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New Zealand

Dairy and Products Annual

New Zealand Annual Dairy and Milk Supply Report 2016

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Report Highlights:
New Zealand milk supply is continuing to slow as cow numbers decline and inputs are reduced in response to the lowest domestic milk prices in more than a decade. The 2017 milk supply forecast of 21.17 million metric tons is 2% below the previous year and over 3% below peak production of 2014 before the current milk price downturn began. However, export volumes remain quite resilient as more milk is channeled into higher margin products, such as ultra-high temperature (UHT) liquid milk exports. In 2017, total dairy exports are forecast at 3 million metric tons, 1.3% below the total for 2016.

Executive Summary

The face of the New Zealand dairy sector is changing: from a bulk commodities based industry to a producer of a wide range of consumer products, food service ingredients, and traditional commodities.

Fonterras joint venture with Beingmate to produce Infant Milk Formula to be sold in China is starting to get traction.

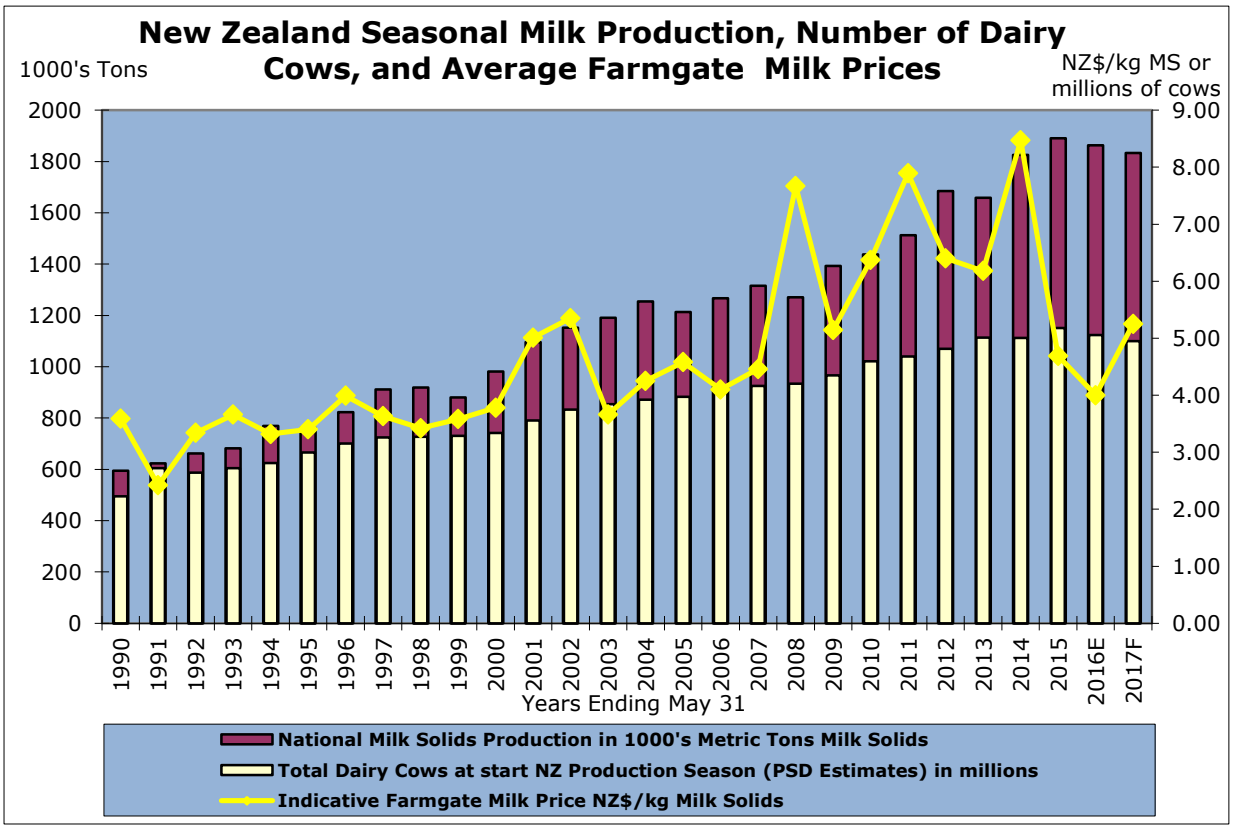
Ultra-high temperature **(**UHT) treated liquid milk and cream, and infant milk formula (IMF) currently account for about 11% of the total volume of exports and are high value products less affected by commodity price volatility. Given current trends, it is likely that these high value dairy exports could comprise close to 30% of the total in five years time.

However, farmers have still been battling away at the bottom of the milk price cycle in 2016. Milk production for 2016 is forecast to be down, now estimated at 21.3 million metric tons (MMT), 1% drop from 2015. This is a result of less cows and slashed supplementary feed inputs, cushioned to some extent by higher than normal pasture growth in the first half of 2016. There is some light at the end of the tunnel. Dairy product prices at auction jumped 33% during the third quarter (Q3) of 2016. This has been enough for Fonterra (the largest dairy cooperative responsible for processing 84% of all milk) to boost its forecast milk price for the New Zealand farming financial year (FY) 2017 (June to May)[1] by 22% over FY2016. That will probably not be enough to stimulate a milk supply increase. Milk production for 2017 is forecast at 21.2 MMT, 1% below 2016.

Total dairy production in 2016 is forecast at 3.03 MMT, 1% down on 2015. Of that, whole milk powder (WMP) comprises 1.33 MMT, 4% down; skim milk powder (SMP) at 400,000 MT down 2%; butter and anhydrous milk fat (AMF) stable at 600,000 MT; and cheese up 1% at 360,000 MT.

For 2017, the milk supply reduction and a small shift in emphasis to the more concentrated products means total product production is forecast at 2.99 MMT; down 1% from 2016. Year-on-year over 2016: WMP is forecast marginally down at 1.32 MMT; SMP will be down 5% at 380,000 MT; butter and AMF 590,000 MT will be down 2%; and cheese will hold steady at 360,000 MT.

Exports have been surprisingly strong despite the reduced milk supply. Total exports in 2016, including liquid milk (forecast up an impressive 55%), are forecast to be up 4% at 3.27 MMT as stocks are reduced by approximately 44,000 MT to achieve the volume forecast. WMP at 1.32 MMT is forecast to be 5% down but SMP, butter/AMF, and cheese are all forecast up between 4% to 6%.



Source: Post Estimates, DairyNZ

Looking forward to 2017 total exports at 3.24 MMT are forecast to drop back 1%. WMP at 1.31 MMT down just 1%, SMP down 11% at 385,000 MT, and cheese back 6% at 323,000 MT. On a positive note liquid milk is forecast up again to 300,000 MT (13%); whey products and IMF up 11% and 9% respectively.

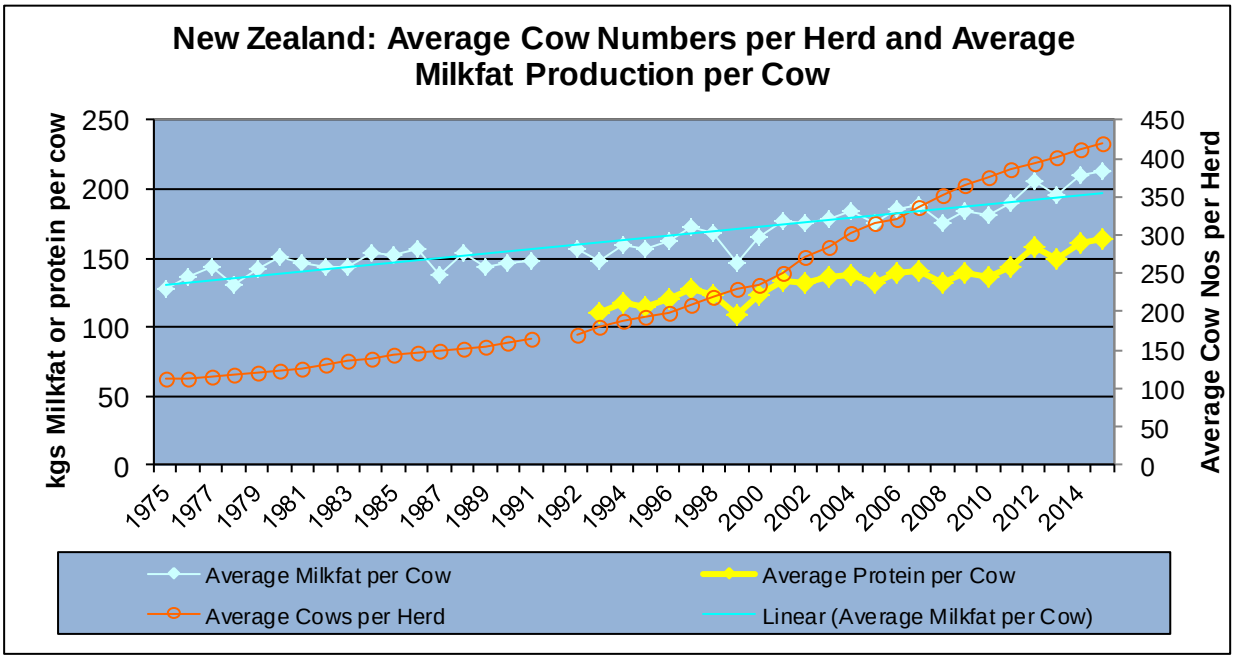
1/ Note: The GAIN Dairy Marketing Year (MY) is the same as the calendar year (CY), January 1 to December 31. In the report "2016" is used which means the marketing year (MY2016) and the calendar year (CY2016). The reference to Financial Year (FY) refers to the New Zealand farming financial year which is June1, to May 31 so FY2016 refers to the period June 1, 2015 to May 31, 2016.

Milk Supply

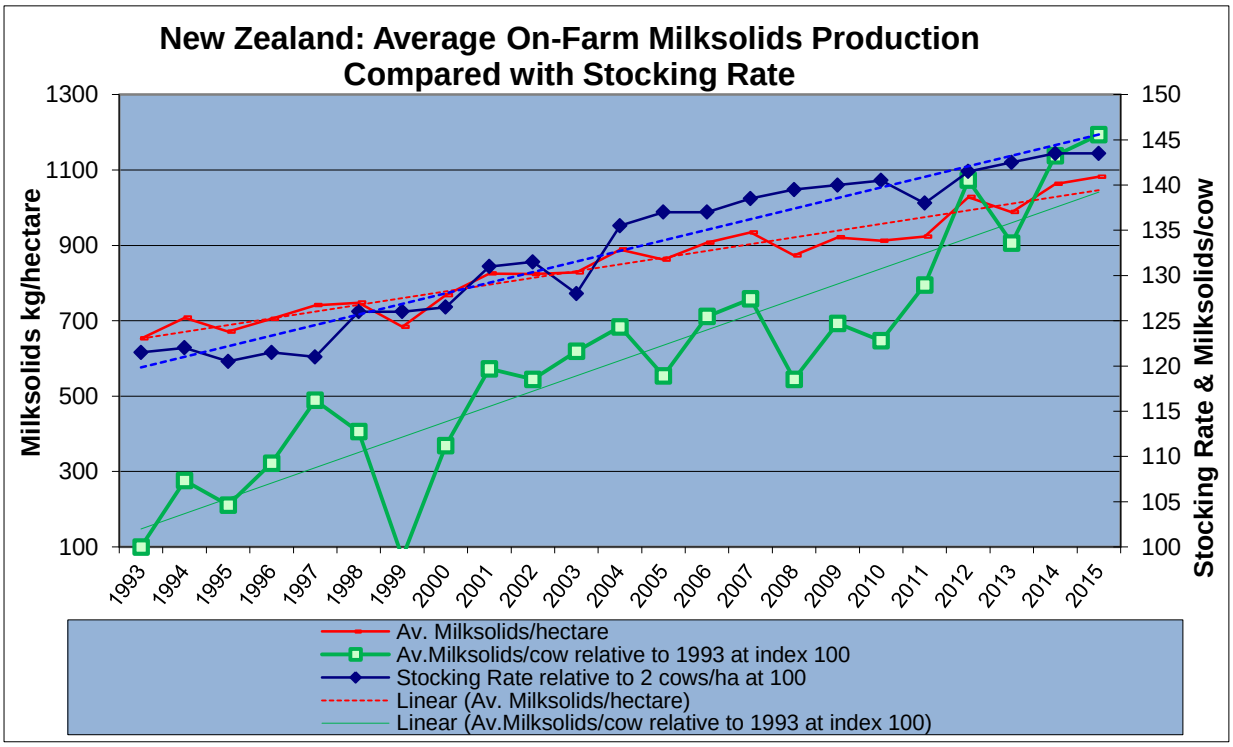
2016

By the end of September the New Zealand dairy herd is through calving and spring is under way. However fewer cows are being milked and the grey overcast days and cooler than average temperatures are taking their toll on 2016 third quarter (Q3) milk production. Now total 2016 production is estimated at 21.3 MMT of milk. This is 1.3% below 2015 but 1.9% better than had been forecast last April based on the following dynamics:

- Sufficient rainfall generally nationwide from February through April 2016 boosted pasture production above expectations and resulted in better milk production for the first half of the year.
- Based on the latest industry information, cow numbers in the FY2016 (June to May) production season had not been reduced as much as had been previously estimated. The actual numbers of cows in milk for 2015 was 5.06 million head, 1% greater than previously estimated. For 2016, Post is now estimating the number at 4.95 million head versus 4.93 million. This is still a 2% reduction from 2015.
- Owing to the low milk price, farmers are using significantly less supplementary feed: Palm Kernel Extract use (imported from Indonesia and Malaysia) is down 36%; maize (corn) silage use is down 12%; and grain imports are down 27%.
- September and October pasture production in the North Island has a lower dry matter proportion than normal because of the cool overcast days, which is constraining per cow milk production.



Source: DairyNZ



Source: DairyNZ

2017

Cow numbers are expected to stabilize at 4.9 million head (1% down from 2016). Now that the milk price signals are more positive it is forecast that 2017 will be the bottom of the trough in terms of production. At 21.2 MMT of milk, production will be just 0.6% below 2016. The factors at play are:

- Cow numbers will be an estimated 50,000 head less than in 2016, which is typically negative for milk production. Farmers, however, will have culled their worst performers and will now be able to feed the resulting smaller herds better, as long as the total feed supply (pasture plus supplements) supply remains the same.

- Most farmers have endured one to two years of financial losses primarily funded by increased bank debt. As profitability returns, repaying some of this debt will take priority over investments to increase production (i.e. extra cows or significantly increased supplementary feeding).

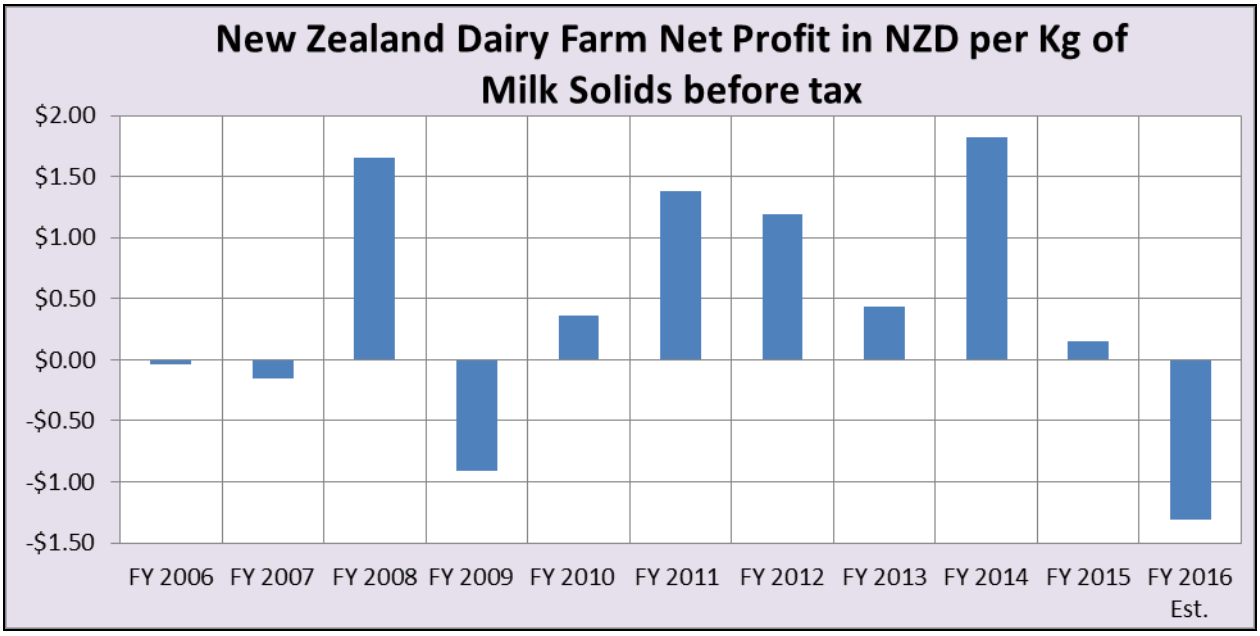
- Farmers will be concentrating on pasture management to maximize pasture growth and utilization. Increased use of nitrogen fertilizers to boost growth is one key aspect of this strategy.

- However some extra supplement may be used if the milk price signals indicate a margin over cost and if widespread drought conditions significantly reduce pasture production in Q1 and Q2 of 2017.

- It is expected that first half (H1) 2017 milk production will not be as strong as 2016 with less cows and normal pasture growth conditions.
- For second half (H2) 2017, five year averages for daily per head milk production have been used to estimate production based on 4.9 million cows.

Dairy Farm Profitability

The New Zealand farming financial year (FY) for 2016 (June 1, 2015 to May 31, 2016) for dairy farmers is proving to have been the worst financial outcome since FY2003. On average it is estimated farmers will have an overall financial loss equivalent to NZ$1.31 (USD0.96) per kilogram (kg) of milk solids (MS) produced. The average herd now produces 157,000 kgs of MS per year, so the average loss would in the vicinity of NZ$196,000 (USD 143,000).



Source: DairyNZ, Post Estimates

However there is now light at the end of the tunnel. The Global Dairy Trade (GDT) auction price index has risen 33% during Q3 2016. This has been enough to get the Fonterra milk price forecast for the FY2017 up 22% over FY2016. This will have the effect of pushing most farms back to a small profit or break-even situation.

New Zealand: Profitability of Dairy Farming (NZ Dollars per kilogram of milk solids)										
Key Indicator Category	**FY 2007**	**FY 2008**	**FY 2009**	**FY 2010**	**FY 2011**	**FY 2012**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016 Est.**
Milk Sales	4.12	7.35	5.20	6.16	7.36	6.69	6.33	7.69	5.76	3.90
Livestock Sales & Sundry Inc.	0.31	0.45	0.45	0.37	0.44	0.40	0.44	0.42	0.56	0.50
Change in Value Livestock	0.16	0.15	0.02	0.00	0.07	0.14	0.08	0.16	0.02	0.05
Total Gross Income	**4.59**	**7.95**	**5.67**	**6.53**	**7.87**	**7.23**	**6.85**	**8.27**	**6.34**	**4.45**
Farm Working Expenses	3.63	4.91	4.88	4.51	4.95	4.73	5.03	5.17	4.94	4.42
Operating Profit	**0.96**	**3.04**	**0.79**	**2.02**	**2.92**	**2.50**	**1.82**	**3.10**	**1.40**	**0.03**
Debt Servicing	1.01	1.30	1.58	1.51	1.39	1.18	1.23	1.13	1.10	1.20
Rent	0.10	0.09	0.12	0.15	0.15	0.13	0.16	0.15	0.15	0.14
Net Profit	**0.15**	**1.65**	**0.91**	**0.36**	**1.38**	**1.19**	**0.43**	**1.82**	**0.15**	**1.31**
Term Debt per kg MS	14.86	18.73	19.91	21.65	20.44	19.24	20.82	20.14	20.80	22.00

Note: (1) Sources are DairyNZ Economics Group Economic Survey; Dairy NZ and Post Estimates
(2) Farm working expenses include: depreciation; wages of management to the owner either real or adjusted; and other adjustments to standardize accounts
(3) Data has been collected from a sample of owner operated farms.

Longer Term Milk Production Outlook

Over the next two to five years milk production growth should maintain a trend of between 1% and 2% per annum increases. This is a level that could be sustained by the existing cow numbers and land area based on productivity increases resulting from: ongoing genetic gain; increased on-farm pasture/feed production and utilization; on-going efficiencies being introduced gradually over the whole sector. It is likely to take two to three years before national milk production gets back to the levels achieved back in 2014. The headwinds pushing back at dairy expansion are:

- Environmental limits on phosphate, nitrate, and sediment leaching into waterways and aquifers are being implemented and will get progressively more restrictive over the next five years. For example, in the Waikato area (approximately 25% of New Zealand's milk supply) new rules just coming into effect could effectively put a stop to land use conversions to dairy. The Waikato region changes are particularly severe, but all territorial authorities are bringing in limits on discharges to water.

- Urban and horticulture encroachment. In the North Island, land-use change to housing/industrial use and for intensive horticulture away from dairying is a factor. In the medium term, it is likely that this loss of land will only just be balanced by dairy conversions in the South Island.

- At the moment there is not the confidence in the sector that the future financial returns for dairy would make conversions of sheep/beef or arable properties to dairy feasible.

There are positives that give some cause for optimism:

- Farmers have restructured their businesses over the last two years during the downturn to achieve lower costs. This means they will return to profitability quicker as the milk price rises.
- The sector continues to innovate at all levels of the production chain. Over the longer term the sector will develop solutions to the environmental issues and continue to increase productivity.

PSD Milk

Dairy, Milk, Fluid (1000HD, 1000MT)	2015 Market Year Begin: Jan 2015		2016 Market Year Begin: Jan 2016		2017 Market Year Begin: Jan 2017	
New Zealand	Official	New Post	Official	New Post	Official	New Post
Cows In Milk	5003	5056	4928	4950		4900
Cows Milk Production	21582	21582	21150	21308		21173
Other Milk Production	0	0	0	0		0
Total Production	21582	21582	21150	21308		21173
Other Imports	2	2	2	2		2
Total Imports	2	2	2	2		2
Total Supply	21584	21584	21152	21310		21175
Other Exports	171	171	210	265		300
Total Exports	171	171	210	265		300
Fluid Use Dom. Consum.	497	497	497	497		500
Factory Use Consum.	20866	20866	20395	20498		20325
Feed Use Dom. Consum.	50	50	50	50		50
Total Dom. Consumption	21413	21413	20942	21045		20875
Total Distribution	21584	21584	21152	21310		21175
CY Imp. from U.S.	0	0	0	0		0
CY. Exp. to U.S.	0	0	0	0		0
TS=TD	0	0	0	0		0

Not official USDA estimates

Dairy Production and Inventories

Dairy Production at a Glance

New Zealand Summary Table for Estimated Dairy Production					
Commodity Group	2015	2016		2017	
(1000s Metric Tons)	Firm Estimate	Estimate	% change from prev. year	New Forecast	% change from prev. year
WMP	1,380	1,325	-4.0%	1,320	-0.4%
SMP	410	400	-2.4%	380	-5.0%
Butter/AMF	600	600	0.0%	590	-1.7%
Cheese	355	360	1.4%	360	0.0%
Sub-Total PSD Commodities	2,745	2,685	-2.2%	2,650	-1.3%
Casein & Caseinates	109	100	-8.3%	95	-5.0%
Whey Products	32	45	40.6%	50	11.1%
Milk Protein Concentrates	81	85	4.9%	85	0.0%
Other Products	56	56	0.0%	58	3.6%
Infant Milk Formula	34	55	61.8%	60	9.1%
Subtotal Rest of Dairy	312	341	9.3%	348	2.1%
Total Production	3,057	3,026	-1.0%	2,998	-0.9%

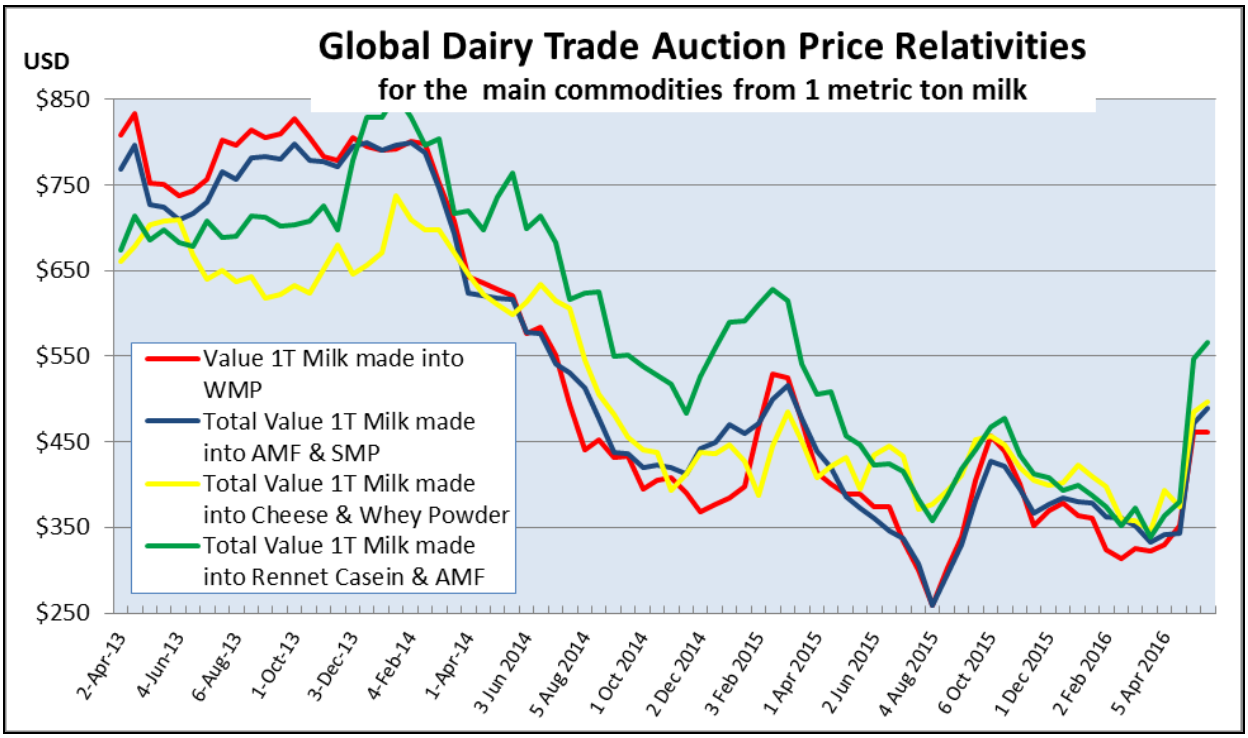
Source: Post estimates Note: Butter/AMF line has the AMF adjusted to butter equivalents

Total dairy production is declining in line with milk production reductions.

General Overview

The dairy industry is hoping it has now seen the bottom of this dairy price cycle during Q2 2016, and the upturn in dairy markets since June 2016 is the sign of a more sustained trend to higher prices than the October 2015 price upswing. The long-term three year dairy price cycle seems to be persisting. However the peak in this new cycle is likely to be a lot lower than the previous three. The peak in the last cycle was extremely high, driven by the extraordinary demand from China (a combination of rapidly growing consumer demand, especially for perceived higher quality imported dairy products, and a severe domestic milk production decline during 2013). This dynamic is no longer present, and the lack of Russian demand--coupled with a surge in milk supply from the E.U. following the removal of production quotas--will dampen down potential price increases.

With a lower peak milk supply in 2016 than either in 2014 or 2015 and additional processing capacity now commissioned, the processors have better flexibility over the product mix during the peak production months of October through December. Based on returns per ton of milk comparisons during 2016, there is still a premium above WMP for the product streams where the fat component is separated off. So casein and AMF along with SMP and AMF are favored. In addition, cheese prices have continued to trade at over a US$500/MT premium to WMP, favoring the manufacturing of cheese.



Source: GDT, GTA, Post estimates

That said it still must be remembered that over 60% of New Zealand's manufacturing capacity is tied up in milk powder driers. In addition, processing costs for WMP are materially lower than the other product streams.

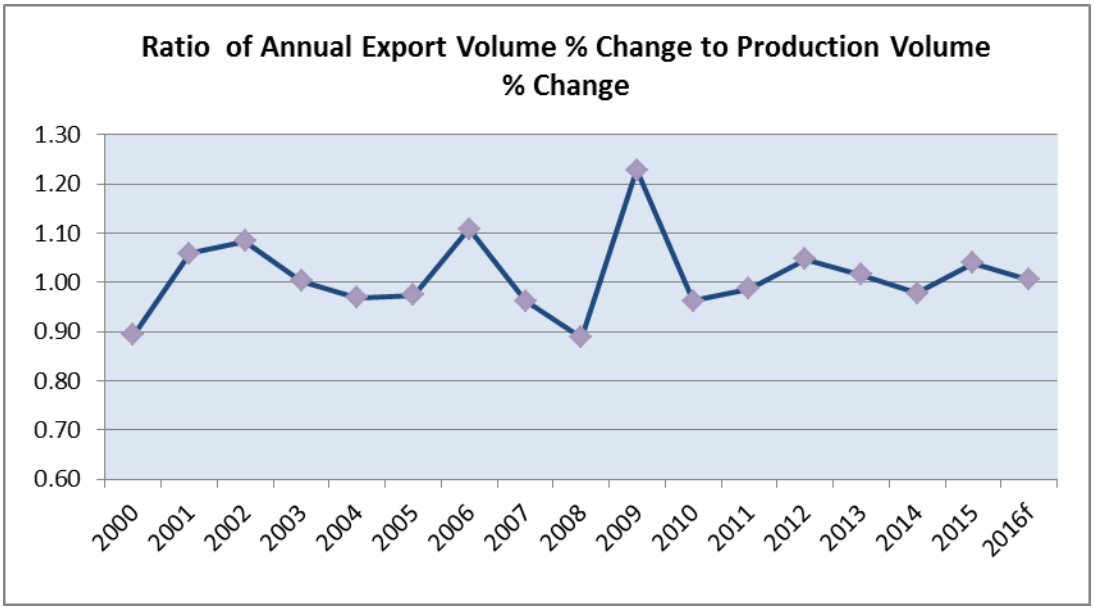
Looking forward to 2017--if general price increases observed in Q3 2016 persist into 2017--then the pricing relativities will favor a continuation of the present product mix. WMP production will be stable; fat component separation will again be emphasized; along with cheese production.

It is now becoming increasingly evident that the New Zealand dairy processing sector is moving rapidly to diversify away from the traditional commodity products of bulk powders, fats, and cheddar cheeses. While New Zealand has done very well from the commodity trade (especially with WMP) from early in the 2000's through to 2014, it is becoming critical that a significant quantity of the milk supply is put into higher value specialized ingredients or consumer ready products. While it is difficult to detect how well this change is going just by analyzing export data, it is hard to miss the fact that most of the new processing capacity built over the last eighteen months has been for the manufacture of IMF or nutritional powders; food service ingredients; and UHT liquid milks and creams.

With the addition of Chinese investment into two new nutritional driers, plus investments by Westland Dairy Cooperative and Synlait Dairy Company, IMF/nutritional powder production capacity has more than doubled if not tripled. Potential capacity is now probably close to 200,000 MT per annum. Eventually most of this capacity will be aimed at exports to China.

A Guide to Inventory levels

It is now estimated that the ending stock levels of the main commodities WMP, SMP, AMF/butter, and cheese increased during 2015 to reach 430,000 MT, which is 38,000 MT greater than had been earlier estimated. This goes against the chart below, which suggests that ratio of export change in 2015 over the production change was 1.04, which suggests export growth was leading production growth and stocks would be run down to some extent. In order to maintain the export pace, which 2016 year-to-date trade data supports, inventories will be run back down again during 2016 to an estimated 386,000 MT. It is forecast that by the end of 2017 inventories will be similar to the start of the year.



Source: PSD milk supply estimates, DCANZ data on milk supply, GTA export data

Whole Milk Powder (WMP)

For 2016 WMP, production is now estimated at 1.33 MMT, which is 4% below 2015 and 2% below the previous revision. Because close to 100% of WMP manufacture is exported, exports are a good proxy for production plus/minus inventory changes. This revised estimate is based on: year-to-date export results; unfavorable relative prices for WMP; and the declining milk supply.

For 2017, WMP production is forecast to be relatively stable at 1.32 MMT just over 0.4% down on 2016. A slight decline in milk production, and similar price relativities for the other product streams persisting into the first half of 2017, are driving Post's forecast for WMP production. However industry sources suggest that global tradable surpluses of milk may well reduce in 2017, which should reduce supplies of WMP later in the year. This would support firmer prices and in turn make WMP manufacture relatively better value then.

Interestingly at the peak of WMP prices in 2014, WMP accounted for 48% of total production and then 45% in 2015. For 2016 and 2017, the proportion is estimated at 44%, which is only slightly lower than peak levels. The manufacturing cost for New Zealand WMP is usually lower than other dairy products

and it is highly competitive on global markets. Consequently, WMP remains the cornerstone product for the New Zealand dairy industry and will likely continue to be for at least the next five years.

PSD

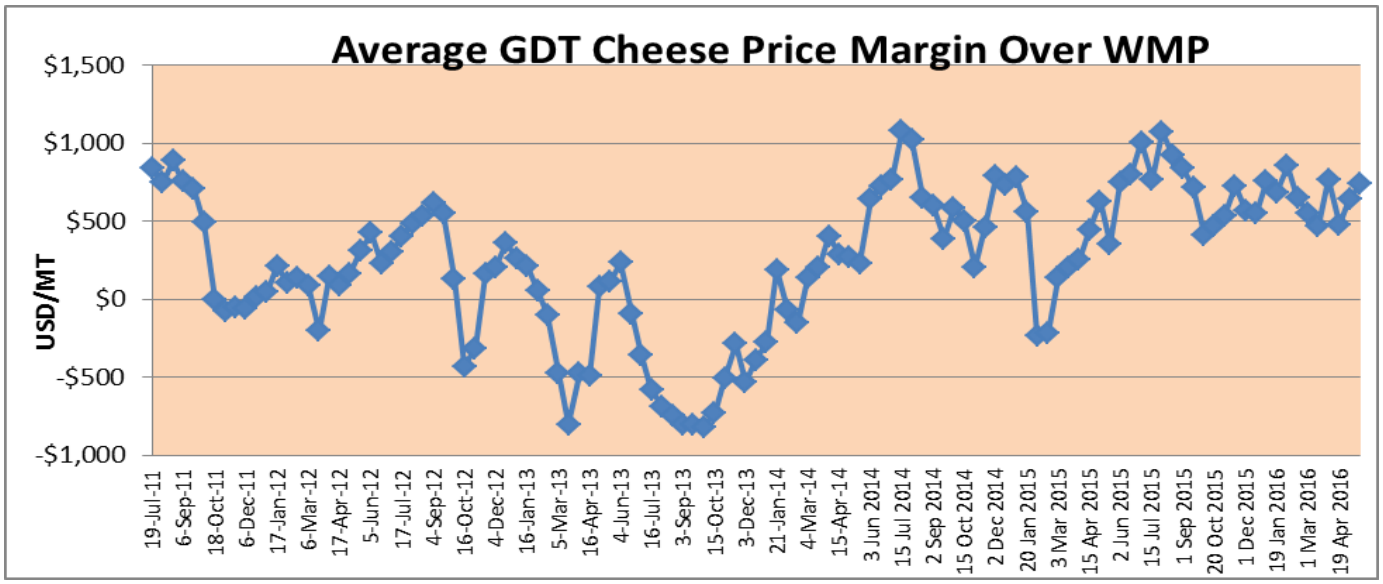
Dairy, Dry	2015		2016		2017	
Whole Milk Powder	Market Year Begin: Jan 2015		Market Year Begin: Jan 2016		Market Year Begin: Jan 2017	
New Zealand (1000MT)	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	180	180	179	169		165
Production	1,390	1,380	1,370	1,325		1,320
Other Imports	7	7	5	5		5
Total Imports	7	7	5	5		5
Total Supply	1,577	1,567	1,554	1,499		1,490
Other Exports	1,380	1,380	1,360	1,315		1,305
Total Exports	1,380	1,380	1,360	1,315		1,305
Human Dom. Cons.	3	3	4	4		4
Other Use, Losses	15	15	15	15		15
Total Dom. Cons.	18	18	19	19		19
Total Use	1,398	1,398	1,379	1,334		1,324
Ending Stocks	179	169	175	165		171
Total Distribution	1,577	1,567	1,554	1,499		1,495
CY Imp. from U.S.	0	0	0	0		0
CY. Exp. to U.S.	0	3	0	2		2
TS=TD	0	0	0	0		5

Not official USDA estimates

Cheese

Judging by the pace of exports so far in 2016, cheese production is now estimated at 360,000 MT for 2016, up 5,000 MT or 1.4%. In order to maintain this pace of exporting, Post forecasts that inventories will be drawn down by 18% by the end of the year. The margin GDT cheese prices have enjoyed over GDT WMP has been consistently greater than USD500 during 2016, the level at which rule of thumb suggests cheese manufacture is more profitable than WMP production. However, the most lucrative markets for New Zealand are limited either by quota restrictions or high entry tariffs.

For 2017, production is forecast to remain at 360,000 MT leading to a build-up of stocks. Cheese production is continuing to diversify to fresh cheese products such as cream and cottage cheeses; fast manufacture mozzarella; and added value to natural cheeses by producing slice on slice or ready grated formats.



Source: GDT Auction data

PSD

Dairy, Cheese New Zealand	2015		2016		2017	
	Market Year Begin: Jan 2015		Market Year Begin: Jan 2016		Market Year Begin: Jan 2017	
(1000 MT)	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	64	64	60	65		53
Production	355	355	350	360		360
Other Imports	8	8	8	8		8
Total Imports	8	8	8	8		8
Total Supply	427	427	418	433		421
Other Exports	327	327	330	345		323
Total Exports	327	327	330	345		323
Human Dom. Cons.	40	35	40	35		35
Other Use, Losses	0	0	0	0		0
Total Dom. Cons.	40	35	40	35		35
Total Use	367	362	370	380		358
Ending Stocks	60	65	48	53		63
Total Distribution	427	427	418	433		421
CY Imp. from U.S.	0	1	0	1		1
CY. Exp. to U.S.	0	17	0	19		18
TS=TD	0	0	0	0		0

Not official USDA estimates

Skim Milk Powder (SMP)

In 2016, SMP production is likely to stabilize at 400,000 MT, 2% below a 2015 figure of 410,000 MT. With the EU sitting on a large inventory of SMP and international prices at cyclical lows for most of 2016, it seems paradoxical that New Zealand would be producing more SMP. However, during 2016

the SMP/AMF product stream has been relatively more attractive than WMP, and the pace of SMP exporting during 2016 suggests processors have favored that product mix.

As milk production declines going into 2017, Post forecasts that SMP production will follow suit and record a 5% reduction to 380,000 MT. While the SMP/AMF product stream has shown better value during 2016, it is expected that WMP prices will recover more strongly in 2017 and WMP will be produced in preference to the SMP/AMF stream.

PSD

Dairy, Milk, Nonfat Dry	2015		2016		2017	
New Zealand	Market Year Begin: Jan 2015		Market Year Begin: Jan 2016		Market Year Begin: Jan 2017	
(1000 MT)	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	113	113	90	110		78
Production	390	410	380	400		380
Other Imports	5	5	4	5		5
Total Imports	5	5	4	5		5
Total Supply	508	528	474	515		463
Other Exports	411	411	415	430		385
Total Exports	411	411	415	430		385
Human Dom. Cons.	7	7	7	7		7
Other Use, Losses	0	0	0	0		0
Total Dom. Cons.	7	7	7	7		7
Total Use	418	418	422	437		392
Ending Stocks	90	110	52	78		71
Total Distribution	508	528	474	515		463
CY Imp. from U.S.	0	0	0	0		0
CY. Exp. to U.S.	0	0	0	0		0
TS=TD	0	0	0	0		0

Not official USDA estimates

Butter and Anhydrous Milk fat (AMF)

For 2016, production of butter and AMF is now estimated at 600,000 MT (butter equivalents), 5% up on the previous revision. International AMF prices have strengthened relative to WMP and SMP during 2016. It is the fat side of the SMP/AMF or Casein/AMF product streams, which is giving these streams the comparative value advantage over WMP. Year-to-date exports are 6% ahead of the prior year comparable period. Exports usually take off more than 90% of production, so the rate of export growth is a reasonable guide to production trend. Butter and AMF production in 2015 has been revised up by 4% to 600,000 MT to account for an estimated increase in inventory.

Looking ahead to 2017, butter and AMF production is forecast at 590,000 MT, down 1.7% generally in line with the milk production reduction.

PSD

Dairy, Butter New Zealand	2015		2016		2017	
	Market Year Begin: Jan 2015		Market Year Begin: Jan 2016		Market Year Begin: Jan 2017	
(1000 MT)	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Beginning Stocks	57	57	63	86		90
Production	575	600	570	600		590
Other Imports	1	1	1	1		1
Total Imports	1	1	1	1		1
Total Supply	633	658	634	687		681
Other Exports	548	548	550	570		575
Total Exports	548	548	550	570		575
Domestic Cons.	22	24	22	27		27
Total Use	570	572	572	597		602
Ending Stocks	63	86	62	90		79
Total Distribution	633	658	634	687		681
CY Imp. from U.S.	0	0	0	0		0
CY. Exp. to U.S.	0	20	0	15		17
TS=TD	0	0	0	0		0

Note AMF product weight tonnages are multiplied by 1.22 to get butter equivalents; not official USDA estimates

Dairy Exports

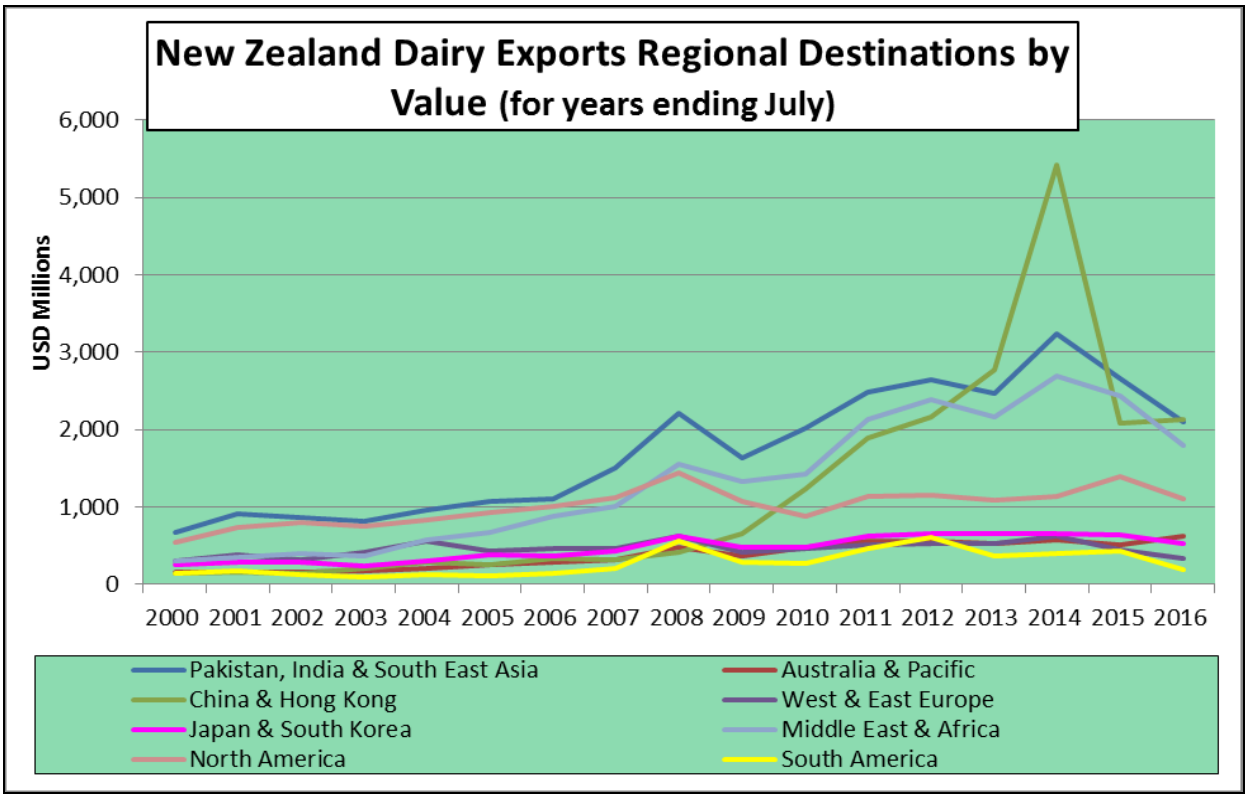
Dairy Exports at a Glance

New Zealand Summary Table for Dairy Product Export Quantities					
Commodity Group	**2015**	**2016**		**2017**	
(1000s Metric Tons)	**Actual**	**Estimated**	**% change from prev. year**	**New Forecast**	**% change from prev. year**
WMP	**1,380**	**1,315**	-4.7%	**1,305**	-0.8%
SMP	**411**	**430**	4.6%	**385**	-10.5%
Butter/AMF	**548**	**570**	4.0%	**575**	0.9%
Cheese	**327**	**345**	5.5%	**323**	-6.4%
Liquid Milk	**171**	**265**	55.0%	**300**	13.2%
Sub-Total PSD Exports	**2,837**	**2,925**	3.1%	**2,888**	-1.3%
Casein	**109**	**100**	-8.3%	**95**	-5.0%
Whey Products	**32**	**45**	40.6%	**50**	11.1%
Milk Protein Concentrates	**81**	**85**	4.9%	**85**	0.0%
Other Products	**56**	**56**	0.0%	**58**	3.6%
Infant Milk Formula	**34**	**55**	61.8%	**60**	9.1%
Total Exports	**3,149**	**3,266**	**3.7%**	**3,236**	**-0.9%**

Source: GTA, Post estimates. Note: Butter/AMF line has the AMF adjusted to butter equivalents

General Comments on Exports

In general, because domestic consumption is such a small proportion of production (only 3% to 4%) exports follow the same trends as production. This is only complicated in a minor way by inventory changes.



Source: GTA

The chart above shows the rapid diversification away from the developed world into Asia and the Middle East/Africa by New Zealand exporters as New Zealand's milk production and volume of exports increased. The unprecedented surge in exports to China from mid-2013 through into 2014 is now looking like a one-off occurrence. While demand by Chinese consumers is expanding, it was the sudden deep drop in China's domestic milk supply and preference, if possible, for imported dairy products, which drove the unheralded spike in demand for imports during mid-2013 through into 2014.

Whole Milk Powder

Exports of WMP in 2016 are now forecast to be 1.32 MMT, 5% less than 2015 and a 2% downward revision from the last forecast. This is based on reduced production volumes led by the reduced price competitiveness relative to the other product streams and reduced milk supply. Post is forecasting WMP exports to bottom out in 2017 at 1.31 MMT less than a 1% reduction, but for all intents and purposes stable against 2016.

New Zealand Export Statistics for Whole Milk Powder									
Calendar Year: 2013 – 2015									
Partner Country	2013			2014			2015		
	Value millions USD	Quantity (metric tons)	FOB Price USD/T	Value millions USD	Quantity (metric tons)	FOB Price USD/T	Value millions USD	Quantity (metric tons)	FOB Price USD/T
China	2759.2	622,133	$4,435	2,563.9	587,631	$4,363	858.2	354,291	$2,422
United Arab Emirates	311.7	76,635	$4,067	488.3	112,579	$4,338	321.6	125,488	$2,563
Algeria	127.1	32,752	$3,882	356.4	95,030	$3,750	300.7	121,129	$2,482
Venezuela	307.6	67,312	$4,570	82.6	17,368	$4,757	212.5	47,286	$4,494
Malaysia	148.4	36,829	$4,030	239.9	59,448	$4,035	205.3	82,358	$2,493
Sri Lanka	171.8	45,339	$3,789	210.6	47,154	$4,466	139.2	57,764	$2,410
Vietnam	95.4	23,758	$4,014	137.1	33,571	$4,083	115.9	49,340	$2,350
Thailand	136.0	31,609	$4,302	169.5	38,799	$4,370	113.3	44,921	$2,523
Nigeria	115.4	27,123	$4,254	150.6	35,094	$4,293	113.3	43,644	$2,595
Saudi Arabia	112.3	27,548	$4,075	193.7	45,485	$4,259	108.3	45,073	$2,402
Rest of World	1255.7	300,422	$4,180	1,462.0	350,782	$4,168	1,033.1	409,120	$2,525
World Total	**5540.5**	**1,291,460**	**$4,290**	**6,054.8**	**1,422,941**	**$4,255**	**3,521.4**	**1,380,414**	**$2,551**

Source: GTA

New Zealand Export Statistics for Whole Milk Powder						
Year To Date: January - July						
Partner Country	2014		2015		2016	
	Quantity (metric tons)	Average FOB Price USD/T	Quantity (metric tons)	Average FOB Price USD/T	Quantity (metric tons)	Average FOB Price USD/T
China	405,762	$4,973	158,662	$2,556	194,422	$2,312
Algeria	39,515	$4,824	85,136	$2,660	73,405	$2,042
United Arab Emirates	67,242	$4,889	78,364	$2,739	61,077	$2,142
Sri Lanka	27,904	$4,967	30,528	$2,542	39,829	$2,231
Malaysia	25,922	$4,975	52,426	$2,641	30,182	$2,212
Thailand	24,748	$4,849	27,493	$2,713	29,597	$2,156
Bangladesh	17,875	$4,767	23,286	$2,604	28,478	$2,196
Egypt	13,718	$4,978	20,873	$2,505	27,008	$2,232

Saudi Arabia	25,984	$4,893	24,403	$2,609	24,719	$2,353
Nigeria	20,432	$5,047	29,524	$2,715	23,085	$2,355
Rest of World	174,477	$4,956	273,129	$3,005	237,317	$2,299
World Total	**843,579**	**$4,947**	**803,824**	**$2,755**	**769,119**	**$2,250**

Source: GTA

Cheese

Based on the pace of cheese exports to date, the volume exported in 2016 is now estimated at 345,000 MT and will surpass the 2015 total by 6%. For 2017, it is unlikely the previous year's export volume will be matched, and exports will reduce by 6% to be 323,000 MT. Inventories are likely to be built back up again to maintain maturation times.

While the natural cheddar cheese category volumes are up 7.6% year-to-date, some of this category is now being further processed to slice-on-slice or grated offerings for food service, especially in Asia to add value. The fresh cheese category, which includes the soft cream, cottage cheeses, and mozzarella, is showing high volume growth at 17.6% ahead for the year-to-date. The advantage of this category is the quick manufacture time needed; no significant maturation time; and the relatively better prices being achieved (13% ahead of cheddar). The majority of the volume in the fresh category is going into food service sales.

Exports to Japan consist mainly of natural cheddar cheese for industrial processing. Japanese importers have historically paid a premium above prevailing world prices to secure supply and ensure quality and product safety. This market has no tolerance for quality defects. Exports into Australia are mainly consumer cheese packs. For China, natural cheddar for industrial processing and fresh cheese for food service are the leading categories. Indonesia buys cheese for industrial processing and consumer ready packs. Other markets are split between consumer, food service and natural cheese for industrial processing categories. The growth markets are: China, Malaysia, Indonesia, and Philippines.

New Zealand Export Statistics for Cheese									
Calendar Year: 2013 – 2015									
Partner Country	2013			2014			2015		
	Value millions USD	Quantity (metric tons)	FOB Price USD/T	Value millions USD	Quantity (metric tons)	FOB Price USD/T	Value millions USD	Quantity (metric tons)	FOB Price USD/T
Japan	263.1	64,296	$4,092	260.3	57,515	$4,526	191.4	55,045	$3,477
Australia	166.5	37,661	$4,420	205.7	43,174	$4,764	185.0	51,294	$3,606
China	96.9	21,367	$4,533	141.1	28,923	$4,877	163.5	39,550	$4,135
United States	4.7	945	$5,002	27.0	6,926	$3,901	57.5	16,915	$3,397

Korea South	92.5	21,728	$4,259	56.8	12,110	$4,688	54.9	14,929	$3,680
Philippines	46.1	11,729	$3,935	51.4	12,335	$4,169	52.5	15,654	$3,355
Indonesia	44.6	11,036	$4,037	48.7	10,959	$4,442	48.0	14,122	$3,402
Saudi Arabia	46.1	11,775	$3,914	55.0	12,749	$4,311	41.6	12,122	$3,430
Malaysia	25.0	6,098	$4,092	30.4	6,750	$4,503	35.1	9,044	$3,882
Egypt	29.0	7,527	$3,852	38.7	8,876	$4,364	33.9	10,975	$3,085
Rest of World	342.6	82,724	$4,142	361.1	77,655	$4,650	301	87,120	$3,455
World Total	**1,157.0**	**276,886**	**$4,179**	**1,276.2**	**277,972**	**$4,591**	**1,164.4**	**326,770**	**$3,563**

Source: GTA

New Zealand Export Statistics for Cheese by Type							
Calendar Year: 2013 - 2015							
Commodity HS code	Description	2013		2014		2015	
		Quantity (metric tons)	FOB Price USD/T	Quantity (metric tons)	FOB Price USD/T	Quantity (metric tons)	FOB Price USD/T
040690	Cheese, Nesoi, Including Cheddar And Colby	174,406	$4,181	172,191	$4,625	208,804	$3,388
040610	Cheese (Unrpnd/Uncurd) Fresh Incl Whey Cheese Curd	51,683	$4,061	51,709	$4,333	57,333	$3,579
040620	Cheese Of All Kinds, Grated Or Powdered	29,359	$4,117	31,594	$4,625	37,238	$4,202
040630	Cheese, Processed, Not Grated Or Powdered	21,284	$4,439	22,331	$4,818	23,278	$4,032
040640	Cheese, Blue-Veined, Nesoi	155	$17,450	147	$13,975	118	$11,344
0406	**Total Cheese**	**276,886**	**$4,179**	**277,972**	**$4,591**	**326,770**	**$3,563**

	And Curd						

Source: GTA

New Zealand Cheese and Curd Export Statistics						
Year To Date: January - July						
Partner Country	**2014**		**2015**		**2016**	
	Quantity (metric tons)	**Average FOB Price USD/T**	**Quantity** (metric tons)	**Average FOB Price USD/T**	**Quantity** (metric tons)	**Average FOB Price USD/T**
Japan	30,101	$4,740	31,138	$3,597	38,184	$3,126
Australia	27,452	$4,985	29,917	$3,749	36,399	$3,190
China	15,326	$4,975	20,366	$4,300	26,496	$4,038
United States	674	$6,426	7,517	$3,232	11,053	$3,571
Korea South	5,925	$4,925	8,255	$3,987	11,088	$3,210
Philippines	6,778	$4,405	9,538	$3,399	10,375	$3,111
Indonesia	6,235	$4,570	8,679	$3,443	9,863	$3,038
Saudi Arabia	7,057	$4,591	8,726	$3,530	6,862	$3,023
Taiwan	4,620	$4,543	4,996	$3,728	5,279	$3,290
Malaysia	4,161	$4,641	4,922	$3,997	4,579	$3,762
Rest of the World	50,361	$4,795	55,761	$3,493	49,976	$3,057
World Total	**158,690**	**$4,800**	**189,815**	**$3,662**	**210,154**	**$3,273**

Source: GTA

New Zealand Export Statistics for Cheese by Type							
Year To Date: January - July							
HS Code	**Description**	**2014**		**2015**		**2016**	
		Quantity (metric tons)	**Av. FOB Price USD/T**	**Quantity** (metric tons)	**Av. FOB Price USD/T**	**Quantity** (metric tons)	**Av. FOB Price USD/T**
040690	Cheese, Nesoi, Including Cheddar And Colby	99,837	$4,896	124,972	$3,488	134,408	$3,026
040610	Cheese (Unrpnd/Uncurd) Frsh Incl Whey Cheese Curd	27,846	$4,469	31,404	$3,685	36,922	$3,431
040620	Cheese Of All Kinds, Grated Or Powdered	18,010	$4,644	20,011	$4,387	24,792	$4,066

040630	Cheese, Processed, Not Grated Or Powdered	12,907	$4,929	13,364	$4,113	13,973	$3,797
040640	Cheese, Blue-Veined, Nesoi	90	$14,467	65	$11,759	60	$10,374
0406	**Totals for all Cheese And Curd**	**158,690**	**$4,800**	**189,815**	**$3,662**	**210,154**	**$3,273**

Source: GTA

Skim Milk Powder (SMP)

SMP exports in 2016 are now forecast at 430,000 MT, which is a complete turnaround compared to the view on SMP exports six months ago. This revision is 13% greater than the previous estimate and is based on the pace of exports for the year-to-date. This level of exports seems more dependent on the relative strength of pricing for fat products, the other side of the SMP product stream, than the world prices for SMP. It is unlikely that this situation will continue into 2017 based on the assumption that WMP prices will rise relative to SMP prices. Further, given that the milk supply is expected to be reduced, Post forecasts SMP exports will be lowered to 385,000 MT (-10.5%) in 2017.

New Zealand Export Statistics for Skim Milk Powder									
Calendar Year: 2013 - 2015									
Partner Country	2013			2014			2015		
	Value USD mil.	Qty (MT)	Av. FOB Price/ MT	Value USD mil.	Qty (MT)	Av. FOB Price/ MT	Value USD mil.	Qty (MT)	Av. FOB Price/ MT
China	563.4	132,527	$4,251	465.7	114,949	$4,051	299.5	122,926	$2,437
Philippines	146.1	34,958	$4,179	130.7	30,591	$4,273	78.3	32,668	$2,397
Malaysia	151.5	36,106	$4,195	142.8	33,376	$4,280	76.0	31,272	$2,431
Singapore	92.4	23,575	$3,920	112.5	29,049	$3,873	73.4	35,266	$2,082
Thailand	64.6	15,816	$4,086	83.2	20,580	$4,044	58.6	25,838	$2,267
Indonesia	137.9	33,780	$4,083	116.3	26,918	$4,321	58.2	24,021	$2,421
Taiwan	62.6	14,841	$4,216	78.7	18,674	$4,215	49.7	20,655	$2,407
Saudi Arabia	42.5	10,112	$4,201	78.8	17,768	$4,432	33.6	14,738	$2,279
Vietnam	39.4	10,496	$3,753	29.9	7,901	$3,787	33.2	18,483	$1,798
Japan	28.7	7,251	$3,958	64.0	16,480	$3,883	26.9	10,473	$2,569
Rest of world	297.3	72506	$4,100	271.5	66,684	$4,072	173.8	74,976	$2,318
World Total	**1626.3**	**391,969**	**$4,149**	**1,574.2**	**382,970**	**$4,110**	**961.3**	**411,314**	**$2,337**

Source: GTA

New Zealand Skim Milk Powder Export Statistics
Year To Date: January - July

Partner Country	2014		2015		2016	
	Qty (MT)	Av. FOB Price/MT	Qty (MT)	Av. FOB Price/MT	Qty (MT)	Av. FOB Price/MT
China	64,861	$4,732	62,609	$2,627	59,780	$2,008
Malaysia	17,733	$4,912	18,924	$2,738	24,336	$1,902
Philippines	17,910	$4,842	20,261	$2,654	23,805	$1,938
Indonesia	14,944	$4,863	14,882	$2,678	18,329	$1,924
Thailand	9,182	$4,639	14,051	$2,623	15,713	$1,893
Singapore	14,177	$4,449	23,557	$2,231	14,983	$1,664
Saudi Arabia	12,943	$4,698	10,046	$2,454	11,379	$1,942
Taiwan	11,669	$4,730	12,975	$2,599	11,405	$1,880
Vietnam	2,622	$4,776	4,568	$2,634	11,772	$1,588
Algeria	2,394	$5,148	708	$2,396	9,128	$1,723
Rest of world	33,987	$4,846	46,060	$2,713	56,779	$1,974
World	**202,422**	**$4,765**	**228,641**	**$2,608**	**257,409**	**$1,913**

Source: GTA

Butter and Anhydrous Milkfat (AMF) Exports

Based on the favorable market outlook and the strength of the year-to-date exports for butter and especially AMF, exports in 2016 are estimated to total 570,000 MT (butter equivalents), which will be 4% greater than 2015. It is envisaged the favorable market conditions will persist into 2017 and fat exports will reach 575,000 MT (up 1%).

New Zealand Export Statistics For Butter, Anhydrous Milkfat, & Dairy Spreads						
Year To Date: January - July						
Partner Country	2014		2015		2016	
	Qty Product Weight (MT)	Av. FOB Price/MT	Qty Product Weight (MT)	Av. FOB Price/MT	Qty Product Weight (MT)	Av. FOB Price/MT
China	45,456	$4,607	29,746	$3,645	36,609	$3,448
Mexico	4,253	$4,836	10,755	$3,864	22,375	$3,453
Egypt	23,772	$4,575	27,874	$3,530	26,195	$2,756
Iran	23,799	$4,542	8,081	$3,279	24,103	$2,949
Philippines	13,278	$5,040	15,711	$3,838	15,931	$3,501
Saudi Arabia	14,430	$4,662	11,499	$3,648	16,169	$3,294
Australia	9,442	$4,455	11,164	$3,275	15,210	$3,155
Indonesia	9,275	$4,826	8,756	$3,535	10,950	$3,262
Malaysia	6,913	$4,865	7,441	$3,579	8,304	$3,271
Taiwan	8,272	$4,590	9,294	$3,511	8,185	$3,215
Rest of world	145,481	$4,618	134,583	$3,424	107,118	$3,192
World	**304,371**	**$4,637**	**274,904**	**$3,509**	**291,149**	**$3,211**

Source: GTA; Note: all quantities are by actual product weight

New Zealand Export Statistics For Butter, Anhydrous MilkFat, & Dairy Spreads									
Calendar Year: 2013 - 2015									
Partner Country	2013			2014			2015		
	Value USD mil.	Qty Product weight (MT)	Av. FOB Price/ MT	Value USD mil.	Qty Product weight (MT)	Av. FOB Price/ MT	Value USD mil.	Qty Product weight (MT)	Av. FOB Price/ MT
China	219.8	52,508	$4,186	290.3	67,905	$4,275	224.7	67,831	$3,312
Egypt	120.9	32,111	$3,765	142.8	34,556	$4,132	129.4	39,314	$3,292
Mexico	59.5	15,508	$3,835	51.4	12,541	$4,101	98.3	29,237	$3,363
Philippines	61.2	14,521	$4,218	98.8	21,449	$4,606	90.5	24,800	$3,649
United Arab Emirates	45.2	11,267	$4,009	62.1	14,633	$4,245	79.7	24,674	$3,232
Saudi Arabia	65.6	17,394	$3,769	112.5	27,153	$4,142	71.2	21,052	$3,381
Australia	72.7	18,675	$3,895	77.9	19,696	$3,955	60.9	19,328	$3,152
Azerbaijan	52.5	13,247	$3,966	90.8	21,876	$4,152	57.0	17,426	$3,272
United States	62.5	16,474	$3,792	106.1	25,880	$4,099	55.4	16,796	$3,296
Indonesia	63.2	14,993	$4,212	70.3	16,212	$4,338	54.2	16,388	$3,304
Rest of world	1,003	254,448	$3,943	1,045	247,978	$4,216	716	223,538	$3,202
World	**1,826.3**	**461,146**	**$3,960**	**2,148.5**	**509,879**	**$4,214**	**1,637.1**	**500,384**	**$3,272**

Source: GTA; Note: all quantities are by actual product weight

Other Products

Casein

The casein/AMF product stream has been relatively higher priced than WMP in the recent past, and during 2015 casein exports were boosted to 109,000 MT -- well above previous years when 85,000 MT was the norm. However, there is a limited market for casein. While the relative pricing differential remains, the 2016 year-to-date export volume is 1,300 MT behind 2015. For the whole of 2016, Post forecasts exports will be 100,000 MT, 8% down year-on-year. For 2017, it is envisaged there will be a further reduction of 5% to 95,000 MT as the milk supply is reduced and prices favor WMP production.

Liquid Milk

The export of UHT liquid milk and creams is becoming a significant diversification for many of the New Zealand dairy processors. While only 1.3% of the milk supply is being used, the volumes of exports forecast in 2016 at 265,000 MT of liquid milk are close to double the total exported only two years ago in 2014. The processing capacity now being commissioned and the relative profitability suggest that this increasing trend will continue. In 2017, Post forecasts that 300,000 MT of liquid UHT milk will be exported, and even this may be conservative judging by the present rate of increase.

Infant Formula/Nutritional Powders

At 38,406 MT, there has been a huge surge in IMF exports for 2016 year-to-date, 116% up on last year's volume to the same date. At present, Post forecasts IMF shipments will reach at least 55,000 MT in 2016 and 60,000 MT in 2017. Exports to Australia are up over four-fold at 18,586 MT for 2016 year-to-date compared with 3,318 MT for the prior-comparable-period. There may be couple of reasons for this: Fonterra may now be shipping base powder to further process at its plant at Darnum for re-export into Asia; and/or one of the multi-national dairy companies has rationalized its Australasian production back to New Zealand and is now exporting its needs for Australia from New Zealand.

Once the regulatory changes in the Chinese market are fully implemented and the IMF producers in New Zealand are fully compliant, it is likely there will be further significant increases in total worldwide exports up to a level of 150,000 MT to 200,000 MT annually. The regulations in China now demand that IMF is produced at pharmaceutical safety levels and the supply chain back to the original milk processor is owned and/or controlled by one entity. The number of brands each entity can use is also limited.

Milk Protein Concentrates (MPC)

MPC exports are forecast to reach 85,000 MT in 2016, 5% up on 2015, although this may be hampered by the recent collapse of a storage silo attached to the MPC facility at Fonterra's Edendale, South Island site. Post forecasts that the 2017 export total will be a minimum of 85,000 MT again. One of the strategies behind the new MPC plant at Edendale was to provide the by-product lactose, which is used in WMP manufacture to dilute the protein concentration back to specification.

Imports

Lactose

Imported lactose is used as an ingredient in WMP to standardize the protein content. As WMP produced has reduced, the need for as much lactose has also reduced. In 2016, Post forecasts 65,000 to 70,000 MT will be imported, which will be approximately 23% below 2015. The United States will supply an estimated 87% of this total.