



# **Regulatory Options for Milk**

**Report to Fonterra Co-operative Group Limited**

**25 July 2010**



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# 1. Introduction

The New Zealand Institute of Economic Research (NZIER) has been asked by Fonterra Co-operative Group Limited (Fonterra) to:

- identify the problems that the Dairy Industry Restructuring Act 2001 (DIRA) regulatory regime is intended to address
- identify the full range of regulatory options available to the government to address the identified problems
- specify an appropriate decision framework for choosing between regulatory options and
- conduct an analysis of the state of competition in the farm gate and factory door milk markets and an assessment of the various regulatory options.

The investigation must meet the principles and standards outlined in the *Government Statement on Regulation: Better Regulation, Less Regulation*, which was released in August 2009.

The purpose of the DIRA was to authorise the creation of Fonterra through the amalgamation of the two largest dairy co-operatives in New Zealand and the New Zealand Dairy Board. As the Act allowed for the creation of a co-operative that was considered to have a dominant position in a number of domestic dairy markets, the DIRA also provided for legislative measures and the issuing of regulations to mitigate the risks inherent in the new merged entity having a position of market power. One set of regulations, the Raw Milk Regulations, has been issued. These govern the conditions of access to raw milk from Fonterra by independent dairy processors. This milk is referred to as regulated milk.

The DIRA contains sunset clauses setting out conditions in the markets for milk in the North and South Islands that, when met, will trigger the withdrawal of the legislative measures to promote competition and the power to regulate. In anticipation of the prospect that the sunset clause conditions may be triggered in one or both islands in the near future, the Ministry of Agriculture and Forestry (MAF) consulted recently on options for extensions to the regulatory regime in the DIRA.

MAF's consultation document reaches the preliminary conclusion that "there may be a prima facie case for extending the entire DIRA regime, including the Raw Milk Regulations".<sup>1</sup> However, the consultation document is high level in its description of the markets and does not contain the substantive economic and empirical analysis necessary to support MAF reaching a preliminary conclusion, never mind the conclusion it has reached. The Raw Milk Regulations were amended in 2010 to adjust the formula used to calculate the price for regulated milk and the DIRA was amended to allow, potentially in future, allocation of access to this milk by auction

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<sup>1</sup> Ministry of Agriculture and Forestry (2009) *The Future of the Pro-competition Regulatory Regime in the New Zealand Dairy Industry – Consultation Document*, December 2009.

should demand exceed the available quantity. Again, the analysis supporting these changes has not been to the standard of the government's own regulatory guidelines.

Since Fonterra has been operating under the DIRA and the Raw Milk Regulations, other parties have increasingly come to recognise the opportunities the regulatory regime offers to them. As a result, in Fonterra's opinion, the Raw Milk Regulations in particular are causing unintended consequences and leading to inefficient outcomes in the dairy industry. As Fonterra and its competitors face global competition, New Zealand can ill-afford a regulatory regime that undermines the efficiency of what is its major export industry. This concern, together with the observation that the policy analysis underlying the review and amendment of the DIRA to date has not been supported by quality data and analysis, and has failed to meet the government's own guidelines for scrutiny of regulatory proposals, have lead Fonterra to commission this report from NZIER.

In Section 2, we outline the theories behind economic regulation and discuss regulatory objectives and approaches. We also describe the dairy industry supply chain and the potential competition problems that could arise. Section 3 contains a description of the regulatory regime contained in the DIRA and the Raw Milk Regulations and relates this to potential problems in the dairy industry supply chain. The deficiencies of the current regime are discussed in Section 4. Section 5 presents criteria for assessing regulatory options, drawing on widely accepted standards of regulatory best practice, and provides a framework for consideration of the various regulatory options available. We describe the options in Section 6. We explain in Section 7 the assumptions used to undertake the cost-benefit assessment of the options. The results of the analysis are reported in Section 8 and our conclusions are provided in the final section – Section 9.

## 2. Regulatory objectives and approaches

### 2.1 Why regulate?

It seems reasonable to start with the presumption that governments regulate firms and industries because they believe doing so will improve market conditions and performance relative to what these would be without regulation. This raises the question, however, of what yardstick the government uses to determine “improved performance”.

There are a wide variety of outcomes that various governments have considered to be “improved performance”: a greater proportion of electricity produced by renewable energy sources than the market outcome would deliver; continuation of “free” local calls by telephone companies; investment by infrastructure providers in the provision of new and improved services; and acceleration in the roll out of broadband internet services.

Economists, however, usually restrict their discussion to regulations intended to improve performance in the sense of improving economic welfare – to regulations intended to improve the aggregate benefits that consumers and producers derive from the provision of essential goods and services. The perfectly competitive equilibrium is Pareto optimal or efficient in that, beyond this point, it is not possible to reallocate resources and improve the welfare of one or more consumers or producers any further without making one or more consumers or producers worse off. At this equilibrium, price equals marginal cost in all markets.<sup>2</sup> As perfectly competitive markets optimise economic welfare, economic regulation to improve welfare is typically associated with some failure of the market to deliver outcomes approximating the competitive or economically efficient outcome.

### 2.2 Market failures

The operation of markets can fail to deliver economically efficient outcomes for a number of reasons and, as a result, society’s economic welfare may not be optimised. The recognised sources of market failure are:

- the existence of market power in the hands of buyers (or sellers); for example, when decisions are left to the market, a single price monopoly supplier produces less than the socially optimal quantity of a good or service
- the presence of externalities; these cause the benefits and costs borne by decision makers to diverge from the benefits and costs to society as a whole; as market participants respond to the private benefits and costs they face, the market outcome will generally not be the socially optimal outcome at which the incremental benefits to society just match the incremental costs of obtaining it

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<sup>2</sup> Viscusi, W.K., Harrington, J.E. and Vernon, J.M. (2000) *Economics of Regulation and Antitrust*, 3<sup>rd</sup> ed., p.75.

- the existence of so-called public goods; these are goods or services from which it is difficult to exclude consumption by a party who does not pay and consumption by one person does not affect the ability of another person to consume; the quantity of public goods produced when decisions are left to the market is usually less than optimal due to everyone preferring to be a free rider, leaving others to pay for what they benefit from and
- asymmetric information between market participants; this can take the form of one party in a transaction having less complete or accurate information than the other party or one party not being able to determine accurately the performance of the other party in providing a service or the performance of a good.

Where economic regulation is intended to improve economic welfare, it tries to do this by overcoming one or more of the above market failures. The imposition of economic regulation incurs costs to implement and enforce and costs to comply with and can also lead to consequences and outcomes other than those intended. These unintended consequences are referred to as regulatory failures. The “cure” in the form of regulation can be worse than the “disease” due to the market failure; regulations may have a negative impact on society’s economic welfare compared with the option of doing nothing and putting up with the consequences of the market failure.

It is usual, therefore, for economists to consider whether the net benefits from introducing regulation exceed the net costs of living with the market failure. If the aim is to improve economic welfare, economic regulation should be introduced only where the outcome with regulation will be superior to the outcome with the market failure left to exist or ameliorated in some other way.

## 2.3 Theories of economic regulation of monopolies<sup>3</sup>

### 2.3.1 Two schools of thought

There are two distinct camps and a number of variations on the theme when it comes to theoretical explanations for the regulation of monopolies, or, more generally, economic entities with market power. One older school of thought argues that economic regulation of firms with market power is the rational response of politicians to calls by the consumers who elect them to protect them from welfare losses from being charged excessive prices. In contrast, there are others who argue that economic regulation of firms with market power is an instrument of producers seeking protection of their position (capture theory) or, in a more general way, the outcome of the interplay of competition between various interest groups and the political process and this explains what is regulated and what is deregulated.

The empirical evidence is not fully consistent with either of these general theories of why regulation occurs when it does and why it takes the form it does.<sup>4</sup> Most of the

<sup>3</sup> For a useful summary of the various arguments see Viscusi *et al.* (2000), pp.313-31.

<sup>4</sup> Viscusi *et al.* (2000), p.331.

explanations that have been suggested do, nevertheless, provide some insights into regulatory purposes and objectives, both economic and political.

Two broad areas of concern about the efficiency effects that can arise in relation to the regulation of firms with market power can be identified in the industry-specific regulations relating to Fonterra:

- concerns about the behaviour of firms with market power and
- concerns about their potential role in thwarting competition in downstream markets.

### 2.3.2 Firms with market power

One rationale for the economic regulation of goods and services produced by firms with market power is that, because of the high fixed capital costs typically involved, the market structure for their provision usually displays economies of scale and scope in production. The result is that the long-run average cost of production of a single seller or small group of sellers may still be declining when total market demand for the good or service is satisfied or, even if not, it may still be lower cost for one or a few firms to produce the entire output. For this reason, these industries tend to be natural monopolies or, at least, to have limited direct competition and the firms in these industries possess market power.<sup>5</sup>

One problem that arises with these industries is that it is generally uneconomic to replicate their investments, so they face limited competition. As a result, the firm or firms:

- can charge higher prices than they could if they faced competition, with the consequence that consumers who would be willing to pay a price between the marginal cost of the good or service and the firm's asking price are excluded from the market, with a loss of the benefits these consumers would have enjoyed
- face less pressure to lower costs (including capital costs) and to make efficiencies as they are only subject to the "carrot" of increased returns and there is no "stick" of lost customers and business
- have attenuated incentives to meet the quality and service needs of customers because they do not face the full threat of lost business and
- have reduced incentives to invest and innovate as they do not risk competitors developing a superior product or achieving lower costs.

The ability to charge higher prices because it possess market power means a firm can set prices so as to earn above normal economic profits and capture some of the benefits consumers would otherwise obtain from consuming the good or service. This

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<sup>5</sup> Technically, a natural monopoly exists in an industry when the costs are subadditive. That is, if there were two firms each producing a single output in volumes  $q_1$  and  $q_2$ , the costs at the market output,  $Q$ , are such that:  $C(Q) = c(q_1 + q_2) < c(q_1) + c(q_2)$ . Subadditivity is not the same as economies of scale. For a discussion of subadditivity see Viscusi (2000), pp.339-43. For this definition of natural monopoly see Baumol, W.J. (1977) On the proper cost test of natural monopoly in a multiproduct industry, *American Economic Review*, no.67, pp.809-33.

is not the same problem as the higher price excluding potential consumers who would value the good or service more than it costs to produce, as identified above. It arises from the same cause – the ability of the firm with market power to charge higher prices. The concern in this case is about the equity of the firm setting prices to capture some of the benefit that consumers who actually purchase the product would enjoy if the price was the competitive price, or closer to it.

Equity is generally not the focus of economists who see no reason to value a dollar in the hands of a producer as more valuable than a dollar in the hands of consumers. It is arguable that the reason firms with market power are regulated in most developed economies is because makers of laws sanctioning regulation are concerned about the equity effects of the exercise of market power and if improving economic efficiency was the only interest of policy makers, the level of regulation of such firms would be much less.

Although economists usually discuss the economic effects of a seller possessing market power, or having a monopoly, they recognise that in some instances a buyer can possess market power in a particular market and the consequences are similar. A sole buyer, or monopsony, will tend to pay less than the competitive price and as a result earn above competitive economic profits when it on-sells the good or service. The upshot will be a wealth transfer from sellers to the buyer with market power and an efficiency and welfare loss because some producers that would have been willing to sell the product at a competitive price but not at the price being paid do not get the opportunity to do so. Output that would have cost less to produce than it was worth to buyers will not be produced and there will be a resulting loss of allocative economic efficiency and economic welfare.

### 2.3.3 One-way access

Another concern about firms with market power relates to access to goods or services to provide competition to firms in other markets that would otherwise be competitive. One situation in which this arises is where the assets of the firm are needed to deliver potentially competitive goods or services to end consumers, but the monopoly is also engaged in the activity of delivering to consumers in the downstream market. The monopoly may use the revenue from the charges for its monopoly goods or services to preclude other businesses from entering the downstream market, it is often argued.

This one-way access problem is most commonly raised as a risk to competition in electricity and gas retailing where the argument is that the owner of the distribution network also being an electricity or gas retailer can result in charges for access that stifle retail competition. It is also relevant to the dairy industry, where competition in the downstream markets for dairy products will be affected by competitive conditions in the markets for raw milk at the farm gate or factory door.

An argument raised against concerns about one-way access precluding competition in downstream markets is that a firm with market power can gain no extra profits by

monopolising a downstream market that they could not achieve by choosing the right price in the upstream market. This is true when each unit of output requires a fixed proportion of the various inputs, so that there can be no substitution away from the input controlled by one or a few firms in the downstream market. It is not true, however, if there are variable proportions in production in the downstream market.<sup>6</sup> Concerns persist that vertically integrated firms can create barriers to entry in downstream markets.

## 2.4 Dairy industry supply chain

The dairy industry supply chain is set out schematically in Figure 1. The dairy industry is not a natural monopoly.<sup>7</sup> The creation of Fonterra and the economies of scope and scale available to it in the collection and processing of raw milk do, however, mean that ensuring access by farmers to alternative buyers of their milk and access by processors to raw milk on competitive terms was a regulatory challenge. In most respects, the challenge was similar to the regulatory choices available in ensuring access for competitors in industries more traditionally considered to be dominated by one or a few firms, such as telecommunications networks, gas distribution pipelines or electricity distribution and transmission lines.

One of the dairy markets of potential concern to New Zealand regulators as a result of the creation of Fonterra is the farm gate market. In this market, farmers supply raw milk, which is bought by initial processors, milk aggregators and/or brokers. The concern here is that the number of buyers of milk from farmers may be so low in an area or region that Fonterra could exercise market power against farmers. The perishable nature of raw milk compounds the vulnerability of farmers because withholding product if the price or terms offered by the buyer are not acceptable can be very costly when the product is perishable – much more costly than for the provider of a non-perishable product like wool, for example.

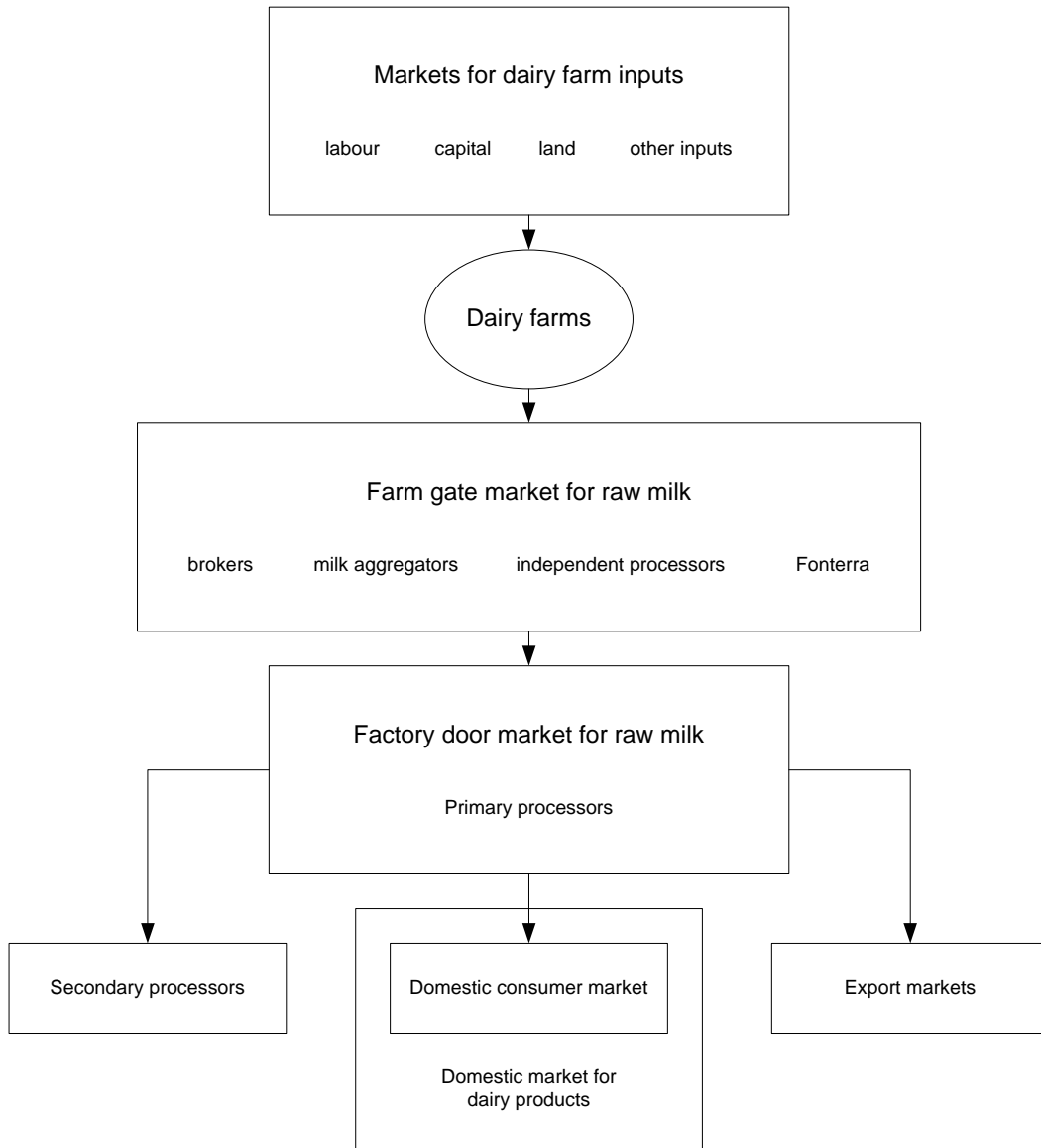
The second dairy market of potential concern to regulators is the factory door market in which the initial processors, milk aggregators and/or brokers that collect milk from farm gates provide raw milk or milk that has undergone initial processing to processors that undertake initial or secondary processing. One concern here is that a dominant buyer of raw milk like Fonterra, which is also a processor selling milk in this market, may use its dominant position to block entry into the provision of processed milk. Another concern is that, as a dominant provider, Fonterra may be incentivised to refuse to supply raw milk to other processors because they could in time collect their own milk or engage with milk brokers or aggregators and so threaten Fonterra's market power in the farm gate market for raw milk.

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<sup>6</sup> Viscusi *et al.* (2000), pp.229-32.

<sup>7</sup> In the sense that duplication of infrastructure or production facilities would be inefficient.

**Figure 1 Dairy industry supply chain**



Source: NZIER

The third market of potential interest is the market for sale of dairy products in New Zealand, for the provision of butter, cheese, processed cheese, milk powders, dairy-based nutraceuticals, yoghurts, fresh milk and cream, etc. The potential concern in this market is the level of competition among suppliers to the domestic market.

## 3. Dairy industry regulation - instruments and objectives

The regulatory regime covering the dairy industry in New Zealand consists of the following key instruments:

- the Dairy Industry Restructuring Act 2001 (DIRA) and its amendment in 2010
- the Dairy Industry Restructuring (Raw Milk) Regulations 2001 (the Raw Milk Regulations) and its amendments
- Fonterra's own Constitution and
- the Commerce Act 1986 and its amendments.

### 3.1 DIRA

The DIRA allowed for the creation of an amalgamated dairy co-operative, new co-op, which later took on the name Fonterra. Part 2, Subpart 5 of the DIRA contains measures to counteract the potential for the creation of Fonterra to inhibit competition. The DIRA contains provisions aimed at facilitating competition and contestability in all three of the markets in the dairy supply chain identified in the previous section as being of potential concern to regulators:

- the farm gate market for raw milk
- the factory door market for raw and partially processed milk and
- the New Zealand domestic market for dairy products.

We shall consider each in turn.

#### 3.1.1 Competition in the farm gate market for raw milk

The principal components of the DIRA that directly facilitate competition for Fonterra in the farm gate raw milk market are the provisions that facilitate dairy farmers switching between supplying raw milk to Fonterra and supplying to another party. Ease of exit and re-entry as suppliers to Fonterra means dairy farmers have greater freedom to reject the terms on which Fonterra will buy their raw milk. This reduces their vulnerability to Fonterra exercising market power. It also reduces the risks to farmers of leaving Fonterra making it easier and financially less costly for independent processors to recruit farmer suppliers and so enhances their ability to compete in the farm gate market. The provisions with this effect are the following aspects of the DIRA:

- the right of a shareholding farmer to withdraw from Fonterra is protected and the legislation ensures that farmers are able to exit Fonterra and receive the same published price for shares and peak notes as new shareholders entering at the same time<sup>8</sup>

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<sup>8</sup> DIRA, ss. 97-105.

- when processing capacity is reached, Fonterra may issue capacity constraint notices if, in its “reasonable opinion”, processing the expected increase in milk volume cannot be reasonably managed;<sup>9</sup> otherwise, applications from any farmer wishing to join Fonterra must be accepted if capacity is available, provided that the farmer produces more than a minimum quantity (10,000 kilograms – approximately the output of a herd of 40 cows<sup>10</sup>) and the transport costs involved in collection are no higher than those of existing shareholders<sup>11</sup>
- at all times within a 160 kilometre range, one third of milk supplied by farmers must be either to an independent processor or collected under contracts with Fonterra that expire (or may be terminated without penalty) at the end of each season
- shareholding farmers who withdraw from Fonterra and cease or reduce supply must receive their capital in Fonterra within 30 working days of the end of the season in which they give notice<sup>12</sup>
- shareholding farmers wishing to withdraw from Fonterra are able to purchase the milk vat on their farm from Fonterra at its fair market value<sup>13</sup> and
- Fonterra shareholders may “allocate to independent processors up to 20% of their weekly production throughout the season.”<sup>14</sup> This allows farmers to experiment with supplying an independent processor without having to make a full commitment to continue supplying it should the arrangement disappoint the farmer.

The allocation of up to 20% of production to an independent processor is subject to a requirement to use separate vats for the milk for Fonterra and the milk for the independent processor. This is an understandable requirement given that Fonterra owns the on-farm milk receiving assets of its suppliers and the logistical problems and food safety risks that using the same on-farm vats for supplying multiple processors could raise. However, it does militate against the effectiveness of the provision by raising the costs of providing multiple processors. In practice, few, if any, farms regularly supply milk to more than one processor.

The DIRA also indirectly addresses concerns about Fonterra’s dominant position in the farm gate market by encouraging contestability at other levels of the supply chain – in the factory door market for raw and partially processed milk and in the New Zealand retail market for dairy produce.

### 3.1.2 Competition in the factory door market

The provisions in the DIRA identified above as facilitating dairy farmers switching between supplying raw milk to Fonterra and supplying to another party not only

<sup>9</sup> DIRA, ss. 86-93.

<sup>10</sup> Commerce Commission, *Compliance*, Issue 22, December 2001, p.6.

<sup>11</sup> DIRA, ss. 94-6.

<sup>12</sup> DIRA, s. 101(1).

<sup>13</sup> The independent processor may also be the purchasing party.

<sup>14</sup> DIRA, ss. 106-9.

reduce Fonterra's potential dominance in the farm gate market, they also facilitate the establishment of independent processors and competition in the factory door market for raw and partially processed milk.

The idea behind many of the provisions in the DIRA is that a new processor may have difficulties contracting with farmers for the supply of raw milk, as farmers may be reluctant to risk exiting Fonterra before a new processor is established and proven. A processor who has not yet contracted with suppliers may, however, face difficulties in raising capital to fund necessary plant development. Easier access for independent processors to raw milk supplies direct from farmers was intended to break this circular difficulty.

### 3.1.3 Competition in the domestic market for dairy produce

At the time the DIRA was passed in 2001, it was realised that Fonterra would have a large market share and so possibly a position of market power in domestic markets for dairy products. Ensuring access to raw milk for independent processors aimed to facilitate production of dairy products by parties additional to Fonterra and thereby promote a degree of competition in domestic markets. For example, protection of domestic consumers is mentioned in the Bill's first reading: "It will be essential to make sure that there is adequate protection in the domestic market for the domestic consumers, who make up 4 percent of the industry".<sup>15</sup>

Section 9 of the DIRA implemented the decision to create, at the time of allowing the formation of Fonterra, a viable competitor to the new co-operative in retail markets. This provision required Fonterra to dispose of shares in New Zealand Dairy Foods Limited (NZDF). NZDF is now owned by Goodman Fielder and produces and markets a wide range of dairy products through New Zealand wholesale and retail outlets in competition with Fonterra, other local producers and imports. NZDF produces both house brands and products it markets under its own brand: fresh milk (Meadow Fresh); specialist nutraceuticals (Sun Latte and Activate); yoghurts (Meadow Fresh and Naturalea) and cheeses (Bouton d'or, Tararua, Chesdale, Ornelle and Puhoi Valley).

## 3.2 Raw Milk Regulations

### 3.2.1 Legislative basis

Section 115 of the DIRA provides for regulations to be made to impose supply obligations on Fonterra. The obligations may relate to the supply of raw milk and components of milk and products derived from milk and their transport, processing and packaging. For Fonterra's supply of raw milk, components of milk and products derived from milk to independent processors, the regulations may specify a price or prices or methods for determining the price and the terms and conditions of supply. When the product supplied is raw milk, the method for determining the price may be

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<sup>15</sup> Shane Arden, 26 June 2001 (First reading)

by auction. Fonterra cannot be required to supply more than 5% of the amount of any goods or services it produces.

The DIRA also provides for regulations to be made to require Fonterra to publish and send specific information to the Commerce Commission, including on share and peak note prices, pay-outs to shareholders, price forecasts for goods and services, current prices (and their component parts) and total volumes of goods or services contracted to supply to independent processors.<sup>16</sup>

### 3.2.2 Main provisions

The Dairy Industry Restructuring (Raw Milk) Regulations 2001 (The Raw Milk Regulations) and its amendments are the only regulations currently in force under section 115 of the DIRA. The raw milk supplied by Fonterra to independent processors under the provisions of these regulations is referred to as regulated milk. The Raw Milk Regulations cover the conditions of supply and processes to be followed by all parties for the request and sale of regulated milk. Conditions include:

- “independent processors must ... provide [Fonterra] with advance estimates of the quantity of raw milk required”.<sup>17</sup>

Fonterra receives a first estimate of demand quantity for regulated milk at least three months before the delivery date and a second estimate, which must be within a +/-40% range of the first estimate, up to one week before the commencement of supply. Winter milk requirements carry a provision for an estimate 18 months in advance. Fonterra may require an independent processor to contract to buy a quantity of raw milk not exceeding 80% of the quantity of raw milk estimated by the independent processor in its second estimate. On the other hand, an independent processor may require Fonterra to contract to sell a quantity of raw milk not exceeding 120% of the quantity of raw milk estimated by the independent processor in its second estimate. Such flexibility for the independent processors means there is a significant option element within their entitlements to regulated milk, as it includes greater flexibility than would be afforded to the independent processor (or Fonterra) under a standard agreement with a farmer to buy milk at the farm gate. Fonterra effectively has ‘take-or-pay’ arrangements with farmers but independent processors do not have the same obligation to Fonterra in relation to regulated milk.

- Limits are set on the amount of raw milk that Fonterra must supply to independent processors.

When the Raw Milk Regulations were first issued, the total amount that Fonterra was to supply to independent processors was limited to 400 million litres a season, with a 250 million litre cap (within the total amount) on supply to NZDF. The overall limit has been increased from 400 to 600 million litres.<sup>18</sup> The maximum

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<sup>16</sup> DIRA, ss.116 -17.

<sup>17</sup> Raw Milk Regulations 2001 Clause 5.

<sup>18</sup> Amended on 1 June 2009 by the Dairy Industry Restructuring (Raw Milk) Amendment Regulations 2008 (SR 2008/399).

entitlement of any independent processor, “and interconnected bodies of the independent processor” apart from NZDF is 50 million litres in a season.

- Fonterra and an independent processor may agree a price for the supply of raw milk or an independent processor may require Fonterra to supply the raw milk at the default milk price.<sup>19</sup> Default prices are set for raw milk, winter milk and organic milk.
- In April 2010, amendments to the Raw Milk Regulations replaced the current wholesale milk price formula used to determine the default price with the farm gate price (the milk component of the Fonterra farmer payout) plus seasonal margin of 10 cents per kilogram of milksolids from the 2010/11 dairy season. The seasonal margin is intended to reflect the costs to Fonterra of providing independent processors a “square supply curve” instead of a supply following the seasonal production pattern of farmers.
- In each season, the default milk price applies to raw milk required by an independent processor in October, and during the months of August, September and November through to April the quantity required that does not exceed by more than 10% the raw milk required by the independent processor from Fonterra in October in that series of months.<sup>20</sup>

This “October 110% rule” limits the amount of milk an independent processor is able to take at the default milk price to the same or slightly more milk than they took at the peak production period in October when milk is plentiful. This was intended as a means of limiting the ability of independent processors to take larger quantities of milk during the non-peak months to achieve a relatively steady flow of milk through their plants throughout most of the season – a so-called, “square supply curve”. As we discuss later in this report, its effectiveness has been limited.

The original Raw Milk Regulations were amended in 2008<sup>21</sup> to include a quantity rationing rule to apply should demand for regulated milk exceed supply. As a result of recent legislation, the regulations may be further amended to allow the auctioning of regulated milk to match demand and supply.<sup>22</sup> This has not yet occurred.

### 3.2.3 Other provisions

Part 2 of the Raw Milk Regulations impose on Fonterra obligations to publish forecast data quarterly and actual recorded data annually. The forecasts required relate to the expected total payout, the retentions – kilograms of milksolids supplied and the additional costs of winter milk for each Island. The recorded data relate to the same variables plus the price and value of Fonterra’s co-operative shares and peak notes as at 1 June and the cost of capital used to calculate the price of the co-operative share.

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<sup>19</sup> Raw Milk Regulations 2001 Clause 8.

<sup>20</sup> Raw Milk Regulations 2001 Clause 8.

<sup>21</sup> *Ibid.*

<sup>22</sup> The Dairy Industry Restructuring (Raw Milk Pricing Methods) Amendment Act 2010.

### 3.2.4 Rationale for Raw Milk Regulations

The main purpose of the Raw Milk Regulations is to increase competition for Fonterra in the factory door market for milk and the domestic retail market for dairy produce by providing independent processors with access to raw milk without having to obtain it directly from farmers. They are also intended to promote farm gate competition by facilitating independent processors entering the market. As we will discuss later, in practice, while the regulations may have initially had this purpose by assisting independent processors begin operations they now have the net effect of inhibiting the level of competition in this market. The information disclosure provisions are intended to assist in the implementation of the open entry and exit provisions of the DIRA by informing parties of the values of shares and peak notes. They are also intended to assist the operation of the aspects of the regulations aimed at providing independent processors with access to raw milk.

## 3.3 Sunset clauses

The competition oriented provisions in the DIRA and the Raw Milk Regulations were not intended to last for an indefinite period of time. Sections 147 and 148 of the DIRA set out when the industry-specific regulations cease to operate in each of the North Island and South Island.

The trigger for the North Island is when 12.5% or more of the total raw milk quantity collected directly in the season from North Island farmers is collected by independent processors in the North Island.<sup>23</sup> The expiry trigger for the South Island is defined in terms of quantities of milksolids; independent processors must collect at least 65 million kilograms of milksolids in the South Island, at least 25 million of which must be collected by one independent processor from farmers outside of the Westland Regional Council boundaries.<sup>24</sup>

When these provisions are triggered, the industry-specific competition oriented provisions contained in the DIRA cease to have effect in the island in which they are triggered, but remain in force in the other island until triggered there.

The ability to make regulations requiring Fonterra to supply milk to independent processors, the requirement on Fonterra to disclose information and some process and transitional measures do not expire, however, until the day on which the other competition oriented sections in the DIRA cease to operate in both the North and South Islands.

So, for example, if the trigger for expiry had been met in the North Island but not in the South Island, the provisions aimed at ensuring shareholder farmers have reasonable opportunities to exit Fonterra would cease to operate in the North Island, but would continue to operate in the South Island. The requirements on Fonterra to supply regulated milk and to disclose information would continue to operate in both islands until the trigger for expiry is met in the South Island.

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<sup>23</sup> DIRA, s. 147.

<sup>24</sup> DIRA, s. 148.

### 3.4 Fonterra's Constitution

Even when the DIRA and any competition oriented regulations made under it cease to have effect, this does not mean that Fonterra would be removed of all constraints on its behaviour that impact on its ability to exercise market power. There would still be Fonterra's Constitution and the general legal provisions relating to competition. Moreover, the government could always decide to reintroduce dairy industry-specific regulation applying to Fonterra if it considered this was warranted and the impact on Fonterra's behaviour of the possibility of further regulation should be not discounted.

Fonterra is currently a co-operative registered under the Co-operative Companies Act 1996<sup>25</sup> and owned by the farmers who supply it with milk. The company's Constitution reflects, in a number of ways, its co-operative nature and that its suppliers are not only its shareholders but also provide it with its key raw material, raw milk. There are several features of the current Fonterra Constitution that are designed to reflect the interests of the supplier shareholders. These are contained in Part A – Co-operative Principles of Company and include:

- the purpose of Fonterra being to maximise the wealth of its shareholders by:
  - selling their milk
  - providing a purchaser of that milk and
  - enhancing the value of the co-operative shares<sup>26</sup>
- the procedures for setting the fair value of a co-operative share each year; this is the price at which suppliers buy and sell shares in the co-operative;<sup>27</sup> specifically, the Constitution requires:
  - an Independent Valuer to provide the fair value range within which the Board has to set the fair value of a co-operative share
  - the Independent Valuer to take into account a prescribed set of factors when determining the fair value range and to report to the Board on various matters in relation to his or her estimates
  - the Board to disclose to shareholders the report it received from the Independent Valuer and, if it did not choose the mid-point of the range, to explain why not and
  - the Independent Valuer to use the milk price manual, which sets out the policies and methodology for determining the milk price, as one of the key inputs into determining the fair value range
- the procedures for setting the payments for milk supplied by shareholders each season
- the establishment of a Shareholders' Council to:<sup>28</sup>

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<sup>25</sup> We have considered whether the Co-operative Companies Act 1996 provides an additional set of checks on Fonterra's behaviour in addition to those embodied in its Constitution. We concluded there were none.

<sup>26</sup> Fonterra Constitution, clause 1.1.

<sup>27</sup> Fonterra Constitution, clause 4.

- represent the views of shareholders to the Board
- monitoring the performance of the company
- appointing the Independent Valuer to set the fair value range
- appointing a Milk Commissioner to take up the complaints and disputes of shareholders with Fonterra<sup>29</sup> and
- approving or rejecting by majority vote any proposal to amend any of the co-operative principles in Part A of Fonterra’s Constitution.<sup>30</sup>

The Constitution also places relatively light constraints on the ability of suppliers to shift their supply to another processor and to surrender their co-operative shares for the fair value. The pay out is in the form of capital notes (if currently quoted on a stock exchange) or cash within 30 days, or, in exceptional circumstances, may be partially in the form of redeemable preference shares with no more than a three year maturity.<sup>31</sup>

There are also limited restrictions on farmers or suppliers joining Fonterra, provided they are willing and able to pay the fair value of the co-operative shares and peak notes they require. The Fonterra Constitution is a relatively pro-competitive document in terms of openness to entry and exit by farmers at a fair value. These provisions are entrenched in the sense that they are included in Part A and therefore their amendment requires the support of the Shareholders’ Council, which has an obligation to protect the interests of shareholders. The establishment and role of the Shareholders’ Council is itself entrenched by being included in Part A.

Recently, Fonterra shareholders have voted to accept Stage 3 of its capital restructuring plan. Under Stage 3, its Constitution will be amended to remove the requirement on the company to redeem the shares of shareholders wishing to leave the company. Instead, farmer shareholders would be allowed to trade shares in the company among themselves. An exiting shareholder would be able to sell his or her shares in this market at the price set by the interplay of Fonterra suppliers wishing to buy and sell Fonterra shares. Few individual Fonterra shareholder farmers own a significant parcel of shares in the co-operative, so the average parcel size from exiting shareholders is likely to be modest relative to the total capital of the company. Moreover, approximately 10,500 farmer suppliers will be able to participate in the market.

The near universal adoption of the co-operative company structure by farmers in the New Zealand dairy industry over the last 100 years or so is due to the co-operative structure permitting the economies of scale and scope available in transporting and processing milk to be captured while avoiding the risks of producing a perishable raw material for which there is only one local buyer. In our opinion, the co-operative

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<sup>28</sup> Fonterra Constitution, clause 16

<sup>29</sup> Fonterra Constitution, clause 17

<sup>30</sup> Fonterra Constitution, clause 18.

<sup>31</sup> Fonterra Constitution, clause 5.

Constitution of Fonterra provides a strong check on the company exercising monopsony power in its dealings with its shareholder farmers. The right of the Shareholders' Council to monitor the decisions of the Board and potentially to veto changes to the constitution that dilute the co-operative principles of Fonterra, reinforce this role of the Constitution, especially as the Shareholders' Council could not be abolished without its own agreement.

With regard to open entry and exit from Fonterra for farmers, the Constitution and the Shareholders' Council provide some comfort, but fall short of ensuring that Fonterra would fully retain open entry and exit of its own volition should the DIRA cease to require it. Given that there are economies of scale in dairy transport and processing, new entrants are very likely to be admitted by Fonterra, provided it has capacity available or the new entrants are willing to bear the costs of expansion to accommodate them.

Two situations in which Fonterra may be reluctant to replicate the requirements of the DIRA are in the sale of vats to departing shareholders (or their independent processors) at fair market value and in allowing shareholders to shift up to 20% of their milk to an alternative processor. The latter provision has been implemented on only a couple of farms, although a larger number of farmers with multiple farms have split their supplies between Fonterra and other processors. Two other areas where Fonterra may not follow the DIRA provisions voluntarily are in not having long-term contracts, although these have not been a feature of the co-operative dairy industry hitherto, and in allowing previously departed suppliers to return on an equal footing with new entrants. Fonterra may find it in its collective interest to treat returning shareholders in a manner that would discourage other suppliers from leaving Fonterra and running the risk of receiving the same treatment should they ever return.

### 3.5 General competition law

In New Zealand, the principal general legislation of relevance for competition law is the Commerce Act 1986, the purpose of which is "to promote competition in markets for the long-term benefit of consumers within New Zealand".<sup>32</sup> By competition, the Commerce Act means "workable or effective competition".<sup>33</sup>

Part 2 of the Commerce Act contains provisions prohibiting anti-competitive behaviour, which includes the following practices:<sup>34</sup>

- agreements or arrangements between two or more people or enterprises that contain provisions that:

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<sup>32</sup> Commerce Act 1986, s.1A.

<sup>33</sup> Commerce Act 1986, s. 3.

<sup>34</sup> See Commerce Commission (2002) *Anti-competitive Practices under Part II of the Commerce Act*, September 2002.

- substantially lessen competition in a market, including by mergers or acquisitions
- are exclusionary, in preventing or limiting dealings with a rival
- fix prices, volumes or other terms of trade against competitors and
- unilateral behaviour by a person or enterprise that:
  - sets the minimum price at which goods are supplied by the person or enterprise, or can be sold by others and
  - takes advantage of market power for an anti-competitive purpose.

There are several components of the Act that relate to the control of firms with market power in New Zealand. A number are pre-emptive in the sense that they preclude the establishment of monopolies or effective monopolies by mergers and acquisitions. Section 47(1) provides, *inter alia*, “a person must not acquire assets of a business or shares if the acquisition would have, or would be likely to have, the effect of substantially lessening competition in a market”.

However, the Commission is able to provide a clearance or authorisation for a merger if it is satisfied that the acquisition will not have, or be likely to have, the effect of substantially lessening competition in a market.<sup>35</sup> It is also permitted to provide an authorisation even if it thinks competition may be substantially lessened, provided it believes the acquisition will result, or be likely to result, in such a benefit to the public that it should be permitted.<sup>36</sup> The effect of the Commission granting a clearance or authorisation for a merger is that sections 27 and 47 of the Commerce Act do not apply.<sup>37</sup> These general merger provisions relate to the dairy industry. These provisions do not, however, stop a business from expanding *per se*. What they stop is it expanding by take-over.<sup>38</sup>

Part 4 of the Commerce Act, 1986 “provides for the regulation of the price and quality of goods or services in markets where there is little or no competition and little or no likelihood of a substantial increase in competition”. The outputs of major international airports, gas pipeline businesses and electricity lines companies are in the process of becoming regulated under Part 4, but the services provided by other businesses with market power are currently not. Fonterra could, however, become subject to the provisions in Part 4 following an inquiry by the Commission undertaken on its own initiative or at the request of the Minister of Commerce.<sup>39</sup>

In short, Fonterra, like other businesses operating in New Zealand, is subject to prohibitions on various forms of anti-competitive behaviour. It is also subject to the possibility of firm-specific regulation under Part 4 of the Commerce Act in those New

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<sup>35</sup> Commerce Act 1986, Part 5.

<sup>36</sup> Commerce Act 1986, ss. 66 and 67

<sup>37</sup> Commerce Act 1986, s. 69.

<sup>38</sup> Commerce Act 1986, s. 47 and Part 5.

<sup>39</sup> Commerce Act 1986, s. 52H.

Zealand markets in which it operates in which there is little or no competition. This is unlikely to change. The regulations are additional to the constraints on its behaviour imposed by Fonterra's own Constitution and the industry-specific regulations in the DIRA and Raw Milk Regulations.

### 3.6 Objectives of dairy industry-specific regulation

The objective of New Zealand's dairy industry-specific regulation is set out clearly in the DIRA. It is to mitigate the market power that might be held by Fonterra. This is to be achieved by the creation of instruments designed "to promote the efficient operation of dairy markets in New Zealand by regulating the activities of [Fonterra] to ensure New Zealand markets for dairy goods and services are contestable".<sup>40</sup>

In other words, the objective is to create efficient dairy markets in New Zealand. The means by which this is to be done is to regulate Fonterra so that the markets in New Zealand are contestable.

Economists usually identify three components of economic efficiency:

- allocative efficiency relates to *which* goods and services are produced and to *whom* they are allocated – whether resources (inputs) are being put to their most valuable uses (outputs)
- productive efficiency relates to *how much* of a good or service is produced from given resources – whether higher output could be produced from a given level of inputs or, alternatively, whether the same level of output could be achieved using fewer inputs
- dynamic efficiency relates to the development over time of *better or new* techniques and technologies through research, investment and innovation, which may reduce the costs of producing existing goods and services or provide better or new goods and services.

Regulatory options that will not produce efficient outcomes in these three regards are clearly inconsistent with the regulatory objective.

Moreover, it is clear that the objective is not to transfer wealth from one group in the community, say Fonterra suppliers, to others, say the shareholders or suppliers of independent processors. The objective is the fundamental tenet of economics of improving society's overall economic welfare by promoting efficiency in the operation of markets.

The objective of industry-specific regulation of Fonterra is appropriately well-aligned with the general objectives of New Zealand's competition policy. The central purpose of New Zealand's competition policy "is to promote competition in markets for the long-term benefit of consumers within New Zealand".<sup>41</sup> However, where there is little or no likelihood of competition, the long-term benefit of consumers is to be promoted

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<sup>40</sup> DIRA, s. 4(f)

<sup>41</sup> Commerce Act 2001, s. 1A.

by “promoting outcomes that are consistent with outcomes produced in competitive markets”.<sup>42</sup>

Nor is it the objective of the DIRA *per se* to shrink Fonterra in size to the point where it has no market power and a relatively small share of each market in New Zealand; achieving efficient market outcomes without this would be fully consistent with the stated objective.

In practical terms, that the objective is to improve the efficiency of dairy markets in New Zealand has a clear implication for the assessment of regulatory options. It means that, when it comes to assessing the benefits and costs associated with the various options, it is the net public benefits within New Zealand that should be measured and assessed. Effects that merely transfer wealth within New Zealand should be disregarded from the overall assessment. The relevant question is, from all the alternatives available, including doing nothing, which regulatory option yields the highest positive net public benefit in New Zealand? Which option minimises the loss in what economists refer to as consumers’ and producers’ surpluses through inefficiency?

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<sup>42</sup> Commerce Act 2001, s. 52A.

**Table 1 Dairy supply chain and industry-specific regulatory instruments and objectives**

Link in supply chain	Potential competition issues	How addressed by regime
Supply of inputs to dairy farmers	None	None to address
Supply of raw milk by dairy farmers (farm gate)	Dominant buyer in raw milk market (monopsony power)	Fonterra Constitution's co-operative structure and Shareholders' Council
		Open entry and exit
		Non-discrimination in exit and entry price for Fonterra shares
		30-day payment rule
		Sale of vats at fair market value
		160 km rule
		20% rule
	Inefficient allocation of returns between milk suppliers and capital suppliers	Linking shareholding to capital provision Stage 3 of capital restructuring plan
Collection of raw milk and processing by first processors (factory door)	Unavailability of raw milk to Fonterra's competitors because of Fonterra locking up supply from farmers	Raw Milk Regulations provide stepping stone for new processors and ongoing source of supply for niche producers
		Indirectly addressed by ensuring competition at the farm gate level by provisions above which increase ability and reduce risk of farmers providing milk to independent processors
Subsequent processing (factory door)	Unavailability of basic dairy products to Fonterra's competitors because of Fonterra locking up supply	Indirectly addressed by ensuring competition at the farm gate and first processor level
		Power to make further regulations under s 155 requiring Fonterra to supply basic dairy components and products
		No restrictions on importation of dairy components
Domestic market for dairy products	Dominant seller in domestic market (monopoly)	Creation of NZDF as separate entity in 2001
		Indirectly addressed by ensuring competition at the upstream market levels
		No restrictions on importation of goods

Source: NZIER

## 4. Deficiencies of the current regime

Our analysis has identified three areas where the current regime is deficient from the perspective of the economic efficiency of its outcomes:

- the requirement under the Raw Milk Regulations for Fonterra to provide well-established independent processors with up to 50 million litres of milk per season
- the default price for regulated milk, even in its very recently amended form, and
- the incentives the regime provides for parties to lobby for the extension of the industry-specific regulations beyond the time when the efficient outcome would be for these to lapse.

We address each area in turn.

### 4.1 Raw milk and established independent processors

As we have already noted, one of the policy objectives when the government allowed Fonterra to be formed was to ensure that other processors would be able to gain access to milk from Fonterra on reasonably competitive terms. This objective was manifested in a number of aspects of the industry-specific regulations introduced at the time. In particular, those that made it easy for farmers to shift some or all of their production to an alternative buyer of milk, such as the rules relating to transferring vats, liberal provisions for entry and exit from Fonterra, limitations on long-term contracting for supply by Fonterra and ability to shift up to 20% of output without leaving Fonterra.

These measures are all likely to make it possible for an established milk processor to acquire a network of farmer suppliers reasonably quickly. However, what policy makers feared they would not likely do on their own is allow a potential new entrant with no established track record to quickly build a network of farmer suppliers of sufficient size to allow it to operate a processing plant of an efficient scale at a high enough level of capacity to be economic and cost competitive with Fonterra.

To address this perceived problem, policy makers included in the statement of principles for Subpart 5 of Part 2 of the DIRA that “independent processors must be able to obtain raw milk, and other dairy goods and services, **necessary for them to compete** in dairy markets” [emphasis added]. This policy objective was given effect by the Raw Milk Regulations requiring Fonterra to make available to other independent processors up to 600 million litres of its raw milk.<sup>43</sup>

Whether or not the fear of policy makers which led to these provisions was well founded is questionable as a number of firms - Dairy Trust (now Open Country Dairies), Synlait and New Zealand Dairies Limited – have demonstrated the ability of a well-financed new entrant processor to contract with sufficient farmer suppliers prior

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<sup>43</sup> Between 2001/02 and 2006/07 the requirement was 400 million litres. In 2007/08 it was 500 million litres and since then it has been 600 million litres.

to establishing their plants to justify their establishment. That farmers who contract to supply other processors can access the funds they had invested in Fonterra shares to reduce debt or expand their operations appears to be sufficient to induce a number to be willing to shift to a new entrant independent processor, provided it appears well resourced.

**Table 2 Regulated milk sales by Fonterra in the last three seasons by purchaser**

Millions of litres

	Customer	Dairy season 1 June to 31 May		
		0708	0809	0910 (est)
<b>Upper North Island</b>				
	Mahoe Cheese	0	0	199,030
	GF Puhoi Cheese	8,898,719	7,486,198	7,401,445
	<b>TOTAL</b>	<b>8,898,719</b>	<b>7,486,198</b>	<b>7,600,475</b>
<b>Central North Island</b>				
	Emerald Foods	2,501,114	2,758,301	3,098,672
	Goodman Fielder (Green Valley)	7,717,433	1,858,894	0
	Green Valley Dairies	6,709,119	5,958,663	6,781,157
	Kaimai Cheese	0	1,249,647	447,822
	Open Country - Waharoa	49,960,167	19,966,842	18,140,326
	Open Country (Green Valley)	95,245	0	0
	Tatua Co-op Dairy	49,960,167	49,997,829	50,440,435
	Waimata Cheese	0	1,926,174	2,674,910
	<b>TOTAL</b>	<b>116,943,245</b>	<b>83,716,350</b>	<b>81,583,322</b>
<b>Lower North Island</b>				
	Goodman Fielder Longburn	113,706,193	115,038,268	112,175,744
	Open Country - Wanganui	0	0	15,770,890
	Kaimai Te Mata Cheese	0	0	771,895
	Te Mata Cheese	656,909	1,066,642	181,644
	<b>TOTAL</b>	<b>114,363,102</b>	<b>116,104,910</b>	<b>128,900,173</b>
<b>Upper South Island</b>				
	Neudorf Dairy	0	0	45,192
	Talleys Group	577,739	1,482,023	1,318,524
	<b>TOTAL</b>	<b>577,739</b>	<b>1,482,023</b>	<b>1,363,716</b>
<b>Central South Island</b>				
	Barrys Bay Cheese	462,141	345,060	335,995
	Goodman Fielder Christchurch	87,575,764	86,869,966	96,099,555
	Klondyke Fresh	4,487,882	5,111,179	5,433,621
	Natural Dairy Products	2,930,362	2,812,322	2,439,998
	NZ Dairies	46,372,274	50,234,800	49,904,848
	Serra Natural Foods	152,268	59,494	230,972
	Synlait	0	47,320,026	48,962,167
	Talbot Forest Cheese	86,109	87,061	62,004
	Whitestone Cheese	1,482,758	1,224,680	1,291,135
	<b>TOTAL</b>	<b>143,549,558</b>	<b>194,064,588</b>	<b>204,760,295</b>
<b>Organic</b>				
	Serra Natural Foods	1,116,668	1,075,360	957,884
	Whitestone Cheese	14,350	15,703	0
	<b>TOTAL</b>	<b>1,131,018</b>	<b>1,091,063</b>	<b>957,884</b>
<b>Lower South Island</b>				
	Cadbury	13,407,169	26,191,901	23,954,764
	Evansdale Cheese	216,434	197,118	250,405
	Open Country - Awarua	0	5,810,785	16,999,371
	<b>TOTAL</b>	<b>13,623,603</b>	<b>32,199,804</b>	<b>41,204,540</b>
	<b>GRAND TOTAL</b>	<b>399,086,984</b>	<b>436,144,936</b>	<b>466,370,405</b>

Source: Fonterra

The regulations do not, however, include any express test for whether access to raw milk from Fonterra is necessary for a specific independent processor to compete in dairy markets. Instead, the regulations cap the supply to each independent processor (apart from NZDF, which is entitled to 250 million litres) at 50 million litres per year and impose no other restriction on volume. Indeed, as interpreted by the Commerce Commission, the regulations allow several parties each to access up to 50 million litres of milk from Fonterra and have it all processed in the one plant.

Table 2 indicates the extent to which regulated milk has been taken by various parties at various locations around the country over the three seasons 2007/08 to 2009/10.

These provisions would have been of no great consequence for the efficiency of the outcome if the price for regulated milk was set at an efficient level – that is, if it fully reflected the efficient price of raw milk. For, if this was the case, Fonterra would be no worse off with the regulations than it would have been without them. Its efficient costs, which include its opportunity costs from not having access to the raw milk itself, plus its own capital costs, would be fully covered by what it received from the independent processors that bought the milk.

On the other hand, if the price was set at the efficient level, the newly established independent processors would have had access to the raw material policy makers thought they needed to become established. However, it would have been available on terms not so favourable that it was significantly cheaper than the cost at which a well-established processor might be able to access milk from farmers directly. As a result, the more established processors, like NZDF and Tatua, would have quickly developed or expanded their own networks of farmer suppliers, or reached a commercial arrangement with Fonterra or some other party. In addition, successful new entrants, like Open Country Dairies, Synlait and New Zealand Dairies would have reached a commercial deal with Fonterra or some other milk aggregator or further expanded their own networks once they established greater credibility and convinced additional farmers to those they had signed up before their plants were finished to accept the risks of contracting with a smaller and newer processor. Even if independent processors reached commercial arrangements with Fonterra to provide them with additional milk that they could have collected the milk from dairy farmers at nearly the same cost would have ensured Fonterra faced greater competitive pressure in the raw milk market than it currently does.

In its recent consultation document, MAF explicitly recognised that “[t]he Raw Milk Regulations have also had the effect of allowing dairy food companies to build their business models based on the regulated milk supply rather than having it outsourced to dairy processors, other than Fonterra, or sourcing it directly from farmers”.<sup>44</sup> Established and new processors seeking to expand their own networks of suppliers to the point of self sufficiency or beyond would have helped fulfil one of the other

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<sup>44</sup> Ministry of Agriculture and Forestry (2009), paragraph 21.

objectives of policy makers – to ensure that there is competition in the market for milk at the farm gate for the benefit of farmer suppliers.

Processors developing their own supply networks would also have left more of the limited supply of Fonterra regulated milk available to assist the second and third generation of new entrant processors get established, increasing competition in the domestic market for dairy products and ultimately competition in the market for milk at the farm gate also. Indeed, if processors like NZDF and Tatuia had been unable to access regulated milk, it is possible that specialist milk collectors/aggregators would have developed in the more intensive dairying regions. As they would have been able to offer their services to new entrant independent processors, this would have increased competition for Fonterra at both the farm gate and factory door.

Instead, during the recent MAF consultation about the current regime there were complaints from small producers that they could be crowded out of dairy markets, for example, by the “protection” of 250 million litres for the well-established NZDF.<sup>45</sup> Indeed, the development of supply networks by several players could have resulted in competition among several parties to supply raw milk to independent processors. In other words, it would have also increased competition in the market for milk at the factory door, another policy objective.

So the combination of the lack of an express test on whether it was necessary for an independent processor to access Fonterra’s regulated milk and the level at which the default price was set has had unintended consequences. It has inhibited the development of competition in the market for raw milk at the farm gate and the market for raw milk at the factory door – two potentially very significant regulatory problems from two small matters.

This brings us to the second deficiency – that the default price has been set significantly below the economically efficient level and continues to be so set even under the changes introduced recently.

## 4.2 Default price of raw milk

There were four elements of “value” missing from the original default milk price:

- the difference between the wholesale milk price and the farm gate price to Fonterra
- the value to independent processors of receiving a more even supply of milk throughout the season, rather than a supply that follows the seasonal pattern of farmers’ production
- the opportunity cost to Fonterra that results from it not being able to process the raw milk it provides to other independent processors under the regulated milk regime and market the resulting products and

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<sup>45</sup> See for example the submission to MAF by Natural Dairy Products Limited, Submission 14 at: <http://www.maf.govt.nz/mafnet/publications/dairy-consultation/2010-dira-submissions.pdf>

- the value to independent processors of their flexibility to determine the volume of regulated milk they take within a wide band.

#### 4.2.1 Wholesale milk price and the farm gate price to Fonterra

The original formula for the default price was based on the wholesale milk price whereas the cost to Fonterra of regulated milk is based on the farm gate milk price – the payout made to farmer suppliers. As any independent processor would have to match or better the farm gate price to acquire milk, directly basing the default price on the wholesale milk price was inefficient. Table 3 shows the difference between the two prices over the period from 2002/03 to 2008/09. The base data have been taken from the explanatory notes to the 2010 Bill that amended the DIRA. The price differential has been material in many years, especially given the significant volumes of regulated milk sold by Fonterra at the default price.

**Table 3 Wholesale milk price and Fonterra farm gate price**

Season	Wholesale Milk Price	Fonterra farm gate milk price \$/kgMS	Difference	Volume m litres	Volume m kgMS	(Loss)/Gain to Fonterra \$m
2002/03	\$3.23	\$3.34	\$0.11	280	25.35	\$2.79
2003/04	\$3.82	\$3.97	\$0.15	282	25.53	\$3.83
2004/05	\$4.27	\$4.37	\$0.10	368	33.31	\$3.33
2005/06	\$3.55	\$3.85	\$0.30	352	31.86	\$9.56
2006/07	\$3.91	\$3.87	\$0.04	333	30.14	\$1.21
2007/08	\$7.24	\$7.59	\$0.35	408	36.93	\$12.93
2008/09	\$4.67	\$4.72	\$0.05	441	39.92	\$2.00

Source: Explanatory note of the Dairy Industry Restructuring (Raw Milk Pricing Methods) Bill 2010 and Fonterra (volume of DIRA milk).

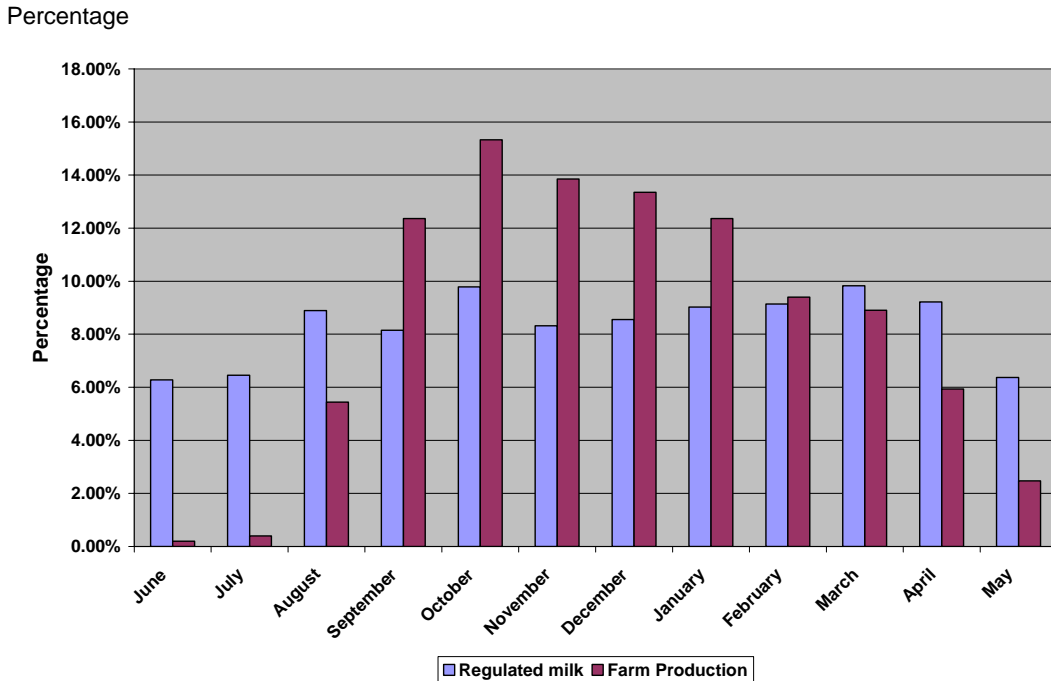
Officials recognised this policy error in the recent amendments and the latest regulations link the default price to the Fonterra farm gate price, not the wholesale milk price.

#### 4.2.2 Value to independent processors of an even supply

The second element missing from the original default milk price was the benefit to independent processors from the availability of regulated milk allowing them to “square” the annual supply profile so they have access to additional milk in the shoulders of the season than they would have if they were dependent on the natural seasonal flow of milk from farmer suppliers. The Raw Milk Regulations contain what is referred to as the “October 110% rule”. This limits the amount of regulated milk an independent processor can require Fonterra to supply to it in any month from August until May to be no more than 110% of the amount supplied in the month of October in the same season.

The intention behind this rule is to limit the ability of independent processors to use access to regulated milk to obtain significantly larger quantities of milk in the shoulder months of the milk season than they obtained in the month of October when milk output is generally at its highest. The regulation has not, however, stopped independent processors from squaring up their production profiles.

**Figure 2 Comparison of season patterns of regulated milk deliveries and farm production 2003/04 to 2009/10**



Source: NZIER and Fonterra

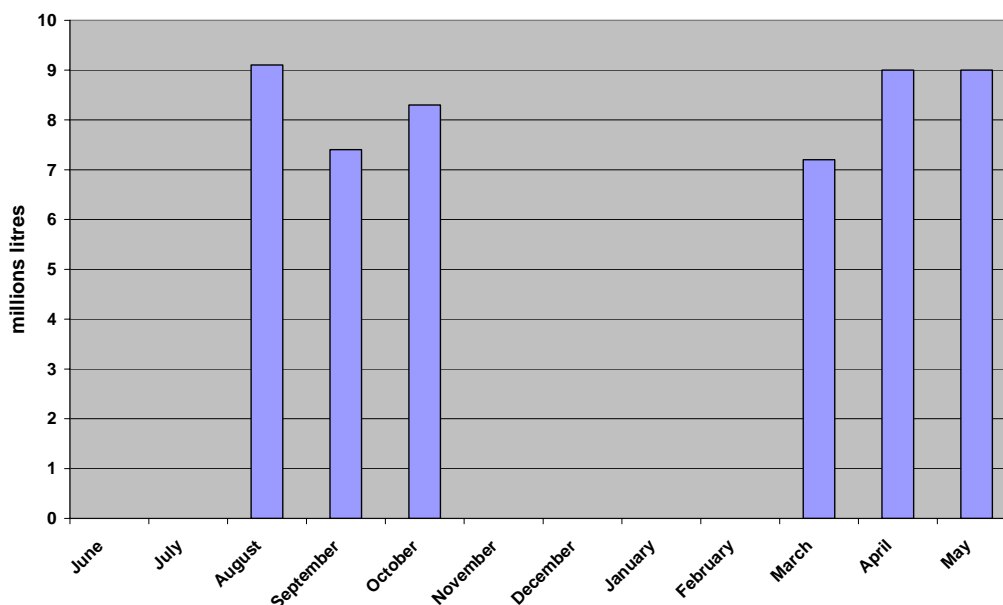
A squarer “supply” of milk allows an independent processor to improve its plant utilisation over the course of a season. It also allows the processor to smooth its inventory holdings to some extent, which allows it to reduce its working capital costs.

According to the explanatory notes to the 2010 Bill to amend DIRA, if independent processors maximised their use of the “October 110% rule”, the additional cost to Fonterra would be \$0.155 per kilogram of milksolids above the farm gate milk price. For this reason, officials proposed the default price from the 2010/11 season should contain a \$0.10 per kilogram of milksolids “seasonal premium”.<sup>46</sup> This reflected the estimated cost based on the actual profile of regulated milk taken by independent processors in aggregate.

<sup>46</sup> See Explanatory Notes to 2010 Bill.

**Figure 3 Westland's Regulated Milk Forecast 2010/11**

Millions of litres



Source: Data provided by Fonterra

We have undertaken our own calculations of the value to an independent dairy processor of access to 50 million litres of regulated milk. We have used the 2009 annual accounts of Westland Milk Co-operative Limited (Westland) as representing the costs structures of independent processors in general. We have used the data to derive estimates of the variable costs of processing a kg MS and the resulting revenue in 2009. To these estimates we have added the cost of regulated milk and the average cost of transporting regulated milk to independent processors.<sup>47</sup> Our calculations are set out in Table 4. This shows that, under these assumptions, the benefit from accessing 50 million litres of regulated milk would amount to \$1.15 per kilogram of milksolids, or \$5.22 million in total for the 50 million litres.

Our estimate is based on the assumption that the independent processor can process all the regulated milk it receives as a result of its orders. We believe this is realistic. However, if the independent regulator spread its orders as Westland has done for the 2010/11 season and had to dump all the 8.3 million litres it ordered in October, its economic profit from the exercise would still be \$1.4million or \$0.31 per kilogram of milksolids of regulated milk bought. In other words, the current regulations provide independent processors with an incentive to order regulated milk for delivery by Fonterra even if they have no capacity to process that milk and intend to dump it. The inefficiency of such an outcome under the Raw Milk Regulations is obvious

<sup>47</sup> The costs of transporting milk to Westland would be considerably higher than the estimate we have used here which is an average transport cost.

**Table 4 Estimated economic benefit from purchasing DIRA milk to “square” supply**

		\$/kgMS
Variable processing costs		\$0.86
Regulated milk transport costs		\$0.27
Fonterra farm gate price		\$4.72
Regulated milk premium		\$0.10
<i>Total costs</i>		<i>\$5.95</i>
Revenue from sale of goods (\$000)	\$320,961	
Reduction in inventories (\$000)	\$4,165	
Net revenue (\$000)	\$316,796	
Total production m kgMS	44.6	
<i>Total revenue</i>		<i>\$7.10</i>
<b>Profit</b>		<b>\$1.15</b>
Volume 50 m litres in m kgMS	4.526	
Profit for 50 m litres (\$000)	\$5,222	

Notes: (1) Assumes Westland’s 2008/09 processing cost structure and revenue per kgMS is representative of independent processors in general.

(2) Assumes 50 million litres of regulated milk is all able to be processed using existing plant and equipment

(3) Uses 2008/09 farm gate milk price plus \$0.10 per kgMS premium for regulated milk

Source: Calculated by NZIER using Westland Annual Report 2008/09

Clearly, officials’ estimate of \$0.155 per kilogram of milksolids as the maximum potential cost to Fonterra of independent processors maximising their use of the “October 110% rule” to “square” their production falls far short of the mark. Fonterra’s own variable costs for producing bulk commodities like Westland produces are not materially different from Westland’s. In place of a \$0.10 per kilogram premium to the farm gate price in the Raw Milk Regulations, a more realistic figure **for this factor alone** in 2008/09 would be \$1.15 per kilogram of milksolids greater than the \$0.10 included in the costs in Table 4, or \$1.25 per kilogram. Since returns were adversely impacted in this year by the global financial crisis, the estimate of \$1.25 per kilogram of milksolids is probably conservative.

#### 4.2.3 Opportunity cost to Fonterra of reduced scale

There are significant economies of scale in the processing of milk and marketing of dairy products. The long history of amalgamations in the industry since the late nineteenth century, during which time the industry expanded considerably in volume terms while the number of independent processing factories and companies went

from hundreds to a small handful, demonstrates the economic significance of these scale effects.

Economies of scale are conceptually distinct from the factor we have analysed above. There we considered the economic benefit available to a dairy company from being able to increase the volume of throughput during the year **given its existing size of plant**. With higher throughput, the fixed costs are spread over a larger volume, reducing the unit cost of output. Economies of scale and scope relate to the efficiencies in terms of lower average costs which can be achieved by varying the overall size of a plant or scale or scope of production – the gains in terms of lower costs of production and marketing of having larger rather than smaller plants and total outputs. Economies of scale can typically be captured only by investment in new plant or the development of a brand and so tend to be captured over a period of time.

Requiring Fonterra to reduce its throughput by up to 5% while the Raw Milk Regulations remain in force will undoubtedly impose an opportunity cost on it in terms of forgoing some scale efficiencies because its throughput and the volume it has to market will be smaller by the amount of regulated milk it provides to independent processors that it would not have provided in the absence of the regulations.

There has been no adjustment in the default price for this opportunity cost and none is planned under the proposed new method of calculating the default price. Economies of scale forgone are as real a cost to Fonterra and New Zealand as the cost of any input. This cost is incurred in relation to all the raw milk that would have been collected by Fonterra and all the products it would have produced and marketed in the absence of the DIRA and not just the regulated milk Fonterra provides to independent processors under the raw milk regulations. For this reason, this cost can be significantly greater than the value of regulated milk. The beneficiaries of this cost are the firms being given access to regulated milk. Unless they face the cost of this loss, they will demand more regulated milk than is efficient for New Zealand as a whole. The default price should reflect this opportunity cost so that the buyers make efficient decisions.

The cost is incurred in relation to Fonterra's value added to the milk it collects. Using data published in Fonterra's 2008/09 annual accounts we have estimated the processing value added in that year to be \$3.99 per kilogram of milksolids:<sup>48</sup> This figure does not include any of the value added in international marketing but includes some value added in downstream processing owned by Fonterra. To be conservative we shall use \$2.00 per kilogram of milksolids as our estimate of the value added to which the loss in economies of scale applies.

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<sup>48</sup> To arrive at this figure we have taken the New Zealand geographic segment revenue from p. 75 (\$10,904m) less the cost of milk from p.37 (\$5,793m) to arrive at an estimate of the revenue attributed to New Zealand processing (\$5,111m). We have divided this by the volume of milksolids collected (1,281m kg) to arrive at an estimate of \$3.99 per kilogram of milksolids.

We do not know of any detailed estimates of the economies of scale in dairy production and marketing from which the efficiency loss to Fonterra and the economy could be accurately estimated. This does not mean the efficiency loss is not real. Even if the reduction in Fonterra's raw milk throughput due to the regulations resulted in Fonterra's economic costs of production, shipping and marketing, including the cost of capital, being 0.25% higher than otherwise, this would amount to a loss of 0.25 cents for every dollar of value added to produce 1 kilogram of milksolids output. If 0.25 cents is applied to our estimate of Fonterra's value added of \$2.00 per kilogram of milksolids, this amounts to a loss of \$0.005 per kilogram of milksolids. We believe these are modest estimates, given the economic history of the dairy industry being, for many years, one of continual amalgamation of neighbouring co-operatives, rationalisation of plant and use of a centralised marketing organisation, all of which indicates the presence of strong economies of scale (and scope) in processing and marketing dairy products.

#### 4.2.4 Volume flexibility or optionality

The fourth element missing from the original default price is the value to independent processors of their flexibility to determine the volume of regulated milk they take within a wide band. Fonterra, and any other processor or specialist aggregator, buying directly from a network of farmer suppliers has to take all the milk the farmers produce. The processor with farmer suppliers has to be able to deal with unexpectedly high milk flows and to process this milk, store it, transport it to another plant with capacity or bear the economic loss of disposing of some or all of the excess. It also has to be able to manage currency and interest rate risks and to fulfil contracts to supply long-term customers and avoid disturbing market balances when there are unexpectedly low or high milk volumes in a season due to variations in weather. Moreover, Fonterra and others with contracts to take milk from farmers have to manage unexpected plant outages, transport disruptions and other interruptions.

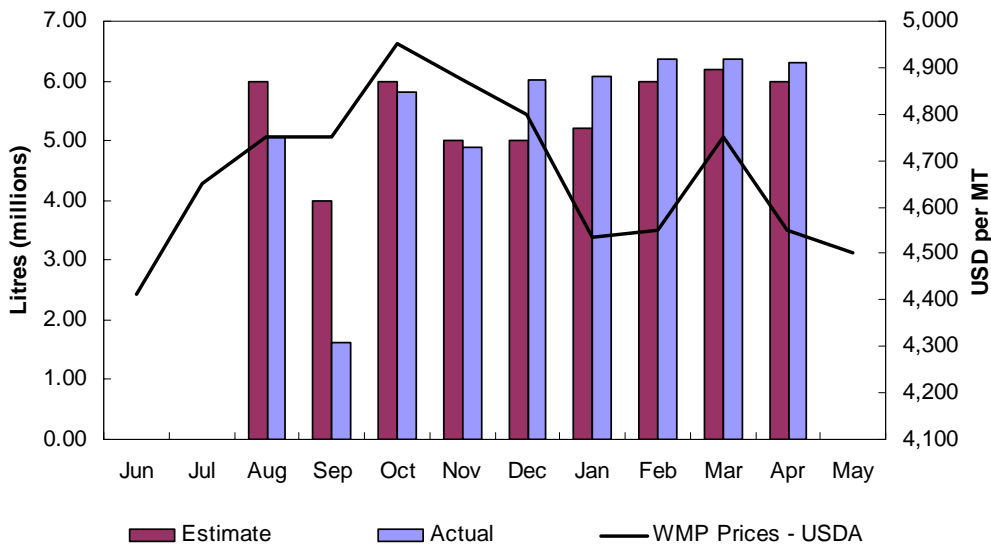
All this imposes costs. These costs can be largely avoided by the independent processors accessing regulated milk as they have considerable flexibility around the volume of regulated milk they take and can use this flexibility to eliminate totally or very substantially the costs of managing the variable and somewhat unpredictable supply from farmers.

As we have noted, the current regime requires an independent processor wanting to take regulated milk during the main season to provide Fonterra with an estimate of the supply it wants three months in advance. Prior to one week from delivery the independent processor may give a second estimate of volume. This should be within +/-40% of the first estimate. When it comes time for delivery, the independent processor is required to take up to 80% of its second estimate but can take up to 120%. This means that the actual volume delivered should be between 48% and 168% of the original estimate. However, the regulations prohibit Fonterra imposing take-or-pay conditions on independent processors, which means they can effectively cancel orders or very sharply reduce them because Fonterra does not have an effective sanction available.

More specifically, the current Raw Milk Regulations have permitted independent processors to largely avoid the consequences of autumn droughts by taking regulated milk. For example, in the 2009/10 season, neither Tatua nor Open Country Dairies (OCD) included any requirement for regulated milk in May 2010 in their annual estimates submitted to Fonterra prior to the start of the 2009/10 season. Dry conditions negatively impacted milk production in the Waikato in the autumn of 2010 and the whole milk powder price rose sharply over the season. At the beginning of 2010, both Tatua and OCD submitted orders requiring regulated milk in May 2010. Tatua ordered 5.8 million litres and OCD 5.3 million litres, a total of 11.3 million litres between them. Both required delivery in the Waikato. The combined deliveries to these two entities corresponded to 24% of Fonterra's actual milk collection in the Waikato in May and 29 per cent of its collection in the second half of May.

The level of these purchases also precluded Fonterra from taking full advantage of the higher prices at the end of this season. This had the effect of lowering Fonterra's overall farm gate price, and hence of lowering the cost of regulated milk to independent processors in the 2009/10 season. Tatua and OCD also used access to regulated milk to maintain their production until late autumn in the 2007/08 season. This was another period of abnormally low production in the Waikato.<sup>49</sup>

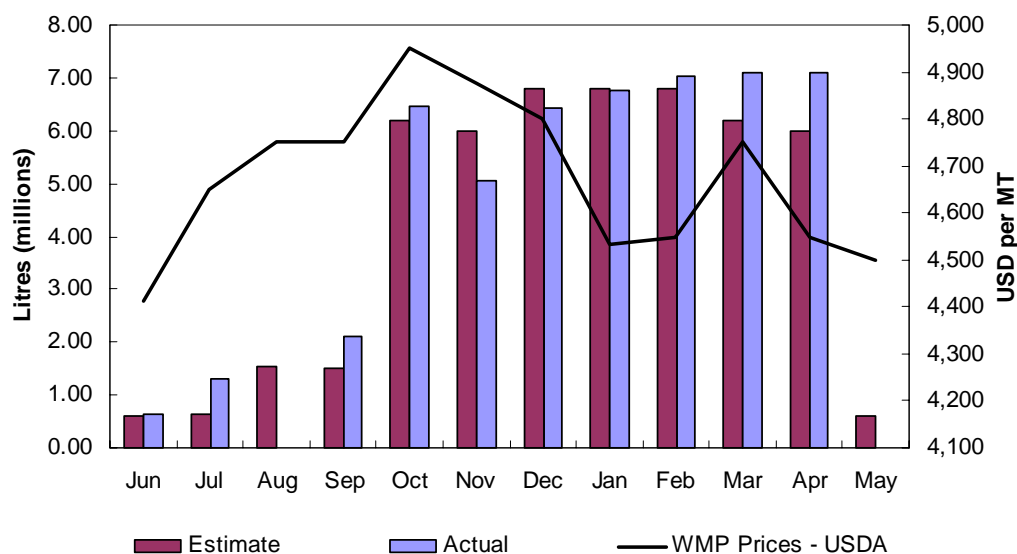
**Figure 4 Tatua regulated milk 2007/08 season**



Source: Fonterra

<sup>49</sup> Personal communication from George Morrissey, Fonterra, 19 May 2010.

**Figure 5 Open Country Dairies regulated milk 2007/08 season**



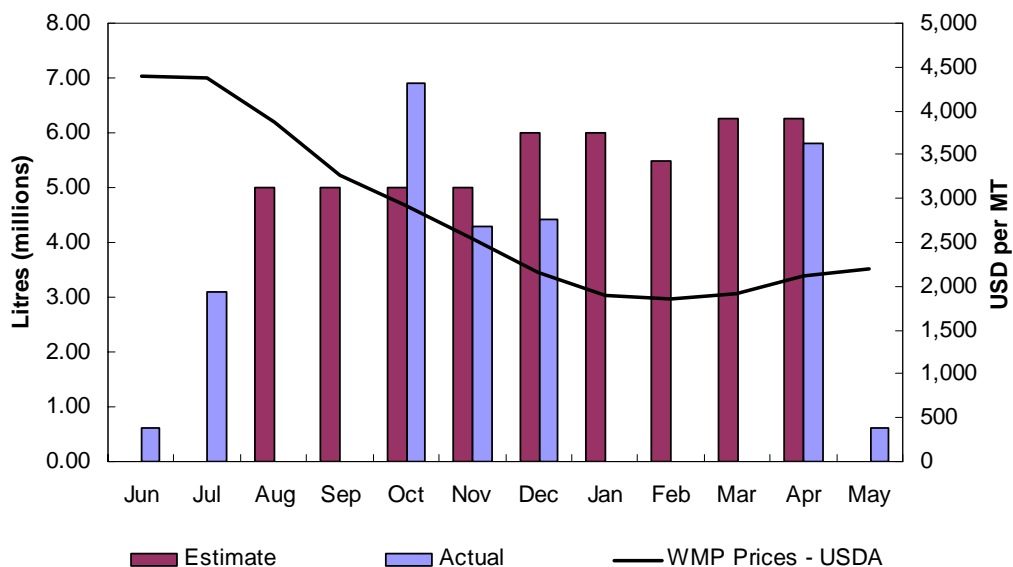
Source: Fonterra

Another option the Raw Milk Regulations provide to independent processors is to arbitrage between the physical market and the default price. We have already noted this as an element of the behaviour of Tatura and OCD in the second half of the 2009/10 season. Both have increased their orders in May to take advantage of the recent rise in price by being able to buy milk at the seasonal average price. OCD used the flexibility in the 2008/09 season, but, on this occasion, to avoid the consequences of falling prices.

Between June 2008 and February 2009, the international whole milk powder price fell from around US\$4,400 per metric tonne to around US\$1,800 per metric tonne, a decline of nearly 60%. The default price for regulated milk fell only 35% between the 2007/08 and 2008/09 season, from \$7.24 to \$4.67 per kilogram of milksolids. OCD responded to the decline in price by taking less than its initial nominated quantities in November and December 2008 and cancelling entirely its original estimates totalling 17.7 million litres over January to March 2009.<sup>50</sup> Again there was the secondary effect of leaving Fonterra with more milk to sell at the bottom of the cycle, with the result of dragging down the default price for regulated milk, which is based on a seasonal average price.

<sup>50</sup> Personal communication from, Fonterra, 10 May 2010.

**Figure 6 Open Country Dairies regulated milk 2008/09 season**



Source: Fonterra

In essence, the current Raw Milk Regulations provide independent processors with call options over milk against Fonterra at the default milk price; they force Fonterra to be an option writer or a writer of financial insurance policies without receiving any premiums. These options or insurance policies have a value.

In general, the value of an option, or the premium a rational buyer and seller would trade it at, depends partly on its intrinsic value (the amount it would be worth if exercised immediately, which is dependent on the price at which the option can be exercised and the current market “price” of what it is the option relates to) and partly on its time value. The latter is determined by:

- the variability of the returns that might be achieved; the more variable the greater the option is worth, all else being equal and
- the time the option has before it expires; the longer the option lasts the more it is worth, all else being equal.

Given the significant costs that the astute exercise of the options granted to independent processors by the Raw Milk Regulations will help mitigate or avoid, the wide variety of risks they provide insurance against, that they are for up to nearly a year and that their exercise price is the default price, which, as we have already shown, is well below the true value to independent processors of regulated milk,<sup>51</sup> these options have a significant value. This value has been missing from the default price and remains so even under the new pricing regime. Given the complexity of the

<sup>51</sup> Using the terminology applied to options, the options have a strike price that at the beginning of the season is well “in-the-money”.

optionality implicit in default milk, the only reasonable way to ascertain their value is through establishing a market for them.

As the regulations do not permit Fonterra to impose any take-or-pay conditions on independent processors in relation to regulated milk, it cannot be sure that milk ordered will be taken and, if not taken, will be paid for. So while the option element in the Raw Milk Regulations allows flexibility for independent processors, Fonterra is still required to have available the capacity to process the milk if it is not taken or suffer the economic loss of selling the milk for a low value use like calf rearing or dumping it and managing the environmental costs and public concern this would undoubtedly raise. The option element provides independent processors with considerable flexibility, but reduces Fonterra's flexibility in planning its production and marketing as it has to provide for the contingency that regulated milk that independent processors have earlier indicated they will require is not taken on short notice.

#### 4.2.5 Impact of auctioning regulated milk

The values of these options may or may not be captured in the default price if the provision in the recent legislation to auction access to regulated milk were implemented. Whether they are captured or not will depend on the design of the auction and also on whether the prices set at auction are competitive prices. If the auction is for a fixed volume on a take-or-pay basis, for example, it would remove the flexibility and the optionality would not be captured in the default price; but neither should it be, as there would no longer be any flexibility for buyers of regulated milk around volume for Fonterra to manage. This reflects that the introduction of a take or pay provisions would remove the optionality, whether associated with introducing an auction or otherwise. If any auction process adopted is not competitive the prices are unlikely to be efficient and reflect the value of the options, even if the design of the auction is such that they should.

The opportunity cost of the economies of scale lost by Fonterra as a result of it having less milk to process and market would not be captured in auction prices, irrespective of the design of the process. No party would have an incentive to bid in an auction to compensate Fonterra for its loss in this regard. What participants in a competitive auction would be willing to pay to receive regulated milk is their own benefit from increased economies of scale from being able to process more milk than they would otherwise. This may fully or partially compensate Fonterra for its own loss of scale.

### 4.3 Maintenance of the current regulatory regime

#### 4.3.1 Incentives to support it

The third area of deficiency is the incentive the regime provides for parties to lobby for the extension of the industry-specific regulations beyond the time when the efficient outcome for the economy as a whole would be for these to lapse.

We have already noted that under the regulated milk regime, as currently implemented, the present outcomes are:

- a net reduction in competition for raw milk at the farm gate
- reduced competition to provide raw and partially processed milk at the factory door
- potentially reduced competition for dairy products in domestic markets, all else being equal, and
- a default price that is inefficient because it:
  - does not accurately reflect the value to independent processors of receiving a more even total supply of milk throughout the season
  - does not reflect the opportunity cost of Fonterra's loss of economies of scale and scope through the reduction in its milk throughput in processing and the amount of product it has to market and
  - does not reflect the value to independent processors of their flexibility to determine the volume of regulated milk they take.

A number of these outcomes, including reduced competition at the farm gate and the effects on default prices, favour existing independent processors. These processors have incentives to lobby vigorously to maintain the current regime and oppose auctions. Their behaviour appears consistent with this.<sup>52</sup>

Aspiring independent processors have incentives to be more critical of the current regime's effects on competition than they are critical of the default price. In fact, their self-interest points them towards being in favour of the default price and opposed to auctions, provided they can be assured of access to milk under some regime. Again, this broadly matches the observed behaviour.

Overall, a number of parties have reasonably strong incentives to ensure that Fonterra remains obligated to provide regulated milk and the default milk price continues to understate the efficient price. Regulations are resulting in outcomes contrary to the stated intention in regard to stimulating competition in the markets for milk and leading to inefficient price signals about the true economic costs of regulated milk to the country. With Fonterra the only party likely to highlight the deficiencies in the current regime, and its objections likely to be perceived as pursuing its own interests rather than good regulatory practice, the weight of numbers is likely to be on the side of those in favour of the current regime continuing.

#### 4.3.2 Sunset clauses and required competitive conditions

One aspect of the current regulatory regime that is helping those with an interest in lobbying for its retention after the present sunset clauses in the legislation have been triggered is the manner in which these clauses are framed. Neither of the sections in the DIRA specifying the sunset conditions sets out explicitly the kind of markets for

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<sup>52</sup> See for example the submissions to MAF by Kaimai Cheese Company Limited, Natural Dairy Products Limited and Westland.

milk and dairy products that policy makers expected would exist in the two islands when these conditions are met, although they do provide some guidance.

It is safe to assume that policy makers thought the markets would be sufficiently competitive to safely remove the industry-specific regulations and to rely on:

- the general provisions in the Commerce Act for dealing with market power
- the supplier protection features of the Fonterra Constitution
- the incentives on Fonterra to maintain productive and dynamic efficiency and be technically innovative because of the strong competition it faces in global markets for dairy products and
- the incentive on Fonterra to offer financial returns and impose conditions that satisfy the vast bulk of its suppliers so as not to lose the benefits of economies of scale and scope in collection, processing and marketing.

But any analysis to support this view has been lost. What is clear from the text and provisions in the DIRA and the key parliamentary speeches by the Responsible Minister which accompanied its introduction in 2001 is that the policy makers who helped shape the legislation were strongly influenced in their approach by the notion of “contestability”.

Section 4(f) of the DIRA states the aim for the regime is to “promote the efficient operation of dairy markets in New Zealand by regulating the activities of new co-op to ensure New Zealand markets for dairy goods and services are **contestable**” [emphasis added].

The Hon Jim Sutton, the Minister Responsible for the Bill, in response to pre-first reading Questions to the Minister, stated: “The regulatory package in the bill is designed to ensure contestability and efficiency in the dairy sector”.<sup>53</sup> During the first reading the Minister summarised the philosophy and approach as:

*Once the merger has occurred the entire industry will be covered by the competition rules in the Commerce Act, like other industries, for the first time. The regulatory package is designed to create a contestable environment. Among other things this package allows for open entry and exit of farmers from the merged company, reasonable ease of movement by milk suppliers to competing processors, and regulations to ensure that independent processors can source milk and other dairy goods and services from the merged entity.*<sup>54</sup>

The essence of contestability is relatively free entry and exit. More specifically:

- potential competitors exist who can enter and leave a market without loss of capital and

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<sup>53</sup> Hansard, Jim Sutton, 19 June 2001 (Questions to Minister)

<sup>54</sup> Hansard file docoraGf2 (2).html Jim Sutton 26 June 2001 (First reading).

- new entrants and incumbents compete on the same terms as they have the same cost structures.

Contestability focuses on creating realistic threats of competition entering a market to keep a player with market power in check, rather than on limiting the share of the market the major organisations may have.

The theory had very considerable influence on the development of New Zealand's reforms from the mid-1980s.<sup>55</sup> Its attraction was it showed that even if the market is characterised by one or a few firms, which many New Zealand markets are, the desirable efficiency outcomes of competition can be achieved without large numbers of competitors. What is required is to create the conditions of contestability of the market by removing entry barriers and opening up the market to potential competition.<sup>56</sup>

The central questions that should determine whether or not the industry-specific regulation of the dairy industry should continue and, if it should, the form it should take are:

- what are the objectives of regulation and are they appropriate?
- what criteria should be used to assess different regulatory options to ensure they meet their objectives and avoid unintended consequences?
- what are the regulatory options available to the government for the dairy industry, including the option of not regulating?
- which of the various regulatory options, including the option of not regulating, is optimal when assessed against the appropriate criteria?

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<sup>55</sup> Bollard, A.E. (1997) *A Brief Summary of Competition Policy in New Zealand*, ACCC/PURC Training Program on Utility Regulation.

<sup>56</sup> Bollard, A. (1987) More market: the deregulation of industry, in Bollard, A. and Buckle. R; (eds.) *Economic Liberalisation in New Zealand*, pp.35-37.

## 5. Criteria for assessing regulatory options

### 5.1 Good regulatory practice

Economic regulation involves both direct and indirect costs and can also lead to unintended consequences or regulatory failures. The “cure” can be worse than the “disease” in terms of the impact on society’s economic welfare. The obvious question is what regulatory practices are likely to optimise the quality of decision making in relation to whether or not to regulate and the form any regulation should take?

### 5.2 Ministry of Economic Development

In the discussion paper issued by the Ministry of Economic Development as part of a recent review of regulatory control provisions under the Commerce Act, the Ministry listed the following as the desirable characteristics of a regulatory regime:<sup>57</sup>

- regulatory uncertainty is minimised and stability and predictability of regulatory outcomes are improved over time
- regulatory approaches are consistent and coherent across different firms/industries and over time
- regulatory processes are transparent, cost-effective and timely and also tailored to New Zealand’s small scale in terms of resources and business size
- the regulatory regime is sufficiently flexible to account for firm or industry-specific circumstances, changing market conditions, innovation and experience and
- there are appropriate levels of regulatory accountability and independence.

### 5.3 Government Statement on Regulation

More recently, in August 2009, the government issued the *Government Statement on Regulation: Better Regulation, Less Regulation*. The key points of this were that:<sup>58</sup>

*[Ministers and government agencies] will resist the temptation or pressure to take a regulatory decision until we have considered the evidence, advice and consultation feedback, and fully satisfied [themselves] that:*

- *the problem cannot be adequately addressed through private arrangements and a regulatory solution is required in the public interest;*
- *all practical options for addressing the problem have been considered;*

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<sup>57</sup> Ministry of Economic Development (2007) *Review of Regulatory Control Provisions under the Commerce Act 1986 - Discussion Paper*, April 2007, p.13.

<sup>58</sup> The Government Statement on Regulation: Better Regulation, Less Regulation, Released by Hon Bill English and Hon Rodney Hide on 17 August 2009, at: <http://www.treasury.govt.nz/economy/regulation/statement/govt-stmt-reg.pdf>

- *the benefits of the preferred option not only exceeds the costs (taking into account all relevant considerations) but will deliver the highest level of net benefit of the practical regulatory options available;*
- *the proposed obligations or entitlements are clear, easily understood and conform as far as possible to established legislative principles and best practice formulations;*
- *implementation issues, costs and risks have been full assessed and addressed.*

We consider this government statement provides a very good framework for deciding whether to regulate and for choosing among the regulatory options available. To it, we would add two further points:

- that all of the considerations that go into the decision should be transparent and
- consistency and predictability of economic regulation are also very important.

## 5.4 Transparency

Given the risk that the regulatory “cure” may be worse than the “disease”, it is important that in every regulatory decision, whether at the policy level or in implementing policy, careful consideration be given to whether any regulatory action is warranted. The analysis of regulatory options should be formalised into a cost-benefit analysis framework and the various benefits and costs of different regulatory interventions should be quantified, wherever possible.<sup>59</sup> Any uncertainty about outcomes can be handled by conducting sensitivity analysis or assigning probabilities to outcomes and analysing the expected outcome and the possible distribution around it.

The advantages of transparent consideration and quantification of benefits and costs are that they:

- improve the rigour of the analysis as they require the key assumptions and the rationale for decisions to be clearly laid out and made open to scrutiny
- increase the likelihood that the regulator’s decisions are accepted because their basis is clearly explained
- improve the predictability of the regulator’s decisions in future cases as people find it easier to understand the perspective of the regulator and
- assist in making decisions consistent by exposing the details of decisions and making comparisons between decisions much easier.

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<sup>59</sup> On the desirability of quantification in cost-benefit analyses see Richardson J’s decision in *Telecom Corp of NZ Ltd v Commerce Commission* ([1992] 3 NZLR 429).

## 5.5 Cost-benefit analysis

Cost-benefit analysis provides a formal, structured method for systematically assessing proposals in terms of their outcomes relative to their use of resources. The process comprises 10 steps:

1. define the problem
2. select the options for assessment (proposal and alternatives)
3. specify the baseline scenario
4. identify the impacts of the options – positive (benefits) and negative (costs)
5. where possible, quantify the impacts
6. where possible, value the impacts
7. adjust for differences in the timing of the impacts
8. calculate decision criteria
9. analyse the sensitivity of the results to changes in uncertain parameters and
10. document the cost-benefit analysis.

In the analysis of government regulatory policy, the analysis is normally undertaken from a national economy perspective, weighing up the relative benefits and costs to New Zealand as a whole. Wealth transfers between parties, although affecting the distribution of benefits and costs, cancel each other out in the aggregation of total benefits and costs to New Zealand (i.e. where a cost to one party is an equivalent benefit to another party).

A critical step in any cost-benefit analysis is specifying the baseline scenario – the default or prevailing situation or conditions that would occur in the absence of the proposal and any alternatives under consideration. It is relative to this baseline that the benefits and costs of the proposal and any alternatives are measured. For assessments of existing regulatory policy, it is common to assume a baseline of continuation of the status quo. In this case, however, it is important not to exclude the “no regulation” option without fully considering it.

## 5.6 Consistency and predictability

Consistency in regulatory policy decisions tends to be supported by the use of rigorous analysis of options and decision making criteria like cost-benefit analysis. Consistency also leads to predictability of the likely regulatory outcomes in a given situation.

Predictability is an essential requirement for the industries subject to regulation to be able to confidently plan for the future and be assured that their investments will generally not be threatened by unexpected changes in the regulatory environment. The principle is particularly important in sectors characterised by significant and long-term investment commitments as investors need to be confident that their investments will not be stranded or impaired by some unexpected regulatory change.

The dairy processing industry is one characterised by long-term commitments by investors.

## 6. Regulatory options available

### 6.1 Define the problem

We noted in Section 3.6 that the objective of New Zealand's dairy industry-specific regulation is set out clearly in the DIRA. It is to mitigate the market power that might be held by Fonterra. This is to be achieved by the creation of instruments designed "to promote the efficient operation of dairy markets in New Zealand by regulating the activities of [Fonterra] to ensure New Zealand markets for dairy goods and services are contestable".<sup>60</sup>

We also noted in Section 3.6 that:

- economists recognise three forms of economic efficiency – allocative, productive and dynamic; regulatory options that will not produce efficient outcomes in any of these three regards are clearly inconsistent with the objective
- the objective is not to transfer wealth from one group in the community, say Fonterra suppliers, to others, say the shareholders or suppliers of independent processors; the objective is the fundamental tenet of economics of improving society's overall economic welfare by promoting efficiency in the operation of markets
- the objective of industry-specific regulation of Fonterra is appropriately well-aligned with the general objectives of New Zealand's competition policy
- the objective is not to shrink Fonterra in size to the point where it has no market power and a relatively small share of each market in New Zealand; achieving efficient market outcomes without this would be fully consistent with the stated objective and
- that the objective is to improve the efficiency of dairy markets in New Zealand has a clear implication for the assessment of regulatory options; it means that when it comes to assessing the benefits and costs associated with the various options, it is the net public benefits that should be measured and assessed; effects that merely transfer wealth within New Zealand should be disregarded from the overall assessment; the relevant question is, from all the alternatives available, including doing nothing, which regulatory option yields the highest positive net public benefit; which option minimises the loss in consumers' and producers' surpluses through inefficiency?

### 6.2 Select the options for assessment

We have identified eight feasible regulatory options for assessment of their capacity to promote the efficient operation of dairy markets in New Zealand by regulating the activities of Fonterra, to ensure New Zealand markets for dairy products are contestable. Some of these have overlapping features and there are obviously other possibilities which combine various elements from different options. However, for the

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<sup>60</sup> DIRA, s. 4(f)

purpose of understanding the benefits and costs of various options, we believe the eight we have chosen are appropriate.

### 6.2.1 Option 1 (Retain the status quo)

Retain the status quo – no change. This would result in the current provisions in Subpart 5 of Part 2 of the DIRA and the Raw Milk Regulations continuing as they are currently until the sunset clauses in the DIRA are triggered and the provisions cease to have effect. For the industry-specific provisions contained in the DIRA itself (the DIRA provisions), this would occur:

- in the North Island when 12.5% or more of the total raw milk quantity collected directly in the season from North Island farmers is collected by independent processors in the North Island<sup>61</sup> and
- in the South island when independent processors collect at least 65 million kilograms of milksolids in the South Island, at least 25 million of which is collected by one independent processor from farmers outside of the Westland Regional Council boundaries.<sup>62</sup>

For the industry-specific regulations, including the information disclosure requirements placed on Fonterra by the Raw Milk Regulations (the Raw Milk Regulations provisions), this would occur when both of the above thresholds have been triggered. So, for example, the Raw Milk Regulations provisions relating to Fonterra providing independent processors with regulated milk would continue to be effective in the North Island even if the 12.5% threshold had been triggered, provided the South Island threshold had not also been triggered.

Once the industry-specific regulations cease to be effective, there would still be the generic Commerce Act provisions and the provisions in Fonterra's own Constitution, which are entrenched and require Shareholders' Council approval to change. There would also be the threat of the reintroduction of industry specific regulations through further legislation.

Our Option 1 is essentially Approach 1 (Modified status quo) in MAF's 2009 consultation document on the future of the regulatory regime in the dairy industry, although MAF also considers the sub-option of phasing out the industry-specific regulations more slowly than under the status quo once the sunset criteria are met.<sup>63</sup>

### 6.2.2 Option 2 (Remove industry-specific regulations)

Repeal the existing industry-specific regulations contained in the DIRA and the Raw Milk Regulations. The earliest this could be implemented is the 2011/12 season. Repeal would not leave a regulatory vacuum as there would still be the relevant generic Commerce Act provisions – sections 27, 36, 47 and Parts 4 and 5 – and the

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<sup>61</sup> DIRA, s. 147.

<sup>62</sup> DIRA, s. 148.

<sup>63</sup> Ministry of Agriculture and Forestry (2009), paragraph 80.

provisions in Fonterra's own Constitution, which are entrenched and require Shareholders' Council approval to change.

Industry-specific regulation, such as New Zealand has for the dairy industry, is somewhat unusual in a modern deregulated economy, so the reason for it existing warrants close scrutiny. Moreover, one of the key points of the government's recent policy statement on regulation is that the option of no regulation has to be seriously considered.

### 6.2.3 Option 3 (Extend the industry-specific regulations indefinitely)

This option could be achieved by amending sections 147 and 148 of the DIRA that contain the sunset clauses. The consequence would be that the current DIRA and Raw Milk Regulations would be extended indefinitely. The difference from Option 1 is that there would be no trigger mechanism to end the regulations, so the economic consequences could last as long as the regulations continued to be used.

In its recent consultation document, MAF proposed a variant on this option in which sections 147 and 148 would not be repealed but instead be replaced with more stringent quantitative criteria before the industry-specific regulations are removed. It referred to this option as Approach 2.<sup>64</sup> MAF does not specify what the more stringent sunset thresholds should be which makes it impossible to effectively assess its proposed approach.

### 6.2.4 Option 4 (Extend the Raw Milk Regulations only)

Extend the Raw Milk Regulations only and not the other aspects of the policy specified directly in the DIRA. The other aspects of the regime would expire as under the current law when the North and South Island thresholds are triggered.

Once again, this is a variation on an option put forward by MAF in its recent discussion document. Under MAF's Approach 3, the DIRA provisions would expire based on the current sunset provisions except the Raw Milk Regulations would be extended by setting more stringent thresholds than at present.<sup>65</sup> MAF does not specify what the more stringent sunset thresholds should be. This makes it effectively impossible to assess MAF's Approach 3.

### 6.2.5 Option 5 (Remove "established" processors access to regulated milk and review and amend the DIRA provisions)

Under this option, the Raw Milk Regulations would be amended to reduce their anti-competitive elements by removing access to regulated milk from "established" independent processors' with their own supply.

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<sup>64</sup> Ministry of Agriculture and Forestry (2009), paragraph 81.

<sup>65</sup> Ministry of Agriculture and Forestry (2009), paragraph 83.

The soon to be established New Zealand Productivity Commission would conduct an investigation of the level of contestability of the markets for milk and dairy products in each island of New Zealand every five years with a view to recommending whether the DIRA provisions remain in force. The first review would take into account Fonterra's capital restructuring.

The Australian Productivity Commission has a similar role in relation to the regulation of airports in that country and the process has generally been considered to work well by all industry participants and consumer interests. Over time, it has led to a significant relaxation of regulatory controls on Australian airports while managing many of the difficulties that have dogged relationships between airports and airlines in New Zealand.

This option is the proposal which Fonterra put forward in response to the MAF review in 2009, except Fonterra did not suggest the review should be conducted by the new Productivity Commission every five years. It proposed a one off review, which would have been most likely carried out by the Commerce Commission. The Productivity Commission should be able to conduct such a review for less cost than the Commerce Commission because it is less constrained by legal processes.

#### **6.2.6 Option 6 (Amend the Raw Milk Regulations)**

Amend the Raw Milk Regulations to:

- reduce their anti-competitive elements by removing “established” independent processors’ with their own supply access to regulated milk
- ensure the default price is set more efficiently by:
  - reducing the quantity of regulated milk so that demand at an efficiently set reserve price from new processors would be somewhat more than the quantity available and
  - adopting an auction regime to allocate regulated milk in which buyers commit at the beginning of the season in advance to take-or-pay fixed quantities and do not receive zero-priced options to vary their order volumes
  - ensuring effective mechanisms are in place to eliminate explicit and implicit collusion between bidders
- but otherwise do nothing to the DIRA so the current sunset provisions still apply.

#### **6.2.7 Option 7 (Repeal the Raw Milk Regulation provisions and periodically review the need for the DIRA provisions)**

Under this option, instead of reforming the provisions of the Raw Milk Regulations as under Options 5 and 6, they are repealed. The competition provisions of the DIRA remain, but the sunset clause is amended to require the soon to be established New Zealand Productivity Commission to conduct investigations as under Option 5.

### 6.2.8 Option 8 (Repeal the Raw Milk Regulation provisions but continue with the DIRA provisions without review)

This option is a variation on Option 7. The difference is that instead of the Productivity Commission conducting investigations of the level of contestability of the markets for milk and dairy products in each island of New Zealand every five years with a view to recommending whether the DIRA provisions remain in force, these provisions continue without review.

## 7. Benefits and costs of regulatory options

### 7.1 Option 1 (Retain the status quo)

#### 7.1.1 Sunset provisions of industry-specific regulations

One significant uncertainty under Option 1 is when the North and South Island thresholds will be triggered and the various provisions of the regulations stop operating in each Island. Table A 1 at the end of this report shows the raw milk collected by Fonterra and independent processors in each Island over the seasons from 2001/02 to 2008/09. The table also includes base case forecasts for the seasons from 2010/11 to 2014/15. For the 2012/13 season, an “accelerated case” forecast is also given.

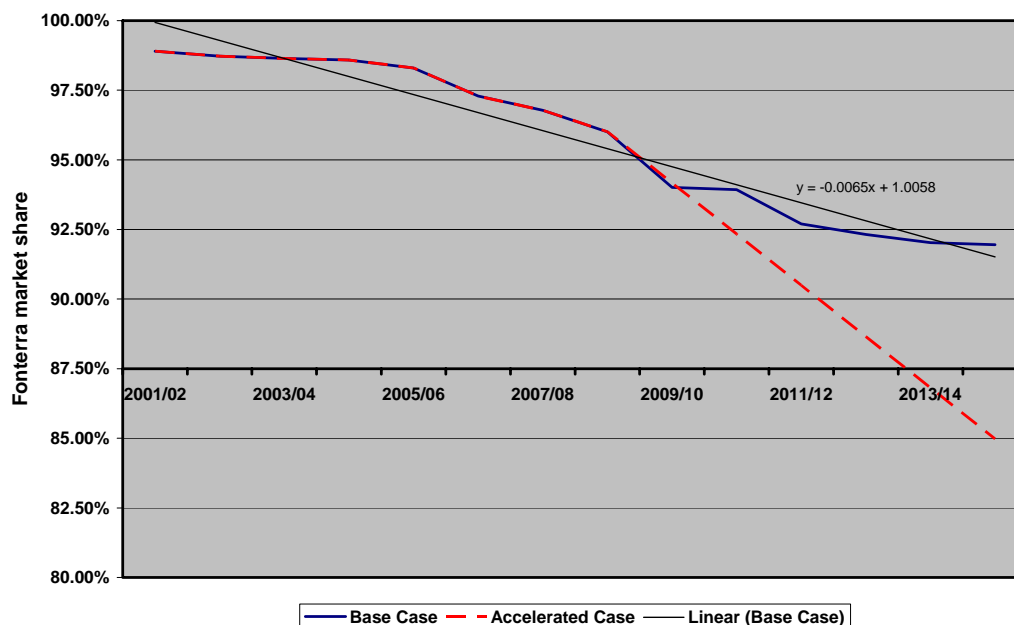
On the basis of these data, the South Island threshold of 65 million kilograms of milksolids being collected by independent processors has already been met and the requirement for at least 25 million kilograms of milksolids to be collected by one independent processor outside Westland will be met in 2012/13 under both scenarios. On this basis, assuming the status quo, the industry-specific provisions in the DIRA will cease to have effect in the South Island from the 2013/14 season onwards. This assumes that the independent processors do not act to prevent the South Island threshold from being triggered by, for example, adopting corporate structures that mean no single independent processor collects more than 25 million kilograms of milksolids from farmers outside the Westland Regional Council's boundaries. If this assumption is incorrect then the costs (and benefits) of the regulations will continue for longer than we assume in our analysis.

The North Island threshold is specified in terms of quantity of raw milk collected but, since there is a reasonably constant percentage of kilograms of milksolids per litre, the proportion of kilograms of milksolids collected by Fonterra is a useful guide as to when the North Island threshold will be triggered. Figure 7 plots both the base case and the accelerated case over the forecast period of 2009/10 to 2014/15. A trend line has been fitted to the base case data. These data suggest that under the accelerated case assumptions the North Island threshold will be triggered in 2013/14 and the competition provisions in the DIRA will cease to have effect in the North Island from the 2014/15 season onwards. If the base case trend continues, however, it will be another eight years beyond 2013/14, in 2021/22, before this threshold is triggered and 2022/23 before the regulations cease to have effect.

The implications of these analyses of when the various regulations will cease to operate in each Island are set out in Table 5. In our analysis of benefits and costs of the various options, we consider only the base case. This is because, on the basis of the development of the industry to date, we consider this is a far more realistic and likely outcome than the accelerated case. Current difficulties in raising capital for almost any venture because of the current state of world finances reinforce our view that the base case is far more realistic.

**Figure 7 Fonterra's North Island market share of raw milk collected from farms**

Percentage



Source: Calculated by NZIER from data provided by Fonterra

**Table 5 First season industry-specific regulations cease to operate in each island**

	Case	DIRA provisions	RMR provisions	Both DIRA and RMA provisions
North Island	Base case	2022/23	2022/23	2022/23
	Accelerated case	2014/15	2014/15	2014/15
South Island	Base case	2013/14	2022/23	2022/23
	Accelerated case	2013/14	2014/15	2014/15

Source: See text

### 7.1.2 Benefits and costs under the status quo

Table 6 to Table 9 set out the benefits and costs from the DIRA and Raw Milk Regulations (RMR) provisions assuming the status quo. We provide estimates for optimistic and pessimistic scenarios. A number of the benefits and costs we identify are wealth transfer payments from Fonterra to other parties. As a result, these factors have no impact on the net benefits (or costs) to the country as a whole we estimate for each scenario. They do affect the distribution of costs and benefits between Fonterra and other parties, however. We have highlighted these wealth transfers in the tables in bold italics.

For simplicity, and because it is a reasonable assumption given the degree of approximation to which we can make estimates, we have assumed that the economic gains to independent processors arising from these factors are equal in value to the losses to Fonterra. There may be some efficiency effects arising from these wealth transfers. These arise when parties making decisions about the use of resources face an incorrect price as a result of the transfer. These efficiency effects, which should be included in the overall calculation of the costs of the regulations, are likely to be small relative to the size of the transfer, although they can still be significant in absolute amounts. As we have been unable to include estimates of these costs, our estimates of net benefits tend to overstate the net benefits or understate the net costs.

We have been unable to develop an estimate of the benefit to independent processors and cost to Fonterra of the flexibility processors have as a result of the Raw Milk Regulations provisions allowing them to vary quantities and making it impossible for Fonterra to impose take-or-pay conditions. This does not affect our net public benefit calculations, however, as this factor is a wealth transfer and not a net benefit.

Some of the shareholders of independent processors are foreign citizens or firms so it is arguable that some of the benefit of the flexibility effectively leaks out of New Zealand whereas all the cost falls on Fonterra and its shareholders and is retained in New Zealand; there is a net cost to New Zealand of this wealth transfer as all the costs fall on parties in the country but some of the benefits accrue to foreign owners. It is not usual to make distinctions of this kind when assessing the net public benefit of a proposal because discrimination in setting policy against overseas ownership has wider implications for their willingness to invest and any deterrence of this is unlikely to be of long-term benefit to consumers. Moreover, at a more practical level, it is not easy to identify accurately what is foreign owned and what is not; companies operating as New Zealand entities can have a mix of New Zealand and foreign shareholders and New Zealanders own shares in overseas entities.

We have, however, included as a cost of the Raw Milk Regulations provisions the wasteful use of regulated milk, which is a likely consequence of this flexibility and is a cost to the economy as a whole. This cost element is intended to cover the full range of inefficiencies from this source. These include, for example, ordering regulated milk in October, even if it is not able to be efficiently used, in order to access higher volumes in other months under the 110% October rule and building additional capacity to cater for increased volumes that would not be required without access to subsidised regulated milk.

**Table 6 Benefits of current regulatory arrangements – DIRA provisions**

Benefits	Frequency	Optimistic scenario	Pessimistic scenario
Facilitates dairy farmers switching to supplying independent processors with minimal cost and	Ongoing while DIRA provisions in operation	Increased competitive pressure on Fonterra to retain suppliers results in efficiency gains by	Half the benefits estimated for the optimistic scenario

without risk of not being able to return to Fonterra if the arrangement does not work out		Fonterra while DIRA provisions in force. We estimate these are initially \$0.02 per kgMS per year but they decline linearly from 2015/16 until they disappear completely in 2024/25	
<i>Facilitates independent processors setting up competing plants to contract with dairy farmers for direct supply and so achieve greater capacity utilisation in production earlier than without regulations</i>	Spread over time taken for new plant to reach capacity. Ongoing while DIRA provisions in operation	\$14.6 m <sup>66</sup> per new 17 m kgMS plant set up by a new operator in NZ market. Pro rata for smaller new entrants. 50% of benefits for establishment of additional plants by existing independent processors until 2014/15 only. No benefit for new entrants that establish plants after 2020/21	Same benefits as estimated for the optimistic scenario
Increases competition in domestic market for dairy products	N/A	No material benefit. New entrants that have accessed own farm suppliers have sold insignificant quantities on domestic dairy markets. Any increase in contestability of the domestic market new entrant's existence may have created would have been insignificant.	No benefit. New entrants that have accessed own farm suppliers have sold insignificant quantities on domestic dairy markets. Any increase in contestability of the domestic market new entrant's existence may have created would have been insignificant.
Increases competition in international markets for dairy products	N/A	No benefit. Output of small independent processors in New Zealand has no effect on world prices	No benefit. Output of small independent processors in New Zealand has no effect on world prices

Source: NZIER

**Table 7 Benefits of current regulatory arrangements – RMR provisions**

Benefits	Frequency	Optimistic scenario	Pessimistic scenario
<i>Facilitates independent processors to achieve higher capacity utilisation earlier by having access to up to 50 million litres of regulated milk from Fonterra per year =</i>	Spread over time taken for new plant to reach capacity. Ongoing while RMR	\$9.7 m per year per new 17 m kgMS plant set up by a new operator in NZ. <sup>67</sup> Pro rata for smaller new entrants. 50% of benefits for establishment of additional plants by established independent	Same benefits as estimated for the optimistic scenario

<sup>66</sup> This is estimated on the basis that the DIRA provisions reduce the time taken by new entrant to fully develop own supply for milk unable to be obtained as regulated milk from 4 years to 3 years. Plant cost is assumed to be \$110m and fixed overheads are based on this at 10% plus the other fixed costs of Westland per kgMS in 2008/09. The annual savings in the first three years are \$2.3 m, \$5.0 m and \$7.3 m respectively.

<i>quarter of annual capacity of 17 m kgMS plant</i>	provisions in force	processors. Advantage lasts 3 years if DIRA provisions in force and 4 years if they are not	
<i>Allows independent processors to use access to 50 million litres of regulated milk to "square" their supply and increase the throughput of their plants</i>	Ongoing while RMR provisions in force	\$5.2 m <sup>68</sup> per year for each major independent processor	Same benefits as estimated for the optimistic scenario
<i>Allows independent processors to exploit flexibility in the optionality included in the conditions for access to regulated milk</i>	Ongoing while RMR provisions in force	Uncertain but could be very sizeable. No estimate provided but since it is a wealth transfer this does not impact on net present value calculations	Uncertain but could be very sizeable. No estimate provided but since it is a wealth transfer this does not impact on net present value calculations
Removes need for small independent processors and Fonterra to negotiate contract for Fonterra to supply raw milk	At time contract first entered into and every five years thereafter on average	\$50,000 per party for both sides in management time and legal expenses	\$25,000 per party for both sides in management time and legal expenses
Increases competition in domestic market for dairy products	N/A	No benefit as Fonterra would contract with independent processors which access regulated milk to produce dairy products for the local market without regulations. This is shown by the contracts it already has in place with NZDF and several others. Moreover, there would be increased competition in the farm gate market and so more competition for Fonterra in providing domestic oriented processors.	No benefit as Fonterra would have contracted with independent processors which access regulated milk to produce dairy products for local market without regulations. This is shown by the contracts it already has in place with NZDF and several others
Increases competition in international markets for dairy products	N/A	No benefit. Output of independent producers has no effect on world price	No benefit. Output of independent producers has no effect on world price

Source: NZIER

<sup>67</sup> Plant cost is assumed to be \$110m and fixed overheads are based on this at 10% (\$0.65 per kgMS) plus the other fixed costs of Westland per kgMS in 2008/09 as representative (\$1.65) or \$2.29 per kgMS in total. Increasing plant throughput by 25% (i.e. 50 million litres) given these costs results in a benefit is \$9.74 m per year for each year this occurs.

<sup>68</sup>Based on the benefit to Westland being representative of the costs for other independent processors.

**Table 8 Costs of current regulatory arrangements – DIRA provisions**

Costs	Frequency	Optimistic scenario	Pessimistic scenario
<i>Cost to Fonterra of loss of efficiencies in use of fixed plant because it loses farmers to independent processors faster than they would otherwise do without DIRA provisions</i>	Spread over time taken for new plant to reach capacity. Ongoing while DIRA provisions in operation	\$14.6 m <sup>69</sup> per new 17 m kgMS plant set up by a new operator in NZ market. Pro rata for smaller new entrants. 50% of benefits for establishment of additional plants by existing independent processors until 2014/15 only. No benefit for new entrants that establish plants after 2020/21	Same costs as estimated for the optimistic scenario
Cost to Fonterra of being forced to take on new suppliers that it would not accept on an economic basis	Ongoing while DIRA provisions in operation	Not material	Not material

Source: NZIER

**Table 9 Costs of current regulatory arrangements – RMR provisions**

Costs	Frequency	Optimistic scenario	Pessimistic scenario
Reduced on balance intensity of competition at the farm gate and hence less pressure on Fonterra to improve efficiency to retain suppliers	Ongoing while RMR provisions in force	Reduces Fonterra's efficiency by \$0.005 per kgMS while RMR provisions are in force <sup>70</sup>	Reduces Fonterra's efficiency by \$0.02 per kgMS while RMR provisions are in force <sup>71</sup>
<i>Reduces Fonterra's capacity utilisation earlier than would be the case without regulation as independent processors setting up competing plants have access to up to 50 million litres of raw milk per year from Fonterra = quarter of annual capacity of basic 17 m kgMS plant.</i>	Spread over time taken for new plant to reach capacity. Ongoing while RMR provisions in force	\$9.7 m per year per new 17 m kgMS plant set up by a new operator in NZ. <sup>72</sup> Pro rata for smaller new entrants. 50% of benefits for establishment of additional plants by established independent processors. Advantage lasts 3 years if DIRA provisions in force and 4 years if they are not	Same costs as estimated for the optimistic scenario
Reduces economies of scale available to Fonterra	Ongoing while RMR	\$0.005 per kgMS of milksolids collected by	\$0.01 per kgMS of milksolids collected by

<sup>69</sup> This is estimated on the basis that the DIRA regulations reduce the time taken by new entrant to develop own supply for milk unable to be obtained as regulated milk from 4 years to 3 years. Plant cost is assumed to be \$110m and fixed overheads are based on this at 10% plus the other fixed costs of Westland per kgMS in 2008/09.

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<sup>70</sup> Equivalent to 0.1% of a conservative payout estimate of \$5.00 per kgMS.

<sup>71</sup> Equivalent to 0.25% of a more optimistic payout of \$8.00 per kgMS.

<sup>72</sup> Based on the same calculations as gains for independent processors. In short this is just a wealth transfer from Fonterra to independent processors and not a net public benefit to New Zealand.

<sup>73</sup> See calculation in section 4.2.5. Strictly, the volume figure should be the milksolids which would have been collected and processed by Fonterra in the absence of the raw milk regulations. The figure should exclude milk that would be sold by Fonterra to other parties without the regulations and include milk that would have been collected by Fonterra that is collected by independent processors because of the regulations. Making these adjustments would not materially alter the results.

<sup>74</sup> Based on the benefit to Westland being representative of the costs for other independent processors.

because it has lower volumes as a result of having to provide independent processors with regulated milk	provisions in force and then reduce linearly over the next 10 years.	Fonterra <sup>73</sup>	Fonterra
<i>Reduces the volumes of raw milk available to Fonterra to process in the shoulders of the season due to independent processors accessing part or all of their entitlement to 50 million litres of regulated milk to "square" their supply and increase the throughput of their plants</i>	Ongoing while RMR provisions in force	\$5.2 m <sup>74</sup> per year for each major independent processor able to use regulated milk in this manner	Same costs as estimated for the optimistic scenario
<i>Requires Fonterra to cater for increased flexibility of independent processors due to the conditions of their access to regulated milk</i>	Ongoing while RMR provisions in force	Uncertain but could be very sizeable. No estimate provided but since it is a wealth transfer this does not impact on net present value calculations	Uncertain but could be very sizeable. No estimate provided but since it is a wealth transfer this does not impact on net present value calculations
Cost of inefficient use and handling of regulated milk because regulated milk not priced to independent processors at its true opportunity cost	Ongoing while RMR provisions in force	2.5% of the value of the regulated milk available to parties other than NZDF assumed to be wasted each year. At a value of \$5 per kgMS	5% of the value of the regulated milk available to parties other than NZDF assumed to be wasted each year. At a value of \$8 per kgMS
Incremental cost to Fonterra of monitoring and managing RMR regime including providing information disclosure required under regulations, responding to lobbying in favour of regime etc.	Ongoing while RMR provisions in force	\$250,000 per year	\$500,000 per year
Incremental costs to independent processors making submissions, entertaining politicians etc. to support continued existence of RMR	Ongoing while RMR provisions in force	\$25,000 per major independent processor per year	\$50,000 per major independent processor per year

Source: NZIER

## 7.2 Option 2 (Remove industry-specific regulations)

### 7.2.1 The counterfactual

The difference between Option 2 and Option 1 is the timing of the lifting of the industry-specific regulations. Instead of the DIRA provisions being lifted in the South Island from 2013/14 and in the North Island from 2022/23, we assume they are lifted from 2011/12, the earliest date for which it would be practicable to do so. Instead of

the provisions of the Raw Milk Regulations ceasing to be operative from 2022/23, we assume they are also lifted in 2011/12.

### 7.2.2 Benefits and costs of Option 2

In Section 7.1, we identified all the benefits and costs associated with the current regulations continuing in force according to the current law. Under Option 2 the only benefit or cost that will occur from 2011/12 onwards, which is also the first year in our cost-benefit calculations, are the legacy consequences of Fonterra having fewer economies of scale than it would otherwise. We have assumed that it will take 10 years after the removal of the Raw Milk Regulations for these costs to completely disappear and that they will decline linearly over that time period.

### 7.3 Option 3 (Extend the industry-specific regulations indefinitely)

This is not exactly the same as Option 1 with the benefits and costs we have identified extending into the future indefinitely. This is because some of the benefits and costs will start to alter as circumstances change and particularly as the levels of competition in the markets for raw milk at the farm gate and factory door change. The following table lists the benefits and costs of regulations we have identified in our discussion of Option 1 and comments on how they will vary over time under Option 3.

**Table 10 Comparison of benefits and costs of Option 1 and Option 3**

<b>DIRA provision benefits</b>	<b>Assumption under Option 3</b>
Facilitates dairy farmers switching to supplying independent processors with minimal cost and without risk of not being able to return to Fonterra if the arrangement does not work out	Same assumptions as for Option 1 except applies to all milk from 2014/15 onwards and not just North Island milk as under Option 1
<i>Facilitates independent processors setting up competing plants to contract with dairy farmers for direct supply and so achieve greater capacity utilisation in production earlier than without regulations</i>	Under Option 1 we assumed this benefit will dissipate as competitors to Fonterra become well established and so can quickly acquire farmer suppliers if they are willing to meet the market. We assumed that there would be no benefits for independent processors with existing plants after 2014/15 and no benefit to new entrants after 2020/21. We will maintain these assumptions
Increases competition in domestic market for dairy products	Over an extended time period there will be more new processors enter the local market but we do not believe the DIRA provisions will contribute to this materially
Increases competition in international markets for dairy products	No benefit throughout our period of analysis. Output of independent processors in New Zealand has no material effect on world prices
<b>RMR provisions benefits</b>	
<i>Facilitates independent processors to achieve higher capacity utilisation earlier by having access to up to 50 million litres of regulated milk from Fonterra per year = quarter of annual capacity of 17 m kgMS plant</i>	Same assumptions as for Option 1
<i>Allows independent processors to use access to 50 million litres of regulated milk to “square” their supply and increase the throughput of their plants</i>	This benefit will continue indefinitely while Raw Milk Regulations provisions remain in force
<i>Allows independent processors to exploit flexibility in the optionality included in the conditions for access to regulated milk</i>	This benefit will continue indefinitely while Raw Milk Regulations provisions remain in force
Removes need for small independent processors and Fonterra to negotiate contract for Fonterra to supply raw milk	This benefit will continue while the Raw Milk Regulations provisions remain in force
Increases competition in domestic market for dairy products	Over an extended time period there will be more new processors enter the local market but we do not believe the Raw Milk Regulations provisions will contribute to this materially
Increases competition in international markets for dairy products	No benefit throughout our period of analysis. Output of independent processors in New Zealand has no material effect on world prices
<b>DIRA provisions costs</b>	
<i>Cost to Fonterra of loss of efficiencies in use of fixed plant because it loses farmers to independent processors faster than they would otherwise do without DIRA provisions</i>	Same assumptions as for Option 1
Cost to Fonterra of being forced to take on new suppliers that it would not accept on an economic	Not material

basis	
<b>RMR provisions costs</b>	
Reduced intensity of competition at the farm gate and hence less pressure on Fonterra to improve efficiency to retain suppliers	This cost will gradually reduce over time as the level of competition rises generally and is not dependent on the regulations. We assume it is fully dissipated in 20 years.
<i>Reduces Fonterra's capacity utilisation earlier than would be the case without regulation as independent processors setting up competing plants have access to up to 50 million litres of raw milk per year from Fonterra = quarter of annual capacity of basic 17 m kgMS plant</i>	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force
<i>Reduces economies of scale available to Fonterra because it has lower volumes as a result of having to provide independent processors with regulated milk</i>	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force
<i>Reduces the volumes of raw milk available to Fonterra to process in the shoulders of the season due to independent processors accessing part or all of their entitlement to 50 million litres of regulated milk to "square" their supply and increase the throughput of their plants</i>	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force
<i>Requires Fonterra to cater for increased flexibility of independent processors due to the conditions of their access to regulated milk</i>	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force
Cost of inefficient use and handling of regulated milk because regulated milk not priced to independent processors at its true opportunity cost	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force
Cost to Fonterra of monitoring and managing RMR regime including providing information disclosure required under regulations, responding to lobbying in favour of regime, etc.	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force
Costs to independent processors making submissions, entertaining politicians etc. to support continued existence of RMR	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force

Source: NZIER

## 7.4 Option 4 (Extend the Raw Milk Regulations only for an indefinite period)

Under this option, the DIRA provisions would cease to operate according to the current sunset conditions, so in our base case would cease to apply in 2013/14 in the South Island and in 2022/23 in the North Island. They would, therefore, have no on-going effect beyond then. This means that the benefits and costs of these provisions will be the same as under Option 1. The Raw Milk Regulations would continue in force indefinitely and the benefits and costs for these provisions would be the same as we have assumed under Option 3.

## 7.5 Option 5 (Remove “established” processors access to regulated milk and review and amend the DIRA provisions)

Under this option, the Raw Milk Regulations would be amended to reduce their main anti-competitive elements by removing access to regulated milk from “established” independent processors’ with their own supply. In addition, instead of the current sunset provisions applying to the DIRA provisions, these would be subject to five-yearly review by the soon to be established Productivity Commission. The review would consider the level of contestability of the markets for milk and dairy products in each island of New Zealand. The purpose of the review would be to recommend which of the DIRA provisions should remain in force for the next five year period, The first review would take into account Fonterra’s capital restructuring,

We assume the first Productivity Commission review recommends the term of the DIRA provisions in both islands be extended for another five years from 2011/12. We further assume the second review results in the recommendation that the DIRA provisions should cease to operate in 2016/17 in the South Island, because the competition faced by Fonterra in the raw milk markets at farm gate and factory door in the South Island means the regulations are unnecessary. We further assume the Productivity Commission recommends the DIRA provisions should continue to apply in the North Island. At the next review, the Productivity Commission recommends the DIRA regulations end in the North Island also from the 2022/23 season onwards. We further assume that the government implements the Commission’s recommendations after each review.

We estimate that under the optimistic scenario each Productivity Commission review costs the Commission \$500,000 to conduct and costs Fonterra (including its Shareholders’ Council) \$250,000 to participate. The other submitters face costs of \$50,000 each on average. We estimate there will be 10 submitters at the first and second reviews and seven at the third review, relating to the North Island only. Under the pessimistic scenario, we assume each review costs 50% more than under the optimistic scenario.

The following table sets out the differences between Option 1 (retain the status quo) and Option 5, in relation to the Raw Milk Regulations provisions

**Table 11 Comparison of Raw Milk Regulations provisions under Option 1 and Option 5**

RMR provisions benefits	
<i>Facilitates new independent processors to achieve higher capacity utilisation earlier by having access to up to 50 million litres of regulated milk from Fonterra per year = quarter of annual capacity of 17 m kgMS plant</i>	Similar to Option 1 but from 2011/12 onwards only new independent processors and parties without own supply will have access to regulated milk.
<i>Allows independent processors to use access to 50 million litres of regulated milk to “square” their supply and increase the throughput of their plants</i>	No longer relevant as this opportunity largely of benefit to “established” independent processors now excluded from access to regulated milk
<i>Allows independent processors to exploit flexibility in the optionality included in the conditions for access to regulated milk</i>	Not relevant as this opportunity largely of benefit to “established” independent processors now excluded from access to regulated milk
Removes need for small independent processors and Fonterra to negotiate contract for Fonterra to supply raw milk	This benefit will continue indefinitely while Raw Milk Regulations provisions remain in force
Increases competition in domestic market for dairy products	Over an extended time period there will be more new processors enter the local market but we do not believe the Raw Milk Regulations provisions will contribute to this materially
Increases competition in international markets for dairy products	No benefit throughout our period of analysis. Output of independent processors in New Zealand has no material effect on world prices
RMR provisions costs	
Reduced intensity of competition at the farm gate and hence less pressure on Fonterra to improve efficiency to retain suppliers	This cost is not relevant as increased competition at farm gate from established independent processors will occur.
<i>Reduces Fonterra’s capacity utilisation earlier than would be the case without regulation as independent processors setting up competing plants have access to up to 50 million litres of raw milk per year from Fonterra = quarter of annual capacity of basic 17 m kgMS plant</i>	This cost will continue indefinitely while Raw Milk Regulations provisions remain in force but only apply to new entrant processors
Reduces economies of scale available to Fonterra because it has lower volumes as a result of having to provide independent processors with regulated milk	No longer relevant as the volume of milk to be provided to small and new entrant independent processors insignificant and so any cost will be small. However, residual effect of current situation will decline gradually over ten years.
<i>Reduces the volumes of raw milk available to Fonterra to process in the shoulders of the season due to independent processors accessing part or all of their entitlement to 50 million litres of regulated milk to “square” their supply and increase the throughput of their plants</i>	No longer relevant as this opportunity largely of benefit to “established” independent processors now excluded from access to regulated milk
<i>Requires Fonterra to cater for increased flexibility of independent processors due to the conditions of their access to regulated milk</i>	No longer relevant as this opportunity largely of benefit to “established” independent processors now excluded from access to regulated milk
Cost of inefficient use and handling of regulated	No longer relevant as volume of milk to be

milk because regulated milk not priced to independent processors at its true opportunity cost	provided to small and new entrant independent processors insignificant and so any cost will be very small
Cost to Fonterra of monitoring and managing Raw Milk Regulations regime including providing information disclosure required under regulations, responding to lobbying in favour of regime, etc.	This cost will continue indefinitely while the Raw Milk Regulation provisions remain in force
Costs to independent processors making submissions, entertaining politicians etc. to support continued existence of RMR	No longer material as regulations unlikely to be contentious if amended on proposed basis

Source: NZIER

## 7.6 Option 6 (Amend the Raw Milk Regulations)

Under this option, the inefficient elements of the Raw Milk Regulations provisions will cease to operate from 2011/12 as will their anti-competitive effect in the market to purchase milk from farmers. Costs will be incurred in establishing and operating an auction regime to allocate regulated milk. Against this, however, the lobbying activities of independent processors to retain the raw milk regulations will be reduced. The DIRA provisions will remain in force until they lapse under the sunset clauses in the Act. In relation to the DIRA provisions, this option will have the same benefits and costs as Option 1.

We estimate that under Option 6, the costs incurred supporting the regulations on average by independent processors will fall to 50% of the levels we estimated under Option 1. We further estimate for the optimistic scenario that the costs of establishing the electronic platform to auction and trade regulated milk is \$4 million and that it costs \$250,000 per year to operate and these costs will be borne by independent processors.. For each independent processor taking regulated milk it will cost \$10,000 a year on average to pay for their internal overheads and staff necessary to participate in the auctions and the secondary trading of regulated milk. For the pessimistic scenario, our estimate of the corresponding figures are \$6 million to set up, \$500,000 a year to operate and \$20,000 a year for each independent processor taking regulated milk.

## 7.7 Option 7 (Repeal the Raw Milk Regulations provisions and periodically review the need for DIRA regulations)

Under Option 7, instead of reforming the Raw Milk Regulations provisions as under Option 6, they are repealed. The provisions of the DIRA remain, but the sunset clause is amended to require the Productivity Commission to conduct investigations of the level of contestability of the markets for milk and dairy products in each island of New Zealand every five years and on the basis of a cost-benefit analysis recommend whether the industry-specific regulations should remain in force unaltered until the next review, be amended or be repealed.

We assume the Raw Milk Regulations provisions are removed from 2011/12. Most of the effects cease immediately but the effect on economies of scale deteriorates over 10 years. In relation to the Productivity Commission reviews of the DIRA provisions we make the same assumptions as under Option 5.

Relative to Option 1, the benefits and costs of the DIRA provisions are extended beyond 2012/13 to 2015/16 in the South Island. The benefits and costs of the DIRA provisions cease in 2022/23 in the North Island, the same year as they are assumed to cease under Option 5.

## **7.8 Option 8 (Repeal the Raw Milk Regulations provisions but continue with the DIRA provisions without review)**

This option is a variation on Option 7. The difference is that instead of the Productivity Commission conducting investigations of the level of contestability of the markets for milk and dairy products in each island of New Zealand every five years with a view to recommending whether the DIRA provisions remain in force, these provisions continue without review for an indefinite period and yield the same costs and benefits as assumed in Option 3.

The result is that the costs and benefits of the Raw Milk Regulations, apart from those related to economies of scale, cease from 2011/12 onwards, as under Option 2. There are no costs for periodic review of the DIRA provisions as would be incurred under Options 5 and 7 and this is the principal reason why the net benefits for Option 8 are higher than they are for these two options..

## 8. Cost-benefit analysis results

### 8.1 Net present value of benefits and costs

Table 12 summarises the results of our cost-benefit analysis of the various options we have identified. It shows for each option the net present value of the benefits and costs over the period from 2011/12, the first season for which it would be practicable to change the regulatory regime, to 2039/40. We also show the results for both the optimistic and the pessimistic scenarios. A 10 percent discount rate has been used to calculate the net present values of the annual figures.

**Table 12 Net present value of benefits and costs of selected options relating to dairy industry-specific regulations 2011/12 to 2039/40**

\$ million

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Optimistic Scenario</b>								
Net benefit (cost) of DIRA provis	112	0	158	112	132	112	132	158
Net benefit (cost) of RMR provisi	-149	-23	-205	-205	-21	-29	-23	-23
Net benefit (cost) provisions com	-37	-23	-47	-93	111	83	109	135
<b>Pessimistic Scenario</b>								
Net benefit (cost) of DIRA provis	56	0	79	56	64	56	64	79
Net benefit (cost) of RMR provisi	-450	-46	-617	-617	-49	-63	-46	-46
Net benefit (cost) provisions com	-394	-46	-538	-561	15	-7	17	33

Source: NZIER

In relation to the DIRA provisions, the highest present value of the benefits of \$158 million arises under Options 3 and 8. These options both involve leaving this component of the regulatory regime in place indefinitely and without review. The assumption implicit in these options is that the economic impact of the DIRA provisions encouraging Fonterra to be more efficient so as to retain farmer suppliers will apply in both Islands but gradually decline in a linear trend between 2015/16 and 2024/25.

In relation to the Raw Milk Regulations provisions, the lowest present value of the costs of \$21 million occurs under Option 5. This option involves leaving the regulations in place but reforming them so that the inefficiencies they currently create are avoided by removing the right of “established” independent processors with their own supply of raw milk to access regulated milk. Option 5 is, in this regard, superior to Options 2, 7 and 8, all of which generate net costs with a present value of \$23 million from abolishing immediately the Raw Milk Regulations provisions.

The reason for the \$2 million difference between these options and Option 5 is that the continuation of the regulations under Option 5 results in lower transaction costs for Fonterra and the processors that retain access to regulated milk compared with what they would incur if the regulations were abolished as envisaged under Options 2, 7 and 8. In short, the retention of the regulations removes the need for Fonterra

and independent processors without their own milk supply to negotiate separate legal agreements for the supply and purchase of raw milk.

Option 5 generates a lower present value of costs compared with the amendment of the Raw Milk Regulations provisions assumed under Option 6. This option involves reforming the regulations and introducing an auction mechanism to allocate regulated milk. The establishment and operation of the auction costs money and increases the present value of the cost of this option from \$23 million to \$29 million.

The status quo (Option 1) results in a very significant net cost with a present value of between \$149 and \$450 million from the Raw Milk Regulations provisions. Removal of the sunset conditions applying to these regulations (Options 3 and 4) adds a further \$56 to \$167 million to their present values, depending on the scenario.

Option 2 assumes that both the DIRA provisions and the Raw Milk Regulations provisions are abolished immediately. While abolition of the DIRA provisions removes any cost (or benefit), there is still a present value net cost of \$23 million from the Raw Milk Regulations provisions. This occurs because the economies of scale effects of these regulations continue to impact on the efficiency of Fonterra for a number of years compared with what it would have been in the absence of any regulations.

Table 13 gives details of the composition of the net present values of the various costs and benefits under both the optimistic and pessimistic scenarios for Option 1, the status quo. The items in bold italics are wealth transfers and so have no impact on the present value of costs and benefits.

From Table 13 it can be seen that:

- the only significant net benefit of the current DIRA provisions arises from the pressure it places on Fonterra to perform in order to retain farmer suppliers
- the benefits of the Raw Milk Regulations provisions are almost exclusively transfer payments and
- the net costs of the Raw Milk Regulations provisions arise principally from the reduced intensity of competition at the farm gate, reduced economies of scale for Fonterra and the inefficient use of regulated milk because its price does not fully reflect its opportunity cost.

At the time the DIRA was enacted to permit the formation of Fonterra there was considerable uncertainty as to how contestable the markets for raw milk would be. During the nearly 10 years that have elapsed, evidence has accumulated that independent processors can attract debt and equity financing to set up in competition with Fonterra. The uncertainty that prevailed 10 years ago no longer exists.

Equally, given that multiple independent processors have become established, the Raw Milk Regulations are now impeding competition in the farm gate raw milk market and losses of economies of scale resulting in very significant net costs to the New Zealand economy as a whole, not just Fonterra. These costs are estimated to have a

net present value of between \$150 and \$450 million, depending on the assumptions made.

**Table 13 Break-down of net present value of costs and benefits for Option 1**

\$ million

	Optimistic Scenario	Pessimistic Scenario
<b>Benefits - DIRA provisions</b>		
Facilitates dairy farmers switching; increases competitive pressure on Fonterra	\$112	\$56
<b>Facilitates independent processors to achieve higher capacity utilisation earlier</b>	<b>\$42</b>	<b>\$42</b>
Increase competition in domestic dairy market	Minimal	Minimal
Increases competition in international markets for dairy products	Minimal	Minimal
<i>Benefits from DIRA provisions</i>	\$154	\$98
<b>Benefits - RMR provisions</b>		
<b>Facilitates independent processors to achieve higher capacity utilisation earlier by u</b>	<b>\$166</b>	<b>\$166</b>
<b>Allows independent processors to "square" their supply and increase throughput of p</b>	<b>\$226</b>	<b>\$226</b>
<b>Allows independent processors to exploit flexibility in the conditions of access to re</b>	??	??
Removes need for small independent processors to negotiate contract for Fonterra to supp	\$1	\$1
Removes need for Fonterra to negotiate contract fto supply raw milk to independent proces	\$1	\$1
Increases competition in domestic dairy market	Minimal	Minimal
Increases competition in international markets for dairy products	Minimal	Minimal
<i>Benefits from RMR provisions</i>	\$394	\$393
<b>Total Benefits</b>	<b>\$548</b>	<b>\$491</b>
<b>Costs - DIRA provisions</b>		
<b>Cost to Fonterra of loss of production efficiencies from reduced capacity utilisation</b>	<b>\$42</b>	<b>\$42</b>
Cost to Fonterra of being forced to take on new suppliers	Minimal	Minimal
Cost of Productivity Commission Review of DIRA provisions	Not relevant	Not relevant
<i>Costs of DIRA provisions</i>	\$42	\$42
<b>Costs - RMR provisions</b>		
Reduced intensity of competition at the farm gate	\$48	\$194
<b>Reduces Fonterra's capacity utilisation earlier as independent processors have acce</b>	<b>\$166</b>	<b>\$166</b>
Reduces economies of scale available to Fonterra	\$59	\$117
<b>Reduces volumes of raw milk available to Fonterra to process in season's shoulders</b>	<b>\$226</b>	<b>\$226</b>
<b>Requires Fonterra to cater for increased flexibility of independent processors</b>	??	??
Cost of inefficient use of regulated milk because regulated milk not priced at opportunity co:	\$42	\$135
Cost to Fonterra of monitoring and managing RMR regime	\$2	\$3
Costs to independent processors maintaining support for RMR	\$1	\$2
Cost to regulated milk auction system and its operation	Not relevant	Not relevant
<i>Costs of RMR provisions</i>	\$543	\$843
<b>Total Costs</b>	<b>\$586</b>	<b>\$885</b>
Net Benefit (Cost) of DIRA provision	\$112	\$56
Net Benefit (Cost) of RMR Provisions	-\$149	-\$450
Net Benefit (Cost) Provisions combined	-\$37	-\$394

Source: NZIER

## 8.2 Costs to Fonterra of the current regime and other options

From the cost-benefit analysis, we can also extract the net present value of the costs that the current regulatory regime and the various options impose on Fonterra over the period from 2011/12 to 2039/40. These are summarised in Table 14.. The high cost of the current regulatory regime to Fonterra is very clear. These estimates exclude the costs to Fonterra of granting independent processors the flexibility implicit in the Raw Milk Regulations, which could be considerable. Thus, these estimates are an understatement of the total costs to Fonterra under the various assumptions we have made.

**Table 14 Net present value of the costs of the current regulatory regime and other options for Fonterra 2011/12 to 2039/40**

\$ million

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
	\$m	\$m	\$m	\$m	\$m	\$m	\$m	\$m
<b>Optimistic Scenario</b>	494	23	663	678	238	67	92	75
<b>Pessimistic Scenario</b>	554	46	742	757	263	91	115	98

Source: NZIER

## 9. Conclusions

Of the options assessed, Options 3 and 8 are the most satisfactory in relation to the DIRA provisions. These options both involve leaving this component of the regulatory regime in place indefinitely and without review. The assumption implicit in these options is that the economic impact of the DIRA provisions encouraging Fonterra to be more efficient so as to retain farmer suppliers will apply in both Islands but gradually decline in a linear trend between 2015/16 and 2024/25. If, however, there was uncertainty about this assumption and, as a consequence, about when and how these provisions should be removed, periodic review, as proposed in Options 5 and 7, would be a reasonable policy choice.

Of the options assessed, Option 5 is the most satisfactory in relation to the Raw Milk Regulations review. While it has a present value which is negative, it generates the smallest net cost, and is clearly considerably superior to the status quo or other options involving retention of these regulations. Options 2 and 6 to 8 are also reasonably satisfactory in terms of the present value of their net costs; these all involve abolition or substantial reform of the Raw Milk Regulations provisions.

A hybrid of Option 8 and Option 5 under which the DIRA provisions are allowed to continue without review and the Raw Milk Regulations provisions are amended by removing from established independent processors with their own milk supplies access to regulated milk would appear to be the preferable policy option. However, if there is uncertainty about the assumption relating to the timing of the decay in the effectiveness of the DIRA provisions, Option 5, which involves periodic review of the need for these regulations by the Productivity Commission could be the best policy option.

How does our analysis stack up against the criteria we identified for assessing regulatory interventions in Section 5?

***Can the competition issues be adequately addressed through private arrangements; is a regulatory solution in the public interest?***

The DIRA provisions providing dairy farmers with easy options to shift to supply independent processors are more liberal than Fonterra would be likely to concede through its own Constitution or agreement to supply. However, in our opinion the Raw Milk Regulation provisions are not necessary to ensure the supply of raw and semi-processed milk to independent processors targeting domestic dairy product markets.

Some of these processors do not directly compete with Fonterra or are specialist niche players. For example, Cadbury and Whitestone Cheese. Moreover, Fonterra has a voluntary agreement with NZDF which means it would face competition from it even if the Raw Milk Regulations were repealed. NZDF competes with Fonterra in the major domestic dairy markets.

The costs to Fonterra of any incremental competition in these markets from other independent processors and niche players would generally be small and may be outweighed by the benefits to Fonterra of the economies of scale in collection that would accrue by continuing to sell milk to them on a commercial basis.

Moreover, in the absence of the Raw Milk Regulations several independent processors, such as Open Dairies, Westland, Tatua, Synlait and New Zealand Dairies would have a stronger incentive to compete in the farm gate raw milk market and more players in this market would increase competition on Fonterra in the factory door market to provide raw milk to other independent processors. In our opinion, given the current state of dairy markets, private arrangements can and would adequately address the competition issues that the Raw Milk Regulations are intended to address, there real benefit may be in lowering transaction costs for Fonterra and independent processors without their own milk supply.

***Have all practical options for addressing the competition problem been considered?***

The eight options we have considered span the practical options, although variations on them may also be possible.

***Do the benefits of the preferred options exceed the costs and yield the highest level of net benefit?***

Options 3 and 8 produce the highest present values of the net benefit for the DIRA provisions. Option 5 produces the lowest present value of the net cost of the Raw Milk Regulations provisions but relative to the counterfactual of the status quo, and all other options, is the best available and significantly better than doing nothing (Option 1).

***Is the proposed option clear, easily understood and conform to established legislative principles and best practice formulations?***

Yes

***Are all the considerations that go into the selection of the option as the preferred option transparent?***

Yes

***Would the adoption of the preferred option be seen as a consistent and predictable outcome given other regulatory decisions?***

It would if good regulatory practice were uniformly adopted.

**Table A 1 Milk collected by Fonterra and independent processors 2001/02 to 2014/15**

millions kgMS

Region		2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	Base case			Accelerated	
													2012/13	2013/14	2014/15	2012/13	
UNI	m kgMS	95	100	87	88	89	89	89	87								
CNI	m kgMS	461	490	495	475	490	497	437	473								
LNI	m kgMS	283	260	296	270	278	280	266	295								
Total NI	m kgMS	839	850	877	834	857	865	792	856	820	875	878	883	888	893		883
USI	m kgMS	22	25	27	26	25	25	25	24								
CSI	m kgMS	129	142	155	162	176	193	208	217								
LSI	m kgMS	122	132	143	139	152	161	167	184								
Total SI	m kgMS	272	298	324	327	353	380	400	425	466	470	489	512	536	562		512
Total	m kgMS	1,111	1,148	1,202	1,160	1,210	1,246	1,192	1,281	1,286	1,345	1,367	1,394	1,424	1,455		1395
CNI	m kgMS	9	11	12	12	12	13	11	12				13				13
CNI	m kgMS	-	-	-	0	3	12	16	23				33				33
LNI	m kgMS	-	-	-	-	-	-	-	-				17				24
LNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	10				14
UNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-				8
CNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-				9
CNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-				12
CNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-				-
LNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-				-
CNI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-				-
Total NI	m kgMS	9	11	12	12	15	24	26	36	52	57	69	73	77	78		113

CSI	m kgMS	30	31	37	37	41	42	43	43								50	50
CSI	m kgMS	-	-	-	-	-	-	4	13								33	33
CSI	m kgMS	-	-	-	-	-	-	6	11								14	14
LSI	m kgMS	-	-	-	-	-	-	-	11								17	30
CSI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-	-	-			12
LSI	m kgMS	-	-	-	-	-	-	-	-	-	-	-	-	-	-			12
Total SI	m kgMS	30	31	37	37	41	42	53	78	92	96	106	114	120	123			151
Total	m kgMS	39	42	49	49	56	66	79	113	144	153	175	187	197	201			264
NI	market share	98.90%	98.72%	98.64%	98.59%	98.30%	97.29%	96.78%	96.01%	94.01%	93.92%	92.70%	92.32%	92.03%	91.95%			88.65%
SI	market share	90.21%	90.50%	89.81%	89.88%	89.55%	90.01%	88.35%	84.57%	83.52%	83.02%	82.15%	81.79%	81.75%	82.01%			77.22%

Source: NZIER

