

# **Report on the dry run review of Fonterra's farm gate milk price**

## **Final report**

Date: 27 August 2012

Confidential material in this report has been removed. Its location in the document is denoted by [ ].

## Table of contents

Executive summary	5
Chapter 1: Introduction	7
Purpose of this report	7
Context to this report	7
Structure of the report	8
Chapter 2: Farm gate milk price in New Zealand	10
Milk prices in New Zealand	10
Farm gate milk market in New Zealand	11
Fonterra’s approach to calculating its farm gate milk price	11
Fonterra’s methodology for setting its farm gate milk price	12
Chapter 3: Our approach to the dry run review	15
Context to our analysis in this chapter	15
The Act	15
Our interpretation of subpart 5A of the Act	17
Key questions asked as part of the dry run review	18
Scope of the dry run review	20
Limitations on the dry run review	21
Chapter 4: Conclusions from the dry run review	23
Efficiency dimension	23
Contestability dimension	24
<u>Attachments</u>	
Attachment 1: Terms of Reference for the dry run review	29
Attachment 2: The dry run review versus future statutory reviews	33
Attachment 3: Our interpretation of subpart 5A of the Act and our approach to the dry run	35
Attachment 4: Analysis of reference commodity product selection in the base milk price calculation	47
Attachment 5: Analysis of the yield assumptions in the base milk price calculation	54
Attachment 6: Analysis of sales phasing assumptions in the base milk price calculation	61
Attachment 7: Analysis of pricing selection in the base milk price calculation	66
Attachment 8: Analysis of sales costs in the base milk price calculation	72
Attachment 9: Analysis of labour costs in the base milk price calculation	78
Attachment 10: Analysis of lactose costs in the base milk price calculation	83

Attachment 11: Analysis of tax provision in the base milk price calculation	89
Attachment 12: Analysis of the fixed asset base assumptions in the base milk price calculation	95
Attachment 13: Analysis of the cost of capital assumptions in the base milk price calculation	108
Attachment 14: Our observations regarding the modelling risks in the base milk price calculation	119
Glossary of terms and abbreviations	120

## Executive summary

- X1 The purpose of this report is to outline our conclusions on the extent to which Fonterra's 2011/12 methodology for setting its farm gate milk price (FGMP), and Fonterra's application of that methodology, is consistent with the purpose and principles of the milk price regime set out in the Dairy Industry Restructuring Amendment Act 2012 (the Act).
- X2 The Act requires the Commission to monitor and report on the extent to which Fonterra's methodology for setting its FGMP, and Fonterra's application of that methodology is consistent with the purpose and principles of the milk price regime set out in the Act.
- X3 Prior to the Act being passed into law, the Minister for Primary Industries requested we conduct a non-statutory dry run review of Fonterra's 2011/12 methodology for setting the FGMP and Fonterra's application of that methodology. We understand that the purpose of the dry run review is to provide increased investor certainty ahead of Fonterra potentially launching Trading Among Farmers, in particular by showing how the monitoring regime will work in practice. This report is in response to that request.
- X4 The purpose of the milk price monitoring regime is set out in s 150A of the Act and is to promote the setting of a FGMP that provides an incentive for Fonterra to operate efficiently while providing for contestability in the market for the purchase of milk from farmers. Our interpretation of the purpose of the Act is that we should assess the extent to which Fonterra's setting of the FGMP both:
- i. Provides an incentive for Fonterra to operate more efficiently; and
  - ii. Provides for contestability in the farm gate milk market, by examining whether Fonterra's assumptions are practically feasible for an efficient processor to achieve.
- X5 Our view is that setting any realistic achievable benchmark for the revenue and costs that underpin the FGMP would provide an incentive for Fonterra's management to operate more efficiently, provided that benchmark is independent of Fonterra's actual performance. The level of the FGMP does not have to be 'right' to provide incentives for Fonterra to improve its productive efficiency.
- X6 In assessing whether the setting of the FGMP provides for contestability we focus on whether the assumptions are practically feasible for Fonterra. We also consider whether the assumptions are consistent with other assumptions used to calculate the base milk price. Where the assumptions are not practically feasible we have considered the impact of this on the FGMP, in terms of both direction and materiality.
- X7 If the assumptions adopted are practically feasible for an efficient processor, then the FGMP is consistent with the contestability standard of s 150A.

- X8 We consider that the implication of the Act is that it does not matter whether *existing* independent processors can necessarily achieve the level of efficiency implied by the FGMP or not. As long as Fonterra or a potential entrant can achieve that level of efficiency, then that ensures that the FGMP reflects a practically feasible level, and would provide a normal return on incremental investment.
- X9 The dry run review, and the conclusions we draw from it, are limited in a number of respects. In particular, we have not reviewed all aspects of Fonterra's setting of the FGMP. For example, we have not reviewed a number of operating costs including energy, packaging, collection costs and overheads. Rather, we have focused on a limited number of key issues identified by us and in submissions at the start of the dry run review. These key issues are set out in paragraph 64.
- X10 Subject to the points noted in paragraphs 61 to 66 about the limited scope of our dry run review, our analysis indicates that:
- i. Fonterra's use of mostly notional data does set the FGMP largely independently from Fonterra's actual performance and this provides an incentive for Fonterra to operate more efficiently; and
  - ii. We consider that the FGMP provides for contestability in the market for the purchase of milk from farmers. Most, but not all, of the assumptions used by Fonterra are practically feasible. The exceptions relate to certain aspects in regard to the cost of capital and the asset base. Having regard to the direction and aggregate size of the impact of the exceptions on the FGMP from addressing these issues, our analysis suggests that the FGMP is practically feasible to an efficient processor. We also consider that the assumptions reviewed by us in the dry run are materially consistent with other assumptions used in determining the FGMP.
- X11 Based on the evidence currently available, our conclusion is that Fonterra's setting of the FGMP does not appear to be inconsistent with the purpose and principles in the Act.
- X12 Although we comment on the appropriateness of Fonterra's approach and assumptions in setting the FGMP, Fonterra retains significant discretion in setting that price. Our monitoring, therefore, does not provide certainty over precisely how that FGMP will be set or that it will not change over time. However, our report does show interested parties how we intend to implement the milk price monitoring regime in practice. It therefore improves clarity over the regulatory environment for the New Zealand dairy industry.
- X13 Section 150F of the Act requires Fonterra to maintain a milk price manual that sets out how the FGMP is calculated. This dry run review and future statutory reviews do not require us to assess the transparency of the milk price manual. However, we have identified areas where we will require further information for the next review and/or analysis by Fonterra, and other areas where we consider that the clarity and content of the Fonterra's milk price manual can be improved.

## Chapter 1: Introduction

1. This chapter sets out the purpose of this report and provides the rationale and context for the dry run review of Fonterra's 2011/12 methodology for setting the FGMP and Fonterra's application of that methodology. This chapter also provides an overview of the process for the dry run review.

### Purpose of this report

2. The purpose of this report is to outline our conclusions on the extent to which Fonterra's 2011/12 methodology for setting its FGMP and Fonterra's application of that methodology are consistent with the purpose and principles of the milk price regime set out in the Act.

### Context to this report

3. The Dairy Industry Restructuring Amendment Bill 2012 (the draft Bill) was introduced to Parliament on 27 March 2012.
4. Prior to the draft Bill being passed into law, the Minister for Primary Industries requested we conduct a non-statutory dry run review of Fonterra's 2011/12 methodology for setting the FGMP and Fonterra's application of that methodology. The dry run review is a non-statutory review based on Terms of Reference that we have agreed with Fonterra. We have included a copy of the Terms of Reference in Attachment 1 to this report.
5. We understand that the purpose of the dry run review is to provide increased investor certainty ahead of Fonterra potentially launching Trading Among Farmers (TAF). In particular, the dry run review is intended to inform investors how the Government-proposed farm gate milk price monitoring regime would work in practice.<sup>1</sup>
6. In March 2012, we published the Terms of Reference for the dry run review and sought stakeholder input in relation to information, evidence and key issues we should consider as part of the dry run review.
7. We received a number of submissions that have helped us to identify the key issues addressed in our dry run review. For example, submissions highlighted potential issues with production yields, cost of capital, product mix, use of notional standard plants, and sales and marketing costs.<sup>2</sup> These submissions are available on our website ([www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price](http://www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price)).
8. We have received a report from Fonterra on its views on the extent to which its methodology for setting the FGMP and the application of that methodology are

---

<sup>1</sup> Letter from Office of Hon David Carter (Minister for Primary Industries) to Mark Berry (Chair, Commerce Commission) regarding the Commerce Commission's preliminary review of Fonterra's 2011/12 Farm Gate Milk Price Manual and its application (16 February 2012).

<sup>2</sup> Other issues, such as scale and foreign exchange gains, have also been raised but these are treated as safe harbours in the Bill and are not addressed in this report.

consistent with the purpose of the draft Bill.<sup>3</sup> Fonterra has also provided us with models that detail its calculation of the FGMP and Fonterra has assisted us in obtaining further information necessary to conduct the dry run review.<sup>4</sup>

9. We issued our draft report on the dry run review on 31 May 2012 in accordance with the draft Bill. The Primary Production Select Committee reported the Bill back in June 2012 (the revised Bill). On 18 June 2012, we issued a memorandum discussing the implications of the revised Bill for the dry run.<sup>5</sup> This indicated that we thought the revised Bill did not change our analysis and conclusions in the draft dry run report. Submissions were therefore able to consider our draft report in light of our interpretation of the revised Bill.
10. We have also received a number of submissions on our draft report on the dry run review of Fonterra's FGMP. These submissions are available on our website ([www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price](http://www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price)).
11. We have considered these further submissions in drawing our conclusions on whether Fonterra's setting of its farm gate milk price is consistent with the purpose and principles of the milk price monitoring regime set out in the Act.
12. On 26 July 2012 the amending legislation was enacted following further changes to the purpose in s 150A in the Act.<sup>6</sup> Again we do not consider that the final wording in s 150A alters our interpretation of the revised Bill to the extent that it will change our conclusions for the dry run.
13. Our conclusions under any of the relevant purpose statements are therefore consistent with the task we committed to in our dry run Terms of Reference with Fonterra. However, for the purpose of this final report, we consider that it is most useful to interested parties to explain our understanding of the purpose statement in the Act, as opposed to earlier versions in various iterations of the Bill.

### Structure of the report

14. The structure of the report is as follows:
  - Chapter 2 provides an overview of the FGMP
  - Chapter 3 sets out our interpretation of the key provisions of the legislation and our approach to the dry run

---

<sup>3</sup> Fonterra, Report to Commerce Commission on Milk Price Manual, 4 April 2012.

<sup>4</sup> Some of the information provided to us by Fonterra and other parties is commercially sensitive. Although we relied on this information to conduct our analysis, the information itself is not included or referred to directly in this report. Confidential information which is included in this report, and in the detailed attachments which support this report, is blanked out and shown in square brackets.

<sup>5</sup> See "Statement on the implications of the dry run DIRA changes" at <http://www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price/>

<sup>6</sup> <http://www.legislation.govt.nz/bill/government/2012/0011/latest/DLM4371905.html>



- Chapter 4 summarises our conclusions from the dry run review. These conclusions are supported by a number of more detailed attachments on each of the key issues covered in this review.

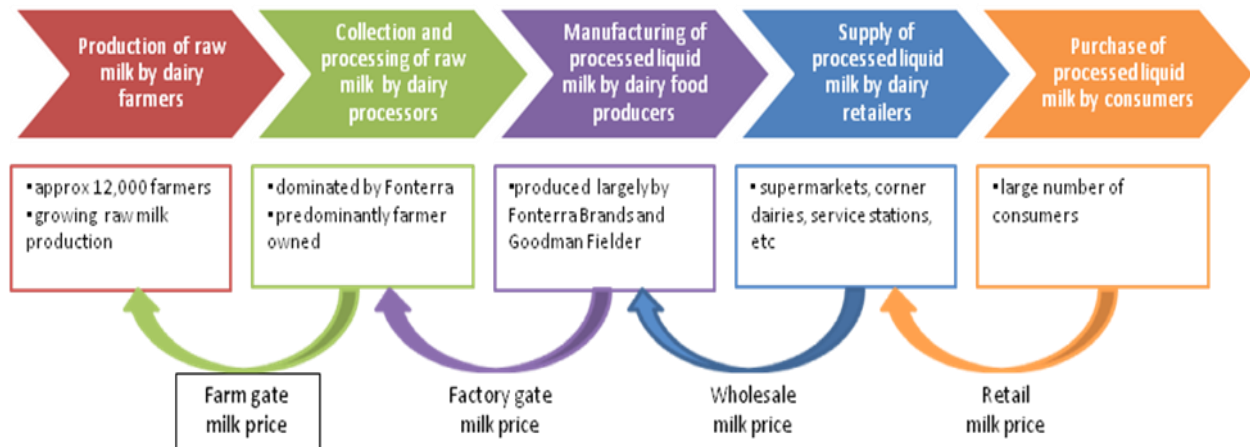
## Chapter 2: Farm gate milk price in New Zealand

15. This chapter outlines the different milk prices within the milk supply chain and explains the unique nature of the farm gate milk market in New Zealand. It also provides an overview of our understanding of Fonterra's rationale for calculating its FGMP and the methodology Fonterra uses to calculate its FGMP.

### Milk prices in New Zealand

16. Public concerns have been raised about the "milk price" in New Zealand.<sup>7</sup> The phrase "milk price" can, however, have different meanings depending on which component of the milk supply chain is being considered.
17. Figure 1 describes the milk supply chain in New Zealand and shows the different components of the "milk price" as generated by different milk markets within the supply chain.

**Figure 1: Milk supply chain in New Zealand**



18. As Figure 1 shows, the "milk price" in New Zealand is made up of the following four components:
- 18.1 **Farm gate milk price (FGMP)** is the price paid by dairy processors (eg, Fonterra) to dairy farmers for raw milk;
  - 18.2 **Factory gate milk price** is the price paid by dairy processors (eg, Synlait, and dairy food and beverage producers, eg, Goodman Fielder) to other dairy processors (eg, Fonterra) for either raw milk or dairy ingredients;
  - 18.3 **Wholesale milk price** is the price paid by dairy retailers (eg, supermarkets) to dairy food and beverage producers (eg, Fonterra Brands and Goodman Fielder) for processed milk; and

<sup>7</sup> In response, we considered whether to initiate an inquiry into milk prices under Part 4 of the Commerce Act, but concluded that there was no valid basis for a price control inquiry under Part 4. See: Commerce Commission, *Milk markets - consideration of whether to initiate a Commerce Act Part 4 Inquiry into milk prices*, August 2011.

- 18.4 **Retail milk price** is the price paid by dairy consumers to dairy retailers (eg, supermarkets) for processed milk.
19. Given that approximately 95 percent of the total raw milk produced in New Zealand is exported, all four components of the “milk price” are influenced by the demand and supply characteristics of the international dairy markets and by foreign exchange fluctuations.
20. The focus of our review is solely on the **farm gate milk price**, and not any other milk price within the milk supply chain. The FGMP accounts for between one quarter and one third of the retail milk price.<sup>8</sup>

### **Farm gate milk market in New Zealand**

21. In a workably competitive farm gate milk market, the level of the FGMP would be determined both through the process of competition between suppliers of raw milk (ie, farmers) to processors, and through those processors competing in both the purchase of raw milk and its onward sale after processing.
22. In New Zealand, the majority of farmers are also the owners of the majority of processing capacity (ie, Fonterra, which collects approximately 89 percent of total raw milk supply in New Zealand). In this situation there is not a workably competitive market process to derive a FGMP and it is determined by Fonterra using an administrative methodology. Given Fonterra’s dominant position in the market for farmers’ raw milk, Fonterra’s FGMP also effectively sets the minimum price that other dairy processors need to pay farmers for raw milk in order to attract and retain supply.

### **Fonterra’s approach to calculating its farm gate milk price**

23. Since its formation and until 2009, Fonterra’s payment to dairy farmers for their raw milk was bundled together with the returns to dairy farmers for their shareholding in Fonterra. During that time, Fonterra’s FGMP was calculated only for the purposes of estimating Fonterra’s long-run earnings for share valuation purposes.
24. Shareholding dairy farmers have two separate but related interests in Fonterra and they are recompensed through two revenue streams: payment for the raw milk they supply and the dividend payments for the share capital they hold in the cooperative.<sup>9</sup> As a result, it is the total return on raw milk and share capital invested in the cooperative that supplier-shareholders tend to be interested in, rather than its individual components.

---

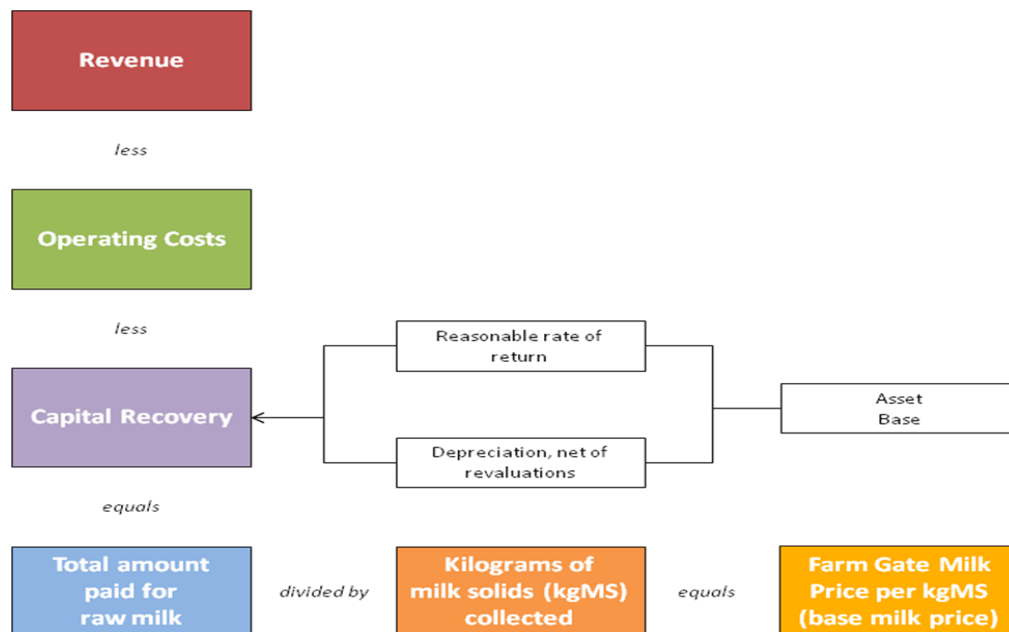
<sup>8</sup> The actual proportion of the farm gate milk price to the total combined milk price is difficult to estimate as each of the milk price components (particularly the retail milk price) varies among retailers.

<sup>9</sup> To supply raw milk to Fonterra, dairy farmers are required to hold one share for every kilogram of milk solids they wish to supply the cooperative. We understand that an average Fonterra supplier holds approximately half a million dollars in Fonterra shares at the current share valuation. There are a small number of dairy farmers who supply Fonterra with raw milk on a contract supply basis and do not hold shares.

25. In 2009, Fonterra unbundled its total return to farmers into a FGMP paid for raw milk and returns on share capital. With the unbundling came the need to set the FGMP independently of Fonterra's share valuation processes.
26. In 2010, Fonterra shareholders voted to change Fonterra's capital structure to implement TAF. TAF is proposed to replace the current Fonterra share purchase and sale process, where the shares are issued and redeemed by Fonterra. TAF was endorsed by Fonterra shareholders in a second vote in 2012.
27. Under TAF, dairy farmers wanting to sell their Fonterra shares (in accordance with their raw milk supply decisions) would trade their Fonterra shares with other Fonterra suppliers with the share price determined by supply and demand. In addition, an external fund will be established into which farmers may sell beneficial rights to a portion of their shares in exchange for cash and a voucher. External investors would be able to purchase shares in the fund (beneficial rights to receive income, but not milk supply rights or voting rights) that farmers have sold.
28. Under TAF, there are some external (non-farmer) investors in the external fund, whose economic interests will be to maximise the share price and the return on share capital invested in Fonterra, rather than the return on raw milk.
29. In 2011, Fonterra released its methodology for calculating the FGMP, contained in Fonterra's milk price manual, on its website. Fonterra's release of its methodology was accompanied by a Milk Price Statement which provided some information about the key elements of the 2010/11 FGMP calculation.
30. The Fonterra Board sets the FGMP for each dairy season. The Board is advised by a Milk Price Panel, whose role is to oversee the governance of Fonterra's milk price manual. The Milk Price Panel has five members, with the majority and the chair of the panel being independent of farmer interests. All panel members are appointed by the Fonterra Board and ratified by Fonterra farmer-shareholders.

#### **Fonterra's methodology for setting its farm gate milk price**

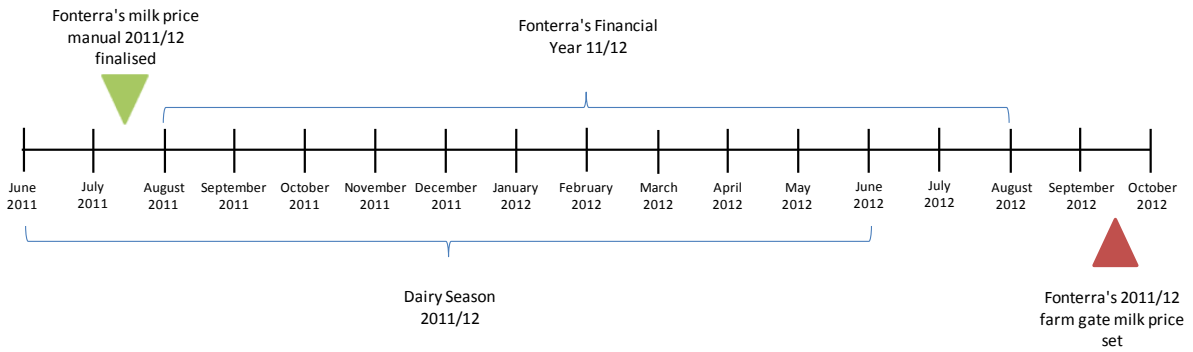
31. Fonterra's methodology for calculating its FGMP is guided by a set of principles set out in Fonterra's constitution and outlined in Fonterra's milk price manual. Figure 2 provides a visual representation of Fonterra's methodology.

**Figure 2: Fonterra's FGMP methodology**

32. Fonterra calculates the FGMP from the total pool of money available for payment to farmers for their raw milk supply to Fonterra in a season, which is determined by:
- 32.1 The revenue Fonterra would earn in NZ dollars if the equivalent of all the raw milk Fonterra collects in New Zealand was converted into a chosen product mix, and sold on international dairy markets; less
- 32.2 The costs of collecting raw milk from farms, processing it into the chosen product mix and then transporting this product mix to the point of export from New Zealand, along with sales and administration expenses, depreciation and a return on investment on fixed assets and working capital.
33. The FGMP is expressed in terms of dollars per kilograms of milksolids (kgMS) supplied to Fonterra. Payments to individual farmers for their milk are, however, adjusted for the composition of milk supplied (in terms of the fat and protein components) and the timing of supply (eg, milk supplied during the winter period attracts certain premiums).
34. Although Fonterra makes a number of payments to farmers for raw milk during the dairy season (based on its forecast FGMP), its current policy is to confirm the final FGMP for the season a few months after the end of that season. The dairy season runs from 1 June to 31 May. Fonterra's final FGMP is typically set in late September after the end of the relevant season. This results in end of year 'wash-up' payments to farmers.

35. Fonterra’s current policy is that its milk price manual is subject to comprehensive review every four years. However, changes to the milk price manual can be made in the interim on a prospective basis. Any changes to the milk price manual take effect in the financial year after the year in which the changes are made (Fonterra’s financial year is from 1 August to 31 July). Figure 3 shows a timeline of Fonterra’s decisions.

**Figure 3: Timeline for setting the FGMP**



36. As set out in Attachment 2 of this report, the dry run review has different timelines than the statutory reviews under the Act.

### Chapter 3: Our approach to the dry run review

37. This chapter summarises the key legislative provisions of the Act, our interpretation of the legislation, and our approach to the dry run review. Attachment 3 of this report discusses these matters in more detail. This chapter also sets out the scope of, and limitations on, the dry run review.

#### Context to our analysis in this chapter

38. As discussed in Chapter 1 of this report, the draft Bill was introduced to Parliament on 27 March 2012. We issued our draft dry run report in accordance with this version of the draft Bill. Prior to submissions being due, the revised Bill was reported back from the Primary Production Select Committee.<sup>10</sup>
39. On 18 June 2012, we issued a memorandum discussing the implication of the revised Bill on the dry run.<sup>11</sup> This indicated that we thought the revised Bill did not change our analysis and conclusions in the draft dry run report. Submissions were therefore able to consider our draft report in light of our interpretation of the revised Bill. We consider submissions related to the interpretation of the Bill (as it was then) in this chapter in Attachment 3 of the report.
40. On 26 July 2012 the amending legislation (the Act) was enacted following further changes to the purpose in s 150A via a Supplementary Order Paper.<sup>12</sup> Again we do not consider that the final changed wording in s 150A alters our interpretation of the revised Bill to the extent that it will change our conclusions for the dry run.
41. Our conclusions under any of the relevant purpose statements are therefore consistent with the task we committed to in our dry run Terms of Reference with Fonterra. However, for the purpose of this final report, we consider that it is most useful to interested parties to explain our understanding of the purpose statement in the Act, as opposed to earlier versions in various iterations of the Bill.

#### The Act

42. The Act introduces a new Subpart 5A into Part 2 of the Dairy Industry Restructuring Act 2001 (DIRA) relating to Fonterra's process for, and calculation of, its FGMP, (referred to in the Act as the base milk price). Consistent with the legislation, this report will principally refer to the base milk price, rather than the FGMP.
43. Subpart 5A provides for a milk price monitoring regime, under which the Commission will undertake annual reviews of the base milk price. We will review the methodology set out in Fonterra's milk price manual, and Fonterra's application of that methodology in setting its base milk price, against specified purpose and principles in Subpart 5A of the Act.

<sup>10</sup> [http://www.parliament.nz/en-NZ/PB/SC/Documents/Reports/2/6/9/50DBSCH\\_SCR5490\\_1-Dairy-Industry-Restructuring-Amendment-Bill-11-2.htm](http://www.parliament.nz/en-NZ/PB/SC/Documents/Reports/2/6/9/50DBSCH_SCR5490_1-Dairy-Industry-Restructuring-Amendment-Bill-11-2.htm)

<sup>11</sup> See "Statement on the implications of the dry run DIRA changes" at <http://www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price/>

<sup>12</sup> <http://www.legislation.govt.nz/bill/government/2012/0011/latest/DLM4371905.html>

44. We set out the specified purpose and other key provisions of Subpart 5A of the Act below.

### **“Subpart 5A – Base Milk Price**

#### *“Purpose of subpart*

#### **“150A Purpose of this subpart**

- (1) The purpose of this subpart is to promote the setting of a base milk price that provides an incentive to new co-op to operate efficiently while providing for contestability in the market for the purchase of milk from farmers.
- (2) For the purposes of this subpart, the setting of base milk price provides for contestability in the market for the purchase of milk from farmers if any notional costs, revenues, or other assumptions taken into account in calculating the base milk price are practically feasible for an efficient processor.

#### **“150B Certain assumptions do not detract from purpose of subpart**

It does not detract from the achievement of the purpose set out in **section 150A** that new co-op sets the base milk price using assumptions that include any of the following:

“(a) that new co-op operates a national network of facilities for the collection and processing of milk:

“(b) that the size of new co-op's assumed units of processing capacity approximates to the average size of new co-op's actual units of processing capacity:

“(c) that gains and losses experienced by new co-op resulting from foreign currency fluctuations, including from new co-op's foreign currency risk-management strategies, are incorporated in the base milk price:

“(d) that all milk collected by new co-op is processed into commodities at yields that are practically feasible.

#### **“150C Setting of base milk price in way that is consistent with certain principles**

“(1) For the achievement of the purpose set out in **section 150A**, the base milk price must be set in a way that is consistent with the following principles:

“(a) revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the times that those commodities are contracted to be sold by new co-op:

“(b) costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital) of—

“(i) collecting milk; and

“(ii) processing milk into the same portfolio of commodities as the portfolio adopted for the purposes of **paragraph (a)**; and



“(iii) selling those commodities:

“(c) new co-op collects all milk that it processes from the farms on which the milk is produced.

“(2) For the purposes of **subsection (1)(a) and (b)(ii)**, the portfolio of commodities must be determined having regard to the following:

“(a) in respect of the commodities included in the portfolio,—

“(i) the commodities that are likely to be the most profitable over a period not exceeding 5 years from the time when the portfolio is determined; and

“(ii) the need for commodities included in the portfolio to utilise all components of milk; and

“(b) in respect of the relative proportions of the commodities included in the portfolio, the quantities of commodities likely to be produced by new co-op based on—

“(i) the mix of commodities that are likely to be most profitable; and

“(ii) new co-op’s physical manufacturing capacity for the production of those commodities; and

“(iii) the need to utilise all components of the milk processed.

45. Our views on these provisions are discussed further in Attachment 3 to this report.

### **Our interpretation of subpart 5A of the Act**

46. We have interpreted the intention of subpart 5A of the Act as follows:<sup>13</sup>

46.1 The focus of the base milk monitoring regime is on improving incentives for Fonterra to drive cost efficiencies whilst also providing for contestability in the farm gate milk market;

46.2 The base milk price is intended to reflect notional costs (which may be lower than Fonterra’s current actual costs), to encourage Fonterra to be more efficient;

46.3 It is not mandatory for us to model the base milk price that independent processors can afford to pay;

46.4 To ensure contestability in the market, any assumptions taken into account in calculating the base milk price must be practically feasible for an efficient processor to replicate; and

46.5 Fonterra still has significant discretion to set the base milk price as it sees fit.

---

<sup>13</sup> Our detailed interpretation is set out in Attachment 3 to this report.

47. We interpreted the intention of s 150B as creating ‘safe harbours’ for the items listed in paragraphs (a) to (d). If an assumption is listed in s 150B, we do not consider it further against the purpose statement. We also interpreted s 150B that, if the assumption is considered as a safe harbour, then that assumption only applies to Fonterra, rather than any other efficient processor.<sup>14</sup> Further, we have interpreted the phrase “does not detract from” in s 150B to have the same meaning as “is not inconsistent with”.
48. Section 150C requires Fonterra to adopt certain assumptions. For assumptions listed in s 150C we have simply checked that Fonterra has applied them in its methodology to set the base milk price.

### **Key questions asked as part of the dry run review**

49. We understand the proposed milk price monitoring regime in the Act requires us to examine the extent to which the base milk price:
- 49.1 Provides incentives for Fonterra to operate more efficiently (efficiency dimension); and
- 49.2 Provides for contestability in the market for the purchase of milk from farmers (contestability dimension).

### *Efficiency dimension*

50. Our approach to considering the efficiency dimension is to examine the extent to which the notional components of the FGMP incentivise Fonterra to operate more efficiently. We have interpreted the efficiency standard as primarily focusing on productive efficiency.
51. Our view is that setting any realistic achievable benchmark for the costs that underpin the base milk price, provided that benchmark is independent of Fonterra’s actual performance, would provide an incentive for Fonterra’s management to improve efficiency. However, the price level does not have to be ‘right’ to provide incentives for Fonterra to improve its productive efficiency. Setting any realistic achievable independent benchmark would provide a target for Fonterra’s management to beat.<sup>15</sup>
52. We also consider that the Act’s intention is that the base milk price is intended to reflect notional costs to provide an incentive on Fonterra to be more cost efficient. The reasons are:
- 52.1 The legislation clearly envisages the assumptions of notional values and in some instances requires the use of a notional business; and

---

<sup>14</sup> For example, the yields assumption only applies to Fonterra.

<sup>15</sup> The benchmark should be stable over time in order to provide an incentive to operate efficiently over time. Under the DIRA legislation the base milk price will not, however, necessarily be a stable benchmark over time. The Act allows Fonterra to change its methodology and the application of that methodology each year. The range within which the milk price is found to be consistent with the purpose and principles might be fairly wide, potentially making it difficult to predict the price from one year to the next.

- 52.2 As we explain above, to create an incentive to improve productive efficiency, the benchmark cannot be based on actual cost.
53. We consider whether the efficiency standard of s 150A is met based on the use of notional and actual values in Fonterra's milk price manual and the application of the manual. We are assessing whether Fonterra's methodology, and its application, does incentivise Fonterra to improve its productive efficiency and not whether Fonterra actually improves its productive efficiency.

*Contestability dimension*

54. Our approach to considering the contestability dimension is to examine whether Fonterra's assumptions are practically feasible for an efficient processor, including whether they are consistent with other assumptions used to calculate the base milk price. If the assumptions adopted are practically feasible, then the base milk price is consistent with the contestability standard of s 150A.
55. We assessed the contestability dimension by examining:
- 55.1 Whether the assumption is practically feasible for Fonterra; and
- 55.2 Whether the assumption is reasonable for another efficient processor. This is to ensure that an assumption is not practically feasible for Fonterra due to features which are unique to Fonterra and which do not relate to Fonterra acting efficiently. An example of this would be if Fonterra was to restate retrospectively an assumption in the calculation of the FGMP.
56. Submissions indicated that it is not clear whether our interpretation of the draft Bill is that the assumptions are practically feasible today or over time.<sup>16</sup> Our interpretation is that it must at the very least be practically feasible today for an incremental plant built by Fonterra or another efficient processor, as opposed to necessarily expecting all of Fonterra's existing plants to be able to operate at that level of efficiency.
57. Submissions also argued that we need to consider whether the assumptions are practically feasible on both an individual level and in aggregate.<sup>17</sup> Our view is that we do need to make, and have made, an aggregate assessment. For purposes of the targeted dry run review, after we had assessed each selected issue:
- 57.1 We considered whether there is consistency between the assumptions;

---

<sup>16</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 9

<sup>17</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 30; Open Country, Synlait and Miraka submission, dated 29 June 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 16

- 57.2 Where the assumptions are not practically feasible or reasonable, we have considered the impact of this on the base milk price, in terms of both direction and materiality; and
- 57.3 We then draw a conclusion on the extent to which the overall base milk price provides for contestability in the market within the targeted scope of the dry run review i.e. based on the aggregate impact of the assumptions that were not practically feasible or reasonable.
58. We note that the Act does not require us to separately model the costs of an independent processor when making this or any other assessments (s 150P(3)).
59. Our interpretation of the Act is that in considering what is reasonable for an efficient processor, the Commission is not limited to considering the existing processors as potential entrants exist and may enter the New Zealand milk processing market. Under the Act, it does not matter whether *existing* independent processors can necessarily achieve that efficiency or not. As long as Fonterra or some other *potential* entrant can achieve that level of efficiency, then that ensures that the base milk price reflects a practically feasible level, and would provide a normal return on the incremental investment.
60. Inevitably, our review involves a level of subjectivity and we have exercised a degree of judgement, based on our experience as an economic regulator.

#### **Scope of the dry run review**

61. The dry run review is a targeted review of Fonterra's 2011/12 methodology for setting the base milk price and its application of that methodology. The review focuses on a limited number of key issues identified by industry stakeholders and from our own analysis as potentially contentious and material to the calculation of Fonterra's base milk price.
62. Further, the dry run review is a combined review of Fonterra's milk price manual and the calculation of the base milk price in respect of a limited number of key issues, rather than separate reviews of the milk price manual and the base milk price calculation, as will occur under the statutory reviews.
63. For the purpose of the dry run review we have reviewed Fonterra's milk price manual (as of September 2011) and Fonterra's base milk price calculations as at January 2012 (that is, an interim estimate of the 2011/12 base milk price).
64. The key issues covered in the dry run review are as follows:
- selection of the reference commodity products
  - production yields
  - sales phasings
  - selection of prices

- sales costs
- labour costs
- lactose costs
- tax provision
- asset base
- cost of capital.

65. We received a number of submissions on our draft dry run report about potential issues relating to Fonterra's total cost base<sup>18</sup> and the performance gap between Fonterra's actual commodities business and that of the notional processor.<sup>19</sup> We note that these issues are outside the scope of the dry run review but can be considered further in future statutory reviews.

#### **Limitations on the dry run review**

66. Our dry run review and our initial conclusions are limited in certain respects. In particular:

- 66.1 As outlined in Chapter 1 of this report, we have finalised the dry run review on the basis of the provisions in the Act. We set out our interpretation of the relevant provisions of the Act in full in Attachment 3 to this report;
- 66.2 We have received a substantial amount of information from Fonterra to support its methodology and its application of that methodology, but not all of the information we sought was available in the form we wanted (for example, if it was not sufficiently comparable to the notional milk price business modelled for calculating the milk price<sup>20</sup>);
- 66.3 We have not reviewed the appropriateness of the capital asset values used in the model (eg, the assumed capital costs for building a new powder plant);
- 66.4 We have reviewed Fonterra's modelling, but we have not undertaken our own financial modelling of Fonterra or of an independent processor (either existing or potential). In any event, s 150P(3)(a) states that it is not mandatory to undertake modelling of an independent processor;

---

<sup>18</sup> See Synlait, Miraka and Open County, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology 5 July 2012, paragraph 17 – 18*; and Westland Milk Products, *Submission on the Commerce Commission's review of Fonterra's Farm Gate Milk Price 29 June 2012, page 7*

<sup>19</sup> Synlait, Miraka and Open County, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology 5 July 2012, paragraph 21*.

<sup>20</sup> Fonterra's current business performance relates to a much wider set of products, and sales channels, than that assumed in the milk price manual and calculations. This limits the applicability and usefulness of current performance information to calculating the milk price (or testing that calculation).

- 66.5 Also consistent with our interpretation of the Act, we have not calculated our own estimate of the base milk price, and, in any event, s 150P(3)(b) prohibits us from stating the amount of the base milk price according to our own calculations; and
- 66.6 Finally, we have not audited the information used or models created by Fonterra and its advisers to calculate the base milk price.

## Chapter 4: Conclusions from the dry run review

67. This chapter summarises our conclusions from the dry run review. It draws on the analysis of individual key issues, which we discuss in Attachments 4 - 14 to this report.
68. As outlined in Chapter 3 and Attachment 3 of this report, the dry run review sought to assess:
- 68.1 Whether Fonterra's milk price manual and the application of the manual provide an incentive for Fonterra to operate more efficiently (efficiency dimension); and
  - 68.2 Whether the assumptions adopted are practically feasible, both on an individual level and in aggregate, to meet the contestability standard (contestability dimension).
69. The dry run review, and the conclusions we draw from it, are limited as we have focused on a limited number of key issues for the purposes of the dry run review. Subject to the points noted in paragraphs 61 and 66 about the limited scope of our work, our dry run review indicates that:
- 69.1 Fonterra's use of mostly notional data does set a farm gate milk price which provides an incentive for Fonterra to operate more efficiently; and
  - 69.2 In respect of the key issues considered, we are satisfied that most assumptions appear to be practically feasible to an efficient processor both individually and in aggregate. Considering the key issues in aggregate, the base milk price would meet s 150A(2) and therefore provide for contestability in the market for the purchase of milk from farmers.
70. We summarise our conclusions in Table 2, titled Conclusions Summary Table on page 28 of this report.

### Efficiency dimension

71. Fonterra uses a mix of actual and notional data to set the base milk price. The use of some notional data means that the base milk price is set independently of Fonterra's actual performance. Improvements in Fonterra's profits, after payment of the base milk price, therefore represent real progress by Fonterra in improving its product mix or product yields, and/or reducing operating costs. When the base milk price uses notional data, independent of Fonterra's actual performance, Fonterra has an incentive to operate more efficiently. Components of the base milk price that are set using notional data include production yields and a range of costs.
72. The use of actual data is unlikely to provide an incentive for Fonterra to operate more efficiently, since the base milk price will simply reflect whatever Fonterra's actual performance was during that dairy season. In our view, the use of actual data is appropriate either when there is no readily available information to set a robust benchmark level or when Fonterra has no control over the actual cost.

73. In Table 2 we identify when actual and notional data is used in the model in respect of the key issues we have considered as part of the dry run review. We also summarise how this may create an incentive for Fonterra to operate more efficiently. On balance, we consider that Fonterra has set the base milk price so as to provide an incentive for Fonterra to operate more efficiently.

### Contestability dimension

74. The Act assumes that if the level of the base milk price is set using assumptions that are not practically feasible, the base milk price may not provide for contestability in the market for the purchase of milk from farmers.
75. To consider the contestability dimension, we have considered whether the assumptions (both individually and in aggregate) used in setting the base milk price are practically feasible for Fonterra to achieve and whether they are reasonable (that is, they relate to Fonterra operating efficiently rather than some other features which are unrelated to whether Fonterra is operating efficiently).<sup>21</sup> We summarise our findings regarding whether Fonterra's assumptions are practically feasible and reasonable in Table 2 below.
76. We have, however, identified a number of Fonterra's assumptions or approaches that do not appear to be both practically feasible for Fonterra and reasonable.
77. Of the issues we considered, the following approaches and assumptions do not appear to be practically feasible for Fonterra:
- 77.1 The approach to determining the cost of debt which references debt premiums in the United States of America but makes insufficient or no allowance for the additional costs incurred by NZ-domiciled operations (such as cross-currency swap costs, allowance for debt issuance costs). The impact on the base milk price is likely to be small (as discussed in Attachment 13); and
- 77.2 Fonterra's model allocates powder plants to either the South Island or the North Island, but not to milk producing regions within those islands. This creates potential inconsistency with other assumptions (as discussed in Attachment 12).<sup>22</sup>
78. In our view, the approach to determining the phasing of sales is reasonable. This is discussed further in Attachment 6).
79. Having regard to the direction and size of the impact on the base milk price from addressing these issues, our analysis suggests that the overall base milk price meets

---

<sup>21</sup> Refer to paragraph 55 for an example.

<sup>22</sup> We have also identified a potential inconsistency in the determination of operating costs (in particular collection costs) in light of the optimisation of the allocation of plants between two regions (as discussed in **Attachment 12**), however these costs were not included in the key issues to be addressed in the scope of the dry run review.



s 150A(2) and therefore provides for contestability in the market for the purchase of milk from farmers. This analysis is summarised in Table 1 below.

80. This conclusion also holds when considering the assumptions in aggregate. Our analysis indicates for the issues covered within the scope of the dry run review, that the assumptions are internally consistent. For example the yield assumption is consistent with the assumption of a small range of undifferentiated Reference Commodity Products (RCPs) produced and the configuration of the plant included within the asset base.

**Table 1: Impact on the base milk price resulting from assumptions which are not reasonable or practically feasible, or where we have not drawn a conclusion**

	Impact of Fonterra's approach on the base milk price in terms of size and direction	
	Direction	Size
Sales phasing	Unclear in case of retrospective setting of sales phasing profile	No impact if historical actuals are used. Unknowable impact if Fonterra were to optimise sales phasing retrospectively
Asset base	Increased the base milk price	Some aspects over-optimised but impact not significant
Cost of capital	Increased the base milk price	Small in relation to issuance costs and swap costs

81. To the extent that the differentiated products produced by independent processors attract higher output prices (net of incremental processing and sales costs) than the commodities modelled in Fonterra's base milk price calculations, independent processors have additional incentives to enter the market for the purchase of farmers' raw milk. In other words, even if the base milk price precludes entry from a processor intending to produce undifferentiated milk powders, it may not preclude potential competition for farmers' raw milk from a processor intending to produce differentiated milk products.
82. More significantly, our review of Fonterra's analysis to support recent business cases for large milk processing investment also supports the view that Fonterra's base milk price provides for contestability in the market for the purchase of milk from farmers. Fonterra's analysis shows that recent powder investments were expected to be NPV

positive when assessed against the base milk price.<sup>23</sup> If Fonterra expects to recover all of its costs from new investment under its current base milk price settings, other efficient processors too would be able to potentially compete for farmers' raw milk.

*Gaps in available information and analysis*

83. Fonterra and its advisers have provided us with substantial information to support and explain aspects of the base milk price. However, not all of the information that we sought was available.<sup>24</sup> These gaps are noted in the second to last column of Table 2.
84. We expect these gaps can be addressed over future statutory reviews. For example we would expect that the information provided to support the yield assumptions would improve over time as additional trials are able to be conducted and more performance information becomes available from the new Darfield plant which is a dedicated WMP plant producing whole milk powders and is of a similar size to the standard plant used in the base milk price calculation.

*Transparency over how the base milk price is calculated*

85. Section 150F of the Act requires Fonterra to maintain a milk price manual that sets out how the base milk price is calculated. The manual and any amendments must be made publicly available.<sup>25</sup> However, the Act does not prescribe what information used to set the base milk price must be included in the manual and disclosed publicly.
86. This dry run review and future statutory reviews do not require us to assess the transparency of the milk price manual. However, we have made some high level comments regarding the transparency of the milk price manual in this report.
87. The final column of Table 2, labelled 'transparency to 3<sup>rd</sup> parties', identifies whether in our view Fonterra's current milk price manual did or did not make clear how each of the key issues considered as part of the dry run review would be treated when calculating the base milk price.
88. In particular, the conclusions summary table identifies:
- 88.1 Where the approach proposed in Fonterra's current milk price manual is not fully consistent with the approach used to calculate the base milk price (in particular, the explanation in the manual dealing with some aspects of fixed assets);

---

<sup>23</sup> Under DIRA Fonterra is obliged to accept all milk supply offered by dairy farmers in New Zealand. Fonterra's business cases focus on ensuring positive incremental returns from the additional capacity relative to the next best alternative for processing that milk, rather than relative to the base milk price. However, the analysis discussed in paragraph 82 which supports those business cases, indicates that the expected returns exceed the cost of capital for those investments.

<sup>24</sup> Especially for the reason discussed above in paragraph 66.2

<sup>25</sup> Section 150F(2).

- 88.2 Where Fonterra's current milk price manual does not clearly explain the methodology for how a particular item is to be treated in calculating the base milk price; and
- 88.3 Where Fonterra's current milk price manual does not disclose key quantitative information used in calculating components of the base milk price. Some data may be considered confidential and not disclosed, but where it is not confidential, more complete disclosure would ensure the manual more fully sets out how the base milk price is to be calculated.
89. By identifying these issues at this time, Fonterra has an opportunity to revise its milk price manual and how it sets out how the base milk price is calculated prior to our first statutory review.
90. In its submission on our draft Dry Run Report, Fonterra submitted that:<sup>26</sup>
- 90.1 It is not reasonable in all instances to expect complete transparency, particularly where this would enable third parties to draw inferences about Fonterra-specific information that is commercially sensitive; and
- 90.2 Additional information on the calculation of the FGMP is provided by Fonterra through the Milk Price Statement. Fonterra submits although that statement is voluntarily provided by Fonterra that it is in Fonterra's interest to provide the requisite level of disclosure necessary to ensure all stakeholders' confidence in the stability and robustness of the Milk Price methodology.

---

<sup>26</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 June 2012, p.8.

Table 2: Conclusions summary table

Issue	Legislative Requirement	Notional v Actual	Materiality and potential impact on base milk price	Provides incentive for Fonterra to operate efficiently?	Practically feasible?	Reasonable?	Gaps in Fonterra Information and Analysis	Transparency to 3rd parties
<b>GENERAL</b>								
Selection of reference commodity products (and assumed mix of those RCPs)	DIRA Act requires commodities that are likely to be the most profitable and which are based on existing and planned investment in physical capacity (s 150C(2)(a))	Notional	Unknown	Yes	Yes	Yes	Limited formal analysis supporting initial (2008) selection of RCPs. In particular, the relative returns offered by the different product streams.	Ex post revenue details around the RCPs selected are highly transparent via the Milk Price Statement (including the product mix profile used).
Model assumes a volume of milk powder sales and lactose purchases much greater than that currently observed		Notional	Unknown	N/a	Yes, links to average realised prices	Yes	N/a	N/a
<b>REVENUES</b>								
Yields	A safe harbour as long as yields are (practically) feasible (s 150B(d)).	Notional	Very High	Safe harbour (s 150B(d))	Yes, a challenging target but apparently consistent with other assumptions in the model (standard plant, limited product range, powders only).	Not applicable (safe harbour)	Limited data received (no yield information available by plant or product).	Not transparent. Methodology for calculating yields not clearly stated in milk price manual. Key assumptions of losses applied by RCP not published.
Sales phasing		Actual	Unknowable	No, use of Fonterra's actual sales phasings does not provide an incentive to operate efficiently	Yes, provided no ex post optimisation adjustments are made	Yes, provided the sales phasings are not adjusted with the benefit of hindsight		Ex post revenue details around sales phasings are spelt out in Milk Price Statement.
Prices for product	Revenue is determined from prices at the times that those commodities are contracted to be sold by Fonterra (s 150C(1)(a)).	Uses selected actual prices (with heavy reliance on GDT sales)	Very high, but extensive use of GDT prices reduces Fonterra's discretion to change the Milk Price	Yes, use of GDT prices is publicly available information, setting an objective benchmark. To increase its profits Fonterra can seek to obtain higher prices through other channels, or to sell more profitable differentiated products.	Yes, largely based on GDT prices	Yes		Transparent as GDT results are publicly available, publication of pricing selection policies would make it more transparent for non-GDT products.
<b>COSTS</b>								
Sales Costs		Notional	Relatively low	Yes	Yes	Yes		Not transparent. Methodology for determining sales costs not clearly stated in the milk price manual.
Labour Costs		Notional Employee Numbers Actual Salary Rates	Medium	Yes, the labour costs modelled represent the costs of producing the RCPs, and not Fonterra's actual costs. Fonterra can improve its profits by improving the productivity of its own labour force.	Yes	Yes		Not transparent. Methodology for determining labour costs not clearly stated in the milk price manual.
Lactose Costs		Notional Lactose Volumes Actual Lactose Price and Freight	Medium	Yes	Yes	Yes		Ex post transparency provided via Milk Price Statement disclosures.
Tax Provision		Notional	Medium	The tax cost is a consequence of a range of other decisions and incentives to be tax efficient should not outweigh the overall incentive to operate efficiently.	Yes	Yes		Not transparent, results from complex interrelationship of many variables
Asset Base	Safe Harbour: "Fonterra operates a national network of facilities for the collection and processing of milk" (s 150B(a)). Safe Harbour: the size of plants modelled in the milk price approximates the average size of Fonterra's actual units of processing capacity (s 150B(b)).	Notional (size, location, plant capability, number)	Medium	Assumption of modern, averaged-sized plant operating at benchmark level will place scrutiny on older or less efficient plant to improve performance or be replaced. Creates a weak incentive in respect of larger, modern Fonterra plants.	Yes, but questions over potential over-optimisation through two regions, ancillary services.	Yes	No specification of site location. So unable to demonstrate consistency with collection costs.	Not transparent. Methodology used in base milk price calculation not entirely consistent with milk price manual, and is not well explained in the Manual.
Annuity Calculation (capex and depreciation)	Costs include capital costs and a return on capital over the long term (s 150C(1)(b)).	Notional	Medium	Not applicable	Yes	Yes	No data to support CGPI assumptions for some periods	Not transparently stated in the FGMP manual
Cost of Capital	Costs include capital costs and a return on capital over the long term (s 150C(1)(b)).	An estimate of actual WACC	Medium	Yes, though an unrealistic or infeasible WACC creates an incentive for inefficiency.	Inadequate allowance for costs of debt (debt premium and costs of cross-currency swaps). Impact on base milk price is small.	Yes	No analysis to support asset beta is currently available. Debt costs incomplete.	Yes, methodology and approach to individual parameters is clearly stated.
Foreign exchange gains and losses	Gains and losses from managing foreign currency can be incorporated in the base milk price (s 150B(c)).	Actual	High	Not applicable (safe harbour, s 150B(c))	Not applicable (safe harbour, s 150B(c))	Not applicable (safe harbour, s 150B(c))		Not applicable (safe harbour, s 150B(c))

## **Attachment 1: Terms of Reference for the dry run review**

### **Monitoring of Fonterra Milk Price Manual and Base Milk Price Calculation**

#### **Terms of Reference for 2012 Pre-Legislation Review**

Between:

**Commerce Commission and  
Fonterra Co-operative Group Limited**

6 March 2012

#### **Commission Reviews**

1. The Commission will review the 2011/12 Fonterra Farm Gate Milk Price Manual<sup>27</sup> (Manual) and prepare a report on the extent to which the Manual is consistent with the purpose and the milk price principles set out in the January 2012 exposure draft of the Dairy Industry Restructuring Amendment Bill (the exposure DIRA Amendments) (the Manual Review).
2. The Commission will perform a targeted review of Fonterra's application of the Manual and prepare a report on the extent to which the selected assumptions, inputs and processes used by Fonterra in calculating the base milk price for 2011/12 are consistent with the purpose and the milk price principles in the exposure DIRA Amendments (the Price Review). The Commission will select the aspects of the application of the Manual that will be targeted for review, including any aspects that Fonterra requests are included in the Price Review (to be provided by Fonterra to the Commission by 9 March 2012).
3. Both the Manual Review and Price Review (the Reviews) will be made publicly available once completed. The Commission will complete its final Review report(s) by 14 August 2012.
4. Completion of the Price Review by the Commission is based on Fonterra's assurance that the selected assumptions, inputs and processes that the Commission will be assessing will not materially change between March and August 2012.
5. The parties acknowledge that the Government has already publicly consulted on the exposure DIRA Amendments, and that the consultation process may result in changes to the exposure DIRA Amendments before they are introduced into Parliament. The parties agree that they will discuss the ongoing scope and feasibility of the Reviews as soon as any DIRA amendments are introduced into Parliament.

#### **Provision of information by Fonterra**

6. Fonterra will prepare a brief report for the Commission providing Fonterra's view on the extent to which the Manual is consistent with the purpose and the milk price principles set out in the exposure DIRA Amendments, and the rationale underpinning any assumptions in the Manual that are material to the calculation of the farm gate

---

<sup>27</sup> Provided by Fonterra to the Commission and marked 'effective date 21 September 2011'.

milk price (key assumptions). In particular, for each key assumption that has involved a choice between the uses of notional or actual inputs, Fonterra should explain the rationale for that choice and for the definition/specification of that input as set out in the Manual. This report is due by 9 March 2012. Fonterra may update this report in the course of the Reviews to address any matters raised by the Commission.

7. For the purpose of completing the Reviews, the Commission may also ask any additional questions and request any other documents or information (Requests) that it considers are relevant to the Reviews, and set timeframes for responses by Fonterra to the Requests.
8. Requests by the Commission will be treated by Fonterra as if s 98 of the Commerce Act 1986 applied to them.

### **Confidentiality**

9. Fonterra will specifically mark as confidential all information that it reasonably believes is commercially sensitive (Confidential Information) and explain the rationale for its belief.
10. Except as set out below or required by law, in accordance with its normal procedures the Commission will –
  - 10.1 Not disclose Confidential Information to any third parties other than its professional advisors, who will be subject to confidentiality agreements
  - 10.2 Not use Confidential Information for any purpose other than the Reviews or subsequent reviews relating to Fonterra’s milk price.
11. The Commission may provide Confidential Information to MAF Officials.
12. For the avoidance of doubt –
  - 12.1 The Commission will include conclusions drawn from the Confidential Information in its final published Review report(s)
  - 12.2 The fact that the Reviews are occurring, or end, will not be confidential. If the Reviews end, the reasons why they have ended will not be confidential
  - 12.3 Nothing in paragraph 10.2 is intended to prevent members of the Commission who participate in the Reviews from applying knowledge of Fonterra that they gain during the Reviews in any other capacity, including in relation to the Commission’s statutory powers and functions.

### **Fonterra / interested party input**

13. It is agreed in principle that the Commission will –
  - 13.1 Work with Fonterra to better understand Fonterra’s milk price setting process while it is performing the Reviews

- 13.2 Subject to meeting its own internal processes, provide Fonterra with an early indication of any aspect of the Manual or base milk price calculation that in its view is materially inconsistent with the exposure DIRA Amendments (including any change in the Commission's views after it has received submissions on its draft Review report(s), as contemplated in paragraphs 16 and 17).
14. The Commission may seek input from other interested parties into the Review process. The purpose of that input is to assist the Commission in completing the Reviews.
15. If the Commission wishes to seek any input from other interested parties, it will discuss the nature of the input it is seeking from interested parties with Fonterra for the purpose of targeting its requests. However, for the avoidance of doubt, the Commission does not require Fonterra's agreement to seek input from other interested parties.
16. By no later than 31 May 2012, the Commission will provide Fonterra with a draft of its Review report(s). The Commission will have regard to any submission that Fonterra makes on the draft Review report(s) by 21 June 2012 before finalising its Review report(s).
17. The Commission may also provide a draft of its Review report(s) to other interested parties for the purpose set out in paragraph 14, but will not do so before first providing Fonterra with a reasonable opportunity to review the factual accuracy of the report(s).

#### **Parliamentary process**

18. Agreeing to perform the Reviews does not constrain the Commission from providing advice to MAF, or making Select Committee submissions, in relation to the proposed DIRA amendments.

#### **Status of Reviews**

19. The Commission intends to take a consistent approach to its ongoing reviews relating to Fonterra's milk price under the DIRA, to the extent practicable. However, for the avoidance of doubt, the Reviews will not in any way bind the Commission in any subsequent reviews relating to Fonterra's milk price under the DIRA.

#### **Extending or Ending the Review Process**

20. Fonterra may end the Review process if the purpose and/or milk price principles in the exposure DIRA Amendments (or any other relevant aspect of that amendment) are materially changed prior to completion of the Reviews (subject to the parties first discussing whether reviews of the Manual and base milk price taking account of those changes would be useful and feasible to complete).
21. The Commission may extend or end (at its discretion) part or all of the Review process if –

- 21.1 Fonterra does not provide complete, adequate and timely responses to any Requests
  - 21.2 The selected assumptions, inputs and processes that the Commission will be assessing in the Price Review materially change between March and August 2012
  - 21.3 As a result of any material change in the scope of the Reviews requested by Fonterra, it does not have adequate time or funding to complete the process.
22. Prior to either party ending the Review process, they will first meet to discuss their concerns at CEO/Chair level, and provide MAF with an opportunity to comment on those concerns.



## Attachment 2: The dry run review versus future statutory reviews

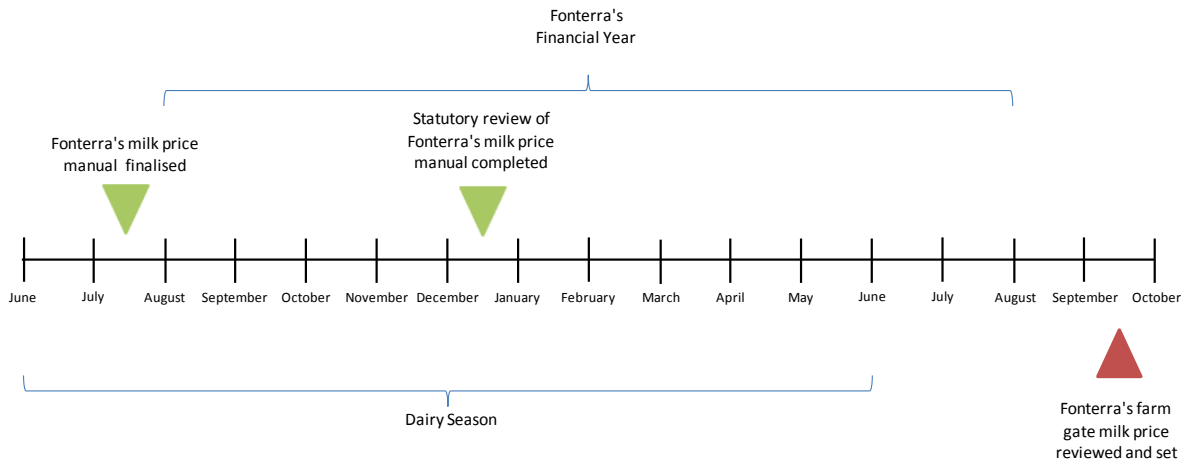
A2.1 Table 3 below summarises the key aspects of the dry run review and highlights potential differences with the future statutory reviews.

**Table 3: Dry run review versus future statutory reviews**

Key aspects	Dry run review	Statutory reviews
Status of review(s)	Voluntary review based on Terms of Reference agreed with Fonterra	Mandatory reviews based on statutory requirements in the Act
Basis for review(s)	The Act	The Act
Scope of review(s)	Targeted to key issues identified as potentially contentious and material to the calculation of the base milk price	The Act does not currently contain a materiality threshold; a wide range of issues may therefore need to be considered
Number of review(s)	Combined review of Fonterra's 2011/12 milk price manual and its application	Separate reviews of Fonterra's milk price manual and Fonterra's application of the milk price manual
Consultation process	We sought input from Fonterra and third parties on both the scope of the dry run review and our initial conclusions of the dry run review	The Act requires us to consult with Fonterra on our draft reports, but is silent on any third party input
Timeline for completion of the review(s)	The dry run review is to be completed by mid August 2012	Review of Fonterra's milk price manual is to be completed by 15 December in the season to which the milk price manual relates  Review of Fonterra's calculation of the base milk price is to be completed by 15 September following the season to which the base milk price relates

A2.2 Figure 4 below shows the timeline for the proposed statutory reviews relative to Fonterra's FGMP setting processes.

**Figure 4: Timeline for Fonterra's FGMP setting processes and statutory review process**



### **Attachment 3: Our interpretation of subpart 5A of the Act and our approach to the dry run**

#### **Purpose**

A3.1 In this attachment we describe our interpretation of the key provisions in the Act relevant to the dry run review of Fonterra's base milk price and set out our practical approach to the dry run review.

#### **Context to our analysis in this attachment**

A3.2 As discussed in Chapter 1 of this report, the draft Bill was introduced to Parliament on 27 March 2012. We issued our draft dry run report in accordance with this version of the draft Bill. Prior to submissions being due, the revised Bill was reported back from the Primary Production Select Committee.<sup>28</sup>

A3.3 On 18 June 2012, we issued a memorandum discussing the implication of the revised Bill on the dry run.<sup>29</sup> This indicated that we thought the revised Bill did not change our analysis and conclusions in the draft dry run report. Submissions were therefore able to consider our draft report in light of our interpretation of the revised Bill. We consider submissions related to the interpretation of the Bill (as it was then) in this Attachment.

A3.4 On 26 July 2012 the amending legislation (the Act) was enacted following further changes to the purpose in s 150A via a Supplementary Order Paper.<sup>30</sup> Again we do not consider that the final changed wording in s 150A alters our interpretation of the revised Bill to the extent that it will change our conclusions from the dry run.

A3.5 Our conclusions under any of the relevant purpose statements are therefore consistent with the task we committed to in our dry run terms of reference with Fonterra. However, for the purpose of this final report, we consider that it is most useful to interested parties to explain our understanding of the purpose statement in the Act, as opposed to earlier versions in various iterations of the Bill.

A3.6 A number of issues were raised in the submissions on the draft dry run report on the Commission's interpretation of the legislation and our approach to the dry run. Issues raised in submissions included:

A3.6.1 The contestability standard is inconsistent with the efficient component pricing rule (ECPR) and the Commerce Act (discussed in paragraphs A3.20- A3.21);

<sup>28</sup> See [http://www.parliament.nz/en-NZ/PB/SC/Documents/Reports/2/6/9/50DBSCH\\_SCR5490\\_1-Dairy-Industry-Restructuring-Amendment-Bill-11-2.htm](http://www.parliament.nz/en-NZ/PB/SC/Documents/Reports/2/6/9/50DBSCH_SCR5490_1-Dairy-Industry-Restructuring-Amendment-Bill-11-2.htm)

<sup>29</sup> See "Statement on the implications of the dry run DIRA changes" at <http://www.comcom.govt.nz/review-of-fonterra-s-farm-gate-milk-price/>

<sup>30</sup> See <http://www.legislation.govt.nz/bill/government/2012/0011/latest/DLM4371905.html>

- A3.6.2 A minimum requirement for the dry run should include the identification of performance gaps between Fonterra's commodities business and the notional processor (discussed in paragraph A3.45);
  - A3.6.3 Fonterra's use of mostly notional data weakens the incentive for Fonterra to operate more efficiently (discussed in paragraph A3.46);
  - A3.6.4 It is open to the Commission to conclude that the efficiency limb is ineffective (discussed in paragraph A3.44);
  - A3.6.5 It is not clear whether the Commission's judgement reflects that Fonterra could improve its efficiency today or in the future to that of a notional processor (discussed in paragraph A3.64);
  - A3.6.6 The contestability test should be whether the milk price regime precludes small corporate commodity processors from competing rather than precluding all processors from competing (discussed in paragraphs A3.58- A3.59);
  - A3.6.7 The Commission should consider whether the assumptions are practically feasible, both on an individual level and in aggregate (discussed in paragraph A3.65);
  - A3.6.8 The Commission is required to model what an efficient new entrant can afford to pay for milk (discussed in paragraphs A3.52- A3.54); and
  - A3.6.9 Contestability and efficiency tests are interrelated (discussed in paragraphs A3.25- A3.28).
- A3.7 We will consider the key aspects argued in submissions in this attachment of the report.

### **Legislation**

- A3.8 The key questions that we answer in this section are:
- A3.8.1 What does contestability mean and what standard does the legislation imply?
  - A3.8.2 What does efficiency mean and what dimension of efficiency should we focus on?
  - A3.8.3 What is the correct balance between the concepts of contestability and efficiency?

### **The purpose statements – sections 150A and 4(f)**

- A3.9 This section explains our interpretation of the purpose statements in the Act. In particular, we discuss the concepts of contestability and efficiency incentives that are embodied in the Bill and our interpretation of those concepts.

- A3.10 The Act contains two purpose statements that relate to the milk price monitoring regime: s 4(f) and s 150A.
- A3.11 The most directly applicable purpose statement is s 150A of the Act, a specific purpose statement in the part of DIRA dealing with the milk price monitoring regime.
- A3.12 Section 150A states:
- (1) The purpose of this subpart is to promote the setting of a base milk price that provides an incentive to new co-op to operate efficiently while providing for contestability in the market for the purchase of milk from farmers.
  - (2) For the purposes of this subpart, the setting of a base milk price provides for contestability in the market for the purchase of milk from farmers if any notional costs, revenues, or other assumptions taken into account in calculating the base milk price are practically feasible for an efficient processor.
- A3.13 For the purposes of the dry run review, we have focussed on this specific purpose statement.
- A3.14 We note that the Dairy Industry Restructuring Act 2001 also contains a purpose statement in s 4(f) that more generally seeks 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”. We consider that this general purpose statement is consistent with the more specific purpose statement in s 150A, and therefore does not alter the interpretation of that section.
- A3.15 We consider that the statements within s 150A are interlinked and that together, they require consideration of:
- A3.15.1 What is meant by ‘contestability’?
  - A3.15.2 What is meant by ‘efficiency’?
  - A3.15.3 How do the concepts of contestability and efficiency inter-relate?

*Our interpretation of contestability in s 150A*

- A3.16 While the Act does not define contestability, practical guidance on what is required to satisfy the requirement to provide contestability is provided by s 150A(2).
- A3.17 Section 150A(2) states that the setting of a base milk price will provide for contestability if:

any notional costs, revenues, or other assumptions taken into account in calculating the base milk price are practically feasible for an efficient processor.<sup>31</sup>

---

<sup>31</sup> This ‘practical feasibility’ requirement had previously been added into the draft Bill at section 150C by the Primary Production Select Committee.

- A3.18 Our interpretation of s 150A(2) is that if the assumptions are practically feasible, on both an individual level and in aggregate, the setting of the base milk price provides for contestability in the market.
- A3.19 Some submissions considered there is a problem with the contestability standard from a legal perspective because it is arguably inconsistent with the Efficient Component Pricing Rule (ECPR), and therefore inconsistent with s 36 of the Commerce Act.<sup>32</sup>
- A3.20 Our view is that the DIRA milk price monitoring regime is intended to be different to s 36 of the Commerce Act. Under s 150A, the Commission is required to assess the milk price manual against the purpose in s 150A(1). The DIRA competition standard chosen by Parliament is contestability, and how the Commission is to assess against that standard is set out in sections 150A(2), 150B and 150C. This legislative scheme is different to s 36 of the Commerce Act which focuses on whether a person with substantial market power has taken advantage of that substantial market power for a prohibited purpose. Given these different contexts, any comparisons between the express requirements in sections 150A and the requirements of s 36 must be made with caution.
- A3.21 We discuss our practical approach on the contestability standard of the purpose statement in paragraphs A3.46 to A3.62 below.

*What is efficiency?*

- A3.22 Section 150A of the Act refers to incentives for Fonterra to 'operate efficiently'. We have therefore interpreted the primary focus of the efficiency dimension to be improving incentives for Fonterra to drive cost efficiencies (ie, productive efficiency).<sup>33</sup> We note that concerns about whether investment to cater for new milk supply is undertaken by the most efficient processor (ie, dynamic efficiency) appear to have been given less weight in the Bill.
- A3.23 We discuss our practical approach on the efficiency standard of the purpose statement in paragraphs A3.36 to A3.45 below.

*How are the two tests reconciled?*

- A3.24 Some submissions considered that the contestability and efficiency tests are interrelated.<sup>34</sup>
- A3.25 The Select Committee Commentary provides guidance on the interrelationship between the contestability and efficiency tests:

---

<sup>32</sup> Open Country, Synlait and Miraka submission, dated 29 June 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*

<sup>33</sup> Productive efficiency is present when producers use inputs in such a manner as to minimise costs, subject to technological constraints.

<sup>34</sup> Open Country, Synlait and Miraka argued the efficiency and contestability tests are related. See Open Country, Synlait and Miraka submission, dated 5 July 2012.

The Bill introduced [ie the draft Bill] could have the effect of prioritising Fonterra’s efficiency over the contestability of the farm gate milk market. This is contrary to the intent of the principal Act where contestability is a means to achieving efficient dairy markets. To reflect the principal Act’s intention, the farm gate milk price should be set at a level that provides an incentive to Fonterra to operate efficiently, while also providing for contestability in the farm gate milk market.<sup>35</sup>

- A3.26 The Act retains both tests, although different words are used to join the two limbs. We consider that s 150A contains the two limbs, incentivising Fonterra to operate efficiently while providing for contestability.<sup>36</sup> The Committee of the whole House’s use of the words “while providing for” in the Act appears to have been intended to ensure that the first limb (incentives to operate efficiently) is not prioritised over the second limb (contestability).
- A3.27 It is therefore our interpretation that to satisfy s 150A it is necessary to satisfy both tests of the Act, independently. As such, we are not required to choose between the priority of the tests in s 150A to assess whether the s 150A is satisfied.

### Section 150B – “safe harbours”

- A3.28 Section 150B provides:

It does not detract from the achievement of the purpose set out in **section 150A** that new co-op sets the base milk price using assumptions that include any of the following:<sup>37</sup>

- (a) That new co-op operates a national network of facilities for the collection and processing of milk
- (b) That the size of new co-op’s assumed units of processing capacity approximates to the average size of new co-op’s actual units of processing capacity
- (c) That gains and losses experienced by new co-op resulting from foreign currency fluctuations, including from new co-op’s foreign currency risk-management strategies, are incorporated in the base milk price
- (d) That all milk collected by new co-op is processed into commodities at yields that are practically feasible.

- A3.29 We assume that the intention of this section is to create ‘safe harbours’ for the items listed in paragraphs (a) to (d). We have interpreted “does not detract from” to have the same meaning as “is not inconsistent with”.

---

<sup>35</sup> Select Committee Commentary; see section “Milk Price” on page 2 [http://www.parliament.nz/en-NZ/PB/SC/Documents/Reports/2/6/9/50DBSCH\\_SCR5490\\_1-Dairy-Industry-Restructuring-Amendment-Bill-11-2.htm](http://www.parliament.nz/en-NZ/PB/SC/Documents/Reports/2/6/9/50DBSCH_SCR5490_1-Dairy-Industry-Restructuring-Amendment-Bill-11-2.htm).

<sup>36</sup> Open Country, Synlait and Miraka argued the efficiency and contestability tests are related. See Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra’s Milk Price Methodology* and Open Country, Synlait and Miraka submission, dated 29 June 2012, *Submission: Commerce Commission Dry Run Review of Fonterra’s Milk Price Methodology*: paragraph 16.

<sup>37</sup> The exposure draft of the Bill issued in January 2012 provided that using the assumptions listed *was not inconsistent with the purpose set out in s 150A*.

A3.30 Our interpretation of s 150B is that if the assumption is considered as a safe harbour, then that assumption relates to Fonterra. For example, the yield assumption only relates to Fonterra and not an independent processor.

### Section 150C – “mandatory assumptions”

A3.31 We interpret s 150C of the Act as setting out certain assumptions that Fonterra is required to make in setting the base milk price:

- (1) For the achievement of the purpose set out in **section 150A**, the base milk price must be set in a way that is consistent with the following principles:
  - (a) Revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the times that those commodities are contracted to be sold by new co-op
  - (b) Costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital) of-
    - (i) Collecting milk
    - (ii) Processing milk into the same portfolio of commodities as the portfolio adopted for the purposes of **paragraph (a)**; and
    - (iii) Selling those commodities;
  - (c) New co-op collects all milk that it processes from the farms on which the milk is produced.
- (2) For the purposes of **subsection (1)(a) and (b)(ii)**, the portfolio of commodities must be determined having regard to the following:
  - (a) In respect of the commodities included in the portfolio-
    - (i) The commodities that are likely to be the most profitable over a period not exceeding 5 years from the time when the portfolio is determined; and
    - (ii) The need for commodities included in the portfolio to utilise all components of milk; and
  - (b) in respect of the relative proportions of the commodities included in the portfolio, the quantities of commodities likely to be produced by new co-op based on-
    - (i) the mix of commodities that are likely to be most profitable; and
    - (ii) new co-op’s physical manufacturing capacity for the production of those commodities; and
    - (iii) the need to utilise all components of the milk processed.

A3.32 The Commission’s review will be limited to examining whether Fonterra has applied each of the above assumptions. Many of the assumptions that Fonterra makes in setting the base milk price are not referred to in sections 150B or 150C. When



considering these assumptions, we will be guided by our interpretation of the purpose statement.

- A3.33 We have also approached our review using the working assumption that we are intended to focus only on those commodity products referred to in s 150C(2)(a) (in other words, we will not consider other products such as cheese, or milk protein concentrates, etc). In reaching this conclusion, we have treated s 150C as paramount over other parts of the Act that may suggest that we would have regard to other commodities.

### **What does this mean for the dry run review?**

- A3.34 In this section we identify the questions to assess whether Fonterra's methodology for setting the base milk price, and its application of that methodology, is consistent with the purpose and principles of the milk price monitoring regime.
- A3.35 Our approach to the dry run review breaks down our assessment of consistency with the purpose statements into two steps:
- A3.35.1 First, to examine whether the base milk price provides an incentive for Fonterra to operate more efficiently (efficiency dimension); and
- A3.35.2 Second, to examine whether Fonterra's assumptions are both practically feasible and reasonable. As indicated in s 150A(2), if the assumptions are practically feasible, then they are consistent with the contestability standard of s 150A (contestability dimension).

### **Our approach to the efficiency dimension**

- A3.36 This section explains our approach to examine whether the base milk price provides incentives to Fonterra to operate more efficiently.
- A3.37 Given our interpretation of the efficiency standard of the purpose statement in the Act in paragraph A3.22 above, we have approached the efficiency standard to be primarily concerned with productive efficiency. For revenue items (such as the selection of reference commodity products (RCPs) and sales prices), where productive efficiency cannot be achieved, other efficiencies, such as allocative efficiency, become important.
- A3.38 Fonterra will have an incentive to operate efficiently, where the base milk price is set independently of Fonterra's actual performance. Fonterra's measured profit is what is left after payment of the base milk price. If the base milk price is set independently of Fonterra's performance, and is allowed to operate mechanically, any improvements in Fonterra's measured profit will depend mostly on its actual yields getting better, its actual product portfolio migrating to more valuable options, and its operating costs being reduced. In this setting, Fonterra has a strong incentive to make these gains.
- A3.39 As the measured profit can also change if Fonterra modifies the assumptions relating to the value and costs of producing the RCPs, meddling with these

assumptions (for example to reflect Fonterra's actual performance) will undermine the ability of owner/members and TAF investors to assess whether efficiency gains (of all kinds) are being made. As a result, the incentive effect falls away.

- A3.40 Our view is that setting any realistic achievable benchmark for the costs that underpin the base milk price, provided that benchmark is independent of Fonterra's actual performance, would provide an incentive for Fonterra's management to improve efficiency. However, the price level does not have to be 'right' to provide incentives for Fonterra to improve its productive efficiency. Setting any realistic achievable independent benchmark would provide a target for Fonterra's management to beat.<sup>38</sup>
- A3.41 Submissions suggested that it is open to the Commission to conclude whether the efficiency limb is ineffective or at worst, likely to be impeded by the notional processor milk price setting regime.<sup>39</sup> We consider that the monitoring regime is set by Parliament and the role of the Commission is to implement the monitoring regime effectively. Within the regime, our role in relation to the efficiency dimensions is to assess whether Fonterra's methodology and application of the methodology incentivises Fonterra to improve its efficiency. The Commission has been able to make that assessment in the dry run.
- A3.42 Submissions also recommended that the Commission should identify where the performance gaps between Fonterra's commodity's business and the notional processor lie.<sup>40</sup> It is our view that defining the gaps between Fonterra's actual commodity business and the notional processor is outside the scope of the dry run.
- A3.43 Submissions also argued that the use of actual costs instead of notional cost will incentivise Fonterra to operate efficiently.<sup>41</sup> Our view remains that the Act's intention is that the base milk price is intended to reflect notional costs to provide an incentive on Fonterra to be more efficient. The reasons are:
- A3.43.1 We are assessing whether Fonterra's methodology, and its application, does incentivise Fonterra to improve its productive efficiency and not whether Fonterra actually improves its productive efficiency;
- A3.43.2 The legislation clearly envisages the assumptions of notional values and in some instances requires the use of a notional business; and

---

<sup>38</sup> The benchmark should be stable over time in order to provide an incentive to operate efficiently over time. Under the draft DIRA legislation the base milk price will not necessarily be a stable benchmark over time. The Bill allows Fonterra to change its methodology and the application of that methodology each year. The range within which the milk price is found to be consistent with the purpose and principles might be fairly wide, potentially making it difficult to predict the price from one year to the next.

<sup>39</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 27

<sup>40</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 12

<sup>41</sup> See Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*, paragraphs 23-26

- A3.43.3 As we explain above, to create an incentive to improve productive efficiency, the benchmark cannot be based on actual cost.
- A3.44 While providing an incentive to be efficient is best achieved by the use of benchmarks independent from Fonterra's actual performance, there are instances where it is still reasonable to use actual data. In particular, we think it is reasonable to use actual data where, for example:
- A3.44.1 There is insufficient information to know what an appropriate notional value would be; and
- A3.44.2 Fonterra has no control over the actual costs used for the proxy.
- A3.45 The practical questions we have considered in assessing whether the base milk price has been set to provide an incentive for Fonterra to be efficient are:
- A3.45.1 Have actual or notional values been used?
- A3.45.2 Where actual data is used:
- Is this consistent with the assumed product mix?
  - Why was actual data used? Is it relatively fixed?
  - Could the use of the notional data instead provide an incentive for Fonterra to operate more efficiently?
- A3.45.3 Where notional data is used:
- Is it exogenously determined, or is it adjusted for Fonterra's actual results?
  - Will it reflect Fonterra's actual performance over time?

### **Our approach to the contestability dimension**

- A3.46 This section explains our approach to examine whether the assumptions are practically feasible to provide for contestability in the market.
- A3.47 Our interpretation of the Act in relation to the contestability standard, is:
- A3.47.1 It is not a mandatory requirement to model the base milk price independent processors (existing and potential) can afford to pay;
- A3.47.2 The base milk price will reflect the costs associated with efficient notional plants;
- A3.47.3 Fonterra's assumptions should be practically feasible to provide for contestability; and
- A3.47.4 An efficient processor is not limited to a small corporate processor

A3.48 We expand on our approach for the dry run review on each of the aspects below.

*It is not a mandatory requirement to model the base milk price independent processors can afford to pay*

A3.49 Some submissions proposed that the Commission is required to model what an efficient new entrant can afford to pay for milk.<sup>42</sup>

A3.50 The Act does not require the Commission to model what an efficient new entrant can afford to pay for milk. Section 150P (3) of the Act states that in completing our report on the calculation of the base milk price, we are not required to calculate the cost of an independent processor.

A3.51 Accordingly, we have not modelled independent processors' costs or attempted to work out the base milk price that independent processors (either existing or potential) can afford to pay.

*The base milk price will reflect the costs associated with efficient notional plants*

A3.52 Our view is that s 150A and s 150C require Fonterra to assume notional plants when calculating the base milk price. Further, s 150B(b) provides a safe harbour if the assumed units of processing capacity used to calculate the base milk price approximate the average size of Fonterra's actual units of processing capacity.

A3.53 The assumed notional plant has to be least cost to compete successfully for farmer's milk. The calculation of the base milk price will therefore be partially optimised relative to Fonterra's average level of performance.

A3.54 The nature of the notional plant matters to address questions related to scale; what matters here is incremental entry. For example, we have considered whether the assumed lactose supply required by the notional business in the manual is reasonable. Although the manual and base milk price calculations assume purchase of very large quantities of lactose (so as to turn all milk collected into milk powders), we consider the key focus should be on the lactose requirement, and thus the price of lactose, for additional processing units. Entry is unlikely to occur at the scale of the entire existing industry but may at the scale of an individual plant.

*An efficient processor is not limited to a small corporate processor*

A3.55 Submissions indicated that the relevant test on the contestability standard should be focused on not precluding "small corporate commodity processors" from competing rather than not precluding all processors from competing.<sup>43</sup>

A3.56 Our interpretation of the Act is that an efficient processor is not limited to the existing processors (ie, one large processor (Fonterra) and a range of small

---

<sup>42</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 31

<sup>43</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 24

independent processors), as other potential entrants exist and may enter the market for the purchase of milk from farmers.

- A3.57 Submissions also indicated that the Commission should consider whether Fonterra's economies of scale should be allowed to have an impact on the base milk price.<sup>44</sup> Our view is that the Act contemplates economies of scale in Fonterra's safe-harbour assumptions in s 150B(a) and (b).<sup>45</sup>
- A3.58 A potential outcome of a higher base milk price (compared to a base milk price based on Fonterra's actual values) is that some processors that are more efficient than Fonterra (on average) may not be able to enter. For example, the lowest practically feasible processing costs (including the cost of capital) might be associated with the next plant of efficient scale. Under the Act, it does not matter whether *existing* independent processors can necessarily achieve that level of efficiency or not. As long as Fonterra's next plant or some other *potential* entrant can achieve that level of efficiency, then that ensures that the base milk price reflects a feasible level, and would provide a normal return on the incremental investment.

*Fonterra's assumptions should be practically feasible*

- A3.59 Our approach to considering the contestability dimension is to examine whether Fonterra's assumptions are practically feasible for an efficient processor, including whether they are consistent with other assumptions used to calculate the base milk price. We have assumed that if the assumptions adopted are practically feasible, then this is consistent with the contestability standard of s 150A.
- A3.60 We assess the contestability dimension by examining:
- A3.60.1 Whether the assumption is practically feasible for Fonterra; and
  - A3.60.2 Whether the assumption is reasonable. This is to ensure that an assumption is not practically feasible for Fonterra due to features which are unique to Fonterra and which do not relate to Fonterra acting efficiently. An example of this would be if Fonterra was to restate retrospectively an assumption in the calculation of the FGMP.
- A3.61 We have assumed that if the assumptions are both practically feasible and reasonable, then the base milk price is consistent with the contestability standard of s 150A.
- A3.62 Where the assumptions are not reasonable or practically feasible we have considered the impact of this on the base milk price, in terms of both direction and materiality of impact, and drawn a conclusion as to the extent to which the overall

---

<sup>44</sup> Westland Milk Products, dated 29 June 2012, *Submission on the Commerce Commission's review of Fonterra's Farm Gate Milk Price* paragraphs 53 to 56

<sup>45</sup> Section 150B(a) and (b) refers to the new co-op operating a national network and the size of the average plant of the new co-op

base milk price is set at a level to provide contestability in the market for the purchase of milk from farmers.

- A3.63 Submissions submitted that that it is not clear whether our interpretation of the Bill is that the assumptions are practically feasible today as opposed to the belief that Fonterra could actually improve its efficiency over time to that of a notional processor.<sup>46</sup> Our interpretation is that it must at the very least be practically feasible today for an incremental plant built by Fonterra or another efficient processor as opposed to necessarily expecting all of Fonterra's existing plants to be able to operate at that level of efficiency.
- A3.64 Submissions also suggested that we need to consider whether the assumptions are practically feasible on both an individual level and in aggregate.<sup>47</sup> Our view is that we do need to make, and have made, an aggregate assessment. For purposes of the targeted dry run review, after we had assessed each selected issue:
- A3.64.1 We considered whether there is consistency between the assumptions;
- A3.64.2 Where the assumptions are not reasonable or practically feasible, we have considered the impact of this on the base milk price, in terms of both direction and materiality; and
- A3.64.3 We then draw a conclusion on the extent to which the overall base milk price provides for contestability in the market within the targeted scope of the dry run review i.e. based on the aggregate impact of the assumptions that were not reasonable or practically feasible.
- A3.65 We note that the Act does not require us to separately model an independent processor (s 150P) when making this or any other assessments (s 150P).

---

<sup>46</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 9

<sup>47</sup> Open Country, Synlait and Miraka submission, dated 5 July 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 30; Open Country, Synlait and Miraka submission, dated 29 June 2012, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price Methodology*: paragraph 16

## Attachment 4: Analysis of reference commodity product selection in the base milk price calculation

A4.1 The attachment summarises the approach and assumptions for Fonterra’s selection of the reference commodity products (RCPs) in its milk price manual. Table 4 below summarises our analysis of RCP selection.

**Table 4: Summary analysis of RCP selection**

Criteria	Comment
Legislative Requirement	Section 150C(2)(a) provides that the portfolio of commodities should represent the commodities likely to be most profitable over the five year period from when the portfolio is determined and utilise all components of milk.  Fonterra’s manual selects the commodities that are most likely to be profitable, but we don’t consider that this results in a price which is inconsistent with s 150A.
Notional vs Actual	Notional
Materiality / potential impact on the milk price	Unknown
An incentive to operate more efficiently?	Yes.
Practically feasible?	Yes.
Reasonable?	Yes.
Gaps in Fonterra Information and Analysis	Limited formal analysis supporting the initial selection of RCPs has been provided by Fonterra. For future resets, Fonterra could do further analysis of what commodities are likely to be the most profitable, including considering the relative returns from different product streams.
Transparency to 3 <sup>rd</sup> Parties	Ex post revenue details around the RCPs selected are highly transparent via the Milk Price Statement.

### Relevant clauses in the Act

A4.2 Section 150C(2)(a) of the Act provides that the portfolio of commodities must be determined having regard to the commodities that are likely to be the most

profitable over the five year period from when the portfolio is determined and the need for the commodities to utilise all components of milk.

A4.3 Section 150C(2)(b) states that in respect of the relative proportions of commodities included in the portfolio, the quantities of commodities likely to be produced by [Fonterra] should be based on:

A4.3.1 The mix of commodities that are likely to be most profitable; and

A4.3.2 Existing and planned investment by [Fonterra] in physical manufacturing capacity for the production of those commodities.

#### **Provisions for RCP selection in Fonterra's milk price manual**

A4.4 Fonterra's interpretation of this provision is as follows:

A4.4.1 Each of the commodities selected being that which is 'most likely to be profitable';

A4.4.2 There is some allowance for the uncertainty over the future profitability of closely related products (eg, WMP v SMP, or Butter v AMF); and

A4.4.3 Commodities must be 'most likely to be profitable' at the margin, ie, commodities most likely to drive incremental investment decision in New Zealand.

A4.5 Fonterra's current portfolio of commodity products includes WMP, SMP and the by-products of WMP and SMP (which are butter, AMF and BMP). These products were selected in 2008. Although not a specific requirement in the Act or in the milk price manual, Fonterra advises that it would be highly unlikely that an additional product would be added to the portfolio if Fonterra itself was not investing in new capacity for the manufacture of that product.

A4.6 In its submission on the draft dry run report,<sup>48</sup> Westland indicated that cheese and casein should be included within the portfolio of commodities given Fonterra's significant existing physical capacity to manufacture these commodities and availability of a transparent pricing mechanism (selling through GDT).

A4.7 We consider that Fonterra's interpretation of the Act is correct, in that the Act applies a two stage approach to the determination of the portfolio of commodities. The first stage is that the commodities selected are those likely to be the most profitable over the next five years and that utilise all components of milk. Secondly, having selected the commodities to be included in the portfolio, the mix is determined with regard to the existing and planned investment by Fonterra in physical manufacturing capacity for the production of those commodities.

---

<sup>48</sup> Westland Milk Products, *Submission on the Commerce Commission's review of Fonterra's Farm Gate Milk Price*, 29 June 2012, pg 4



- A4.8 If a product does not meet the requirement for inclusion in the portfolio, it will not be included in the portfolio, even if there is existing physical capacity to manufacture it.

#### **Application of Fonterra's milk price manual in the base milk price calculation**

- A4.9 Having selected the RCPs to be used in the base milk price calculation, Fonterra uses its own production plan to determine the proportions of each product to be produced (ie, the proportional relationship of WMP and SMP, Butter and AMF, is the same in the base milk price calculation as it is in Fonterra's production plan for the same period).

#### **Are the RCPs selected notional or actual?**

- A4.10 The RCPs are all currently produced by Fonterra. The selected mix of RCPs is notional, as Fonterra's actual production reflects a broader range of products.
- A4.11 The product mix of the notional milk price business (NMPB) is based on Fonterra's actual production plan, that is the proportion of WMP to SMP and butter to AMF used in the base milk price calculation matches Fonterra's target production proportions of these products. This is consistent with the requirement in s 150C(2)(b) that quantities of commodities produced should be based on existing and planned investment, which indicates the determination of product mix should have regard to but is not necessarily constrained by Fonterra's current production capabilities.

#### **Materiality/potential impact on the base milk price**

- A4.12 Whether the selection of RCPs has a material impact on the price depends on the relative returns from the commodities included or excluded from the portfolio.
- A4.13 We are unable to determine the impact that a change to the selected RCPs would have on the base milk price calculation as this would depend on the number of RCPs which are changed, which new products would be added to the basket of commodities produced by the NMPB (and which RCPs, if any, are deleted), and the relative returns from those commodities.

#### **Do the RCPs selected provide an incentive to Fonterra to operate efficiently?**

- A4.14 Fonterra's profits are calculated after payment of the base milk price. The selection of WMP and SMP and the by-products of WMP and SMP as the RCPs ensures the products and prices used in the base milk price are determined exogenously, using widely traded commodities. The size of Fonterra's profits depends on it operating more efficiently than implied by the revenue assumptions that underpin the base milk price (eg, by producing and selling more profitable commodities than those used to set the base milk price). The use of WMP and SMP in setting the Base Milk Price therefore provides an incentive for Fonterra to operate efficiently.

#### *Recent investment in manufacturing capacity*

- A4.15 Fonterra advises that since its formation, approximately 94 percent of its incremental investment and 97 percent of incremental capacity has been for milk

powder, with the remaining six percent and three percent respectively, being devoted to cheese.

- A4.16 Fonterra considers that such an investment pattern reflects the long run economics of milk processing, where on a fully-costed basis (ie, accounting for sunk costs) returns from selling milk powder had outperformed returns from selling cheese in all but one of the eight years in the period to May 2011.
- A4.17 Independent processors, who have entered the market for farmers' milk since 2008, are largely export focussed milk powder producers. A notable exception is Open Country Dairy, which is also a cheese producer. Since 2008, there has been a significant shift in market trends away from traditional dairy products eg, cheese, towards greater demand for milk powders.<sup>49</sup>
- A4.18 Table 5 below shows the recent investment made by Fonterra and its competitors in New Zealand:<sup>50</sup>

**Table 5: Recent history of investment in the dairy processing sector in New Zealand**

<b>Dairy processor</b>	<b>Manufactured commodity products</b>	<b>Manufacturing plant becoming operational</b>	<b>Approximate level of investment made</b>
Fonterra	WMP SMP BMP AMF Cheese	2012 – WMP plant 2010 – Powder drier 2007 – Cheese	\$150m \$212m \$42m
Miraka	WMP SMP	2011 – Powder plant 2010 – Powder plant	\$98m \$35m
Synlait	WMP SMP AMF	2011 – Infant powder 2008	\$100m
Open Country Dairy	WMP SMP AMF Cheese Whey protein	2009 – WMP plant 2008 – WMP plant 2007 – AMF plant 2006 - Whey plant	
Tatua	Dairy food	2011 – Dairy food	

<sup>49</sup> See, for example, Rabobank's Global Dairy Outlook publications, including: 'Show Me the Money' (2012); 'The European Cheese Market' (2011); and 'Enter the Giants' (2010).

<sup>50</sup> Based on media releases and Coriolus Food & Beverage Information Project Final Report, October 2011.

Westland	WMP SMP BMP Butter Casein	2010 – Yoghurt	
----------	---------------------------------------	----------------	--

A4.19 [ Confidential

,  
51

]. This supports Fonterra's view on the appropriate RCPs and suggests that milk powder and its by-products are likely to represent the most profitable products in the medium term.

**Are the RCPs selected practically feasible?**

- A4.20 The selected RCPs are practically feasible for Fonterra given its extensive existing asset base of powder plants, and history of recent investment in further powder production capacity.
- A4.21 The selected RCPs are intended to represent the likely incremental investment of the dairy industry and reflect the current trend of recent investments towards greater milk powder production. The selected RCPs and the forecast product mix are practically feasible given the assumed asset base of the NMPB (and other New Zealand milk processors).
- A4.22 Section 150C(2) requires the portfolio of RCPs to be determined having regard to the commodities that are likely to be the most profitable over a period not exceeding five years. By their nature, commodities tend to have uncertain and variable prices. Forecasting prices for, and profitability of, dairy commodities is therefore very difficult. For example, in a recent GDT auction (of 16 May 2012) Fonterra's GDT-TWI Price Index fell 6.4 per cent against the last sale two weeks prior. Further, the average winning price was around 40 per cent lower than the 2011 peak. To address fluctuations in commodity prices dairy processors may diversify the mix of products they produce. The adoption by Fonterra of a portfolio of RCPs including WMP and SMP and the respective by-products is, in our view, a reasonable approach and does not result in a base milk price which is unfeasible or unreasonable.
- A4.23 Rabobank's assessment of global dairy markets<sup>52</sup> suggests that China and India are the new faces of a global market, with a relatively slow growth expected in the

---

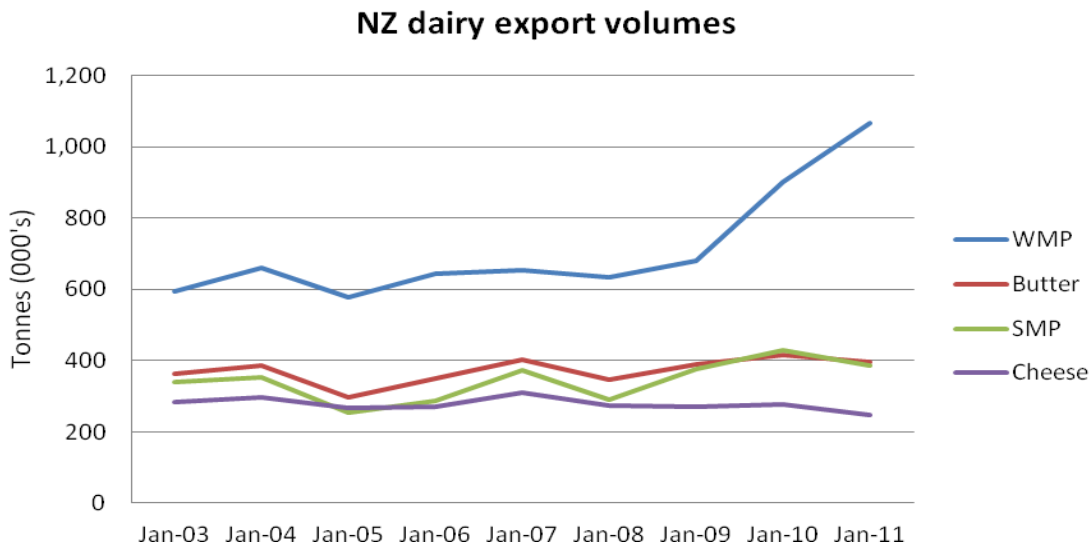
<sup>51</sup>

[

].

traditional EU markets. Rabobank predicts that over the short to medium term developed countries will see low (0 – 1.5 percent) growth in dairy consumption as their population growth slows, incomes stagnate or fall, and diets shift away from dairy influenced by concerns over health impacts of high dairy consumption. On the other hand, dairy consumption in developing countries, in particular China and India, are expected to grow at much faster rates. Rabobank’s analysis also suggests that developing countries are also expected to contribute 82 percent of the growth in the dairy market over the next five years, with 40 percent coming from China and India combined.

- A4.24 Such a shift in the major customer base has a direct impact on suppliers of dairy products, particularly in product terms. This is because the products and product specifications required by customers in China and India are quite distinct from those in traditional/Western dairy markets. Of particular importance, Rabobank predicts that cheese sales are likely to underperform relative to powder and butter oil commodities. Such trends have become evident since 2007, when developing economies, such as China, started to supplement its local milk supply with imported products in large volumes.
- A4.25 Statistics NZ data, as shown in the graph below, also points towards milk powders, in particular whole milk powder, as the commodity that has dominated NZ export volumes over the last few years, with a clear upward trend emerging from 2008 onwards.



Source: Statistics NZ

#### *Impact of lactose on the portfolio*

- A4.26 Lactose is a key cost component in the production of WMP, SMP and BMP, and is used to standardise these milk powders.

<sup>52</sup> Rabobank’s Global Dairy Outlook publications, including: ‘Show Me the Money’ (2012); ‘The European Cheese Market’ (2011); and ‘Enter the Giants’ (2010).

- A4.27 While we note that returns on powders have outperformed those of cheese in recent years, the value of lactose, which is a cheese by-product, has increased significantly in the last year from US\$832 per MT to US\$1409 between Jan 2011 and Nov 2011, an increase of 70 percent.
- A4.28 Changes in prices can impact on the relative profitability of the product streams considered for inclusion as RCPs.
- A4.29 Fonterra has provided limited formal analysis supporting the initial selection of RCPs in 2008, in particular the relative returns offered by different product streams.

**Are the RCPs selected reasonable?**

- A4.30 We consider the RCPs selected by Fonterra are reasonable as they are consistent with the choices available to an efficient processor.

*Conclusion*

- A4.31 The legislation requires in s 150C(2) that the RCPs should represent the commodities likely to be most profitable over the five year period from when the portfolio is determined and utilise all components of milk. Our analysis above suggests that in 2008, when Fonterra made the determination of its portfolio of commodity products, milk powders and the respective by-products were likely to be most profitable over the medium term.
- A4.32 Thought might need to be given in the future as to whether, and under what conditions, other products should be included in the portfolio (in particular, if/when expectations as to price relativities have materially changed). We understand that current market views are that milk powders, especially WMP, are likely to remain the most profitable commodity.

## Attachment 5: Analysis of the yield assumptions in the base milk price calculation

- A5.1 This attachment summarises the approach and assumptions behind Fonterra's determination of production yields in its milk price manual. Table 6 below summarises our analysis of the yield assumptions.
- A5.2 The yield is the ratio of output to milk inputs. It reflects the losses that occur during the manufacturing process when producing a product to meet minimum content specifications. We understand losses can occur at a number of points during the production process and can include effluent losses, stack losses, over-specified product and over-weight packaging.

**Table 6: Summary analysis of the yield assumptions**

Criteria	Comment
Legislative Requirement	Included as Safe Harbour under s 150B(d) as long as yields are practically feasible
Notional vs Actual	Milk price manual and base milk price calculation use notional values
Materiality / potential impact on the milk price	Very high
An incentive to operate more efficiently?	Included as Safe Harbour under s 150B(d)
Practically feasible?	Yes. The yields assumption is a challenging target but it appears to be consistent with other assumptions in the base milk price calculation (including limited product range, standard plant configuration).  We will continue to look closely at this issue in future statutory reviews.
Reasonable?	Included as Safe Harbour under s 150B(d)
Gaps in Fonterra Information and Analysis	Data provided has been at high level, for total Fonterra across all, or a range of, products. We have not received any information regarding actual yields achieved by site or by product. We are advised that this is because of the difficulty in collecting this data in a manner that is consistent with the standard plant assumptions specified in the milk price manual.
Transparency to 3 <sup>rd</sup> Parties	Not transparent, as the manual does not clearly detail the methodology for calculating yields. The manual also does not disclose key values used in the base milk

	price calculation (eg, losses during production).
--	---

### Relevant clauses in the Act

A5.3 Section 150B(d) of the Act states that it does not detract from the purpose set out in s 150A that [Fonterra] sets the base milk price using assumptions that include assuming that all milk processed by Fonterra is processed into commodities at yields that are practically feasible.

### Provisions for yields in Fonterra's milk price manual

A5.4 Fonterra interprets s 150A and s 150B in conjunction with the requirement of s 150C that the base milk price be calculated by reference to returns on the portfolio of commodities ('reference products') likely to be most profitable over the period of five years from the time the portfolio is determined.

A5.5 Given this, we have only considered Fonterra's determination of yields as they relate to the four base milk powder streams comprising four combinations of WMP or SMP, butter or AMF, and BMP.

A5.6 Fonterra notes that there is a slight disconnect between the reference in s 150B(d) to milk processed by Fonterra and the milk price manual's use of milk collected by Fonterra, which slightly exceeds milk processed by Fonterra.<sup>53</sup>

A5.7 The milk price manual states that the yield factors<sup>54</sup> reflect the composition of standard specification commodity products (ie, percentage of fat, protein, lactose and minerals) and a target level of losses that is subject to independent verification.

A5.8 The yield assumptions used to determine the base milk price reflect:

- the composition target for each reference commodity product
- the allowable yield losses for each reference commodity product.

A5.9 Yield assumptions are subject to review by an independent expert in each reset year.

### Application of Fonterra's milk price manual in the base milk price calculation

A5.10 The yields profile in the base milk price calculation is calculated in a separate workbook titled F12 MPG Yields Model Jan 31.xls. This workbook calculates the yield each month for each of the five RCPs.

<sup>53</sup> Fonterra collects approximately 600 million litres of raw milk more than it processes in a season, as under the Dairy Industry Restructuring (Raw Milk) Regulations 2001, Fonterra is required to sell up to 600 million litres of its raw milk to independent processors at a regulated price. The regulated price is currently set at "Fonterra's farm gate milk price plus 10c per kgMS".

<sup>54</sup> As referred to in Rule 8 of the milk price manual.

- A5.11 The yield calculation reflects the forecast composition of milk supply each month and is updated for actual milk composition each month.
- A5.12 Key assumptions include provisions for production specifications and manufacturing tolerances and provisions for losses of milk in the production process for each RCP. Other assumptions include adopting a certain percentage fat content of cream, the density of whole milk (kg/m<sup>3</sup>), standard lactose loss allowance and the solid content of lactose.
- A5.13 Product specifications for the RCPs have been determined with reference to the documentation on GDT about minimum standards of fat, protein and moisture content for four of the five RCPs (as butter is not traded on GDT). A buffer is applied against these minimum specifications in the form of manufacturing tolerances. Manufacturing tolerances are set at a level that ensures that the volume of production that falls outside of the minimum specifications is within allowable targets.
- A5.14 Fonterra has engaged an independent expert (IIFFB Ltd) to assist in the determination of production losses. Fonterra has stated that identifying relevant comparable losses based on Fonterra's actual plant losses is difficult due to:
- A5.14.1 The inability on multi plant sites to match effluent losses to specific plants or products; and
- A5.14.2 The lack of plants within Fonterra that resemble the fixed asset base of the NMPB (ie, it is not possible to identify a plant within Fonterra that precisely matches the standard plant of the NMPB with regards to size, technology and type of production).
- A5.15 Due to the lack of comparable data from Fonterra, two components of the allowable losses for WMP and SMP are based on the loss parameters specified as part of plant performance guarantees (namely stack losses and effluent losses). Fonterra submits that these were sourced from engineering firms / equipment suppliers who supply and install dairy processing plants in New Zealand, but these allowances were not necessarily set at the levels that would be specified in the context of a formal plant performance guarantee.<sup>55</sup> Performance guarantees are provided by the equipment suppliers who tendered the specification for each of the standard plants used for the NMPB's fixed asset base.
- A5.16 Fonterra has advised us that the total combined loss (on a milksolids-equivalent basis) across all production modelled in the base milk price calculation is approximately 0.7 percent.

---

<sup>55</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 June 2012, pg 9.



### **Are the yield assumptions notional or actual?**

A5.17 While product specifications and manufacturing tolerances are relatively easy to identify and determine, the estimation of allowable losses presents a far greater challenge.

A5.18 It has been difficult to obtain data based on Fonterra's actual production performance that is reflective of the yields or losses that the NMPB would experience due to differences between Fonterra's current business operations (which reflects a broader range of products, including more differentiated products) and those assumed in the base milk price calculation as well as practical measurement difficulties in reliably estimating losses.

A5.19 With respect to the use of performance guarantees to inform a benchmark for yields, we note that another independent engineering consultant has made the following statement to Fonterra with regards to the use of Performance Guarantees (albeit in the context of estimating energy usages):

[The specification tenderer has] cautioned against using the guaranteed parameters for utilities consumption as a basis for estimating actual utility usage.

The utilities guarantees for tenders are generally very lean with strict specifications on the plant operating conditions. Hence the guarantees only apply when the plant is operating perfectly. In normal operation the average utility consumptions are likely to exceed estimates.<sup>56</sup>

A5.20 The independent engineering consultant noted that basing estimates on tender guarantees may underestimate the rates of energy usage.

A5.21 While the above discussion relates to the utilities guarantee rather than production guarantees, we consider the underlying logic - that tender guarantees are not necessarily based on normal plant operation and may not be achieved in practice - may still be applicable in this case.

A5.22 We also note that while the GDT specification for WMP states that the typical composition of the product is 25g/100g for protein and 26.8g/100g for fat, the standard WMP plant specification states that the typical composition of the product is 24.5g/100g for protein and 26.5g/100g for fat. We have not assessed the impact of this discrepancy.

### **Materiality/potential impact on the base milk price**

A5.23 The base milk price calculation is extremely sensitive to changes in the yield assumptions. A one percent change in the total yield output (ie, a loss assumption of 1.7 percent) would lead to a 7.5 cent per kgMS change in the base milk price.

A5.24 [ Confidential

---

<sup>56</sup> Connell Wagner, Generic powder plant capital cost estimates, 10 November 2008

.<sup>57]</sup>

A5.25 For illustrative purposes, if we were to assume losses of 1.3 percent, this would result in a decrease in the base milk price of five cents per kgMS.

**Do the yield assumptions provide an incentive to Fonterra to operate efficiently?**

A5.26 Provided that the yield assumption is practically feasible, yields are covered by the safe harbour established in s 150B(d).

**Are the yield assumptions practically feasible?**

A5.27 Section 150B(d) of the Act provides that yields must be practically feasible in order to be considered a safe harbour.

A5.28 The current level of losses allowed for in the base milk price calculation is less than the level of losses currently incurred by Fonterra on average over all its plants. This is because Fonterra produces a wider range of products, including products that incur substantially higher levels of loss than the production of milk powder.

A5.29 Information provided by Fonterra and its independent advisors indicates that total losses for Fonterra across all RCP and non RCP products are 1.8 percent, however with the removal of non milk powder producing sites the losses fall to 1.3 percent. The milk powder producing sites will still include losses related to other products not included in the RCPs – eg, cheese and casein – as these sites are not dedicated to a single powder product. We are advised that these other products often create significantly higher losses than milk powder products, which can be as high as [confidential] percent. Fonterra has used the lower loss assumption of 0.7 percent to reflect, and ensure consistency with, the products modelled in the milk price calculations (which have relatively lower losses).

A5.30 We understand that achievable yields are highly dependent on the manufacturing plant configuration. For example, losses experienced due to cleaning can vary widely depending on the plant configuration. If a drier is supported by only one evaporator, the evaporator would need to be cleaned once a day, taking approximately three to four hours. Shutting down the evaporator would also require the drier to be cleaned while not in use. We understand milk loss from cleaning a drier can be significant.

A5.31 On the other hand, if a plant were to have three evaporators supporting a single drier, as Fonterra does, the evaporators could be cleaned on rotation ensuring at least one evaporator is always operating. Such a situation allows the drier to run 24 hours a day and without stoppages. We understand that a drier producing a single product in long runs under such conditions would only need to be cleaned every 28 – 32 days.

- A5.32 The choice of plant configuration is determined by the owner and therefore yield performance can vary across the processing industry.
- A5.33 Aurecon (an adviser to Fonterra) informed us that Fonterra has invested a great deal of capital in systems that minimise losses. These include composition control systems to minimise over specification of product and other controls to prevent overweight in packaging. Considering the level of investment made in ensuring the plant configuration for the NMPB is designed to minimise production losses, it is appropriate for the NMPB to benefit from improved yields.
- A5.34 Fonterra has undertaken loss monitoring projects with the intention of determining losses at real facilities. The results of the first project, a ten day production run of standard specification WMP at Clandeboye, was able to demonstrate stack and effluent losses significantly below the levels assumed in the base milk price calculation.
- A5.35 This trial is considered by Fonterra to be representative of the longer term yield performance for a plant producing long runs of undifferentiated product as the only aspects of the manufacturing process that were not included due to the time frame of the trial, were any effluent losses from the infrequent baghouse and fluid bed washes. Fonterra and its advisers indicate that these are so small as to make no significant impact on the overall losses measured.
- A5.36 On the face of it, this implies that the loss assumptions are practically feasible for the purpose of meeting the legislative requirements for safe harbour.
- A5.37 Westland, in its submission on the draft dry run report,<sup>58</sup> provided analysis that indicated the yield assumptions used in the base milk price calculation were not feasible, as the fat and protein content of the milk collected was not enough to meet the requirements of the forecast output volumes based on the information provided in the 2010/11 season Milk Price Statement.
- A5.38 Westland based this analysis on its determination of the minimum manufacturing tolerances that could be applied to the production of RCPs based on the accuracy of manufacturing systems and packaging systems and testing methods. When such tolerances were applied to the forecast production volumes, the fat and protein volumes required were greater than the fat and protein volumes available from the milk collected after the 0.7% loss had been applied.
- A5.39 We have looked closely at the Westland analysis and performed similar analysis on the 2011/12 milk price calculation and determined that the output volumes of fat and protein forecast by Fonterra are not greater than the available fat and protein volumes from the milk collected after losses. However, the manufacturing tolerances applied are different from those applied by Westland, with some tolerances being more aggressive than the Westland assumptions and others more relaxed.

---

<sup>58</sup> Westland Milk Products, *Submission on the Commerce Commission's review of Fonterra's Farm Gate Milk Price*, 29 June 2012, pg 6

- A5.40 We note that the manufacturing tolerances applied by Fonterra for WMP and SMP (which represent the majority of production output) are substantially lower than those assumed by Westland. On the other hand, we also note that [ confidential ]. This provides additional assurance that the manufacturing tolerances applied by Fonterra are practically feasible.
- A5.41 We recognise that this is an area where we would like to take further advice and will look to engage an independent expert for future statutory reviews.
- A5.42 The yield assumption sets a challenging target but one that appears to be consistent with the other assumptions made in the setting of the base milk price calculation including:
- A5.42.1 The standard plant configuration which includes multiple evaporators and control systems; and
  - A5.42.2 The limited product range which assumes production of undifferentiated commodities in long production runs with reduced cleaning requirements and therefore low losses due to cleaning.
- A5.43 We understand that such a plant may require greater initial capital investment than other plant configurations, but this does not preclude independent processors from building such plants in order to produce undifferentiated commodities in long production runs.
- A5.44 Based on the analysis in paragraphs A5.27 to A5.43 we consider that the yield assumptions are practically feasible, and therefore satisfy the condition to be treated as a safe harbour set out in s 150B(d).

**Are the yield assumptions reasonable?**

- A5.45 As the yield assumption is practically feasible to Fonterra and therefore satisfies the requirements of the safe harbour under s 150B(d), we don't consider it further under the heading of reasonableness.

**Are the yield assumptions transparent to third parties?**

- A5.46 We do not consider that the milk price manual clearly details the methodology for calculating yields. The manual also does not disclose key values used in the base milk price calculation (eg, losses during production).

## Attachment 6: Analysis of sales phasing assumptions in the base milk price calculation

A6.1 This attachment summarises the approach and assumptions behind Fonterra's determination of sales phasing for each RCP in the milk price manual. Table 7 below summarises our analysis of sales phasing assumptions.

**Table 7: Summary analysis of sales phasing assumptions**

Criteria	Comment
Legislative Requirement	There is no section in the Act that specifically relates to the determination of sales phasings and therefore we have been guided by s 150A, which states that the purpose of the new subpart that relates to the milk monitoring regime is to promote the setting of a base milk price that provides an incentive to Fonterra to operate more efficiently and provides contestability in the market for the purchase of milk from farmers.
Notional vs Actual	The milk price manual and base milk price calculation use Fonterra's actual sales phasing profile.
Materiality / potential impact on the milk price	Unknown
An incentive to operate more efficiently?	No. The sales phasing assumptions are normally aligned to Fonterra's actual sales of the RCPs, and therefore do not provide an incentive to operate more efficiently
Practically feasible?	Yes.
Reasonable?	Yes, as long as Fonterra uses actual sales phasings. If ex post adjustments were to be made with the benefit of hindsight in order to maximise the expected sales value, this would not be reasonable.
Gaps in Fonterra Information and Analysis	n/a
Transparency to 3 <sup>rd</sup> Parties	Not transparent ex ante, as sales phasing assumptions are based on undisclosed Fonterra planned sales phasings and are amended over the milk season in order to achieve alignment to Fonterra's actual sales phasings. Fonterra has disclosed the sales phasings on a quarterly basis in the 2011 Milk Price Statement.

### Relevant clauses in the Act

- A6.2 Section 150C states that to be consistent with the purpose in s 150A, the base milk price must be set in a way that is consistent with the following principles:
- (a) Revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the times that the commodities are contracted to be sold by Fonterra
- A6.3 This section does not specifically relate to the determination of sales phasings and therefore we have used s 150A, which states that the purpose of the new subpart that relates to the milk monitoring regime is to promote the setting of a base milk price that provides an incentive to Fonterra to operate more efficiently and provides contestability in the market for the purchase of milk from farmers, as the primary principle for assessing the determination of the sales phasing profile.

### Provisions for sales phasings in Fonterra's milk price manual

- A6.4 Fonterra's milk price manual specifies in Rule 10 that Fonterra should bear the risks and returns from any decision to delay selling product beyond the month in which the expected sales value, net of holding costs, would be maximised.
- A6.5 Before the start of a season, a series of sales phasings are specified for the next financial year, which maps sales by month of production onto month of sales. The default assumption is that Fonterra's actual phasing of sales of the RCPs manufactured in the season is consistent with this principle and it is therefore appropriate to align the base milk price sales phasing to Fonterra's actual phasing of sales of RCPs.
- A6.6 Fonterra's milk price manual also allows for the application of an alternative sales phasing profile, which may be imposed by the Fonterra Board, if it has reasonable cause to consider that Fonterra's actual phasing of sales is not consistent with the overriding principle.
- A6.7 Fonterra notes that any alternative set of sales phasings implemented by the Board should:
- A6.7.1 Reflect the prospective application of the overriding principle;
- A6.7.2 Have regard to all relevant information that was available at the time Fonterra made its decision with respect to its actual sales phasing; and
- A6.7.3 Reflect a presumption that product is to be shipped as soon as is feasible after the month in which the product is manufactured and ready for sale, modified where required to attain consistency with the overriding principle (eg, it may be appropriate to defer sales if the market would not have the capacity to absorb the volumes at issue without material adverse impact on realised prices).

### **Application of Fonterra's milk price manual in the base milk price calculation**

- A6.8 The sales phasing profile, used to populate the base milk price calculation, is calculated in a separate workbook titled F12 Sales Phasings 31 Jan.xls. This workbook calculates the sales phasing per month for each RCP as the sum of actual contracted sales per month in financial year 2012, adjusted for any sales that relate to production from financial year 2011.
- A6.9 This calculation generates a sales phasing profile for F12 production for each RCP which generally begins four to five months after the start of the F12 milk season. The reason for this lag is that the sell down of F11 production is assumed to have a similar lag. Production from the F12 season is assumed to continue to be sold as far out as September in the following year (or four months into the F13 milk season).
- A6.10 While the sales phasing profile for the financial year is first generated at the beginning of the milk season, the base milk price calculation is updated regularly during the season. This is done by calculating the 'actual' volumes using the sales phasing profile in periods prior to the current month. These volumes are fixed in the base milk calculation before re-forecasting the sales phasing profile for the remaining months. The revised sales phasing profile is then used to generate sales volumes for the rest of the season.

### **Are sales phasing assumptions notional vs actual?**

- A6.11 Sales phasings are based on Fonterra's actual sales phasings for the relevant RCPs and are therefore regularly updated during the season to reflect differences between forecast and actual phasings.

### **Materiality/potential impact on the base milk price**

- A6.12 As commodity prices can be volatile, the base milk price can potentially be impacted by the decisions made with regard to sales phasings. However the impact of such a change on the sale phasing profile cannot be easily assessed.

### **Do sales phasing assumptions provide an incentive for Fonterra to be operate efficiently?**

- A6.13 The allowance for Fonterra to use actual sales phasing, which are regularly updated over the season, may erode the overriding principle that the calculation of the base milk price is designed to promote efficiency by allowing the base milk price to bear the risk that actual performance might fall below forecast performance.
- A6.14 This is inconsistent with Rule 10 that Fonterra should bear the risks and returns of its sales phasing decisions.
- A6.15 The sales volumes (which, as discussed above, are derived from the revised sales phasing profile) are calculated in a way that attempts to ensure that the historic sales volumes cannot be manipulated and corrected for alternative decisions that would have been made with the benefit of hindsight. The base milk price calculation model does this by fixing the sales volumes in historic months and only allowing the re-forecasted sales phasing to be applied in future periods.

- A6.16 The milk price manual does not explicitly state that updates to the sales phasing must be made on a prospective basis and therefore does not prohibit ex post adjustments potentially being made to the sales phasing profile. For example, updates have been made in February 2012 to the version of the model dated 31 January 2012. The base milk price calculation allows the sales phasings to be re-forecast and applies the new forecast going forward, but it also allows for the whole of January sales volumes to be set using this updated profile. This is appropriate so long as the January sales volumes reflect Fonterra's actual sales phasings. However if Fonterra considered that its actual sales phasings for January did not reflect the revenue maximising sale phasing profile, then the milk price manual potentially allows for adjustments to be made to the January's sales volumes that would reflect the benefit of hindsight (ie, optimised with hindsight).
- A6.17 Given the opaque nature of the methodology in Fonterra's milk price manual, Fonterra may wish to consider whether the use of a prescribed and transparent rule for sales phasing would be more appropriate in order to both promote the efficiency of Fonterra and provides for contestability.
- A6.18 For example, using a simple set of rules which links sales phasing to production volumes with a suitable lag (eg, two to three months) or generating the sales phasing profile based on Fonterra's historic sales phasings would ensure that any risk of Fonterra choosing to delay sales would sit with Fonterra (as per the principle of the milk price manual). It would also allow other processors in the market certainty around the determination of the sales phasings within the base milk price calculation, which would allow them to benchmark their own performance.
- A6.19 Any change to the sales phasing away from Fonterra's actual phasings would need to consider the potential impact on prices achieved under such a profile.
- A6.20 Fonterra, in its submission on the draft dry run report,<sup>59</sup> indicated that it interprets the milk price manual to require any adjustment to sales phasing to be implemented with prospective effect (ie, without the benefit of hindsight). Fonterra accepted, however, that the drafting of the relevant provision could be improved to remove any ambiguity in its intent.

### **Are the sales phasing assumptions practically feasible?**

- A6.21 As sales phasings have been linked to Fonterra's actual sales phasings for the RCPs, the implication is that they are practically feasible. However, if Fonterra were to adjust the sales phasing retrospectively, the modelled revenue in the base milk price calculation would be practically feasible only in hindsight. The use of a profile in which the sales phasing is set with the benefit of hindsight allows the prospect of an artificial profile which would not be practically feasible.

---

<sup>59</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 June 2012, pg 9.



A6.22 We have not seen any evidence that Fonterra does in fact adjust the sales phasings retrospectively (other than to update the most recent historic month for actual results).

**Are the sales phasing assumptions reasonable?**

- A6.23 The manual allows for Fonterra to use its actual sales phasings as an appropriate indicator of the sales phasings that would maximise the expected sales value net of holding costs. The base milk price calculation is therefore updated on a monthly basis to reflect the sales phasings expected to be achieved by Fonterra.
- A6.24 The milk price manual also allows for the application of an alternative sales phasing profile, which may be imposed by the Board if the Board has reasonable cause to consider that Fonterra's actual phasing of sales is not consistent with the principle of maximising expected sales revenue.
- A6.25 As the Board must impose any alternative sales phasings prospectively, but still have regard to all relevant information that was available at the time Fonterra made its initial sales phasing decision, it is difficult to imagine a situation where an alternative sales phasing would be implemented, given that Fonterra could continue to update any profile imposed.
- A6.26 As discussed above, the base milk price calculation potentially allows ex post adjustments to the sales phasings profile over the course of the season. Therefore, we consider that the milk price manual provides Fonterra with the ability to use a methodology for determining sales phasings that is not reasonable.
- A6.27 Fonterra could consider generating sales phasings on a more objective and transparent basis either by linking sales phasings to modelled RCP production or by using Fonterra's historic RCP sales phasing profiles (eg, last season's profile or an average of the previous three years). As noted above at paragraph A6.20, Fonterra is considering clarifying the drafting of the manual to remove the prospect that sales phasings could be made retrospectively.

## Attachment 7: Analysis of pricing selection in the base milk price calculation

A7.1 This attachment summarises the approach and assumptions behind Fonterra's determination of pricing for each RCP in the milk price manual. Table 8 below summarises our analysis of pricing selection.

**Table 8: Summary analysis of pricing selection**

Criteria	Comment
Legislative Requirement	Section 150C(1)(a) revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the times that the commodities are contracted to be sold.
Notional vs Actual	The milk price manual and base milk price calculation use actual data (selected prices only)
Materiality / potential impact on the milk price	Very high, but objective due to widespread use of global dairy trade <sup>60</sup> (GDT) sale prices in milk price calculation.
An incentive to operate more efficiently?	Yes. GDT prices are objectively determined, creating a transparent benchmark against which to assess Fonterra's actual performance. To increase its profits Fonterra can seek to obtain higher prices through other channels, or to sell more profitable, differentiated products.
Practically feasible?	Yes. The assumptions are largely based on price achieved on GDT. Modelled prices could have been higher if Fonterra had included more off-GDT prices for RCPs.
Reasonable?	Yes
Gaps in Fonterra Information and Analysis	N/A
Transparency to 3 <sup>rd</sup> Parties	Pricing assumptions are generally transparent as they are largely based on GDT prices, however formal publication of Fonterra's price selection policies in the manual would make pricing assumptions more transparent.

<sup>60</sup> GDT is an internet-based electronic trading platform through which Fonterra (and more recently other suppliers) sell commodity products.

### Relevant clauses in the Act

- A7.2 Section 150C states that in order to be consistent with the purpose set in s 150A, the base milk price must be set in a way that is consistent with a number of principles, including at s 150C(1)(a): revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the times that the commodities are contracted to be sold by Fonterra.

### Provisions for pricing in Fonterra milk price manual

- A7.3 Rule 5 of the milk price manual uses prices calculated on an ex-New Zealand port or free alongside ship (FAS) basis, since FAS prices are the only prices for which information is publicly available. This interpretation is also consistent with the Act.
- A7.4 Fonterra states that by using prices which are externally verifiable, a comparison of the prices used in the base milk price calculation against external benchmarks is possible. This in turn maintains appropriate incentives on Fonterra.
- A7.5 To this effect, Fonterra has placed, where possible, sole reliance on benchmark selling prices achieved on GDT, stating that this appropriately incentivises management to maximise prices achieved for sales off GDT. This also enhances the transparency of the revenue inputs into the base milk price calculation.
- A7.6 Fonterra's milk price manual states in Rule 5 that in determining whether it is appropriate to place sole reliance on benchmark selling prices achieved on GDT in respect of a particular RCP, the board will have regard to:
- A7.6.1 The volume of the RCP traded on GDT relative to the total volume of the RCP sold by Fonterra; and
  - A7.6.2 Any factors relevant to determining whether the prices achieved on GDT can be considered to be materially representative of the prices Fonterra (and its competitors) should generally be able to achieve for a standard specification RCP traded on terms comparable to those applying to sales on GDT.
- A7.7 For the 2012 Milk Season, prices for WMP, SMP and AMF are obtained solely from GDT. These products in aggregate represent approximately 90 percent of base milk price revenue.
- A7.8 Butter is not sold on GDT, and BMP is typically sold on GDT for approximately six months of the year.<sup>61</sup> Therefore, it is necessary to use a sample of FAS equivalent prices achieved by Fonterra through off-GDT sales of these products.

### Application of Fonterra's milk price manual in the base milk price calculation

- A7.9 Sales of commodity products are recognised at the time the product ships, but the sale will ordinarily have been contracted some time prior to shipment, at a price that was current at the time the contract was entered into (eg, sales on GDT

---

<sup>61</sup> WMP, SMP and AMF are sold on GDT 12 months of the year.

provide for shipment one to six months after auction). Sales in a particular month therefore reflect contracts entered into in several different months and a range of different prices.

- A7.10 The determination of the year to date price per shipment month for each RCP is calculated in a separate workbook F12 Shipment Month BCP Model 31 Jan.xls.
- A7.11 This workbook calculates the shipment price for a month for each product by identifying which contracts with shipment in a particular month are considered to inform the base milk price.
- A7.12 In determining which sales prices are to be used to inform the base milk price, Fonterra asserts that it uses the following decision criteria, where sales must:
- be manufactured by Fonterra NZ
  - not be a value add sale (product classified as Consumer and Foodservice)
  - not be a downgrade sale
  - be at a standard specification, ie, based on GDT specs for WMP, SMP and AMF, or based on a standard commodity spec for Butter and BMP
  - not be an intercompany sale
  - not be sold into New Zealand, or into a high-risk destination.
  - be supplied on FAS or FAS-equivalent terms
  - not be formulaically priced (ie, where pricing is not representative of market prices at time of contract and is set by reference to average prices over a preceding period).
- A7.13 All qualifying sales also need to satisfy the condition of being priced a number of months prior to a shipment month that the Board considers to be reasonably representative of the contract timing for sales of a manufacturer of commodity dairy prices selling on FAS terms. This is currently assumed to be between one and eight months prior to shipment.
- A7.14 The total volumes are also generated for each shipment month by RCP by reference to the month that a contract was entered into. However, volumes are generated by reference to the total volumes contracted by Fonterra across each RCP and not just contracts which inform the base milk price. These contracts are then separated into "GDT" and "other contracts" by month in which the contract was entered into. The proportion of total volume sold in each of the eight months prior to shipment is then used to generate a weighted average price per contract month.
- A7.15 The determination of the forecast price per shipment month for each RCP is calculated within a separate workbook F12 Forecast BCP model Jan 31.xls. We

have not assessed the calculation of forecast prices in the base milk price calculation as future statutory reviews will be based on the calculation of the base milk price at the end of the milk season when all pricing assumptions will be able to be based on actual prices achieved under the requirements of the manual.

**Are pricing assumptions notional or actual?**

- A7.16 The pricing assumptions are based on actual prices achieved by Fonterra on sales during the financial year.
- A7.17 The prices used are only a selection of the prices achieved across all Fonterra contracts as a result of the notional basket of commodities determined to be produced by the NMPB.
- A7.18 We understand that if Fonterra had included the prices achieved for WMP, SMP and AMF in contracts entered into off-GDT (ie, negotiated sales to governments etc.) it is likely that average modelled prices would have been higher.

**Materiality/potential impact on the base milk price**

- A7.19 The pricing assumptions are highly material to the calculation of the base milk price. A five percent change to the pricing assumptions (across all products and in all periods) would result in change in the base milk price of approximately 30 cents per kgMS.
- A7.20 While the assumption is highly material, it is not particularly subjective. The majority of prices are based on observable GDT auction results and the determination of the average prices used in the base milk price calculation is largely a mechanical process.

**Do pricing assumptions provide an incentive to Fonterra to operate efficiently?**

- A7.21 GDT prices at each auction are published on the GDT website. As such they are objectively determined and verifiable, and determined exogenously. The use of GDT prices in the base milk price calculation establishes a transparent milk price which Fonterra must pay for milk. To achieve higher profits, Fonterra may seek to produce differentiated products where they earn greater profits than the RCPs, or to target other sales channels if higher prices can be earned through those channels relative to GDT prices.
- A7.22 Fonterra advise that this incentive is working as intended. For example, to justify the extra cost of sales teams within Fonterra above the level required to support sales on GDT, the sales teams are incentivised to achieve contract prices that are higher than those achieved through GDT in order to cover the incremental cost of that sales force.

**Are pricing assumptions practically feasible?**

- A7.23 The assumptions are largely based on prices observed through the use of GDT, which is an auction platform for internationally-traded dairy products.

- A7.24 Where GDT prices are unavailable, Fonterra has relied on actual prices achieved on export sales of standardised products on a FAS basis.
- A7.25 While prices achieved on GDT should be representative of the value of a standard product regardless of who produces it, we have noted that there is often a significant difference between the prices achieved at auction by Fonterra and the prices achieved by other processors. For example, at a trading event dated 1 May 2012, the price achieved for low and medium heat SMP contracts with a July 2012 delivery date was on average (all prices on an FAS per MT basis):
- US\$2,500 by Arla
  - US\$2,525 by Dairy America
  - US\$2,700 by Fonterra.
- A7.26 We have not investigated the reason for any systematic differences in prices achieved at auction by different sellers but note that none of the other sellers are selling product manufactured in New Zealand.
- A7.27 Notwithstanding the artificiality of assuming no impact of greater sales volumes on observed prices, we consider that the approach is feasible given that the key focus of our review is whether entry can occur by building an additional plant, rather than entry at industry scale (as discussed in paragraph A3.54). Further, it would be difficult to confirm the direction and size of any adjustment to currently observed GDT sales prices from an increase in assumed on GDT sales volumes given:
- A7.27.1 the modelled FGMP assumes no larger volume of NZ Milk is collected and then processed and sold than is occurring in practice in any given season;
- A7.27.2 the FGMP is assuming a change in the use of sales channels (more sales on GDT, less off GDT);
- A7.27.3 prices achieved from off GDT sales tend, we understand, to be higher than those made on GDT, and what impact those sales would have on GDT prices if they had been made on GDT is unclear; and
- A7.27.4 product currently sold off GDT can be more differentiated (implying a higher price), so the impact on prices of lesser differentiated sales products from a greater volume of more undifferentiated product is unclear (and would depend on purchaser's ability to further process the milk product themselves, and the costs and benefits of doing so).
- A7.28 We consider that the prices achieved through GDT, and therefore the pricing levels assumed in the base milk price calculation, are representative of the prices that could realistically be achieved by Fonterra and potentially by other New Zealand processors.

**Are pricing assumptions reasonable?**

A7.29 We consider that the pricing assumptions used in the base milk price calculation are reasonable given the stated product mix of the NMPB and the reliance on GDT prices. The assumptions are consistent with, and relate to, Fonterra acting efficiently.

## Attachment 8: Analysis of sales costs in the base milk price calculation

A8.1 This attachment summarises the key approach and assumptions behind Fonterra's determination of the sales costs in the milk price manual. Table 10 below summarises our analysis of sales costs assumptions.

**Table 10: Summary analysis of sales costs assumptions**

Criteria	Comment
Legislative Requirement	Section 150C(1)(b) states that costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital over the long term) of collecting milk, processing milk into the same portfolio of commodities specified in accordance with s 150C(2), and selling those commodities.
Notional vs Actual	The milk price manual and base milk price calculation use notional values
Materiality / potential impact on the milk price	Relatively low
An incentive to operate more efficiently?	Yes.
Practically feasible?	Yes.
Reasonable?	Yes.
Gaps in Fonterra Information and Analysis	
Transparency to 3 <sup>rd</sup> Parties	Not transparent, as the manual does not clearly detail all aspects of the methodology for calculating this cost item.

### Relevant clauses in the Act

A8.2 Section 150C(1)(b) states that costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital over the long term) of collecting milk, processing milk into the portfolio of commodities specified in accordance with s 150C(2), and selling those commodities.

### Provisions for sales costs in Fonterra's milk price manual

A8.3 Rule 6 of Fonterra's milk price manual states that the sales costs of the NMPB should not exceed the lesser of:



- A8.3.1 The costs Fonterra would incur if it sold the product implied by the Farmgate Milk Production Plan on an arm's length basis through a sales agent; and
- A8.3.2 The selling costs actually incurred by Fonterra adjusted to reflect the Farm Gate Milk Production Plan and having regard to any cost reductions achievable through the extension of GDT.
- A8.4 Fonterra's milk price manual also states that the sales costs are to be calculated with reference to the costs Fonterra could reasonably be expected to incur if it converted all milk into standard RCPs and, where feasible, sold those products through GDT. However, it shall not exceed the amount that would be incurred by a manufacturer for RCPs that paid an arm's length commission to a sales agent in respect of all costs incurred beyond the New Zealand wharf.
- A8.5 Subject to this constraint, the sales cost should reasonably reflect:
- A8.5.1 A presumption that the NMPB will maximise (within reasonable commercial constraints) the proportion of its production sold on GDT;
- A8.5.2 The costs that would necessarily be incurred by a manufacturer of RCPs that maximised its sales on GDT, including costs incurred in stimulating customer interest in procuring product through GDT, and in servicing customers;
- A8.5.3 The costs of participating as a third party seller on GDT<sup>62</sup>; and
- A8.5.4 A reasonable provision for credit risk and any other risks customarily assumed by a seller of standard specification commodity products, with such provision not to exceed the cost of paying a third party to assume these risks.
- A8.6 Fonterra also notes that the sales cost provision is largely notional, but has been derived by reference to actual Fonterra costs for relevant activities. The sales cost provision includes allowances for:
- A8.6.1 The cost of maintaining an offshore presence to provide an appropriate level of customer service;
- A8.6.2 Relevant back office services not covered elsewhere in the model; and
- A8.6.3 Direct costs of selling on GDT.
- A8.7 Fonterra considers that the notional nature of the sales cost provision means it is appropriately incentivised to control its actual selling costs.

---

<sup>62</sup> GDT is operated by Global Dairy Trade Holdings Limited, a wholly-owned subsidiary of Fonterra. GDT is operated separately from Fonterra, and all auctions are run by the trading manager, CRA International, Inc.. The notion of third party sellers refers to firms, other than Fonterra, who sell their products on GDT.

### **Application of Fonterra's milk price manual in the base milk price calculation**

- A8.8 Sales costs in the milk price calculation are based on the assumption that 90 percent of its product will be sold through GDT and ten percent will be sold to government procurement agencies.
- A8.9 Within the F12 Milk Price Reporting Model.xls, the sales costs are split into three categories, which we discuss below:
- a USD fixed commission portion
  - a NZD fixed commission portion
  - a USD variable commission per MT portion.
- A8.10 The USD fixed commission portion is based on the assumption that the NMPB would require eight in-market hubs required to support 2.25 million tonnes per year of GDT sales (GDT support hub) and four in-country hubs to support government tenders of 250,000 tonnes per annum (government tender support hub).
- A8.11 Fonterra has used a baseline cost based on actuals to determine the cost of a GDT support hub or a government tender support hub.
- A8.12 The GDT support hub is based in large part on the actual costs of Fonterra's actual China ingredients hub inflated by ten percent to reflect the higher cost of hub operations outside of China. China has been selected as a baseline as a high proportion of China commodity sales are made through GDT.
- A8.13 The government tender support hub is based on Fonterra's actual Venezuela cost to serve, and an additional allowance for staff and travel costs.
- A8.14 The NZD fixed commission portion is an estimate of the NZ headquarters cost based on a range of assumptions, some of which are based on Fonterra actuals, others which are based on the specific requirements of the NMPB (eg, level of staffing, IT systems requirements).
- A8.15 The USD variable commission per MT portion is based on GDT's published tiered fee structure and calculated based on selling 2.25 million tonnes per annum.

### **Are sales cost assumptions notional or actual?**

- A8.16 The NMPB's assumed sales costs are generally a notional figure based on Fonterra's estimate of the number of hubs required to support sales (through GDT or government procurement agencies) and the overhead costs associated with those hubs.
- A8.17 The cost estimates for these hubs are based on benchmark hubs from within Fonterra's current sales costs. However, these costs have been adjusted to meet the expected needs of the NMPB.

- A8.18 The GDT fee is based on the actual tiered fee structure published on the GDT website. The total cost of selling through GDT is based on the NMPB's notional volumes of RCPs produced.

### **Materiality/potential impact on the base milk price**

- A8.19 While the base milk price is not particularly sensitive to small changes in the assumed sales costs relative to other key assumptions (for example, an increase in the sales costs of five percent would result in a one cent per kgMS decrease in the base milk price), judgment is required to determine the appropriate amount of such costs. There is some uncertainty as to what the potential variability in sales costs might be and therefore we cannot state these variations will not have a potentially material impact on the base milk price. Compared to some other issues we have considered, the materiality of this issue is relatively low.

### **Do sales cost assumptions provide an incentive for Fonterra to operate efficiently?**

- A8.20 Sales costs reflect assumptions made in the milk price manual, rather than Fonterra's actual sales costs in any period. Fonterra's profits are calculated after payment of the base milk price. Fonterra can improve its profits by reducing operating costs, including its sales costs. Using notional amounts to set sales costs in the base milk price is consistent with providing an incentive for Fonterra to operate efficiently.

### **Are sales cost assumptions practically feasible?**

- A8.21 Fonterra's milk price manual and the base milk price calculation do make allowance for sales and support costs in international markets, notwithstanding the assumed heavy reliance on GDT auctions to sell product assumed in the milk price manual. This seems to be a prudent approach as we understand some in-country sales support will continue to be required even for GDT sales, and may be necessary to negotiate off-GDT sales.
- A8.22 We have sought to test the appropriateness of the allowance for the sales costs Fonterra has made in setting the base milk price. For example, we have asked Fonterra to provide us with a reconciliation of the number of hubs required to support the sales of Fonterra's commodity products to the number they expect would be required to support the NMPB. We have also requested Fonterra provide information about the cost of operating its sales hubs in order to determine whether the benchmark hubs used (ie, China and Venezuela) are reasonable comparators for the costs associated with maintaining each type of sales hub.
- A8.23 In its submission on the draft dry run report,<sup>63</sup> Fonterra provided additional information about the costs assumed in the base milk price calculation as compared to the actual sales costs incurred by Fonterra. In Fonterra's analysis, it states that Fonterra's actual in-market sales costs (ie, those related to sales hubs) are USD[ ] per MT. This is compared to the base milk price calculation in

---

<sup>63</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price, 29 Jun 2012, pg 12-13*

market sales costs of USD12.4 per MT based on the modelled volumes. This suggests that Fonterra's actual in-market sales costs are higher than those assumed in the base milk price calculation.

- A8.24 However, Fonterra has also shown that the GDT trading costs assumed in the base milk price calculation are higher than those actually experienced by Fonterra and that combined in-market sales costs and GDT fees are comparable for Fonterra and the notional processor.
- A8.25 The analysis provided by Fonterra in its submission indicated that the total sales costs included in the base milk price calculation are practically feasible for Fonterra.<sup>64</sup>
- A8.26 The sales cost assumptions were revised in 2011. Prior to 2011 sales costs were assumed to be approximately \$144m or 10.9 cents per kgMS. The revised sales costs are \$115m or 8.3 cents per kgMS. Fonterra states that the reduction in the sales cost estimate reflects the assumption that WMP, SMP and AMF are all sold exclusively through GDT, whereas prior to 2011, only WMP was sold exclusively on GDT.
- A8.27 In their submission on the draft report,<sup>65</sup> Synlait, Miraka and Open Country have stated that they consider greater costs than the \$115m modelled are required to support Fonterra's forecast sales volumes even given the assumed proportion of commodities sold through GDT.
- A8.28 While the additional analysis provided by Fonterra in its submission on the draft dry run report indicates that the assumed sales costs are practically feasible to Fonterra, we do not consider that these costs could necessarily be achieved by another efficient producer. This is because the sales costs may only be practically feasible if in-market costs and GDT fees are looked at in total. We consider that the actual GDT costs that are achieved by Fonterra may not be achievable by any other producer as these costs are not reflective of what a 3<sup>rd</sup> party with no connection to GDT would have to pay.
- A8.29 However, as we discussed in paragraph 59 above, the Act does not require that *existing* independent processors can necessarily achieve the level of efficiency so long as Fonterra or some other *potential* entrant can achieve that level of efficiency, then that ensures that the base milk price reflects a practically feasible level, and would provide a normal return on the incremental investment.
- A8.30 Additionally we note that:
- A8.30.1 Fonterra has indicated that total in-market costs for the NMPB would be lower than Fonterra's actual in-market sales costs as sales transacted

---

<sup>64</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 Jun 2012, pg 12-13

<sup>65</sup> Synlait, Miraka and Open Country, *Submission: Commerce Commission Dry Run Review of Fonterra's Milk Price*, 5 Jul 2012, pg 4

through GDT are less expensive to support than bilateral sales, the current cost of USD\$12.4 per MT is [ ] percent lower than Fonterra's actual costs; and

- A8.30.2 A low level of sales costs is consistent with the approach to determining revenues, and in particular that off-GDT sales have been excluded from the calculation of FGMP. Off-GDT sales may achieve higher prices, but with higher sales costs (as discussed at paragraphs A7.18 and A7.22 above).

**Are sales cost assumptions reasonable?**

- A8.31 We consider the modeled sales costs are reasonable as Fonterra can achieve them in respect of the notional milk powder business as a result of its efficiency, and not due to some other factor which is unrelated to it acting efficiently.

## Attachment 9: Analysis of labour costs in the base milk price calculation

A9.1 This attachment summarises the approach and assumptions of Fonterra's determination of the labour costs in milk price manual. Table 11 below summarises our analysis of labour costs assumptions.

**Table 11: Summary analysis of labour costs assumptions**

Criteria	Comment
Legislative Requirement	Section 150C(1)(b) states that costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital over the long term) of collecting milk, processing milk into the same portfolio of commodities as the portfolio adopted for the purposes of paragraph (a), <sup>66</sup> and selling those commodities.
Notional vs Actual	Fonterra's milk price manual and the base milk price calculation use notional employee numbers and actual salary and employee related expenses
Materiality / potential impact on the milk price	Medium
An incentive to operate more efficiently?	Yes. The labour costs modelled represent the costs of producing the RCPs, and not Fonterra's actual costs. Fonterra can improve its profits by improving the productivity of its own labour force.
Practically feasible?	Yes
Reasonable?	Yes
Gaps in Fonterra Information and Analysis	
Transparency to 3 <sup>rd</sup> Parties	Not transparent, as the milk price manual does not clearly detail the methodology for calculating this cost item.

### Relevant clauses in the Act

A9.2 Section 150C(1)(b) states that costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital over the long term) of collecting milk, processing milk into the same portfolio of commodities as

<sup>66</sup> Section 150C(1)(a): revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the time that those commodities are contracted to be sold by new co-op.

the portfolio adopted for the purposes of paragraph (a),<sup>67</sup> and selling those commodities.

### **Provisions for labour costs in Fonterra's milk price manual**

- A9.3 For the purpose of the base milk price calculation, specified labour costs are accounted for in the NMPB fixed manufacturing costs and overhead costs.
- A9.4 Rule 15 of the milk price manual states that the NMPB may recover the fixed manufacturing costs that it could reasonably be expected to incur if it manufactured the RCPs to the farm gate milk price production plan.
- A9.5 Fonterra applies this rule by providing for fixed manufacturing costs based on Fonterra's budgeted resource requirements and its actual costs for the relevant year, having regard to the farm gate milk price production plan.
- A9.6 Fonterra notes that the labour requirements for the NMPB are established with expert independent input and are:
- A9.6.1 Materially lower than Fonterra's actual labour requirements;
  - A9.6.2 Reflecting the commodity only product mix; and
  - A9.6.3 Reflective of a narrower range of products than the products actually produced by Fonterra.
- A9.7 The milk price manual also states that the provision for fixed manufacturing costs will be subject to a review by an independent reviewer in each reset year (reset years are assumed to occur every four years).
- A9.8 With regards to overhead costs, Rule 19 in Fonterra's milk price manual states that the NMPB may recover a reasonable provision in respect of any other costs that it could reasonably be expected to incur if it only undertook the activities performed by the NMPB (including expenditure on site overheads, manufacturing overheads, corporate overheads and research and development).
- A9.9 The milk price manual also notes that these costs will be determined in a reset year and subject to independent review. In periods outside of a reset year, the provision will be indexed to the Producers Price Index or Labour Price Index, whichever is most appropriate. The continuing reasonableness of the provision is to be reviewed by the Milk Price Group against budgeted Fonterra Costs and actual costs for the previous year.

---

<sup>67</sup> Section 150C(1)(a): revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the time that those commodities are contracted to be sold by new co-op.

### **Application of the manual in the base milk price calculation**

- A9.10 The fixed manufacturing costs and overhead costs used in the base milk price calculation are determined in a separate workbook F12 Jan 31 IMP Make Allowance Model.xls.
- A9.11 Fixed manufacturing costs include wages and Employee Related Expenses (ERE) which represent the direct labour costs associated with running the 59 plants assumed in the notional asset base.
- A9.12 The Wages and ERE costs are based on assumptions for the number of full time equivalent (FTE) employees required at various levels to run each type of plant and the expected salary cost related to these employees.
- A9.13 The NMPB assumes the direct labour cost associated with its 59 plants is \$149.5m or 11 cents per kgMS.
- A9.14 Other specified employee costs are included in the site overhead and administration cost categories. Site overheads account for a labour cost of \$25.6m or two cents per kgMS.
- A9.15 Corporate overheads and New Zealand manufacturing overheads are included in the administration costs and account labour costs of \$36.5m and \$19.2m, or three cents and one cent per kgMS respectively. We note that additional labour costs have been accounted for within milk collection costs.

### **Are labour cost assumptions notional or actual?**

- A9.16 Labour cost assumptions are based on a combination of notional and actual assumptions. The NMPB's assumed labour force is a notional figure based on Fonterra's estimate of the number of employees required to run its notional fixed asset base and an estimate of the employees required in the overhead structure.
- A9.17 The costs associated with the labour force, ie, salaries and ERE, are based on Fonterra's actual costs. The costs are established in each reset year and are inflated by cost priced indices in non reset years.

### **Materiality/potential impact on the base milk price**

- A9.18 Direct labour costs are included in the operating expenses of the NMPB. An increase in the direct labour costs of five percent would result in a 0.5 cent per kgMS impact on the base milk price.
- A9.19 It is difficult to determine the materiality of the indirect labour costs as we have been unable to identify all indirect labour costs included in the NMPB's overhead structure. In the current version of the base milk price calculation (F12 Milk Price Reporting Model Jan.xls) we have been able to specifically identify approximately \$81.3m of indirect labour costs, which equates to approximately six cents per kgMS.



### **Do labour cost assumptions provide an incentive for Fonterra to operate more efficiently?**

A9.20 The base milk price seeks to model the costs of all staff required to operate the NMPB. It uses actual rates for labour resources, and modelled resource unit requirements. Changes in Fonterra's own labour costs, for example through changes in staffing levels, will not therefore result in direct changes to the base milk price. If Fonterra improves the productivity of its labour force, it will earn increased profits. As such we consider the labour cost assumptions in the base milk price are set in a way which is consistent with ensuring Fonterra has incentives to operate efficiently.

### **Are labour cost assumptions practically feasible?**

A9.21 Fonterra has 16,800 employees, as per page 19 of Fonterra's 2011 annual report. Of these, approximately 8,500 relate to Fonterra's commodity business, which also produces products outside of the selected RCPs (ie, cheese, casein and premium products). Fonterra estimates that the total number of full time equivalent (FTE) employees required by the NMPB is approximately 5,500, however in the base milk price calculation we have only been able to identify directly approximately 2,300 leaving approximately 3,000 employees not specifically identified in the model used to calculate the base milk price.

A9.22 Fonterra provided us with a reconciliation of the number of indirect staff currently employed by Fonterra to the number they expect would be required to be employed by the NMPB. There are some gaps between this number and the number identified in the base milk price calculation for the current financial year. Fonterra advises that this is primarily because some inputs which have a material labour component (such as maintenance and supply chain costs) are calculated by reference to Fonterra's costs, without any explicit calculation of the implied FTEs. Fonterra has undertaken to review the overhead assumptions in the base milk price calculation as part of the 2012 reset year.

A9.23 We also asked for an explanation as to whether (and, if so, where) in the overhead costs the costs of the employees who are not specifically identified have been included.

A9.24 In its submission on the draft dry run report, Fonterra has provided analysis which shows the details of the 8,440 employees in its current ingredients business and how these are allocated across to the NMPB.<sup>68</sup> The total number of FTE employees allocated to the NMPB is approximately 5,150 and the analysis provided is also able to show where the costs of these employees have been included within the costs in the base milk price calculation.

### **Are labour cost assumptions reasonable?**

A9.25 We conclude that the direct labour costs identified in the base milk price calculation are reasonable, as we are able to benchmark the level of staff required

---

<sup>68</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 Jun 2012, pg 11

for each type of plant in the NMPB asset base against an equivalent Fonterra plant and because the salary rates used are based on Fonterra's actuals.

- A9.26 Based on the additional information provided by Fonterra in its submission we conclude that the indirect labour costs included in the base milk price calculation have captured all costs relating to all indirect labour required to be employed by the NMPB. We also conclude that the total labour cost in the base milk price calculation is reasonable as it reflects the costs to Fonterra, acting efficiently.

**Are the labour cost assumptions transparent to third parties?**

- A9.27 We do not consider that the milk price manual clearly details the methodology for calculating labour costs.

## Attachment 10: Analysis of lactose costs in the base milk price calculation

A10.1 This attachment summarises the approach and assumptions behind Fonterra's determination of lactose costs in the milk price manual. Table 12 below summarises our analysis of lactose costs assumptions.

**Table 12: Summary analysis of lactose cost assumptions**

Criteria	Comment
Legislative Requirement	Section 150C(1)(b) states that costs taken into account in calculating the base milk price include costs (including capital costs and a return on capital over the long term) of processing milk into the same portfolio of commodities as the portfolio adopted for the purposes of paragraph (a). <sup>69</sup>
Notional vs Actual	The milk price manual and milk price calculation uses notional lactose volumes and actual lactose price and freight costs.
Materiality / potential impact on the milk price	Medium
An incentive to operate more efficiently?	The use of the best lactose price, and its related Customs, insurance and freight costs (CIF), achieved by either Fonterra or its competitors is consistent with incentivising Fonterra to operate more efficiently as per s 150A of the Act.
Practically feasible?	Yes
Reasonable?	Yes
Gaps in Fonterra Information and Analysis	N/A
Transparency to 3 <sup>rd</sup> Parties	Transparent

### Relevant clauses in the Act

A10.2 Section 150C(1)(b) states that for the achievement of the purpose set out in s 150A, costs taken into account in calculating the base milk price include costs of processing milk into the same portfolio of commodities as the portfolio adopted for the purposes of paragraph (a).

<sup>69</sup> Section 150C(1) states: the base milk price must be set in a way that is consistent with the following principles (a) revenue taken into account in calculating the base milk price is determined from prices of a portfolio of commodities at the times that those commodities are contracted to be sold by new co-op.

### **Provisions for lactose costs in Fonterra's milk price manual**

- A10.3 Rule 18 of the milk price manual states that the NMPB may recover the cost of purchasing any shortfall between the available lactose and the lactose required to produce the RCPs as specified in the NMPB's production plan (referred to as the Farmgate Milk Price Production Plan in milk price manual) at a reasonable estimate of prevailing global prices.
- A10.4 The provision for the cost of lactose is calculated as the product of:
- A10.4.1 Lactose requirements; and
  - A10.4.2 Relevant costs, comprising an appropriate estimate of the lactose price converted to NZD at the benchmark FX rate, and any additional costs that might reasonably be incurred in transporting the lactose requirements to Fonterra's sites, each expressed in NZD per MT.
- A10.5 The milk price manual states that the lactose price for a financial year should reflect a supportable estimate of the arm's length price that would be negotiated under a contract spanning supply of at least 5,000 MT of lactose over a period of at least 12 months between an international producer and a commercially astute NZ purchaser (or vice versa).
- A10.6 The milk price manual stipulates that the calculation of lactose requirements for a season shall appropriately reflect:
- A10.6.1 The Farmgate Milk Price Production Plan for the season as finalised at the end of the season;
  - A10.6.2 The composition of all milk collected in the season;
  - A10.6.3 The composition target for each RCP; and
  - A10.6.4 Supportable assumptions in respect of all other matters material to the calculation, including provisions for losses and for the moisture content of lactose powder.

### **Application of Fonterra's milk price manual in the base milk price calculation**

- A10.7 The milk price manual states that the NMPB may recover the cost of purchasing any shortfall between the available lactose and required lactose. Due to the assumption that all milk collected is processed into the selected RCPs, there is assumed to be no available lactose in the NMPB and all the lactose required to standardise production must be purchased on the international market.
- A10.8 Lactose is required to standardise the production of SMP, WMP and BMP. The lactose requirements in the base milk price calculation are generated with reference to:
- A10.8.1 The composition of the milk supply each month;

- A10.8.2 The RCP yield assumptions (as discussed in Attachment 5);
- A10.8.3 The assumption of a standard lactose loss allowance; and
- A10.8.4 The moisture content of lactose powder.
- A10.9 The calculation of the lactose price and the related CIF costs are generated in separate workbook titled F12 Lactose Model Jan 31.xls.
- A10.10 Fonterra has stated that the price of lactose has been determined with reference to the landed lactose prices as reported by the Statistics New Zealand. The information collected by the Statistics New Zealand allows Fonterra to calculate the actual prices and shipping costs experienced by both Fonterra and its competitors in New Zealand.
- A10.11 The base milk price calculation calculates the lactose price and CIF costs per month in USD as the weighted average price for the previous three months lagged by one month. The NMPB then uses the lower of the lactose price and CIF costs experienced each month by Fonterra or its competitors converted to NZD at the benchmark FX rate.
- A10.12 The base milk price calculation also assumes a domestic freight cost based on the average actual cost of transport per tonne of moving product from Fonterra to relevant New Zealand ports. Fonterra has assumed the reverse trip (ie, bringing product from the port to the site) would have an equivalent cost.
- A10.13 The base milk price calculation assumes that storage costs for lactose are based on the current month's required lactose and that lactose is stored at the same cost per tonne as other dry products (ie, WMP, SMP etc).
- A10.14 The milk price manual also states that the cost should reference a reasonable provision for the elapsed days between delivery of lactose to a site and payment for lactose. However, in the base milk price calculation there is no specific reference to lactose payable days.<sup>70</sup> Instead, a single payable days assumption for all cost categories in the base milk price calculation is applied.

**Are lactose cost assumptions notional or actual?**

- A10.15 Lactose cost assumptions are based on a combination of notional and actual assumptions. The NMPB's assumed lactose volume is a notional figure based on Fonterra's estimate of the amount of lactose required to standardise the volumes of WMP, SMP and BMP produced in the base milk price calculation.
- A10.16 The price of lactose and CIF costs are actual costs based on the lowest achieved prices of Fonterra and its competitors using import information provided by Statistics New Zealand.

---

<sup>70</sup> Lactose payable days refer to time taken to pay creditors for lactose.

### Materiality/potential impact on the base milk price

A10.17 Lactose costs are a significant cost in the milk price calculation.

A10.18 Table 13 below shows the impact on the base milk price of using Fonterra's actual monthly lactose price and CIF costs (ie, not an average of previous three months), using the better of Fonterra and its competitors' actual monthly lactose price and using the USDA average spot price per month with an average Fonterra CIF cost.

**Table 13: Impact on the base milk price of using Fonterra's actual monthly lactose price and CIF costs**

	Change in base milk price (per kgms)
Fonterra Actual Monthly Lactose Price and CIF costs	-\$0.05
Best Actual Monthly Lactose Price and CIF costs	-\$0.05
USDA Average Monthly Price and Average Fonterra CIF costs	-\$0.09

A10.19 The potential changes to the base milk price included in Table 13 are specific to the current season during which lactose prices have been steadily increasing. The use of a 3-month rolling average should not have any systematic impact over time.

### Do lactose cost assumptions provide an incentive for Fonterra to operate efficiently?

A10.20 Lactose costs have increased significantly in the last year. Both the USDA lactose price index<sup>71</sup> and the landed lactose prices reported by the Department of Statistics show a strong increasing trend in lactose costs during 2011, with prices per month to NZ buyers generally lower than the USDA index. Fonterra reported lactose costs that were generally, but not always, lower than those reported by its NZ competitors.<sup>72</sup>

A10.21 By using a three month average price deferred by one month, the lactose price in the model is lower than the price referenced by the USDA lactose price index, when lactose prices are rising.

A10.22 The use of the three month average price means that the full impact of the increase in lactose prices is delayed; however, in times where the lactose price is falling, the base milk price calculation would also be slower to recognise the benefit of the falling prices.

<sup>71</sup> [http://future.aae.wisc.edu/data/monthly\\_values/by\\_area/23?tab=prices](http://future.aae.wisc.edu/data/monthly_values/by_area/23?tab=prices)

<sup>72</sup> Based on Fonterra's analysis of the Department of Statistics data to separate its costs from those of its NZ competitors (as per the F12 Lactose Model.xls).

A10.23 The use of the best price and its related CIF costs, achieved by either Fonterra or its competitors means the lactose price used to set the base milk price is determined exogenously and does not simply reflect Fonterra's actual performance. As a result, the more consistent achievement of lower lactose purchase costs by Fonterra will benefit Fonterra's profits. In short, Fonterra has an incentive to operate efficiently.

**Are lactose cost assumptions practically feasible?**

A10.24 The lactose prices used in the milk price calculation are based on actual costs (which have been independently reported). As such, we consider those costs are practically feasible by Fonterra. Volumes of required lactose are determined by the level of powder production and ought to be practically feasible (we have not verified the reasonableness of the proportions of lactose used in the milk price calculation versus the volume of milk powder produced).

A10.25 We do question some of the lesser assumptions inherent in the calculation of the lactose costs. First, we question the implied assumption in the base milk price calculation that the NMPB is only required to store the current month's lactose requirement. Due to the significant levels of lactose required by the business (275,000 MT in 2011) and the lack of a domestic lactose supply in the base milk price calculation, we consider that it would be prudent for the NMPB to assume it held additional lactose in store to minimise the impact that any disruption to its lactose supply would have on the business. Any increase in lactose stored would reduce the base milk price because of the increased storage costs per MT and an increase in the working capital charge. We have not assessed what the potential value of this impact would be.

A10.26 Second, we question whether the use of actual domestic transportation costs is appropriate in light of the model's assumption of only two regions (North Island and South Island) and the lack of any specific information as to where current and future sites will be located. However, we do not consider that the impact of domestic freight would be material to the base milk price.

A10.27 [ Confidential

.<sup>73</sup>]

A10.28 In determining whether the lactose costs are practically feasible, we have considered whether the assumption of the best price (between Fonterra and its competitors) is realistically achievable, ie, is it realistic to assume that because an entity was able to achieve a lower lactose price in a particular period, any single entity could have achieved the lowest price in all periods?

A10.29 We consider that because Fonterra achieved the lowest lactose price compared to its competitors in nine months of the calendar year 2011, the use of the lowest lactose price achieved is practically feasible by an efficient processor.

**Are lactose cost assumptions reasonable?**

A10.30 As the lactose costs used in the calculation of the FGMP reflect achieved results of Fonterra and other processors, they are reasonably reflective of the performance of an efficient processor.

**Are lactose cost assumptions transparent?**

A10.31 Given that the lactose costs are determined based on information provided by Statistics New Zealand, and that the milk price manual details the manner in which lactose prices should be determined, we consider that the lactose cost assumptions in the base milk price are transparent.



## Attachment 11: Analysis of tax provision in the base milk price calculation

A11.1 This attachment summarises the approach and assumptions behind Fonterra's determination of the tax provision in the milk price manual. Table 14 below summarises our analysis of tax provision in the base milk price calculation.

**Table 14: Summary analysis of tax provision**

Criteria	Comment
Legislative Requirement	No
Notional vs Actual	Notional
Materiality / potential impact on the milk price	Low
An incentive to operate more efficiently?	The tax cost reflects the tax consequences of assumptions in the base milk price, determined independently from Fonterra's actual tax costs. Fonterra is therefore incentivised to minimise its tax liabilities, as these will be reflected in profits, rather than the base milk price.
Practically feasible?	The tax costs in the base milk price calculation are practically feasible.
Reasonable?	Given the steady state assumption, we consider that the tax provision is reasonable.
Gaps in Fonterra Information and Analysis	None
Transparency to 3 <sup>rd</sup> Parties	Not transparent

### Relevant clauses in the Act

A11.2 Section 150A states that the purpose of this subpart is to promote the setting of a base milk price that provides an incentive to [Fonterra] to operate more efficiently and provides contestability in the market for the purchase of milk from farmers.

### Provisions for tax in Fonterra's milk price manual

A11.3 Rule 21 of the milk price manual states that the NMPB may recover a provision for tax on the target manufacturing before tax profit.

A11.4 The application of Rule 21 provides that in calculating the base milk price, a provision will be deducted for the amount of income tax (Farmgate Milk Price Tax Recovery) that the NMPB could reasonably have expected to have paid if:

A11.4.1 It only manufactured reference commodity products for sale GDT and for delivery to a New Zealand wharf;

A11.4.2 The NMPB were operated on a standalone basis; and

A11.4.3 The profits of the NMPB were not deductible on distribution to its owners.

### **Application of Fonterra's milk price manual in the base milk price calculation**

A11.5 To determine the tax provision, the model takes the calculated Earnings before Interest and Tax (EBIT) of the NMPB, adds back the base milk price (ie, accounting) depreciation to the EBIT and deducts the tax depreciation to arrive at a measure of taxable income (before financing costs). It then applies the corporate tax rate of 28 percent. This gives rise to an unleveraged tax amount consistent with using a post-tax WACC without further adjustments.

A11.6 The tax depreciation is calculated as being the total milk price tilted annuity depreciation scaled up by a fixed percentage which is determined in a separate workbook that models the relationship between milk price tilted annuity depreciation and historic cost straight line tax depreciation over time. The application of this fixed percentage therefore transforms the dollar value of milk price tilted annuity depreciation into the dollar value of historic cost straight line tax depreciation.

A11.7 The tax depreciation as a percentage of milk price depreciation is calculated using the average annual historic cost straight line depreciation divided by the average annual tilted annuity depreciation.

A11.8 The model assumes an average economic life of the assets of 31 years, CGPI (Capital Goods Price Index) of two percent, WACC of 8.5 percent and tax depreciation loading of 20 percent.

A11.9 The tax depreciation as a percentage of milk price depreciation is calculated as being 155 percent in 2012. This is rounded down slightly in the base milk price calculation to 150 percent, the impact of which is immaterial to the base milk price.

### **Is the tax provision notional or actual?**

A11.10 The use of a notional asset base for the purpose of calculating tax depreciation means that the resultant tax provision is also notional.

### **Materiality/potential impact on the base milk price**

A11.11 In our draft report we reported that the overall future tax cost is the corporate tax rate (28 percent) multiplied by the difference between revenue and other costs. For the 2012 financial year the model calculates a tax depreciation amount of \$327.4m. The NMPB uses an implied tax depreciation rate of 3.85 %. For illustrative purposes, if a simplistic assumption of a straight line tax rate of 8.5 percent (which is in line with the IRD default rate for dairy plant) was to be applied to the entire asset base, the tax depreciation charge would increase by \$395.4m, with a consequent decrease in tax cost of \$110.7m. This would translate to an 8.2c increase in the base milk price.

A11.12 In its submission on our draft report Fonterra explained the effect of an actual change:

“the Commission’s illustrative assessment in paragraph 11.11 of the potential impact of better aligning the tax depreciation asset life assumed in the supporting analysis to actual tax depreciation rates does not (and was not intended to) indicate the steady state relationship between tax and Milk Price depreciation that would have been obtained had a higher tax depreciation rate been assumed in our analysis. Rather, it illustrates the potential impact on the tax charge for just the F12 year if the calculated F12 tax charge was scaled up by the ratio 8.5% / 3.85%, where 8.5% is an estimate of the actual straight line depreciation rate allowed for tax purposes and 3.85% is the rate assumed in Fonterra’s analysis. Because the starting point (F12 Milk Price depreciation) reflects the longer tax asset lives assumed in the Milk Price, the calculation effectively approximates the first year impact of a *change* in depreciation policy – that is, the first year impact of a move from a steady-state assumption of 8.5% to a new steady-state assumption of 3.85% -- but it significantly overstates the ‘steady state’ impact of assuming a higher tax depreciation rate, and therefore does not show what Milk Price depreciation would have been in F12 had the higher tax depreciation rates been assumed over the full 31 year period over which the steady state Milk Price depreciation assumption is derived.”<sup>74</sup>

A11.13 The effect of shortening the tax life of the average asset does significantly increase the ratio of average annual tax depreciation to annual average tilted annuity depreciation as described in paragraph A11.7 above. This has highlighted that the correct ratio to use to describe the ‘steady state’ assumption is the ratio of total annual tax depreciation to total annual milk price annuity depreciation.

A11.14 Under the ‘steady state’ assumption the impact of an increase in the straight line depreciation rate is small when applied to all assets in the asset base over the full 31 year period of the modelling. This is because newer assets now attract higher depreciation and older assets now attract lower depreciation, with little or no effect on the annual total depreciation for all assets. Changing from a straight line to a Diminishing Value (DV) tax basis (which accelerates the depreciation charge) similarly has little effect.

A11.15 Fonterra has subsequently modelled the steady state effect of applying a DV basis of depreciation with the following modifications:

A11.15.1 Use of a total DV depreciation to total tilted annuity depreciation ratio rather than the weighted average depreciation ratio used in the Milk Price model; and

---

<sup>74</sup> Submission to the Commerce Commission on its Draft Report on ‘Dry Run’ Review of Fonterra Milk Price 29 June 2012, page 7.

A11.15.2 Adjusting the CGPI factors to align with the assumptions used in the capital costs model which generated the accounting depreciation assumption.

This has given a revised ratio of 160% for the 2012 year which would translate into an uplift of \$22m on the \$327.4m (=150%) used in the milk price model. The consequent steady state decrease in tax cost is \$6m, and the pricing effect an increase of 0.4c.

### **Does the tax provision provide an incentive for Fonterra to operate efficiently?**

A11.16 Fonterra considers that because the base milk price tax charge is calculated entirely independently of Fonterra's actual tax calculation, it leaves Fonterra appropriately incentivised to manage its actual tax expense. While this is correct, it needs to be considered in the wider context.

A11.17 The Commission has previously noted that "a focus on incentives to achieve tax efficiencies on their own ought not to outweigh the consideration of incentives to promote improvements in overall economic efficiency. This is because tax liabilities arise as a result of many other business decisions and as such a move that increases tax costs may be desirable, provided it leads to, or is caused by, a reduction in costs overall. It is difficult to conclude that decisions with very different tax consequences are not equally legitimate. Tax efficiency savings are therefore only desirable insofar as they are consistent with a reduction in costs overall (ie, that they are to the long-term benefit of consumers)."<sup>75</sup>

### **Is the tax provision practically feasible?**

A11.18 The calculation of the tax depreciation as percentage of milk price depreciation is conceptually sound, assuming the underlying modelling of the historic tax depreciation reflects real world tax conditions. However, the tax provision uses an average asset life of 26 years,<sup>76</sup> which equates to a straight line rate of slightly less than four percent. This is unlikely to match actual tax payable due the higher actual tax depreciation rates set by the IRD (the default straight line rate for dairy plant and equipment for assets purchased after 2010 is 8.5 percent, while the corresponding diminishing value rate is 13 percent).

A11.19 The effect of using rates that are significantly lower than allowed rates is that the tax costs in the model are higher than would be expected in a real world tax paying situation, where significant cash-flow benefits attend the acceleration of depreciation.

A11.20 The average historic cost depreciation calculation uses the 20 percent tax loading to adjust the economic life of the asset in order to gross up the average

---

<sup>75</sup> Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper*, December 2010, para. 5.2.5.

<sup>76</sup> This is based on the 31 year average economic life, adjusted for the 20% depreciation loading.

depreciation rate per annum for tax purposes. This is consistent with the IRD's depreciation loading allowance which was introduced as an incentive to encourage New Zealand businesses to invest in new capital equipment. However, it is applied in the model across all assets acquired from 1977 to 2045 rather than just those qualifying assets acquired after 1996 and before 2010.

- A11.21 The WACC of 8.50 percent is consistent with the WACC that was used in 2008 when the tax depreciation as a percentage of accounting depreciation assumption was first calculated. This assumption is only revised in a reset year (every four years).
- A11.22 We note some potential issues with the way the tax depreciation as a percentage of accounting depreciation has been calculated.
- A11.23 The first issue relates to the assumed CGPI of two percent. This assumption is inconsistent with the assumptions of the capital cost model which generated the accounting depreciation assumption and does not use a fixed CGPI estimate.
- A11.24 Adjusting the tax depreciation as percentage of milk price depreciation for the use of the same CGPI assumptions as per the capital cost model reduces the tax depreciation as a percentage of accounting depreciation calculation from 155 percent to 151 percent. This is still consistent with the final assumption in the base milk price calculation of 150 percent.
- A11.25 If the tax calculation were to adjust for the removal of tax loading on assets purchased before 1996 and after 2010 the revised tax depreciation as a percentage of accounting depreciation calculation would be 124.4 percent in 2012. This would lead to a reduction in the base milk price of two cents per kgMS.
- A11.26 The combined impact of these two adjustments would lead to a revised tax depreciation as percentage of accounting depreciation calculation of 121.5 percent in 2012. Applying this assumption to the base milk price calculation would lead to a reduction in the base milk price of two cents per kgMS.
- A11.27 Finally, a recent change to the tax law from 2010 means that depreciation can no longer be claimed for buildings with an economic life of more than 50 years (previously a straight line default rate of two percent applied). This does not materially impact on the base milk price calculation.
- A11.28 Given that these matters have been taken into account by the subsequent modelling referred to in paragraph A11.15 above, and this has not given rise to a significant change overall, we consider that the tax provision is reasonable.

#### **Is the tax provision reasonable?**

- A11.29 The tax assumptions and approach are consistent with a processor, acting efficiently. As such, we consider they are reasonable.

**Are the tax provision assumptions transparent?**

- A11.30 The methodology for calculating the tax charge is not made clear in the manual. The wording of the application of Rule 21, “could reasonably expected to have paid”, suggests that a tax payable approach as applied in the base milk price calculation is appropriate.
- A11.31 There is no requirement in the milk price manual to adhere to a particular tax methodology over time, which means that changes could be introduced from time to time to raise or lower the milk price.

## Attachment 12: Analysis of the fixed asset base assumptions in the base milk price calculation

A12.1 This attachment summarises the approach and assumptions behind Fonterra's determination of the fixed asset base in the milk price manual. Table 15 below summarises our analysis of the fixed asset base assumptions.

**Table 15: Summary analysis of the fixed asset base assumptions**

Criteria	Comment
Legislative Requirement	Section 150B allows assumptions of a national network of facilities for the collection and processing of milk and that the size of plants modelled in the base milk price approximates the average size of Fonterra's actual units of processing capacity.
Notional vs Actual	Notional
Materiality / potential impact on the milk price	Medium
An incentive to operate more efficiently?	The capital-related costs in the base milk price calculation are based on notional plants, costs, asset lives, and other assumptions. Fonterra's actual capital-related costs are a function of its legacy assets, its costs, etc. Fonterra has an incentive to improve the management of its asset base, as its profits will benefit from doing so.
Practically feasible?	Yes, but with questions over some over-optimisation from, for example, the assumption of only two geographical regions and the treatment of ancillary assets.
Reasonable?	Yes (mostly)
Gaps in Fonterra Information and Analysis	No specification of site location for manufacturing plants, so unable to demonstrate consistency of geographic profile of assets with collection costs, and that there are sufficient plants to cope with each region's milk supply.
Transparency to 3 <sup>rd</sup> Parties	There are a number of opportunities to improve transparency over the manual's treatment of assets.

### Relevant clauses in the Act

A12.2 Section 150A states that the purpose of this subpart is to promote the setting of a base milk price that provides an incentive to Fonterra to operate more efficiently and provides contestability in the market for the purchase of milk from farmers.

A12.3 With specific regards to the asset base, s 150B states that it does not detract from the purpose set out in s. 150A that new co-op sets the base milk price using assumptions that assume any of the following:

A12.3.1 That new co-op operates a national network of facilities for the collection and processing of milk; and

A12.3.2 That the size of new co-op's assumed units of processing capacity approximates to the average size of new co-op's actual units of processing capacity.

### **Provisions for fixed asset base in Fonterra's milk price manual and its application in the base milk price calculation**

A12.4 For the purposes of the base milk price calculation, the milk price manual specifies a number of rules covering how the fixed asset base is to be formed and how the return on and of capital invested in this fixed asset base is to be calculated.<sup>77</sup>

#### *Standard plants*

A12.5 Table 16 below summarises the assumed replacement cost of the various types of standard processing plant as at 1 June 2008 (ie, the base year) and the number of standard plants required as at that same date:

**Table 16: Standard plants – replacement cost & number**

<b>Plant</b>	<b>Assumed Replacement Cost \$million (2008)</b>	<b>Number of Plants (2008)</b>	<b>Total \$million (2008)</b>
Standard WMP Plant	82.978	24	1,991
Standard SMP Plant	74.836	18	1,347
BMP	51.955	4	208
Butter	33.309	6	200
AMF	20.515	3	62
			3,808

A12.6 The Application of Rule 24 of the milk price manual states, amongst other things 'A Standard Plant will be specified for the manufacture of each initial Reference Commodity Product, and ... independent ... firm ... will be commissioned to provide an assessment of the cost of installing each Standard Plant.'

A12.7 The replacement cost shown in the model for a standard WMP plant and a standard SMP plant are supported by independent assessments obtained by Fonterra.

---

<sup>77</sup> Refer rules 24 to 36.



- A12.8 The WMP and SMP standard plant specifications stated that the respective plants were to be costed to international dairy plant standards, rather than to Fonterra's, higher, engineering standards.<sup>78</sup> We are separately informed by advisers to Fonterra that the difference in cost between these standards is small and will not imply materially different plant operating performance.
- A12.9 The replacement cost shown for each of the remaining three plants (BMP, Butter and AMF) are also supported by an independent assessment obtained by Fonterra.
- A12.10 The application of Rule 22 of the milk price manual states, amongst other things, 'Fonterra will designate as benchmark sites all sites which conform to the following criteria: a benchmark site should have a daily processing capacity of no less than the standard milk powder plant'.
- A12.11 This means that the standard plant used in the model is benchmarked against an attenuated distribution of Fonterra's actual plants, ie, only against plants with a capacity equal to or greater than the actual average capacity. The above components of the Rules in the milk price manual appear to be consistent with the Commission's interpretation of the base milk price purpose statement and the principles. That is, there is a target which is better than the average actual plant but which is not unfeasible.
- A12.12 Rule 25 of the milk price manual states 'Standard Plants are to be allocated to Regions so as to materially align notional and actual regional capacity'. In addition, Rule 33 of the milk price manual states 'Where peak Milk Supply in a region has (or is reasonably expected to) increased by an amount that would result in the commissioning of an additional Standard Plant, the Farmgate Milk Price Fixed Asset Base will be adjusted accordingly'.<sup>79</sup>
- A12.13 Rule 33 implies that peak milk supply is modelled for each major dairy region and notional plants are allocated to those regions to process the supply. However, the model only allocates (or adds) a standard plant to one of two regions in New Zealand (the North Island or the South Island), rather than to a specific dairy region or actual processing site. Fonterra's submission on the draft report states that, in applying Rules 25 and 33 in the Milk Price Manual, Fonterra interprets 'region' to mean North Island or South Island and that this interpretation is consistent with the approach they employ in practice in making incremental capacity decisions. However, Fonterra accept that the Milk Price Manual is not explicit on this point.<sup>80</sup>

---

<sup>78</sup> Connell Wagner, Generic Powder Plant Capital Cost Estimates, 10 November 2008.

<sup>79</sup> Rule 27 of the Manual states '[In each Review Year] the allocation of Reference Assets to Sites is subject to review by an Independent Reviewer'. This rule clearly contemplates allocation of standard plants to actual processing sites. However, this rule only applies in a review year.

<sup>80</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 June 2012, p. 10.

*Peak capacity of standard plant*

- A12.14 The peak capacity of the standard powder<sup>81</sup> plant for the North Island and for the South Island is assumed to be 1.951 million litres of raw milk per day for each season from 2008/09 to 2020/21.<sup>82</sup>
- A12.15 In arriving at the assumption of the peak capacity of the standard plant for the purposes of the model, Fonterra has taken a simple average of the peak capacity in 2008 of the actual plants it assumed would be used (at least partially) in the production of WMP or SMP.
- A12.16 By contrast, the safe harbour provisions in s 150B(b) specify that the assumed size of the processing units should approximate to the average size of Fonterra's actual units of processing capacity, rather than Fonterra's actual units of milk powder processing capacity. However, given that other provisions of subpart 5A refer to a particular portfolio of commodities (s 150C(2)) and the costs of processing milk into those same commodities (s 150C(1)(b)(ii)), we think Fonterra's approach is reasonable and appropriate.
- A12.17 Since 2008 Fonterra has continued to invest in new large plants. If the average size of its units of processing capacity were to be recalculated today, we understand the average would have increased materially since 2008.

*Ancillary and milk collection assets*

- A12.18 Table 17 below summarises the total assumed replacement costs for ancillary assets (ie, milk reception and treatment, a range of site services and site infrastructure) and collection assets as at 1 June 2008.

**Table 17: Ancillary and milk collection assets – replacement cost**

<b>Asset Category</b>	<b>Total Replacement Cost \$million (2008)</b>
Milk Reception and Treatment	581
Site Services	834
Site Infrastructure	756
(Milk) Collection Assets <sup>83</sup>	650
	2,821

<sup>81</sup> ie, WMP and SMP plants.

<sup>82</sup> Taking into account the changing composition of milk during the season, the peak capacity of 1.951 million litres of raw milk per day is consistent with a season average capacity of 1.90 million litres of raw milk per day.

<sup>83</sup> Further information regarding collection assets is contained in a table on the 'Collection assets' worksheet of the Model.

#### A12.19 The Application of Rule 24 of the milk price manual states, amongst other things

The Ancillary Assets required for the manufacture of the Farmgate Milk Price Product Mix ... will be specified, and an estimate of the current cost of installing the ancillary assets will be obtained; An estimate of the replacement cost of Fonterra's Milk Collection Assets will be obtained.

A12.20 Except for part of the site infrastructure, the replacement costs shown in the model for ancillary assets have been extracted from a worksheet prepared by MWH, as part of the commodity milk price models used in the period 2002-2008. To ensure the total replacement cost for each category of ancillary asset in the 2008 base year reflected the replacement cost / capacity relationship implied by DTZ's valuation of the benchmark actual Fonterra assets (contained in the 'DTZ asset valuations May 2008' model), a linear scaling factor has been added to the relevant formulae in this worksheet.

A12.21 A number of the formulae in the worksheet contain power function factors (for example, the formula for coal boilers contains a factor of 0.7261) to describe the relationship between changes in capacity and changes in the replacement cost. These power function factors reflect MWH's views.

A12.22 The values entered into the model for collection assets are based on a valuation as at 1 June 2008 performed by Ernst & Young.<sup>84</sup>

#### *Birthday capital expenditure*

A12.23 The milk price manual recognises that to enable the plants to maintain their service capacity until the end of their assumed economic life, capital expenditure will also be required during their life. In the model it is assumed that, on average, this capital expenditure will occur at year 15 and will be 40 percent of the 2008 assumed replacement cost (expressed as the additional investment required in 2008 dollars). This capital expenditure is added to the replacement costs assumed above.

A12.24 The Application of Rule 24 of the milk price manual states, amongst other things 'An Independent Reviewer will: Provide an estimate of a reasonable provision for, and the timing of, such future capital expenditure as can reasonably be anticipated as being required to maintain the asset's productive capacity for its projected economic life'.

A12.25 DTZ has concluded that the provision for birthday capital expenditure is reasonable but noted that it would be useful to compare this to Fonterra's actual spend to ensure these proportions do align.<sup>85</sup>

---

<sup>84</sup> Ernst & Young, Valuation of Milk Collection Assets for Fonterra – April 2008, 20 May 2009. The values entered into the Model are close to, but not exactly the same as, the values shown in the valuation. In addition, Ernst & Young identify some issues with the accuracy of the Collection Assets fixed asset register and discuss the economic life assumption used for collection vehicles.

<sup>85</sup> DTZ, Review of Capital Base of Notional Commodity Business, 31 March 2009.

*Economic lives*

- A12.26 The Application of Rule 24 of the milk price manual states, amongst other things ‘An Independent Reviewer will: Provide an assessment of the economic life of each major component of each Reference Asset’.
- A12.27 The model caters for assumed economic lives ranging from four years to 80 years. The majority of the key components of WMP, SMP and BMP plants are assumed to have an economic life of 35 years.
- A12.28 The percentage allocation of assumed replacement costs to assumed economic lives for all assets, except collection assets, can be calculated directly from the ‘DTZ asset valuations May 2008’ model, prepared by DTZ.
- A12.29 The assumed economic lives for collection assets are based on a valuation performed by Ernst & Young.

*Tilted annuity calculation*

- A12.30 Rule 34 of the milk price manual states ‘Fonterra may recover an Annual Capital Recovery Amount in respect of each Reference Asset, which over the economic life of the asset is sufficient to recover the present value of the cost of installing the asset and of maintaining its productive capacity over its assessed economic life’. This is followed by Rule 35 of the milk price manual which states; “In each year the annuity for each Reference Asset should be recalculated using the updated WACC and an updated estimate of long run inflation, but without adjusting the assessed economic life”.
- A12.31 For each combination of economic life category and year of investment, the model calculates tilted annuity factors for each year of the economic life starting from that year of investment.<sup>86</sup> The tilted annuity factors, for all prior years of investment, relating to a particular season are added to obtain the average. This average is used to derive the depreciation expense percentage and the capital charge percentage to be applied to the value of the standardised fixed assets in the corresponding economic life category.

*CGPI – annual movements (changes in acquisition costs)*

- A12.32 Changes over time in the acquisition cost of the standardised fixed assets are proxied by changes in an item described as the CGPI. This information is used to scale the assumed 2008 base year replacement cost of the various types of standard processing plant, and related assets, to their equivalent value in the assumed year of acquisition. Table 18 below summarises the values attributed to this parameter in the model.

---

<sup>86</sup> In accordance with Rule 29 of the Manual, the installation cost of standard plants (and other fixed assets) in different years is indexed for asset price inflation. The use of a tilted annuity approach implicitly treats any revaluation gain or loss as income or an expense, as is appropriate.

**Table 18: CGPI – Annual movements**

Asset Acquisition Year	Percentage change for year	Observations
1928 to 1997	2.0	Lower than actual average inflation rate over this period, but set by Fonterra at a rate approximately equal to assumed future inflation rates so as to prevent the allocation of assets over prior years arbitrarily affecting the capital charge.
1998 to 2008	Various values, ranging from -1.8 to +7.5 and averaging 1.1	Fonterra has not been able to located the supporting documentation for these values.
2009 to 2011	2009 4.82 2010 0.13 2011 4.46	Derived from changes in the replacement cost valuation of actual Fonterra processing plants performed annually by Jones Lang LaSalle (source replacement cost data and calculation of annual percentage change contained on 'Inflation 2007-2011' worksheet) <sup>87</sup>
2012 onwards	2012 2.3 2013 2.3 2014 2.1 <sup>88</sup> 2015 2.0 2016 onwards 2.5	Forecast changes extracted from the fair value share valuation performed by Grant Samuel.

*CGPI – long run assumptions (average of forecast of changes in acquisition costs)*

A12.33 This information is used as the value of the forecast growth parameter in the tilted annuity calculations, for each combination of acquisition year and assumed economic life. Table 19 below summarises the values attributed to this parameter in the model:

<sup>87</sup> Jones Lang LaSalle, Valuation of Specified Assets for Milk Price Asset Base Indexation, 14 April 2011. The Jones Lang LaSalle valuation team was previously at Darroch, under whose name the previous annual valuations were prepared.

<sup>88</sup> Some data from here onwards corrected for erroneous hardcoded values in the Model.

**Table 19: CGPI – Long run assumptions**

<b>Asset Acquisition Year</b>	<b>Percentage change for year</b>	<b>Observations</b>
1928 to 1988	2.0	
1989 to 1999	Various values, ranging from 1.1 to 2.2 and averaging 1.6	Ten year rolling average of the forecast changes and (with the benefit of hindsight) the actual changes, commencing 1998.
2000 to 2010	Various values, ranging from 1.0 to 2.4 and averaging 1.8	
2011 onwards	2011 2.6 <sup>89</sup> 2012 2.4 2013 2.4 2014 2.4 2015 onwards 2.5	Ten year rolling average of the forecast changes extracted from the fair value share valuation performed by Grant Samuel

**WACC**

A12.34 The WACC is assumed to be 8.5 percent from 1928 to 2011 and 7.7 percent for 2012. The 2012 WACC (with the deemed acquisition year's average of the forecast of changes in acquisition costs<sup>90</sup>) is used to calculate the 2012 slice of all tilted annuities.

A12.35 Fonterra's estimation of WACC for the purposes of the base milk price calculation is covered in a separate attachment (Attachment 13).

**Is the asset base notional or actual?**

A12.36 The model assumes a standard processing plant for each Reference Commodity Product, with the required volume of processing being performed by the appropriate number of this standard processing plant. The standard processing plant is a notional concept, in that none of Fonterra's actual individual processing plants match the characteristics of this standard processing plant, nor are specific numbers of the standard processing plant allocated to specific actual processing sites.

**Materiality/potential impact on the base milk price**

A12.37 The assumptions regarding the capital asset base are material components of the base milk price.

<sup>89</sup> Some data from here onwards corrected for erroneous hardcoded values in the Model.

<sup>90</sup> Rule 35 of the Manual appears to imply that the annuity calculation should be re-calculated with the updated WACC and updated inflation estimate.

A12.38 The following sensitivities have been run through the model:

*CGPI*

- Change all of CGPI history to 2.0 percent, and then 2.5 percent.
- Change all of CGPI forecast to 2.0 percent, and then 2.5 percent.

*Standard WMP Plant*

- Add an additional standard WMP plant in 2011 (ie, starts producing in 2012)

A12.39 The effects on the 2012 milk price (expressed in \$/kgMS) are set out in Table 20 below:<sup>91</sup>

**Table 20: Sensitivity analysis of the fixed asset base assumptions**

Scenario	Return on and of Capital (\$/kgMS)	Depreciation Expense (\$/kgMS)	Capital Charge on Fixed Assets (\$/kgMS)
Base Case	0.49	0.16	0.33
	Change (\$/kgMS) from Base Case	Change (\$/kgMS) from Base Case	Change (\$/kgMS) from Base Case
Change all of CGPI history to 2.0%	-0.04	-0.02	-0.02
Then change all of CGPI history to 2.5%	-0.06	-0.03	-0.03
Change all of CGPI forecast to 2.0%	0.00	0.00	0.00
Then change all of CGPI forecast to 2.5%	0.00	-0.01	0.00
Add a standard WMP plant in 2011	0.00	-0.01	+0.01

**Does the asset base methodology provide an incentive for Fonterra to operate efficiently?**

A12.40 Rule 26 of the milk price manual states “each initial Reference Asset is allocated an initial deemed acquisition date which results in the initial Farmgate Milk Price Fixed Asset Base having an age profile that is reasonably consistent with the age profile of Fonterra’s actual fixed assets”.<sup>92</sup> The Application of Rule 26 states ‘the Reference Assets in the initial Farmgate Milk Price Fixed Asset Base will be allocated in a manner which results in an even allocation of Reference Assets to acquisition dates over time, having regard to the assessed economic lives of the Reference Assets’.

<sup>91</sup> Sensitivity analysis with respect to WACC is covered in the WACC paper.

<sup>92</sup> Rules 28, 30, 31 and 32 refer, either explicitly or by inference, to the replacement of reference assets deemed to have reached the end of their economic lives.

- A12.41 Fonterra's report to the Commerce Commission on the milk price manual comments with respect to Rule 26 that "this provision means that, over time, the base milk price model will reflect an uptake of new technology at a rate that is consistent with that of a real world business like Fonterra, since it results in approximately 1/30<sup>th</sup> of the notional asset base being replaced each year. In the absence of either major technological change or material stranded assets, this in turn implies the ability for Fonterra to generate a WACC return on its commodity manufacturing assets on average over time. (This approach also results in a 'steady state' allocation of the aggregate of the tilted annuity provisions into capital charge and depreciation components)".<sup>93</sup>
- A12.42 The capital-related costs in the base milk price calculation are based on notional plants, costs, asset lives, and other assumptions. Fonterra's actual capital-related costs are a function of its legacy assets, their costs, remaining life, etc. To the extent that Fonterra can improve the management of its assets, Fonterra can improve its profits. The use of notional values, independent of Fonterra's actual capital related costs, in calculating the base milk price is consistent with providing incentives to operate efficiently.
- A12.43 The assumption of a modern, averaged-sized plant operating at a benchmark level will place scrutiny on older or less efficient plant to improve performance or be replaced. This creates a weak incentive in respect of larger, modern Fonterra plants which may be larger and more efficient than that assumed in the model.

**Is the asset base practically feasible? Are the asset base assumptions reasonable?**

*Peak capacity of standard plant*

- A12.44 The milk price manual stipulates that the standard processing plants are to be benchmarked against Fonterra's actual manufacturing plants that have a daily processing capacity of no less than what is assumed for the standard processing plant.
- A12.45 In practice, many of the actual plants are multi-purpose and some plants are dedicated to particular (whether non-WMP/SMP or WMP/SMP) products. In addition, other than when all of the actual plants are simultaneously operating at peak capacity, there is considerable flexibility during off-peak months to channel production through particular plants.
- A12.46 This potentially provides significant opportunity, if desired, to select which plants are incorporated in calculating the average for the purposes of the peak capacity of the standard plant.
- A12.47 In addition, for the 2012 base year, Fonterra have re-performed the estimation of the simple average peak capacity of actual plants that it assumes will be used (at least partially) in the production of WMP or SMP. This produces a result of 2.20

---

<sup>93</sup> Draft report from Fonterra dated 9 March 2012 to the Commerce Commission in accordance with clause 6 of the Term of Reference for the Dry Run Review of the Fonterra Farmgate Milk Price.



million litres of raw milk per day for the standard plant.<sup>94</sup> This compares with the assumed peak capacity of the model of 1.951 million litres and highlights the potential impact of resetting the model parameters. Such an assumption is not inconsistent with s 150B(b).

#### *Implicit optimisation of plants by island*

A12.48 As standard plants are only added in whole numbers to meet peak milk supply requirements at the level of the two defined regions, rather than to specific manufacturing sites, the incremental number of standard plants is implicitly optimised for each island. Unless the relevant operating costs (eg, actual collection costs) have been appropriately adjusted upwards to reflect this implicit optimisation, this approach may not be consistent with the milk price purpose statement. Fonterra's submission on the draft report notes that they do not consider that 'optimisation' at the level of the North Island and South Island could be interpreted to imply 'over optimisation'.<sup>95</sup> However, the Fonterra submission does not directly address whether any relevant operating costs (eg actual collection costs) need to be adjusted, to ensure internal consistency.

#### *Consistency with yield assumptions*

A12.49 We understand that through the design and operation of its plants, Fonterra has sought to minimise the level of losses of valued components. For example, Fonterra makes choices about the number of evaporators employed per drier which partly determines the relative length of processing operation runs. Fonterra has multiple evaporators per drier to achieve 24 hour 7 day drying operations. Alternate plant choices involving a smaller number of evaporators per drier will likely be associated with greater drier downtime and cleaning, resulting in greater losses. Fonterra and its advisers advise that the assumptions Fonterra makes about its standard plants, and its modelled product yields, are internally consistent. Our analysis to date is consistent with this contention.

#### *Smoothed investment profile*

A12.50 The model also assumes a smooth investment profile in processing capacity in the period prior to the 2008 base year. This assumption removes the natural lumpiness of investment in processing capacity. For example, if the economic life of an asset is 35 years, then the total base year investment required in the asset occurs equally over the prior 35 years (ie, 1/35<sup>th</sup> of the total investment in the asset is replaced each year). In practice, this means that, for example, as there are 24 standard WMP plants in the 2008 base year, only a portion of a standard processing plant is assumed to be built in any given year.

---

<sup>94</sup> The detailed calculations underlying this new estimate have not been sought from Fonterra. However, this estimate will no doubt reflect the impact of including Edendale ED4 and all of Darfield.

<sup>95</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 June 2012, p. 10.

A12.51 We note that this smooth investment profile bears no relationship to Fonterra's actual past pattern of investment, provides no added incentives for efficiency (over and above the use of notional plants), and is clearly not practically feasible because it relates to sunk investments which cannot be changed. On the other hand, this approach does result in steady-state capital costs, which are not demonstrably unreasonable.

*Use of power function factors for ancillary assets*

A12.52 The power function factors used to describe the relationship between changes in capacity and changes in the replacement cost may be appropriate for scaling, (eg, a boiler from a smaller capacity to a larger capacity) it is not clear that this is consistent with the underlying premise of the model, which is that the model uses standard capacity plants, which are added in unitary increments. In the model there are no scaling benefits with respect to adding a standard plant but there are scaling benefits with respect to adding the associated ancillary assets. The milk price manual provides no specific guidance in this area.

A12.53 Whether Fonterra's use of standard power functions is practically feasible and reasonable when adding additional plants to the model depends on an assessment of the utilisation of site assets and the extent of incremental capacity to be added and where. We have not reviewed this issue.

*Birthday capital expenditure*

A12.54 Fonterra recognise the link between repairs and maintenance, and birthday capital expenditure. Fonterra's thinking on the most economic balance between these two has been evolving over time, resulting in an increased emphasis on repairs and maintenance, and a correspondingly lesser emphasis on birthday capital expenditure.<sup>96</sup> This shift in emphasis should not raise any issues provided that the assumptions underlying the allowance for each of these items are internally consistent. We expect to give further consideration to this issue in subsequent reviews.

*Conclusion on the practical feasibility and reasonableness of the allowance for the costs of the fixed asset base*

A12.55 For the reasons above, and subject to the limitations noted above, we consider that the total allowance in the FGMP for the capital costs of the fixed asset base is sufficient to cover the cost of standard processing plants of the scale and type contemplated in the milk monitoring regime. Accordingly, we consider the allowance for fixed asset base satisfies the requirement that they be practically feasible for an efficient processor. Additionally, we are satisfied the fixed asset base costs are reasonable and reflect assumptions that can be achieved by an efficient processor, including Fonterra (on the assumption that is acting efficiently in producing the RCPs).

---

<sup>96</sup> Fonterra, Summary of 'acap' Reviews from 2007 to 2010, 17 March 2011. See also: Jones Lang LaSalle, Review of Capital Base of Notional Commodity Business (Draft), 18 January 2012.

**Gaps in Fonterra Information and analysis**

- A12.56 Fonterra has been unable to provide support for the 1998 – 2008 GCPI assumptions. The Commission notes in particular that there is an unexplained wide range of annual movement values, from -1.8 to +7.5, during this period.
- A12.57 The lack of specification of plant site locations means the geographical profile of the assumed asset base is unable to be checked for consistency with, for example, collection costs.

**Are the fixed asset base assumptions transparent?**

- A12.58 The rules and the applications of the rules in the milk price manual are generally clear and are carried through into the model with two significant exceptions.
- A12.59 The model does not properly implement an alignment of notional and actual regional capacity as required by Rules 25 and 33, as noted in paragraph A12.12 above.
- A12.60 The model is structured in accordance with Fonterra's commentary on Rule 26, per paragraph A12.41 above, rather than what Rule 26 or the Application of Rule 26 themselves might appear to imply.
- A12.61 As a third opportunity to improve transparency, we consider that the milk price manual could include specific selection criteria that will be used to identify which actual plants can be taken into consideration when calculating the peak capacity of the standard plant.

### Attachment 13: Analysis of the cost of capital assumptions in the base milk price calculation

A13.1 This attachment summarises the approach and assumptions behind Fonterra's determination of the weighted average cost of capital (WACC) in its milk price manual. Table 21 below summarises our analysis of the cost of capital assumptions.

**Table 21: Summary analysis of the cost of capital assumptions**

Criteria	Comment
Legislative Requirement	Costs included in the base milk price include are to include a return on capital over the long term (s 150C(1)(b)).
Notional vs Actual	An estimate of the WACC for a notional milk processor
Materiality / potential impact on the milk price	Medium
An incentive to operate more efficiently?	WACC and the resulting capital charge ensure capital is priced appropriately in the base milk price calculation.
Practically feasible?	Yes, but not in respect of the debt premium and issuance costs in the cost of debt.
Reasonable?	The omission of certain costs in respect of the debt premium and debt issuance costs is also unreasonable, but the impact is likely to be small.
Gaps in Fonterra Information and Analysis	Further work is required to refine the estimate of the asset beta in the cost of equity.
Transparency to 3 <sup>rd</sup> Parties	Yes. The methodology is clearly articulated. The value of key parameters is either specified in the milk price manual or a methodology for estimating the value of these parameters is clearly articulated.

#### Relevant clauses in the Act

A13.2 Section 150C(b) requires that for the achievement of the purpose set out in s 150A costs taken into account in calculating the base milk price include capital costs and a return on capital over the long term.

#### Provisions for WACC in Fonterra's milk price manual

A13.3 Fonterra's milk price manual provides that, to the extent possible, the WACC calculation should:

A13.3.1 Reflect the application of a mechanical or prescriptive calculation methodology; and

A13.3.2 Reflect a calculation methodology which is familiar to suppliers and potential investors.<sup>97</sup>

A13.4 Fonterra considers that this rule ensures the base milk price appropriately recognises current financing costs, and is therefore consistent with s 150C(b).

#### **Application of Fonterra's milk price manual in the base milk price calculation**

A13.5 For the purposes of the base milk price calculation, Fonterra's milk price manual specifies the simplified Brennan-Lally CAPM, in conjunction with the simplified beta leveraging formula (ie, debt beta is assumed to be zero), to estimate the cost of equity. The estimated cost of equity and the estimated cost of debt are input into the standard post-tax WACC formula to produce the post-tax WACC used to calculate the base milk price.

A13.6 The application of Rule 38 in the milk price manual states that the WACC will be recalculated each year using updated inputs for the risk free interest rate, the cost of debt and the company tax rate. The post tax market risk premium will be updated in each review year.

#### *Current Fonterra estimate of WACC for base milk price*

A13.7 The WACC was calculated in the 2008 base year, producing a post-tax WACC of 8.50 percent. The WACC has since been updated for the 2012 season (the 2012 WACC), producing a post-tax WACC of 7.70 percent. The calculation of the 2012 WACC is contained in the 'WACC data Feb 2012' workbook (the WACC model).

A13.8 Table 22 below sets out the input values that have been used for each parameter to estimate the 2012 WACC (and the WACC for the 2008 base year), and a brief summary of the basis for the input values per the milk price manual.

---

<sup>97</sup> Fonterra, *Farmgate Milk Price Manual*, 21 September 2011; Rule 38.

**Table 22: Comparison of 2008 and 2012 WACC assumptions**

Parameter	WACC 2012	WACC Basis 2012	WACC 2008	WACC Basis 2008
Risk Free (Rf)	5.58%  (5.66% annualised)	Five year term  Five year simple average of observations prior to start of season ex RBNZ <sup>98</sup>  Annualised	6.80%	Four year term  Simple average of six months prior to start of season
Debt Premium (DP)	1.50% <sup>99</sup>	Spread over US Treasury of A- S&P long term credit rated US industrials  Five year term  Five year simple average of observations prior to start of season ex Bloomberg (rounded to nearest five basis points) <sup>100</sup>	1.85%	Spread over US Treasury of A- S&P long term credit rated US industrials  Four year term  Simple average of first month from start of season daily observations ex Bloomberg (rounded to nearest five basis points)
Corporate Tax (Tc)	28%	Company tax rate for year	30%	
TAMRP	7%	ex ComCom	7%	
Leverage (L)	40%	Set by the milk price manual	40%	
Asset Beta	0.45	Value to be determined by Independent Reviewer under Rule 39	0.45	
Estimated post-tax WACC	7.66%  Rounded to 7.70% <sup>101</sup>		Rounded to 8.50%	

<sup>98</sup> In implementing the milk price manual, this has been interpreted as 'average for month' observations.

<sup>99</sup> The milk price manual specifies that the risk free rate is to be annualised but is silent with respect to the debt premium. To be consistent, the debt premium should also be annualised.

<sup>100</sup> In implementing the milk price manual, this has been interpreted as daily observations.

<sup>101</sup> There does not appear to be any explicit Rule or Application of Rule in the milk price manual which requires this to be rounded. Whereas, for example, there is a specific requirement in the milk price manual for the debt premium to be rounded to the nearest five basis points.

### Observations regarding Fonterra's current estimate of the WACC in base milk price calculation

A13.9 In this section we make brief observations of a number of aspects of the milk price manual approach to WACC focusing on the risk-free rate, debt premium, asset beta and then the post tax market risk premium.

#### *Risk free rate – sourcing from RBNZ*

A13.10 In accordance with the milk price manual, the 2012 WACC incorporates a risk free rate, based on New Zealand government bonds, obtained from the Reserve Bank of New Zealand (RBNZ). The milk price manual's definition of the risk-free rate references the average secondary market yield on five year government stock as reported by the RBNZ.

A13.11 We note that the RBNZ does not estimate interpolated constant maturity yields. Therefore, for example, a yield reported by the RBNZ under the heading '5 years' is not, in fact, an interpolated five year constant maturity yield. Rather, it is the yield of the New Zealand government bond with the nearest maturity to five years.<sup>102</sup>

A13.12 The approach used by Fonterra is consistent with that specified in the milk price manual (ie, reference to estimates of yields published by the RBNZ).

#### *Risk free rate – long term average versus current*

A13.13 In accordance with the milk price manual, the 2012 WACC incorporates a risk free rate estimated as the average of observations over a five year period.

A13.14 Under Input Methodologies for the cost of capital under Part 4 of the Commerce Act, the Commission has generally preferred the use of current rates. This is consistent with the Purpose of Part 4 of the Commerce Act, the objectives of which include providing suppliers with incentives to invest and innovate.<sup>103</sup>

A13.15 Using long term average actual risk free rates will lead to estimated costs of equity and debt which tend to be relatively stable over time. In a price setting context, this relative stability will tend to lead to relatively stable returns to processors over time. The resulting WACC estimates will tend to be more easily forecast. However, this apparent stability could blunt the signals from structural changes in the financial markets with respect to new investment in infrastructure.

---

<sup>102</sup> The RBNZ quoted rates refer to observed yields on government bonds whose term will rarely exactly equal a term of, say, five years. By interpolating between the yield of a bond with a remaining term which is less than five years and the yield of a bond with a remaining term that is more than five years, an estimate can be made of the yield on an equivalent bond for a term of five years. Using interpolated five year constant maturity yield data from Bloomberg, for the same observation period as used for the 2012 WACC, produces a yield of 5.65 percent, compared with 5.58 percent arising from the implementation of the Manual, ie, a difference of 0.07 percent.

<sup>103</sup> See in particular, s 52A(1)(a).

*Term of risk free rate*

- A13.16 In accordance with the milk price manual, the 2012 WACC incorporates a risk free rate with a term of five years.
- A13.17 The principal rationale appears to be that a term of five years is close to both Fonterra's current average debt maturity and to the average debt maturity typically targeted by Fonterra.
- A13.18 A five year term of the risk-free rate is the same as the term of the risk-free rate most commonly used by us for estimating the cost of capital for services regulated under Part 4 of the Commerce Act (to match the term of the regulatory period for those services).<sup>104</sup>
- A13.19 To be consistent, the term adopted for the risk free rate should also be the term adopted for the debt premium. Fonterra uses a five year term for estimating the debt premium and the risk-free rate.

*Debt premium – US currency and debt issuance costs*

- A13.20 In accordance with the milk price manual, the 2012 WACC incorporates a debt premium obtained from the spread over US Treasury of US dollar denominated debt of US industrial entities. No allowance is made in the estimate of WACC for any associated debt issuance costs or currency swap costs.
- A13.21 The current relatively low US debt premiums make raising debt in the US attractive to NZ borrowers. However, an allowance should be made for all costs associated with raising capital in the US to ensure fair comparisons.
- A13.22 The US dollar denominated debt premium is being used in a New Zealand context, ie, a New Zealand dollar denominated WACC. Therefore, to be consistent, the US dollar denominated debt premium needs to have the costs of swapping to a New Zealand dollar equivalent added on to arrive at the all up debt premium (for example, basis swap, conversion factor, hedging credit costs, debt issuance costs, approved issuer levy).
- A13.23 As an alternative, a New Zealand dollar denominated debt premium obtained from New Zealand publicly traded corporate bonds plus the relevant debt issuance costs could be used to arrive at the all up debt premium. The milk price manual specifies the use of US debt premiums.<sup>105</sup>

---

<sup>104</sup> Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper*, December 2010, paragraph H4.29. There is no regulatory term when setting the milk price. While suppliers contract for one season and may exit after one season (which could be argued to imply a one year term), the majority will not exit after one year and may not exit for many years. In this context, a term assumption of five years may represent a reasonable average.

<sup>105</sup> Using data for the month of August 2010, the US dollar denominated debt premium using the Manual's approach would have been 1.19 percent. Whereas, the New Zealand dollar denominated debt premium plus the relevant debt issuance costs, for the same tenor and S&P long term credit rating, would have been 2.10 percent (being 1.75 percent plus 0.35 percent), ie, a difference of 0.91 percent. Similarly, as at



A13.24 We consider that the estimation of the debt premium should be specified in a form consistent with its use in a New Zealand dollar denominated WACC (ie, either a New Zealand dollar denominated debt premium or a US dollar denominated debt premium correctly converted to its New Zealand dollar equivalent). The impact of this is likely to be small.

*Debt premium – A- S&P long term credit rating*

A13.25 In accordance with the milk price manual, the 2012 WACC incorporates a debt premium derived from A- S&P long term credit rated US industrial entities.

A13.26 The minimum S&P long term credit rating to be considered investment grade is BBB-. A S&P long term credit rating of A- is sufficiently high for an entity exposed to the systematic risk characteristics of a processor to ensure there is an adequate buffer against the possible financial consequences of economic downturns or shocks, whilst providing the entity with some flexibility over the level of gearing and the choice and tenor of its debt instruments. Further, a rating of A- is not so high as to preclude an efficient processor from entering the market for farmer's milk.

*Cost of debt – issuance costs*

A13.27 Under Input Methodologies for the cost of capital under Part 4 of the Commerce Act we made an allowance of 0.35 percent per annum for debt issuance costs to support a New Zealand public bond programme.<sup>106</sup> The milk price manual does not make any explicit allowance for debt issuance costs, though we are advised that the allowance for Treasury Operations in Corporate overheads in the milk price manual may cover the costs of roadshows.

*Asset beta – independent reviewer*

A13.28 The 2012 WACC uses an asset beta of 0.45. We understand this value does not come from an independent reviewer but was a decision of a Board sub-committee. The previous wording of the Application of Rule 39, which did not require an Independent Reviewer, was changed to that noted above prior to the public release of the current version of the milk price manual.

A13.29 Advice received by Fonterra from an investment bank, prior to the 2008 base year, recommended an asset beta of 0.55. This recommendation was based upon the maximum of New Zealand and Australian gas pipeline and distribution regulatory asset decisions (assessed range of 0.35 to 0.55 for the asset beta in the referenced regulatory decisions).

---

31 August 2009, the US dollar denominated debt premium would have been 1.50 percent, compared with 2.35 percent (being 2.00 percent plus 0.35 percent) for the New Zealand dollar denominated debt premium, ie, a difference of 0.85 percent.

<sup>106</sup> Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services) Reasons Paper*, December 2010, paragraph H5.95.

- A13.30 For the purposes of the fair value share, Grant Samuel assessed the asset beta of Fonterra as a whole at [ ], based upon their comparable company analysis.<sup>107</sup> Grant Samuel opined that Fonterra as a whole would have greater business risk than a Notional Milk Price Business and also noted that regulated assets in New Zealand and Australia have been given asset betas, in the vast majority of cases, in the 0.4 to 0.5 range. Therefore, Grant Samuel considered the asset beta of 0.45 used for the Notional Milk Price Business as being reasonable. We note, however, that Grant Samuel does not test the reasonableness of the asset beta for the balance of Fonterra (ie, excluding the NMPB) that is implied by Grant Samuel's analysis, against potential comparators for that business.
- A13.31 For the purposes of Input Methodologies, the Commission set the asset beta at 0.34 for EDBs and 0.44 for GPBs. EDBs provide essential services with very stable demand, face limited substitutes and little or no competition. GPBs do have substitutes for their services and their services are not as essential to most users as electricity is.
- A13.32 As processors are potentially exposed to the risk of competitors and thus greater variability in demand than EDBs and being unable to reset prices to compensate for changes in costs (unlike EDBs), processors are likely to face greater variability of returns associated with economy wide fluctuations than EDBs (and possibly GPBs).
- A13.33 We consider that an asset beta of 0.45 appears to lie within the plausible range of values, but look forward to the results of the independent reviewer's analysis of asset beta for the NMPB.

*Asset beta – stranded asset risk*

- A13.34 The Application of Rule 39 of the milk price manual states that an Independent Reviewer will provide an updated asset beta in a review year. In calculating the asset beta, the independent reviewer is required to have particular regard to the allocation of risks and to the allocation of stranded asset risk between the base milk price calculation and Fonterra.
- A13.35 The inclusion in Rule 39 and its application of the requirement for the Independent Reviewer to have particular regard to stranded asset risk suggests that what the asset beta is supposed to reflect and compensate for (ie, systematic risk) has been downplayed.
- A13.36 Consistent with standard corporate finance theory, we consider that the estimation of the asset beta should be specified in terms of the exposure to systematic risk, rather than the exposure to stranded asset risk (as the risks of asset stranding may be diversified away by well diversified investors).<sup>108</sup>

---

<sup>107</sup> Grant Samuel, Fair Value Share Valuation, December 2009, p.66 (extract provided by Fonterra).

<sup>108</sup> Further, the model's treatment of capital costs (not allocated to regions and recovered via the annuity calculations), and the expected growth in New Zealand milk volumes, reduce the risk of asset stranding.

A13.37 From the analysis by an investment bank and Grant Samuel the current asset beta appears to have been largely set by reference to current comparators, not by a consideration of the risk of assets becoming stranded. This is appropriate in our view.

*Post tax market risk premium*

A13.38 The milk price manual states that the value of the post tax market risk premium will be the same as the amount used by the Commerce Commission in recent regulatory decisions.<sup>109</sup> Consistent with the value adopted by most New Zealand investment banks, this result in a post tax market risk premium of seven percent per annum.

*Post tax WACC and adjustment for the interest tax shield*

A13.39 The use of a post-tax WACC means the estimate of the tax building block should be done on an unlevered basis or an explicit adjustment to the tax building block is required to ensure the interest tax shield is not double-counted. Fonterra's approach of estimating the tax expense on an unlevered basis avoids this double-counting.

*Should a WACC above the midpoint be used*

A13.40 For setting prices for services regulated under Part 4 of the Commerce Act we use an estimate of the WACC that is above our midpoint estimate of WACC. This recognises that there is uncertainty over the true WACC, and there are asymmetric consequences if insufficient investment occurs. We do this to limit the risk of regulatory error in estimating the WACC from deterring necessary investment. That is, a higher than midpoint WACC is used to ensure investment does occur.

A13.41 When setting prices for services regulated under Part 4 of the Commerce Act, we estimate a standard error of the WACC and therefore a distribution of WACC estimates. We then use the 75<sup>th</sup> percentile estimate as our estimate of the cost of capital for services that are price-regulated under Part 4. The 75th percentile estimate is materially above our midpoint estimate of WACC.<sup>110</sup>

A13.42 There are other ways of dealing with uncertainty over WACC estimates. For example, some analysts select estimates for individual parameter values that are above the midpoint estimate (eg, of beta).

A13.43 Fonterra uses its midpoint estimate of WACC for setting the base milk price. There is no apparent allowance in the estimation of any WACC parameter which recognises the risk of getting the WACC too low (ie, other parameters appear to have been considered as midpoint estimates).

<sup>109</sup> Fonterra, *Farmgate Milk Price Manual*, 21 September 2011; page 67.

<sup>110</sup> For example our most recent estimates of the 75<sup>th</sup> percentile of WACC for Electricity distribution Businesses was 71 basis points higher than our midpoint estimate. Commerce Commission, *Cost of capital determination for information disclosure year 2013 for specified airport services (March year-end) and electricity distribution services [2012]* NZCC 10, paragraph 11.

- A13.44 In our draft report, we invited submissions as to whether Fonterra's approach of making no buffer or allowance for the estimation risk of estimating WACC is commercially realistic or not. Fonterra submitted that a consistent approach should be taken to evaluating the appropriateness of all inputs into the Milk Price, including the WACC. In those cases where uncertainty around the 'true' value of costs involves trading off a certain higher or lower value of a particular input for an uncertain change in the potential value of another input, this is analytically identical to uncertainty around the 'true' value of the WACC.<sup>111</sup> We accept that a consistent approach should be taken to evaluating the appropriateness of all inputs into the Milk Price, including the WACC.
- A13.45 When we determine an estimate of WACC for use in the context of information disclosure regulation under Part 4 of the Commerce Act we start our analysis with a mid-point estimate of WACC.<sup>112</sup> In the context of the milk monitoring regime a midpoint estimate of WACC should similarly be used for monitoring and analysis. Conversely, when we determine an estimate of WACC to be used as an input into setting price-quality paths under Part 4 of the Commerce Act we use an estimate of WACC that is above our mid-point estimate.<sup>113</sup> This recognises the risk of us setting WACC too low and the long-term consequences to consumers if insufficient investment occurs (which may occur if WACC is too low). There is a lesser risk of under-investment in the farm gate milk market as we are monitoring a price (rather than setting price-quality paths), a company is setting the WACC (rather than us, as a regulator), there are a range of milk processors, Fonterra has an obligation under DIRA to collect and process all milk, and WACC affects only the price for one input whereas under Part 4 the estimate of WACC is used to limit output prices.

#### **Is the WACC notional or actual?**

- A13.46 WACC cannot be measured with precision, so Fonterra (and other analysts) must rely on an estimate of WACC that could be expected for a notional and efficient business which processes raw milk into the five RCPs.

#### **Materiality/potential impact on the base milk price**

- A13.47 The WACC is a material component of the base milk price. As shown in Table 23 below, the return on capital represents around 42 cents per kgMS.

#### *Sensitivity analysis – 2012 milk price*

- A13.48 Table 23 also shows the sensitivity of the base milk price to changes in WACC assumptions. The following sensitivities have been run through the WACC model and the effect on the 2012 milk price (expressed in \$ per kgMS) are set out in the following table:

---

<sup>111</sup> Fonterra, *Submission to the Commerce Commission on its Draft Report on 'Dry Run' Review of Fonterra Milk Price*, 29 June 2012, p. 7.

<sup>112</sup> Commerce Commission *Input Methodologies (Airport Services) Reasons Paper*, 22 December 2010, at H11.58.

<sup>113</sup> Commerce Commission, *Input Methodologies (EDBs & GPBs) Reasons Paper*, 22 December 2010, at H11.61-H11.65

A13.48.1 Debt Premium, increase the debt premium from 1.50 percent to 2.40 percent, to be consistent with a New Zealand dollar denominated WACC; and

A13.48.2 Asset Beta, increase the asset beta from 0.45 to 0.50.

**Table 23: Sensitivity analysis of WACC assumptions**

Scenario	Return on and of Capital (\$/kgMS)	Depreciation Expense (\$/kgMS)	Capital Charge on Fixed Assets and Net Working Capital (\$/kgMS)
Base Case <sup>114</sup>	0.57	0.15	0.42
	Change (\$/kgMS) from Base Case	Change (\$/kgMS) from Base Case	Change (\$/kgMS) from Base Case
Change debt premium from 1.50% to 2.40%	0.01	0.00	0.01
Change asset beta from 0.45 to 0.50	0.02	0.00	0.02
Explicit allowance for uncertainty of estimating WACC	Potentially material		Potentially material

**Does the WACC methodology provide an incentive for Fonterra to operate efficiently?**

A13.49 WACC represents the opportunity cost of capital. Including it in the base milk price ensures capital investment is appropriately priced in the base milk price. In other words capital is not treated as free. Therefore, the inclusion of a capital charge does provide an incentive for Fonterra to operate more efficiently having regard to all costs, including the cost of capital.

A13.50 If the WACC is set too low or too high relative to the true cost of capital, it can provide an incentive for Fonterra to be inefficient (when that WACC is used to inform investment decisions). Only if the WACC is set at the correct level will Fonterra's marginal investment decisions be efficient.<sup>115</sup> However, as the true WACC cannot be estimated with certainty, the key practical question is whether the assumptions used to estimate WACC are reasonable and practically feasible.

<sup>114</sup> All WACC history set to 7.70 percent.

<sup>115</sup> The use of a WACC for the notional business also creates an incentive to minimise WACC, to the extent Fonterra can.

**Are the WACC assumptions practically feasible?**

A13.51 As discussed earlier in this attachment:

A13.51.1 the milk price manual's use of US debt premiums, with no allowance for the cost of cross currency swaps, does not result in a practically feasible cost of debt (as discussed above in paragraphs A13.20-A13.24); and

A13.51.2 the milk price manual's general exclusion of debt issuance costs does not result in a practically feasible allowance for the costs of issuing debt (as discussed above in paragraphs A13.27).

**Are the WACC assumptions reasonable?**

A13.52 For the same reasons as in the preceding paragraph we do not consider the assumptions regarding the debt premium and debt issuance costs to be reasonable.

**Gaps in available information and analysis?**

A13.53 As discussed in paragraph A13.34, the milk price manual requires an independent estimate of the asset beta in 2012. This is an opportunity to refine the estimate of asset beta, which is a critical component of the cost of equity.

**Are the cost of capital assumptions transparent?**

A13.54 We consider that there is a good level of disclosure over the WACC and its components in the milk price manual. In particular, the methodology is clearly articulated, and the value of key parameters is either specified or a methodology for estimating the value of these parameters is clearly articulated in the milk price manual.

## **Attachment 14: Our observations regarding the modelling risks in the base milk price calculation**

- A14.1 Fonterra uses many complex spreadsheet models to calculate its base milk price. While we understand the models have been subject to review for audit purposes, we have not reviewed the auditors' work or discussed the extent of that work.
- A14.2 As stated in paragraph 66.6 of this report, we have not audited the information used or models created by Fonterra and its advisers to calculate the base milk price. However, over the course of our dry run review we have come across some potential modelling issues and errors. Where errors have been identified, we have informed Fonterra and its advisers so that amendments to the models can be made.
- A14.3 We do not consider these issues and errors to have a material impact on the base milk price calculation. However, this is not to say that there are not other errors in the models that might have a material impact.
- A14.4 Fonterra's models are not linked in any form, but many key assumptions are used across a number of these models. Manual reviews are therefore required to ensure that the assumptions are applied consistently across the models. This may give rise to possible errors, ie, when an assumption is revised but is not manually updated in every model.
- A14.5 Inconsistencies in assumptions may also arise, as some assumptions are only reviewed in a reset year, while others are reviewed annually. For example, the cost of capital is reviewed annually, while the tax provision assumption is reviewed every four years. The tax provision calculation includes an assumption about the NMPB's cost of capital. Therefore in non-reset years, the tax provision will be based on the cost of capital at the time of the last reset year and not the current cost of capital assumption. We do not necessarily consider this approach to be wrong or unreasonable.

## Glossary of terms and abbreviations

Term/Abbreviation	Definition
AMF	Anhydrous Milk Fat, one of the commodities included in the calculation of the base milk price
Base milk price	Farm gate milk price expressed in kilograms of milksolids
BMP	Butter milk powder, one of the commodities included in the calculation of the base milk price
DIRA	Dairy Industry Restructuring Act 2001
The Act	Dairy Industry Restructuring Amendment Act 2012
CGPI	Capital goods price index
CIF	Customs, insurance and freight
dairy season	1 June – 31 May
dry run review	Non-statutory review of Fonterra's 2011/12 methodology for setting the farm gate milk price and Fonterra's application of that methodology
DV	Diminishing value
ERE	Employee related expenses
FAS	Free alongside ship
FGMP	Farm gate milk price, calculated from the total pool of money available for payment to farmers for their raw milk supply to Fonterra in a season divided by the milksolids (in kilograms) collected by Fonterra in that season
FGMP manual	Fonterra's farm gate milk price manual, the milk price manual, or the manual
GDT	Global dairy trade, Fonterra's online auction
kgMS	kilogram of milksolids
MT	Metric tonne
NMPB	Notional milk price business



RCP	Reference commodity product, being WMP, SMP, BMP, butter, and AMF
Re-set year	Fonterra reviews/re-sets its milk price manual every four years. The re-set year refers to the next review year, being 2012
SMP	Skim milk powder, one of the commodities included in the calculation of the base milk price
TAF	Trading Among Farmers
USDA	United States Department of Agriculture
WACC	Weighted average cost of capital
WMP	Whole milk powder, one of the commodities included in the calculation of the base milk price