Food & Beverage Information Project 2011
Sector Stream – Dairy

Final Report

October 2011; v1.21

www.foodandbeverage.govt.nz

Coriolis is a strategic management consulting and market research firm

We work with organisations to help them grow. For corporations, that often means developing strategies for revenue growth. For governments, it means working on national economic development. For non-profits, it means helping to grow their social impact.

We address all the problems that are involved in growth: strategy, marketing, pricing, innovation, new product development, new markets, organisation, leadership, economic competitiveness.

We bring to our clients specialised industry and functional expertise. We invest significant resources in building knowledge. We see it as our mission to bring this knowledge to our clients and we publish much of it for the benefit of others.

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However, we deliver results, not reports. To that end, we work side by side with our clients to create and implement practical solutions.

The Coriolis name

The coriolis force, named for French physicist Gaspard Coriolis (1792-1843), may be seen on a large scale in the movement of winds and ocean currents on the rotating earth. It dominates weather patterns, producing the counterclockwise flow observed around low-pressure zones in the Northern Hemisphere and the clockwise flow around such zones in the Southern Hemisphere. *To us it means understanding the big picture before you get into the details.*

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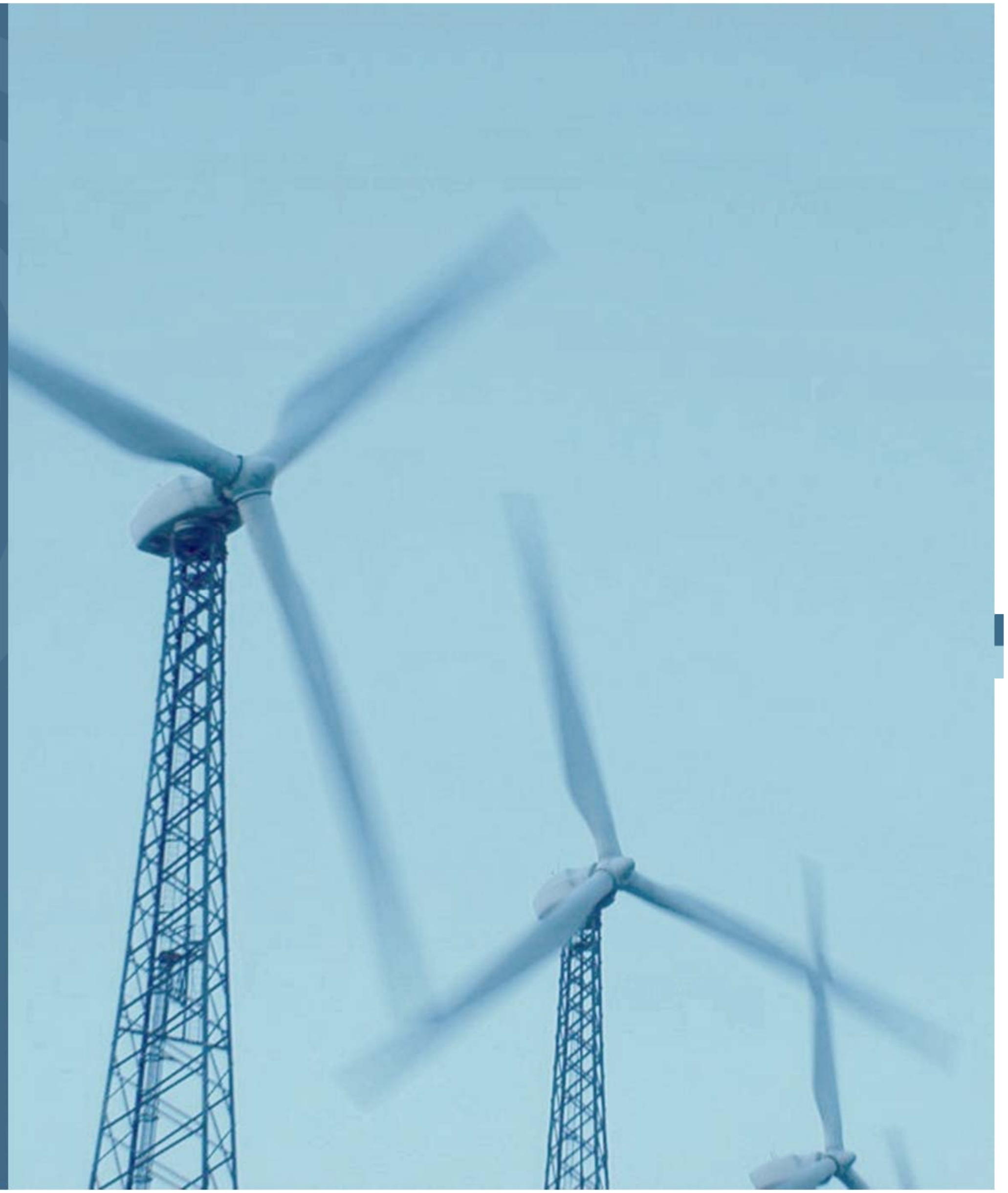

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The objective of this report is to provide a **factual** source of high quality **information** on the current situation in the New Zealand **dairy** sector for four audiences:

- **Investors** (domestic or international)
- **Industry** participants (firms & individuals)
- **Government** (across all roles and responsibilities)
- **Scientific researchers** (academic, government & firm)

It creates a common set of **facts** and **figures** on the current situation in the industry.

It draws conclusions on potential industry **strategic directions** and highlights **opportunities** for further **investment**.

It forms a part of the wider Food & Beverage Information Project and will be updated annually.

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GLOSSARY OF TERMS

This report uses the following acronyms and abbreviations

A$/AUD	Australian dollar
ABS	Absolute change
ANZSIC	AU/NZ Standard Industry Classification
AU	Australia
Australasia	Australia and New Zealand
b	Billion
CAGR	Compound Annual Growth Rate
C/S America	Central & South America (Latin America)
CRI	Crown Research Institute
CY	Calendar year (ending Dec 21)
E Asia	East Asia
EBITDA	Earnings before interest, tax, depreciation and amortization
FAO	Food and Agriculture Organisation of the UN
FY	Financial year (of firm in question)
£/GBP	British pounds
JV	Joint venture
m	Million
n/a	Not available/not applicable
NA/ME/CA	North Africa / Middle East / Central Asia
Nec/nes	Not elsewhere classified/not elsewhere specified
N.H	Northern Hemisphere
NZ	New Zealand
NZ$/NZD	New Zealand dollar
R&D	Research and Development
S Asia	South Asia (Indian Subcontinent)
SE Asia	South East Asia
S.H	Southern Hemisphere
SS Africa	Sub-Saharan Africa
T/O	Turnover
US/USA	United States of America
US$/USD	United States dollar
UK	United Kingdom
YE	Year ending
YTD	Year to date

Sources

AR	Annual report
Ce	Coriolis estimate
Ci	Coriolis interview
K	Kompass
Ke	Kompass estimate

METHODOLOGY & DATA SOURCES

Data was from a variety of sources, and has a number of identified limitations

- This report uses a range of information sources, both qualitative and quantitative.

- The numbers in this report come from multiple sources. While we believe the data are directionally correct, we recognise the limitations in what information is available.
  - In many cases different data sources disagree (e.g. Statistics New Zealand vs. FAO vs. UN Comtrade).
  - Many data sources incorporate estimates of industry experts.
  - As one example, in many cases, the value and/or volume recorded as exported by one country does not match the amount recorded as being received as imports by the counterparty [for understood reasons].

- In addition, in some places, we have made our own clearly noted estimates.

- Coriolis has not been asked to independently verify or audit the information or material provided to it by or on behalf of the Client or any of the data sources used in the project.
  - The information contained in the report and any commentary has been compiled from information and material supplied by third party sources and publicly available information which may (in part) be inaccurate or incomplete.
  - Coriolis makes no representation, warranty or guarantee, whether express or implied, as to the quality, accuracy, reliability, currency or completeness of the information provided in the report.

- All trade data analysed in all sections of the F&B Information project are calculated and displayed in US$. This is done for a range of reasons:
  1. It is the currency most used in international trade
  2. It allows for cross country comparisons (e.g. vs. Denmark)
  3. It removes the impact of NZD exchange rate variability
  4. It is more comprehensible to non-NZ audiences (e.g. foreign investors)
  5. It is the currency in which the United Nations collects and tabulates global trade data

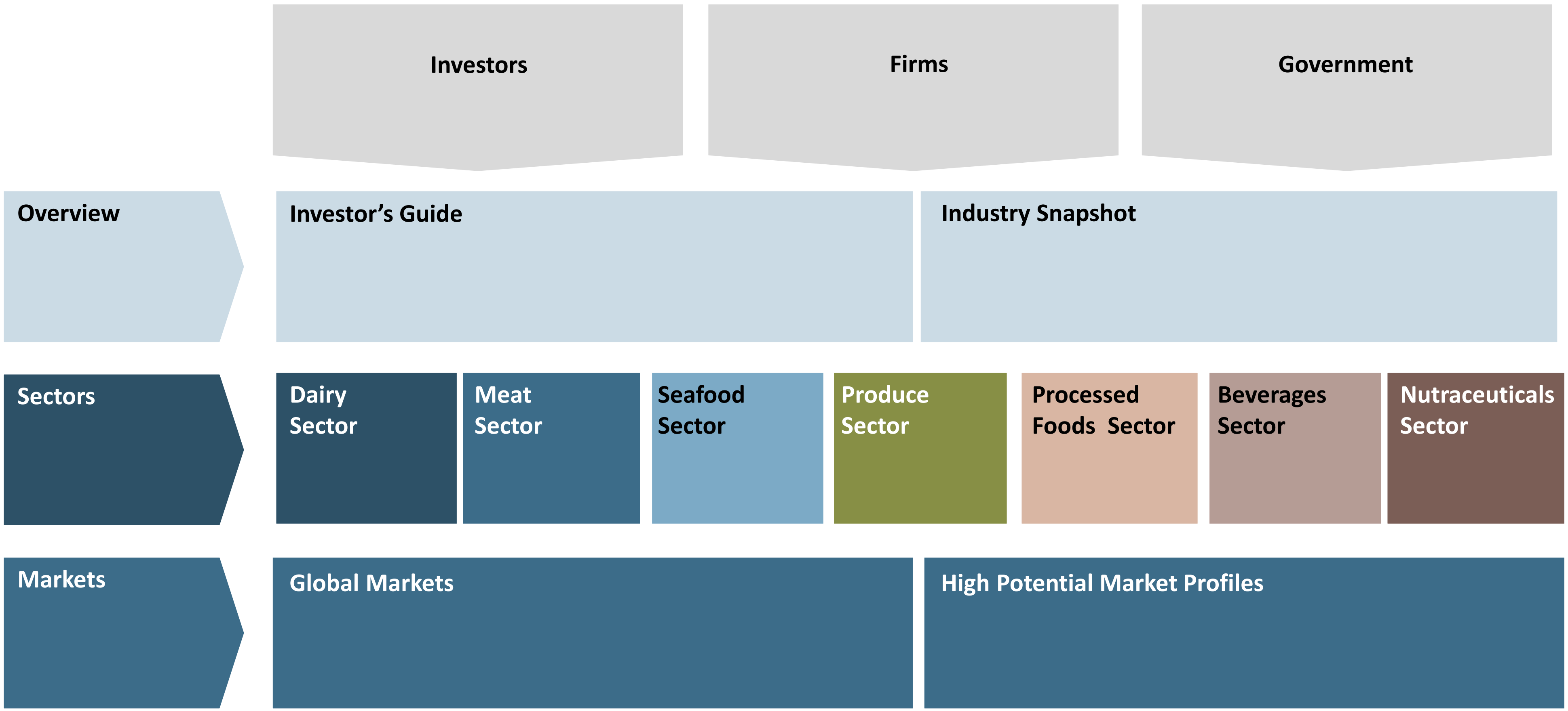
- The opinions expressed in this report represent those of the industry participants interviewed and the authors. These do not necessarily represent those of Coriolis Limited or the New Zealand Government.

- If you have any questions about the methodology, sources or accuracy of any part of this report, please contact Tim Morris, the report's lead author at Coriolis, on +64 9 623 1848

F&B INFORMATION PROJECT

The New Zealand Food & Beverage Information Project is designed to be the foundation of facts and figures on which a range of audiences can build

Structure of the New Zealand Food & Beverage Information Project
(2011)

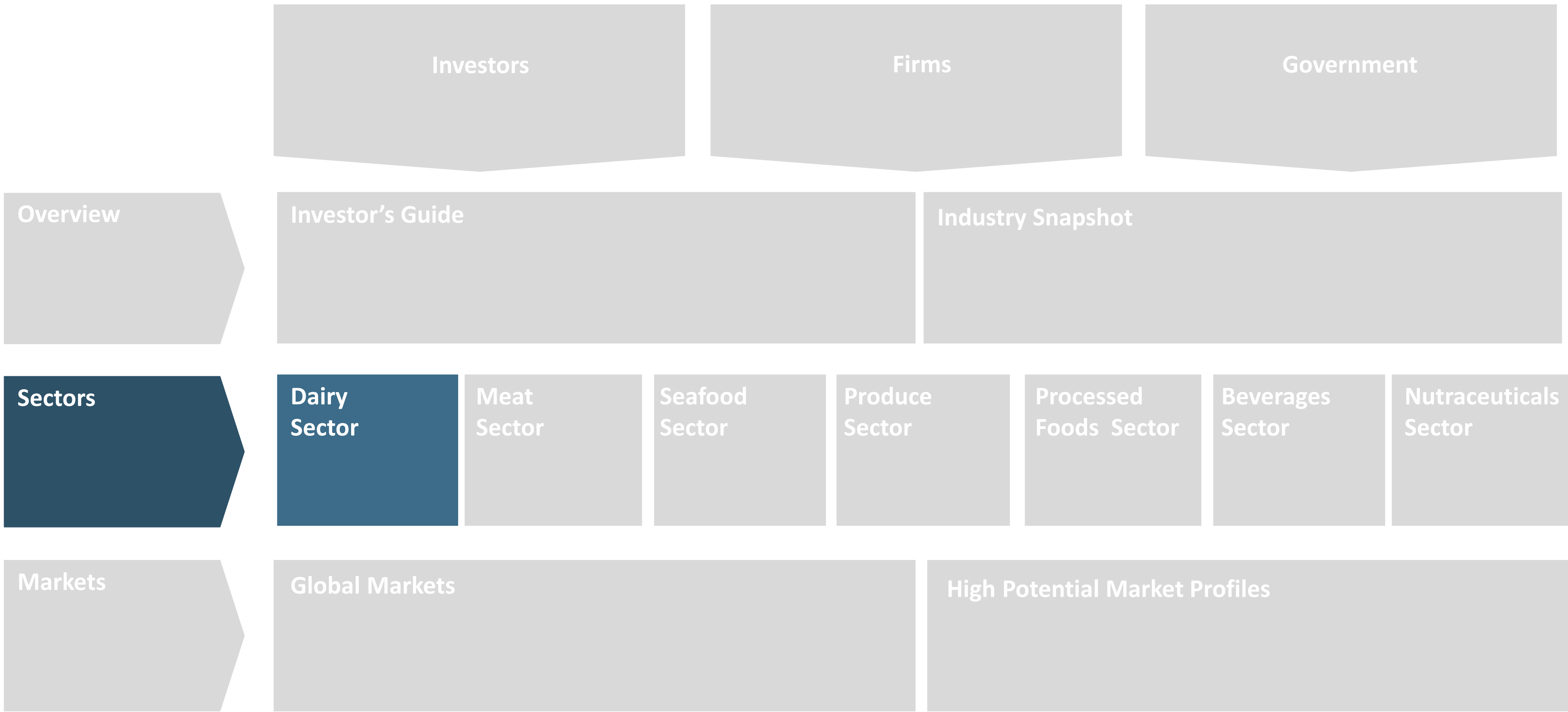


Note: Every year two subsectors are completed in more detail. Seafood and Nutraceuticals in 2011

DAIRY SECTOR ANALYSIS

This analysis of the New Zealand dairy sector forms a part of the wider Food & Beverage Information Project

Structure of the New Zealand Food & Beverage Information Project
(2011)



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DAIRY – SITUATION

New Zealand competes with other dairy cooperatives to supply bulk dairy ingredients to corporate consumer-focused dairy manufacturers primarily in dry/tropical areas

New Zealand

- New Zealand currently "on a high" in dairy
  - Surging US$ prices
  - Growing demand in China, SE Asia and NA/ME/CA[1]
  - However likely inflating a bubble that will ultimately pop
- New Zealand is the 8th largest milk producing country in the world and accounts for 2.6% of global milk production
  - New Zealand produces a similar amount of milk as other temperate countries its size (e.g. Italy, the UK, France)
  - Small population; exports the excess
- New Zealand exports transport friendly dairy ingredients (e.g. milk powder)
- 95%+ of New Zealand milk supply is controlled by Fonterra, a farmer-owned cooperative; Fonterra was formed in 2001 in a government sanctioned mega-merger of dairy cooperatives and the government-mandated export dairy board monopsony[2]

Competitors

- As regional dairy collection is a natural monopsony, dairy farmers in all developed countries control milk collection and primary processing through farmer-owned cooperatives
- New Zealand competes with other dairy cooperatives to supply bulk dairy ingredients
- Competitors are primarily cooperatives in developed Western countries; South America cooperatives are an emerging threat
  - While the BRIC[3] countries are 4 of the top 5 milk producers in the world, they are not yet major exporters as they effectively consume all they produce
- New Zealand does not directly compete with major corporate dairy players (e.g. Nestle, Kraft, Abbott)

Consumers/Markets

- Dairy consumption is flat in the developed world; developed temperate countries (e.g. Canada, Japan) typically produce all the milk they consume and use trade barriers to protect their dairy farmers; therefore these markets are closed to New Zealand
- Dairy consumption is growing in the developing world faster than domestic production; in addition, dry and tropical countries are unable to efficiently produce all the milk they consume, therefore they import bulk dairy ingredients
- Corporate consumer-focused dairy manufacturers buy ingredient dairy and transform ingredients into consumer dairy-based foods (e.g. yoghurt)
- In Australasia (AU/NZ), Fonterra (but not other key NZ milk processor/exporters) sells significant amounts of branded consumer dairy products to consumers[4]

1. North Africa Middle East, Central Asia; 2. A monopsony is a monopoly on buying not selling; 3. BRIC = Brazil, Russia, India and China; 4 Fonterra also sells about NZ$1b worth of Anmum outside Australasia

DAIRY – QUANTITATIVE SCORECARD

The New Zealand dairy sector has performed well in the last year driven by surging prices in Asia

Key metrics	# (2010)	CAGR (00-10)	CAGR (09-10)	ABS (09-10)
Turnover	NZ$18,800m	N/A	6%	+$1,100
Exports	US$7,836m	12%	40%	+$2,231
Enterprises	240	3%	2%	+15
Employment	11,690	1%	3%	+330
Turnover per employee	$1.6m	N/A[1]	N/A[1]	N/A[1]

Key markets	% (2010)	US$m (2010)	CAGR (00-10)	CAGR (09-10)	ABS (09-10)
East Asia	26%	$2,059	16%	75%	+$884
SE Asia	20%	$1,585	11%	42%	+$469
S Asia/Ind. Sub	5%	$397	18%	76%	+$171
NA/ME/CA	17%	$1,309	18%	28%	+$284
SS Africa	4%	$306	27%	44%	+$94
S America/Other	10%	$779	9%	33%	+$195
Europe	6%	$448	3%	11%	+$43
North America	6%	$504	3%	-10%	-$56
Australia/PI	6%	$450	13%	49%	+$148

Key products	US$m (2010)	CAGR (00-10)	CAGR (09-10)	ABS (09-10)
Whole milk powder	$3,072	16%	64%	+$1,197
Skim milk powder	$1,023	14%	23%	+$194
Butter	$1,545	12%	63%	+$596
Cheese	$1,023	8%	20%	+$168
Casein	$476	0%	-10%	-$51
Whey	$419	35%	19%	+$66
UHT milk	$127	16%	43%	+$38
Lactose	$33	8%	-17%	-$7
Other	$117	8%	36%	+$31

Key firms	Employ (#; 10)	Turnover (NZ$m; 10)
Fonterra	15,600[2]	$16,726m
GF Meadow Fresh	1,000	A$441m
Open Country	196	$497m
Westland	350	$422m
Tatua	194	$166m
Synlait	160	$150m

Key competitors country	Key firms
Australia	Murray Gouldburn (coop)
California	Cal Dairies Coop
	Other coop
Germany	Nordcontor Co-operative
	Other coop
Netherlands	Friesland Co-operative
France	Sodiaal
	Other coops
Denmark	Arla Coop

1. Cannot be calculated due to Statistics NZ data issues; will be calculated in future years; 2. Of which 9,700 are in New Zealand; Source: various company annual reports; various company websites; Kompass; Coriolis analysis

DAIRY – SWOT ANALYSIS

The global competitive environment will likely become more competitive going forward

Strengths	Weaknesses
- Low cost pasture-based dairy production system - National champion Fonterra with resources to address global markets and opportunities - Growing market leadership position in Australasia/Oceania	- All our eggs in one basket (Fonterra); Fonterra is limited in its ability to add value due to the risks associated with competing with its own customers - No rich dairy cultural heritage or tradition to draw from for new product development (vs. France or Italy) - Small milk producer in an absolute sense (~2.6% global production) - Limited defensibility of commodity and ingredient position - Significant trade barriers limiting New Zealand access to North America and Europe - Farmgate price mixes returns on milk with returns on Fonterra ownership leading to dairy land price increases leading to decreased international competiveness
Opportunities	**Issues/Threats/Risk**
- Intensification through additional supplementary feed smoothing seasonal peak increasing total milk production and improving return on assets - Growing dairy product consumption in developing world; dry and tropical countries not able to produce all the milk they consume - Chinese dairy consumption per capita growing rapidly drawing in significant imported dairy product (in the short to medium term) - Asians more likely to be dairy intolerant, therefore different consumption patterns (e.g. yoghurt drinks; infant formula) - Ongoing dairy industry consolidation, particularly in South America - Changing global weather patterns (also a threat) - Further investment in in-market production - Removal of dairy subsidies into Europe	- Intensive feedlot dairy model (e.g. California) improving productivity faster than pasture system (e.g. NZ/AU) - Southern South America rapidly adopting the AU/NZ pasture system (e.g. Argentina, Uruguay, Brazil) - The boom/bust economic cycle expresses itself in China - Experience of Japan & South Korea suggest Chinese growth has another 10 years to run; after this point, China will be either self sufficient or a major exporter; Chinese milk/cow almost at NZ levels - Developing countries consumers, currently perceive dairy as healthy; science/attitudes/opinions could turn negative - Adoption of genetically modified animals or feed by poor countries changing international competitive dynamics - Non-dairy substitutes (e.g. soy) more suited to Asian tastes and physiology

Source: various company annual reports; various company websites; Interviews; Coriolis

DAIRY – POTENTIAL STRATEGIC DIRECTIONS

Research suggests six potential "big picture" strategic directions for the New Zealand dairy industry

Situation creating opportunity	Resulting potential strategic direction	Opportunity	Challenges
- New Zealand exports transport friendly dairy ingredients (e.g. milk powder) to corporate consumer-focused dairy companies in other countries - These companies then transform ingredients into consumer ready products adding up to 10x value to raw ingredients in the process - Free trade deals removing punitive tariffs improving economics of NZ production (vs. in market)	1. Vertical integration of NZ milk production into downstream users of milk ingredients	- Acquire in-market buyers of NZ ingredients; link into domestic production - Create integrated supply chain with NZ production	- Fonterra unwilling to compete with own customers - Significant capital required for in market acquisition
	2. Existing NZ firms make final product in New Zealand and export	- "Made in NZ' a strong positioning statement in some markets	- Does not work for highly perishable short shelf life products (e.g. non-UHT fluid milk, yoghurt) - Tariffs and trade barriers remain on many products into many countries - Significant capital required for investment in plant & equipment
	3. Current buyers of NZ ingredient exports manufacture in NZ instead	- Targeted program to attract new greenfields investments by existing users of NZ dairy ingredients	- Reliant on single supplier (Fonterra) - Relative attractiveness of NZ vs. other potential sites (e.g. Singapore)
- While the dairy industry is consolidated in developed markets, it is fragmented in developing ones	4. NZ firms participate in and drive consolidation in dairy industry in developing countries	- Acquire multiple smaller dairy companies in growing markets - Consolidate and implement best practice	- Significant risk - Fonterra unwilling to compete with own customers - Farmer owners of New Zealand co-operatives unwilling to either fund or allow in outside capital
- Developing countries are rapidly growing dairy production (e.g. BRIC[1] are 4 of top 5 dairy producing countries) - These countries will emerge as major competitors to NZ in ingredient dairy over the next 15 years	5. Apply NZ skills and capital to assist development	- Investment by NZ based skills and capital in growth markets	- Risk - Mixed transferability of NZ pastoral dairy ecosystem
	6. Move into more defensible products and categories	- Develop capabilities around defensible dairy/dairy-derived products (e.g. infant formula)	- Competition from existing players with strong market position - Lack of required IP and/or capabilities

Source: Interviews; Coriolis

DAIRY – POTENTIAL AREAS FOR INVESTMENT

Potential areas for new and/or external investment primarily transforming ingredients rather than producing more ingredients

- Farmers control 97% of New Zealand dairy industry limiting opportunities for external investment
  - Farmers own Fonterra, Westland and Tatua
  - "[Dairy cooperatives have] three main objectives: (1) maximise the milk price paid to farmer members, (2) to process and market the milk collected every day from member farms and (3) to maintain farmer control"

- Low opportunities for new investment in ingredient dairy (particularly milk powder)
  - Globally milk collection/disposal is dominated by farmer owned co-operatives (typically marginal cost sellers)
  - Processing of raw dairy into simple ingredients is a relatively high capital, low return sector
  - New Zealand already fully capitalised and saturated with ingredient dairy processing plants

- Poor financial performance to date of post deregulation new market entrants in milk powder & other primary ingredient
  - Majority share in Open Country acquired by Talley family following poor performance; Olam (Singapore) also a shareholder (threatened to quit due to low returns)
  - Majority share in Synlait acquired by Shanghai Bright following failed public listing
  - Oceania Dairy assets purchased by Synlait
  - Arapuni still "in development"
  - Maori-owned Miraka recently opened

- Domestic dairy market is small, saturated, and low growth
  - High levels of dairy consumption per capita
  - Dominated by two key players: Fonterra and Goodman Fielder/Meadow Fresh, each with fluid milk core
  - Limited domestic product innovation; domestic innovation typically copied from other markets (e.g. yoghurt)
  - Growing store brands

- Opportunities for growth in smaller segments of export oriented specialty, niche dairy products that "fly under the radar"
  - Shredded cheese (e.g. Grate Kiwi, Milligans)
  - Single serve butter (e.g. Canary)
  - Premium specialty cheese (e.g. Whitestone)

- Strong opportunities for growth and investment in processed foods that contain significant dairy ingredients *(discussed in processed foods document)*
  - Chocolate
  - Infant formula
  - Frozen bakery (esp. croissants)
  - Dairy nutraceuticals (e.g. colostrum)

Source: Interviews; Coriolis

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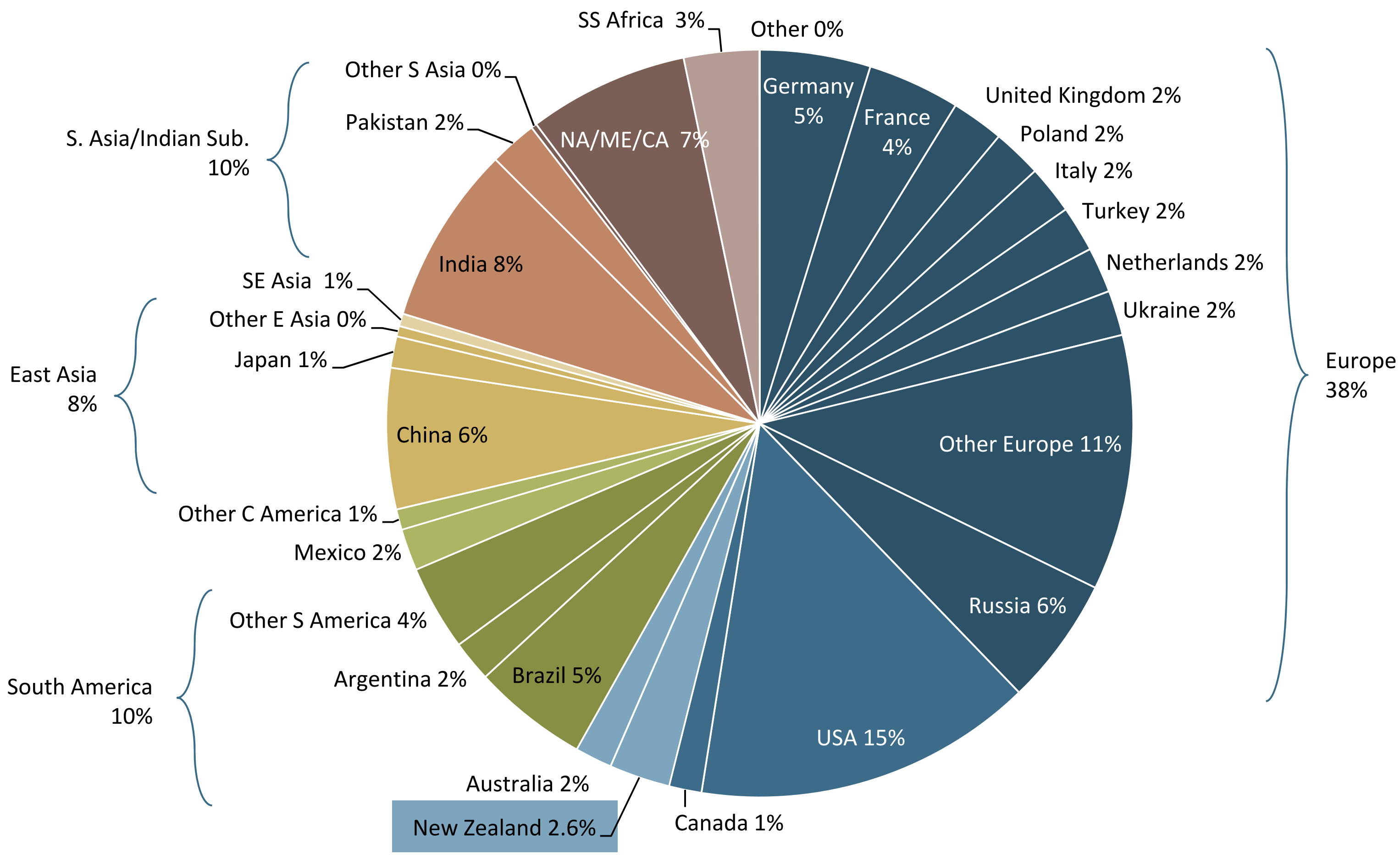
DAIRY – GLOBAL PRODUCTION

New Zealand is the 8th largest milk producing country and accounts for 2.6% of global milk production; it produces a similar amount of milk as other temperate countries its size (e.g. Italy, the UK)

Total global milk production by country/region
(t; m; 2009)



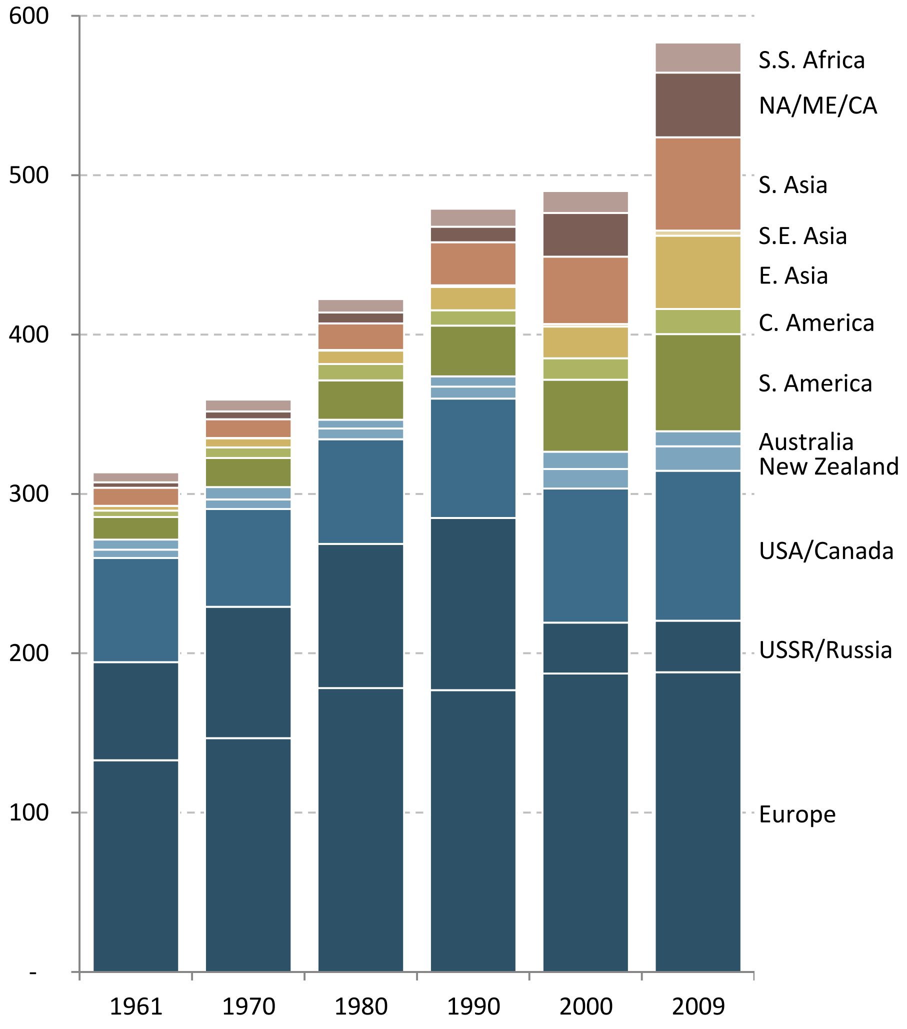
TOTAL = 583m tonnes

Note: Total may not add due to rounding; 2009 is latest available 8/2011; effectively manufacturing milk; excludes on farm/home production (e.g. India); Source: UN FAO AgStat; Coriolis analysis

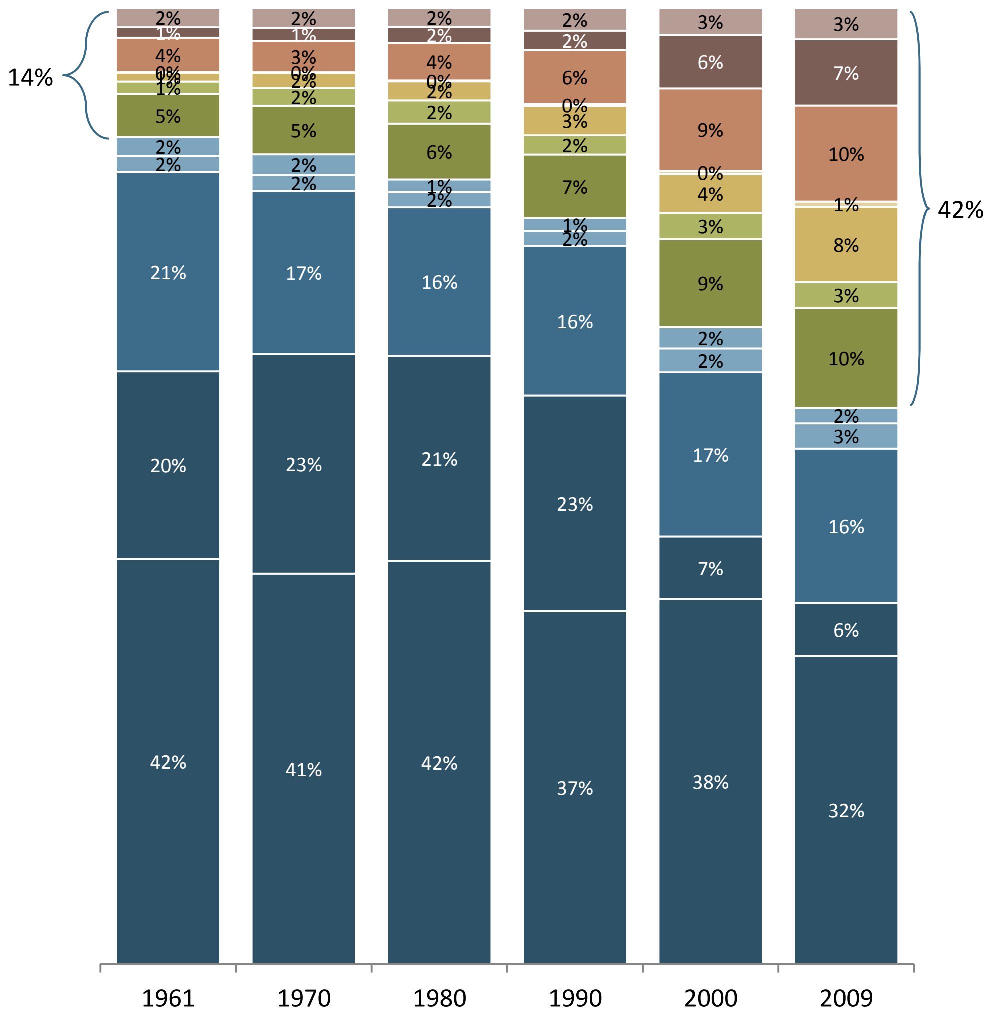
DAIRY – GLOBAL PRODUCTION

Dairy production surging outside traditional European/Western countries

Total global milk production by region
(t; m; 1961-2009)



% of global milk production by region
(t; m; 1961-2009)



Note: Total may not add due to rounding; 2009 is latest available 8/2011; Source: UN FAO AgStat; Coriolis analysis

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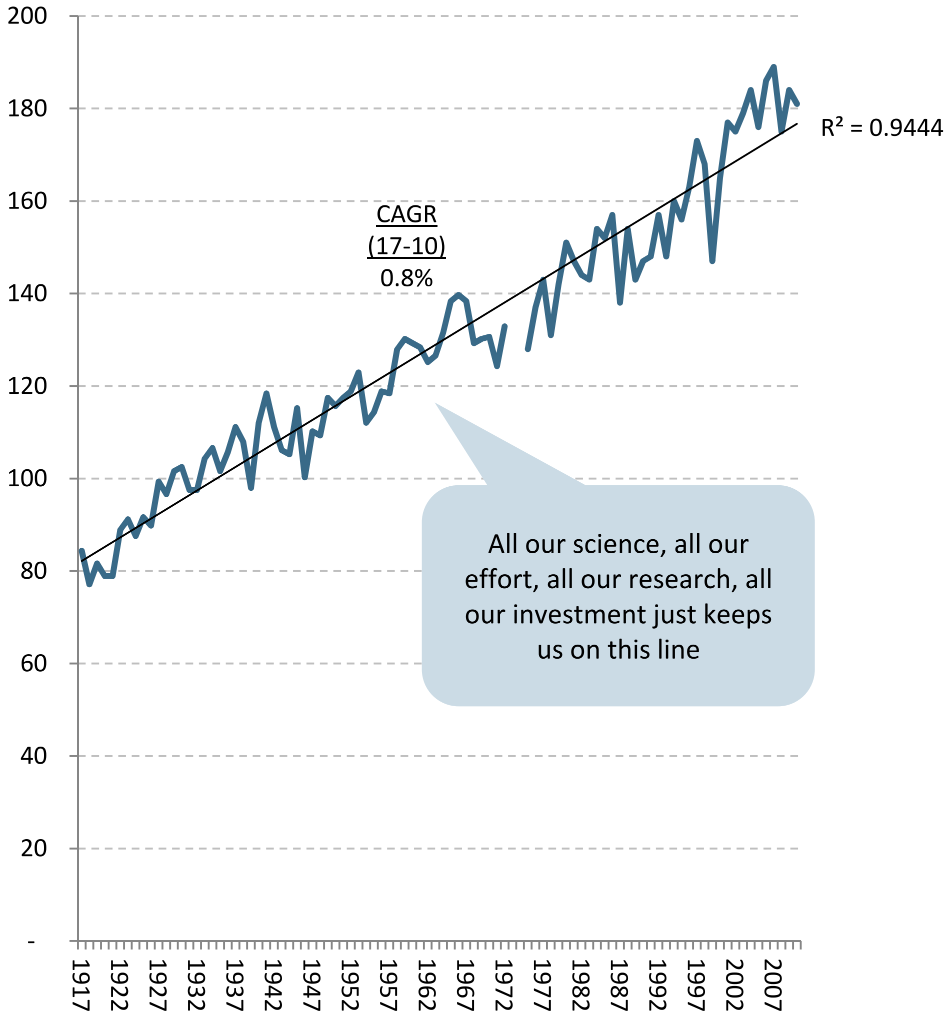
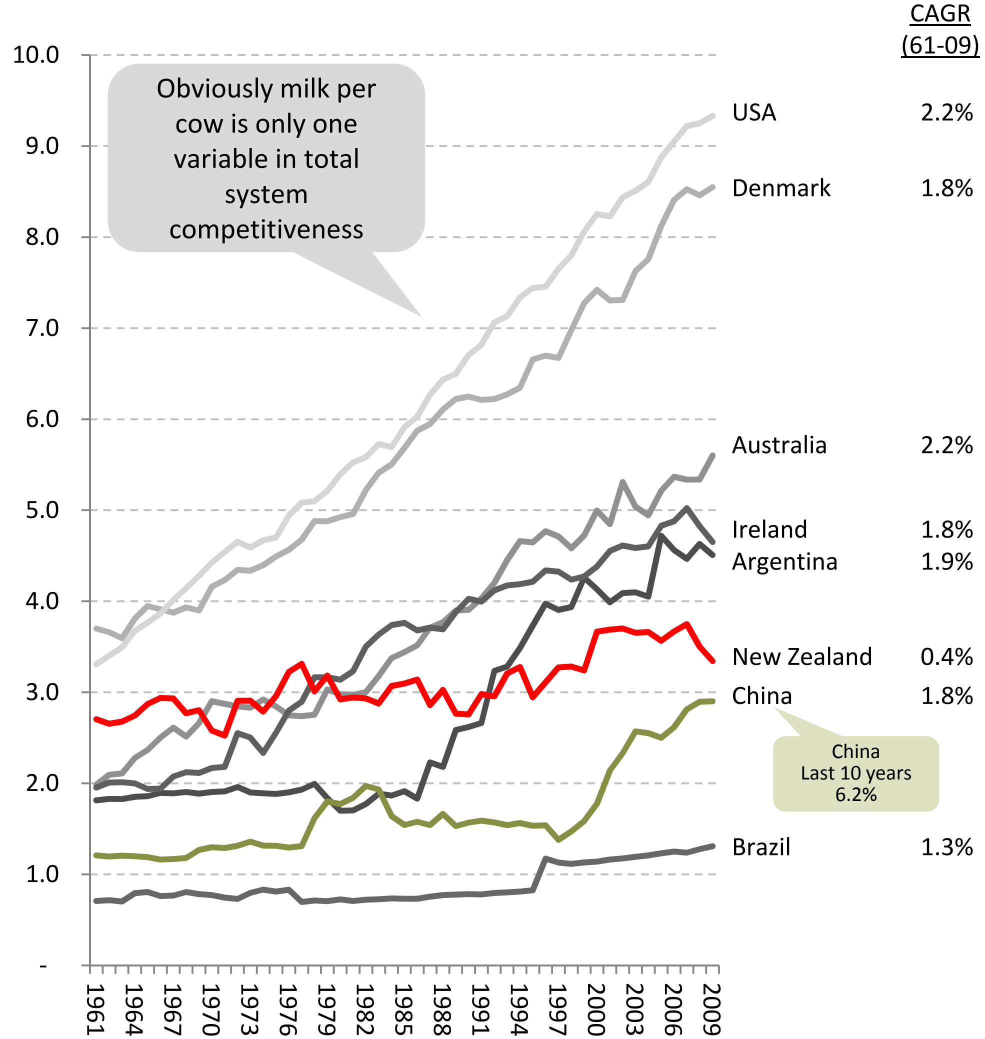
DAIRY – RATE OF IMPROVEMENT

The efficiency of the New Zealand pastoral dairy system is improving at a relatively stable rate; competitors are also improving

93 years growth in New Zealand butterfat per cow
(kg/cow; 1917-2010)



Milk per cow: NZ vs. select peers
(t/cow; 1961-2009)

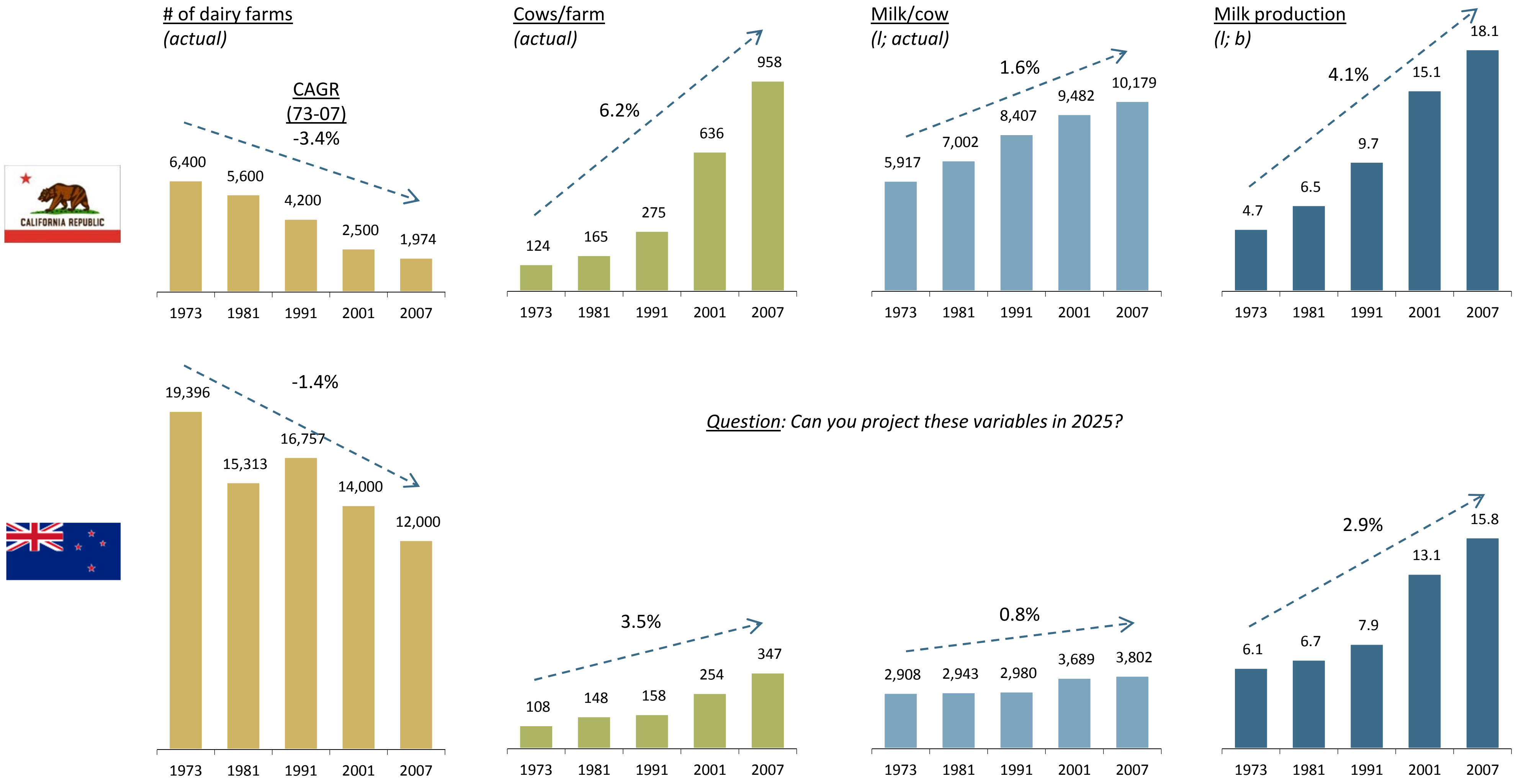


Source: UN FAO AgStats; Statistics NZ; Department of Statistics; DairyNZ; Coriolis analysis

DAIRY – SOME COMPETITORS IMPROVING FASTER

New Zealand's key dairy competitors are not standing still; they continue to improve, often at a faster rate

EXAMPLE: Changing variables in milk production: California vs. New Zealand
(1973-2007)

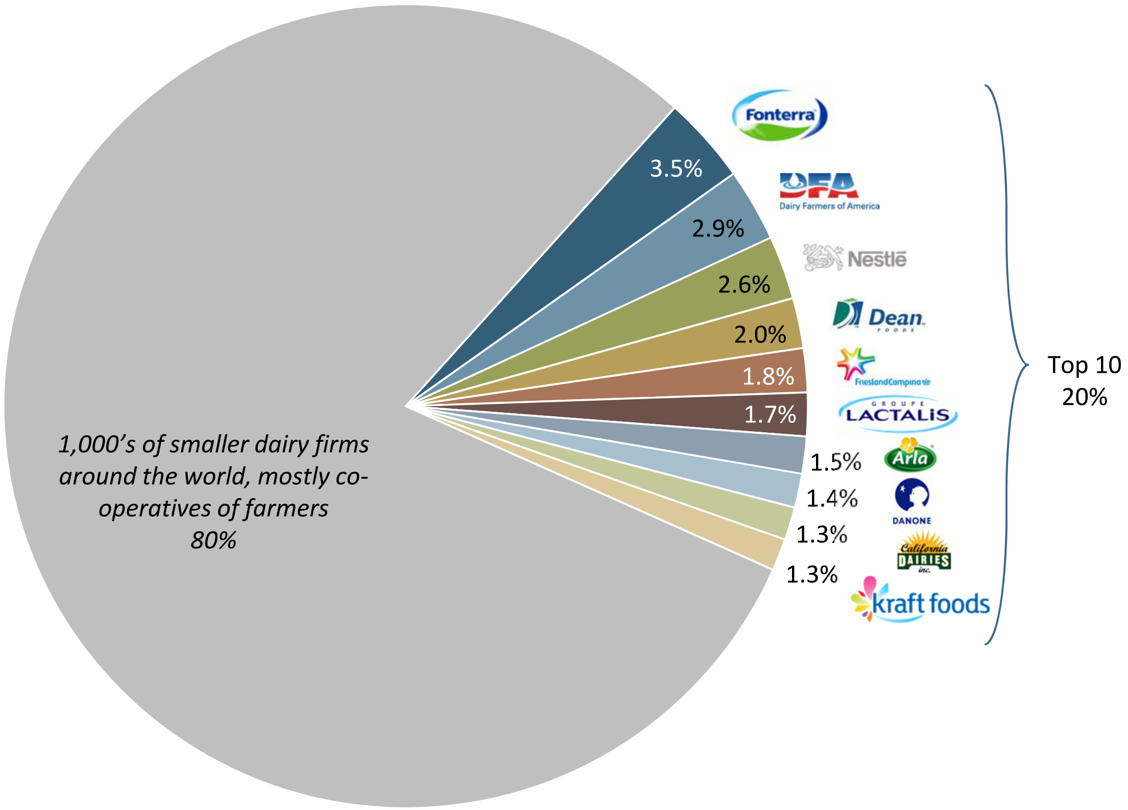


Source: SNZ (various); CDA; USDA ERS; Coriolis analysis

DAIRY – MILK SHARE BY FIRM

The global dairy industry is highly fragmented with thousands of small firms, primarily farmer-owned cooperatives, supplying regional markets

Total global milk production by top ten firm by milk intake
(t; m; 2009)



TOTAL = 583m tonnes

Comments/Notes

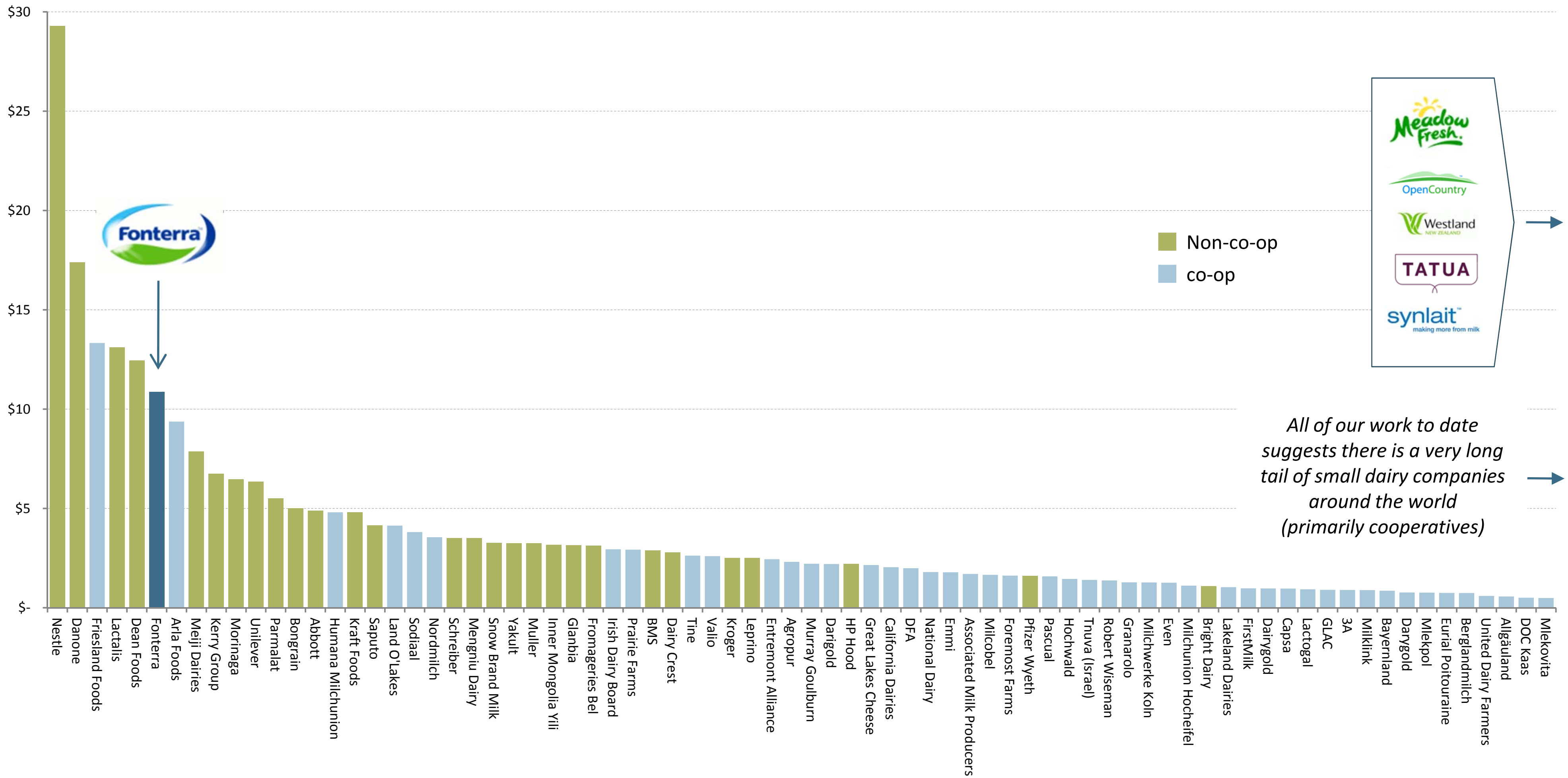
- Treat data as directional/indicative; note data issue discussed below
- Data for companies listed here will include double counting as it is their milk intake, including milk bought from others
  - Corporate dairy firms primarily buy milk from cooperatives; they do not as a rule own farms
  - For example: Nestle, Danone and Kraft all buy lots of milk from Fonterra
- NOTE: Data is milk intake not sales; Nestle's dairy sales are twice those of Fonterra's *(as the things Nestle makes its milk into are worth more than the things Fonterra makes its milk into)*

Source: International Farm Comparison Network; UN FAO AgStat; Coriolis analysis

DAIRY – TOP FIRMS BY TURNOVER

Fonterra is a very large dairy company on global standards; other NZ dairy firms more typical of global mean

Top 76 global dairy firms ranked by dairy products turnover
(US$; 2008 or as available)

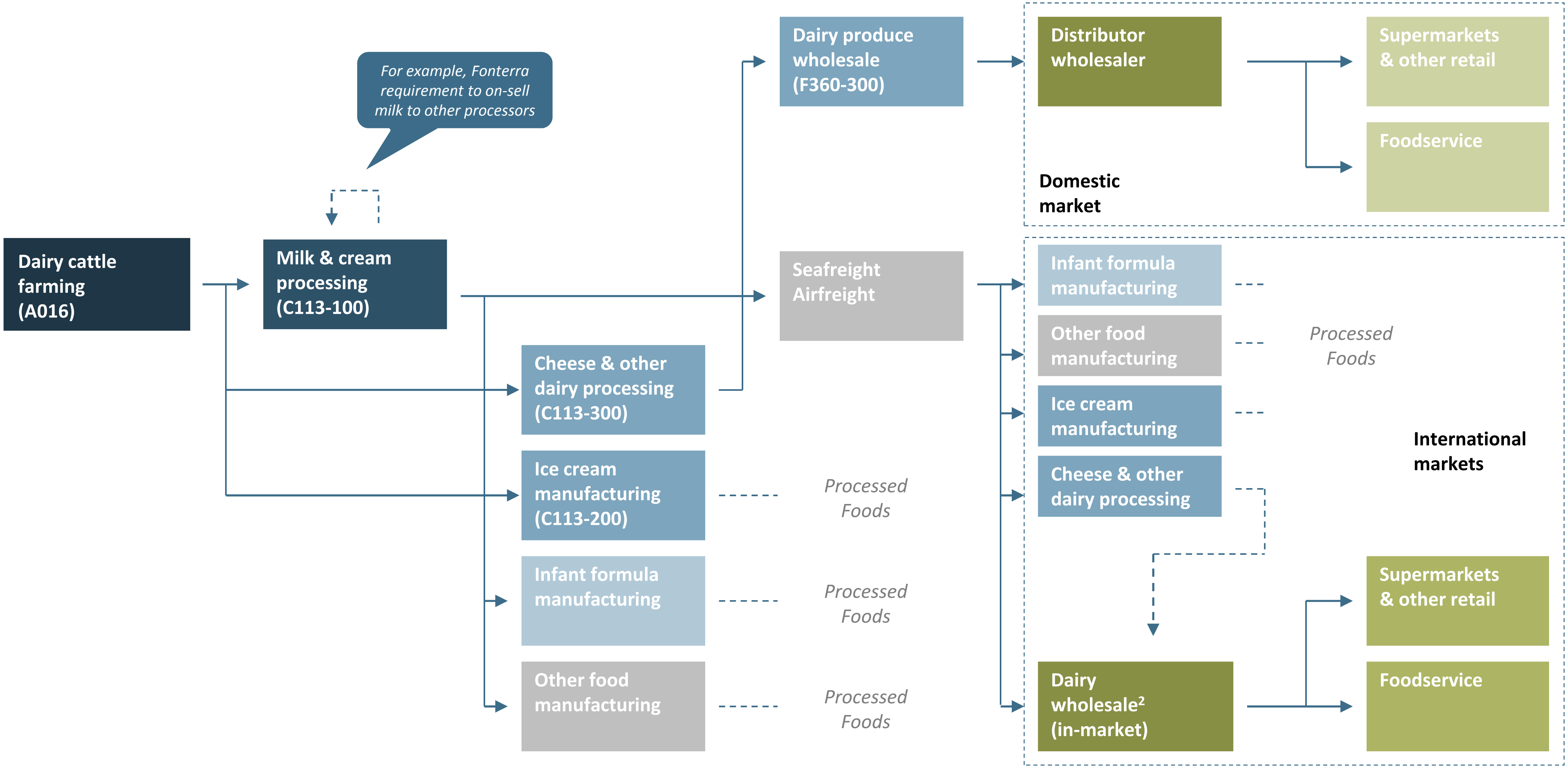


Source: Company annual reports; company reports; and Coriolis analysis

DAIRY – SUPPLY CHAIN

New Zealand dairy products have a somewhat complex supply chain driven by the multiple-stage process of turning raw milk into final products for consumers around the world

Simplified model of New Zealand dairy supply chain[1]
(model; ANZSIC codes as available))

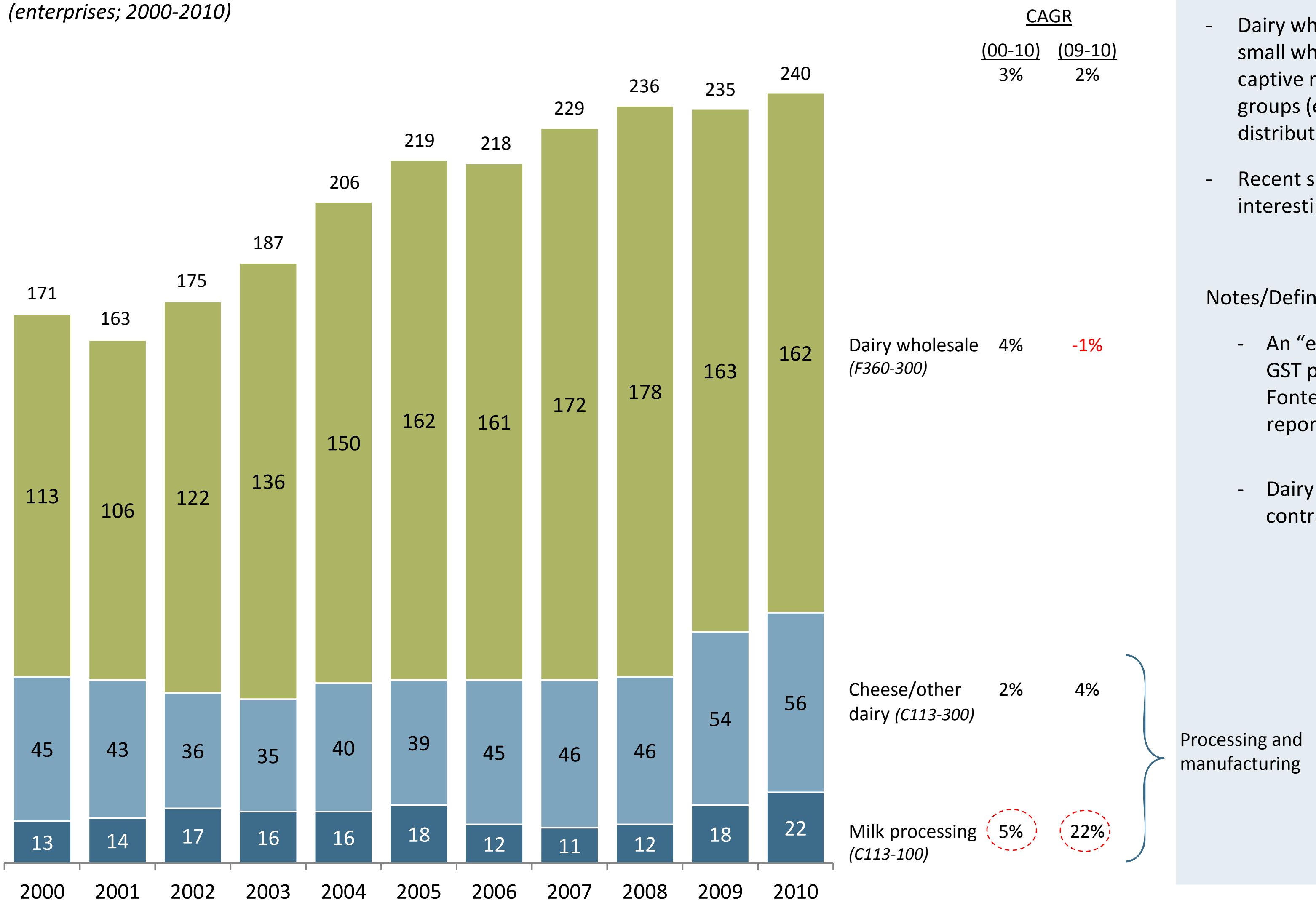


1. Non-dairy supply chain is covered in the processed foods section; 2. There may be one or more layers of wholesaling, depending on product or market; some wholesale functions may be captive inside retailers or foodservice operators; Source: Coriolis

DAIRY – # OF ENTERPRISES

The number of enterprises involved in the New Zealand dairy industry is growing

Number of enterprise units in the dairy industry in New Zealand
(enterprises; 2000-2010)



Comments

- Dairy wholesaler growth likely a mixture of small wholesalers (e.g. imported cheese) and captive regional wholesale functions of larger groups (e.g. regional milk wholesale/ distribution in Southland)
- Recent surge in milk processing enterprises interesting

Notes/Definitions

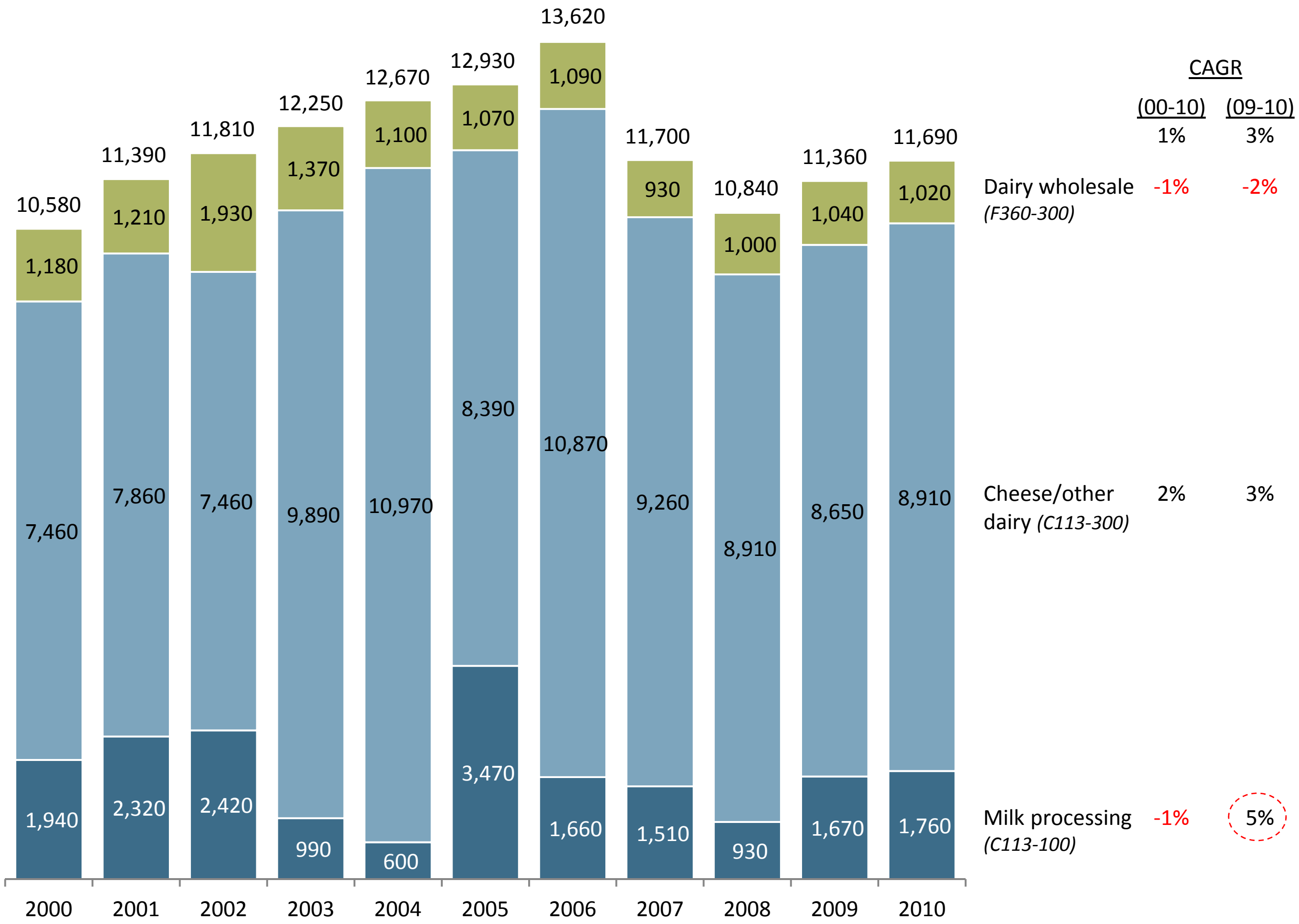
- An “enterprise” is a reporting entity for GST purposes; large companies such as Fonterra will contain multiple GST reporting entities
- Dairy wholesalers may include distributor contractors

Source: SNZ business demographics (detailed industry for enterprise units); Coriolis analysis

DAIRY – EMPLOYMENT

The number of people employed in the dairy industry is growing again following a restructuring in 06/07

Number of persons employed in the dairy manufacturing industry in New Zealand[1]
(people; 2000-2010)



Comments

- 2006-2007 reduction is likely a reduction in the number of undefined/unallocated many offshore Fonterra employees out of the dataset (ie. no longer employees of a directly resident NZ firm)

Notes/Definitions

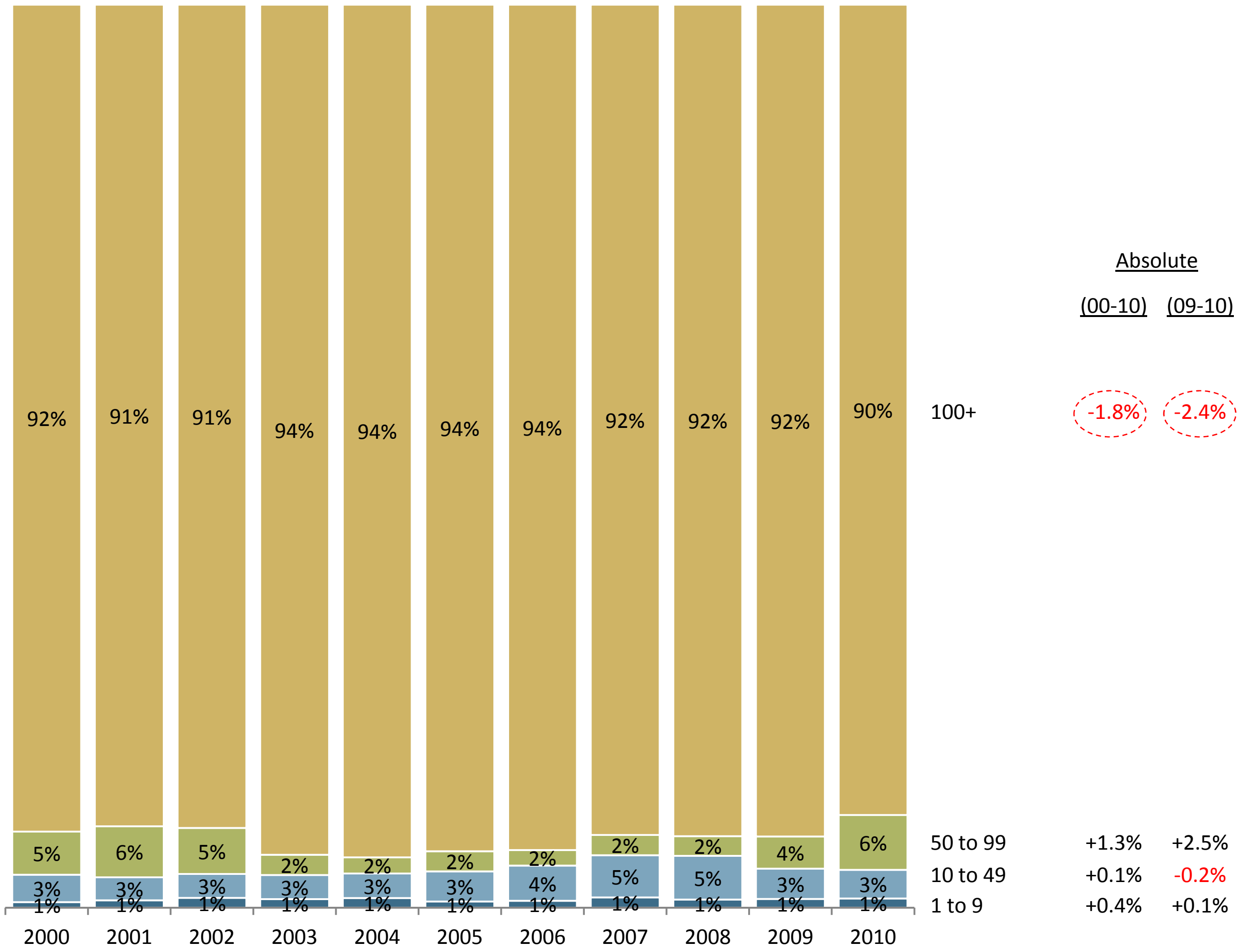
- Excludes farmers
- 2005 looks anomalous; likely SNZ classification issue

1. Uses persons employed by enterprise unit; Source: SNZ business demographics (detailed industry for enterprise units); Coriolis analysis

DAIRY – EMPLOYMENT BY FIRM SIZE

Large firms are not growing their share of dairy industry employment; relative growth appears to be coming from growing mid-sized firms

% of employment by firm employment size in the dairy manufacturing industry in New Zealand[1]
(people; 2000-2010)



Comments

- Large firms appear to be achieving productivity increases
- Growth in mid-size firms hopeful; suggests 2002 drop represents firms moving into large category

Notes/Definitions

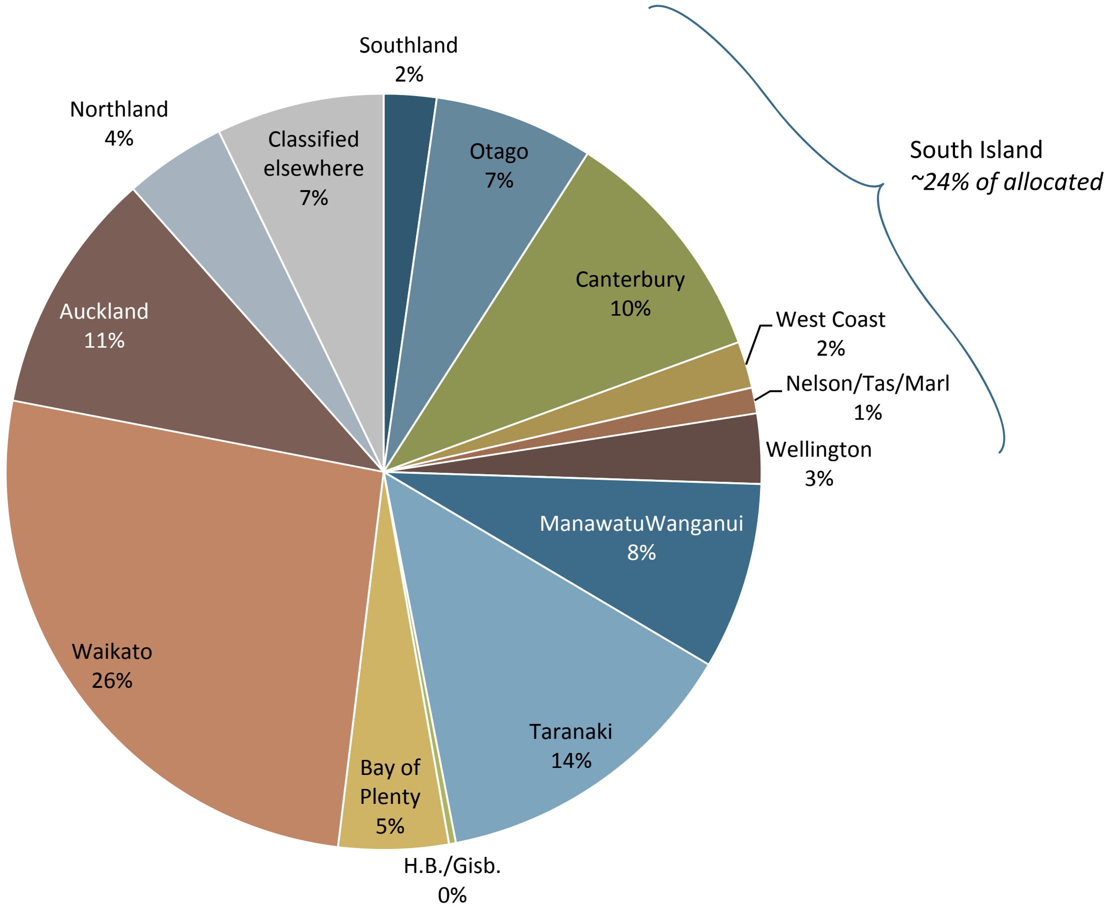
- Data excludes wholesaling (F360-300) as data not available but includes ice cream (C113-200), inseparable at source

Source: SNZ business demographics (detailed industry for enterprise units); Coriolis analysis

DAIRY – EMPLOYMENT BY REGION

Dairy industry employment is spread across the regions; however the Waikato and Taranaki stand out for absolute numbers

Number of persons employed in the dairy manufacturing in New Zealand by region
(people; 2010)



Total = 11,690

Comments/Notes

- Clearly proportional to cow numbers
- Also proportional to # of plants and average plant capacity

Notes/Definitions

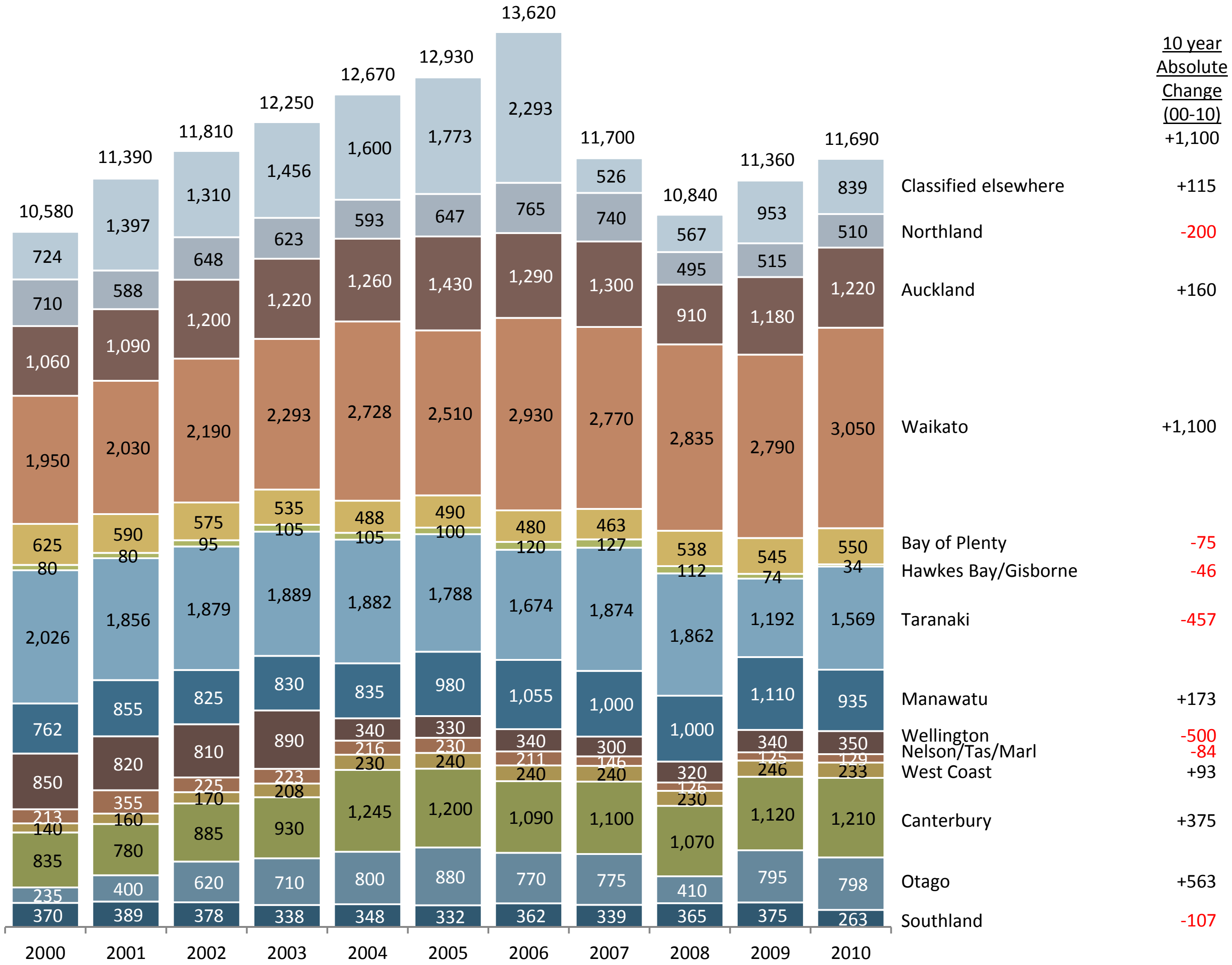
- Does not include farmers
- Statistics New Zealand calculates its statistics based on the predominant business activity of the enterprise
- A firm that is defined as "beverage manufacturing" at the enterprise level may have a subsidiary at the geographic level that is classified as "grape growing"
- Data here is "geographic" units not "enterprise" units (pages prior)
- "Classified elsewhere" is the difference between geographic unit employees and enterprise unit employees; it represents firm subsidiaries not involved in "beverage manufacturing," for example those classified as "grape growing" or "beverage wholesaling"
- Nelson/Tas/Marl = Nelson/Tasman/ Marlborough
- H.B/Gisb. = Hawkes Bay / Gisborne
- Wellington region includes north to the Kapiti and Masterton districts

Note: Uses persons employed by enterprise unit; Source: SNZ business demographics; Coriolis analysis

DAIRY – EMPLOYMENT BY REGION

The dairy industry is creating employment, but only in a handful of regions

Number of persons employed in the dairy manufacturing industry in New Zealand
(people; 2000-2010)



Comments

- Covers before and after creation of Fonterra
- Only Waikato, Otago and Canterbury creating large numbers of new jobs
- 2006-2007 reduction in number of undefined/unallocated likely redefinition of many offshore Fonterra employees out of the dataset (ie. no longer employees of a directly resident NZ firm). Do not read too much into the decline.
- Dairy employment down across 7 of 13 regions over period

Notes/Definitions

- Classified elsewhere is implied difference between enterprise employment and geographic employment (at point-in-time of count). *See note previous page*
- Nelson/Tas/Marl = Nelson/Tasman/ Marlborough
- Wellington region includes north to the Kapiti and Masterton districts

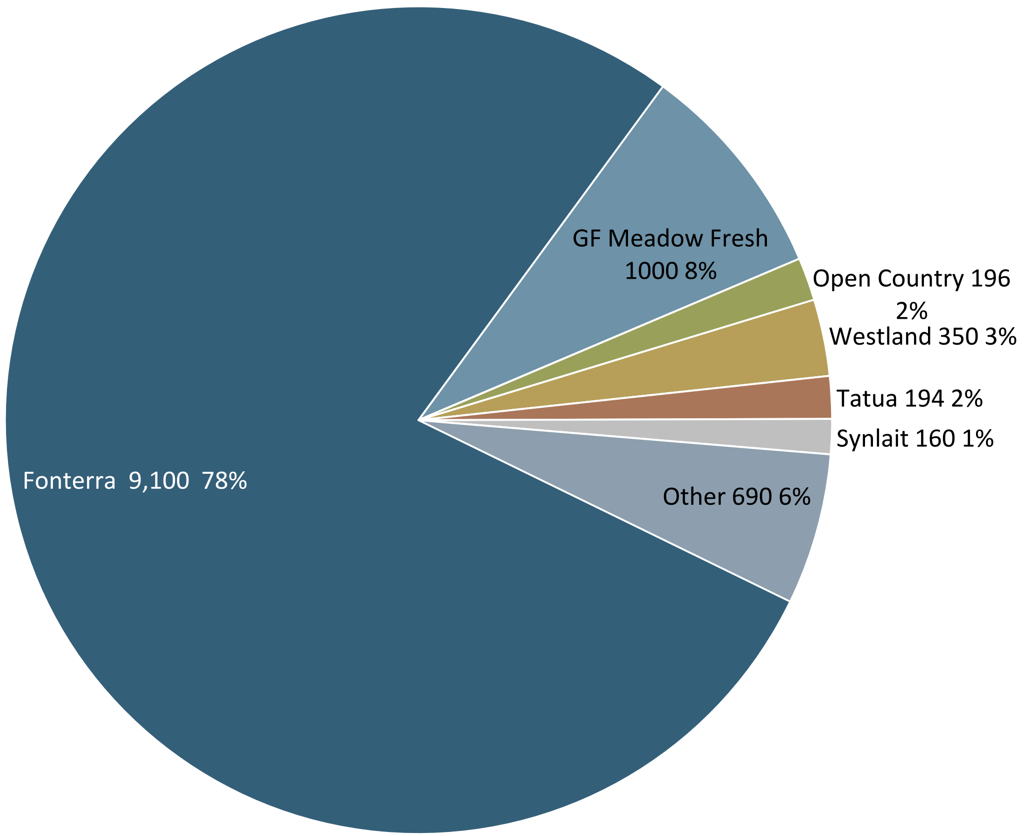
Source: SNZ business demographics detailed industry for enterprise units; Coriolis analysis

CORIOLIS

DAIRY – EMPLOYMENT BY FIRM

Fonterra accounts for ~80% of industry employment; all other dairy firms account for 20%

Number of persons employed in the dairy manufacturing industry in New Zealand by key firm
(people; 2010)



Total = 11,690
(page prior)

Comments/Notes

- Fonterra total is New Zealand employees, not global (excluding TipTop, listed under processed foods)
- Open Country includes Dairy and Cheese

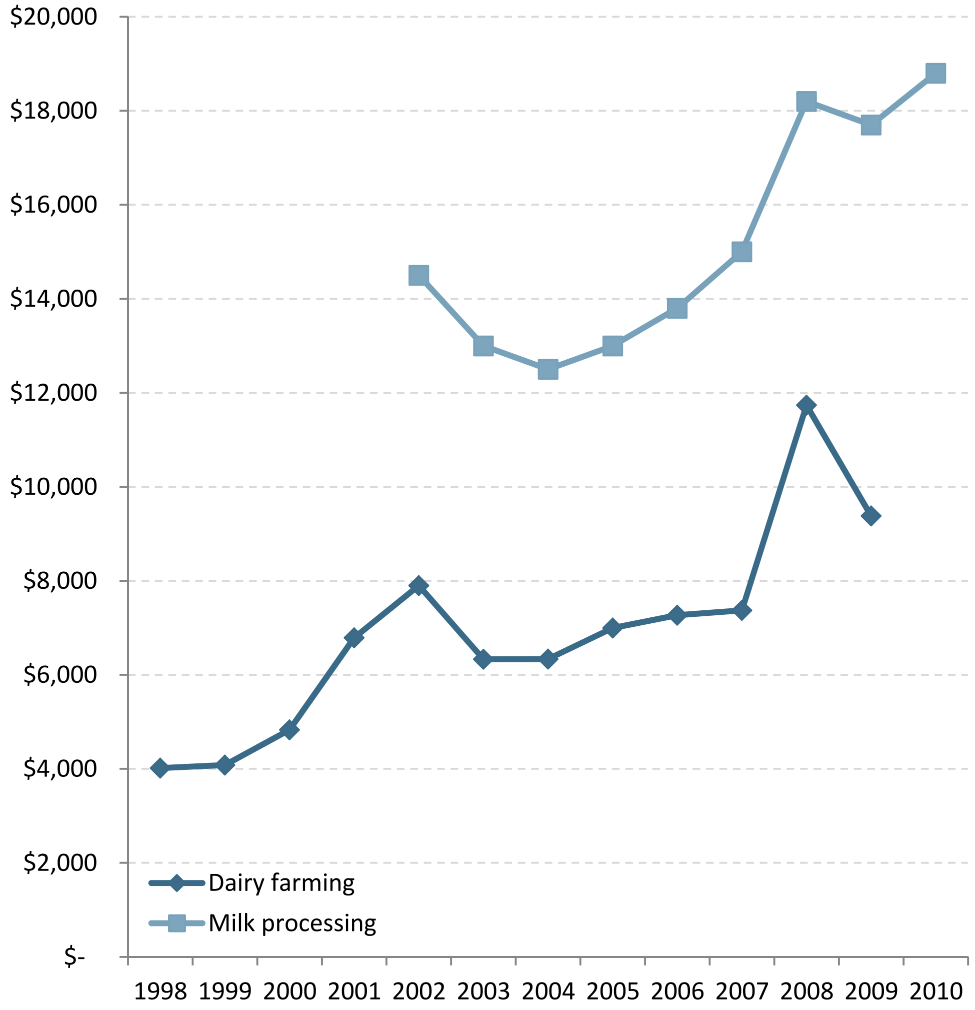
Note: Uses persons employed by enterprise unit; Source: SNZ business demographics (detailed industry for enterprise units) and (detailed industry for geographic units); Kompass; various firm websites; published articles; Coriolis analysis

DAIRY – INDUSTRY AGGREGATE TURNOVER

The dairy industry has been growing at 8% per annum over the past five years

Aggregate dairy industry turnover/total income

(NZ$m; nominal, non-inflation adjusted; 1998-2010)



	CAGR (05-10)	CAGR (09-10)
Dairy processing	8%	6%
Dairy farming	8%[1]	N/A

Comments

- Are we reaching the peak of the cycle?

Notes/Definitions

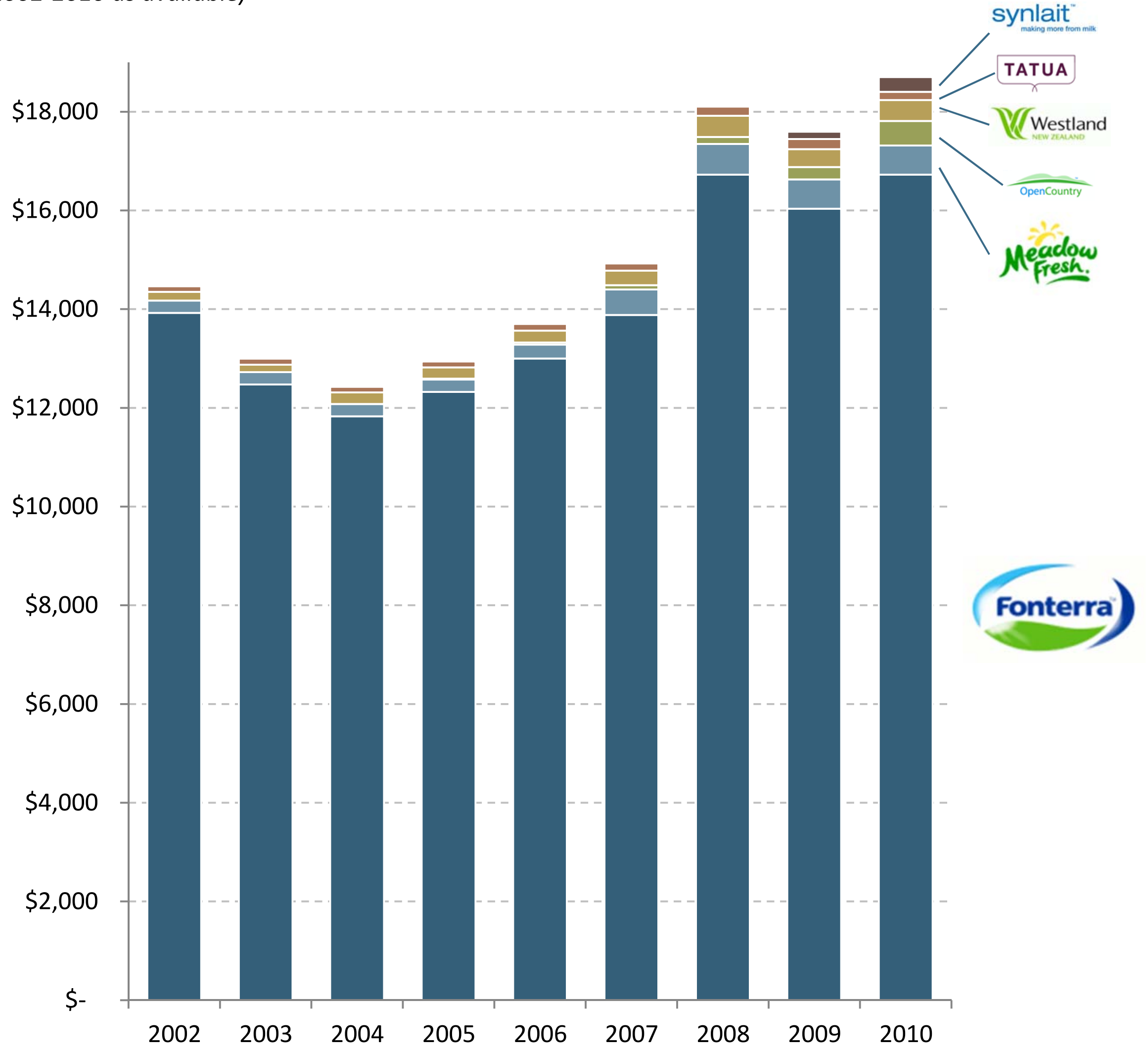
- Dairy farming uses SNZ Annual Enterprise Survey (AES) supplementary table 4 (various years)
- 2009 is the most recent available; 2010 likely available Oct 2011
- Dairy processing not available in SNZ data (dairy industry aggregated with meat) due to confidentiality issues surrounding Fonterra data (which is strange as Fonterra publishes annual accounts)
- Dairy processors given here is Coriolis from published annual accounts (and Coriolis estimates for missing years); pool is: Fonterra, Meadow Fresh, Open Country, Westland, Tatua, Synlait, NZDL and Dairy Goat Co-op
- Dairy processors will include non-NZ sales of non-NZ products by NZ resident firms (e.g. Fonterra in Chile)
- Will include some amount of double counting (e.g. Fonterra on-selling milk to Open Country)
- Dairy processors only; does not include ice cream or small specialty cheese firms

1. Uses last available 10 years (99-09); Source: SNZ Annual Enterprise Survey (supplementary table [table 08 or 4.08]); various company annual accounts; Coriolis analysis

DAIRY – TURNOVER OF KEY FIRMS

While Fonterra still accounts for the bulk of New Zealand dairy industry turnover, the second tier firms are showing strong growth

Turnover of select large dairy industry firms
(NZ$m; 2002-2010 as available)



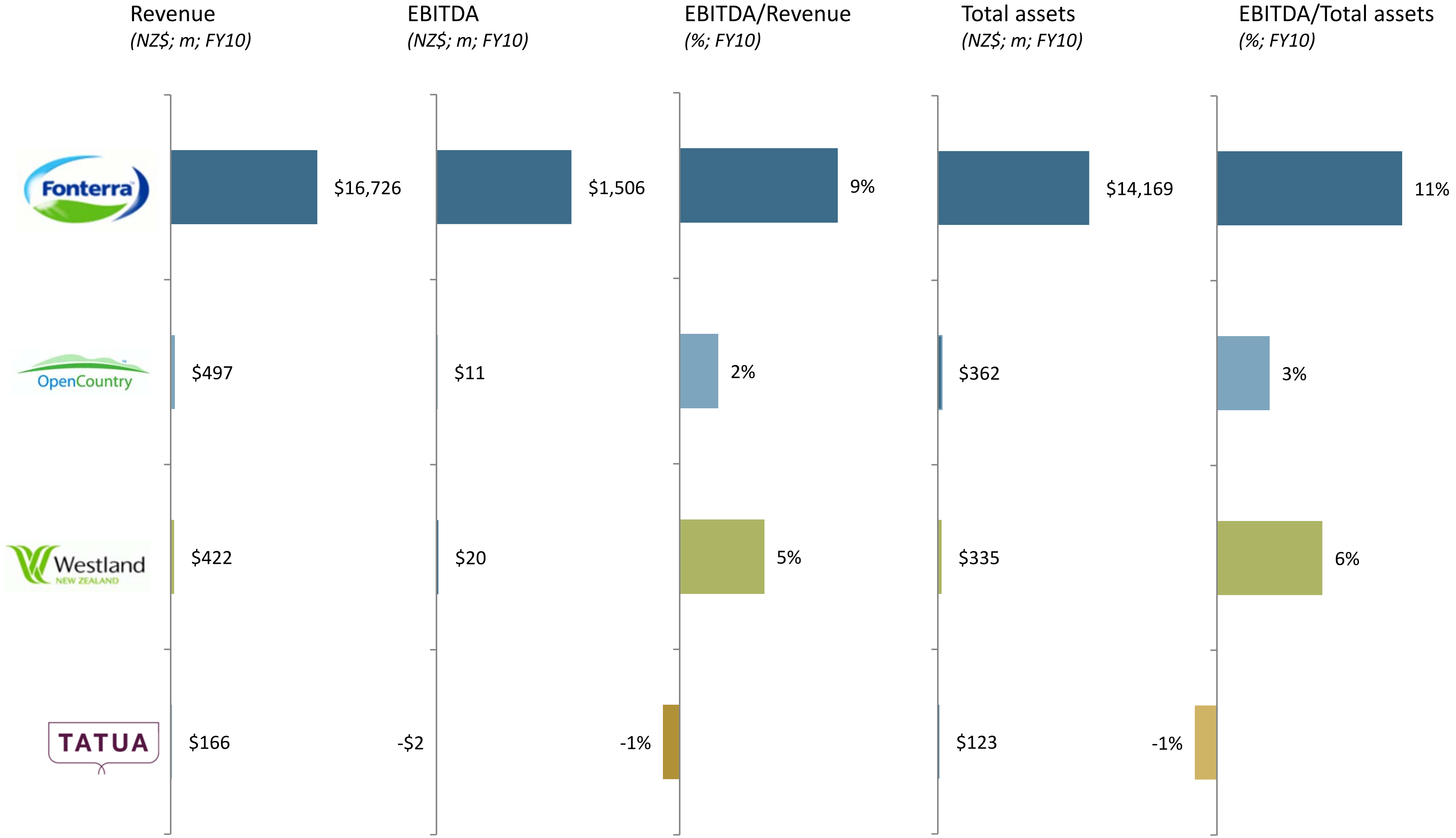
Comments

- Data is as filed with New Zealand Companies Office or financial report as available on companies websites or Coriolis estimates from available data

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); Coriolis analysis

DAIRY – FIRM PROFITABILITY BENCHMARKING

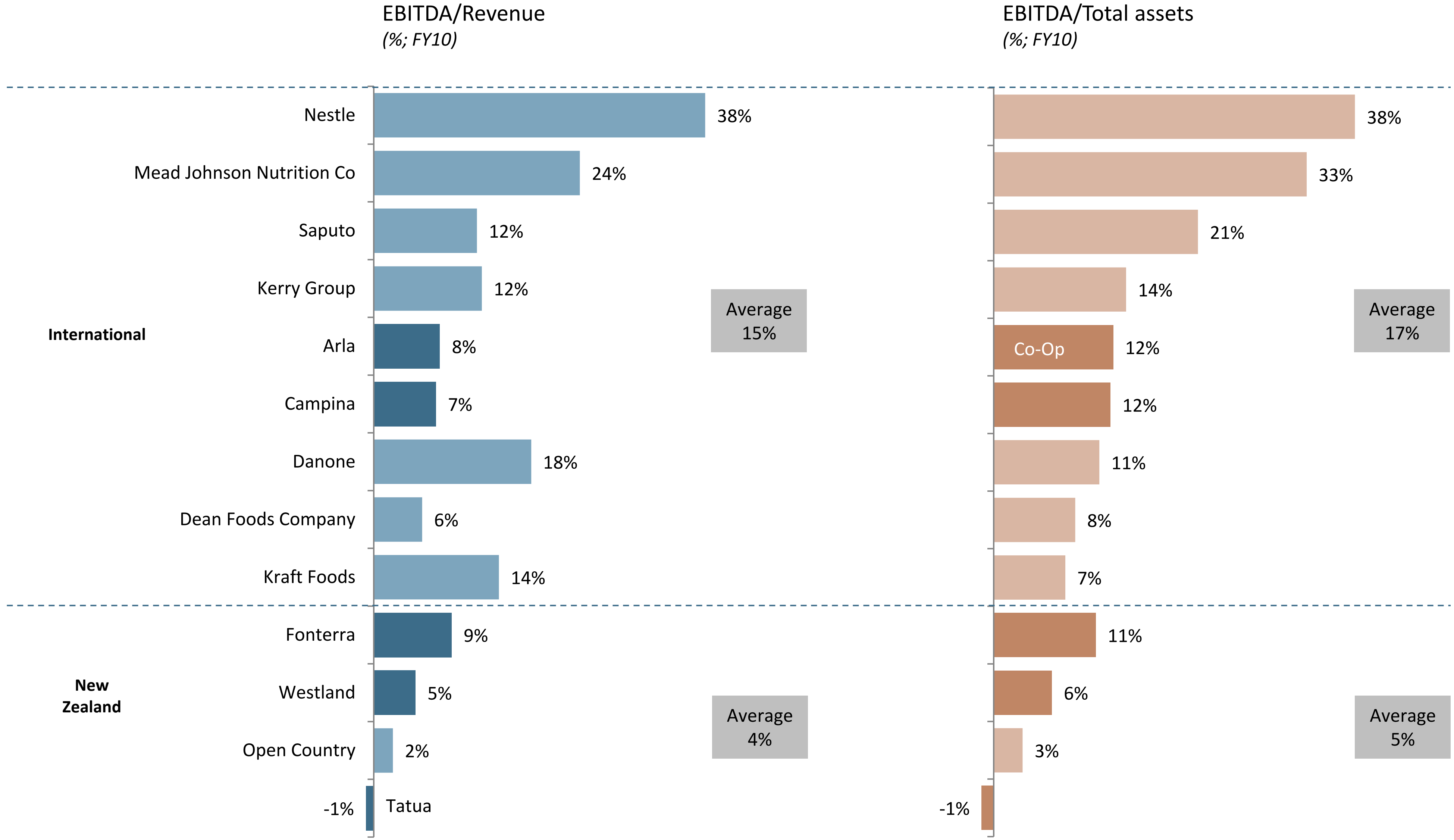
Financial performance of key firms varies



Note: EBITDA is as given or calculated as OPBIT + depreciation; data should be treated as directional; Source: various annual reports as published; Coriolis analysis

DAIRY – FIRM PROFITABILITY BENCHMARKING

New Zealand firms perform below global peers on return on sales and return on assets; Fonterra performance in line with European co-op (Arla & Campina)



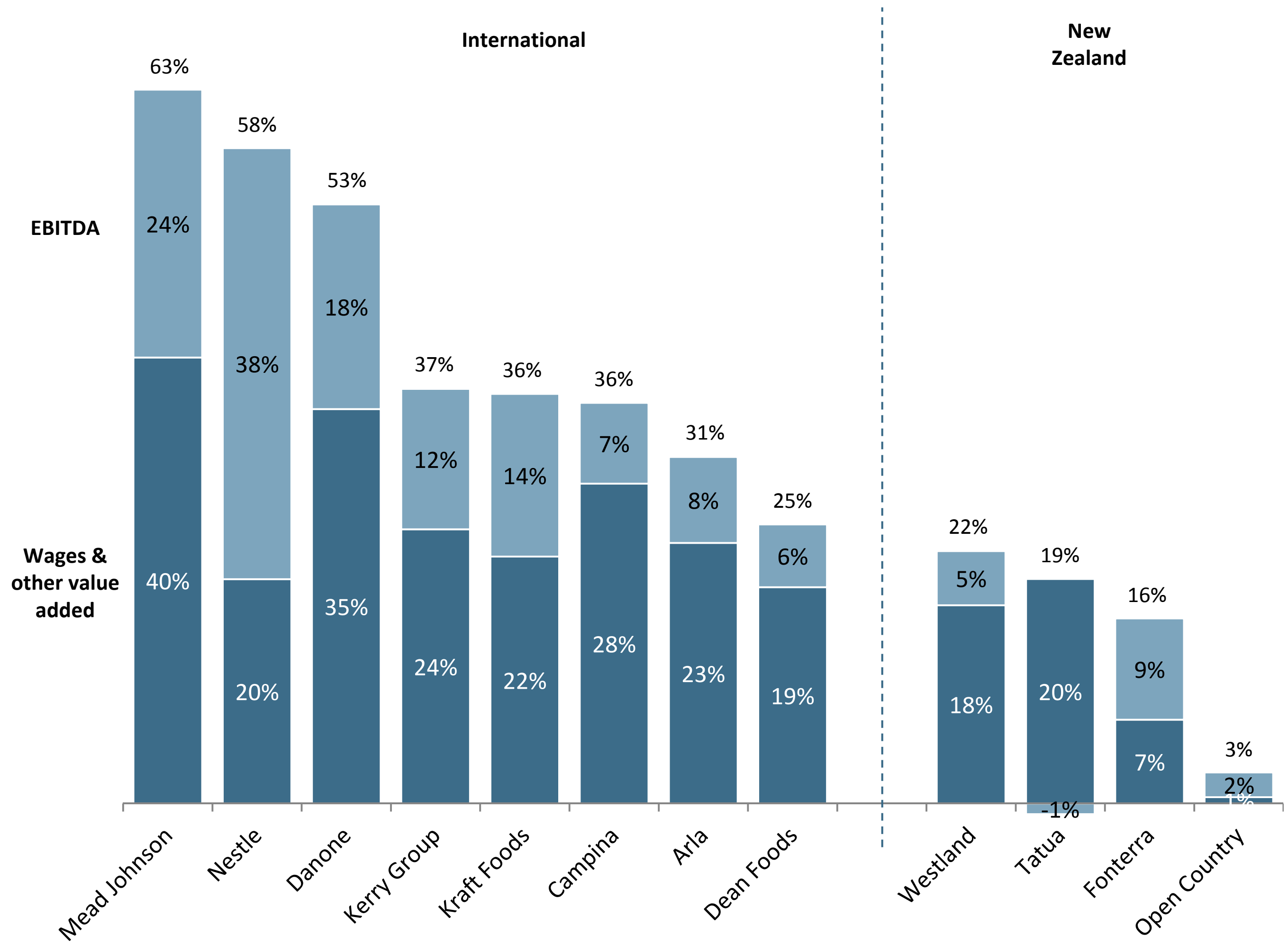
Key: darker = Co-Op; Lighter = corporate; Note: EBITDA is as given or calculated as OPBIT + depreciation; we are not accountants; data should be treated as directional; firms chosen by Coriolis from past research with additions and subtractions suggested by NZ firm interviewees; Source: various annual reports as published; Coriolis analysis

CORIOLIS

DAIRY – VALUE ADDED

Peers indicate there may be more opportunities to add value

Benchmarking value added: key New Zealand firms vs. select global dairy companies
(% of sales; FY10)



Notes/Definitions

- To economists value-added is the "difference between the cost of materials purchased by a firm and the price for which it sells those goods"; this is almost/ effectively gross profit (which is what we use here) [or effectively what firms pay GST on]
- Gross profit itself is then paid out as a return on labour (wages), other non-COGS and a return on capital (EBITDA)
- Gross domestic profit (GDP) is a measure of the gross value added; when we propose increasing New Zealand's GDP, we are effectively proposing to increase the amount of value added
- Saputo (used page prior) not enough data in Annual report for this calculation

Note: we are not accountants; data should be treated as directional; Source: various annual reports as published; Coriolis analysis

CORIOLIS

DAIRY – KEY FIRMS

The New Zealand dairy industry is dominated by Fonterra; there are five other firms with dairy turnover over $100m (Goodman Fielder, Open Country, Westland, Tatua and Synlait)

Key firms in the New Zealand dairy sector
(2010 or as available)

	Turnover	% Export	Employees	Ownership	Year founded	Notes
Milk processing/diversified dairy						
Fonterra	$16,726m (2010)	95% (AR)	NZ 9,500 15,600 (ws) 20,000 (K)	NZ; co-operative (11,000 farmers)	2001	www.fonterra.com Formed in industry mega-merger in 2001
Goodman Fielder / Meadow Fresh	A$441m (2010)		1,000 (dairy only)	Subsidiary of Goodman Fielder (Public: ASX)	~1986	www.goodmanfielder.com.au/index.php?q=node/53 Formerly NZDF; brand swap with Font; Incl. Huttons Kiwi Nat Foods likely long-term owner Acquired SunLatte in 2005
OpenCountry	$497.3m (2010)		196 (Ci)	NZ/Singapore (52% Talleys; 25% Olam; others)	2001	www.opencountry.co.nz 3 plants; capacity 800m l/year; exports to 45 countries 35.5% owned by AFFCO itself 52.8% owned by Talleys
Westland New Zealand	$421.6m (2010)	85% (article)	350 (K)	NZ; co-operative (380+ farmers)	1934	www.westland.co.nz Owns Easiyo
TATUA	$166.4m (2010)	96% (article)	194 (article)	NZ; co-operative (112 farmers)	1914	www.tatua.com
synlait™ making more from milk	$150m (2009e)		160 (article)	China/Japan/NZ; mixed (Bright; Mitsui; others)	2000	www.synlaitmilk.com Adding capacity to plant in Dunsandel Purchased assets of Oceania Dairy ($95m plant not built)

Source: Source: various company annual reports (AR) ; various company websites (ws) ; Kompass (K) ; interviews (Ci) ; Coriolis analysis and estimates (Ce)

DAIRY – SECONDARY FIRMS

New Zealand also has a strong second tier of dairy firms

Secondary firms in the New Zealand dairy sector
(2010 or as available)

	Turnover	% Export	Employees	Ownership	Year founded	Notes
Butter						
Ballantyne	$31m (2007)		TBD	NZ/Australia; mixed (Ballantyne family)	1936 (AU) 1980 (NZ)	http://www.ballantyne.com.au/ Moved canned butter factory to New Zealand in 1980; Morrinsville factory is 50% owned by Fonterra
Canary	$4-5m (Ce)		20 (K)	New Zealand; private (Bartosh family; others)	2001	www.canarybutter.co.nz Formed in 2001 to manufacture portion pack butter
Other dairy products						
National Foods	$21.8m (2010)		40 (K)	Japan; Listed (Kirin)		www.natfoods.com.au; http://lnnf.com.au www.kirinholdings.co.jp/english/ Primarily Yoplait yoghurt in New Zealand
Milligans Food Group Ltd	$14m (Ke)		50 (K)	New Zealand; private (Patton family)	1896	www.milligans.co.nz Range of dairy products including Frosty Boy
Klondyke Fresh	$8-12m (Ce)		35 (ws)	New Zealand; private (Gormack family; others)	2003	www.klondykefresh.co.nz Fluid milk manufacturing plant in Christchurch

Others (est. under $10m)

BioFarm Products Limited "Farming for Life" · Cyclops Premium Organic Yoghurt · Piako Gourmet Yoghurt · The Collective · A2 Corporation

Proposed or in progress

Zoagn · Miraka · Arapuni Milk

Source: Source: various company annual reports (AR) ; various company websites (ws) ; Kompass (K) ; interviews (Ci) ; Coriolis analysis and estimates (Ce)

CHEESE – OTHER FIRMS

There is also a group of smaller specialty cheese firms

Secondary firms in the New Zealand cheese sector

(2010 or as available)

	Turnover	% Export	Employees	Ownership	Year founded	Notes
Cheese						
	$10m (2008)		40 (K)	Michael Laird 70% DIFL 30%		www.kiwicheese.co.nz; www.difl.co.nz Focus on foodservice Recent JV with GF/Meadow Fresh
	$10m (Ke)		35 (K)	New Zealand; private (Robert (Bob) Berry)		whitestonecheese.co.nz
	$8m (article)		70 (article)	New Zealand; mixed DIFL 24%; Wyatt Creech 6%; others		www.kaimai.co.nz www.dairyexporter.co.nz/article/36225.html www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=10691110 Closed in 2011 the recently acquired (2009) Te Mata cheese factory

Others (est. under $5m)

Source: Source: various company annual reports (AR) ; various company websites (ws) ; Kompass (K) ; interviews (Ci) ; Coriolis analysis and estimates (Ce)

DAIRY – FONTERRA TRANSACTIONS

Fonterra is expanding rapidly overseas …

Recent major dairy industry transactions
(2005-2010)

Date	Acquirer	Target	Price	Details
May 2010	DairiConcepts (Fonterra and Dairy Farmers of America JV)	Swiss Valley Farms (USA)	N/A	- Bought a stake in a Midwest cheese company US hard Italian cheese business of co-operative Swiss Valley Farms (SVF) - Includes a plant in Minnesota
March 2010	Fonterra	Full ownership of Saudi dairy plant	$45m	- Dairy manufacturing plant was a joint venture with Saudi company in Saudi Arabia, Fonterra bought the whole business. Plant supplies Anchor and Anlene milk powder and cheese to the Middle East
Jan 2009	Fonterra	License to produce SKI brand yoghurt in Australia	N/A	- Acquired from National Foods the licence to manufacture, market and sell Nestle's Ski yoghurt brand in Australia - Combined with other Nestle yoghurt deal, this investment increased Fonterra market share in Australian yoghurt from 1% to 30% (by value)
2009	Fonterra	Sold shares in Britannia New Zealand Foods		- Fonterra JV with Britannia Industries (India), Fonterra sold 49% stake to Britannia Industries - Fonterra exits from India
Sep 2008	Fonterra	Fresh yoghurt business of Nestle in Australia	N/A	- Acquisition of Nestle's yoghurt and dairy dessert business in September 2008 (but not Ski brand)
2008	Fonterra	Purchased remaining shares in Soprole		- Ownership increased from 57% to 99.8% - Soprole is a leading Chilean branded dairy products company, selling yoghurt and a variety of other dairy products - Soprole sales were $583m in 2007 - Soprole accounts for 50% of Chilean dairy exports
2007	Fonterra	Norco Milk	N/A	- Bought Australian milk company to expand access to NSW and Queensland
2005	Fonterra	Acquired Kapiti Fine Foods	$50-60m	- Bought gourmet ice cream, cream, liquid milk and cheese company including production facilities
2005	Fonterra	Bought Fresh 'n Fruity yoghurt business	$754m	- Bought manufacturing and brand from New Zealand Dairy Foods - Includes Anchor brand - Sold Kiwi Meats and Meadow Fresh brands after the purchase, retained Mainland cheese
2005	Fonterra and Campina (Europe)	Created JV pharmaceutical lactose company (DMV Fonterra Excipients)	$115m	- Plants in New Zealand, Germany and Holland - Pharmaceutical grade lactose is used in the production of pills and as a carrier for inhalation of drugs for instance as used in asthma inhalers
2005	Fonterra	National Foods (Australia)	Unsuccessful	- Highly public but ultimately unsuccessful bid to purchase National Foods - Sold previous 19% stake in company for $269m

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – FONTERRA TRANSACTIONS

… and has been for decades

Recent major dairy industry transactions
(1986-2005)

Date	Acquirer	Target	Price	Details
June 2005	Fonterra	Bonlac Foods	N/A	- Increases Australian milk supply to Fonterra - Bonlac was Australia's 4th largest milk company - Bonlac plant produces liquid milk, yoghurt and dairy desserts
2005	Fonterra	Investment in San Lu Group	$183m	- Invest partly to gain access to local fresh milk supplies, 43% ownership - San Lu was a leading Chinese milk company
Sept 2003	Fonterra	Increase holdings in Bonlac Supply Company	N/A	- Company stake was increased from 25% to 50% - Fonterra now responsible for sales and marketing of Bonlac products - Bonlac collects milk and processes it
2002	Nestle	Fonterra	$318m	- As part of Dairy JV in South America (Dairy Partners Americas), Fonterra sold several dairy companies to Nestle in several South and Central American countries
2002	Fonterra	Britannia Foods (India)	JV formed	- Formed Britannia New Zealand Foods to sell branded cheeses and other branded dairy products in India using primarily Indian milk
December 2001	Fonterra	Arla Foods (Europe)	JV formed	- JV formed to market Lurpak (Arla) and Anchor (Fonterra) butter to the UK - Allowed rationalisation of Anchor brand in UK due to declining UK butter market
May 2000	Fonterra	Dairy Farmers of America	JV formed	- DairiConcepts JV company to access US milk and process with Fonterra technology - Produces infant formula ingredients, cheese powders, milk protein concentrate
1986	NZ Dairy Board	Soprole	N/A	- Acquired greater than 50% of this Chilean dairy company that produces a range of value added products - Soprole is now 99.8% owned by Fonterra

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – FONTERRA ACTIVITY

Fonterra is building up capacity in South America and Asia …

Recent major dairy industry activities
(2009-2011)

Date	Company	Investment	Activity	Details
2011	Fonterra	N/A	Expanded online trading platform	Exchange expanding to include cheese, milk protein concentrate and casein
2011	Fonterra	N/A	Investigate forming pilot farm in India	Agreement signed to investigate building dairy farm in India; 3,000-5,000 cow farm planned JV with 2 Indian dairy farmer groups
2011	Fonterra	N/A	Plans to build dairy farm in Brazil	Plan to develop 3,300 cow farm to supply Dairy Partners Americas with milk
2011	Fonterra	N/A	Agreement pulled	Saprole (Fonterra Chilean Subsid) and Nestle liquid and chilled pulled out of planned merger
2010	Fonterra	$212m	World's largest milk powder dryer	Dryer can produce 27 tonnes of milk powder per hour Increases output and efficiency of operation
2010	Fonterra	$8m	UHT expansion	$8m expansion upgrade to UHT facility in Takanini (+600k packs/week) = 30% increase in production [To 1.7m/week]
2010	Fonterra	$150m	New plant consents	New plant at Darfield, Canterbury planned – at resource consent stage; will employ 50 people
2010	Fonterra	$42m	Develop farm in China	NZ$42m investment - formally agreed to develop a new Fonterra dairy farm in Yutian County, Hebei Province, China Strategy to increase local milk supply in China
2010	Fonterra	$26m	Expand Australian dairy plant	Capacity increased in Victoria yoghurt plant so all Ski yoghurt can be manufactured by Fonterra
2010	Fonterra	$12m	Expand Malaysian dairy plant	Increase capacity to produce yoghurt and related products for the Malaysian market
2010	Fonterra	N/A	Fonterra shift close to "Food Valley"	Fonterra moving from Germany to Amsterdam (near "Food Valley") to grow sales of value-added ingredients and food technology solutions near big corporate food makers and the professional culinary sector
2010	Fonterra	N/A	New cool store	Ships more than 235,000 tonnes of butter cheese/yr from coolstore in Hamilton; located beside existing dry store will form a hub; described as NZ's largest cool store
2009	Fonterra	N/A	Sold shares in JV	Sold 25% shares in Arla Fonterra Foods, a joint venture between Arla (Europe) and Fonterra to merge marketing of butter to UK "No longer considered core to long-term strategy'
2009	Fonterra	$18m	Expand Sri Lanka dairy plant	Expanded plant to increase production of yoghurt and related products for the Sri Lankan market

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – FONTERRA ACTIVITY

… continued …

Recent major dairy industry activities

(2004-2009)

Date	Company	Investment	Activity	Details
2009	Dairy Partners Americas (Fonterra and Nestle JV)	$51m	Built milk concentration plant in Brazil	JV plant was opened in Palmeiras daz Missoes in southern Brazil, a region with significant dairy production Processes 1 million litres per day
2008	Fonterra	-$139m	Wrote off Chinese investment	San Lu produced melamine contaminated infant formula causing sickness and death Fonterra maintains other significant and growing investments in China
2008	Fonterra	N/A	Opened online commodity trading platform	Commodity whole milk powder exchange formed that has grown to trade 25% of total Fonterra sales, 300 bidders from 58 countries
2008	Fonterra	$2.4m	Created research facility	Research facility in Chicago employs 50 staff to research novel milk-based ingredients for use in the manufacture of cheeses, yoghurts, infant formula Complements existing research facilities in Palmerston North, Melbourne and Hamburg (now in Amsterdam)
2007	Fonterra	N/A	Farm in China	The Tangshan Fonterra Farm produces milk for local market (6,000 cows, 25m litres of milk) and uses an intensive feedlot system for dairy herd
2007	Fonterra	$42m	Cheese factory near Timaru	Consolidates cheese production into one main site, produces a range of cheeses for Anchor, Chesdale and Mainland brands Fonterra developed patented technology to rapidly make mozarella cheese Plant also makes shredded mozarella cheese using this technology for foodservice sale to pizza chains
2007	Fonterra	$72m	Expand production of infant formula base mix	Investment upgrades a New Zealand and an Australian plant to increase production by 1/3rd Primarily produces infant formula mix to supply to infant formula companies
FY06	Fonterra	$77m	Plant upgrades	Upgraded Te Awamutu and Takaka plants in New Zealand
FY06	Fonterra	N/A	Plant upgrades	Upgraded Soprole plants in South America
2006	Fonterra	N/A	Expand services for RD1 stores	In a JV with Landmark (Australia), RD1 rural supply stores will start selling finance, insurance and real estate services There were 51 RD1 stores in 2006
2005	Fonterra	N/A	Bought Nestle plant in Aus	Plant converted to only make milk powder for export
2004	Fonterra	$25m	Pharmaceutical lactose production facility	Plant produces lactose for drug inhalation devices
2004	Fonterra	$15m	Milk fractionation plant	Plant opened in Hautapu and is focused on lactoferrin production along with other milk proteins
April 2004	Fonterra	N/A	Expanded JV in South America	Dairy Partners Americas is a JV between Fonterra and Nestle Expanded operations to Trinidad, Ecuador and Columbia Involves manufacture, distribution, sales of milk powder, chilled dairy products

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – FONTERRA ACTIVITY

… continued

Recent major dairy industry activities
(2001-2002)

Date	Company	Investment	Activity	Details
2002	Fonterra	$26m	Butter plant constructed	Butter plant was built at existing Claneboye site
March 2002	Nestle and Fonterra	N/A	Form JV in South America	Form Dairy Partners Americas In 2003, JV had 3400 employees throughout South America Agreement to cooperate on manufacture of UHT milk, yoghurt, ingredient milk powder and milk management
2002	DairiConcepts (Fonterra and Dairy Farmers of America)	$73m	Built dairy plant	Plant built on existing site and manufactures milk protein concentrate
2001	Fonterra	N/A	Formed research venture	JV with the University of Auckland with funding from FRST (NZ gov't science fund) Aim is to discover novel bioactive milk compounds
2001	Fonterra	N/A	Built new plants	New milk powder and lactose plants built at Clandeboye in Canterbury
2001	Fonterra	N/A	Licensed probiotic	DR10 probiotic was developed by the NZ Dairy Research Institute and launched by NZ Milk (now Fonterra) Licensed product to Danisco, a major food manufacturer for use in yoghurt

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – TRANSACTIONS

Traditional dairy companies are moving into new higher growth areas

Recent major dairy industry transactions

(2005-2011)

Date	Acquirer	Target	Price	Details
2011	Synlait	Oceania assets	N/A	- Agreement to buy assets of Oceania land and consents (no plant built yet); "Help manage our growth" CEO, John Penno
Sep 2010	Bright Dairy & Food (China)	51% of Synlait Limited from other shareholders (equity increase)	$82m	- Bright Dairy's investment of $82 million for 51 per cent of Synlait Milk will facilitate the completion of a second milk powder plant to begin operations in August 2011. The plant will produce value added products, such as infant formula and other high specification formulated milk powders, packaged for consumers in China and elsewhere
Apr 2010	Westland	Remaining 25% of EasiYo	N/A	- Remaining share from founders Kathy and Len Light
2010	A2 Corp	A2 Australia Dairy Products	N/A	- Buy up the remaining 50%; partner Freedom Nutritional Products will get 25% stake in A2 Corp; better financial position to expand internationally
Sept 2009	Kaimai Cheese	Te Mata Cheese factory and café	N/A	- Purchased factory and café
2008	AFFCO	Open Country Dairy	N/A	
2007	Mitsui (Japan)	14% of Synlait	$13.5m	- Mitsui of Japan invests in NZ dairy production via Synlait and an additional $16.5m loan
2007	Goodman Fielder Dairy (Meadow Fresh)	Independent Dairy Producers	"relatively small"	- IDP processes and supplies town milk under the Cow and Gate brand to dairies and small retailers in Auckland, Wellington, Tauranga and Hamilton.
2007	Westland	75% of EasiYo from founders Kathy and Len Light	N/A	- $30m dehydrated yoghurt manufacturer founded in 1991; sales are 75% export , primarily Australia and UK markets; Westland's first acquisition of a "a value-add business"
Dec 2005	Goodman Fielder	NZ Dairy Holdings (Meadow Fresh) from Rank Group	A$693.8m	

1. Ex-head PPCS (aka. Silver Fern Farms); Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – ACTIVITY

There has also been a range of significant investments in plants, both domestic and overseas

Recent major dairy industry activities
(2006-2011)

Date	Company	Investment	Activity	Details
2011	Piako Gourmet Yoghurt	N/A	Distribution deal Fonterra	Piako signed a deal with Fonterra to distribute through supermarkets Purchased factory in Norwich, UK to produce local yoghurt in UK branded as “Little Melton Products” (“UK-made” company)
2011	Kaimai Cheese Company	N/A	Plant closure	High milk prices have forced Hawkes Bay cheese factory to close the Te Mata Cheese factory and cafe with the loss of nine jobs (purchase in Sept 2009). Sold up to 135 tonnes of white-rinded, blue and feta cheese a year. Production moving to Waharoa
2010	Miraka	$35m	Milk powder plant	8t/hour powder drying plant has a capacity for 50,000 cows sharing a similar configuration to that used by Open Country Cheese and Synlait plants; scheduled to open in August 2011 Miraka is a joint venture between Wairarapa Moana Incorporation and Tuaropaki Ltd.
2010	South Waikato Processing Facility Ltd (Arapuni Milk)	N/A	Processing plant consent granted	Plans to build a $100 million processing plant at Arapuni, Waikato; 37,000 tonnes per year milk powder plant
2010	Westland/EasiYo	N/A	Increase capacity	EasiYo (75% Westland at the time) moves to new premises and doubles capacity at dehydrated yoghurt factory in Albany, Auckland
2009	Open Country Dairy	N/A	New plant - Wanganui	Produces whole milk powder
2008	Open Country Dairy	N/A	New plant - Awarua	Commissioned the Awarua factory; whole milk powder capacity to increase to 200m litres of milk
2008	Goodman Fielder Dairy (Meadow Fresh)	N/A	Plant upgrade	Developing a UHT milk facility from which Goodman Fielder will be able to service its emerging market opportunities, particularly in Asia
2008	Goodman Fielder Dairy (Meadow Fresh)	N/A	Plant upgrade	Development of a specialty cheese facility at its plant in Longburn in the Manawatu and upgrading the plant's yoghurt and liquid milk operation
2006-08	Open Country Dairy	N/A	Improved facilities	Waharoa Whey Plant (2006); anhydrous milk fat plant (2007); and whole milk powder plant (2008)

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – THEMES

A number of theme emerge from firm behaviour…

Identified firm level activity or investment themes

(2010)

Theme	Details	Examples
In-market investment		
Farm investments	Investing in farms in international markets	- Fonterra – 2010 New Fonterra Yutian Farm ($42m investment) to be developed in Yutian County, Hebei, China (houses 3,000 cows) - Fonterra – 2007 The Tangshan Fonterra Farm pilot successfully demonstrated ability to produce high quality milk locally (6,000 cows, 25m litres of milk)
Production investment	Piako Gourmet Yoghurt producing yoghurt in UK	- Producing yoghurt in UK and branding as "Little Melton Products" (to be a UK-made company) supplying Harrods and Waitrose - Support from Fonterra in NZ market to distribute into supermarkets
Facility investment- down the value chain	Fonterra new facility in Amsterdam	- EU headquarters and Fonterra's Europe technology application centre, moving to Amsterdam to expand the value-added ingredients and food technology solutions and sell to big corporate food makers and the professional culinary sector. Aim to become active in "Food Valley"
Efficiencies		
Transport hubs	Rail focussed hubs	- Fonterra to develop 5 hubs; national supply chain strategy, coupled with the move to use rail more often. New coolstore facility in Hamilton built beside Dry store and Kiwirail.

Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – THEMES

… continued

Identified firm level activity or investment themes

(2010)

Theme	Details	Examples
Focus on Growth		
Asia-NZ co-investment	Asian state owned enterprises investing in New Zealand dairy	- Vietnam Dairy Products (48% Government of Vietnam) invests to buy 19% ownership of Miraka with Maori (Wairarapa & Tuaropaki) - Bright Dairy (majority owned by Shanghai regional government) buys 51% of Synlait - Misui (Japan) invests 15% of Synlait
Vertical integration	Joint ownership of farms and processor	- Synlait ownership of 15,000 cows; Bright part ownership of processing and marketing assets, not including farms - Miraka ownership of 18,000 cows (via Maori owner/shareholders)
Partnerships		- Goodman Fielder and The Grate Kiwi Cheese Co. partnership (2007) to supply cutting and wrapping for its cheeses - “We will be investing limited capital in the joint venture which will be used to install specialist cutting and wrapping equipment in GKC’s Auckland plant. This will not only provide us with a secure supply base but will also allow us to develop some innovative new packaging solutions for our range of consumer cheeses.” *CE, Peter Margin, 2007* - Fonterra and Piako yoghurt distribution deal
Increasing Retail Brands		
Exporting consumer products	Dehydrated yoghurt	- Full ownership of EasiYo adds a branded product to Westland Milk Products portfolio. The shift to a new plant in 2010 enables EasiYo to increase export sales to $30m a year.

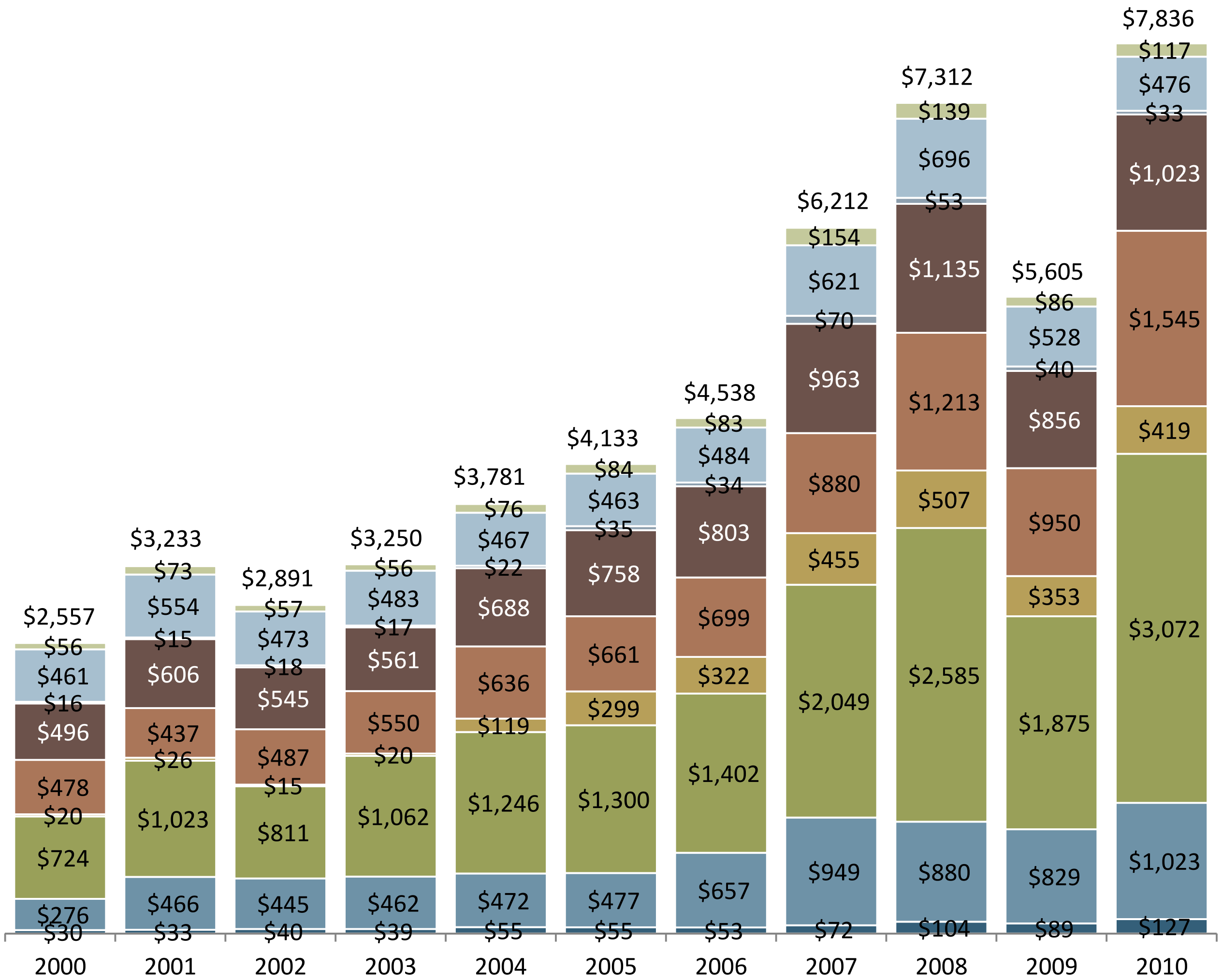
Source: various companies annual financial statements (as filed with NZ Companies Office or available company website); various press releases and news articles; Coriolis analysis

DAIRY – EXPORTS BY TYPE

New Zealand dairy exports have achieved strong growth driven by milk powder and whey

New Zealand dairy export by form

(US$m; 2000-2010)



	10 Year		Last Year	
	CAGR	Absolute	CAGR	Absolute
TOTAL	12%	+$5,279m	40%	+$2,231m
Other	8%	+$61m	36%	+$31m
Casein	0%	+$15m	-10%	-$51m
Lactose	8%	+$17m	-17%	-$7m
Cheese	8%	+$527m	20%	+$168m
Butter	12%	+$1,067m	63%	+$596m
Whey	35%	+$399m	19%	+$66m
WMP	16%	+$2,348m	64%	+$1,197m
SMP	14%	+$748m	23%	+$194m
Milk	16%	+$97m	43%	+$38m

Source: UN Comtrade database; Coriolis analysis

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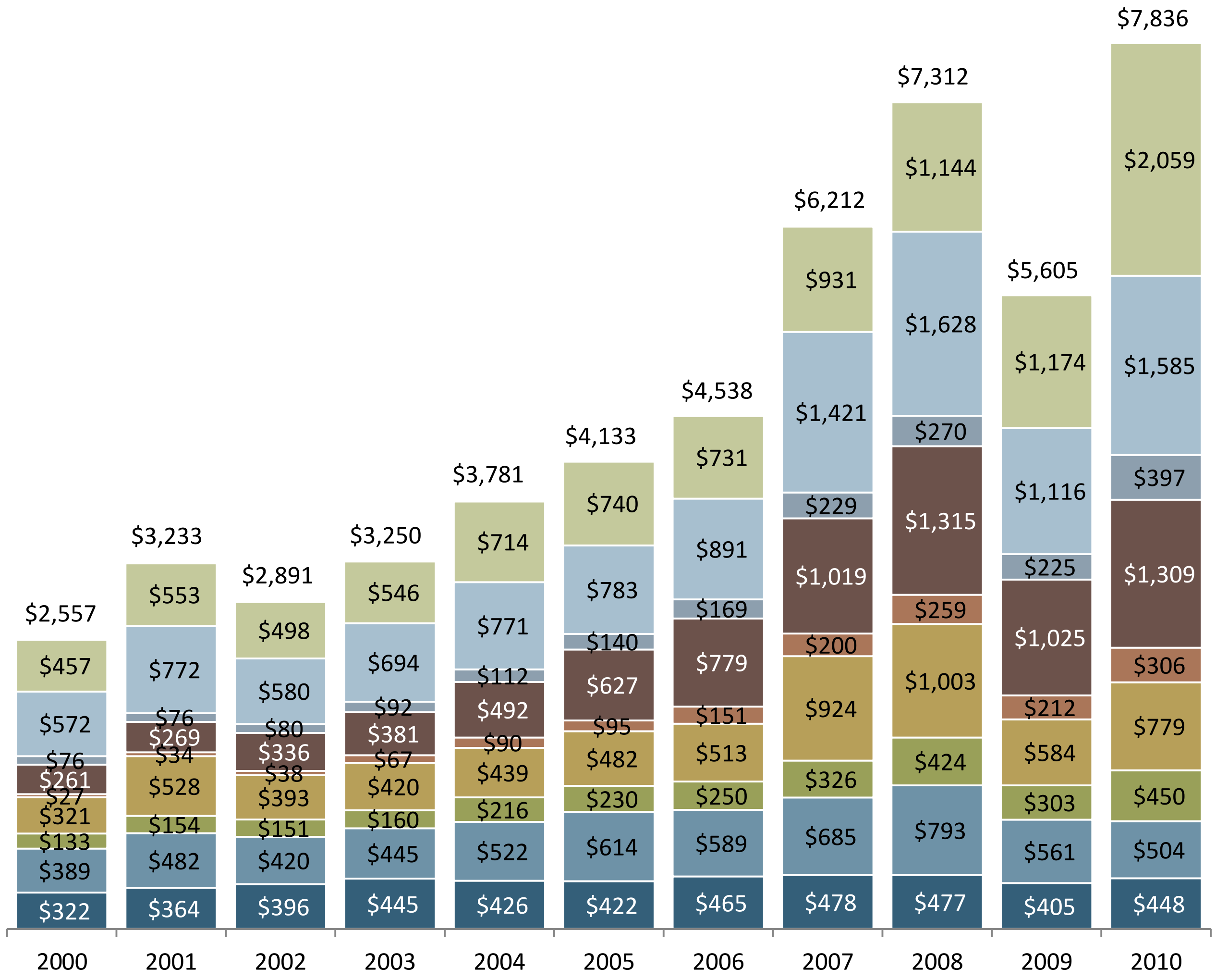
DAIRY – EXPORTS BY REGION

New Zealand dairy exports have achieved strong growth driven primarily by the developing world

New Zealand dairy export by region
(US$m; 2000-2010)



	10 Year		Last Year	
	CAGR	Absolute	CAGR	Absolute
TOTAL	12%	+$5,279m	40%	+$2,231m
E Asia	16%	+$1,602m	75%	+$884m
SE Asia	11%	+$1,013m	42%	+$469m
Indian Sub	18%	+$321m	76%	+$171m
NA/ME/CA	18%	+$1,048m	28%	+$284m
SS Africa	27%	+$279m	44%	+$94m
Other	9%	+$458m	33%	+$195m
Australia/ Pacific Islands	13%	+$318m	49%	+$148m
N. America	3%	+$116m	-10%	-$56m
Europe	3%	+$126m	11%	+$43m

Source: UN Comtrade database; Coriolis analysis

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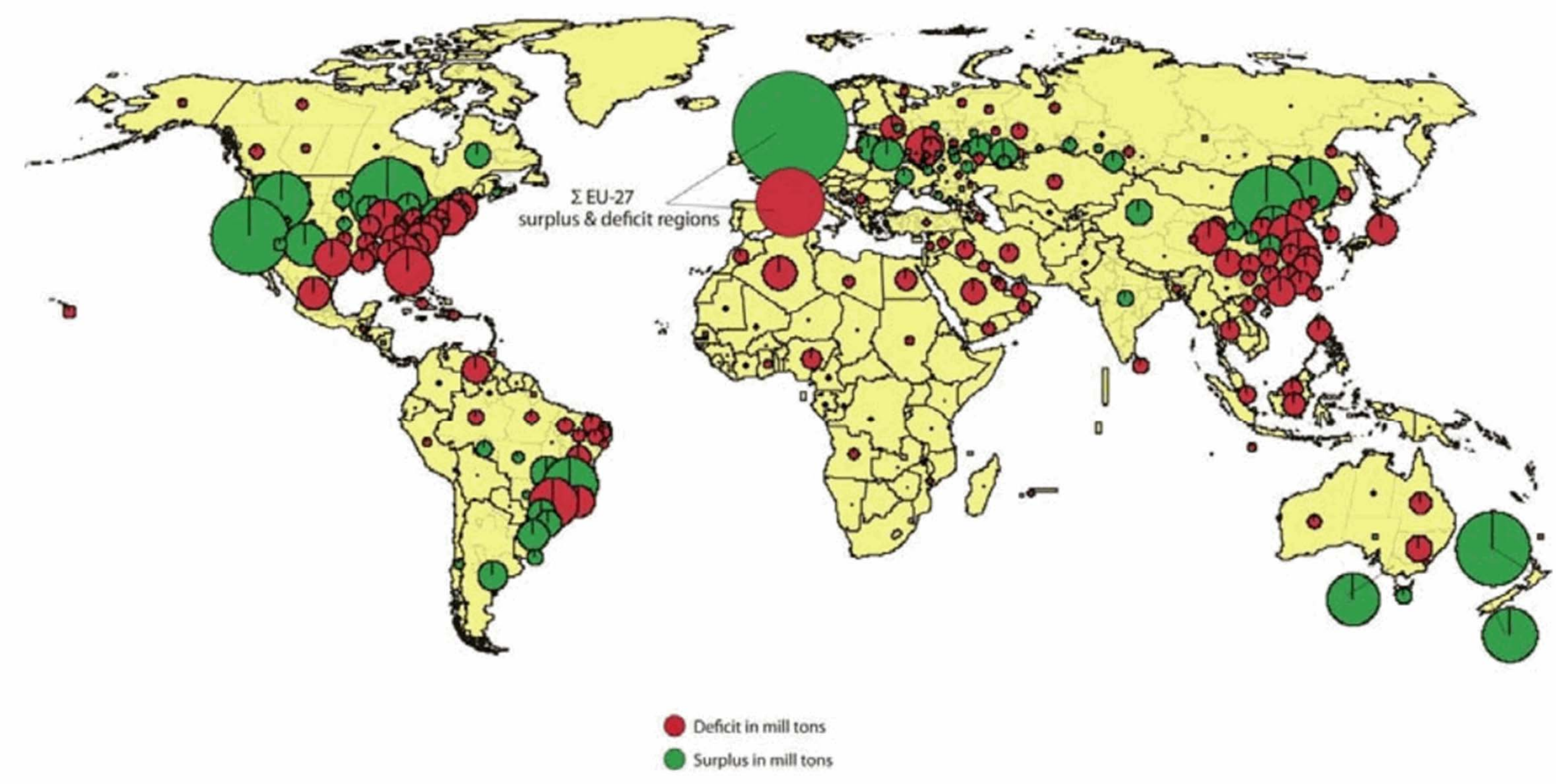
MILK POWDER – GLOBAL

Milk is produced in temperate regions and exported as milk powder to tropical or dry areas close to the equator

Milk surplus and deficit worldwide
(2007 or 2008)

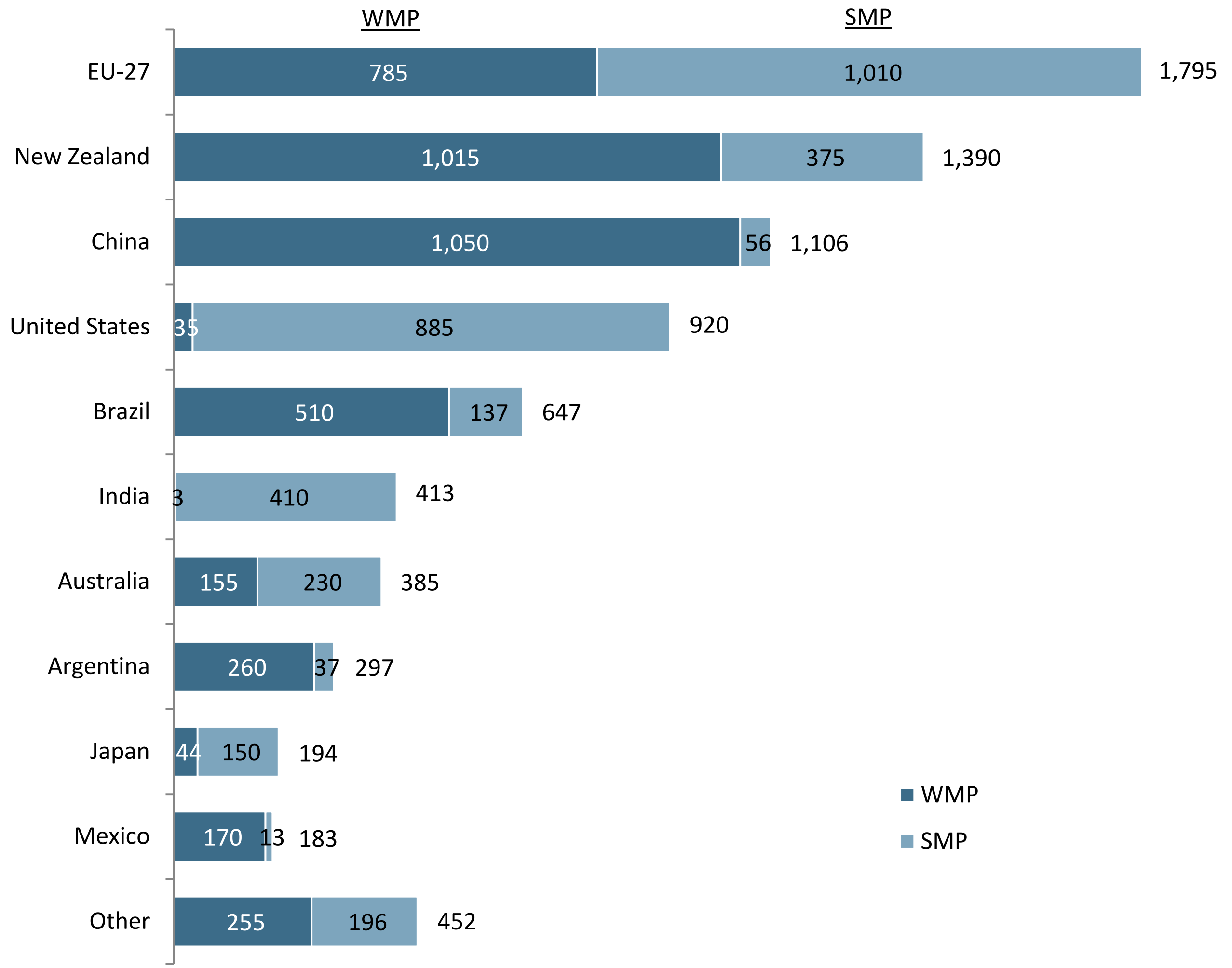


Source: IFCN

MILK POWDER – PRODUCTION TOP 10

New Zealand is the largest producer of milk powder in the world, followed by China; however, in aggregate, Europe is the largest producer

Global milk powder production by top 10 countries/regions and other
(tonnes; 000; 2011 or as available)



Comments

- Few would articulate that China was the second largest producer of milk powder in the world
- At what point will China become self-sufficient in milk powder?
- At what point will China begin exporting significant quantities of milk powder?

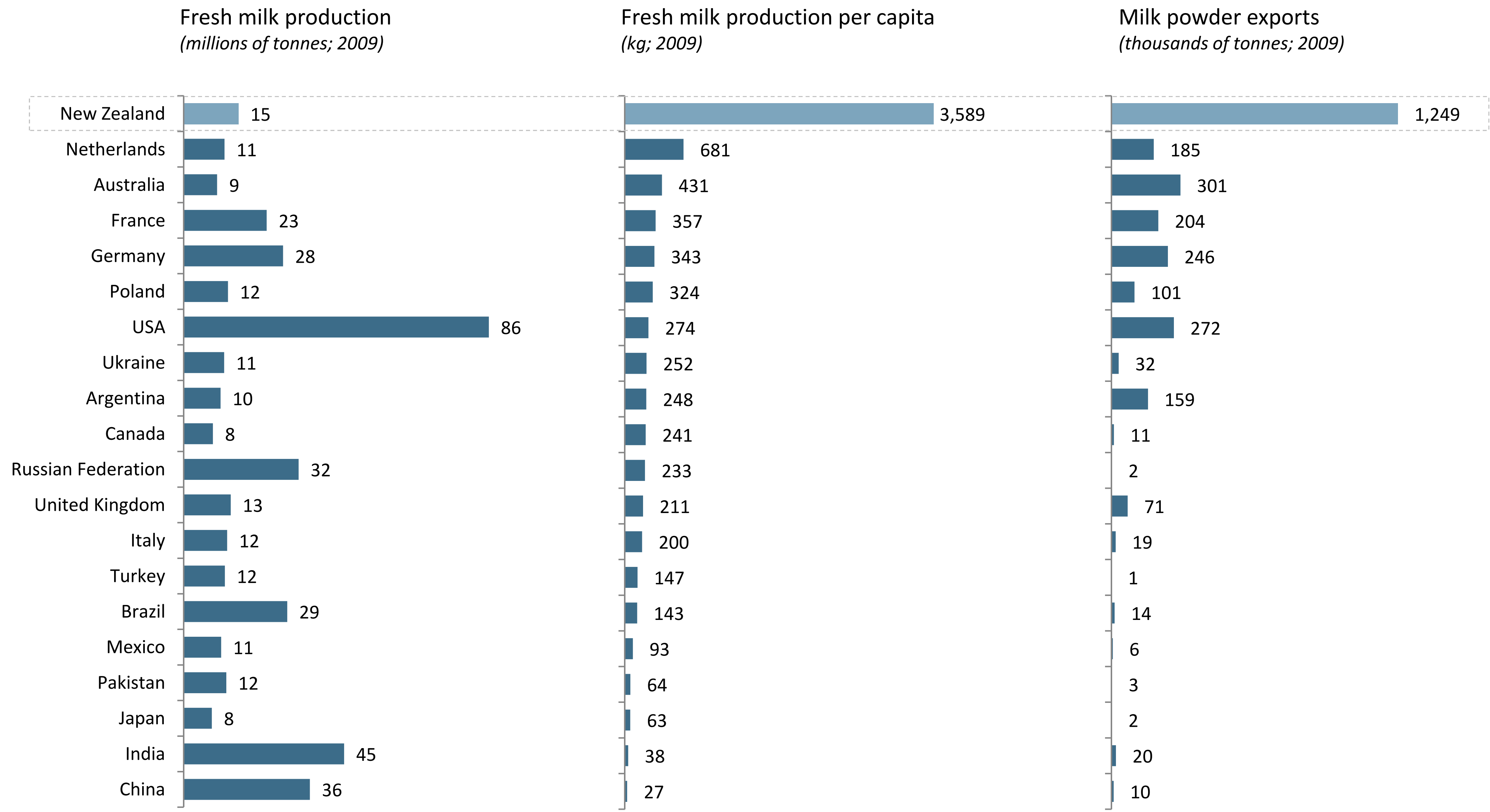
Notes

- Data is USDA FAS forecast for top 10 filled in with missing data and total from FAO 2009 production

Source: USDA "Dairy: World Markets and Trade July 2011" p19 and p23; UN FAO AgStat; Coriolis analysis

DAIRY – TOP 20 MILK PRODUCERS

Countries with excess milk production export milk powder



Source: UN Comtrade database; FAOSTAT; Coriolis analysis

DAIRY – KEY MILK POWDER EXPORTERS

Milk powder is exported by regional dairy cooperatives; our dairy cooperatives compete with their dairy co-operatives

Key milk powder producers by ownership structure by country
(2011)

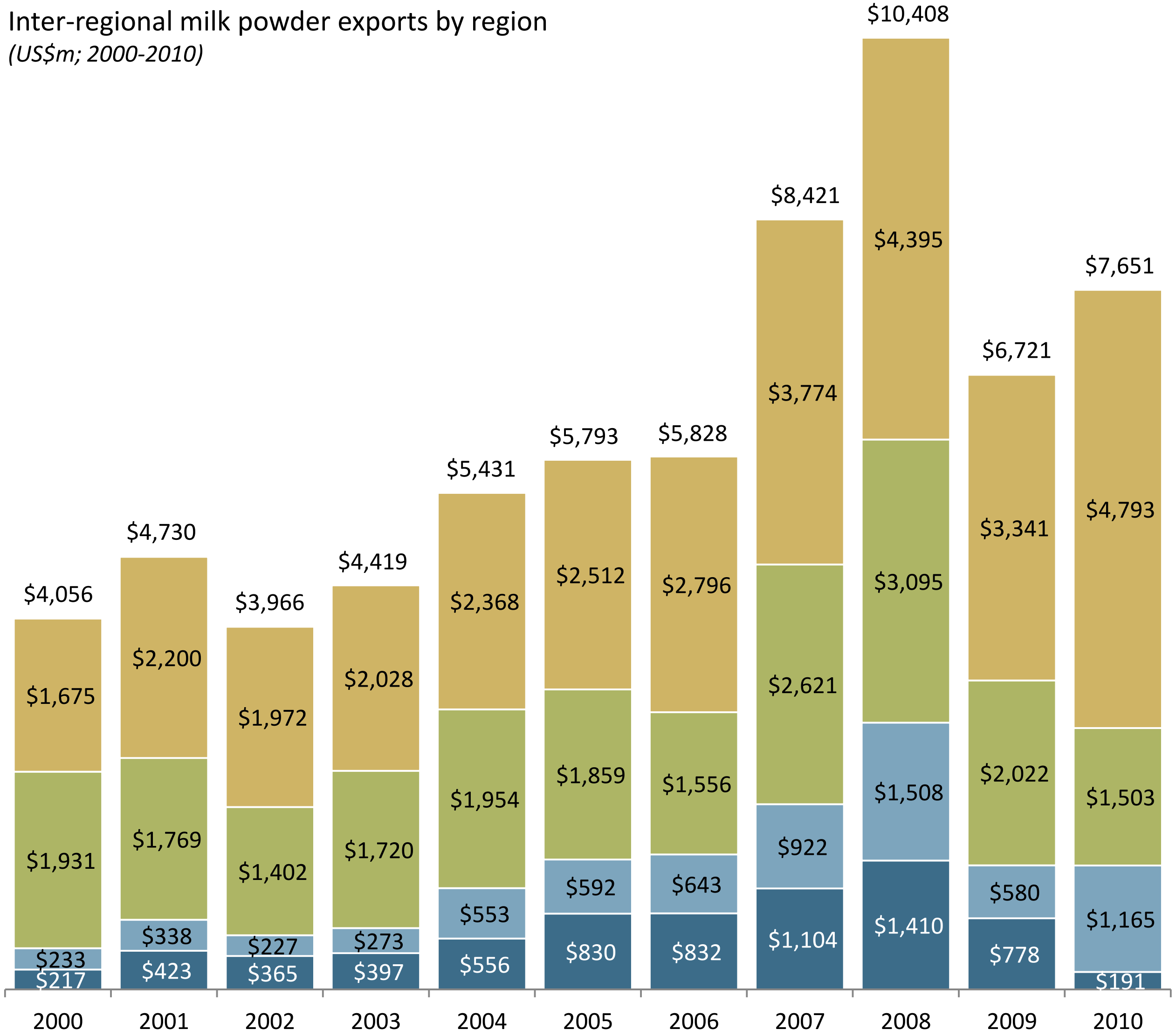
	Key Milk Powder Producers		
	Co-operatives	Private	Corporate
New Zealand	Fonterra, Westland New Zealand, TATUA	OpenCountry, synlait making more from milk	-
Australia	Murray Goulburn Co-operative Co. Limited, Fonterra	-	-
USA	Land O'Lakes, Inc., DFA Dairy Farmers of America, Prairie Farms, Darigold, AMPI, Foremost Farms USA, Dairylea Cooperative Inc., California Dairies inc., DairyAmerica, Agri-Mark	-	-
Germany	Nordcontor, Nordmilch, Humana Milchunion, hochwald, BMI, Omira Milch, Allgäuland, Molkerei Ammerland, Bayernland, MUH	-	-
Netherlands	FrieslandCampina	-	-
Denmark/ Sweden	Arla	-	-
France	Sodiaal Entremont Alliance, Groupe Even, 3A Coop, Coopagri Bretagne, Eurial		

Source: Coriolis

DAIRY – INTER-REGIONAL MILK POWDER EXPORTS

Oceania has grown to become the major global milk powder exporting region

Inter-regional milk powder exports by region
(US$m; 2000-2010)



	10 Year		Last Year	
	CAGR	Absolute	CAGR	Absolute
TOTAL	7%	+$3,595m	14%	+$930m
Australia/ Pacific Islands	11%	+$3,117m	43%	+$1,451m
Europe	-2%	-$428m	-25%	-$519m
N America	17%	+$932m	101%	+$586m
Other	-1%	-$26m	-75%	-$587m

Inter-regional exports means all exports by countries in a region minus exports between countries within that region; Source: UN Comtrade database; Coriolis analysis

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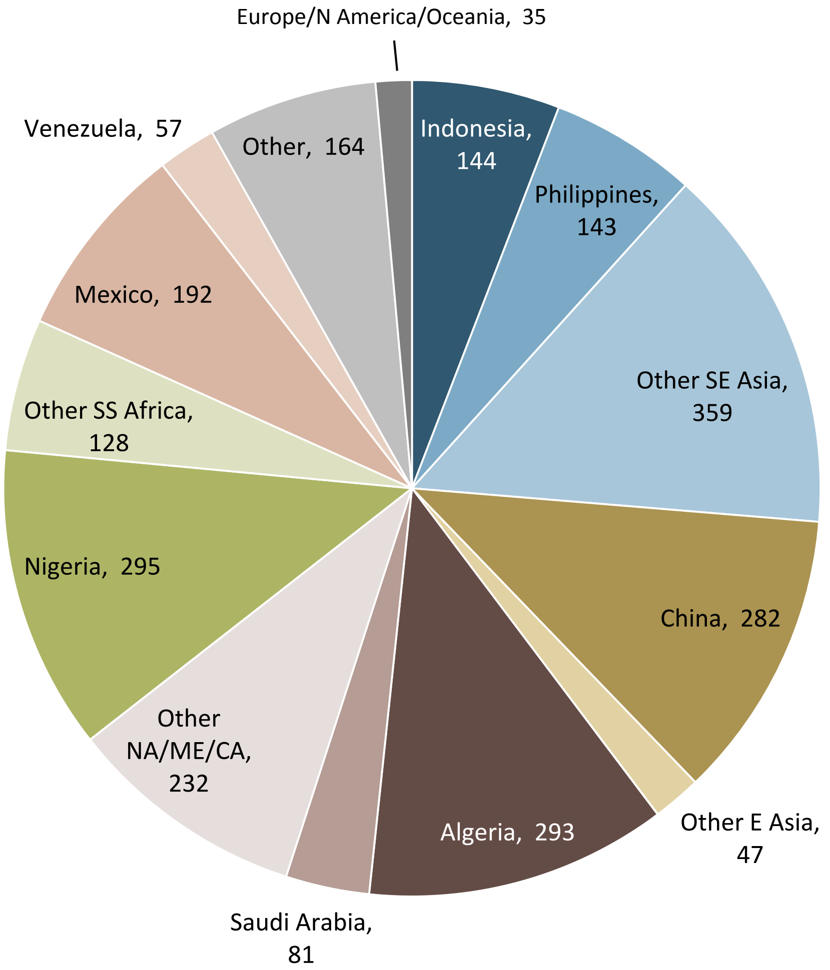
DAIRY – MILK POWDER IMPORTS

Globally, milk powder is imported by tropical and desert regions; China is the main exception

Inter-regional milk powder imports by country/region
(millions of tonnes; 2009)



Total = 2,452

Comments/Notes

- Inter-regional imports means all imports by countries in a region minus imports between countries within that region
- China stands out as a non-tropical, non desert country that imports significant milk powder
- China has significant and growing domestic milk production

China includes Hong Kong; Source: UN Comtrade database; ; Coriolis analysis

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DAIRY – MILK POWDER

Milk powder is sold as a commodity ingredient for various processed foods and reconstituted milk as shown in this Malaysian example

EXAMPLE: Simplified model of uses of imported milk powder in Malaysia
(model)

+20% lager than NZ in area but only 2% as many dairy cows as NZ

Malaysian cows (95,000)

Imported milk powder

→ **Malaysian Dairy Factories**

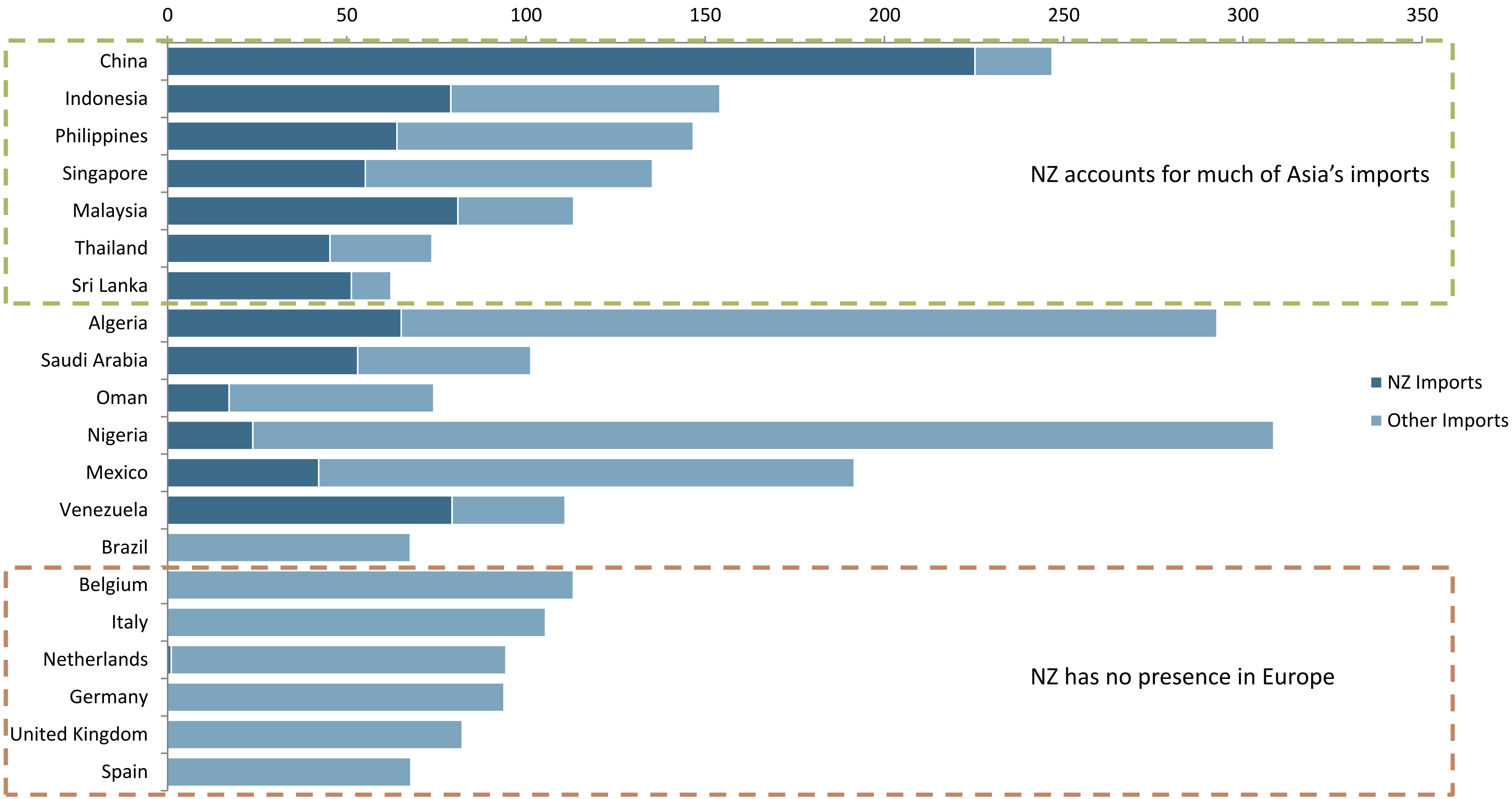
Most value added at this stage

Source: photo credit (fair use; low resolution; complete product/brand for illustrative purposes); Coriolis

DAIRY – TOP 20 MILK POWDER IMPORTING COUNTRIES

New Zealand has a very high market share in Asia, especially China

Top 20 milk powder importing countries and New Zealand's share
(millions of tonnes; 2009)

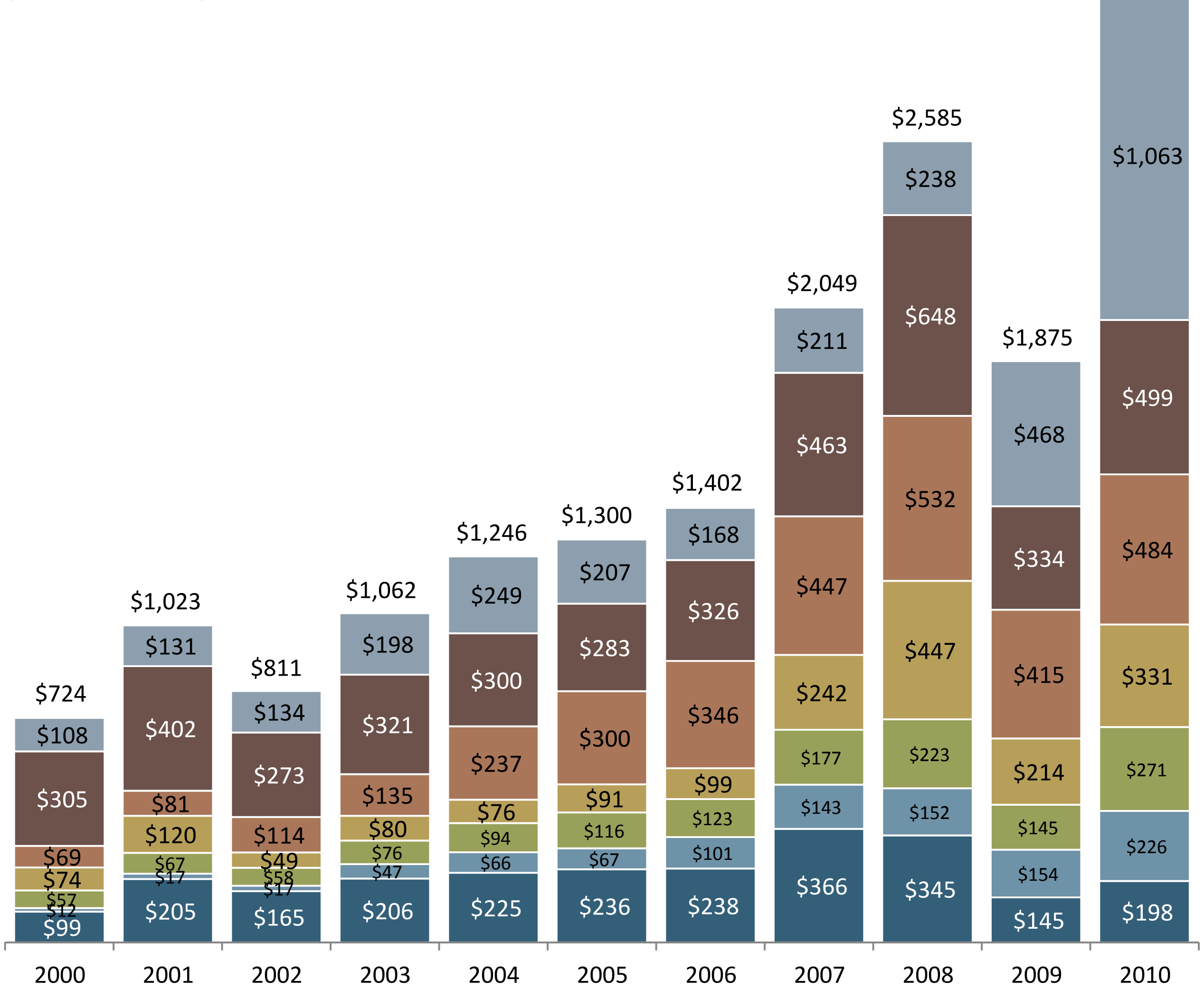


Source: Plant & Food /HortReseatch Fresh Facts various years; Statistics New Zealand Agricultural Statistics; MAF SONZAF; UN FAO AgStats database (custom job); past Coriolis research & projects; Coriolis analysis and estimates

DAIRY – WHOLE MILK POWDER EXPORTS BY REGION

New Zealand whole milk powder exports are growing well, especially in East Asia

New Zealand WMP exports by region
(US$m; 2000-2010)



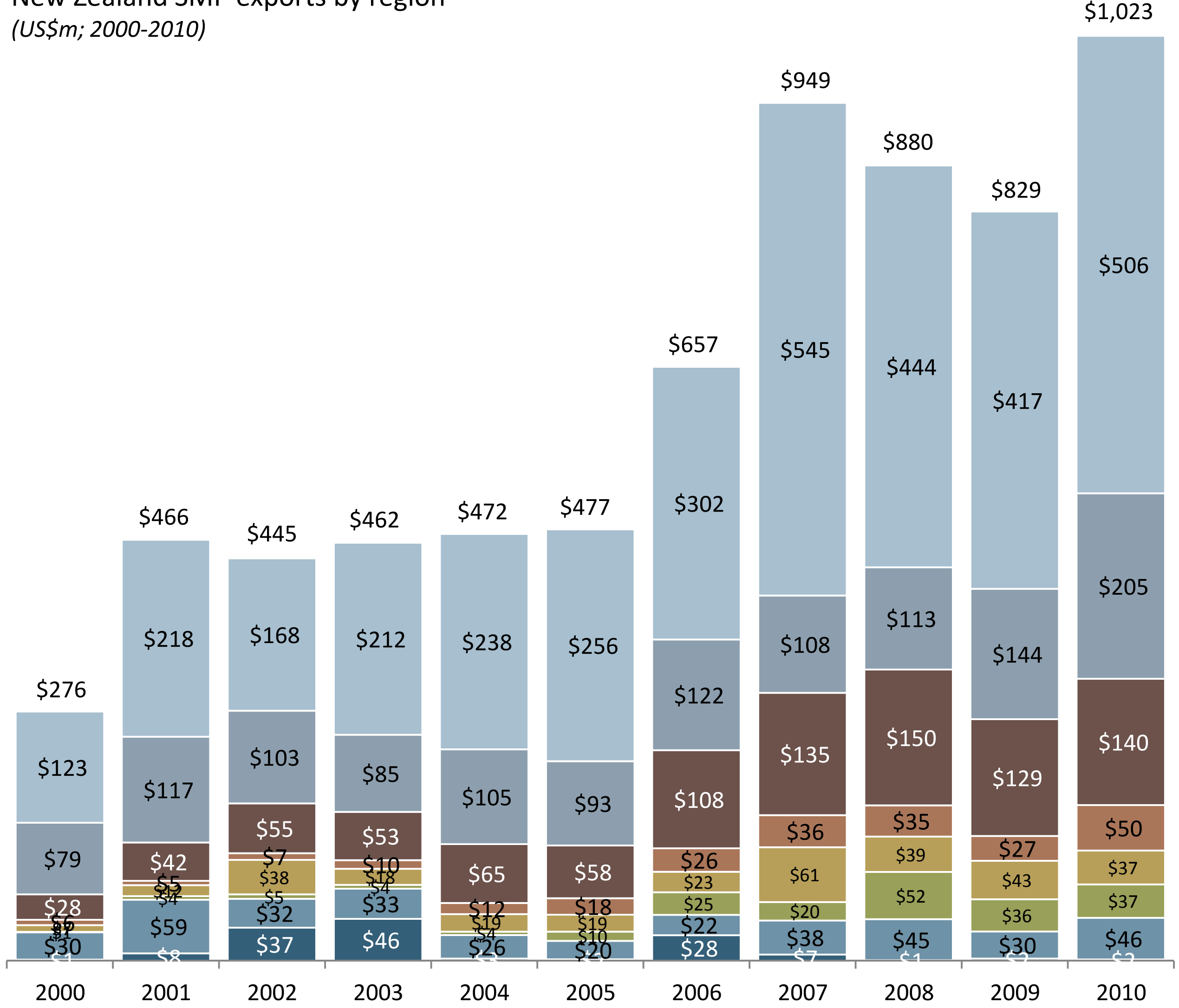
	10 Year		Last Year	
	CAGR	Absolute	CAGR	Absolute
TOTAL	16%	+$2,348m	64%	+$1,197m
E Asia	26%	+$955m	127%	+$595m
SE Asia	5%	+$193m	49%	+$164m
NA/ME/CA	21%	+$415m	17%	+$69m
S America	16%	+$257m	55%	+$117m
Indian Sub	17%	+$214m	86%	+$126m
SS Africa	34%	+$214m	47%	+$72m
Other	7%	+$99m	37%	+$53m

Source: UN Comtrade database; Coriolis analysis

DAIRY – SKIMMED MILK POWDER EXPORTS BY REGION

New Zealand skimmed milk powder is primarily exported to populated regions with limited domestic dairy production

New Zealand SMP exports by region
(US$m; 2000-2010)



	10 Year CAGR	10 Year Absolute	Last Year CAGR	Last Year Absolute
TOTAL	14%	+$748m	23%	+$194m
SE Asia	15%	+$383m	21%	+$89m
E Asia	10%	+$126m	42%	+$61m
NA/ME/CA	17%	+$112m	8%	+$10m
Indian Sub	24%	+$44m	83%	+$23m
C America	18%	+$30m	-12%	-$5m
SS Africa	48%	+$36m	4%	+$1.3m
Other	4%	+$16m	54%	+$16m
Europe/ N America	1%	+$0.2m	-37%	-0.9m

Source: UN Comtrade database; Coriolis analysis

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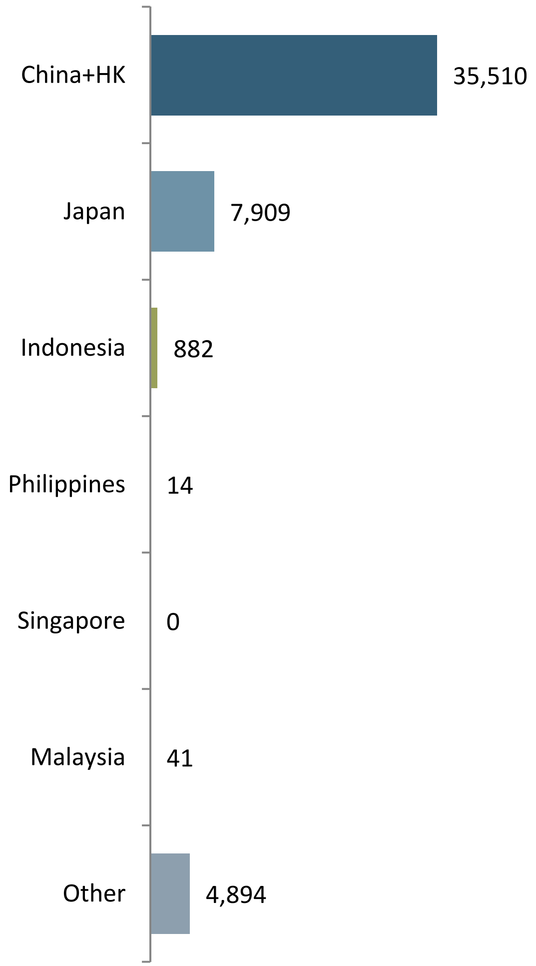
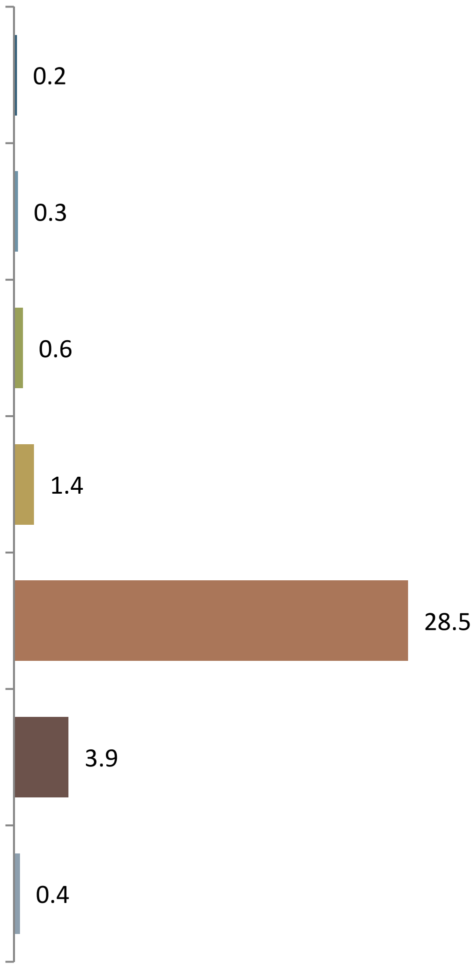
DAIRY – ASIAN MILK MARKET

Asia is New Zealand's largest market for milk powder and New Zealand and Australia have captured most of this market

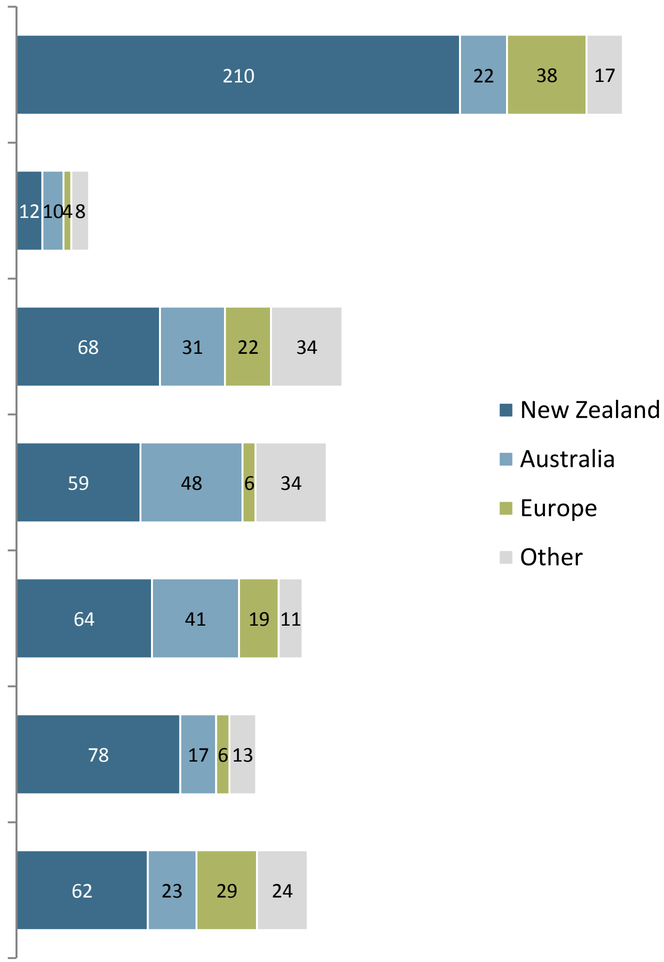
Fresh milk production
(thousands of tonnes; 2009)



Milk powder import per capita
(kg per person; 2009)



Milk powder imports
(thousands of tonnes; 2009)



Source: UN Comtrade database; FAOSTAT; Coriolis analysis

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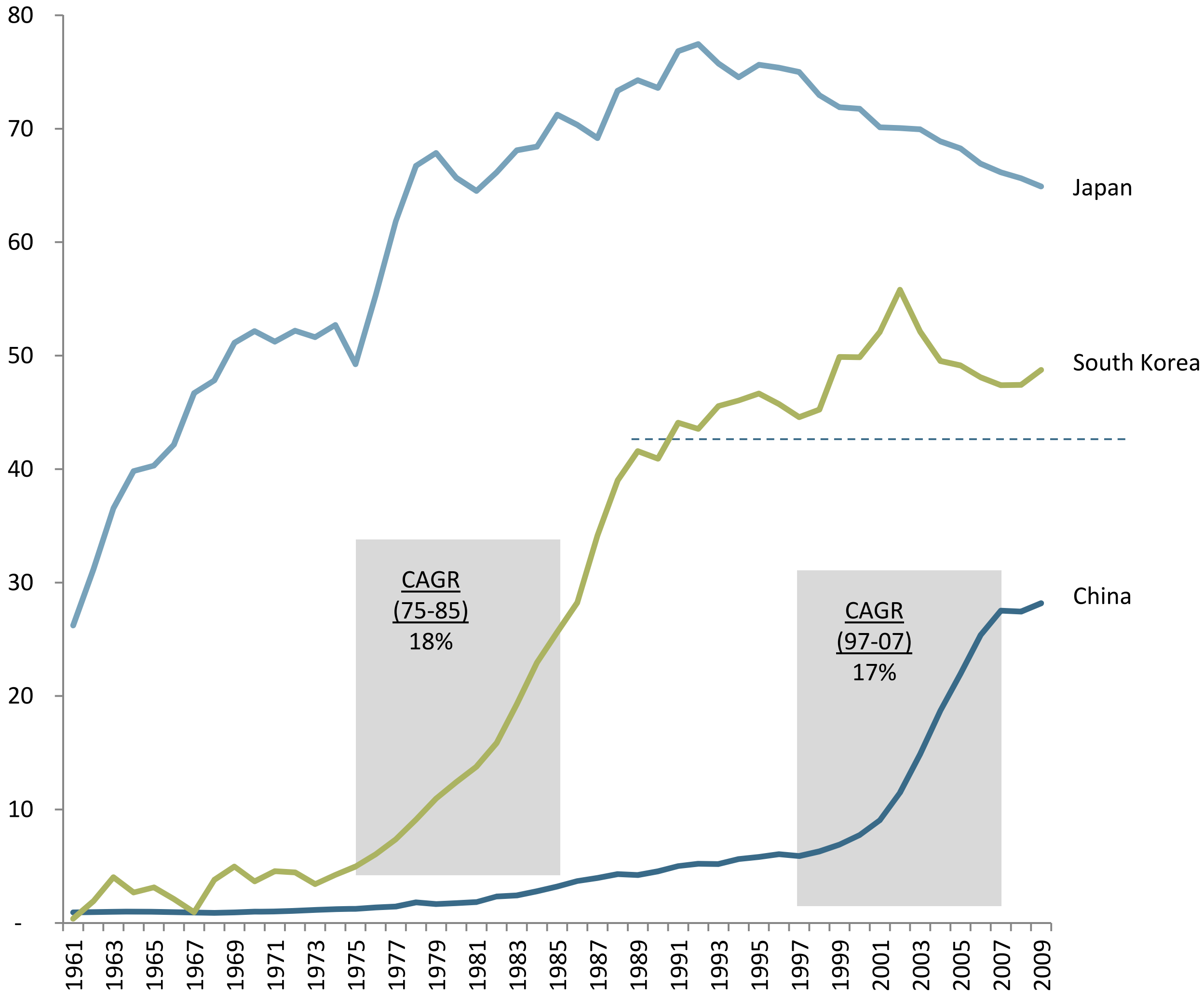
DAIRY - AVAILABLE MILK SUPPLY – CHINA, JAPAN AND SOUTH KOREA

Using the growth in milk production of Japan and South Korea as a guide, China should grow ~30% in the next 10 years then level off

Total milk available per capita

(kg per capita; 1961-2009)



Comments/Notes

- Calculation is (milk production) + (dry milk imports x 10) / (population
- This is not total dairy, just available milk; it excludes imported cheese, etc.

Total milk available means local fresh milk production + reconstituted milk powder imports (reconstituted milk calculated to weigh 10 times more than milk powder); Source: FAOSTAT, UNESCAP, Coriolis analysis

DOCUMENT STRUCTURE

DAIRY – INDUSTRY ORGANISATIONS

As a major dairy producer, New Zealand has a strong range of dairy industry organisations

Key dairy industry organisations
(2010)

	Representing	# of members	Annual budget	Funding	Website/notes
DairyNZ	Farmers	~11,000	$65.1m (Expenses YE10)	- Levy ($51.8m) and other ($15.1m) - Govt co-funded research program PGP $170m	www.dairynz.co.nz merger of Dairy InSight and Dexcel
DCANZ DAIRY COMPANIES ASSOCIATION OF NEW ZEALAND	Processors & exporters	8	n/a	- Membership Fees	www.dcanz.com DCANZ - Dairy Companies Association of NZ
FEDERATED FARMERS OF NEW ZEALAND	Farmers & sharemilkers	n/a	n/a	- Membership Fees	www.fedfarm.org.nz/industry/dairy
NZ Large Herds Association Inc.	Large farmers	n/a	n/a	- Conference fees	www.largeherds.co.nz Conferences

Source: Coriolis analysis

DAIRY – INDUSTRY SCIENTIFIC RESEARCH

New Zealand has strength in dairy research across a range of research institutes

Key dairy research bodies in New Zealand
(2010)

	Total Income	Total Staff	Focus & activities
Riddet Institute – Kai | Whakaauaha | Hauora	n/a	n/a	- www.riddet.massey.ac.nz - Hosted by Massey University in partnership with University of Otago, The University of Auckland, Plant and Food Research, AgResearch - National Centre of Research Excellence (CORE) - Research in food industry in particular the dairy industry
Fonterra – Dairy for life	n/a	100+ scientists	- www.fonterraresearch.com - Fonterra Research Centre - Dairy centre and pilot plant in Palmerton North
agresearch	$155m (2010)	824	- Foods & Bio-based Products; food composition and function, The role of foods in human health and wellbeing
DairyNZ	$65.1m	26 (research team)	- Industry good activity - Research farms, feed, farm systems, animal sciences

Source: Coriolis analysis

Ministry of Economic Development
Manatū Ōhanga

ministry of science + innovation
TE PŪNAHA HIRINGA WHAKAEA

NEW ZEALAND MINISTRY OF FOREIGN AFFAIRS & TRADE
MANATŪ AORERE

MAF

New Zealand TRADE & ENTERPRISE

Ministry of Fisheries
Te Tautiaki i nga tini a Tangaroa

Department of Labour
TE TARI MAHI

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