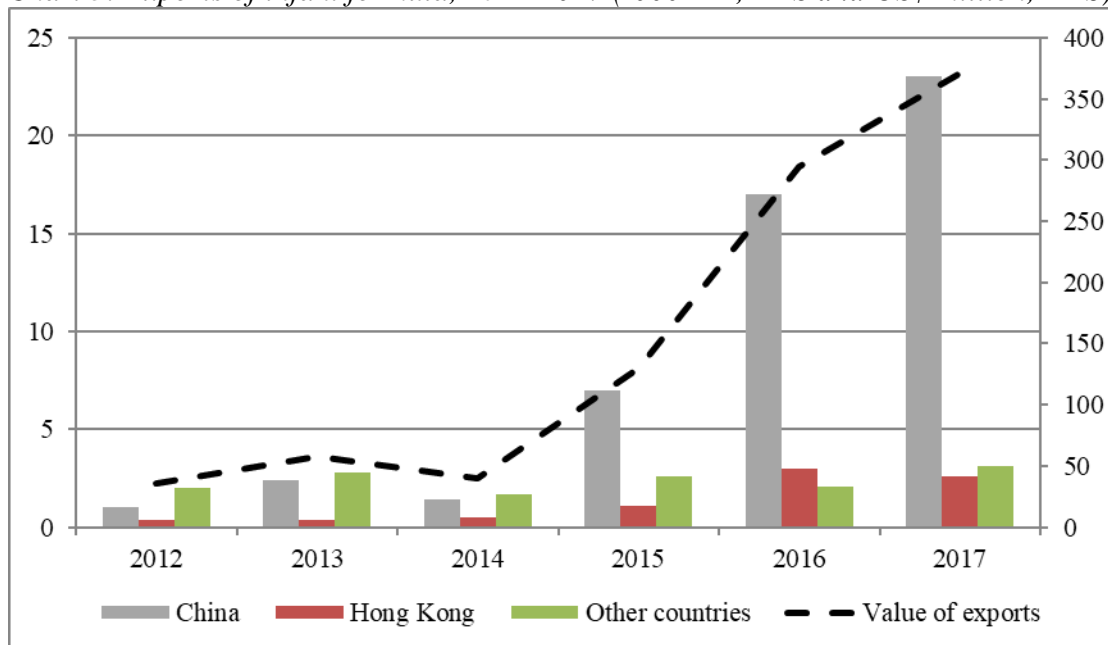
Consumption:

Post forecasts consumption of whole milk powder to be stable at 35,000 MT in 2019, the same as the previous year. Whole milk powder is mainly used in food manufacturing, such as ice cream, ready-to-cook meals and confectionary; as well as infant formula for infants less than two years old. Whole milk powder is preferred in this segment of infant formula because the nutrients and fats in WMP are reportedly better for infant development. Demand for exports of infant formula, which incorporates WMP, has increased significantly in recent years. Major dairy producers Bega Cheese, Fonterra Australia and Murray, Goulburn have all announced partnerships with established nutritional companies to develop their infant formula businesses for export markets, particularly to China.

Trade:

Post forecasts whole milk powder exports for 2019 to reach 90,000 MT while imports of WMP are expected to be unchanged at 40,000 MT. Almost all WMP and infant formula imports are from New Zealand. Australian exports of infant formula have grown rapidly in recent years, especially to China (see Chart 5).

Chart 5: Exports of infant formula, 2012-2017 ('000' MT, LHS and US\$ million, RHS)



Note: Tariff Code: 190110, Food and preparations for infant use and for retail sale
Source: Global Trade Atlas

Production, Supply and Demand Data Statistics:

Table 17: Production, supply and distribution of whole milk powder ('000 MT)

Dairy, Dry Whole Milk Powder	2017		2018		2019	
	January 2017	January 2017	January 2018	January 2018	January 2019	January 2019
Market Begin Year	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Australia						
Beginning Stocks	3	3	21	21	41	41
Production	77	77	85	85	90	90
Other Imports	28	28	40	40	40	40
Total Imports	28	28	40	40	40	40
Total Supply	108	108	146	146	171	171
Other Exports	55	55	70	70	90	90
Total Exports	55	55	70	70	90	90
Human Domestic Consumption	32	32	35	35	35	35
Other Use, Losses	0	0	0	0	0	0
Total Domestic Consumption	32	32	35	35	35	35
Total Use	87	87	105	105	125	125
Ending Stocks	21	21	41	41	46	46
Total Distribution	108	108	146	146	171	171

Note: 'New Post' data reflect author's assessments and are not official data.