Westland Milk Products
Hokitika · New Zealand

DAIRY INDUSTRY RESTRUCTURING ACT REVIEW

Initial Submission from Westland Milk Products

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1. Introduction and summary

1.1 Introduction

Westland Milk Products (Westland) is a key economic driver of the West Coast economy and New Zealand's second biggest dairy cooperative. Dairy is also the biggest single contributor to GDP on the West Coast and consistently contributes almost a quarter of a billion dollars annually ($234.4 million in 2016 alone.)

Westland has 342 shareholding farmers and over 420 supplying farms. It employs 555 staff in total as well as indirect supplier jobs and contributes to considerable economic 'spill overs' to the region. During the deliberations which became the Dairy Industry Restructuring Act 2001 (DIRA), Westland chose to remain an independent processor in order to maintain processing on the West Coast. The company believes that New Zealand needs strong independent processors that work as part of NZInc and that it is very important to counter against any global perception of New Zealand having a state-supported monopoly.

Westland agrees with our economic experts, TDB, in that the DIRA enabled Fonterra to be set up as a near monopoly / monopsony in New Zealand's dairy markets. DIRA was designed to be the counter-balance. It included a number of provisions designed to foster competition at the farm gate and to protect New Zealand dairy product consumers. The key "contestability" provisions that apply to Fonterra are:

- open entry;
- open exit;
- no discrimination between suppliers;
- the right for Fonterra suppliers to supply up to 20 percent of their weekly production to an independent processor; and
- the setting of the base milk price.

In addition, the Dairy Industry Restructuring (Raw Milk) Regulations 2012 (DIRA regulations) require Fonterra to supply raw milk to Goodman Fielder and independent processors (IPs) subject to certain conditions.

DIRA was originally envisaged as temporary legislation with automatic expiry provisions once certain milk-supply thresholds were met. Those automatic expiry provisions have now been removed.

The objectives of the current review by the Government are to ask:

- is the DIRA regulatory regime operating in a way that protects the long-term interests of New Zealand dairy farmers, consumers and the nation's overall economic, environmental and social wellbeing?
- does the DIRA regulatory regime give rise to any unintended consequences manifesting themselves in other parts of the wider regulatory system and, if so, to what extent? and

- does the purpose and form of the DIRA regulatory regime remain fit-for-purpose, given the dairy industry's current structure, conduct and performance, as well as the global and domestic challenges and opportunities facing the industry, the wider regulatory system within which it operates, and the Government's broader policy objectives?

1.2 Executive summary

The DIRA contestability provisions have helped protect the long-term interests of New Zealand dairy farmers, consumers and the nation's overall economic wellbeing. This is demonstrated by:

- farmers have an increasing level of farm gate competition;
- New Zealand consumers have been at least partially protected from the adverse impact of the formation of Fonterra to the extent that there is more competition in the domestic market now than there was, although in our opinion, regulatory changes are required to remove the competitive limits unintentionally imposed; and
- the dairy industry continues to be an important contributor to New Zealand's economic health.

It is recognised that the dairy industry's environmental impact has worsened as intensification has increased and as land has been converted to dairy. We consider that, at the margin, DIRA's open-entry provisions have contributed to this outcome and could be phased out without imposing significant costs.

The poor environmental situation (and, probably more importantly, the industry's slow and hesitant response to it) means that there is a lot of discussion now about dairy farmers having lost their social license to operate. From that perspective, we would argue that DIRA has not protected the nation's wellbeing. However, we would argue that any environmental protections required should be imposed by generic environmental legislation rather than through DIRA.

The purpose of the DIRA regulatory regime remains fit-for-purpose, although we would recommend the following changes:

- we contend that open-entry (and open re-entry) could be phased out. To be clear, by open entry and open re-entry we mean milk from new dairy conversions. We do not mean that Fonterra could not choose to collect milk from an existing dairy farm. Open entry has contributed to the development of marginal farming land so we would be happy to have that area closed to entry. We do not want to see a situation whereby any farmer would not have their milk collected;
- the base milk price provisions remain crucial, but we would recommend a number of changes to the milk price methodology as follows:
  - Fonterra's average currency conversion rate should be excluded from the calculation,
  - non-Global Dairy Trade sales should be excluded from the calculation, and
  - the asset beta used should not be that of the hypothetical efficient processor, but that of the industry. (Note – this is a different discussion to the one that the Commerce Commission is currently consulting on.);

- the special provisions relating to Goodman Fielder should be removed and Fonterra should be required to supply 100 percent of the raw milk required by any domestic dairy products market competitor; and
- full accounting separation and reporting of Fonterra and FBNZ should be required.

The recommended changes to the milk price methodology are intended to increase the transparency of the calculation. Currently, Westland believes Fonterra's prices appear to be unacceptably manipulated.

With regard to the domestic market, the highly seasonal nature of the milk production in New Zealand, relative to the pattern of domestic demand, and the absence of a factory gate market mean that domestic competitors are largely reliant on Fonterra for their milk supply. The raw-milk supply provisions, therefore, essentially limit the size of domestic competitors by limiting their access to 50M litres of milk (or 250M litres in the case of Goodman Fielder (GF)). We consider that the individual company limits should be removed and all potential suppliers to the domestic market be treated equally in terms of their access to Fonterra milk. Full accounting separation and reporting of Fonterra and FBNZ is required to ensure that FBNZ's ability to compete in the domestic market is not being subsidised by another part of the business.

Westland believes that there are some unintended outcomes from the DIRA such as the dominant player mentality displayed by Fonterra. We want measures in place that prevent discriminatory behaviour. For this we see a need for the legislation to potentially be strengthened in a way that prevents abuse of market power and the maintenance and encouragement of true contestability.

Table 1: Summary responses to MPI's questions

Question	Summary response
1. Benefits of 2001 industry restructure realised?	• There is little evidence that Fonterra has delivered the anticipated benefits to farmer/shareholders • The anticipated benefits for farmer/shareholders were $310 million per annum • We estimate that those benefits should translate into a theoretical share price now of $8.43 versus the current actual price of $5.15 • We estimate that, in the absence of those benefits, the theoretical share price now should be $6.07
2. Is the DIRA contestability regime contributing to and/or impeding the sector's performance?	• Leaving aside the original mega-merger, performance and competition within the dairy sector has not been impeded by DIRA • Fonterra's farm gate market share has decreased by 14 percent in 16 years – from 96 percent to 82 percent • Five new IPs have started up since Fonterra was established, with one of those failing. An additional two new IPs have announced their intention to build new processing plants. Along with Westland and Tatua, the addition of the two new companies would bring the total number of IPs competing with Fonterra at the farm gate to eight • The organisational structures of IPs range from co-operative companies to private companies to publicly listed companies

	• The strategies employed by the IPs range from commodity to business-to-business to consumer products • We estimate that capital of approximately $19 billion has been invested by the processors since 2001
3. Who is benefiting?	• Farmers – the amount of on-farm investment since 2001 indicates that farmers have been earning an adequate return on their investment • Processing company shareholders – the return on asset performance of the IPs vis-à-vis their capital cost is variable • NZ Inc – the contribution of the sector to the NZ economy continues to be significant • However, it is generally accepted that the environment has suffered as a consequence of dairying. It could be argued that DIRA has contributed to that outcome
4. What incentives exist for the dairy industry to transition to higher value products?	• There isn't any incentive but neither is there any disincentive • Moving up the value chain brings potential for higher investment returns • Moving up the value chain also increases risk • The challenge for companies is to create value rather than to necessarily move up the value chain • The Government's role is to create an environment that allows the processors and their shareholders to make their own decisions about their business strategy and how much risk they want to take
5. Are the current contestability provisions still fit-for-purpose?	• The incentives and ability for Fonterra to operate to the detriment of the long-term dynamic efficiency of the broader dairy industry remain and, with stalled milk growth, might be stronger now than they were in 2001 • There is more competition at the farm gate now than there was in 2001 and there have been a number of announcements since the last Commerce Commission review regarding increasing competition at the farm gate • There is more domestic consumer market competition now than there was in 2001, although there are a number of unintended consequences with respect to the raw-milk supply provisions • No factory gate market has developed
6. What changes are required? 7. Are changes to the industry and/or the DIRA regulatory regime required?	• The open-entry provision is no longer required • The base milk price provision is still required but changes are needed to make the calculation of the FGMP more transparent • Fonterra's obligation to supply raw milk destined for the domestic market to competitors should not be capped
8. Is the domestically-focused dairy sector operating in the long-term interests of New Zealand consumers?	• The domestic market is still dominated by the same two companies (although one has a different owner – GF) • In the grocery channel, we estimate that Fonterra and GF's combined market share has decreased by 8 percent (from approximately 95 percent to 87 percent) since 2001

	• The milk-supply volume limits do not restrict the number of domestic competitors that could emerge but do unnecessarily limit the absolute and relative size of any of those competitors in an environment of domestic market growth
9. Are there significant economies of scale in the collection, processing, and wholesale distribution of into domestic consumer markets?	• Yes – in two areas – collection costs and capacity costs • The domestic market requires a flat milk curve supplying constant monthly milk volumes • The NZ milk-production curve is not flat. There is twenty times more milk produced in the peak month than there is in the low month • We estimate that 10 to 15 percent of Fonterra suppliers supply winter milk • A larger proportion would require the processor to either pay higher winter-milk premiums than Fonterra or to travel further to collect milk • A larger proportion would require the processor to hold more capacity in reserve to manage daily demand fluctuations
10. What would the domestically-focused dairy sector look like in the absence of the DIRA regulations?	• The absence of DIRA regulations would lead to fewer competitors and higher prices for domestic consumers as per the Commerce Commission's 2016 report
11. Does the DIRA regulatory objective of ensuring "competition in the wholesale supply of domestic consumer dairy products" remain fit-for-purpose?	• Yes – the regulatory objective remains fit-for-purpose, although changes to the regulations are required to remove the disincentive that potential domestic competitors have to invest, and to remove the regulatory limits on the size of individual competitors
12. What changes would be required to ensure that the DIRA regulatory regime supports a well-functioning domestically-focused dairy sector that operates in the long-term interests of New Zealand consumers?	• Fonterra's obligation to supply raw milk destined for the domestic market to competitors should be unlimited • That obligation needs to be on-going and needs to survive any future phasing out of the other contestability provisions • Fonterra should be obliged to separately account for and report on its domestic consumer brands business 'Fonterra Brands New Zealand', to demonstrate that its financial performance is not being subsidised by some other part of the business

2. Background

2.1 Context

Total global annual milk production is estimated to be around 500 billion (B) litres of milk[1]. The size of the internationally traded dairy-products market is estimated to be the equivalent of around 65B litres, or around 15 percent of total production.

New Zealand's annual milk production is estimated to be approximately 21B litres (or less than 5 percent of global production), of which, approximately 5 percent is consumed domestically and 95 percent is exported. New Zealand's share of the internationally traded dairy-products market is approximately 30 percent, or 20B litres p.a.

While being able to produce huge volumes at internationally competitive prices is positive, there are aspects of the New Zealand industry that are very challenging, including the proportion of production that needs to be exported, the consequent exposure to international prices, the distance from export markets and the shape of the seasonal milk curve.

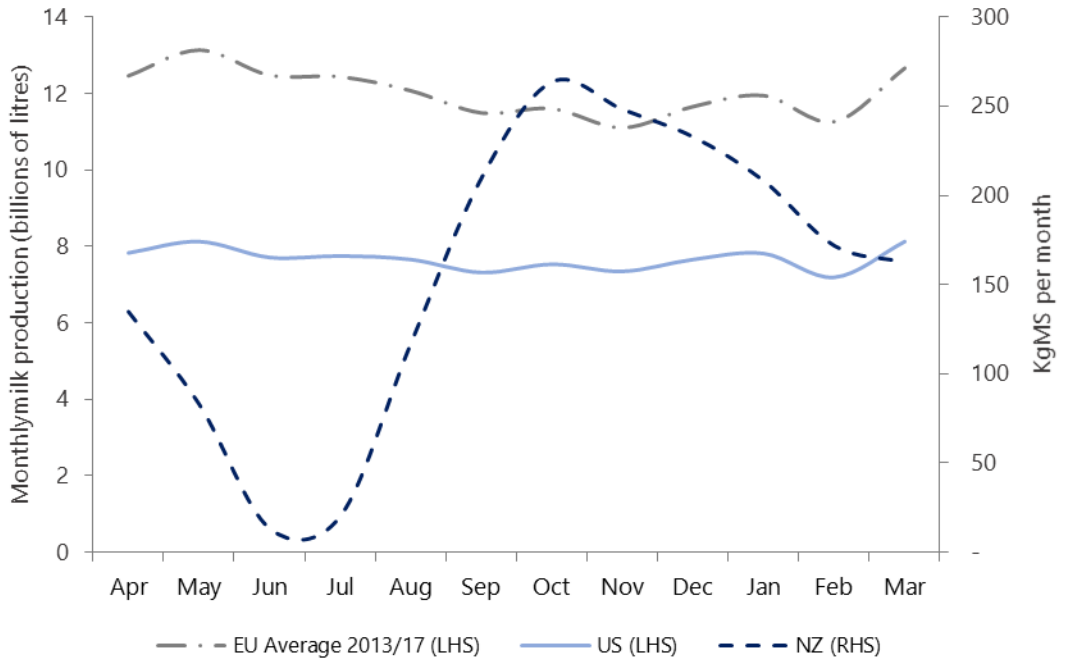
The New Zealand dairy industry is internationally cost-competitive, in part because New Zealand's temperate climate and abundant water allows the farming system to be a pasture-based system where milk production matches grass growth. The pasture-based system, however, means milk production is highly seasonal, with milk production in the peak month (October each year) being typically 20 times as large as milk production in the slowest month (June each year).

Given the seasonal milk curve and the non-seasonal nature of domestic demand, it is no surprise that the original two large pre-Fonterra domestic businesses were subsidiaries of very large export businesses (NZ Co-operative Dairy Group Ltd (NZDG) and Kiwi Co-operative Dairies Ltd (Kiwi)). Both NZDG and Kiwi had large ingredient businesses to funnel their excess milk through to manufacture and export as long-life products (through the New Zealand Dairy Board at the time).

As Figure 1, below, illustrates, the shape of the seasonal milk curve in New Zealand is much more extreme than in the US or EU.

[1] USDA, Dairy: World Markets and Trade, December 2016.

Figure 1: Milk curves – international comparison



These peak to trough variations graphically illustrate the difficulty the New Zealand milk curve causes New Zealand processors, especially those who are focused on the domestic market.

2.2 Historical development of DIRA

New Zealand's largest dairy processor, the co-operative company Fonterra, was established in 2001 from an amalgamation of the then two largest dairy co-operatives: NZDG and the New Zealand Dairy Board. In forming Fonterra, participants sought to realise efficiencies of scale and scope in the collection and processing of farmers' milk, so as to better compete in international dairy markets, for the overall benefit of New Zealand.

At the time, the value of the benefits of the mega-merger (ie, Fonterra) to New Zealand farmers was estimated to be $310M[2] p.a., or almost $2.5 billion (B) on a capitalised present value basis[3].

On creation, Fonterra collected approximately 96 percent of New Zealand's raw-milk production. Allowing the creation of such a dominant firm had competition policy implications. In particular, a dominant firm could have:

- the incentives and ability to create barriers to farmers switching to potential competitors;
- the incentives and ability to impede entry into the farm gate market by new dairy processors;

[2] "The Quigley report on dairy megamerger", 24 January 2001. Section 4.1 of the Quigley report refers to the "Business Case for Global Dairy Co Ltd: Executive Summary" that outlines the sources of the $310M in benefits that were claimed to be associated with the merger.

[3] Using Fonterra's FY16 pre-tax WACC of 7.9% to capitalise a benefit expressed in 2001 dollar values.

- the incentives and ability to set wholesale prices in downstream domestic dairy markets; and
- fewer incentives to drive cost efficiencies and invest in innovation, as it could use its market position to retain farmer suppliers even if they were dissatisfied with the company's performance.

The Dairy Industry Restructuring Act, 2001 (DIRA) authorised the amalgamation and allowed it to bypass the Commerce Commission. The Commerce Commission's earlier draft determination found that the merger would result in a strengthening of a dominant position in each of the relevant markets[4].

As the amalgamation resulted in an entity with a substantial degree of market power in several New Zealand dairy markets, DIRA was designed and implemented to mitigate the risks of Fonterra's market power. In particular, DIRA seeks to promote contestability in the New Zealand raw-milk market and provides for access for other dairy goods or services supplied by Fonterra to be regulated, if necessary.

Regulations made under the Dairy Industry Restructuring (Raw Milk) Regulations, 2001 (and as amended and re-enacted in 2012) contain further provisions to facilitate the entrance of independent processors (IPs) to New Zealand dairy markets and enable them to obtain the raw milk necessary to compete in dairy markets.

The original regulations required Fonterra to supply, at a DIRA price, up to 50M litres of raw milk p.a. to any IP and up to 250M litres p.a. to Goodman Fielder (GF). The price of this regulated raw milk was the farm-gate base milk price (FGMP)[5] for that season, plus reasonable transport costs.

An IP, in DIRA:

- is defined as a processor of milk, milk solids or dairy products that is not associated with Fonterra; and
- includes GF and any associated person of that company, other than Fonterra.

IPs, therefore, include the obvious companies such as Tatua and Westland, but also the less obvious companies like GF and Cadbury[6]. The latter IPs outsource their raw-milk supply to vertically integrated dairy processors, rather than sourcing it directly from farmers.

The default price specified in the regulations is a calculated price that is meant to ensure the following outcomes:

- Fonterra is constrained from offering farmers a higher price for their milk. This reduces the risk of Fonterra being able to offer a higher FGMP to limit the ability of competing processors to persuade farmers to switch to supplying them; and

[4] The Commerce Commission had reached the preliminary conclusion, in 1999, that the merger that formed Fonterra could not be authorised under the Commerce Act. The Commission's preliminary estimate was that the merger would result in a price rise in domestic dairy-products markets (other than spreads) of between 10% and 20%. This translates to a wealth transfer from domestic consumers to the merged entity (Fonterra) of between $75M and $146M p.a., and a net deadweight welfare loss in the domestic dairy production and supply markets of up to $4M p.a. This deadweight loss included both allocative losses in the domestic dairy products-market and dynamic efficiency concerns.

[5] The FGMP is a notional calculation of the cost of milk supplied to Fonterra on the basis that Fonterra is an efficient processor.

[6] Supermarkets do not meet the definition of an IP under DIRA and do not have any direct access to DIRA milk.

- from a domestic consumer perspective, competition in the domestic market between wholesale companies is sufficient to ensure that Fonterra does not have the power to charge prices in excess of what is required to generate an adequate return on capital employed.

Thus, the DIRA contestability provisions were designed to ensure that milk flows to the highest-value user (whether the user is a producer of dairy commodities, ingredients or fresh consumer products) and to avoid wealth transfers from domestic consumers to Fonterra. The provisions work in parallel with, and are supplementary to, the general competition provisions of the Commerce Act, 1986.

2.3 Changes to DIRA Regulations in 2012

The 2001 Regulations were revoked on 1 June 2013 and replaced by the Dairy Industry Restructuring (Raw Milk) Regulations, 2012 ("the 2012 Regulations").

Under subpart 1 of the 2012 Regulations:

- the total amount of raw milk to be supplied by Fonterra to IPs increased from 600M litres per season to 795M litres per season;

- the total amount of raw milk to be supplied by Fonterra to GF was unchanged, at 250M litres per season, but supply in the non-winter months was limited to 110 percent of the amount of raw milk supplied in the preceding October;

- the total amount of raw milk to be supplied by Fonterra to any one individual IP was unchanged, at 50M litres per season, but maximum monthly limits for non-winter milk were put in place; and

- the obligation on Fonterra to supply raw milk to an IP in a season beginning on or after 1 June 2016 was extinguished if that IP's own supply of raw milk in the three previous seasons was 30M litres or more.

Subpart 3 of the 2012 Regulations divided IPs into two categories:

- those with no, or less than 30M litres of own-supply raw milk; and

- those with more than 30M litres of own-supply raw milk and those that do not require a fixed quarterly raw-milk price from Fonterra and GF.

For the first group, the new regulations changed the price of raw milk supplied by Fonterra from the FGMP plus $0.10 per kilogram of milk solids (plus transport costs and winter-milk premiums) to a fixed quarterly price being Fonterra's most recent forecast FGMP (plus transport costs and winter-milk premiums).

For the second group, the new regulations changed the price of raw milk supplied by Fonterra from the FGMP plus $0.10 per kilogram of milk solids (plus transport costs and winter-milk premiums) to the FGMP (plus transport costs and winter-milk premiums).

2.4 The Dairy Industry Restructuring Amendment Bill, 2017

In March 2017, as a consequence of the recommendations made by the Commerce Commission and a subsequent MPI-led review, the then-Minister introduced into the House the Dairy Industry Restructuring Amendment Bill. That Bill was subsequently substantially altered by the new Government before being passed into law on February 15, 2018.

The changes made to the DIRA by the amendment prevent the relevant DIRA provisions from expiring in the South Island and remove the market share thresholds that would trigger the Act's expiration in the future. The other provisions that were set out by the original Bill (under the previous Government) were removed[7].

In removing the previous provisions which timetabled a further review for 2020/21, the new Government announced its intention to "undertake a comprehensive review of the DIRA and consult fully with the dairy sector"[8], commencing in 2018.

[7] The original Bill (among other things):

- removed the default expiry provisions and the market share thresholds in the North and South Islands that trigger a review of the state of competition;
- required a review of the state of competition to commence during the 2020/21 dairy season;
- required a review at five-year intervals thereafter if competition has not yet been considered sufficient;
- allowed Fonterra the discretion to refuse supply from new dairy conversions;
- reduced the total volume of raw milk that Fonterra must supply to IPs from 795M litres to 600M litres per season; and
- removed the requirement for Fonterra to supply DIRA milk to large export-focused processors from the beginning of the 2019/20 season. The definition of a large export-focused processor was one that has the capacity to process more than 100M litres of milk per season and exports more than 50% of its production by volume.

[8] https://www.beehive.govt.nz/release/dairy-industry-restructuring-amendment-bill-passed

3. Is DIRA achieving its objectives

3.1 Introduction

There are two components to the question 'is DIRA achieving its objectives?':

- have the originally anticipated benefits been realised?; and
- has DIRA enabled competition to emerge?

These two questions are answered in turn below.

3.2 To what extent have the anticipated benefits of the 2001 industry restructure been realised?

As noted in section 2.2, above, the anticipated benefits of the establishment of Fonterra were $310 million per annum[9]. The sources of the benefits were anticipated to be as follows:

- annual cost savings in the order of $120 million as a consequence of the elimination of duplicated facilities and activities;
- annual revenue enhancements and productivity improvements in the order of $70 million as a consequence of enhanced economies of scale and scope if manufacturing activities are integrated with marketing and distribution functions; and
- additional increased earnings of $120 million per year as a consequence of being able to harness the synergies between different parts of the industry, provide fresh strategic impetus and broaden options to exploit new market, technology and biotech opportunities.

We would expect to be able to measure the realisation of the benefits with reference to Fonterra's share price as follows (details of the calculations are provided in Appendix 1):

- the expected benefit in 2001 was $310m per year to farmer-shareholders. If we assume that the expected benefit was expressed in pre-tax terms, it would equate to $223m after tax;
- if we assume an average cost of equity for Fonterra of 9 percent, an average dividend ratio of 70 percent, and add all the new equity associated with increased production, we estimate that the current share price should be $8.43;
- Fonterra's current share price is $5.15;
- if we exclude the anticipated benefit from the theoretical share price calculation, the current share price should be $6.07; and
- we note that since Fonterra's change in capital structure in 2012, its share price has averaged $6.10 with a range of $4.60 to $8.08. We also note that over the same period of time, Fonterra's normalised EBITDA has increased by 0.6 percent, year-on-year[10].

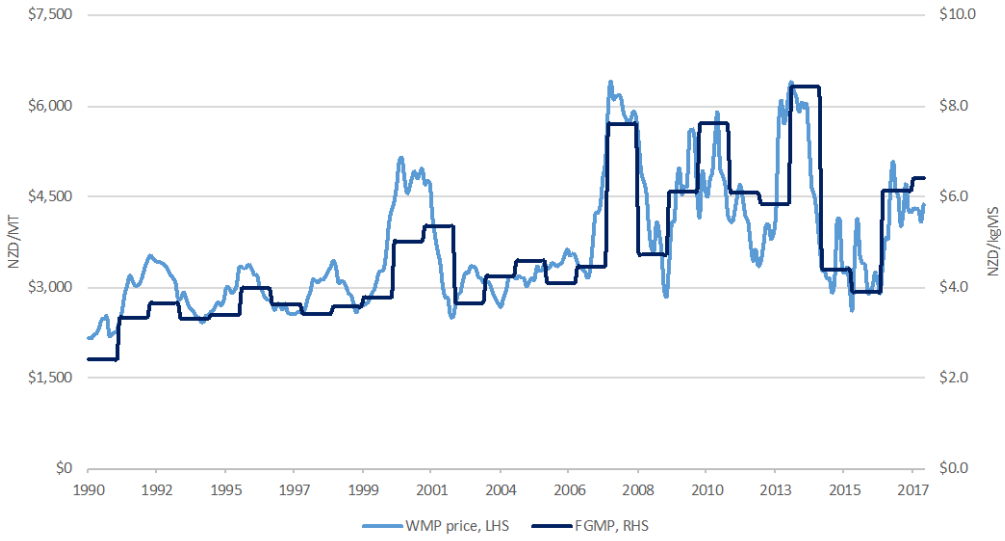
[9] Refer to footnote 2 above.
[10] ANZ Research, Agri Focus – we have lift off, June 2018, p.24.

The logic employed above would lead us to conclude that there is little evidence that Fonterra has delivered the anticipated benefits to farmer / shareholders.

However, it should be noted that Fonterra, like most companies, has been subject to some adverse shocks over the period (like the GFC and WPC80 crisis) that will have affected its financial performance.

We do not think that it could be argued that the benefit has been passed through to shareholders via the FGMP. In the first instance, the anticipated benefits can only be achievable as a consequence of the merger and not otherwise. We can observe that most of the IPs are paying slightly more than the FGMP to their suppliers for their milk on average and are earning more than their required rate of return, which implies that the merger was not required for any benefits to be received via the FGMP. In addition, Figure 2, below, indicates that the FGMP has generally been consistent with international commodity prices.

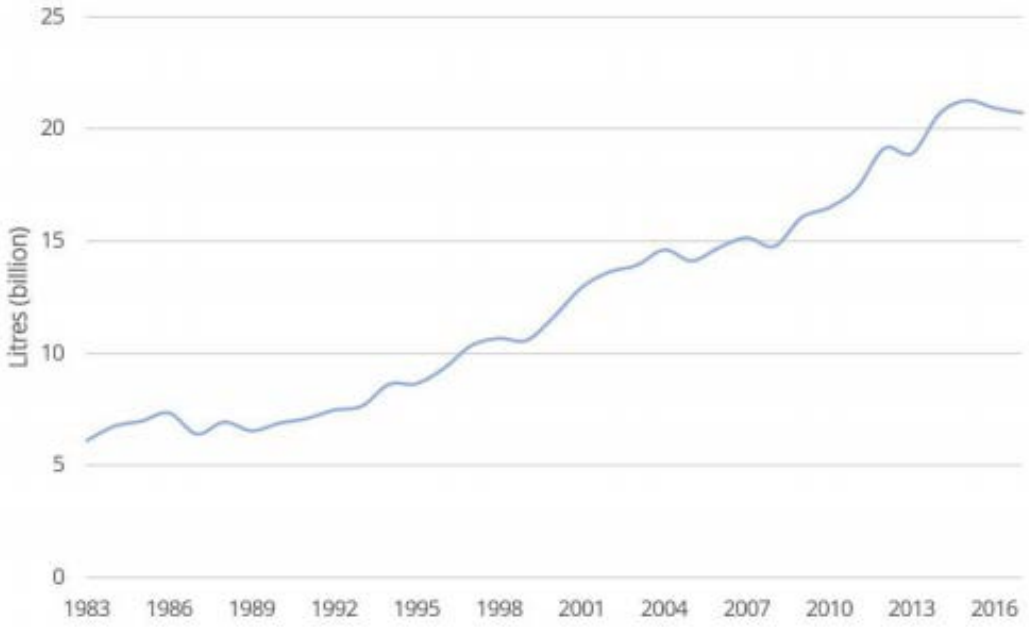
Figure 2: Timeline of FGMP and commodity prices



Similarly Westland does not think it can be argued that the costs imposed on Fonterra by DIRA have therefore been excessive. The contestability provision that has received the most attention by Fonterra (and has subsequently been changed most significantly as a consequence) is the raw-milk supply provision. We estimate that the opportunity cost to Fonterra of having to sell raw milk to IPs at the FGMP has been approximately $25-$30 million per annum.

DIRA, by allowing the mega-merger to be formed without going through the normal Commerce Commission process, was a major step. DIRA itself was an attempt to offset the adverse competition effects of the merger. DIRA has been reasonably successful in this regard. Figure 3, below, presents a time series of dairy processing volumes in New Zealand since 1983.

Figure 3: Dairy processing volume in NZ



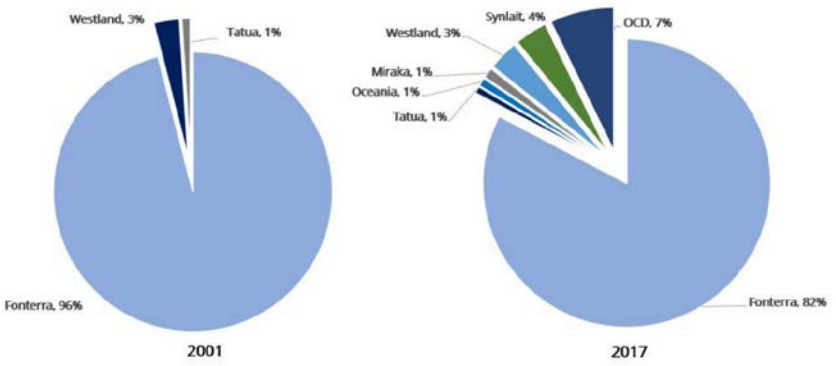
3.3 To what extent and in what way is the DIRA contestability regime contributing to or impeding the sector's performance?

Figure 3 shows no notable change in the trend in New Zealand's milk production following Fonterra's creation (although New Zealand has likely now reached (or passed) peak cow numbers, which will see continuing growth in milk production stall or at least slow considerably from now on). In our opinion, this overall trend indicates that DIRA has not impeded industry growth.

3.3.1 Farm gate competition

As presented in Figure 4, in addition to volume growth in the industry, the market share of competition at the farm gate has increased from 4 percent to 18 percent over the last 16 years.

Figure 4: Farm gate competition in 2001 and 2017



In 2001, directly following the formation of Fonterra, there were three processors competing at the farm gate in the New Zealand dairy industry with Fonterra being almost completely dominant, processing 96

percent of all volume collected. Since then, although Fonterra's collection volumes have continued to grow, its market share (in terms of New Zealand milk collected) has fallen to 82 percent.

The market share that has been captured from Fonterra has been distributed across multiple competitors in the farm gate market that have varying corporate structures and strategic objectives. Apart from Fonterra there are now six IPs competing at the farm gate and collecting 18 percent of New Zealand's raw milk. An additional two IPs have announced their intentions to build new processing plants in the near future (subject to milk supply).

3.3.2 Industry composition

Table 2 presents an overview of the major competitors at the farm gate (based on publicly available information). The table notes when each company was established, their total revenues in the 2017 financial year, their revenues per kgMS (which indicates where in the value chain they compete), their product positioning and their ownership structure.

Table 2: Major farm gate competitors

Company and year established	Volume growth rate 2012-2017	2017 Revenue	2017 Revenue per kgMS	Product positioning	Sales channels	Ownership
Fonterra 2002	0.12%	$19.2b	$12.60	Branded consumer goods, dairy ingredients, and processed commodity powders	Largest global exporter of dairy products. 95% of local production is exported to over 100 countries.	Co-operative ownership for farmer shareholder / suppliers who purchase an ownership stake consistent with their supply volume. Fonterra Shareholders Fund (FSF) is publicly traded on the NZX and ASX and gives non-voting right ownership to retail and institutional owners.
Open Country Dairy 2002	12%	$1.1b	$8.73	Commodity powders and cheese, with some movement recently into higher value ingredients (mozzarella curd, mature cheddar, whey protein concentrate).	100% exports to over 64 countries Sells direct to trade customers 20% of sales though OLAM (a 15% shareholder)	NZ public unlisted company, Talley's 76%, OLAM 15%, sixty others 9%.
Synlait 2007	8%	$759m	$11.69	Ingredient powders, infant formulas, cream, UHT and specialty ingredients.	Sells direct to business partners and trade buyers. 2% of sales to Bright Dairy (a 39% shareholder)	Publicly owned and listed on NZX and ASX. Major shareholders are Bright Dairy 39%, A2 Milk 8.2% and Mitsui 8.4%.
Westland 1938	4%	$630m	$10.60	Base commodities through to branded consumer products, powders, UHT milk, butter, and yoghurt.	Export to 60+ countries.	Co-op owned by 429 farmer suppliers.
Tatua 1914	3%	$332m	$22.16	High value speciality ingredients, caseinate, whey protein and anhydrous milk.	Progressively established offshore offices once separated from NZDB/Fonterra	Co-op owned by 113 farmer suppliers.
Oceania 2013	0	$228m	n/a	Whole milk powder, infant powders, UHT milk.	Exported through Yili (100% owner) sales channels	100% Yili Industrial Group.

In 2001, the three competitors in the processing sector (Fonterra, Westland and Tatua), were all co-operative companies. Since 2001, new processing firms have emerged with differing corporate structures. OCD is a public unlisted company. Synlait is publicly listed on the NZX and the ASX. Oceania is a wholly owned subsidiary of a major foreign company.

The nature of each processing business has also varied, with some processors like OCD continuing to be focused on commodity processing for the export market, other new entrants focusing on the ingredients and consumer business segments and incumbent competitors diversifying away from commodity processing into ingredients and consumer segments.

Our conclusion is that DIRA has contributed to increasing competition at the farm gate without placing significant structural constraints around the way in which that competition has emerged.

Figure 5 presents the 2017 firm revenue per kgMS.

Figure 5: Revenue per kgMS per processing company

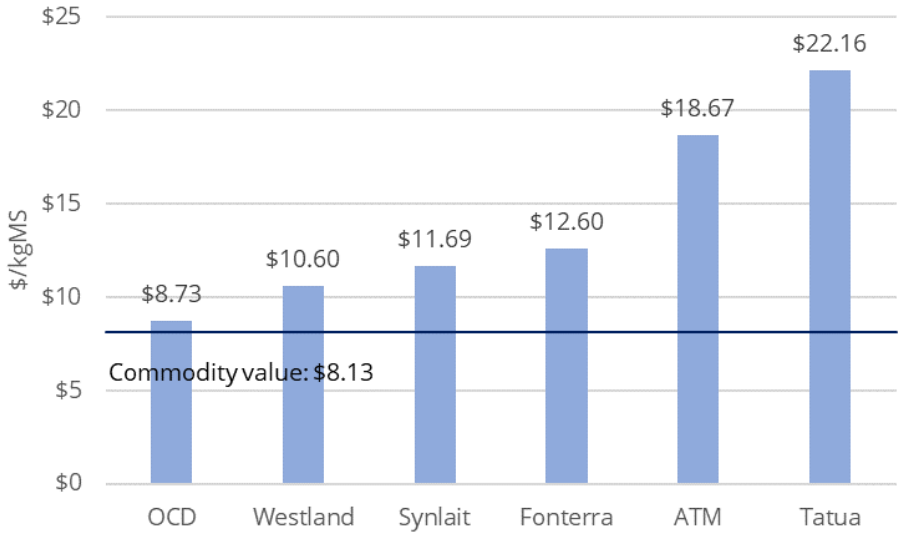


Figure 5 highlights the variation in strategy and market positioning in the industry. Revenue per kgMS gives insight into the product mix, as it gives both an indication of sale price of products per unit of milk processed and the cost of production. The pure commodity value calculated for the hypothetical efficient processor (HEP) used for the calculation of the FGMP was $8.13 for the 2017 season. OCD (as noted above) is close to a commodity processor and only competes in the export market. Its revenue per kgMS of $8.73 is close to that of the notional processor. Revenue per kgMS increases with Fonterra, Synlait and Westland as, in addition to commodity products, they also compete in the ingredients and the consumer markets, both domestically and internationally. A2 Milk is a consumer company and outsources its processing. Tatua is a processor of speciality ingredients and has the highest level of revenue per kgMS processed (and the highest cost of production).

Figure 5 shows that the sector in general is now made up of a diverse array of corporate strategies and that DIRA has contributed to increasing competition at the farm gate, without placing structural constraints around the way in which that competition has emerged.

3.4 Where and by whom are the benefits of the sector's performance being captured and the costs / risks incurred?

We would expect to see the benefits and the costs of the sector's performance being captured by farmers, by the processing companies' shareholders and the broader economy generally. We think that leaving aside how the market may have evolved in the absence of DIRA, the cost to the broader economy has been largely environmental.

3.4.1 Farmers

Total milk production in New Zealand has increased by 60 percent since Fonterra was established in 2001. Part of that increase in production has been the result of improving genetics (animals and pasture) and farmers investing in more intensive, higher cost farming systems leading to higher production per hectare. The other part of the increase has been the result of farmers converting more land to dairy.

Table 3: Attributes of milk production changes since 2001

	2001	2017	change
Total production (millions of litres)	12,925	20,702	60%
Total production (millions of kgMS)	1,096	1,851	69%
Land area (000 ha)	1,329	1,729	30%
Cows (000s)	3,486	4,861	39%
Production per cow	314	381	21%
Cows per ha	2.6	2.8	7%

Source: New Zealand Dairy Statistics 2016-17, LIC - DairyNZ

Table 3, above, records the breakdown of the changes in milk production on-farm since 2001. We conclude that the continuing investment by farmers in both productivity improvements and land suggests that farmers have been earning an adequate return on their capital for the risks being taken.

3.4.2 Processing company shareholders

While on-farm investment by farmers seems to indicate that farmers believe that they are being adequately rewarded for the risks they are facing, it is not at all clear that the same can be said for the milk-processing companies' shareholders. We have measured the investment performance of Westland, Fonterra, Synlait, OCD and Tatua by subtracting their weighted average cost of capital from their return on assets to see which companies have generated an adequate return and which haven't. We have used the FGMP to adjust each company's reported earnings to make their relative performances comparable.

Figure 6: 7-year average adjusted ROA-WACC 2011-2017

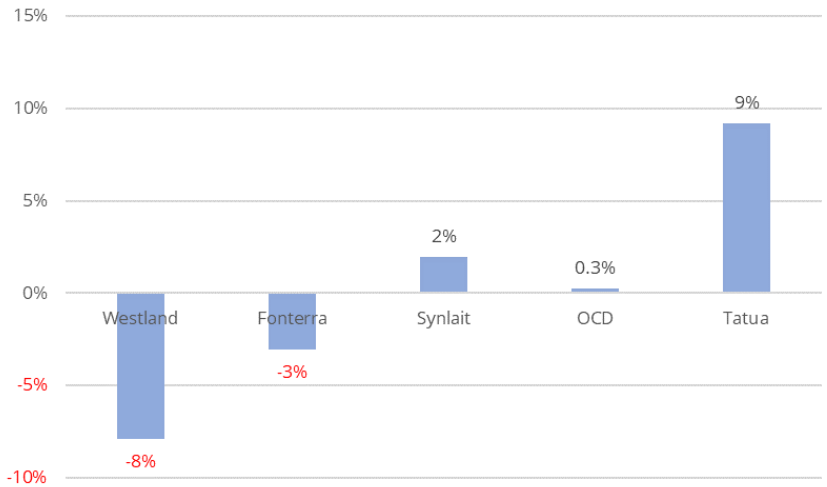


Figure 6 indicates that both Westland's and Fonterra's capital providers (and therefore shareholders) have not received an adequate return on capital employed, while Synlait's, OCD's, and Tatua's have[11]. We have not analysed the causes of any under or over-performance, although it is unlikely that DIRA was a major factor in the differing returns.

3.4.3 Macro economy

According to the New Zealand Institute of Economic Research, from a macro-economic perspective, it is estimated that the dairy sector[12]:

- contributes $7.8 billion (3.5 percent) to New Zealand's total GDP, comprising dairy farming ($5.96 billion) and dairy processing ($1.88 billion);
- supports rural New Zealand, with the sector accounting for 14.8 percent of Southland's economy, 11.5 percent of the West Coast, 10.9 percent of the Waikato, 8.0 percent of Taranaki and 6.0 percent of Northland;
- remains New Zealand's largest goods export sector, at $13.6 billion in the year to March 2016. Export growth has averaged 7.2 percent per year, over the past 26 years, faster than any primary industry apart from the wine and 'wood and wood products' industries;
- exports twice as much as the meat sector, almost four times as much as the 'wood and wood products' sector and nine times as much as the wine sector;
- accounts for more than one in four goods export dollars coming into New Zealand;
- employs over 40,000 workers, with dairy employment growing more than twice as fast as total jobs, at an average of 3.7 percent per year since 2000;
- creates jobs at a faster rate than the rest of the economy in all but 5 territorial authorities across New Zealand;
- provides over 1 in 5 jobs in three territorial authority economies (Waimate, Otorohanga, Southland); and over 1 in 10 in a further eight (Matamata-Piako, South Taranaki, Hauraki, Waipa, South Waikato, Clutha and Kaipara);
- delivered $2.4 billion in wages to farmers and processing workers in 2016;
- supports a range of supplying industries; in 2016, farmers spent $711 million on fertilisers and agro chemicals, $393 million on forage crops and bought over $190 million of agricultural equipment. Farmers also spent $914 million on agricultural services, $432 million on financial services and $197 million on accounting and tax services; and
- as well as taking farmers' raw milk, the dairy processing sector also spends significant amounts on packaging ($288 million in 2016), hired equipment ($199 million) and plastics ($174 million).

[11] This measure is a proxy shareholder measure because the companies' assets are funded via both debt and equity but it is a reasonable measure.
[12] "Dairy trade's economic contribution to New Zealand", NZIER report to DCANZ, February 2017.

3.4.4 Environment

It is generally accepted that the environment has suffered as a consequence of the performance of the dairy industry. From the dairy industry's perspective, and leaving aside the behaviour of individual participants, it has been operating to applicable laws and regulations and they have been tightened as their inadequacies have been revealed.

It might be reasonably argued that DIRA has contributed to poor environmental outcomes by incentivising the conversion of land to dairy that probably should not have been and otherwise probably would not have been converted. An obvious example would be the Mackenzie Country land. The open-entry provisions require Fonterra to accept all the milk that farmers want to supply. This means that farmers could have converted cheap (and therefore, by definition, marginal) land into dairy if it was economical to do so, knowing that Fonterra would have to collect the milk. This point is expanded upon in section 5.

3.5 What and how strong are the existing incentives and disincentives for the dairy industry to transition to a higher-value based dairy production and processing industry, that global consumers seek out, for a premium?

In our opinion, the challenge for dairy companies (like other companies in the economy) is not necessarily to move up the value chain, but to create value. Creating value is not necessarily the same as moving up the value chain. Economic value is created if the return earned on the capital employed is greater than the cost of the capital employed. From that perspective, if we refer back to Figure 6, above, we can observe that Synlait, OCD, and Tatua have created value, on average, over the last seven years and Fonterra and Westland have not.

The cost of the capital employed is lowest when companies operate at the low-risk end of the risk spectrum, which means that the required return on the capital employed to compensate for this cost is also lowest at that point. For milk processing companies, the low-risk end is the commodity-production end because the margin earned by the processors is relatively constant, as the processors are able to pass the majority of the commodity=price risk back to the farmer suppliers.

Risk increases as a company moves up the value chain because:

- production is more capital intensive;
- production is more difficult;
- the margin earned becomes more variable, as increases in milk prices take time to be passed through to the consumer, while the consumer expects immediate relief when milk prices decrease;
- stock becomes obsolete as tastes change; and
- there is a constant need to invest in research and development.

OCD is the closest example there is in New Zealand to a commodity product manufacturer (ie, a company at the low end of the value chain) and it has successfully created value. Tatua is probably the company that has positioned itself furthest away from the commodity end and therefore is probably

the riskiest of the processors and it similarly has successfully created value. Synlait is somewhere between the two in terms of risk and it has created value. Fonterra and Westland are probably similar to Synlait in terms of overall average position on the value chain, but they have lost value, on average, over the last seven years. In other words, moving up the value chain involves taking more risk and there is no guarantee that it will add value for shareholders, or the economy.

Rather than seeking to promote so-called "high value" or "low value" products, the government's role is to create an environment that allows dairy companies to adopt the strategies that best meets their objectives, manages their risks and makes the best risk-adjusted return possible for their suppliers/shareholders.

The current regulations, appropriately, do not appear to provide any strong incentive or disincentive for companies to move up or down the value chain.

3.6 Does the DIRA regulatory objective of ensuring "contestability for the supply of milk from farmers" remain fit-for-purpose?

3.6.1 Incentives

The key competition concern with a company such as Fonterra having such a dominant position in the market for farmers' raw milk is that it could have the incentive and ability to operate to the detriment of the long-term dynamic efficiency of the broader dairy industry. By declining applications for new supply, paying inefficiently high milk prices to existing suppliers and retaining the value of the exiting supplier's capital contributions for as long as possible after they ceased to supply milk, it could "lock in" its suppliers. Such actions would create significant barriers to entry for those seeking to compete for farmers' raw milk and allow Fonterra to operate inefficiently, but nevertheless remain in business.

To address this concern, the DIRA requires Fonterra to operate an open entry and exit regime. This means that Fonterra must accept all milk-supply offers from dairy farmers in New Zealand and allow relatively costless exit from the co-operative, upon the request of farmer-shareholders. These requirements ensure that Fonterra cannot "lock in" its farmer-suppliers, and, as a consequence, Fonterra faces strong commercial incentives to pay efficient prices for farmers' raw milk and the capital invested in Fonterra.

The Commerce Commission reviewed the state of competition in New Zealand dairy markets and released its final report in March 2016. The Commission concluded at that time there was not sufficient competition at either the farm gate or the factory gate to consider full deregulation.

Since the last Commerce Commission review, there have been a number of additional processing capacity investment or announcements by the competing processors:

- OCD has built a new processing plant in Horotiu (Waikato) with milk processing due to commence for the 2018/19 season;
- Mataura Valley Milk has built a new plant in McNab (Gore, Southland) with milk processing due to commence for the 2018/19 season;
- Oceania (Glenavy, South Canterbury) intends to increase its capacity by 50 percent, although the timing of this expansion is not clear;

- Synlait has announced the purchase of land to build a second processing plant – to be located in Pokeno (north Waikato). The plan is for this plant to be processing milk for the 2019/20 season; and

- Happy Valley Milk has announced the construction of a new plant to be built in Otorohanga. The company has received land use consent and the plant could be ready for the 2020/21 milk season.

It is not clear exactly how much additional capacity is implied by these announcements, but we estimate that it could be around 1 billion litres of milk, which equates to approximately 4.5 percent of New Zealand's total milk production.

We are not suggesting that this additional capacity necessarily represents sufficient additional competition such that the Commerce Commission might conclude differently to what it did in March 2016. However, on the assumption that there isn't any increase in milk production in the next three years and, in order for these plants to be full, Fonterra is most at risk of losing milk supply. To the absence of (particularly) the base milk price contestability provisions, Fonterra would have a strong incentive to transfer profits into the FGMP in order to retain milk. The Fonterra shareholders who would be most affected by such a transfer would be the 12 percent of shareholders who are not also suppliers. Shareholder-suppliers are not affected at all by this transfer because, in total, they would still receive the same amount of cash from Fonterra with the increase in milk price, offsetting a decrease in the dividend.

We note that the milk-price principles in Annexure 1 of Fonterra's constitution require the milk price to be the maximum it can be.

3.6.2 Farm gate competition

Table 4, below, is our estimate of where there is farm gate competition in New Zealand. The points to note are:

- there are two regions where there are more than one IP competing with Fonterra at the farm gate – the two biggest producing regions in New Zealand: Waikato and Canterbury;

- 5 of the 11 regions have no direct competition at the farm gate (including West Coast, where Westland is currently the only processor); and

- while there is direct farm gate competition in the regions where 74 percent of New Zealand's milk is produced, the current capacity of the IPs limits their immediate competition to approximately one quarter[13] of that milk.

[13] 18% / 74% = 24%.

Table 4: Farm gate competition

Dairy Region	Total production (millions kgMS)	Percentage of national market (kgMS)	No. of IPs	Market share of the IPs	Strength of balance sheet
Northland	104	6%	0	0%	
Waikato	503	27%	2	15%	OCD – strong Tatua- strong Miraka - strong
Bay of Plenty	124	7%	0	0%	
Taranaki	180	10%	0	0%	
Hawkes Bay	16	1%	0	0%	
Whanganui / Manawatu	81	4%	1	49%	OCD – strong
Wellington / Wairarapa	59	3%	0	0%	
Westland / Tasman / Nelson / Tasman	85	5%	1	59%	Westland – moderate
Canterbury	385	21%	3	30%	Westland - moderate Synlait - strong Oceania - moderate
Otago	101	5%	1	6%	Danone - strong
Southland	223	12%	1	18%	OCD - strong
Total	1861	100%	9	100%	

Figure 7, below, shows the location of the existing IPs, the intended locations of their new processing plants (Synlait in Pokeno, OCD in Horotiu, and Oceania in Glenavy) and the yet-to-be built IPs (Happy Valley Milk (Otorohanga) and Mataura Valley Milk (Gore)). As can be seen, the most intensive competition is in Waikato. This is set to escalate, with Waikato being the location of three of the five new processing plants.

Figure 7: Farm gate competition

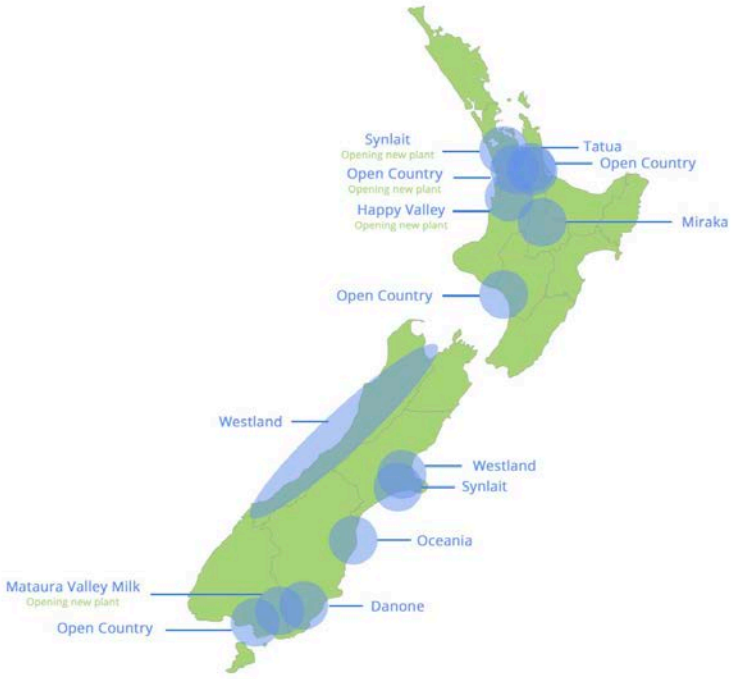
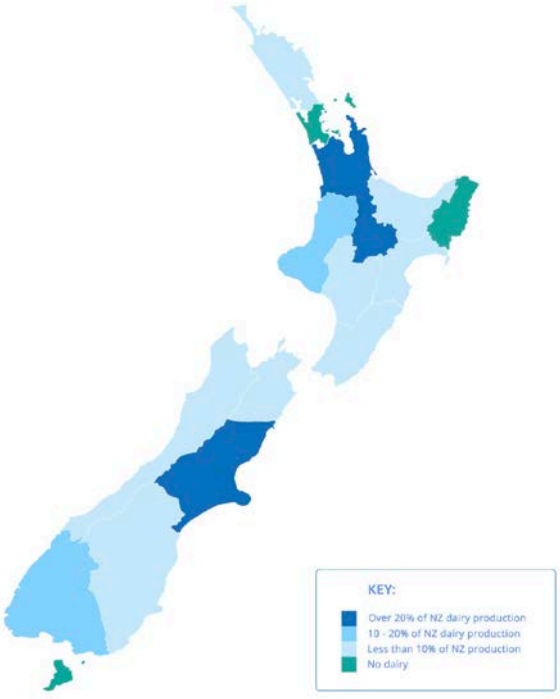


Figure 8, below, illustrates regional milk production, with Waikato and Canterbury both producing in excess of 20 percent of New Zealand's milk and together accounting for almost half of New Zealand's milk. Taranaki and Southland each produce more than 10 percent of New Zealand's milk and together account for almost a quarter of New Zealand's milk. The other seven milk producing regions each produce less than 10 percent of New Zealand's milk and there are three regions that produce no milk at all (Auckland, Poverty Bay, and Stewart Island).

Figure 8: Milk production by region



An emerging issue for the industry is excess capacity, partly as a result of Fonterra deciding to increase capacity in order to give itself "production optionality" at the peak of the season. We estimate that excess capacity is currently probably at least 10 percent and will rise to at least 15 percent if all the announced additional capacity comes online. Excess capacity will become more of a problem if total milk production decreases.

3.7 If so, what changes, if any, are required to ensure that the individual provisions of the DIRA contestability regime remain fit-for purpose and are consistent with the Government's wider policy objectives?

3.7.1 Contestability provisions

As per the Act, the key contestability provisions are:

- open entry / exit and, as part of that, Fonterra being limited to offering one-year supply contracts except under certain conditions;
- the right for Fonterra suppliers to supply up to 20 percent of their weekly production to an independent processor;

- the setting of the base milk price; and
- no discrimination between suppliers.

As per the Regulations and subject to certain constraints, Fonterra must supply raw milk to independent processors.

All of these provisions (other than arguably the 20 percent rule) appear to have been crucial to the competitive development of the industry.

The contestability provisions that remain crucial until there is effective competition are:

- open exit and, as part of that, Fonterra being limited to offering one-year supply contracts except under certain conditions;
- the setting of the base milk price;
- no discrimination between suppliers; and
- raw milk supply.

The 20 percent rule (anecdotally) appears to have been used very sparingly by farmers and because the benefit attached to the 20 percent rule has been very small, its cost has also been very small for Fonterra. There is a reasonable argument that the 20 percent rule could be used more in the future, as farmers seek to cash in on the premiums being offered for A2 and grass-fed milk e.g., by those IPs that have the ability to segregate milk for processing. On the basis of the potential benefit and the small cost of the 20 percent rule, our recommendation is that it be retained.

3.7.2 Open entry (and re-entry)

We contend that open entry (and open re-entry) should be phased out. To be clear, by open entry and re-entry we mean milk from new dairy conversions. We do not mean that Fonterra could choose not to collect milk from an existing supplying dairy farm. Open entry has contributed to the development of marginal farming land so we would be happy to have that area closed to entry. We do not want to see a situation whereby any famer doesn't have his/her milk picked up.

It might reasonably be argued that the open-entry provisions of DIRA have contributed to worse environmental outcomes, with land being converted to dairy that probably should not have been and otherwise probably would not have been. For example, land in the Mackenzie Country. The open entry provisions require Fonterra to accept all the milk that farmers want to supply it, which means that farmers could have converted cheap (and therefore, by definition, marginal) land into dairy if it was economical to do so, knowing that Fonterra would have to collect it.

Fonterra would reasonably argue that the open-entry provisions have increased its costs to the extent that it has extended its milk catchment area and therefore Fonterra's collection costs.

Fonterra might also argue that the open-entry provisions have frustrated its value-add strategy by obliging it to invest its limited capital in stainless steel instead. We contend that this argument is unreasonable for the following reasons:

- while total milk production in New Zealand has increased by 60 percent since Fonterra was established, Fonterra's milk collections have only increased by 37 percent. In the absence of

DIRA and assuming the same increase in milk production, Fonterra's milk collections would have increased by almost 60 percent;

- half of the milk production increase was the result of genetic improvements and intensification, with only half coming from land being converted to dairy (with most of that land being in Canterbury and Southland); and
- Fonterra set its own rules about the capital contribution required from supplier / shareholders to match increased milk production.

We are not aware of any significant cost that would be incurred by the rest of the industry as a consequence of the phasing out of the open-entry provisions as described.

There is an emerging debate regarding open entry versus open re-entry, with concern being voiced that Fonterra could frustrate the open exit provisions by threatening to restrict re-entry. That is, there is a concern that existing Fonterra supplier / shareholders would be more reluctant to exit Fonterra in the future if they think that their ability to re-enter might be in danger, should they choose to. That is a legitimate concern.

The counter-argument is that there seems to be a reasonable consensus in the industry that peak-cow numbers have not just been reached, but surpassed (though, not necessarily peak-milk production), which means that milk production in the future will increase at a much lower rate than it has for the last 16 years. The consequences of that are that every litre of milk supplied to a processor becomes more valuable, to the extent that it becomes harder to replace and the cost of excess capacity is not insignificant in an industry where efficient processing is an absolute requirement.

3.7.3 Open exit

The open exit provisions deliberately put Fonterra at a competitive disadvantage relative to the rest of the industry, to the extent that all of the IPs' supply contracts are for terms of more than one year. It is a basic risk management strategy for the IPs to limit their exposure to lost supply in any one year. Fonterra's supply risk is lower than the IPs owing to the number of Fonterra suppliers and the limited capacity of the IPs to recruit a significant proportion of Fonterra suppliers in any one year. The open exit provisions need to be retained while it is determined that there is insufficient competition at the farm gate.

3.7.4 Base milk price

In our opinion, the base milk price provisions are emerging as the most critical issue, on the basis that they are essential in order to differentiate between the Fonterra supplier / shareholders' return on their on-farm investment (via the FGMP) and the return on their off-farm investment. This differentiation is critical to containing Fonterra's power. That is, Fonterra has an incentive to pay more for milk by transferring profit into the FGMP in order to attract and retain milk supply and without this clear differentiation, Fonterra would have the ability to do just that – its non-supplier shareholders notwithstanding.

Commodity-price risk is the IPs' biggest risk. That is, in order to be able to pay their suppliers a milk price that is at least the same as the notional hypothetical efficient processor (HEP), the IPs need to know how much of which reference products are being sold by the HEP and when. On the basis that

more transparency around the calculation of the FGMP is better than less transparency, we would recommend a number of changes to the milk price methodology as follows:

- Fonterra's average currency conversion rate should be excluded from the calculation. Fonterra's average conversion rate has nothing to do with the value of the milk produced and the reference commodities sold. Including Fonterra's average conversion rate forces the IPs to try and match it in an environment of non-disclosure by Fonterra and just adds a level of opaque complexity that doesn't need to exist. In addition, hedging the sales of USD-priced commodity products increases the NZD volatility of outcomes for farmers and therefore increases their risk unnecessarily, which is exactly the opposite of what Fonterra intends;

- non-GDT sales should be excluded from the calculation. The inclusion of non-GDT sales has increased the FGMP. It hard to understand why a customer would pay more for a commodity product than the commodity price. One of the reasons might be because Fonterra guarantees the customer's access to a certain quantity of New Zealand product. That being the case, the price premium is for access rather than for the product and therefore should not be part of the FGMP calculation, especially if that access is something that only Fonterra can provide as a consequence of its size relative to the rest of the processors;

- we assume that the non-GDT sales of WMP, for example, are for WMP that has exactly the same specifications as the WMP sold on GDT. A small variation in product specification to customise it for a customer (eg, fat content), could lead to a price premium. If the product being sold is not of the same specifications as the reference commodity products, then it is clear that they are not actually reference commodity products and therefore should be excluded from the FGMP calculation; and

- it is unreasonable for the asset beta to be that of the HEP, which has the ability to pass all commodity-price risk back to farmers when none of the processors, including Fonterra, have that ability. The proessors are all riskier therefore than the HEP and therefore the FGMP is routinely over-stated[14].

3.7.5 Non-discrimination

We think the non-discrimination provisions should remain as they are. As an aside, it is not clear to us that Fonterra's MyMilk milk supply contract complies with the non-discrimination provisions in the Act. MyMilk does not obligate the supplier to become a Fonterra shareholder.

3.7.6 Raw-milk supply – farm gate market

In the farm gate market, the original intent of the raw-milk supply provisions was to give potential new entrants enough confidence around the supply of a base load of milk to build a new processing plant that would then attract its own supply. The existing provisions recognise that once a processing plant has its own supply, there would seem to be little need for Fonterra to continue to supply raw milk. That said, there is an argument that IPs building a second or third plant in different regions should get access to raw milk supplied by Fonterra on the same basis for the same reason. That argument's pros are:

[14] Note – this is a different discussion to the one that the Commerce Commission is currently having with the industry.

- the cost to Fonterra is nominal in comparison to anticipated benefits of the establishment of Fonterra;
- Fonterra's supply obligation would be temporary, as in order to have enough scale to be efficient, any new processing plant seems to need to have the capacity to process approximately 240 million litres of milk, so the processor has a strong incentive to recruit its own milk supply; and
- should a processor decide not to recruit its own milk, its size would be forever limited to 50 million litres.

3.7.7 Raw-milk supply – factory gate market

The factory gate market in New Zealand has not developed at all because, in our opinion, it is unreasonable to expect that processors will choose to sell milk at the FGMP, which is approximately their cost of milk, when they could manufacture it into a commodity or value-add product and by doing so, earn a return on their capital employed. That being the case, it would be reasonable to argue that the limits on raw-milk supply that is destined for the domestic market need to be relaxed in order to increase competition in the domestic market. See section 3.13, below.

3.7.8 Would changes to the contestability provisions make the industry more or less efficient?

In our opinion, the open-entry provisions have led to dynamic inefficiency at the margin to the extent that they have contributed to capital being employed to convert land to dairy that probably would not otherwise been converted. To the extent that the damage has already been done, it is unlikely that this change will increase dynamic efficiency.

In our opinion, any relaxation in the open exit provisions would almost certainly lead to Fonterra immediately moving to adopt what is common industry practice and lock in suppliers by extending the terms of their supply contracts. That action would create significant barriers to entry to potential new entrants to the farm gate market. Therefore, until it has been determined that there is sufficient farm gate competition, the open exit provisions should be retained. It is possible that farm gate competition should be assessed on a regional basis rather than on a North Island / South Island basis or on a New Zealand basis, as farm gate competition has only developed, to any reasonable degree, in the highest milk producing regions.

The changes we have recommended with respect to the base milk price would probably, on average, decrease the FGMP. We haven't tried to quantify the impact other than that we know that non-GDT sales have, to date, contributed an additional 5-10 cents per kgMS to the FGMP. Any decrease in the FGMP is negative for farmers, but positive for processing company shareholders from a return on capital employed perspective. Having said that, to the extent that the changes increase transparency, farmers should benefit from clearer pricing signals. Any enhancement to processing company shareholder returns should continue to encourage potential investment in the sector (with milk-supply risk continuing to be the most significant start-up risk).

The non-discrimination rules were established in order to ensure wealth was not transferred from one set of Fonterra supplier/shareholders to another, in an effort to frustrate potential new farm gate

competition. That objective is still valid and therefore the non-discrimination provisions need to be retained. We understand that Fonterra is using its contract milk supply product, MyMilk, to recruit milk from targeted pockets of Westland supply. The MyMilk contract does not require suppliers to become Fonterra shareholders. Westland is a traditional co-operative company and all suppliers need to be shareholders.

Westland considers the MyMilk product to be an example of discriminatory behaviour.

The raw-milk supply provisions will continue to make the industry more efficient at the farm gate until such time as there is sufficient competition.

The relaxation of the raw provisions as they apply to the factory gate market will increase the efficiency of the industry to the extent that the current provisions actually inhibit domestic competition by limiting the size of the competitors.

3.7.9 What might we expect to see in the absence of the contestability provisions?

In the absence of the open exit provisions, we would expect to see Fonterra move quickly to protect its current milk supply, by extending its milk contracts and locking in suppliers.

In the absence of the base milk price provisions, we would expect to see:

- Fonterra transferring what would otherwise be value-add profit into the FGMP to protect its current milk supply, to attract new milk supply, to the extent that it has spare capacity, and to discourage any additional farm gate competition; and
- farmers making less informed production decisions because of lack of clarity around the milk price.

In the absence of the non-discrimination provisions, we would expect to see Fonterra targeting other IPs suppliers by creating a multi-tiered milk price structure.

In the absence of the raw-milk supply provisions, we would expect to see investment in processing capacity by new processors disappear.

As a consequence of all of the above, we would expect relatively static milk supply shares between processing companies and therefore less investment in stainless steel and therefore the stalling of production-based company growth. That could lead to companies taking more risk with value-add strategies emerging as companies try and find a way to deliver value to their shareholders. It could also lead to mergers and acquisitions (subject to the Commerce Act).

3.7.10 How are Westland and its supplier / shareholders affected by these changes?

Westland's supplier / shareholders are unaffected by the proposed changes to the base milk price calculation.

Westland's supplier / shareholders would benefit from the proposed changes in the factory gate raw-milk supply, to the extent that it would effectively increase the company's milk supply.

3.8 If so, what changes, if any, are required to ensure that the extent of any unintended consequences, which may have arisen as a result of the DIRA contestability provisions, is reduced/removed, while any impact on the regime's ability to deliver on its policy objective is minimised?

See section 3.7.9, above, for discussion regarding the phasing out of the open-entry provisions.

3.8.1 How are Westland and its supplier / shareholders affected by these changes?

Westland's supplier / shareholders are unaffected by the open-entry recommendations.

3.9 If not, what should the alternative and/or new regulatory objectives be to ensure that the DIRA regulatory regime supports a well-functioning and high performing New Zealand based dairy production and processing industry, which manages resources effectively (including land, water, and capital) to produce high quality, high value dairy products?

Our observation would be that the DIRA contestability provisions have performed as intended with competition emerging at the farm gate with little in the way of unintended consequences (other than possibly the open-entry provisions as commented above). There might be some disagreement with respect to the pace at which farm gate competition has emerged and whether or not that has been satisfactory. However, we do not think that any alternative or new regulatory objectives need to be added. We make the following comments:

- in the absence of major externalities, competitive industries, by definition, manage capital resources effectively;
- history suggests that natural resources need to be regulated in order to establish the acceptable boundaries within which they can be used. We think that those boundaries have now been established;
- ensuring that consumers have consumption choices ensures that product quality is sufficient from their perspective on a cost-value basis;
- the decision to produce high value dairy products is a decision to be made by the shareholders of the various processing companies, as the strategic decision to move up the value chain requires access to capital (because it is more capital intensive than commodity product manufacturing) and it involves a risk-reward trade-off; and
- our hypothesis, based on observation, is that the strategic decision to move up the value chain comes after the processor has become an efficient commodity product manufacturer and after growth via the ability to access more milk supply slows. At that point, shareholders generally start pursuing other avenues to grow the company.

3.9.1 How are Westland and its supplier / shareholders affected by these changes?

Not applicable.

3.10 Is the domestically-focused dairy sector operating in the long-term interests of New Zealand consumers?

3.10.1 The domestic market

The domestically-focused dairy sector in New Zealand makes up a small proportion of total dairy production. The fresh-milk market in New Zealand currently consumes approximately 600M litres of milk, which accounts for 5 percent of total annual production of 20.7B litres of milk.

There are three key channels to market; grocery (supermarkets), route (petrol stations, dairies, small convenience stores) and food service (cafés, catering companies, hotels, restaurants, institutions and the like). Grocery is the largest of these channels with sales comprising approximately 60 percent of the total volume. Figure 9, below, depicts these three channels.

Figure 9: Three channels to market in domestically-focused dairy sector

3.10.2 The domestic market before DIRA

Before DIRA came into place in 2001, the domestic market was dominated by New Zealand's two large dairy co-operatives; NZDG and Kiwi. NZDG traded domestically under the company Dairy Foods, while Kiwi's main sales company was Mainland. The private label brands held by these two competitors had a combined grocery market share of around 95 percent.

3.10.3 The 2001 DIRA reform

The 2001 DIRA regulations combined the operations of NZDG and Kiwi, establishing Fonterra, with an effective monopoly in the domestic dairy market. With a near monopoly structure, the key concern became regulating the market power of the company, particularly in regards to consumer prices and competition. As then opposition MP Bill English said in Parliament at the time of the First Reading of the Dairy Industry Restructuring Bill:

"this bill is the product of a political deal between the Government and the dairy industry, and part of that deal is that the industry accepts a degree of regulation to mitigate the effective monopoly with which it sets out. Parliament now has a public interest job to do, and that job is to ensure that a regulatory regime comes into place that protects consumers and protects suppliers." [15]

These protections were:

[15] Refer Hansard, 26 June 2001, p 10059.

- to require one of the two founding companies of Fonterra, the New Zealand Dairy Group (NZDG), to divest its domestic consumer business, New Zealand Dairy Foods (NZDF);
- to give NZDF's (eventual) new owner, GF, guaranteed access to 250M litres of raw milk p.a. from Fonterra at the DIRA price while DIRA remained in place; and
- to supply other IPs with up to 50M litres of raw milk per annum, at the DIRA price.

In order to assess how DIRA has impacted on consumers in the domestically-focused New Zealand dairy market, we need to assess the current state of competition, and how this has changed since 2001.

The domestic dairy market in New Zealand is dominated by Fonterra Brands NZ (FBNZ) and Goodman Fielder (GF), who between them own most of the brands previously owned by NZDG and Kiwi. FBNZ is the dominant player, supplying a full range of dairy products and having market leadership across all channels. GF is number two.

The lack of comprehensive market-share data limits the ability to draw firm conclusions with respect to how the retail market for dairy products in New Zealand has developed since the establishment of Fonterra. We therefore focus on the grocery sector as the main proxy for understanding competition in the consumer market.

The grocery channel makes up approximately 60 percent of the domestically-focused dairy market. FBNZ has a branded marker share of around 25 percent by volume and GF has around 11.5 percent. The smaller players combined have about 12 percent. The balance is made up of supermarket house-branded fresh white milk, cheese and butter – which together account for around 50 percent of the total grocery dairy market.

The combined share of the private-label brands held by FBNZ and GF is currently around 87 percent. This has decreased from 95 percent over the last 16 years. The combined market share of all the other participants in the grocery sector has increased from 5 percent to 13 percent.

Overall, if the grocery sector can be used as a proxy for the total consumer market, we would conclude that competition in the sector has increased since Fonterra was created and therefore that DIRA has been successful in preventing FBNZ from exercising its market dominance.

3.11 Are there significant economies of scale in the collection and processing of farmers' milk into domestic consumer dairy products?

Economies of scale in the collection and processing of farmers' milk into domestic consumer products (and specifically fresh milk) exist on a relative basis. That is, the scale of a processor's domestic business relative to its total business (being domestic plus export). The scale economies exist in two areas: collection costs and the ability to manage daily variations in fresh milk demand (represented as capacity costs).

3.11.1 Collection costs

The New Zealand dairy industry is internationally cost-competitive, in part because New Zealand's temperate climate and abundant water allows the farming system to be a pasture-based system where milk production matches grass growth. The pasture-based system, however, means milk production is

highly seasonal. Milk production in the peak month (October each year) is typically 20 times larger than the lowest milk-producing month (June each year).

The multiple between the highest and lowest milk-producing months would be more than twenty if Fonterra did not specifically incentivise farmers to produce winter milk for the domestic market by paying them a margin over the FGMP for their milk.

The demand for fresh milk in the domestic market does not match the seasonal milk supply curve of the industry. The domestic demand for milk is flat over a given year meaning that approximately the same amount of milk is demanded for domestic consumption in every day of every month of the year.

Fresh milk for domestic consumption goes to five designated factories: four in the North Island and one in the South Island.

Our best estimate is that approximately 10 to 15 percent of New Zealand farmers produce winter milk. In other words, milk that is destined for domestic consumption. The collection cost scale economy exists for one or both of the following reasons, either:

a. the milk produced by the winter milkers is collected and transported to the closest plant for processing into whatever product that plant produces for 10 months of the year (which could be but need not be one of the five designated fresh milk plants) and only has to go to one of the five designated fresh milk factories for two months of the year; and/or

b. the number of winter milk suppliers required is very low relative to the total number of winter milk suppliers. Given the premium required to attract winter milkers, it follows that the higher the ratio of winter milk suppliers to the total number of suppliers, the higher the premium required or the larger the catchment area.

3.11.2 Capacity costs

We understand that daily demand for fresh milk can vary by 30 percent. That means that the fresh milk supplier needs access to 15 percent more milk everyday than the average daily amount to meet demand on high-demand days and needs to be able to find an alternative buyer for or to process 15 percent of the milk on low-demand days. The relative cost of being able to manage this daily variation diminishes with scale. The smaller the proportion of fresh milk demand to total milk supply, the smaller the cost of having processing capacity standing idle on those days when fresh milk demand is high and the smaller the cost of having to hold processing capacity in reserve "just in case" for those days on which fresh milk demand is low.

3.11.3 Pre-merger structure

Given the seasonal milk curve and the non-seasonal nature of domestic demand, it is no surprise that the original two large pre-merger domestic businesses were subsidiaries of very large export businesses (NZDG and Kiwi). Both NZDG and Kiwi had large ingredient businesses to funnel their excess milk through to manufacture and export as long-life products (through the New Zealand Dairy Board at the time).

3.12 What would the domestically-focused dairy sector look like (in terms of structure and range of business models) in the absence of the DIRA regulations?

The domestic market regulations under DIRA ensure that Fonterra supplies milk to GF and other IPs at a regulated price, for sale in the domestic market. Almost all milk, cheese and butter sold in the domestic market is supplied by Fonterra under this system. Absence of the DIRA would thus allow Fonterra unregulated control of this domestic milk supply, with power over the price and quantity with which it on sells base products.

The 2016 report by the Commerce Commission provides an assessment of the efficiency and equity effects of abolishing the regulations that require Fonterra to supply raw milk to processors that produce dairy products to the domestic market.

The Commission estimates that without these domestic DIRA regulations:

- Fonterra would have the ability to use its dominant position to increase the factory-gate raw-milk price by around 25 percent;
- consumers would face a resultant price rise of around 6 percent; and
- this would lead to a transfer of wealth from New Zealand consumers to milk suppliers of between $51M and 92M p.a.

3.13 Does the DIRA regulatory objective of ensuring "competition in the wholesale supply of domestic consumer dairy products" remain fit-for-purpose, given the dynamics of the domestically-focussed dairy sector?

DIRA gives these two firms a privileged position in the domestic dairy market, creating a challenging environment for other competitors.

One of the key constraints for competitors in the domestic dairy market is their milk entitlement. With access to a maximum of 50M litres of milk per annum, smaller firms are limited in their ability to grow their domestic market share. Though GF has access to a larger entitlement of 250M litres, its ability to grow beyond its current market share is also restricted. These caps on milk supply from Fonterra mean firms are not able to compete for new high-volume contracts without switching product from an existing customer or sourcing milk directly. Considering the scale an IP would have to reach to overcome the costs of winter milk and efficiently produce its own milk for use in the domestic market, it hard to foresee a growth pathway without the ability to increase access to Fonterra's milk.

Regulatory uncertainty presents another obstacle for competitors in the domestic market. Regulatory uncertainty inhibits investment as potential investors cannot be sure what their investment horizon is.

3.14 If so, what changes (if any) would be required to ensure that the DIRA regulatory regime supports a well-functioning domestically-focused dairy sector that operates in the long-term interests of New Zealand consumers?

Though competition in the domestic dairy market has increased since the establishment of the DIRA, there is potential for regulatory change that would further support a well-functioning market. We suggest that to improve competition in the domestic dairy market two main changes are required:

1. Fonterra be required to supply all of the raw milk required by any domestic dairy products market competitor with no special regulatory entitlement or limits; and

2. full accounting separation of Fonterra and FBNZ.

3.14.1 Requiring Fonterra to supply 100 percent of the raw milk required by any domestic dairy products market competitor with no special regulatory entitlement or limits

The current caps on the amount of DIRA milk GF and IPs can acquire, of 250M litres and 50M litres p.a., respectively, would be removed subject to the total amount required being supplied to the domestic market. All milk acquirers would be subject to audits to confirm that the DIRA milk supplied went into the domestic market. A penalty would be required if the milk acquired was used to produce exports rather than to supply the domestic market.

The proposed change has the potential to lead, over time, to a more innovative and competitive dairy products market:

- It would allow successful niche participants to grow to scale without the associated costs of an ingredient business to balance milk supply;

- it provides competitive neutrality amongst current and potential buyers of raw milk at the factory-gate; and

- it allows Fonterra to capture the economies of scale in collecting and processing milk for the international market while not penalising domestic consumers of dairy products.

This change would avoid the detrimental effects on competition resulting from the current caps.

There is a risk that this change could disincentivise IPs from having an independent supply when entering the domestic dairy products market. This change could therefore partially reinforce Fonterra's dominance and discourage competition at the farm-gate. Nevertheless, because it is unlikely that a large IP would establish a presence in the domestic market without an exporting arm, this is less of an issue. As New Zealand currently exports 95 percent of total milk production, it is unlikely that this option (which is limited to the domestic market) will have a significant impact on the incentives of an IP considering sourcing independent milk supply. In summary, the benefits should outweigh any potential costs.

3.14.2 Requiring accounting separation of Fonterra and FBNZ

Requiring accounting separation of Fonterra and FBNZ, while leaving FBNZ as part of the Fonterra group, would go some way towards providing a level competitive playing field between domestic competitors but with no change in Fonterra's dominance of factory-gate supply. Fonterra could be required to account for FBNZ as a separate entity.

Allocative efficiency would be likely to be somewhat improved under this option. If monitored appropriately by non-supplier shareholders and the Commerce Commission, this approach would reduce the risk of Fonterra assisting FBNZ to retain or increase its market share by cross-subsidising FBNZ. The issue of allocative inefficiency, if Fonterra was not required to supply milk at regulated prices would remain, although in the long run the entry of IPs into the domestic market, encouraged by removal of FBNZ privileged position, could introduce a constraint on Fonterra.

Dynamic efficiency would also be improved, possibly substantially, since IPs considering entry into the domestic market would have a degree of protection against competitive non-neutrality, by Fonterra. As noted above, in the long run the entry of IPs into the domestic market could reduce and eventually eliminate the effect of Fonterra's dominance in the factory-gate market.

3.14.3 How are Westland and its supplier / shareholders affected by these changes?

The change should enhance Westland's ability to compete domestically because, like any other domestic competitor, Westland would similarly be able to buy milk destined for the domestic market from Fonterra and by so doing effectively access Fonterra's milk collection scale economies in the same fashion as the other domestic competitors.

The change would also effectively result in a marginal increase in total milk supply for Westland, as it would be able to channel into export markets the milk that it would otherwise have been selling into the domestic market.

4. Regional development

4.1 Is regional development enhanced by DIRA?

It is generally accepted that the dairy industry has been beneficial for the New Zealand economy. If that is the case, given the dairy industry is a regional industry, it follows that it has been beneficial for the regions.

We consider that the "contestability" provisions of DIRA have helped make the industry more efficient than it otherwise would have been. That being the case, again, it follows that the contestability provisions of DIRA have been beneficial for the regions, which is the same thing as saying that regional development has been enhanced by these aspects of DIRA.

Instead, Westland believes that its operation as an IP has made it essential to the regional economy, especially given the company is biggest private sector employer on the West Coast. With its move to higher value products, Westland's economic "spill-over" effects will also increase, particularly enabling further growth in employment opportunities, secondary businesses to meet demand and sustainability of the vital transport links such as west-east rail, of which Westland is the largest user.

Any change to the DIRA provisions should not put this economic growth at risk.

5. Environmental considerations

5.1 Does regional development lead to more appropriate and innovative environmental solutions?

Environmental solutions required in the regions are likely different from those required in larger urban areas because the causes of the environmental problems are probably not the same. That is not the same as saying that the solutions are more appropriate or innovative.

The activities of New Zealand dairy farmers are constrained by existing legislation such as the Resource Management Act, the Animal Welfare Act and the Health and Safety at Work Act amongst others.

From an environmental perspective, we would argue that it is inappropriate for DIRA to also include any environmental restrictions for two reasons:

- dairy farmers in New Zealand should be bound by the same environmental constraints as everybody else; and
- including environmental constraints in different pieces of legislation is bound to lead to legislative conflicts and confusion.

Westland as a company, mainly operates in a unique environment and as a responsible IP fosters its farmer-shareholders to develop and implement more suitable, innovative and effective environmental solutions. This include farming practices which are unique to the West Coast's topography and climate that maintains productivity sustainably and protects the natural environment.

6. Fonterra Co-operative Group Limited

6.1 Should it remain a co-operative?

The question of the appropriate organisational form (eg, co-operative or not) of an enterprise is one for shareholders to answer. There are both advantages and disadvantages to being a co-operative:

- as a co-operative, Fonterra cannot go beyond the bounds of its supplier/shareholders for equity capital. Even though the subordinated nature of the milk-price payment to farmers gives Fonterra better access to debt than an ordinary company, that access is ultimately limited without access to additional equity resources;

- Fonterra is essentially two businesses within a single entity: a commodity and near-commodity business and a value-add business. The commodity and near-commodity business is an easy fit into a co-operative structure because it is a business that the supplier / shareholders understand and can fund. The value-add business is not an easy fit because it is higher risk, more capital intensive, and less tangible; and

- in most co-operatives, the board of directors is either entirely made up of supplier/shareholders or they make up the majority. In our view, that structure is satisfactory for a commodity or near-commodity co-operative because the product is only one-step removed from primary production. It is less satisfactory the further up the value-chain the co-operative moves because the board of directors becomes more reliant on management, which means that it loses its ability to hold management to account.

- In Fonterra's case, the board of directors' composition problem is exacerbated by a nomination process that gives the existing board of directors the ability to veto almost any potential candidate's nomination and to therefore effectively control the on-going composition of the board of directors; and

- in this case, Fonterra, as a co-operative, appears to be at a competitive disadvantage versus the ordinary companies when trying to recruit new milk. Having to buy Fonterra shares in order to supply it versus not having to buy, say, Synlait shares to supply it has seen Fonterra come out on the wrong side of the competition. Synlait suppliers can decide to buy shares as well, but that decision is quite separate from a decision to become dairy farmers and grow milk.

If Fonterra choses to remain a co-operative Westland maintains that it must operate as a genuine co-operative on behalf of its farmer shareholders.

7. Conclusions

There is still a need for the DIRA. The DIRA contestability provisions have helped protect the long-term interests of New Zealand dairy farmers, consumers and the nation's overall economic wellbeing. It has opened up competition to others but not as many or as quickly as it could have.

It is recognised that the dairy industry's environmental impact has got worse as intensification has increased and as land has been converted to dairy. We consider that, at the margin, DIRA's open entry provisions may have contributed to this outcome and could be phased out without imposing significant costs. We would not want to see unfettered entry available.

The environmental situation has been acknowledged by farmers and efforts are in place to mitigate adverse effects of dairying. However, any further environmental protections required should be imposed by generic environmental legislation rather than through DIRA.

Although fit for purpose, we recommend these changes to the DIRA, including to the milk price methodology which would increase the transparency of the calculation and appear less manipulated.

- We contend that open entry (and open re-entry) could be phased out. To be clear, by open entry and re-entry we mean milk from new dairy conversions, we do not mean that Fonterra could choose not to collect milk from an existing dairy farm. Open entry has contributed to the development of marginal farming land so we would support that area closed to entry. Westland does not wish to see a situation whereby any farmer would not have their milk collected.
- the base milk price provisions remain crucial but these are changes we recommend:
  - Fonterra's average currency conversion rate should be excluded from the calculation;
  - non-GDT sales should be excluded from the calculation; and
  - the asset beta used should not be that of the hypothetical efficient processor but that of the industry. (Note – this is a different discussion to the one that the Commerce Commission is currently consulting on.);
  - Fonterra should supply the 100 percent of the raw milk required by any domestic dairy products market competitor; and
  - full accounting separation and reporting of Fonterra and FBNZ.

With regard to the domestic market, the shape of the New Zealand milk curve versus the domestic demand curve and the absence of a factory gate market mean that domestic competitors are largely reliant on Fonterra for their milk supply.

The raw milk supply provisions therefore essentially limit the size of domestic competitors by limiting their access to 50M litres of milk (or 250M litres in the case of Goodman Fielder (GF)). Limited access to milk together with uncertainty with respect to on-going access to that milk has limited investment in the domestic market. The cap should be removed and all participants in the domestic market be given equal access to DIRA milk. Full accounting separation and reporting of Fonterra and FBNZ is required

to ensure that FBNZ's ability to compete in the domestic market is not being subsidised by another part of the business.

We also believe that the DIRA has created some perverse outcomes in regard to dominant player behaviour and we are unsure if this can be adequately regulated against. An example was the experience of Westland during the collection and processing black outs created by Cyclone Fehi in 2018 which affected 600 businesses in the West Coast region. Instead of supporting each other, as others do in such crisis situations, the dominant player used its market position to offer non-Fonterra farmers very low, 'take it or leave it', prices to take the milk. Given the only other alternative was to dump the milk this could have resulted in negative environmental impact.

The DIRA legislation currently has no recourse for such dominant behaviour and Westland would support official efforts to curb these scenarios again, particularly given the worsening predicted effects and frequency of climate change events.

Appendix 1: Calculation of Fonterra's capital value including assumed merger benefits

In 2001, the initial Fonterra share price was set at $3.85 and there were initially 1,110,153,888 shares on issue. This gave Fonterra an initial market capitalisation of $4.3B.

Added to this is the (then) present value of the estimated annual merger benefits ($310m per year or $223.2m after tax assuming a 28 percent tax rate). Assuming that the required return on equity is 9 percent (which is in-line with current market estimates of Fonterra's cost of equity and is likely historically prudent given the period over which we are estimating the change in capital value), the ($2001) present value of the annual merger benefits equates to $2.5B. The theoretical value of Fonterra's equity immediately post-merger was therefore $6.8B or $6.08 per share.

That equity value is required to generate a return of 9 percent per annum. That return could either be via an annual dividend or it could be capital growth or some combination of both (Re*(1-Div)). We have assumed the dividend policy to be 70 percent (consistent with the mid-point of Fonterra's stated dividend policy).

After the 16 years (2001 to 2017) this results in a total expected equity value of $10.3B.

In addition, as milk supply increases, new shares are issued and new is equity raised. From annual filings, we know there have been just under 500M new shares issued and $2.6B of new equity raised – on average $5.24 per share. For simplicity, we have assumed that the same number of shares have been issued for the same price each year.

The expected value of this new equity is now $3.2B.

The total expected value of equity is therefore $13.5B. If we divided $13.5B by the number of shares currently on issue we get a theoretical share price of $8.43.

The actual calculations are presented in Table 5, below.

Table 5: Theoretical share price calculation

Original Fonterra shares on issue	1,110,153,888
Value per share	$3.85
Original Fonterra equity value	$4,274,092,469
Anticipated annual benefit (pre tax)	$310,000,000
Anticipated annual benefit (after tax)	$223,200,000
Cost of equity	9.0%
PV of anticipated annual benefits	$2,480,000,000
Theoretical merger equity value	$6,754,092,469
Theoretical merger equity value per share	$6.08
Average dividend rate	70%
Years	16
Theoretical equity value now	$10,344,133,092
Theoretical value of those share now	$9.32
Total number of shares on issue now	1,606,932,511
Total number of shares issued since the merger	496,778,623
Average number of new shares issued per year	31,048,664
2001 Subscribed Equity	$3,229,000,000
2017 Subscribed Equity	$5,833,000,000
New equity raised	$2,604,000,000
Average equity raised per year	$162,750,000
Average share issue price	$5.24
Theoretical current value of equity raised since the merger	$3,203,978,505
Theoretical total current equity value	$13,548,111,597
Theoretical current value per share	$8.43