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An Assessment of the DIRA Triggers Ministry of Agriculture and Forestry

NERA

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1. Introduction and Executive Summary

1.1. Introduction

The creation of Fonterra in 2001, from a merger of the two largest dairy cooperatives in operation at the time and the New Zealand Dairy Board, created a monopoly/monopsony in the raw milk markets – Fonterra purchased 96% of the raw milk supplied by farmers, with the two remaining cooperatives, Tatua and Westland, purchasing 4% combined.² An earlier version of the proposed merger was initially declined authorisation in a draft determination by the Commerce Commission in 1999,³ and in order for a modified version to proceed the Dairy Industry Restructuring Act (“DIRA”) was enacted to provide an exemption from the merger provisions of the Commerce Act.

To ensure that the monopoly/monopsony Fonterra was constrained by competition, Part 2, subpart 5 of the DIRA was put in place to provide the regulatory framework for the “efficient operation of dairy markets in New Zealand” (section 70). The key provisions of subpart 5 are as follows:

- Fonterra has an obligation (with some exceptions) to accept supply from any farmer and to allow withdrawal (“**free entry and exit**”);⁴
- Shareholding farmers are able to allocate up to 20% of their weekly production to independent producers without having to exit Fonterra (“**the 20% rule**”);⁵
- Fonterra cannot discriminate between suppliers in the same circumstances;⁶
- At least 33% of all milksolids supplied on contract within 160km of any point in New Zealand are either held by independent processors (“IPs”) or, if held by Fonterra, are required to be contestable;⁷
- Fonterra must sell the milk vat of an exiting farmer to that farmer or to an IP at market value (“**the milk vat sale rule**”);⁸ and

² MAF (2009), “The Future of the Pro-Competition Regulatory Regime in the New Zealand Dairy Industry”, Consultation Document, December.

³ Commerce Commission, Draft Determination on “Newco” dairy merger, 27 August 1999.

⁴ The obligation to accept supply is set out in sections 73-85, and the right to withdrawal is set out in sections 97-105.

⁵ Section 108.

⁶ Section 106.

⁷ Section 107. Specifically section 107 (3) of the DIRA states:

New co-op must ensure that, at all times, 33% or a greater percentage of the milksolids produced within a 160 kilometre radius of any point in New Zealand-

a) is supplied under contracts with independent processors; or

b) is supplied under contracts with new co-op that-

i) expire or may be terminated by the supplier at the end of the current season without penalty to the supplier; and

ii) on expiry or termination, end all the supplier’s obligations to supply milk to new co-op

⁸ Section 109.

- Fonterra has an obligation to supply milk to IPs if an order in council is made.⁹ This provision of the DIRA led to the Dairy Industry Restructuring (Raw Milk) Regulations, which require that Fonterra must sell up to 50 million litres of raw milk per season to IPs (“**regulated milk**”) at an agreed or default milk price (up to a cap of 600 million litres).

When these provisions are viewed collectively, it is clear that a purpose is to enable efficient entry and expansion by IPs.

At the time of Fonterra’s formation (as now) the optimal structure of the dairy markets in New Zealand was a matter of debate. The DIRA with its strictures on Fonterra sought a structure that, in accord with modern corporate governance principles, enabled the optimal industry and organisational structures to evolve over time in response to forces of competition in the product, ownership, capital and labour markets.

In sections 147 and 148 of subpart 5 of the DIRA certain triggers are set out under which the relevant Minister may recommend that the above provisions cease to apply. These triggers are different for each of the North and the South Island. Thus the trigger could be met and regulation suspended in one Island yet maintained in the other. However, sections 147 (2) and 148 (2) do allow for regulation to be suspended in one Island if it has been suspended in the other. The triggers are as follows:

- **North Island**
IPs collect 12.5% or more of milksolids collected from dairy farmers in the North Island in a season; and
- **South Island**
IPs collect at least 65 million kilograms of milksolids from dairy farmers in the South Island in a season; **and** one IP collects at least 25 million kilograms of milksolids from dairy farmers in the South Island outside the boundaries of the Westland Regional Council.

As the South Island trigger is approached, the Government is considering whether it would be appropriate to extend the application of the DIRA.

In this context, we have been engaged by the Ministry of Agriculture and Forestry (“MAF”) to address the following questions:

1. *At the time that the DIRA is currently legislated to expire, will Fonterra still have (significant) market power in each of the relevant dairy markets or will the relevant markets be workably competitive? This would require a clear definition of “workable competition” for each of the dairy markets explored by this study.*
2. *If the dairy markets are unlikely to be workably competitive at the time the DIRA is currently legislated to expire, what are the likely detriments and how material will they be?*
3. *If there are material detriments, would maintaining the current DIRA pro-competition regime ceteris paribus, in its entirety or partially, ensure the efficient operation of dairy markets?*

⁹ Section 115.

4. *If so, at what point would the dairy markets be likely to become workably competitive, thereby making the DIRA pro-competition regulatory regime unnecessary. This would require a clear definition of the level of likelihood of workable competition being present at that point.*
5. *What should the new expiry thresholds be and how should they be defined? In particular, should the new thresholds be based on measures in addition to or in place of market share? Questions outlined in MAF's consultation document *The Future of The Pro-Competition Regulatory Regime in the New Zealand Dairy Industry*, are also relevant.*
6. *Would Fonterra's current capital structure proposal be likely to have a significant impact on the timeframe for achieving workable competition in the relevant dairy markets if the DIRA thresholds were to be extended?*

Following the Executive Summary in the next section, the remainder of this report is set out as follows:

- In section 2 we define the relevant markets;
- Section 3 provides a definition of workable competition, and introduces certain raw milk market structure issues;
- In sections 4 and 5 we discuss whether workable competition is likely to exist at the time the DIRA expires in the farm gate and factory gate markets respectively;
- Section 6 discusses the appropriate thresholds for the expiry of the DIRA; and
- Section 7 considers the implications for workable competition of Fonterra's proposed capital restructure.

1.2. Executive Summary

At the time that the DIRA comes off pursuant to the existing triggers, Fonterra will have a high market share in the “farm gate” market, being approximately 87.5% in the North Island and 80-82% in the South Island. Furthermore, the approximately 80-82% in the South Island assumes that Westland competes with Fonterra, when in fact the Southern Alps are likely to constrain the pressure Westland can place on Fonterra, due to transport costs. In other words, the 80-82% might understate the true market share of Fonterra in the remainder of the South Island.

Both regulatory precedent and the economics literature generally find that firms (including cooperatives) with such market shares have the ability to exercise market power. This is particularly the case if there are material entry barriers and if competitors are weak.

Regarding entry barriers, in the absence of the DIRA entry to both the farm gate market and the “factory gate” market is likely to be difficult. Dairy processing assets are to a considerable degree sunk – therefore investors will be reticent to invest without a certain raw milk supply. However, farmers also have sunk assets and a non-storable output, and they will be reticent to contract with an IP before that IP's plant is built and a track record established. (We refer to this as the “catch-22 situation”). Furthermore, in the absence of the DIRA Fonterra could remove or weaken the free entry and exit requirement, making it more difficult for IPs to expand.

Regarding existing competitors, there are now five main IPs in New Zealand,¹⁰ with a fairly broad geographic spread: Westland, Tatua, OCD, Synlait and NZDL. However, at the time that the DIRA comes off (MAF forecasts the South Island trigger to be reached in 2011¹¹), at least some of these IPs may still be in establishment mode without a long track record, and may still be vulnerable to shocks and strategic behaviour (such as raising switching costs). This is particularly the case given the likely importance of:

- Economies of scale and scope in dairy processing; and
- The ability to manage risk given the volatility in export prices and the exchange rate.

It is accordingly not yet possible to be confident about the strength and indeed number of newer IPs that would compete with Fonterra in the absence of the DIRA. There also appear to be limits on the pressure that Tatua and Westland might place on Fonterra. Tatua does not appear to compete for suppliers, and Westland is isolated by the Southern Alps.

There is an efficiency trade-off in a small economy between the number of competitors and scale. While the underlying economics are still not clear, in the presence of material entry barriers, we would suggest that workable competition would require at least two efficient IPs competing against Fonterra in each relevant geographic and product market. One efficient IP might be sufficient if entry and expansion were easier, but in the absence of such a threat, the allocative, productive and dynamic efficiency pressures are likely to be greater with three players (i.e., Fonterra plus two IPs). At the moment it is not possible to be confident of such a market structure when the DIRA expires under the current thresholds.

Therefore in our view Fonterra is likely to have the ability to exercise market power when the DIRA expires under the current thresholds. We stress that this is a judgment call, as there is no clean indicator at this stage.

We also think that in the absence of the DIRA Fonterra would have an incentive to use its market power to damage IPs as a means of retaining and winning suppliers, and increasing milk throughput.

In respect of the factory gate market, on its face it appears that Fonterra may not have the ability to raise price above the competitive level immediately on expiry of the DIRA, because the IPs have plenty of capacity to switch milk into the domestic market (the factory gate market is significantly smaller than both the farm gate market and the current capacity of IPs). However, for the reasons discussed above there is a risk that the constraints on Fonterra may weaken over time, providing Fonterra with market power.

It is important to note that, even when the DIRA expires, Fonterra's behaviour will still be subject to the Commerce Act, particularly sections 27 and 36. These provisions would constrain Fonterra's ability and incentive to behave anticompetitively. Nevertheless, this same point could have been made when Fonterra was formed and had a 96% market share.

¹⁰ And a handful of very small IPs.

¹¹ MAF (2009) "The Future of the Pro-Competition Regulatory Regime in the New Zealand Dairy Industry", Consultation Document, December.

Instead the Commerce Act was complemented at that time by the DIRA, which is in effect a form of entry enabling regulation.

It appears that the DIRA has been quite effective in enabling IPs to enter and to grow. In particular:

- The regulated milk has enabled IPs to manage the “catch-22” situation outlined above; and
- The requirement for free entry and exit has reduced switching costs by reducing the reticence of farmers to switch to a relatively unknown IP (as farmers know that they can switch back to Fonterra), and allowing farmers to extract their capital in Fonterra.

Subject to some potential minor modifications, the DIRA also appears to impose relatively low costs on Fonterra and the broader economy.¹² Indeed, the DIRA is quite a different form of regulation to that under Part 4 of the Commerce Act, as the former does not (materially) interfere directly with Fonterra’s strategies, investment plans and pricing decisions.

Accordingly, we think that there is a domestic competition policy argument for extending the application of the DIRA, at least to the point at which there could be more confidence in the sustainability of the IPs. In other words, we think that there are still net benefits in complementing the Commerce Act with the DIRA entry enabling regulation.

In our view, the threshold for the DIRA coming off should be a comprehensive competition analysis of the relevant markets, rather than a mechanistic quantity or market share trigger. However, that comprehensive competition analysis could be triggered by quantity or market share thresholds, or indeed time thresholds. If they were to be market share thresholds, then the literature we have reviewed, taking into account New Zealand circumstances, might suggest a trigger figure of 75% (for each Island).

On its face the 75% figure is still quite a high market share, and the economics literature suggests that even cooperatives might well have market power at this level. However, the literature is US-focused. In respect of the small New Zealand economy, scale considerations might suggest that a higher market share could be appropriate. Furthermore, Fonterra is exposed to competition from the world markets. Finally, the threshold would be a trigger for a comprehensive competition analysis, not for automatic expiry of the DIRA.

In Table 1.1, we set out the questions asked by MAF, and a brief summary response to each. Each of these responses is developed in greater detail in the remainder of this report.

¹² An analysis of the efficiency of the regulated milk price is beyond the scope of this report.

Table 1.1
Summary Responses to MAF Questions

Question	Summary response
<p>At the time that the DIRA is currently legislated to expire, will Fonterra still have (significant) market power in each of the relevant dairy markets or will the relevant markets be workably competitive? This would require a clear definition of “workable competition” for each of the dairy markets explored by this study.</p>	<p>Given the entry barriers to the farm and factory gate markets in the absence of the DIRA, workable competition would likely require at least two efficient (and scale) IPs competing against Fonterra in each market. At the moment it is not possible to be confident of such a market structure when the DIRA expires under the current thresholds. Therefore it is likely that Fonterra will have significant market power at expiry.</p>
<p>If the dairy markets are unlikely to be workably competitive at the time the DIRA is currently legislated to expire, what are the likely detriments and how material will they be?</p>	<p>The key benefit of workable competition is the dynamic efficiency that it stimulates, i.e., the incentives it creates to innovate and invest, and the testing of organisational form and strategies. Accordingly the key detriment of a lack of competition is the softening of these incentives and tests. Given the importance of the dairy industry to New Zealand, these costs would likely be high.</p>
<p>If there are material detriments, would maintaining the current DIRA pro-competition regime ceteris paribus, in its entirety or partially, ensure the efficient operation of dairy markets?</p>	<p>The DIRA appears to be quite effective at promoting competition, and with some minor modifications, appears to impose relatively low costs on Fonterra and the economy. Accordingly, there are still net benefits in complementing the Commerce Act with the DIRA entry enabling regulation.</p>
<p>If so, at what point would the dairy markets be likely to become workably competitive, thereby making the DIRA pro-competition regulatory regime unnecessary. This would require a clear definition of the level of likelihood of workable competition being present at that point.</p>	<p>The DIRA regime will become unnecessary when there can be more confidence in the sustainability of the newer IPs. While it is difficult to accurately identify the future indicia of workable competition in each of these markets, because the underlying economic performance and structure are still to be revealed, it might be that workable competition would exist in each product and geographic market if there were at least two IPs competing against Fonterra, with the IPs having:</p> <ul style="list-style-type: none"> ▪ Material levels of market share (e.g., perhaps greater than 10% each),¹³

¹³ It may be that sufficient scale can be obtained across geographic markets, e.g., a firm with 5% in each of the North and South Islands may have sufficient scale.

earned on the basis of their own supply rather than regulated milk; and

- Strong balance sheets and a history of profitability.

What should the new expiry thresholds be and how should they be defined? In particular, should the new thresholds be based on measures in addition to or in place of market share?

The threshold for the DIRA coming off should be a comprehensive competition analysis of the relevant markets, rather than a mechanistic quantity or market share trigger. However, that comprehensive competition analysis could be triggered by quantity or market share thresholds, or indeed time thresholds. If they were to be market share thresholds, then the literature we have reviewed, taking into account New Zealand circumstances, might suggest a figure of 75%.

Would Fonterra's current capital structure proposal be likely to have a significant impact on the timeframe for achieving workable competition in the relevant dairy markets if the DIRA thresholds were to be extended?

Fonterra has proposed a three stage capital restructuring. We do not think stages 1 and 2 would have a material effect on the timeframe for achieving workable competition. Concerns have been expressed that the stage 3 market might not be liquid, and that this would soften competition. An assessment of this liquidity concern is beyond the scope of this report. For present purposes we have been instructed to assume that the market would be liquid and that the share price would be "fair". If that is the case, then we do not see any material impact on competition.

2. Market Definition

Fonterra operates in several different markets, including overseas markets. However, the scope of our current analysis is largely limited to two relevant markets.¹⁴ The first is the market in which farmers sell their raw milk to processors – as MAF has done in its consultation document, we will refer to this product market as the "farm gate market". This is an input market for Fonterra and what we will refer to as "independent processors" ("IPs", the main ones of which are Westland, Tatua, OCD, Synlait and NZDL).

The DIRA triggers imply that there are two geographic farm gate markets, being the North and South Islands. This has also been the traditional view of the Commerce Commission, on the basis that while transport costs limit the catchment area of processing plants, the distances that milk can be economically transported still cover the greater part of the North and South

¹⁴ Although we do on occasion refer to effects in other markets.

Islands, and in any case uniform pricing by dairy cooperatives means that even those farmers without buyer options enjoy the benefits of competition.¹⁵ However, in its recent investigation of Fonterra’s “tactical pricing”, the Commission did note (correctly in our view) that a move away from uniform pricing by Fonterra might lead to narrower geographic markets.¹⁶ We return to this issue in section 5.

There is also potentially a time dimension to the farm gate market. Milk production in New Zealand is seasonal, with the peak being in spring. However, some farmers are compensated by processors for “winter milk”, and it is possible that this constitutes a separate market. However, this issue does not really matter for our analysis, and we have therefore not formed a final view on it.

The other relevant market is that in which food companies purchase raw milk from Fonterra (and possibly) IPs, which we will refer to as the “factory gate market”. Food companies include firms such as Goodman Fielder, Cadbury and Emerald. While the factory gate market is currently only an output market for Fonterra, it is primarily an input market for IPs who purchase regulated milk off Fonterra (pursuant to the DIRA), although it could also be an output market for these firms (we discuss this later in our report).

While we have not tested this empirically,¹⁷ it seems likely that if a farm gate purchaser such as Fonterra raised the price at which it sells raw milk to food companies by 5% above the competitive level, it would not be economic for at least some of the existing food companies in New Zealand to switch to contracting directly for supply with farmers. A key reason for this is the seasonality of farm production, and management of that seasonality.¹⁸ It is therefore likely that farm gate and factory gate supply are distinct markets. Indeed, a key distinction between the farm and factory gate markets is that in the latter, there may be no seasonal variation, as this (and more general volatility) may be managed by the supply-side of this market.

As with the farm gate market, transport costs may also define sub-national geographic markets at the factory gate, which could be smaller than the North Island and South Island.

3. Workable Competition and Market Power

3.1. Definition of Workable Competition and Market Power

Assuming that the DIRA thresholds would be triggered in the near future, the first question we have been asked is whether Fonterra would be likely to have (significant) market power at that point.

¹⁵ Commerce Commission, Draft Determination on “Newco” dairy merger, 27 August 1999, paragraphs 158-167.

¹⁶ Commerce Commission, Investigation Report – Fonterra Tactical Pricing Regime, 18 December 2008, paragraph 27.

¹⁷ In fact, empirical testing of market definition might be quite difficult in light of the volatility of dairy commodity prices. For example, the standard 5% “SSNIP” test might be swamped by price volatility.

¹⁸ For the very small food companies, another reason is that they may have difficulty contracting directly with farmers if they are not able to take the entire volume of an individual farmer’s supply.

Market power is technically defined as the ability for a firm to profitably raise prices above marginal cost.¹⁹ In the real world, pricing at marginal cost rarely occurs, and thus firms are generally expected to have at least some market power.²⁰ However, this market power only becomes a competition concern when it is deemed “significant”. Indeed, the concept of workable competition reflects the fact that the perfectly competitive “ideal” of marginal cost pricing is unlikely to occur in the real world, yet competition can still be effective at constraining firm behaviour and delivering welfare-enhancing outcomes to consumers.

Scherer and Ross (1990) specify a number of criteria in relation to structure, conduct and performance that define a workably competitive market.²¹ These criteria are shown in Table 3.1.

Table 3.1
Criteria for Workable Competition

Structural criteria	Conduct criteria	Performance criteria
Number of firms as large as scale economies permit	Uncertainty exists as to whether price changes will be followed	Firm production and distribution is efficient
No entry or mobility barriers	No collusion	Output level and quality is responsive to consumer demand
Moderate and price-sensitive quality differentials in products	No unfair, exclusionary, predatory or coercive tactics	Profits reward investment, efficiency and innovation
	Inefficient suppliers and consumers are not permanently shielded	Prices encourage rational choice, guide markets to equilibrium and do not intensify cyclical instability
	Promotion is not misleading	Opportunities for technically superior products are exploited
	No persistent, harmful price discrimination	Promotional spending not excessive
		Success comes to those who best serve consumer demand

An alternative definition of workable competition is that given in Heydon’s (1989, p.1548) *Trade Practices Law*, and which has been used by the Commerce Commission and the High Court:²²

Workable competition means a market framework in which the pressures of other participants (or the existence of potential new entrants) is sufficient to ensure that each

¹⁹ See, for example, Carlton and Perloff (2005), p.93.

²⁰ Motta (2004), p.41 makes a similar point.

²¹ These criteria are useful (provided they are not taken too literally), despite the “structure-conduct-performance school” having been critiqued by the “Chicago School” and more recently “post-Chicago economics”.

²² See, Commerce Commission (2008), “Regulatory Provisions of the Commerce Act”, Discussion Paper, 19 December, para 39, and the High Court references therein.

participant is constrained to act efficiently and in its planning to take account of those other participants or likely entrants as unknown quantities. To that end there must be an opportunity for each participant or new entrant to achieve an equal footing with the efficient participants in the market by having equivalent access to the means of entry, sources of supply, outlets for product, information, expertise and finance. This is not to say that particular instances of the items on that list must be available to all. That would be impossible. For example, a particular customer is not at any one time freely available to all suppliers. Workable competition exists when there is an opportunity for sufficient influences to exist in any one market which must be taken into account by each participant and which constrain its behaviour.

The Commission has gone further to note some of the other key aspects of workable competition, including that while profits tend to normal economic returns over time, they are sufficient to reward investment, innovation and efficiency gains.²³ Importantly, the Commission refers to the following discussion by the Australian Trade Practices Tribunal in the QCMA case,²⁴ which highlights that significant market power is inconsistent with workable competition:

...the basic characteristic of effective competition in the economic sense is that no one seller has the power to choose its level of profits by giving less and charging more...the antithesis of competition is undue market power in the sense of the power to raise price and exclude entry.

In the case of an input market, market power is the ability to lower price below the competitive level. A firm with enough market power in an input market might be referred to as a “monopsony”, which is the demand-side equivalent of a monopoly on the supply-side of a market. A monopsony exercises market power over its suppliers, while a monopoly exercises market power over its consumers.

From a competition policy perspective, there is also typically a time dimension to the definition, e.g., the ability to lower price and maintain that low price for one or two years.

It is important to note that the definitions of market power refer to *ability*, not *incentive*, to raise/lower price. This is important in respect of a farmer-owned cooperative like Fonterra. Even if Fonterra would have the ability to lower price to farmers below the competitive level, it would not have the incentive, because it is a cooperative (as we explain further below).

3.2. Workable Competition in Raw Milk Markets

The market structure that will lead to workably competitive outcomes will vary across markets in the economy – there is no “single fit”, as the underlying economics of all markets are different. For example, in markets where fixed costs are not material, workable

²³ *Ibid.*, para 40.

²⁴ Queensland Co-operative Milling Association Limited (1976) 8 ALR 481. The passage quoted by the Australian Trade Practices Tribunal was originally attributed to the United States Attorney General in its 1955 Report by the National Committee to Study the Antitrust Laws.

competition might require having many competing firms. At the other end of the spectrum, if entry is easy enough, then even a monopoly might behave efficiently in certain markets.

Fundamentally, competitive pressure could be applied to Fonterra from two sources – IPs and the threat of entry. We analyse both of these potential constraints in section 4 of this report. But as an introductory comment on the constraints imposed by IPs, we note that in general, the more firms there are in a market, the more competitive the market will be. However, it seems likely that economies of scale and scope are important in dairy processing, and perhaps at other functional levels. Furthermore, the ability to manage risk is also likely to be important, given the volatility in export prices and the exchange rate. Accordingly there is likely to be a low limit to the number of efficient dairy processors in New Zealand, and indeed it may be efficient for Fonterra to remain relatively large (keeping in mind that, as we discuss later, Fonterra’s cooperative structure constrains its ability to exercise market power compared to an equivalent investor-owned firm). The same logic suggests that IPs will need to be relatively large in order to provide (sustainable) competitive constraints on Fonterra. For example, a market with two significant IPs competing against Fonterra is likely to be more (sustainably) competitive than a market with five small IPs competing against Fonterra, assuming the same market share for Fonterra in both scenarios.

We now consider more carefully the constraints on Fonterra in each of the farm and factory gate markets.

4. Farm Gate Market

4.1. Would Fonterra Have Market Power in the Farm Gate Market?

4.1.1. Ability to Exercise Market Power

In this section of our report we consider the factors that determine whether Fonterra would have the *ability* to exercise market power in the farm gate market (we consider incentives in section 4.1.2). We set out our conclusion in section 4.1.1.4.

4.1.1.1. Market Share

The DIRA sets separate market share threshold triggers for the North and South Islands. For the North Island, the trigger is when Fonterra’s market share of milksolids collected from dairy farmers in a season falls below 87.5%. For the South Island, the trigger is for IPs to collect at least 65 million kilograms of milksolids from dairy farmers in a season, with any one IP collecting at least 25 million kilograms of milksolids outside of Westland. The exact market share of Fonterra at which this trigger is reached depends on how the market evolves and how IPs capture that market share (e.g., whether directly from Fonterra, from each other, or through new farm conversion). In Appendix A, we estimate the market share trigger using a range of different assumptions, and on the assumptions that most closely match historical milk volume growth rates since the formation of Fonterra, we estimate that Fonterra’s market share trigger in the South Island is approximately 80-82%.

Care needs to be exercised when considering the competitive implications of market share – as already noted, even a firm with 100% market share might operate efficiently if entry is easy. Nevertheless, all regulators that we are familiar with would *presume* that a firm with an

80% or 87.5% market share has market power, particularly if there are entry and/or expansion barriers. For example, in the case of mergers, competition authorities around the world typically apply market share “safe harbours”, below which a merged firm is unlikely to hold significant market power. Market share safe harbours are typically lower than 80%, such as 20% used by the Commerce Commission for highly concentrated markets or 40% for relatively unconcentrated markets.

As an example for dairy markets in particular, the proposed dairy merger between Kiwi and SIDCO was declined by the Commission in 1999, on the basis that the merged entity, with a 73% share of South Island milksolids, would be dominant.²⁵ More generally, Strong (1998) and Strong, Bollard and Pickford (2000) analyse Commerce Commission merger decisions from 1991-1996 and find that, when entry barriers are high, if the merged entity was to obtain a market share of at least 70% then the Commission was likely to find that the merged firm would have market power.

The economics literature on cooperatives also finds that cooperatives with a market share of around 80-87.5% have the ability to exercise market power. We review this literature in 0, and while it focuses on market power exercised against output market consumers (and finds that cooperatives with market shares as low as 60-70% have the ability to exercise market power in output markets),²⁶ it seems quite plausible that this power could also be used strategically against rivals. Indeed, Baumer, Masson and Masson (1986) refer to the US courts having heard “a smorgasbord” of cases involving predatory activity by cooperatives against their rivals.

Intuitively the concern with a high market share is that rivals would not have sufficient capacity to accept enough switching customers to undermine an attempted price increase/decrease by the firm with that large market share. Of course, this depends on how market share is measured. In the case of the New Zealand raw milk markets, it might be that even if IPs only purchased 12.5-20% of milksolids, they might in fact hold some much larger fraction of capacity, and could therefore expand quickly to take on new farmers.

It appears that IPs’ share of existing capacity either equals or only slightly exceeds their current market share of production. MAF estimates that IPs have a market share in the South Island of approximately 15% of production in the 2008/09 season.²⁷ As the information in Table 4.1 shows, IPs currently have a share of South Island capacity of approximately 17%. In the North Island, the market share by production and capacity share of IPs are both approximately 5%. While we have not assessed the capacity expansion plans of Fonterra or new or existing IPs,²⁸ it is possible that IPs may hold a much larger share of capacity in the

²⁵ Commerce Commission, *Decision No. 341*, 26 February 1999.

²⁶ We find similar results for market share thresholds in Appendix C, where we review the more general economics literature for investor-owned firms on the market share threshold above which there is deemed to be significant market power.

²⁷ MAF (2009), “The Future of the Pro-Competition Regulatory Regime in the New Zealand Dairy Industry”, Consultation Document, December, paragraph 42.

²⁸ There are public reports of at least four new IPs looking to build processing capacity in both the North Island (Arapuni Milk and Miraka) and South Island (Mataura Valley Milk and Oceania Milk Products).

future. Nonetheless, the current evidence suggests that Fonterra would likely hold a large share of capacity, as well as of milk production, at the expiry of the DIRA.

Table 4.1
Dairy Processing Capacity²⁹

Processor	Estimated capacity (million litres per annum)	Share of capacity
<u>North Island</u>		
Fonterra	13,480	94%
Tatua	200	1%
OCD	600	4%
<u>South Island</u>		
Fonterra	6,520	83%
Westland	550	7%
OCD	200	3%
Synlait	400	5%
NZDL	200	3%

Sources: Fonterra capacity is recorded as 20 billion litres per annum³⁰ (<http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/Our+Business/News/Media+Kit/>), and we have split this between North and South Island using 30 June 2008 cow numbers from Statistics NZ. Other IP capacities are from USDA Foreign Agricultural Service, “New Zealand Dairy and Products Annual Dairy Industry Report 2008”, Gain Report Number NZ8026, 20 October 2008.

4.1.1.2. Barriers to Entry

In the absence of the DIRA, there are likely to be important entry barriers to the farm gate market. Firstly, dairy processing assets are to a considerable degree sunk³¹ – therefore investors will be reticent to invest without a certain raw milk supply. However, farmers also have sunk assets and a non-storable output, and they will be reticent to contract with an IP before that IP’s plant is built and a track record established (we will refer to this as the “catch-22 situation”). Once an IP is established and has that track record, expansion is likely to be easier, subject to capacity constraints and the sunk costs involved in building new plant.

Secondly, an entry issue could be the ability for Fonterra, absent the DIRA, to remove its free entry and exit policies, and limit the ability for farmers to shift their supply to new entrant IPs (e.g., by locking farmers into five-year contracts, which we understand would be possible under the Cooperative Companies Act). It is possible that Fonterra would retain free entry

²⁹ Figures may not sum to totals due to rounding.

³⁰ While the 20 billion litres per annum figure appears to indicate Fonterra’s worldwide capacity, we note that this figure is consistent with Fonterra maintaining some excess capacity for its production of approximately 15 billion litres per annum (<http://www.fonterra.com/wps/wcm/connect/fonterracom/fonterra.com/our+business/fonterra+at+a+glance/about+us/ke+y+facts>).

³¹ And capital markets are not perfect.

and exit even without the DIRA – for example, farmers may generally be in favour of free exit, because it:

- Facilitates the exit of their capital; and
- Strengthens efficiency pressures on Fonterra.

However, as far as we are aware free entry and exit is not entrenched in Fonterra's constitution. As discussed in section 4.1.2 of this report, Fonterra is likely to have an incentive to seek ways in which to keep suppliers, so as to keep milk and to avoid redeeming share capital.

We more generally consider the possibility that Fonterra could behave strategically against IPs later in the report (section 4.1.2).

The Resource Management Act (RMA) can increase the costs of entry. However, the RMA does not appear to have stopped recent IP entry (nor deterred further entry, as there are currently various proposals for new processing plants before consent authorities).³²

4.1.1.3. Constraint from IPs

Despite a high market share and entry barriers at the expiry of the DIRA, Fonterra may lack the ability to exercise market power if there are IPs that are sufficiently well established to survive without the provisions of the DIRA.

In Table 4.2 we present some of the key public data on the IPs currently in the market. While the long-term viability of Tatura and Westland is not really in doubt, it is probably too early to characterise each of the three newer IPs as being established and viable, although OCD may be over that threshold.³³ Relatedly, it is too early to judge whether the newer IPs are efficient, particularly given the assistance provided to them by the DIRA and the controversy over the efficiency of the price of regulated milk (which we return to later in this report). As already noted, scale, scope and risk management³⁴ are likely to be important in the raw milk markets, and it will take time to determine the viability of the newer IPs. Indeed, the DIRA can be viewed as having a function of assisting in the revelation of the underlying economics of these markets.

³² The resource consent process may affect the timeliness of entry. However, the expectations of new entrants are generally that they will enter within a two-year timeframe (which is the timeframe typically used by the Commission). For example, Arapuni Milk announced its entry in October 2009, and expects to commence production in August 2011 (see <http://www.arapunimilk.co.nz/news>). Oceania Milk Products applied for resource consents in September 2009, and also expects to commence production in August 2011 (see <http://www.odt.co.nz/the-regions/north-otago/84640/consents-filed-dairy-plant>).

³³ We have not been able to obtain a time series of profitability for Synlait, but even if we could, it would be too short to draw any reliable economic conclusions. A similar statement applies in respect of NZDL, although we have been able to obtain data from the Companies Office website for NZDL – it shows that NZDL has made a loss in each of its reporting years, and has approximately 70% leverage. Finally in respect of OCD, according to data on the Companies Office website, it made a profit in 2009, but a loss in 2008. For the pre-merger OCC, the data shows a mixture of profit and losses back to 2005, and generally a low return on assets.

³⁴ Part of which might include having a portfolio of products, and the ability to switch between products.

Our concern then is that, without the DIRA, it is not yet possible to be confident about the strength and indeed number of newer IPs that would compete with Fonterra. There also appear to be limits on the pressure that Tatua and Westland might place on Fonterra. In its draft decision on the early version of the merger to form Fonterra, the Commission concluded that, because Tatua concentrated on niche markets and had a policy of not accepting new suppliers, “there is little prospect that Tatua will provide any significant competition to Dairy Group for unprocessed milk supply in the foreseeable future”.³⁵ As Tatua continues to focus on niche markets with a restricted supply base,³⁶ the Commission’s conclusion is likely to continue to hold.

Regarding Westland, because of the Southern Alps (and their impact on transport costs), it may be appropriate to carve Westland out as a separate market. Indeed, in *Decision 341* the Commission concluded that Westland was not a sufficient constraint on other cooperatives in the South Island, due to transport costs and capacity constraints.³⁷ This appears to be reflected in the DIRA, as the trigger for the South Island requires an IP outside of Westland to collect sufficient milk volumes.

Table 4.2
Key Statistics on Independent Processors

IP	Entry date	Number of processing sites	Number of supplying farms	Volume processed ³⁸ (million litres)	Capacity (million litres per annum)
Westland	1937	1	380	479	550
Tatua	1919	1	112	138	200
Synlait	August 2008	1	60	290	400
OCD	October 2004	3	510	740	800
NZDL	September 2007	1	40	200	200

Sources: company websites, USDA Foreign Agricultural Service, “New Zealand Dairy and Products Annual Dairy Industry Report 2008”, Gain Report Number NZ8026, 20 October 2008, USDA Foreign Agricultural Service, “New Zealand Dairy and Products Annual Dairy Industry Report 2009”, Gain Report Number NZ9018, 20 October 2009.

4.1.1.4. Conclusions on Fonterra’s Ability to Exercise Market Power

To summarise our findings to this point:

³⁵ Commerce Commission, Draft Determination on “Newco” dairy merger, 27 August 1999, paragraph 252.

³⁶ See, for example, “Tatua content to be niche market player”, Rural News, 16 October 2009, <http://www.ruralnews.co.nz/Default.asp?task=article&subtask=show&item=18457&pageno=1>

³⁷ Commerce Commission, *Decision No. 341*, 26 February 1999.

³⁸ Volume processed is based on publicly available data, and includes milk purchased from Fonterra under the raw milk regulations.

- Fonterra will have a high market share when the DIRA triggers are met, being approximately 80-82% in the South Island and 87.5% in the North Island. Furthermore, the approximately 80-82% in the South Island assumes that Westland competes with Fonterra, when in fact the Southern Alps are likely to constrain the pressure Westland can place on Fonterra, due to transport costs. In other words, the 80-82% might understate the true market share of Fonterra in the remainder of the South Island. Both regulatory precedent and the economics literature generally find that firms (including cooperatives) with such market shares have the ability to exercise significant market power;
- Key entry barriers are the catch-22 situation and the possibility of Fonterra weakening the free entry and exit requirements, and these are likely to place a material constraint on entry in the absence of the DIRA provisions; and
- It is not yet possible to be confident about the strength and indeed number of newer IPs that would compete with Fonterra in the absence of the DIRA. There also appear to be limits on the pressure that Tatua and Westland might place on Fonterra.

As already noted in this report, there is an efficiency trade-off in a small economy between the number of competitors and scale. While the underlying economics are still not clear, in the presence of material entry barriers, we would suggest that workable competition would require at least two efficient IPs competing against Fonterra in each relevant geographic and product market. One efficient IP might be sufficient if entry and expansion were easier, but in the absence of this threat, the allocative, productive and dynamic efficiency pressures are likely to be greater with three players (i.e., Fonterra plus two IPs). At the moment it is not possible to be confident of such a market structure when the DIRA expires under the current thresholds. Therefore in our view Fonterra is likely to have the ability to exercise market power when the DIRA expires.³⁹

It is possible that as the underlying economics are revealed over time, it will become clearer that in fact one efficient IP competing with Fonterra would be efficient. But at the current point in time, and given the cost benefit balance of the DIRA that we discuss below, our judgment is that it is most appropriate to assume that two efficient IPs are required.

4.1.2. Incentive to Exercise Market Power

Fonterra's cooperative nature means that it would not have the *incentive* to exercise market power against its own farmer suppliers/shareholders – there would be little point in lowering prices to farmers in order to make greater profits, which would then be cycled back to those same farmers as shareholders. But would Fonterra have the incentive to behave anticompetitively against IPs (in the absence of the DIRA)?

Fonterra's suppliers/shareholders have two hats on. As shareholders, they would like Fonterra to exercise market power. But as suppliers they would like to have options in terms of who to sell to. Also, there are likely to be a variety of preferences among farmers – a

³⁹ It seems likely that Fonterra's uniform pricing policy means that the gross margins it earns from farmers vary by geography, due to differing transport costs. If that is correct, then Fonterra is in effect price discriminating. While price discrimination is consistent with market power, it is also consistent with competitive markets.

certain proportion of farmers may be particularly loyal to Fonterra or at least to the cooperative model, while others may be keener to test other models.⁴⁰ Therefore it seems likely that Fonterra's cooperative nature would at least partly reduce its incentive to behave anticompetitively in respect of the farm gate market, compared to an investor-owned firm.

There is also a possible principal-agent issue. Even if the majority of Fonterra's farmers would prefer that competition at the farm gate develops, it is possible that Fonterra's management might have a different objective. We stress that we do not have any evidence as to this happening, but note it as a conceptual possibility. Principal-agent concerns between shareholders and management are a well recognised issue in the economics literature on organisational form.

The classic rationale for a firm with market power to behave anticompetitively is to damage rivals and to then charge monopsony prices to suppliers. But that rationale is likely to be relatively inapplicable to Fonterra, for the reasons discussed above.

Nevertheless, Fonterra does appear to have an incentive to maximise profits and its milk supply is important in this, due to Fonterra's economies of scale (if these exist) and effectively unlimited demand in overseas markets – with scale economies, the more milk that Fonterra obtains, the more profit that it makes, limited only by the on-farm supply price of milk and capacity constraints. Consistent with this, Fonterra has stated its aspirations for growth in milk supply of around 3% per annum.⁴¹

Furthermore, when Fonterra loses a supplier, it also loses some share capital. Fonterra has expressed the view in recent years that the redemption risk from share capital exiting the cooperative is of concern. For example, in response to the significant number of redemptions linked to the 2007/08 drought, Fonterra stated that:⁴²

Redemption risk affects the long-term health and success of the Co-operative and must be addressed as shareholders consider changes to our capital structure.

Therefore Fonterra has a strong incentive to fight hard for suppliers. So despite being a cooperative, there is still a question as to whether Fonterra would have the incentive to take advantage of its market position to weaken IPs (an undesirable outcome), as opposed to beating IPs purely on efficiency grounds (a desirable outcome). While such behaviour might have costs for Fonterra, Fonterra may be able to recoup those costs by increasing its milk throughput (and therefore profitability) once its rivals are weakened.

In other words, Fonterra may have the incentive due to its size, not efficiency, to keep and attract farmers. It may turn out ultimately that Fonterra's size does provide it with efficiency advantages (albeit with capital limitations). The trick is to create an environment that enables

⁴⁰ Also there is the difference in ages and relatedly capital of actual and potential suppliers: capital markets are not perfect and so this sets up heterogeneity among suppliers.

⁴¹ Address by Andrew Ferrier to the Annual Meeting, 6 October 2006, available at: <http://www.fonterra.com/wps/wcm/connect/a88c9b804b62a7f49e25be787a0f2827/250907+-+CEO+address+at+AM+Sep+07+media.pdf?MOD=AJPERES>

⁴² Fonterra, Annual Report 2009, p.7.

efficiency, and not anticompetitive behaviour, to determine market share in the farm gate market.

We are aware of allegations that Fonterra has behaved in an anticompetitive manner against IPs. However, it is beyond the scope of our report to investigate these claims, and in any case we are somewhat constrained from investigating by our inability to require the provision of data and information from industry players (as the Commerce Commission can in its investigations, based on the provisions in the Commerce Act). Nonetheless, there is an economics literature which discusses how such strategic behaviour can be practiced by dominant firms.⁴³ Krattenmaker and Salop (1986) find that the larger is a firm's market share, the more likely it is to behave strategically.⁴⁴ Likewise, as already noted, Baumer, Masson and Masson (1986) refer to the US courts having heard "a smorgasbord" of cases involving predatory activity by cooperatives against their rivals.

For the sake of completeness, we note that while Fonterra may have an *incentive* to damage IPs, the cooperative nature of Fonterra constrains its *ability* to behave strategically against IPs. In particular, Fonterra is constrained by the overall cooperative desire to treat suppliers equally. However, this constraint is likely to be partial only. Fonterra has already shown an appetite to price differentially (although the Commission investigated this behaviour and found no breach of the Commerce Act). Furthermore, there may be strategies that Fonterra could use that would not affect suppliers unequally.

On balance, we think that in the absence of the DIRA Fonterra would have an incentive to use its market power to damage IPs as a means of winning suppliers and increasing milk throughput.

4.2. Costs and Benefits for the Farm Gate Market of Maintaining the DIRA

Our conclusion in section 4.1 is that, when the DIRA triggers are met, there is a material probability that Fonterra would have at least some ability and the incentive to use its market position to restrict competition in the farm gate market. If this is correct (i.e., if Fonterra is able to damage IPs due to its size rather than efficiency), then the potential costs to the New Zealand economy are high. Dairy production currently accounts for approximately 3% of GDP, and the long-term interests of New Zealand dairy farmers are best served by having an industry structure that facilitates innovation and investment. This is most likely to occur if a variety of commercial strategies can be employed. In addition, because Fonterra is a cooperative, it is likely to be capital constrained and have a mixed risk attitude, reducing its ability to invest, including in R&D, and manage risk.

It is important to note that Fonterra's behaviour would still be subject to the Commerce Act, particularly sections 27 and 36. These provisions would constrain Fonterra's ability and

⁴³ For textbook discussion see chapter 7 of Motta (2004) and pages 661-674 of Carlton and Perloff (2005). Salop and Scheffman (1983) present a more formal analysis of strategic behaviour that raises rivals' costs.

⁴⁴ Krattenmaker and Salop (1986, p.271) state that "successful exclusion is more likely when the predator is large and the excluded rivals are small".

incentive to behave anticompetitively.⁴⁵ Nevertheless, there would be various costs in just relying on the Commerce Act:

- The DIRA is effectively more proactive than the Commerce Act, and as discussed below, the DIRA appears to have been quite effective in enabling IPs to enter and grow (we consider separately below the offsetting costs of the DIRA). While the Commerce Act would constrain to some extent Fonterra's ability and incentive to damage IPs using anticompetitive means, the Commerce Act cannot protect vulnerable IPs against external shocks (e.g., international price drops and exchange rate fluctuations). Of course, protecting IPs against external shocks should not be the role of the DIRA, but there is a legitimate short-term role to enable entry and expansion to the point where IPs are able to be tested on their ultimate efficiency. As already discussed in this report, we do not think there can be confidence that this point has yet been reached; and
- Detecting anticompetitive behaviour can be difficult, particularly strategic behaviour against rivals,⁴⁶ and enforcement can be costly and uncertain – there is an argument that the DIRA reduces transaction costs of dealings between Fonterra and IPs, at least while Fonterra has market power.

As noted, it appears that the DIRA has been quite effective in enabling IPs to enter and to grow. In particular:

- The regulated milk has enabled IPs to manage the “catch-22” situation outlined above; and
- The requirement for free entry and exit has reduced switching costs by reducing the reticence of farmers to switch to a relatively unknown IP (as farmers know that they can switch back to Fonterra), and allowing farmers to extract their capital in Fonterra.

From what we can gather, other provisions of the DIRA (such as the 20% rule and the milk vat sale rule) have been less utilised.⁴⁷

The regulated milk and free entry and exit provisions are likely to lower Fonterra's incentives to behave anticompetitively, because they lower entry and expansion barriers. Lower entry and expansion barriers mean that Fonterra has less chance of recouping its investment in anticompetitive behaviour.

Accordingly, there are likely to be material benefits in extending the application of the DIRA. The next question is whether there would be material offsetting costs in doing so.

⁴⁵ Even though concerns have been expressed about the difficulties of enforcing section 36, it is our experience that firms' behaviour is constrained by it.

⁴⁶ For example, the OECD (2005) states in relation to strategic entry barriers, which are intentionally created or enhanced by incumbents, that it “can be substantially more difficult to measure the difficulties that such behaviour can impose on potential entrants. Furthermore, it is not always easy to determine whether strategic behaviour should be viewed as fostering or restricting competition in the first place”.

⁴⁷ An issue to consider though is whether the 20% rule might become more important under Fonterra's proposed capital restructuring.

In general, the most important (potential) costs of economic regulation are the impacts on the incentives of the regulated firm to invest, innovate and improve its productive efficiency over time. These dynamic efficiency costs can be quite large, and can occur because expected profits are constrained to such a degree that it is difficult to justify investments.

Capital constraints are a major issue for Fonterra in achieving dynamic efficiency. However, it does not appear that the DIRA is a key cause of these. Rather, it seems that Fonterra's capital issues are primarily caused by its cooperative nature, and farmers' desire to retain control. For example, Fonterra's first attempt at a capital restructure in 2007, dividing Fonterra into a listed company and a co-operative, failed to win sufficient shareholder support, on the basis of "significant and irreversible" effects of opening up the business to non-supplying shareholders.⁴⁸

Indeed, the DIRA is quite a different form of regulation to that under Part 4 of the Commerce Act as the former does not (materially) interfere directly with Fonterra's strategies, investment plans and pricing decisions.

Other potential costs of the DIRA include the following:

- There have been concerns expressed for some time that the price of regulated milk is inefficiently low (although others have argued that this is not correct), encouraging potentially inefficient entry at Fonterra's expense. However, there is currently a Bill in the Select Committee process that effectively increases this price, and it is beyond the scope of this report to assess the appropriateness of the new price.⁴⁹ We understand that there is no proposed change to address another critique of regulated milk, which is that purchasers of regulated milk have a "free option", and that they should be required to enter into take-or-pay contracts;
- While Fonterra continues to dominate the market, there is a valid rationale for IPs being able to access regulated milk while they are establishing themselves (we return to the issue of the factory gate market in the next section). However, it is more difficult to see a justification for established IPs having such access; and
- The recent publicity about plans by investors to set up cubicle dairy farms in the MacKenzie Basin has illustrated a concern that the requirement of the DIRA that Fonterra accepts all farmers (with some exceptions) may impose an unreasonable burden on Fonterra, in terms of brand damage.

However, none of these issues present fundamental flaws with the principles of the DIRA – it seems likely that each of the issues could be addressed by relatively minor changes to the provisions. In particular:

⁴⁸ "Prudent decision says Fonterra Shareholders' Council", Fonterra Media Release, 18 February 2008.

⁴⁹ Dairy Industry Restructuring (Raw Milk Pricing Methods) Bill. The Bill proposes replacing the current regulated milk price with the new formula of "Fonterra farm gate milk price + \$0.10". The farm gate price would be the average price across the year and the \$0.10 would be to reflect the value of having access to milk when it is more expensive for farmers to produce it. Note that the regulated price only applies to milk produced between August and May - winter milk incurs an additional charge above the regulated price.

- While it is beyond the scope of this report to analyse the efficiency of the pricing of regulated milk, consideration could be given to requiring contractual commitments (although there may be countervailing arguments, particularly given the retrospectivity of pricing);⁵⁰
- Consideration could be given to limiting access to regulated milk to new entrants and food companies (we return to the issue of food companies below). It is hard to see why well established IPs should be permitted to access regulated milk – once established, the more critical DIRA principle for IPs is free entry and exit (i.e., the issue moves from entry to expansion).⁵¹ This is particularly important given that access to regulated milk by established IPs likely weakens the incentives for IPs to compete for milk from farmers, as a certain volume can be obtained directly from Fonterra; and
- Consideration could be given to limiting automatic entry to Fonterra to existing dairy farmers (whoever those farmers currently supply), i.e., “free re-entry” rather than “free entry”. This might mitigate the brand costs issues outlined above, while still facilitating switching by giving farmers comfort that they could always return to Fonterra from an IP. However, a risk of such a change would be the potential undermining of the incentives that free entry and exit provide on Fonterra to set an efficient milk price.

4.3. Conclusion in Respect of Farm Gate Market

Our conclusions in respect of the farm gate market are as follows:

- At the expiry of the DIRA, Fonterra is likely to have market power, and is likely to have an incentive to exercise this against IPs;
- Fonterra’s ability and incentive to exercise market power is likely to be constrained to some extent by the Commerce Act;
- However, if the policy objective is to have efficient markets (as per section 70 of the DIRA), there would be a net benefit in extending the application of the DIRA, to the point where there could be more confidence that the newer IPs could be tested on the basis of efficiency rather than Fonterra’s market position. The DIRA appears to have been quite effective in assisting IPs to enter and grow, and also appears to impose relatively low costs, particularly with some relatively minor amendments.

⁵⁰ We do note that it will always be difficult for an administratively determined price to accurately mimic a competitive market determined price.

⁵¹ We recognise that there may be tricky drafting issues in defining the boundary.

5. Factory Gate Market

5.1. Would Fonterra Have Market Power in the Factory Gate Market?

As an indication of the size of the factory gate market, the total volume of regulated milk that was supplied in the 2008/09 dairy season was 440 million litres.⁵² This represents approximately 3% of total milk collected in 2008/09 of 16,044 million litres.⁵³ While the factory gate market may include sales of milk by Fonterra that occur outside of the regulated milk arrangements (e.g., through individual contractual arrangements), the percentage of sales of regulated milk at least gives a rough feel for the likely size of the factory gate market.

As further context, consider that in 2008/09 approximately 1,123 million litres of milk was consumed in New Zealand.⁵⁴

Against this background, note that the volume of milk processed by the IPs is approximately 1,847 million litres and their supply capacity is 2,150 million litres (see Table 4.2), i.e., actual and potential supply exceeds annual factory gate milk supply and annual New Zealand consumption.

Despite this supply capacity, from what we can gather there appear to be few sales of raw milk at the factory gate by any firm other than Fonterra. The reason for this appears to be that IPs can currently earn higher margins selling processed products overseas than they can from selling to domestic food companies. This is perhaps because the factory gate raw milk price is being held down by the price of Fonterra's regulated milk, although we have neither heard this claim made nor investigated this issue carefully.

There is an expectation in the industry that once IPs become more established and source enough milk to keep their factories full, a more competitive market for factory gate raw milk will develop. We understand that sales of raw milk between processors are quite frequent in Australia. At the moment this does not really occur in New Zealand. One possible inference is that Fonterra would have market power in the factory gate market in the absence of the DIRA, at least in some regions. However, another is that the current price in the factory gate market is below the competitive level, in that it does not compensate processors for the opportunity cost of not selling that milk overseas.

As already noted, it is beyond the scope of this report to analyse the efficiency of either the current or the proposed price of regulated milk. Even if it could be said that in an unregulated market Fonterra would be unable to raise the price of milk in the factory gate market above the competitive level due to the potential diversion of milk by IPs to that market, we still have a concern that at least some of the IPs may not have yet established a sustainable business in the absence of the DIRA. If following the expiry of the DIRA one or

⁵² "Fonterra unhappy with milk ruling", New Zealand Herald, 10 June 2009, available at: http://www.nzherald.co.nz/the-fonterra-float/news/article.cfm?c_id=1501678&objectid=10577454&pnum=1.

⁵³ LIC and Dairy NZ (2009), *New Zealand Dairy Statistics 2008-09*.

⁵⁴ MAF (2009) note that domestic milk consumption is approximately 7% of total milk supply (i.e., 1,123 million litres is 7% of 16,044 million litres). MAF (2009), "The Future of the Pro-Competition Regulatory Regime in the New Zealand Dairy Industry", Consultation Document, December.

two of the new IPs failed or were otherwise weak competitors, then it is far more likely that Fonterra would have market power in the factory gate market. Like the farm gate market, workable competition in the factory gate market would probably require two efficient IPs competing against Fonterra, given the entry barriers that would apply in the absence of the DIRA (particularly the catch-22 situation already described).

Therefore our conclusion is that even though Fonterra may not have the ability to raise price above the competitive level immediately on expiry of the DIRA, there is still a material risk that the constraints on Fonterra may weaken over time, providing Fonterra with market power.

We should also point out though that there is an economics literature that analyses the effect of supplier-owned cooperative governance structures on output market power (as already noted, the factory gate market is an output market for Fonterra) – we summarise this literature in 0 to this report. The literature finds that, under some circumstances, the structure of cooperatives implies that they cannot hold market power. The basic argument is that if a cooperative increases output prices to the monopoly level, supplier-shareholders would respond to the higher prices by producing more and thus delivering more of the raw product to the cooperative. If the cooperative cannot dump or dispose of the surplus, it must lower prices to sell it, and the increase in prices becomes self-defeating.

The literature finds that two of the key requirements for this argument to hold are:

- The cooperative must have an open membership policy. If instead the cooperative could control the entry and exit of its members, it could lower its membership numbers to offset the surplus production by retained members; and
- The cooperative must not be able to price discriminate in different output markets. If price discrimination were possible, the cooperative could raise the price in one output market while diverting surplus production into another output market.

This literature implies that the free entry and exit (i.e., open membership) requirements on Fonterra are likely to constrain to some degree the ability of Fonterra to raise prices in the factory gate market. However, this constraint is likely to be weakened by the relatively small size of the factory gate market (e.g., regulated milk is approximately 3% of total milk production) and Fonterra's ability to divert other milk to overseas markets – in other words, if the higher farm gate prices caused by rents in the factory gate market increased farm gate supply, Fonterra could process that supply and sell it overseas.⁵⁵ Therefore on balance we do not think that Fonterra's cooperative governance structure will materially undermine any ability it otherwise might have to exercise market power in the factory gate market in the absence of the DIRA.

⁵⁵ It is beyond the scope of our report to analyse the degree to which Fonterra might have market power overseas. The economic literature described here also provides a useful perspective for considering this issue.

5.2. Costs and Benefits for the Factory Gate Market of Maintaining the DIRA

If the DIRA falls off and leaves Fonterra with market power in the factory gate market, the main risks are that Fonterra would:

- Raise the price of raw milk to IPs. Even if the existing IPs were established enough to survive without access to Fonterra's milk, such behaviour would make new entry much more difficult; and
- Raise the price of raw milk to food companies, some of whom (e.g., Emerald Foods) compete with the vertically-integrated Fonterra (therefore Fonterra may have an incentive to "raise rivals' costs").

It is our understanding that monopoly pricing per se is not prohibited by the Commerce Act. However, the use of market power to lessen competition is subject to the provisions of the Commerce Act, particularly sections 27 and 36. As discussed in section 4 though, there are probably net benefits to extending the application of the DIRA to the point where there could be more confidence that the newer IPs could be tested on the basis of efficiency rather than Fonterra's market position. At that point, it is likely that the factory gate market would become more competitive.

5.3. Conclusion in Respect of Factory Gate Market

As in respect of the farm gate market, we are concerned that when the DIRA expires under the current thresholds, it will be too early to have confidence that there will be sufficient ongoing competitive pressure from the IPs to constrain Fonterra in the factory gate market. The DIRA appears to have been quite effective in assisting IPs to enter and grow, and also appears to impose relatively low costs, particularly with some relatively minor amendments. Therefore we think that there is a case to extend its application.

6. Appropriate Expiry Thresholds

6.1. Nature of Thresholds

We have concluded that on balance there is a domestic competition policy case for extending the application of the DIRA. The next issue is to determine revised triggers.

The current DIRA triggers are quite mechanistic and simplistic. While quantities and market shares have a role in competition analysis, they are just one consideration. This is illustrated by the role that market shares play in the Commerce Commission's *Mergers & Acquisitions Guidelines*, where they are but one of many factors that the Commission takes into account in assessing the competitive effects of a merger. Recent economics literature finds that market share analysis is at best a "crude first step" in competition analysis.⁵⁶

⁵⁶ Carlton (2007, p.161). See also Leonard and Wu (2009) who suggest that the US Horizontal Merger Guidelines be revised to deemphasise the current emphasis on market definition and the calculation of market shares.

While it is important that the DIRA should be removed at some point (when the market is workably competitive), it would seem inappropriate for the expiry of the DIRA to be triggered by simple quantity and/or market share thresholds. In our view, a more comprehensive competition analysis should be required. Such a review would have the benefit of the performance of the market and its agents (perhaps) as market shares evolve.

Our suggestion is that simplistic thresholds continue to be used, not for automatic expiry of the DIRA, but rather as triggers for a comprehensive analysis of whether or not Fonterra maintains significant market power in the relevant markets (or some other objective function, such as whether workable competition exists). The use of thresholds as triggers would be similar to the use of safe harbours in merger analysis i.e., as a means of deciding whether a more comprehensive competition analysis should be undertaken. The thresholds could be quantity and market share ones, or they could just be timing ones, e.g., the analysis gets carried out every three years. If they were to be market share thresholds, then the literature outlined in 0 would suggest that in many instances a cooperative with an output market share of above 60% would hold significant market power. Nonetheless, there are instances of cooperatives with higher market shares that are not considered to hold significant market power. Moreover, in Appendix C we set out a more general (i.e., not specific to cooperatives) review of the economics literature on the market share threshold above which there is significant market power. While there is no clear consensus in this literature on an appropriate threshold, it does suggest that a threshold of 70% is commonly used by the US courts in relation to investor owned firms.

However, there are further considerations:

- The analysis and cooperative economics literature reviewed in 0 indicate that the structure of cooperatives mitigates their market power to some extent;
- The more general economics literature reviewed in Appendix C is US-focused. For the small New Zealand economy, scale considerations might suggest that a higher market share could be appropriate;
- The literature is focused on output market share, not input market share;
- Fonterra is exposed to competition in world markets; and
- The threshold would be a trigger for a comprehensive competition analysis, not for automatic expiry of the DIRA.

For these reasons, we think that a 75% market share trigger might be appropriate.

A possible agency to carry out the analysis would be the Commerce Commission, because of its expertise in competition law and economics, as well as experience in regulating the dairy industry. Moreover, the Commission's powers under the Commerce Act allow it to require industry players to provide it with the data necessary to undertake a comprehensive analysis. On the other hand, the fact that the Commission does regulate the industry (under the DIRA) may be perceived as raising a conflict of interest.

A comprehensive review of the DIRA is consistent with recent precedent for regulators to periodically assess the need for deregulation, including relaxing regulation on occasion. For example, in 2009 the Commission commenced an investigation into whether certain telecommunications resale services should continue to be regulated.⁵⁷ In the UK, telecommunications regulator Ofcom publishes annual “simplification plans” in which it sets out its commitment to reviewing and minimising regulation.⁵⁸ As a recent example of where Ofcom has reviewed, and relaxed, regulation, its 2006/07 review of wholesale broadband access found that there was sufficient competition in broadband in many parts of the UK so that existing regulatory remedies could be removed.⁵⁹ In Australia, the ACCC has recently reviewed the regulatory arrangements for certain fixed-line telecommunications services, although it ultimately determined to continue to regulate these services.⁶⁰

6.2. Workable Competition

6.2.1. Introduction

As set out in section 1 of this report, the scope of this project includes providing “a clear definition of ‘workable competition’ for each of the dairy markets explored by this study”.

Unfortunately it is difficult to accurately identify the future indicia of workable competition in each of these markets, because the underlying economic performance and structure are still to be revealed – indeed, this is a function of the DIRA. For example, we do not really know the optimal scale and scope economies, although it is likely that they are important. Similarly we do not know the appropriate balance of firm governance structures between cooperative and other (e.g., investor-owned) forms.

This is why it will be important to carry out a comprehensive competition analysis in the future. However, our analysis to date does suggest the following propositions, although we emphasise that these would need to be tested in the future.

6.2.2. Market Structure

As noted earlier, it seems likely that economies of scale and scope are important in dairy processing, and perhaps at other functional levels. Furthermore, the ability to manage risk is also likely to be important, given the volatility in export prices and the exchange rate. This would suggest that the optimal market structure will consist of only a small number of competing IPs that are relatively large, while at the same time it may be efficient for Fonterra to also remain relatively large.

⁵⁷ See Commerce Commission (2009), “Reasons for Commerce Commission decision to investigate Resale Services”, 24 September. The investigation is ongoing.

⁵⁸ See, for example, Ofcom (2008), “Simplification Plan: reducing regulation and minimising administrative burdens”, 11 December.

⁵⁹ Ofcom (2008), “Review of the wholesale access markets: final explanatory statement and notification”, 21 May.

⁶⁰ ACCC (2009), “Fixed Services Review Declaration Inquiry for the ULLS, LSS, PSTN OA, PSTN TA, LCS and WLR”, Final Decision, July.

So one hypothesis (to be tested in the future) is that workable competition would exist in the farm gate market (for each relevant geography) if there were at least two IPs competing against Fonterra, with the IPs having:⁶¹

- Material levels of market share (e.g., perhaps greater than 10% each),⁶² earned on the basis of their own supply rather than regulated milk; and
- Strong balance sheets and a history of profitability.

There remains an interesting question as to whether this farm gate market structure would be sufficient to result in workable competition at the factory gate. On one hand, once an IP reaches a farm gate market share of 10%, it is likely to have huge capacity compared to the size of the factory gate market. This is because the factory gate market is likely to be significantly smaller than the farm gate market, given that the vast majority of New Zealand produced milk is exported. As above, if regulated milk is used as a proxy for the factory gate market, then the farm gate market is approximately 36 times the size of the factory gate market.⁶³

On the other hand, food companies generally demand a flat milk curve, and it is possible that even with 10% of the farm gate market, an IP would not be well set-up to provide flat demand curves. It really is a question of price: flat milk curves have some cost that is properly assigned if the milk is priced at a seasonal price of milk to farmers and this is a matter that would be revealed over time as the market evolves. Therefore it is possible that workable competition in the farm gate and factory gate market could occur at different times.

Regarding geographic market definition, it is difficult to anticipate how the geographic dynamics will pan out. If Fonterra maintains uniform pricing to its suppliers, then the North Island/South Island split will probably be reasonable. However, if Fonterra starts to systematically differentiate the raw milk price regionally in response to regionally-based IP competition, then narrower geographic markets may become appropriate.

Regardless, because of the Southern Alps (and their impact on transport costs), it may well be appropriate to carve Westland out as a separate market.

6.2.3. Barriers to Entry

Workable competition requires that entry is possible if the incumbents are not performing efficiently. The catch-22 situation already described in this report may well be a problem even if there are well established IPs in the markets. Any future competition analysis will need to focus carefully on this issue, and on how barriers to entry affect market performance. It may be that firms develop strategies to deal with the problem, particularly once the IP

⁶¹ The competition analysis might also consider whether the DIRA could expire in some geographic markets but continue in others.

⁶² It may be that sufficient scale can be obtained across geographic markets, e.g., a firm with 5% in each of the North and South Islands may have sufficient scale.

⁶³ Total milk collected (i.e., in the farm gate market) in the 2008/09 season was 16,044 million litres, which is approximately 36 times regulated milk volumes of 440 million litres.

model is mature and farmers feel more comfortable with IPs. For example, it may be that an entrant has sufficiently deep pockets and credibility from other ventures to persuade farmers to sign contracts before a processing plant is built, or that such an entrant is able to take the risk of building a plant prior to signing up farmers.

However, the existence of regulated milk may “crowd out” such other strategies – in other words, even though alternative strategies might be feasible, they might not be observable because regulated milk is always used as the “circuit breaker”.

6.2.4. Measurable Outcomes

Other indicia of workable competition in the relevant markets might include the following:

- Evidence of raw milk sales between IPs, and from IPs to food companies (particularly if the latter are for flat curves). However, as already noted in this report, the existence of regulated milk may mean that even though the markets may be mature enough to provide such sales, such sales may nevertheless not be observed;
- Switching of farmers between Fonterra and IPs;
- Spare capacity at IPs; and
- Investment, innovation and alternative strategies being pursued.

6.3. Phase Out

As a final brief comment on revised thresholds for the expiry of the DIRA, consideration should be given to a gradual phase-out of the regulated milk, to assist in planning for Fonterra and IPs.

7. Implications of Fonterra's Proposed Capital Restructuring

In 2009 Fonterra proposed a three stage capital restructuring, with the intention of improving the cooperative's ability to raise finance, while at the same time retaining farmer control and ownership.⁶⁴ The three stages of the proposal are:

- Stage 1: Strengthening the Share Structure. Farmers would be allowed to hold shares of up to 120% of their milk production, with incentives for them to hold shares even if their production falls;
- Stage 2: Restricted Share Value. Share value would be adjusted to reflect the farmer-only share restriction. This would likely result in a lower share value, so a transition process would be implemented to deal with the impact; and

⁶⁴ See “Three-step process to strengthen Fonterra's capital structure that retains 100% farmer control and ownership”, Fonterra media release, 18 September 2009.

- Stage 3: Trading Among Farmers. Farmers would trade shares among themselves, rather than transacting through Fonterra.

Stages 1 and 2 have been voted on and approved by Fonterra, and there has been an initial share issue to farmers under stage 1.

Stages 1 and 2 will weaken the link between supply and ownership, i.e., some farmers will have a relatively higher ownership interest compared to supply interest. This has the potential to alter the incentives of Fonterra to exercise market power, by altering the strictures discussed earlier that are placed on Fonterra through its cooperative form. However, this delinking will be minor, particularly given the discount that has been implemented for the share price. The effect of stages 1 and 2 on Fonterra to invest in anticompetitive behaviour is likely to be negligible.

An alternative force is that the restructuring proposals (particularly a functioning stage 3) would reduce the redemption risk for Fonterra, and therefore lessen Fonterra's incentive to fight for suppliers. Once again though we doubt that this would be a material effect.

Concerns have been expressed that the stage 3 market would not be liquid, and that if there is an excess supply of shares, the price might plunge, raising switching costs and therefore reducing competition in the farm gate market. An assessment of this liquidity concern is beyond the scope of this report. For present purposes we have been instructed to assume that the market will be liquid and that the share price will be "fair". If that is the case, then we do not see any material impact on competition.

References

American Bar Association (2003), *Market Power Handbook*, ABA Section of Antitrust Law, American Bar Association.

Baumer, David, Robert Masson and Robin Masson (1986), "Curdling the Competition: An Economic and Legal Analysis of the Antitrust Exemption in Agriculture", *Villanova Law Review*, 31, 183-252.

Bergman, Mats (1997), "Antitrust, Marketing Cooperatives, and Market Power", *European Journal of Law and Economics*, 4, 73-92.

Carlton, Dennis (2007), "Does Antitrust Need to be Modernized?", *Journal of Economic Perspectives*, 21(3), 155-176.

Carlton, Dennis and Jeffrey Perloff (2005), *Modern Industrial Organization*, Fourth Edition, Addison-Wesley.

Cotterill, Ronald (1987), "Agricultural Cooperatives: A Unified Theory of Pricing, Finance, and Investment", in J. Royer (ed.), *Cooperative Theory: New Approaches*, Washington D.C: US Department of Agriculture.

Cotterill, Ronald (1997), "The Performance of Agricultural Marketing Cooperatives in Differentiated Product Markets", *Journal of Cooperatives*, 12, 23-34.

Evans, Lewis and Patrick Hughes (2003), “Competition Policy in Small Distant Open Economies: Some Lessons from the Economics Literature”, New Zealand Treasury Working Paper 03/31.

Gal, Michal (2001), “Size Does Matter: The Effects of Market Size on Optimal Competition Policy”, *University of Southern California Law Review*, 74, 1437-1478.

Gal, Michal (2003), *Competition Policy for Small Market Economies*, Harvard University Press.

Gal, Michal (2006), “The Effects of Smallness and Remoteness on Competition Law: The Case of New Zealand”, New York University Law and Economics Research Working Paper Series No. 06-48.

Hansmann, Henry (2000), *The Ownership of Enterprise*, Cambridge, Mass.: Harvard University Press.

Hay, George (1992), “Market Power in Antitrust”, *Antitrust Law Journal*, 60, 807-827.

Heydon, Justice J.D. (1989), *Trade Practices Law*, Vol. 1 (2nd Edition), Lawbook Co.

Hoffman, Susan and Jeffrey Royer (1997), “Evaluating the Competitive Yardstick Effect of Cooperatives on Imperfect Markets: A Simulation Analysis”, Paper presented at Western Agricultural Economics Association 1997 Annual Meeting, Reno/Sparks, Nevada, July 13-16.

Ippolito, Richard and Robert Masson (1978), “The Social Cost of Government Regulation of Milk”, *Journal of Law and Economics*, 21, 33-65.

Jesse, E.V., A.C. Johnson Jr, B.W. Marion and A.C. Manchester (1982), “Interpreting and Enforcing Section 2 of the Capper-Volstead Act”, *American Journal of Agricultural Economics*, 64(3), 431-443.

Krattenmaker, Thomas and Steven Salop (1986), “Anticompetitive Exclusion: Raising Rivals’ Costs to Achieve Power over Price”, *Yale Law Journal*, 96(2), 209-293.

Leonard, Gregory and Lawrence Wu (2009), “Revising the Merger Guidelines: Second Request Screens and the Agencies’ Empirical Approach to Competitive Effects”, *The Antitrust Chronicle*, 12(1).

Madhavan, Ananth, Robert Masson and William Lesser (1994), “Cooperation for Monopolization? An Empirical Analysis of Cartelization”, *Review of Economics and Statistics*, 76(1), 161-175.

Motta, Massimo (2004), *Competition Policy: Theory and Practice*, Cambridge University Press.

OECD (2005), “Barriers to Entry”, DAF/COMP(2005)42.

Paterson, Thomas and Willard Mueller (1986), “Sherman Section 2 Monopolization for Agricultural Marketing Cooperatives”, *Tulane Law Review*, 60, 955-994.

Rogers, Richard and Bruce Marion (1990), “Food Manufacturing Activities of the Largest Agricultural Cooperatives: Market Power and Strategic Behavior Implications”, *Journal of Agricultural Cooperation*, 5, 59-73.

Rogers, Richard and Lisa Petraglia and (1994), “Agricultural Cooperatives and Market Performance in Food Manufacturing”, *Journal of Agricultural Cooperation*, 9, 1-12.

Salop, Steven and David Scheffman (1983), “Raising Rivals’ Costs”, *American Economic Review*, 73(2), 267-271.

Sexton, Richard (1990), “Imperfect Competition in Agricultural Markets and the Role of Cooperatives: A Spatial Analysis”, *American Journal of Agricultural Economics*, 72(3), 709-720.

Scherer, Frederic and David Ross (1990), *Industrial Market Structure and Economic Performance*, Third Edition, Houghton Mifflin Company.

Strong, Nathan (1998), “A Study of the Commerce Commission’s Evaluation of Applications for Business Acquisition Clearances and Authorisations, 1991-96”, Commerce Commission Occasional Paper No. 8.

Strong, Nathan, Alan Bollard and Michael Pickford (2000), “Defining Market Dominance: A Study of Antitrust Decisions on Business Acquisitions in New Zealand”, *Review of Industrial Organization*, 17, 209-227.

Warlick, Eugene and Robert Brill (1978), “Cooperatives Vis-à-Vis Corporations: Size, Antitrust and Immunity”, *South Dakota Law Review*, 23, 561-584.

Wills, Robert (1985), “Evaluating Price Enhancement by Processing Cooperatives”, *American Journal of Agricultural Economics*, 67(2), 183-192.

Youde, James and Peter Helmberger (1966), “Marketing Cooperatives in the U.S.: Membership Policies, Market Power, and Antitrust Policy”, *Journal of Farm Economics*, 48(3) Part 2, 23-36.

Appendix A. Market Share in the South Island at Expiry of the DIRA [Confidential]

The current DIRA market share triggers for the South Island are based on kilograms of milksolids produced by IPs, rather than market share. The trigger is for IPs to collect at least 65 million kilograms of milksolids in a season, with any one IP collecting at least 25 million kilograms of milksolids outside of Westland.

By making some assumptions as to the likely growth of South Island milk volumes, and how IPs capture market share from Fonterra, we can estimate the market share of Fonterra at which the South Island trigger is likely to be reached.

[Confidential]

Appendix B. Cooperative Economics Literature

There is an economics literature that analyses the effect of supplier-owned cooperative governance structures on output market power (as already noted, the factory gate market is an output market for Fonterra). The literature finds that, under some circumstances, the structure of cooperatives implies that they cannot hold market power. The basic argument is that if a cooperative increases output prices to the monopoly level, supplier-shareholders would respond to the higher prices by producing more and thus delivering more of the raw product to the cooperative. If the cooperative cannot dump or dispose of the surplus, it must lower prices to sell it, and the increase in prices becomes self-defeating.⁶⁵

The problem for the cooperative essentially arises because it cannot control the individual supply of each member. However, the literature finds that there are some circumstances in which supply can be controlled and thus cooperatives can hold (and exercise) output market power. If the cooperative has a restricted membership policy, it can control aggregate production by lowering membership numbers to offset production increases by retained members.⁶⁶ The production response from the exercise of market power can also be controlled when the cooperative has the ability to price discriminate in its output markets, for example by raising the price of one product-type, and diverting the excess production to another product-type.⁶⁷ Other approaches to controlling supply may be long-term production agreements with members, stringent quality requirements on production allowing the cooperative to take only the portion of production that satisfies those requirements, and the ability to avoid passing through higher output prices to members by retaining revenues within the cooperative.⁶⁸ Although note that Wills (1985) states that most methods for controlling aggregate supply are costly, and as a result cooperatives are still likely to produce higher levels of output than similar investor-owned companies.

Baumer, Masson and Masson (1986) argue that there are also other important factors to consider, at least for milk cooperatives. They argue that the supply of milk is inelastic, and so short-run supply will remain stable when faced with a price increase.⁶⁹ They also argue that there are factors preventing entry and exit from dairy cooperatives, such as predatory pricing and economies of scale, so that even open membership cooperatives can have control over membership.

In the U.S., the Capper-Volstead Act provides an exemption to cooperatives from the normal antitrust provisions of the Sherman Act. As paraphrased by Baumer, Masson and Masson (1986), section 1 of the Capper-Volstead Act “allows cooperatives and their members to act

⁶⁵ See, for example, Cotterill (1997) and Hansmann (2000) for summaries of this argument. Youde and Helmberger (1966) provide one of the earliest articulations of this argument. Cotterill (1987) explains this result within a more formal supply-demand framework.

⁶⁶ See, for example, Jesse, Johnson, Marion and Manchester (1982). Sexton (1990) shows more formally that restricted membership cooperatives can exercise market power.

⁶⁷ Ippolito and Masson (1978).

⁶⁸ Paterson and Mueller (1986).

⁶⁹ Query whether this is the case in New Zealand.

collectively in ways that could otherwise be prosecuted as restraints of trade”. Jesse et al (1982, p.434) suggest that this exemption reflects the theory set out above:

Congress was convinced that farmer cooperatives – even with high market shares – would be unable to control prices or exclude competitors and, hence, achieve unreasonable monopoly power. Given their lack of supply control, cooperatives would have to pursue other activities to develop monopoly power. The language of Capper-Volstead reflects this belief.

However, section 2 of the Capper-Volstead Act provides some limitations to the exemption of section 1. Section 2 provides that actions by cooperatives which lead to “undue enhancement” of agricultural prices shall be subject to enforcement by the U.S. Secretary of Agriculture. Jesse et al (1982) suggest that section 2 is designed to capture circumstances such as those noted above in which a cooperative can hold, and exercise, market power. They state (at 438):

...we do believe that by Section 2, Congress meant to deny substantially enhanced prices resulting from restricted supply that is maintained by excluding potential competitors or potential primary producers.

The empirical evidence on the ability for cooperatives to hold, and exercise, market power is mixed. Baumer, Masson and Masson (1986) provide a survey of the empirical literature in the 1970s and early 1980s. They conclude from this survey that (p.230):

The behavioral and empirical evidence compels a conclusion that cooperatives with market shares in excess of sixty to seventy-five percent possess – and use – monopoly power.

More recent empirical analysis by Madhavan, Masson and Lesser (1994) yields a similar conclusion. They consider the price setting behaviour of AMPI, a large milk cooperative in the U.S., both before and after it settled a case with the U.S. DOJ in 1975 by consent decree in which AMPI agreed to desist from specific “predatory and exclusionary” practices. Madhavan et al’s results show that, prior to the consent decree, the market share of AMPI in various regional markets had a statistically significant effect on AMPI’s margins in those markets. Using two different regression models, at the minimum observed market share of 52% the authors found a statistically significant effect of market share on AMPI’s margins prior to the decree, although only in one model and with a 10% significance level. At the mean and maximum observed market shares of 85% and 100% respectively, they found more robust statistically significant effects at the 1% level. After the consent decree, Madhavan et al show a statistically significant fall in margins, and AMPI’s market share became insignificant in its effect on margins. One of the conclusions of these authors is (p.163):

The hypothesis that milk cooperatives could have any market power has been questioned. Our results rebut the no-power hypothesis.

Hoffman and Royer (1997) use simulation analysis to analyse the effects of cooperatives on industry output and economic welfare, under various industry structures. Their results are mixed: in models of Cournot or Bertrand equilibrium, the addition of a cooperative to investor-owned competitors generally lowers industry output or leaves it unchanged. Only in

a model of symmetric equilibrium does the addition of a cooperative unambiguously increase industry output.

However, there is other empirical evidence that finds cooperatives do not hold market power. Wills (1985) finds that cooperatives with similar market shares and levels of advertising tended to obtain lower output prices than their investor-owned competitors, and found no evidence of these cooperative prices being above competitive levels. Rogers and Petraglia (1994) find that the percentage of industry sales attributable to cooperatives has a significant negative effect on price-cost margins. Rogers and Marion (1990) find that cooperatives are nowhere near as dominant, in terms of market shares and leading positions, in food and tobacco manufacturing industries as their investor-owned counterparts. They conclude (p.72):

Within food and tobacco manufacturing, cooperatives appear to have little market power. And when compared with the largest 20 and 100 investor-owned food and tobacco manufacturing firms, the size and market power of cooperatives is like a mosquito on an elephant's rump.

The early analysis of Youde and Helmberger (1966) assesses the market power of 31 different agricultural cooperatives in the U.S., based on a qualitative assessment of seller concentration, barriers to entry and the extent of product differentiation. They classify only seven cooperatives with a high degree of market power, and suggest that the majority of the sample do not hold significant market power. Of the seven cooperatives with significant market power, all but two have a market share in the range of 50%-85%, with the remaining two cooperatives having 25% and 40% market shares respectively. The remaining firms that are not assessed as having significant market power generally have market shares less than 40% (with most in the 0-20% range), but there are two relative outliers with shares of 55% and 73% respectively.

An analysis that similarly presents results that allow us to consider the market share at which a cooperative is deemed to hold significant market power is that of Paterson and Mueller (1985). Here the authors analyse U.S. case law under the Sherman Act involving cooperatives. This includes the following cases in which the courts made a link between the market share of the cooperative and its level of market power:

- *Bergjans Dairy Farms Co. v Sanitary Milk Producers*: the court found that the defendant cooperative, with a market share of 55-60%, held significant market power, although this was attributable to other factors in addition to market share, such as the ability of the cooperative to raise funds by withholding payments from its members;
- *Case-Swayne Co. v. Sunkist Growers, Inc*: Sunkist held a market share of 67% in the relevant markets and the court concluded that it held significant market power;
- *Pacific Coast Agricultural Export Association v Sunkist Growers, Inc*: the defendant's share of the relevant markets ranged from 45-70%, and the court concluded that the cooperative held significant market power. However, the court found that this market power was less to do with Sunkist's market share and more to do with its ability to control initial distribution; and

- **Kinnett Dairies, Inc v. Dairymen, Inc:** in this instance the defendant cooperative had a market share of no more than 30% in the relevant markets, and on the basis of this share the court found the cooperative did not have market power.

The most recent analysis is that of Bergman (1997), who shows theoretically that a cooperative will set lower prices than an investor-owned firm in the same market and with the same market share, provided the cooperative cannot price discriminate. Bergman also presents empirical analysis that supports these results.

Appendix C. Minimum Market Shares to Establish Significant Market Power

Courts and competition authorities worldwide generally find that a large market share is required to establish significant market power. Having said that, there is no consensus on the exact market share threshold above which a firm is said to hold significant market power. Moreover, market share is not the only factor that affects a firm's market power, and it is possible for a firm with a relatively small market share to still hold significant market power (or for a firm with a large market share to hold little market power). Nonetheless, the general view is that market share is at least a factor to consider when considering whether market power exists, and thus in this appendix we review some of the literature on market share thresholds.

Warlick and Brill (1978) survey the U.S. monopolisation case law for investor-owned firms, and conclude that the courts generally find that a market share of 70% or more definitely constitutes significant market power. Hay (1992) notes a similar conclusion in more recent U.S. case law, which typically suggests that less than 50% share rarely indicates significant market power, 50-70% occasionally indicates significant market power, and above 70% is strong evidence of significant market power. The American Bar Association's "Market Power Handbook" (2005) states that U.S. courts typically conclude that market shares above 70% are prima facie evidence of significant market power, but at the same time the exact threshold depends on the market context.

While these articles are U.S.-focused, Gal (2003) presents a survey of market share thresholds across a number of jurisdictions. Gal's table is replicated below, although we caution that the survey is now quite old and many of the thresholds may be out of date (including New Zealand's).

Table C.1
Market share thresholds for market power in different jurisdictions

Jurisdiction (listed by size)	Dominant position definition	Market share threshold	Role of threshold (mandatory or suggestive)
United States	Monopoly power	Usually 70–75%; rarely below 50% ^a	S
EC	Dominant position	45–55% ^b	S
Canada	Substantial control	87% high enough. Predatory pricing guidelines, 35% ^c	S
Australia	Substantial degree of power	60% large enough. 7–15% too low ^d	S
New Zealand	Dominant position	Higher than in Australia and the EC ^e	S
Israel	Significant influence on the market	50% ^f	M (unless minister declares lower)
Malta	Dominant position	40% ^g	M (unless proven to be lower)
Cyprus	Dominant position	Follow the EC	S

a. When market share is 70–50%, courts usually seek corroborating evidence for the existence of market power. P. Areeda, H. Hovenkamp, and J. L. Solow, *Antitrust Law*, vol. 2A (Boston: Little, Brown, 1995), para. 532b; William M. Landes and Richard A. Posner, “Market Power in Antitrust Cases,” 94 *Harv. L. Rev.* 937, 951 (1981).

b. *Hoffman La Roche v. Commission* [1979] 1 ECR 461; *AKZO Chemie BV v. Commission* (C-62/86) [1991] ECR I-3359, para. 60, [1993] 5 CMLR 215; *Hilti AG v. Commission* (T-30/89) [1991] ECR II-1439 [1992] 4 CMLR 16. Although the EC is a large market, the lower thresholds for dominant position may result from the fact that the Treaty of Rome’s fundamental emphasis is on facilitating trade between member states.

c. *Canada (Director of Investigation and Research) v. Laidlaw Waste Systems Ltd.* (1992), 40 CPR (3d) 289, 325. It is difficult to base any conclusions regarding the degree of market power necessary to establish a dominant position on existing Canadian case law given that in all cases the monopolists had a very large market share. Director of Investigation and Research, *Predatory Pricing Guidelines* (1992).

d. *Williams v. Papersave Pty Ltd.* (1987) ATPR 40–781 and (1987) ATPR 40–818; *D&R Byrnes (Nominees) Pty Ltd. v. Central Queensland Meat Export Co. Pty Ltd.* (1990) ATPR 41–028. The threshold was lowered from “in a position substantially to control a market” to “a substantial degree of power in a market.”

e. *Telecom Corporation of New Zealand Ltd. v. Clear Communications Ltd.* [1992] 3 NZLR 429 (CA).

f. Restrictive Trade Practices Act of 1988, Sec. 26.

g. The Maltese Competition Act of 1994 defines dominant position as control of over 40% of the market. Although the law allows for a market analysis proof that a lower market share is sufficient for a finding of dominance, the 40% market share is a nonrebuttable presumption when one would have liked to prove the opposite.

Source: Gal (2003)

For the New Zealand dairy industry, context is important for two reasons. Firstly, Fonterra is a cooperative, and the conclusions from elsewhere in our report are that, under some circumstances, the structure of cooperatives mitigates their market power.

Secondly, New Zealand is a small economy, and thus other considerations may be important in assessing the market share threshold. There appear to be two opposing effects here. One effect, based on Gal (2001, 2003), is that in small economies entry barriers tend to be higher due to economies of scale, so that a firm with a given market share is likely to have fewer constraints (and thus hold more market power) than in a larger economy. Gal’s survey of market share thresholds replicated above indicates that most small economies surveyed

(Israel, Malta and Cyprus) adopt lower thresholds, but New Zealand is notably distinct in setting a relatively high threshold (at least under the old “dominance” standard of the Commerce Act).

The opposing effect is that in a small economy, markets often only support a small number of firms and economies of scale become of considerable importance.⁷⁰ The implications of this are that, while a given market share may imply significant market power, the anticompetitive effects of this may be offset by the efficiencies from economies of scale. Indeed, Gal (2006) makes this point in relation to merger safe harbours in small economies, where relatively wide safety zones can be used to allow for the capture of scale efficiency benefits.

⁷⁰ Evans and Hughes (2003).