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**PUBLIC** version

# **Review of Fonterra's 2022/23 base milk price calculation: Dairy Industry Restructuring Act 2001**

**Final report**

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## Associated documents

Publication date	Title
1 August 2023	<a href="#">Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation</a>
30 March 2023	<a href="#">Proposed focus areas for our review of Fonterra's 2022-23 base milk price calculation</a>
15 December 2022	<a href="#">Final report – Review of Fonterra's 2022-23 Milk Price Manual – 15 December 2022</a>
15 September 2022	<a href="#">Final Report – Review of Fonterra's 2021/22 base milk price calculation: Dairy Industry Restructuring Act 2001</a>
15 September 2020	<a href="#">Review of Fonterra's base milk price calculation 2019-20 – 15 September 2020</a>
12 September 2019	<a href="#">Final Report – Review of Fonterra's 2018/19 base milk price calculation: Dairy Industry Restructuring Act 2001</a>
15 September 2017	<a href="#">Final Report – Review of Fonterra's 2016/17 base milk price calculation: Dairy Industry Restructuring Act 2001</a>
15 September 2015	<a href="#">Final Report – Review of Fonterra's 2014/15 base milk price calculation: Dairy Industry Restructuring Act 2001</a>

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# Chapter 1 Introduction

## Purpose of this report

- 1.1 This report sets out our conclusions from our statutory review of the extent to which Fonterra's 2022/23 base milk price calculation (the **Calculation**) is consistent with the purpose of the base milk price monitoring regime under subpart 5A of the Dairy Industry Restructuring Act 2001 (**DIRA**).<sup>1</sup>
- 1.2 This report follows our review of Fonterra's Milk Price Manual (**Manual**) for the 2022/23 season and builds on the analysis and conclusions from our previous reviews of Fonterra's base milk price calculation (**Calculation review**) and Manual.<sup>2</sup>

## How this report is structured

- 1.3 Chapter 2 explains our review framework and the scope of our 2022/23 Calculation review.
- 1.4 Chapter 3 sets out our conclusions from:
  - 1.4.1 our review of the focus areas for the 2022/23 Calculation review; and
  - 1.4.2 our fit for purpose review of the assumptions adopted, and inputs and processes used by Fonterra when calculating the base milk price.
- 1.5 In Attachment A, we respond to submissions by stakeholders received during our consultation processes for some of the points that are not addressed in the body of this report.
- 1.6 Attachment B provides a glossary of the key terms and abbreviations used in this report.
- 1.7 Attachment C provides a detailed list of the cost lines considered in our inflation cost adjustment component of our fit for purpose review. It provides a detailed breakdown of cost drivers and the method applied to each line as well as variances.

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<sup>1</sup> The term 'base milk price' defined by DIRA is the price per kilogram of milk solids set by Fonterra for a dairy season.

<sup>2</sup> [Commerce Commission "Final Report – Review of Fonterra's 2022/23 milk price Manual: Dairy Industry Restructuring Act 2001" \(15 December 2022\).](#)

## Chapter 2 Our review framework

### Our approach for the Calculation review

- 2.1 This report should be read with our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation (**Approach paper**), which we have applied in this review and which forms part of this report.<sup>3</sup> The Approach paper explains how we perform our reviews of Fonterra's Manual and base milk price calculation and includes:
- 2.1.1 an overview of how the base milk price is set;
  - 2.1.2 our interpretation of key legislative provisions guiding our statutory reviews; and
  - 2.1.3 our analytical and practical approach to our statutory reviews.
- 2.2 The base milk price monitoring regime is intended to provide incentives for Fonterra to act efficiently, while providing for contestability in the market for the purchase of milk from farmers. The regime also promotes greater transparency of Fonterra's base milk price setting processes.<sup>4</sup>
- 2.3 In our Approach paper, we discuss both the efficiency and contestability dimensions in the context of the base milk price calculation review.<sup>5</sup> In summary:
- 2.3.1 Efficiency: our view is that the assumptions adopted, and inputs and processes used in the Calculation will provide an incentive for Fonterra to operate efficiently where the Calculation uses independent notional benchmarks for the revenue and cost inputs.
  - 2.3.2 Contestability: the contestability dimension is satisfied if the assumptions adopted, inputs and processes used in the Calculation are practically feasible for an efficient processor. The essence of contestability is that efficient firms can compete in the market. If efficient firms are able to compete in the market, then the market is contestable.
- 2.4 Our analytical and practical approach to our statutory reviews is described in Chapter 4 of the Approach paper.<sup>6</sup>

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<sup>3</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\).](#)

<sup>4</sup> DIRA, section 150A.

<sup>5</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\), p.12 -13.](#)

<sup>6</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\), p.20-31.](#)

- 2.5 Under DIRA we are required to review the calculation of the base milk price and assess the extent to which the assumptions adopted, and the inputs and processes used by Fonterra in setting the base milk price, are consistent with the efficiency and contestability dimensions, as outlined in section 150A of DIRA (the **section 150A purpose**).
- 2.6 We note that Fonterra uses the term farmgate milk price when referring to the base milk price in its Manual and annual Farmgate Milk Price Statement. In this report we use the term 'base milk price' in all cases unless quoting from Fonterra materials.
- 2.7 Information on the distinction between the base milk price, which is subject to our statutory reviews, and other prices in the dairy supply chain is provided in our Approach paper.

### **Scope of our review of the 2022/23 Calculation**

- 2.8 Our review of the Calculation builds on the conclusions from our previous reviews; we consider a range of matters as outlined in the Approach paper.<sup>7</sup> Based on the information we gather, we determine the key areas to focus on for each Calculation review.<sup>8</sup> These constitute our 'focus areas' for which we undertake more detailed analysis.<sup>9</sup>
- 2.9 For this year's Calculation review, our focus areas are:
- 2.9.1 Foreign Exchange Translation
  - 2.9.2 Milk Diversion Costs
- 2.10 For the other revenue and cost components of the Calculation that are not part of the focus areas analysis, we undertake a fit for purpose review, which typically includes:<sup>10</sup>
- 2.10.1 an analytical verification of the values used in each component against our previous reviews of the same component; and
  - 2.10.2 a review of the consistency of the assumptions, inputs and processes related to the different components.

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<sup>7</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\), at paragraph 109.](#)

<sup>8</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\), at paragraph 110.](#)

<sup>9</sup> As explained at paragraph 3.9 below.

<sup>10</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\), at paragraph 111.](#)

- 2.11 We have expanded the scope of the ‘fit for purpose review’ for this year to include a review of cost inflation adjustments due to the widespread increase in inflation. Furthermore, it highlights any possible underreporting of adjustments for cost or capital asset value inflation.
- 2.12 This expanded scope of the ‘fit for purpose review’ includes a review of cost inflation adjustments to all other cash costs, in addition to the existing review of adjustments to revenue and cost components as well as for capital asset valuations.
- 2.13 If any aspect of this ‘fit for purpose’ review identifies material changes from our previous analysis of the base milk price reporting model, we consider whether more analysis of that component is required.<sup>11</sup> This year we only identified material changes to two components compared to last year: lactose and energy costs.

### Information considered in our review process

- 2.14 In reaching our conclusions we have considered:
- 2.14.1 submissions and cross submissions received on the proposed focus areas;<sup>12</sup>
  - 2.14.2 submissions received on our draft report;<sup>13</sup>
  - 2.14.3 Fonterra’s Reasons paper in support of the base milk price calculation for the 2022/23 season;<sup>14</sup>
  - 2.14.4 additional models and documentation that Fonterra provided to us during our review which show the application of the assumptions, inputs and processes used by Fonterra in the base milk price calculation.<sup>15</sup>

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<sup>11</sup> [Commerce Commission "Our approach to the milk price manual and milk price calculation reviews" \(2023\), at paragraph 112.](#) As described, to identify changes which might be elevated to a focus area, we apply an ‘indicative operational’ materiality of the dollar equivalent of 0.5% added to the WACC rate used in the milk price reporting model for the season under review.

<sup>12</sup> Submissions and cross submissions on our Proposed Focus Areas Paper were received from five stakeholders (Fonterra Co-operative Group Limited, and a joint submission by Miraka Limited, Open Country Dairy Limited, Westland Milk Products Limited and Synlait Milk Limited), available at <https://comcom.govt.nz/regulated-industries/dairy/milk-price-manual-and-calculation/milk-price-calculation/milk-price-calculation-202223-season>.

<sup>13</sup> [Miraka, Open Country Dairy, Synlait Milk and Westland Milk Products "Submissions on the review of Fonterra’s base milk price calculation 2022-23" \(15 August 2023\);](#) [Fonterra "Submission on the review of Fonterra’s base milk price calculation 2022-23" \(15 August 2023\)](#)

<sup>14</sup> [Fonterra "'Reasons' Paper in Support of Fonterra’s Base Milk Price for the 2022/23 Season" \(15 June 2023\).](#)

<sup>15</sup> For the purposes of our review, we are provided with Fonterra’s full model for calculating the base milk price, as well as any underlying models and documentation. The public version of Fonterra’s base milk price model is available at Fonterra’s website at <https://www.fonterra.com/nz/en/investors/farmgate-milk-price/milk-price-methodology.html>.

- 2.15 Where stakeholders raised points in submissions for this year's review, we have addressed these points in Chapter 3 where relevant to our consideration of the matter. In Attachment A we provide a summary of our responses to other matters relevant to the calculation that were raised in submissions.



## Chapter 3 Conclusions

### Purpose of this chapter

- 3.1 In this chapter we outline our conclusions on the extent to which the assumptions, inputs and processes of the base milk price calculation for the 2022/23 season are consistent with the Section 150A Purpose.
- 3.2 Specifically, we set out:
  - 3.2.1 a summary of our overall conclusion and conclusions on our focus areas review and fit for purpose review;
  - 3.2.2 our detailed findings from the review of the focus areas; and
  - 3.2.3 our detailed findings from the fit for purpose review.

### Summary of overall conclusion

- 3.3 Our conclusion is that, except for inter-site diversion costs, the assumptions adopted, and the inputs and processes used by Fonterra to calculate the 2022/23 base milk price are consistent with the contestability and the efficiency dimensions of the section 150A purpose.
- 3.4 Our conclusion is that inter-site diversion costs are likely to be consistent with the contestability dimension of the section 150A purpose, and are consistent with the efficiency dimension of the section 150A purpose.

### Focus areas review

- 3.5 Our conclusion is that the assumptions adopted, and the inputs and processes used by Fonterra to calculate the 2022/23 base milk price that we reviewed as part of our focus areas review are consistent with the contestability and efficiency dimension of the section 150A purpose.

### *Foreign exchange*

- 3.6 We consider that:
  - 3.6.1 the foreign exchange translation process is consistent with the practical feasibility dimension as Fonterra can demonstrate it is able to achieve substantially similar foreign exchange outcomes.
  - 3.6.2 the foreign exchange translation process is consistent with the efficiency dimension and that there are sufficiently strong incentives for Fonterra to operate efficiently with respect to its hedging activities.

*Milk diversion costs*

- 3.7 Our conclusion is that the assumptions adopted, and the inputs and processes used in the modelling of notional inter-site diversion costs and inter-island milk transport costs are likely to be practically feasible for an efficient processor<sup>16</sup>. We consider that:
- 3.7.1 the modelling simplifications result in a small net understatement of inter-site diversion costs. However, given the immaterial size of the net understatement and its minimal effect on the final base milk price, our overall conclusion is that inter-site diversion costs in the base milk price calculation are likely to be practically feasible for an efficient processor.
  - 3.7.2 there is sufficient capacity within each island to process all raw milk produced in each island. As such, the Notional Producer would not have been required to transport milk between islands. Accordingly, we consider that inter-island transport costs would be zero, and are practically feasible for an efficient processor.
- 3.8 Our conclusion is that the modelling of notional inter-site diversion costs and inter-island milk transport costs appropriately incentivises Fonterra to operate efficiently.
- 3.9 For the reasons given in paragraphs 3.20 to 3.22 below, we have not assessed the ways in which Fonterra uses the assumptions in s 150B(1)(a), (b) and (d) as part of this year's calculation review, and they will be considered as part of our upcoming reviews as a matter of priority.

**Fit for purpose review**

- 3.10 In our fit for purpose review, we identified a material variance from last year's costs for lactose. This was driven by changes in international lactose prices and shipping costs applied to the notional milk price volumes and is outside Fonterra's control. We consider this variance consistent with the efficiency and contestability dimensions of section 150A.
- 3.11 We also identified a material variance to energy costs, also driven by changes in energy prices the Notional Producer faced, over which Fonterra has limited control. Relying on our prior conclusions, as no changes have been made to the manual rules or calculation methodology, we consider this variance consistent with the efficiency and contestability dimensions of section 150A.

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<sup>16</sup> We have qualified our finding in this instance as "likely" as we have undertaken analysis that approximately quantifies the effect. Fonterra noted in its submission on the Commission's draft report that it "will modify the diversion cost model used for the 2023/24 base milk price" as discussed at paragraph 3.74 below. We will be able to examine the modelling with more certainty in next year's review.

- 3.12 We did not identify any other material variances in inputs and assumptions compared with last year's base milk price calculation.
- 3.13 For cost inflation adjustments, the rates used are compiled independently of Fonterra's current year performance and so provide an appropriate notional benchmark to beat.<sup>17</sup>
- 3.14 In its Reasons paper in support of the Calculation, Fonterra has confirmed that it has:
- 3.14.1 not made any substantive amendments to the Manual for 2022/23 in respect of the revenue calculation; and
  - 3.14.2 not made any material changes<sup>18</sup> to the Calculation methodology since last year.<sup>19</sup>
- 3.15 We rely on our conclusions from previous years' reviews for those aspects of the Manual and the Calculation methodology that have not significantly changed from previous years.
- 3.16 Therefore, for the assumptions and inputs that we have analysed as part of the fit for purpose review, our conclusions are as follows:
- 3.16.1 the assumptions adopted, and the inputs and process used by Fonterra in calculating the 2022/23 base milk price are consistent with the efficiency dimension of the section 150A purpose; and
  - 3.16.2 the assumptions adopted, and the inputs and process used by Fonterra to calculate the 2022/23 base milk price are consistent with the contestability dimension of the section 150A purpose.

## Conclusions on foreign exchange focus area and reasons

### Scope of focus area

- 3.17 We proposed the monthly Benchmark Foreign Exchange (FX) Conversion Rate (Monthly Benchmark Conversion Rate) as a focus area for this calculation review.<sup>20</sup>

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<sup>17</sup> [Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" \(5 July 2021\), p.75-79.](#)

<sup>18</sup> We note there was a minor amendment to clarify that the Asset Beta must comply with DIRA requirements.

<sup>19</sup> [Fonterra 'Reasons' Paper in Support of Fonterra's Base Milk Price for the 2022/23 Season" \(1 July 2022\), at paragraphs 12, 21 and 33.](#)

<sup>20</sup> [Commerce Commission "Proposed focus areas for our review of Fonterra's 2022/23 base milk price calculation" \(30 March 2023\), at p.5-6](#)

- 3.18 The joint submission from Independent Dairy Processors (IDPs) on our proposed focus areas requested that the Commission widen the focus area to include the impacts of the section 150B amendments.<sup>21</sup>
- 3.19 We note that our proposed focus areas on the Monthly Benchmark Conversion Rate proposed that we consider the application of section 150B(1)(c), which would necessarily consider the effect of the new section 150B(2). In any event, we have considered the effect of section 150B(2) as part of this focus area.
- 3.20 IDPs also submitted that reviewing the calculation of the Monthly Benchmark Conversion Rate was a lower priority compared to the other assumptions in section 150B(1), because such a review would be unlikely to provide anything not already known, and the Commission had already rejected IDP concerns about practical feasibility of the calculation.<sup>22</sup>
- 3.21 We note these points but consider it important to review the Monthly Benchmark Conversion Rate as part of this calculation review, because:
- 3.21.1 the Monthly Benchmark Conversion Rate can have a significant impact on the base milk price; and
  - 3.21.2 amendments to section 150B now allow us to assess the way in which the section 150B(1) assumptions are used in setting the base milk price for consistency with the section 150A purpose.
- 3.22 We agree that reviewing the application of the other assumptions in section 150B(1) is important in light of the amendments to section 150B, and we will consider these in upcoming reviews of the base milk price calculation and the Manual, as a matter of priority.

### **Consideration of the application of section 150B(1)(c)**

- 3.23 As indicated above, before considering the extent to which Fonterra's approach to foreign exchange is consistent with the section 150A purpose, we consider the application of section 150B(1)(c) and 150B(2).

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<sup>21</sup> [IDP Joint Submission "Submission on proposed focus areas for base milk price calculation 2022-23" \(27 April 2023\), p. 21.](#)

<sup>22</sup> [IDP Joint Submission "Submission on proposed focus areas for base milk price calculation 2022-23" \(27 April 2023\), p. 22.](#)

*Fonterra's approach to section 150B(2) for the 2022/23 calculation review*

3.24 Fonterra regards “the way in which [Fonterra] uses an assumption” in section 150B(2) as referring to the process by which actual figures are converted into notional values in the model. The opinion by Webb Henderson attached to Fonterra’s Reasons paper for this year’s base milk price calculation review states:<sup>23</sup>

... The meaning [of s 150B(2)] can be derived by reference to Fonterra’s practice of generating notional values used in the base milk price calculation through a process that in many instances begins with actual values, and translating these into notional values relevant to an efficient producer of the reference commodity products. Where notional values are used in the model, the Commission has historically tested both the applicability of the actual values, and the process used to translate those values into base milk price inputs against the s 150A purpose tests. In effect, where s 150B(1) actuals are used, then the first phase of that analysis is avoided by the presumptive effect of s 150B(1).

3.25 We consider that the focus on the translation of actual values into notional values is potentially too narrow an interpretation of section 150B. We discuss the application of section 150B(2) in the specific context of section 150B(1)(c) and foreign exchange below.

*Fonterra's approach to section 150B(1)(c)*

3.26 Fonterra addresses section 150B(1)(c) in its Reasons Paper for the 2022/23 season, as follows:

3.26.1 Fonterra explains that it uses “Fonterra’s actual average conversion rates” applied “without any further adjustments to the NMPB’s notional monthly USD cash receipts.” Fonterra explains that, because “the NMPB is using Fonterra’s actual monthly average conversion rates it falls within the s 150B(1)(c) safe harbour.”<sup>24</sup> It further submits that because there is not any translation of an actual value into a notional one, it does not consider it necessary to consider s 150B(2).<sup>25</sup>

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<sup>23</sup> [Fonterra, “Reasons’ Paper in Support of Fonterra’s Base Milk Price for the 2022/23 Season” \(15 June 2023\), at p. 53 paragraph10.](#)

<sup>24</sup> [Fonterra, “Reasons’ Paper in Support of Fonterra’s Base Milk Price for the 2022/23 Season” \(15 June 2023\), at p.20.](#)

<sup>25</sup> [Fonterra, “Reasons’ Paper in Support of Fonterra’s Base Milk Price for the 2022/23 Season” \(15 June 2023\), at p.10.](#)

- 3.26.2 However, Fonterra’s view is that the process used is consistent with the section 150A purpose in any case, because the model assumes that the NMPB applies Fonterra’s foreign currency risk-management policies in an identical manner to Fonterra, entering into individual hedging contracts for slightly different amounts to Fonterra.<sup>26</sup> Fonterra says that its treasury team does not have routine access to NMPB monthly cash receipts, so does not know whether it is hedging a larger or smaller exposure than the NMPB and this therefore gives it an incentive to operate efficiently.
- 3.26.3 Fonterra’s position that it is not necessary to consider section 150B(2) is consistent with its position that the Commission’s review role is limited to the process of converting actual into notional figures (as summarised at paragraph 3.24 above).
- 3.27 We consider that Fonterra’s interpretation in this respect is too narrow. Fonterra’s description of the process that it uses to implement the assumption in s 150B(1)(c) demonstrates that there is more to the process than simply adopting actual values. Fonterra uses a combination of actual data to generate an exchange rate on a monthly basis, which is then applied to a notional figure. It would be open to Fonterra to adopt a different methodology to calculate and incorporate its “gains and losses” into the milk price model, or to apply its model in a different way. For example, it could decide to calculate the applicable exchange rate on a daily or quarterly basis, instead of a monthly basis, and this would affect the resulting milk price.
- 3.28 We consider that the correct approach to interpreting and applying section 150B(1)(c) and 150B(2) is as follows:
- 3.28.1 the Commission cannot review whether incorporating into the base milk price “gains and losses experienced by [Fonterra] resulting from foreign currency fluctuations, including from [Fonterra’s] foreign currency risk-management strategies” is consistent with the section 150A purpose; but
- 3.28.2 the Commission is able to review the way in which Fonterra incorporates these “gains and losses” into the base milk price.
- 3.29 We have conducted our review, as set out below, consistent with this approach.

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<sup>26</sup> Reflecting the difference between Fonterra’s actual USD receipts and the NMPB’s notional USD receipts, which Fonterra says fall within +/- 20 per cent – see [Fonterra, “‘Reasons’ Paper in Support of Fonterra’s Base Milk Price for the 2022/23 Season” \(15 June 2023\), at footnote 13.](#)

### How Fonterra incorporates foreign exchange into the base milk price

- 3.30 The Monthly Benchmark Conversion Rate is a monthly weighted average exchange rate, based off Fonterra net receipts, that is used to convert monthly notional processing US dollar (USD) revenue into New Zealand dollars (NZD). It is calculated by:
- 3.30.1 Converting all Fonterra's USD-equivalent receipts to NZD at the daily average spot exchange rate for the month.
  - 3.30.2 Adding (subtracting) to the NZD receipts the gains (losses) on foreign exchange contracts exercised by Fonterra in the month.
  - 3.30.3 Subtracting (adding) from the NZD receipts premiums paid (received) in respect of any options for foreign exchange that are exercised or which expire in the month.
  - 3.30.4 Subtracting (adding) from the NZD receipts a provision for interest on option premiums in respect of options exercised or expired in the month for the period elapsed since the acquisition (sale) of the option.
  - 3.30.5 Dividing the adjusted NZD receipts obtained through steps above by USD receipts, to derive Fonterra's Monthly Benchmark Conversion Rate.<sup>27</sup>
- 3.31 While Fonterra has small amounts of receipts in foreign currencies other than USD (approximately 2%), those are converted and hedged as USD exposures. Accordingly, only USD exposures are used for the purposes of the Monthly Benchmark Conversion Rate.
- 3.32 There are few notional costs incorporated into the Benchmark Conversion Rate calculation. While Fonterra uses a combination of option and forward contracts to hedge forecast exposure, only option contracts have associated notional costs due to capital required to purchase the premium. Forward contracts are priced in accordance with interest rate differentials and reflect market expectations for future spot rates. Additionally, while there is a treasury allowance to incorporate operational costs associated with hedging, that does not form part of the Benchmark Conversion Rate, and instead contributes to notional overheads.

#### *Quantum and phasing of Monthly Benchmark Conversion Rate*

- 3.33 Fonterra does not make any manual adjustments to the Monthly Benchmark Conversion Rate to account for differences between the quantum and phasing of Fonterra's and the Notional Producer's monthly USD-equivalent cash receipts.

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<sup>27</sup> Calculation steps taken from [Fonterra "Reasons' Paper in Support of Fonterra's Base Milk Price for the 2022/23 Season" \(15 June 2023\), at p.19.](#)

- 3.34 While the Monthly Benchmark Conversion Rate that Fonterra achieves is the same, or substantially similar to the Notional Producer,<sup>28</sup> the effective sales weighted annual average exchange rate will be different as the amounts of USD to convert into NZD will have different weights for the Notional Producer.
- 3.35 We previously explored whether the base milk price should convert notional USD revenue at Fonterra's annual average conversion rate instead of a monthly basis.<sup>29</sup> In relation to our 2012/13 calculation review, Miraka submitted that converting USD revenue based on Fonterra's annual average is more consistent with the actual rate achieved by Fonterra across the season. Miraka considered that the annual average is also more consistent with the purpose of s 150B(c) (now s 150B(1)(c)) and applies Fonterra's actual gains and losses associated with foreign exchange.
- 3.36 We examine this point in relation to discussion of the practical feasibility of the foreign exchange translation process at paragraph 3.50 below.

*Hedging and key assumptions*

- 3.37 Fonterra's hedging strategy, that gives rise to Fonterra's gains and losses that are then incorporated into the Benchmark Conversion Rate, is a passive strategy and covers two forms of currency exposure:
- 3.37.1 A forecast sales cash flow hedging book, which hedges the forecast of sales receipts out up to 18 months on a stepped profile. The percentage of the exposure hedged increases over time to 100% giving an average conversion rate for that month's forecast exposure.
- 3.37.2 An actual receivable hedging book, which covers the on-balance sheet exposure arising from the invoicing of a sale to a customer. As sales are made, that volume of cover is transferred from the forecast sales book to this book, maintaining the average conversion rate. Both books consider the same set of hedges and this transfer is an accounting treatment driven exercise that allows matching of the gains/losses from movements in the fair value of the hedges to offset the movements in the NZD value of the debtor balance arising from translation to the current NZD spot rate.<sup>30</sup>

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<sup>28</sup> There are still differences between a relevant Fonterra monthly exchange rate and the Monthly Benchmark Conversion Rate applied to Notional Producer's, such as a notional consideration associated with option premiums, but we consider those differences are small.

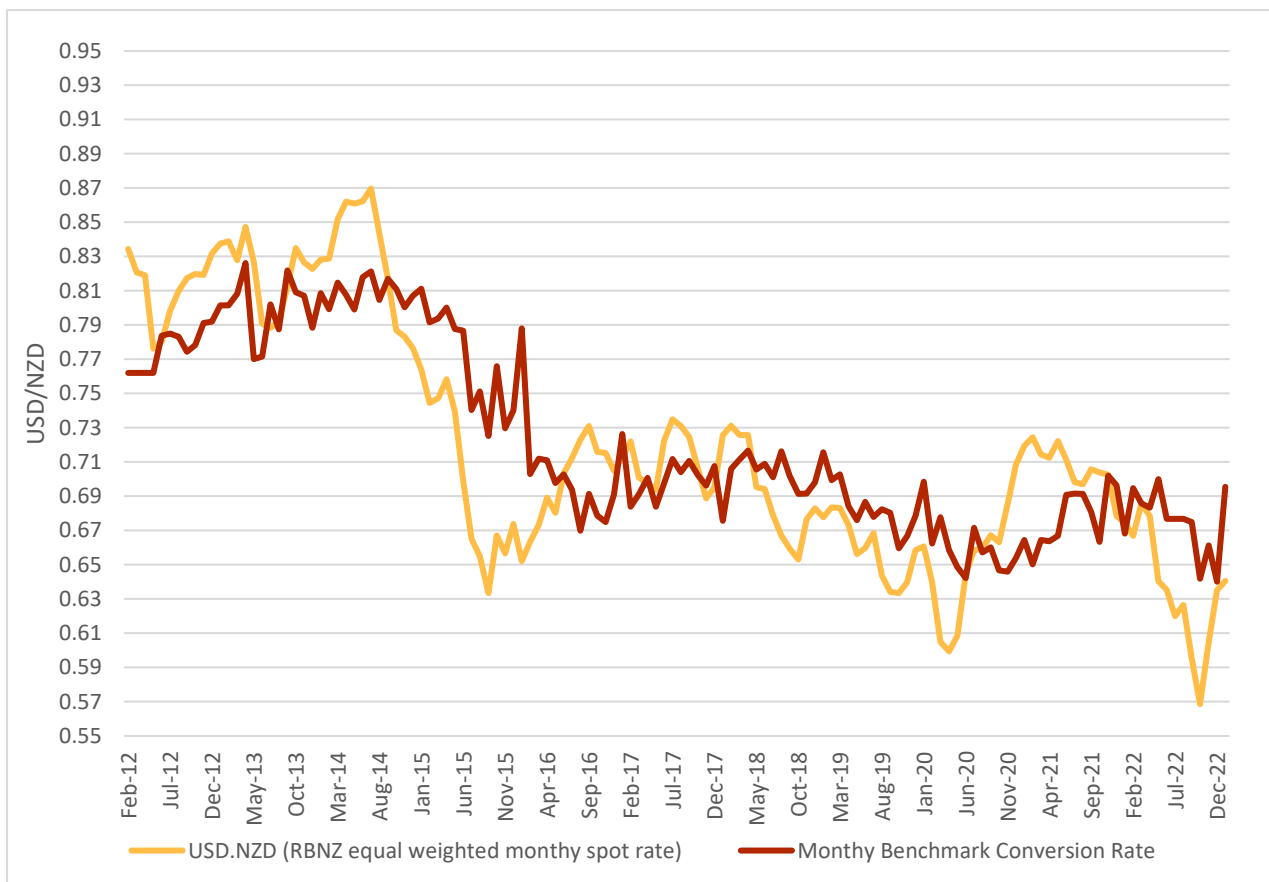
<sup>29</sup> [Commerce Commission "Review of Fonterra's 2012/13 base milk price calculation - Final report" \(15 September 2013\), p. G.12-G.16.](#)

<sup>30</sup> For completeness we note that Fonterra maintains five hedge books in respect of its New Zealand operations, with each hedge book dealing with a certain category of exposure. The benchmark conversion rate is based only on the two we describe.



- 3.38 For a traditional domestic exporter, hedging is designed to reduce exchange rate volatility and increase certainty with respect to NZD revenue to help with budgeting and capital allocation decisions. In the case of Fonterra, hedging serves the additional purpose of reducing volatility with respect to the base milk price. This allows greater certainty for advance payments to farmers and improves accuracy in relation to forecasting.
- 3.39 Figure 3.1 below compares the Monthly Benchmark Conversion Rate to spot rates and illustrates the 'smoothing' effect of hedging.

**Figure 3.1: Spot rates vs Monthly Benchmark Conversion Rate**



- 3.40 The Monthly Benchmark Conversion Rate will largely be driven by the hedging decisions Fonterra made over the 18 months prior. Based on Fonterra's hedging target, the rate is approximately 85% set at least 6 months before the USD is actually received. In practice, however, Fonterra is unlikely to be able to forecast USD receipts with 100% accuracy (as both prices and volumes are uncertain and depend on a variety of factors such as GDT prices, product mix and collection volumes).

- 3.41 Any errors forecasting USD receipts will be incorporated in the Monthly Benchmark Conversion Rate by reference to relevant spot rates. Additionally, there may be some deviations from the percentage of hedged forecast exposure to the target percentage of hedged forecast exposure as forecast exposure is regularly adjusted through the forecast period.
- 3.42 Two key assumptions are used when applying the Benchmark Conversion Rate to the Notional Producer:
- 3.42.1 The Notional Producer will make proportionately the same forecasting errors as Fonterra when forecasting its USD-equivalent monthly cash receipts – if, for example, Fonterra's forecast for a particular month was overstated by 10%, the Notional Producer's would also be overstated by 10%. This assumption reflects the fact that the Notional Producer's treasury team's forecasts would be based on the same information as Fonterra's team, and that it would be applying the same hedging policy.
- 3.42.2 The differences between the Notional Producer's and Fonterra's demand for foreign currency hedging instruments in any particular month would not, on average, have any impact on the effective conversion rate achieved through the purchase of those instruments.
- 3.43 The combination of these assumptions means the Notional Producer effectively achieves a similar monthly exchange rate as Fonterra achieves for the sale of its products, irrespective of differences between the products and volumes sold which contribute to separate monthly amounts of USD exposure.
- 3.44 We have considered the implications of having the Notional Producer adopt the same hedging decisions as Fonterra (and any associated forecasting error or deviation from Fonterra's target hedging policy). We discuss the assumptions in the context of Fonterra's incentive to operate efficiently with respect to hedging at paragraphs 3.45 to 3.49 below.

#### **Conclusion on efficiency dimension of section 150A**

- 3.45 We consider Fonterra operates efficiently in relation to calculating and translating the Monthly Benchmark Conversion Rate when incentives are sufficient to cause it to act in a way that reduces the uncertainty associated with movements in foreign exchange rates on the base milk price.
- 3.46 Fonterra, in its Reasons paper, states why it considers that the foreign exchange process provides for efficiency:<sup>31</sup>

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<sup>31</sup> [Fonterra "Reasons' Paper in Support of Fonterra's Base Milk Price for the 2022/23 Season" \(15 June 2023\), at p.10.](#)

Fonterra's treasury team does not have routine access to forecast NMPB monthly cash receipts, and therefore does not generally know whether it is hedging a smaller or larger exposure than that faced by the NMPB. This uncertainty means the translation process also appropriately incentivises Fonterra to operate efficiently.

- 3.47 We are satisfied that Fonterra's treasury team, responsible for executing hedging in accordance with hedging target policy, is incentivised to reduce uncertainty in relation to the effects of foreign exchange on the base milk price. Additionally, we consider that Fonterra is not able to take advantage of foreign currency movements and allocate foreign exchange gains or losses to earnings instead of the base milk price under the rules of the Manual.
- 3.48 Our review of the calculation of Monthly Benchmark Conversion Rates identified variance between forecast and actual Fonterra USD receipts (forecast errors) and deviations from Fonterra's target hedging policy. We consider the existence of these variances did not convey significant information about Fonterra's efficiency.
- 3.49 For these reasons, our view is that the way Fonterra uses the assumption in section 150B(1)(c) to calculate the 2022/23 base milk price is consistent with the efficiency dimension in section 150A.

#### **Conclusion on contestability dimension of section 150A**

- 3.50 The calculation and the translation of the Monthly Benchmark Conversion Rate is practically feasible if it can be demonstrated that Fonterra, or another processor that is efficiently building and operating an incremental plant, can achieve it.<sup>32</sup> Our view is that it is practically feasible for an efficient processor to achieve the Monthly Benchmark Conversion Rate and that the translation process is consistent with the section 150A purpose. In reaching this conclusion we consider the following:
- 3.50.1 Any differences between the Monthly Benchmark Conversion Rate and the actual effective exchange rate Fonterra achieves are likely to be very small.
- 3.50.2 Translating the Notional Producer's USD revenue monthly better incorporates differences in the quantum of sales phasing than if Fonterra's annual average exchange rate was applied to notional revenue.

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<sup>32</sup> [Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" \(1 August 2023\), paragraph 51.](#)

- 3.50.3 Assumptions relating to applying Fonterra’s hedging decisions to the NMPB, including that the Notional Producer makes proportionally the same forecast error as Fonterra, are not inconsistent with practical feasibility. We consider that any difference in forecast error between Fonterra and the NMPB would not systematically bias Monthly Benchmark Conversion Rate in any particular direction.

## **Conclusion on milk diversion costs focus area and reasons**

### **Scope of focus area**

- 3.51 In its submission on the ‘Proposed Focus Areas Paper’ for the 2021/22 Calculation review, Miraka requested that we undertake a review of the practical feasibility of milk collection costs and consider including a review of milk collection costs in the 2022/23 Calculation review.<sup>33</sup>
- 3.52 Milk collection costs were considered in our 2022/23 Proposed Focus Areas Paper but we did not propose milk collection costs as a focus area as there was, at the time, insufficient evidence to justify a detailed review.<sup>34</sup>
- 3.53 We received a joint submission from the IDPs raising concerns regarding milk diversion costs. In particular, IDPs raised concerns that Fonterra’s actual diversion costs and inter-island milk costs are necessary costs of delivering milk, that are excluded in the calculation of collection costs:
- the Notional Producer Milk Collection Costs are based on Fonterra actual costs, the Notional Producer costs do not include all Fonterra costs. Diversion costs and inter-island milk transport costs are excluded. Those excluded costs however, are the necessary costs of delivering milk in accordance with Fonterra actual processing of milk at each site.<sup>35</sup>
- 3.54 We received no cross submissions from stakeholders on the matters set out above.
- 3.55 Therefore, given the concerns raised in submissions, we have reviewed milk diversion costs.

### **Summary of what milk diversion costs are and how they are incorporated into the base milk price**

- 3.56 The base milk price calculation takes into account the costs of transporting raw milk, or by-products produced from the processing of raw milk, to the most appropriate processing site. These are known as milk collection costs.

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<sup>33</sup> [Miraka Limited "Submission on the proposed focus areas paper for base milk price calculation 2021-22" \(6 May 2022\), p.35.](#)

<sup>34</sup> [Commerce Commission "Proposed focus areas for our review of Fonterra’s 2022/23 base milk price calculation" \(30 March 2023\), at.6](#)

<sup>35</sup> [IDP Joint Submission "Submission on proposed focus areas for base milk price calculation 2022-23" \(27 April 2023\), p.43.](#)

3.57 Rule 15 of the Manual states as follows:

In calculating the Farmgate Milk Price Fonterra's actual milk collection costs for a Year shall be deducted, adjusted for any difference between the actual cost to Fonterra of diverting product between Sites and the diversion costs implied by the Farmgate Milk Price Production Plan and the allocation of Reference Assets to Sites if the difference is material to either the Aggregate Farmgate Milk Price or to Fonterra's earnings after paying for Milk at the Farmgate Milk Price.

3.58 We note that Fonterra's actual milk diversion costs are substantially different from that of the Notional Producer, and we therefore consider it appropriate to make adjustments as per Rule 15 of the Manual. We consider the approach to the calculation of collection costs to be consistent with Rule 15 of the Manual.

3.59 For the 2022/23 base milk price calculation, Fonterra has made this adjustment by replacing the following actual costs with notional (modelled) costs, constituting 4% of total collection costs, in the base milk price:

3.59.1 inter-site diversion costs; and

3.59.2 inter-island milk transport costs.

3.60 We have reviewed the extent to which the inputs, assumptions and processes associated with both of these costs are consistent with the section 150A purpose.

### **Inter-site diversion costs**

#### *Summary of the modelling of inter-site diversion costs*

3.61 Inter-site diversion costs are the costs of transporting cream (a by-product of the processing of WMP and SMP) to a different processing site if a particular site does not have the ability to process cream into the other three RCPs (butter, AMF and BMP). Diversion costs are also incurred if buttermilk then needs to be diverted to another processing site to be processed into BMP.

3.62 Inter-site diversion costs are modelled using the following key components:

3.62.1 total volume of cream and buttermilk to be diverted;

3.62.2 distance of cream and buttermilk diverted; and

3.62.3 transport cost per kilometre per unit of cream and buttermilk diverted.

3.63 We summarise below how each of these components are determined.

3.63.1 The total volume of cream diverted is the total of the volume of cream and buttermilk diverted from each site, which is calculated as follows:

- 3.63.1.1 The total raw milk available for processing into RCPs at each site is the actual amount of raw milk delivered to the site in each month.
  - 3.63.1.2 Each site is categorised as either a SMP site, a WMP site, or a SMP/WMP site (a swing site), irrespective of whether the site also has the ability to process cream (a by-product of the production of WMP and SMP) into butter, AMF and BMP.
  - 3.63.1.3 For SMP-only and WMP-only sites, all raw milk delivered to the site is processed into SMP or WMP respectively.
  - 3.63.1.4 For SMP/WMP sites, the raw milk delivered to each site is first allocated to SMP processing in order to meet the island-wide SMP production target. The total amount of raw milk required to meet the island-wide SMP production target is pro-rated across all SMP/WMP sites. The remaining raw milk delivered to each site is allocated to WMP processing at the site. This allocation does not take into account whether a particular SMP/WMP site has the ability to process cream.
  - 3.63.1.5 For example, if the island-wide SMP production target is 1000 units, and the SMP-only plants can produce 600 units, the SMP/WMP swing sites (together) must produce 400 units. If the combined SMP/WMP processing capacity of SMP/WMP sites is 1200 units, each SMP/WMP plant must allocate one-third of its processing capacity to SMP (and two-thirds to WMP).
  - 3.63.1.6 If a particular site is able to process cream, no diversion is necessary. If the site is not able to process cream, the amount of cream produced at the site will be required to be diverted to another site that can process cream. Similarly for BMP, if a site is unable to process buttermilk, the buttermilk will be diverted to another site that can process buttermilk into BMP.
  - 3.63.1.7 The calculation does not take into account whether a particular site has sufficient capacity to process all milk delivered to the site into SMP or WMP, individually, but does consider a site's aggregate SMP and WMP maximum production capacity. It also does not take into account whether a site that is able to process cream has the capacity to process all of the cream diverted to it (in which case further costs would be incurred).
- 3.63.2 The distance of product diverted is determined as follows:

- 3.63.2.1 The distance between sites is the actual distance between sites.
- 3.63.2.2 Cream or buttermilk that is required to be diverted from a particular site is diverted to the nearest site that can process it.
- 3.63.3 The transport cost per kilometre per unit of product diverted is Fonterra's actual cost per kilometre rate for a standard Fonterra tanker.

*Conclusion on contestability dimension of section 150A*

- 3.64 As noted at paragraph 3.63.1.7 above, the calculation does not take into account whether a particular site has sufficient capacity to process milk allocated to SMP production into SMP or milk allocated to WMP production into WMP. Nor does it take into account whether a site that is able to process cream has the capacity to process all of the cream diverted to it. We understand from Fonterra that the calculation of diversion costs is simplified in this way to avoid creating technical complexity in the calculation.
- 3.65 If processing capacity was taken into account, further diversion of raw milk or cream would be likely to be required to ensure that all raw milk is processed into the RCPs. Accordingly, the calculation is likely to understate diversion costs in this respect, and the calculation of diversion costs therefore may not be practically feasible for an efficient processor.
- 3.66 However, we consider that the calculation, in another respect, is likely to overstate diversion costs relative to an efficient processor. As explained at paragraph 3.63.1.4 above, the total amount of raw milk required to meet the island-wide SMP production target is simply pro-rated across all SMP/WMP sites, irrespective of whether each SMP/WMP site can also process cream.
- 3.67 But since the production of SMP produces approximately six times as much cream as WMP production, an efficient processor would maximise SMP production at SMP/WMP sites that also had the ability to process cream, rather than pro-rating it, thereby minimising the cost of diverting cream to a site with the ability to process it. Accordingly, the diversion costs of an efficient processor are likely to be less than the notional costs produced by the calculation.
- 3.68 We consider the simplifications that lead to the understatement of inter-site diversion costs in one aspect and overstatement in another aspect would likely only have a small net impact if considered together. This net impact in turn would only have a small impact on the base milk price. Our approximate quantification of the net impact on milk diversion costs is an understatement that we consider immaterial.

- 3.69 Because this net impact is immaterial, we do not consider that it has a material effect on the practical feasibility of inter-site diversion costs. Accordingly, we conclude that inter-site diversion costs are likely to be practically feasible for an efficient processor.

*Conclusion on efficiency dimension of section 150A*

- 3.70 Fonterra in its Reasons paper notes that the inter-site diversion costs are modelled on a basis that is independent of Fonterra's actual costs and considers that the approach does appropriately incentivise efficiencies.
- 3.71 We are satisfied that modelling notional inter-site diversion costs appropriately incentivises Fonterra to operate efficiently.

**Submissions on milk diversion costs and our response**

- 3.72 In their joint submission, Miraka, Synlait, Open Country Dairy and Westland Milk Products raised concerns that there is no assurance that milk delivered to a processing site can be processed into the allocated production, and therefore would not incur an additional diversion cost.
- 3.73 We understand that the process of matching target production to milk volumes, as opposed to production capacity, assumes that the designated site for a catchment area (or for the onward movement of cream or buttermilk) has the capacity to produce the allocated production, as a matter of modelling simplification. As discussed in paragraph 3.64 – 3.69, our conclusion is that this simplification leads to a small underestimate of milk diversion costs.
- 3.74 Given the size of this underestimate, and the fact it is partially offset by a similar overestimate, we re-affirm our conclusion that inter site diversion costs are likely to be practically feasible. In its submission on our draft report, Fonterra stated that it "will modify the diversion cost model used for the 2023/24 base milk price to address the matters raised by the Commission."<sup>36</sup> We may consider this again as part of our review of the 2023/24 base milk price calculation.

**Inter-island milk transport costs**

*Summary of how milk transport costs are addressed in the base milk price calculation*

- 3.75 Inter-island milk transport costs are the costs of transporting raw milk to the other island if a particular island does not have the ability to process milk due to capacity constraints.

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<sup>36</sup> [Fonterra submission, "Review of Fonterra's 2022/23 Base Milk Price Calculation: Dairy Industry Restructuring Act 2001" \(15 August 2023\), p.1.](#)



- 3.76 In advance of a season, the Notional Producer forecasts peak milk supply for each island, and ensures it has sufficient processing capacity to process this milk. If actual milk supply is greater than forecast, we understand from Fonterra that the notional processor would be able to increase processing capacity by up to approximately 13% by reducing the lactose content of SMP/WMP. Only once it had exhausted this option would it transport raw milk between islands for processing.
- 3.77 The 2022/23 base milk price calculation has assumed that the Notional Producer has sufficient raw milk processing capacity in both the North Island and the South Island, such that no raw milk would be required to be transported between islands for processing, and as such the cost would be zero.<sup>37</sup> We have reviewed the extent to which this assumption is practically feasible for an efficient processor.

*Conclusion on contestability dimension of section 150A*

- 3.78 Rule 34 of the Manual states as follows:

An additional Standard Plant will be added to the Farmgate Milk Price Fixed Asset Base if peak Milk Supply increases in circumstances where Fonterra has increased its actual processing capacity in a region, and where a requirement for increased processing capacity is otherwise indicated by an increase in actual or reasonably foreseeable peak supply in the Region.

- 3.79 This rule in effect requires the processing capacity in each island to be increased to ensure that each island has sufficient processing capacity to meet forecast raw milk volumes for the season in each island.
- 3.80 We have reviewed Fonterra's application of this rule in the calculation of the 2022/23 base milk price, as set out in information Fonterra provided to us. We consider that the capacity assumptions, and application to the calculation, allow for the processing of all raw milk within each island. In particular, we consider that the Notional Producer has sufficient processing capacity in each island for the peak milk collection months of October and November 2022.
- 3.81 Even if processing volumes had exceeded capacity for any month, the Notional Producer would first increase processing capacity by reducing lactose content of SMP/WMP before transporting raw milk between islands (as explained above).

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<sup>37</sup> [Fonterra "Reasons' Paper in Support of Fonterra's Base Milk Price for the 2022/23 Season" \(15 June 2023\), at p.23.](#)

- 3.82 We therefore consider that the Notional Producer has sufficient capacity within each island to process all raw milk produced in each island. As such, the Notional Producer would not have been required to transport milk between islands. Accordingly, we consider that the assumption that no inter-island milk transport would be required, and that associated costs would be zero, is practically feasible for an efficient processor.<sup>38</sup>

*Conclusion on efficiency dimension of section 150A*

- 3.83 We are satisfied that inter-island milk transport costs appropriately incentivise Fonterra to operate efficiently.

**Detailed findings from our fit for purpose review**

- 3.84 We reviewed Fonterra's base milk price calculation model, as well as supporting models for each of the key inputs. We assessed further information on a confidential basis where we considered it necessary.
- 3.85 As part of this analysis, we have also examined any changes in the following assumptions that could impact the base milk price:
- 3.85.1 changes in costs;
  - 3.85.2 inclusion of off-GDT sales as a reference for calculating RCP prices;
  - 3.85.3 changes in sales phasing;
  - 3.85.4 changes in timing or volume of milk collected; and
  - 3.85.5 yield and loss calculations.
- 3.86 Our conclusion is that we consider that the inputs and assumptions and processes covered in our fit for purpose review are consistent with the efficiency and contestability dimensions of section 150A.

**Changes in costs versus prior year**

- 3.87 A significant increase in milk price component costs for the 2022/23 season has occurred, with non-milk expenses rising by \$416.8 million or around 27 cents per kgMS for the 2022/23 season. Increases in lactose costs and energy costs have been flagged as significant.

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<sup>38</sup> We note, for transparency, that Fonterra's actual inter-island milk transport costs were less than \$50,000.

- 3.88 Lactose costs have increased by \$200.0 million or around 13c per kgMS for the 2022/23 season. The increase is driven by changes in international lactose prices and shipping costs applied to the notional milk price volumes and is outside Fonterra's control.
- 3.89 Prior to the beginning of a season, Fonterra chooses whether it will use either its own lactose price or that of other processors in calculating the base milk price, based on which is lower of the two. For the 2022/23 season, Fonterra has used the competitor price series, reflecting actual costs for lactose landed in New Zealand.<sup>39</sup> We therefore consider that the assumptions relating to lactose costs are practically feasible.
- 3.90 We consider that selecting the lower of Fonterra's or its competitors' actual lactose costs as a benchmark, prior to the beginning of the season, in combination with notional lactose volume requirements that are significantly larger than Fonterra's actual volumes, meaning that lactose costs are significantly multiplied in the Calculation, incentivises Fonterra to reduce its actual lactose costs (i.e., operate efficiently).
- 3.91 Therefore, our conclusion is that we consider the lactose cost assumptions are consistent with the efficiency and contestability dimensions of section 150A.
- 3.92 Energy costs have increased by \$66.7 million or around 5 cents per kgMS for the 2022/23 season. This increase of 22.7% from 2021/22 is primarily driven by changes in energy prices, specifically electricity and steam unit rates, applied to the Notional Producer's fixed asset base usage rates and over which Fonterra has limited control.
- 3.93 The way in which these energy costs are set has not changed, therefore we are relying on our conclusion from our previous calculation reviews, that the energy costs are consistent with the efficiency dimension of the section 150A purpose.
- 3.94 We also conclude that the energy costs in the milk price calculation are practically feasible for an efficient processor and accordingly, satisfy the contestability criteria in section 150A.

#### **Inclusion of off-GDT sales as a reference for calculating commodity prices**

- 3.95 In our previous years' fit for purpose reviews we looked at the off-GDT prices and volumes against the previous season to obtain comfort in what was being used as a reference for prices used for the Notional Producer.

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<sup>39</sup> [Fonterra "Reasons' Paper in Support of Fonterra's Base Milk Price for the 2021/22 Season" \(1 July 2022\), at 21.](#)

- 3.96 We obtained the same information for the 2022/23 season as of 31 May 2023. This shows that the overall impact of off-GDT pricing for WMP, SMP and AMF was 8.3 cents per kgMS compared with 10.9 cents per kgMS in 2021/22, a decrease of 2.6c, driven by declining off-GDT prices, which continue to be benchmarked from on-GDT prices.
- 3.97 Given the process for including off-GDT costs has not changed since last year's calculation review and a downward adjustment in the overall impact of off-GDT pricing, we continue to consider that the use of off-GDT sales pricing is practically feasible.
- 3.98 As provided for in section 150C(1)(a), using a GDT or off-GDT benchmark set independently of Fonterra's current year performance provides an incentive to Fonterra to operate efficiently.

### **Sales phasing**

- 3.99 Fonterra's approach to sales phasing has not changed from previous years' reviews. The revenue is recognised in the base milk price model based on the contracted prices, and the use of total phasing is consistent with the production profile of the Notional Producer, therefore our conclusion is that we consider that the phasing is practically feasible.
- 3.100 Furthermore, as Fonterra's approach to sales phasing is unchanged from previous years' reviews, we are relying on our conclusion from our previous calculation reviews, that the approach to sales phasing is consistent with the contestability dimension of the section 150A purpose.
- 3.101 While the incentive to operate efficiently is potentially weaker than if notional data had been used, we continue to consider the current approach to sales phasing using Fonterra's actual data to be consistent with the efficiency dimension of the purpose because:
- 3.101.1 there is insufficient data to develop a reasonable notional figure; and
  - 3.101.2 Fonterra only has limited discretion over its sales phasing.<sup>40</sup>

### **Changes in volumes of milk collected**

- 3.102 The 2022/23 volume of milk collected (1,480m kgMS) was around 0.2% higher than 2021/22. Only standardised product was processed.

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<sup>40</sup> [Commerce Commission "Review of Fonterra's 2014/15 base milk price calculation - Final report" \(15 September 2015\), p.7.94-7.106.](#)

- 3.103 The most recent review of the fixed asset base was completed in 2021, and resulted in a decision to maintain the assumed processing capacities of incremental and replacement plants for the manufacture of all five RCPs at the same levels assumed for the previous 2017-2020 Review Period.
- 3.104 Given this and the total annual volume of milk collected has only marginally moved and volumes of milk collected during the peak months of the milk season are marginally lower than the 2021/22 season, we consider this to be appropriate.

### **Yield calculations**

- 3.105 A full description of Fonterra's process to update the specification offset and loss assumptions (the yield inputs) can be found in its 2022/23 Reasons paper. This year's specification offsets and losses are broadly in line with those achieved last season with a very minor downward adjustment to losses and specification offsets, but had no discernible impact on yields.
- 3.106 We confirmed the calculated yield by performing a 'mass balance' calculation to verify that loss assumptions have been properly taken into account. This reconciles the milk solids in the total volume of raw milk purchased by the Notional Producer with the fat and protein milk solids components of the RCPs together with associated losses.
- 3.107 The yield input assumptions are based on manufacturing field trials of plants that are similar to the Notional Producer's Standard Plant and recommendations by Fonterra's independent expert.
- 3.108 Having reviewed the information provided by Fonterra and performing our own 'mass balance' calculation using the yield input assumptions, we are satisfied that the yields of RCPs can be achieved by Fonterra and that they are therefore practically feasible for an efficient processor.
- 3.109 The specification offset and loss inputs are notional and provide a benchmark to beat. Therefore, our conclusion is that the yield inputs are consistent with the efficiency dimension of the section 150A purpose.<sup>41</sup>

### **Cost inflation adjustments**

- 3.110 Stakeholders requested that we consider adding as a focus area, a review of assumptions relating to the impact on milk price costs of current inflationary pressures across the broader economy.
- 3.111 The Joint IDP submission on the 2022/23 Proposed Focus Areas Paper submitted regarding the capital asset base:

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<sup>41</sup> The IDPs submissions on these points are noted in Attachment A.

The Commission added a focus area for the 2021/22 BMP Calculation review to include a review of adjustments for cost inflation. That review extended to adjustments for variable manufacturing costs and to update the cost of the capital asset base. With inflation continuing at historically high levels, the IDPs request the Commission include the same level of scrutiny of Notional Producer inflation-based cost adjustments for the 2022/23 BMP calculations review.<sup>42</sup>

3.112 The Joint IDP submission also raised a request to review all cash costs:

It is requested that review extend to include all cash costs, not just the variable manufacturing costs.<sup>43</sup>

3.113 We have reviewed the processes for updating capital asset base and variable manufacturing costs to take account of the current cost environment, as part of our annual fit-for-purpose review and have not considered it as a separate focus area, but we will consider if this should more appropriately be considered as part of a future focus area.

#### *Capital asset base costs*

3.114 Fonterra has carried out an annual update of capital goods inflation-based on an independent report from Jones Lang LaSalle (**JLL**) using movements in Fonterra asset values.<sup>44</sup>

3.115 We have reviewed the advisory report prepared by JLL for the purpose of valuation of specified plants and assets at various sites to assist with the milk price index pricing update.<sup>45</sup>

3.116 The information sources used to create the capital cost index include, but are not limited to:

3.116.1 JLL Plant and Machinery Database;

3.116.2 searches of similar plant from internet websites;

3.116.3 discussions with suppliers and dealers of machinery and equipment; and

3.116.4 information provided by Fonterra such as receipts, fixed asset schedule and verbal advice as to original purchase costs and date when assets were acquired.

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<sup>42</sup> [IDP Joint Submission "Submission on proposed focus areas for base milk price calculation 2022-23" \(27 April 2023\), p.48.](#)

<sup>43</sup> [IDP Joint Submission "Submission on proposed focus areas for base milk price calculation 2022-23" \(27 April 2023\), p.48.](#)

<sup>44</sup> From MPG 2022/23 work programme.

<sup>45</sup> JLL, Valuation Advisory, 1 June 2023.

- 3.117 The overall increase in the replacement cost of the asset base from 2022 to 2023 was 10.4%. In our 2021/22 Calculation review<sup>46</sup>, we used the PPI Outputs Building construction index as a relevant benchmark. We have performed a crosscheck against these benchmarks. The annual movements for this index for the March 2023 quarter was 10.3%.<sup>47</sup>
- 3.118 We therefore consider that the capital asset costs have been appropriately adjusted to take account of current inflationary effects and are practically feasible.

*Submissions on capital asset base costs and our response*

- 3.119 In their joint submission, the IDPs asked for an explanation of the relationship between the annual price adjustment of asset replacement costs, the tilted annuity calculations, and the impact on depreciation and WACC.
- 3.120 Reference assets that are assumed to have reached the end of their economic lives in the previous year are replaced with new assets at the start of a year. The annual change in capital goods prices (in the previous year) is used to update the cost of these replacement reference assets relative to the previous season. For example, the cost of replacement assets added to the fixed asset base for the 2022/23 season includes the effects of 2021/22 capital goods price inflation.
- 3.121 The value of the fixed asset base in turn affects the repairs and maintenance expense (see Rule 14), return on assets and depreciation.
- 3.122 The tilted annuity mechanism used by Fonterra calculates an annual amount of capital recovery (return on and of capital) that is constant in real terms over the life of the asset (see Rule 36). Capital goods price inflation affects the long-run inflation assumption used by Fonterra to calculate this amount. Again, there is a one-year lag, so that 2021/22 inflation affects the 2022/23 season calculation. Changes in inflation change the profile of capital recovery but do not change the net present value (NPV) of total capital recovered over the life of the asset.
- 3.123 Depreciation is calculated as the difference between the annuity and the return on capital (based on WACC). In 2022/23 there were two effects, the higher 2021/22 inflation reduced the initial value of the annuity and WACC increased, both of these caused depreciation to decline.

*Variable manufacturing costs*

- 3.124 We have reviewed the variable manufacturing cost lines to assess the appropriateness of the methods used to update the costs.

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<sup>46</sup> [Commerce Commission "Review of Fonterra's 2021/22 base milk price calculation - Final report" \(15 September 2022\), p.3.131.](#)

<sup>47</sup> Statistics NZ, PPI Outputs price index tables for March 2023 quarter.

- 3.125 The list of the cost lines and the method applied to each line are outlined in Attachment C.
- 3.126 The allowable methods for updating variable manufacturing costs are specified in the Manual in Table 3.1 Detailed Rules. We consider the cost assumptions have been updated in accordance with the Manual.

#### *Other cash costs*

- 3.127 We have reviewed all other cash cost lines to assess the appropriateness of the methods used to update the costs.
- 3.128 The list of the cost lines and the method applied to each line are outlined below.

#### *Depreciation expense*

- 3.129 We have reviewed the depreciation expense cost line and noted a 10.5% decrease relative to 2021/22.
- 3.130 The capital charge methodology uses a tilted annuity approach as it results in a constant annual capital cost in real terms (i.e., the capital cost increases in time only by the forecast rate of inflation in capital costs). Without this assumption, the depreciation and capital charges would fluctuate from year to year.<sup>48</sup>
- 3.131 The decrease in depreciation was caused by higher inflation impacting the future value of the asset base upwards, and thereby creating a steeper tilt. To ensure the tilt is NPV neutral, the current season's depreciation expense had a downwards adjustment. We have reviewed the forecasts for depreciation expense and are confident that the impact is NPV neutral with a greater increase in depreciation expense expected in future years. In addition, an increase in WACC resulted in a higher return on capital, which in turn reduced the depreciation portion of the annual capital recovery amount (see explanation at paragraphs 3.120 to 3.123 above).

#### *Submissions on depreciation expense and our response*

- 3.132 In their joint submission, the IDPs queried why depreciation expense for 2022/23 was down, in light of a similar level of inflation in 2021/22.
- 3.133 The impact of higher inflation first impacts the annuity calculation in the year following the inflation update. As such, the reduction in depreciation in 2022/23 is the result of the recorded inflation of 2021/22. High inflation in 2022/23 is expected to place downward pressure on the depreciation expense in 2023/24.

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<sup>48</sup> For further information on the approach to Depreciation using Tilted annuity, refer to; [Fonterra "Depreciation & Capital Charge under Tilted Annuity, Replacement cost and Historic Cost Approaches" \(22 March 2016\), at 1-6.](#)



*Assessment of cost inflation adjustments against the section 150A purpose*

3.134 Our conclusions are:

- 3.134.1 the methods used are appropriate for the capital asset and variable manufacturing cost lines to which they have been applied. They are based on industry trends in actual cost data and therefore we consider they are practically feasible; and
- 3.134.2 the rates used are compiled independently of Fonterra's current year performance and so provide an appropriate notional benchmark to beat. Therefore, we consider that the efficiency dimension is met.

## Attachment A      Other matters raised relevant to our review

Submitter(s)	Summary of submission point	Commission response
<b>DIRA S150B(2) Amendment review issues</b>		
<b>Joint IDP Submission</b>	<b>Consistency with s150A purpose:</b> Given the Commission was only able to review application of one of the four s150B assumptions (the NP USD conversion rate), the IDPs consider the Commission is not yet in a position to confirm the other assumptions now comply with the s150A requirements. IDPs request the Commission to review the remaining assumptions in full next cycle. <sup>49</sup>	<p>The Commission’s approach has been to select focus areas and assess the focus areas for consistency with section 150A. We have not assessed the way in which Fonterra uses the assumptions in s 150B(1)(a), (b) and (d) as part of this year’s review, and they will be considered as part of our upcoming reviews as a matter of priority.</p>
<b>Joint IDP Submission</b>	<b>Milk diversion costs and national network assumption:</b> The NP asset base has changed over time and has almost certainly diverged from the Fonterra network. The changes in the NP network have accrued notional advantages to the NP arising from more efficient production facilities. The NP Network of facilities however has not been adjusted to reflect this evolution of the NP and associated cost consequences such as different milk collection costs. <sup>50</sup>	

<sup>49</sup> [IDP Joint Submission “Submission on the Commerce Commission Draft report: review of Fonterra’s 2022/23 base milk price calculation: Dairy Industry Restructuring Act 2001” \(15 August 2023\) p. 2, 4-5](#)

<sup>50</sup> [IDP Joint Submission “Submission on the Commerce Commission Draft report: review of Fonterra’s 2022/23 base milk price calculation: Dairy Industry Restructuring Act 2001” \(15 August 2023\) p. 12-13](#)

<p><b>Joint IDP Submission</b></p>	<p><b>Yields are not practically feasible:</b> The overall milk losses (0.38%) are unlikely to be commercially feasible for a real-world New Zealand commodity processor. The IDPs consider it reflects the way Fonterra interprets the S 150B assumptions. Fonterra has not changed the way it interprets the assumptions (continuing to treat them as safe harbours), and the Commission has not reviewed the assumptions for compliance with the amended s 150B.<sup>51</sup></p>	
<p><b>Joint IDP Submission</b></p>	<p><b>Square curved production yields:</b> Production plan does not appear to have been disaggregated in a manner which aligns assumptions to achieve efficient production and yield attributed to NP. No assurance that production targets and plan is consistent with production assumptions that underpin NP production cost and yields.<sup>52</sup></p>	
<p><b>Capital asset base cost reporting inconsistencies</b></p>		
<p><b>Joint IDP Submission</b></p>	<p>The IDP's raised concerns about certain inconsistencies in reporting on the 2022/23 changes in the NP fixed asset base.</p>	<p>The Commission sought explanations from Fonterra on the variances between the 2022 Milk Price Statement (MPS) and the 2023 Reasons paper. Fonterra has subsequently provided the Commission with reconciliations between the 2022 MPS, the figures reported in the 2023 Reasons Paper and the final values for 2023. In part, the variances in the calculation of fixed assets were caused by an omission of Right of Use lease assets in the 2023 Reasons Paper. Fonterra has stated to the Commission that the 2023 MPS will restate the opening book values to correct these variances. Fonterra has also stated that the underlying</p>

<sup>51</sup> [IDP Joint Submission "Submission on the Commerce Commission Draft report: review of Fonterra's 2022/23 base milk price calculation: Dairy Industry Restructuring Act 2001" \(15 August 2023\) p. 6-7](#)

<sup>52</sup> [IDP Joint Submission "Submission on the Commerce Commission Draft report: review of Fonterra's 2022/23 base milk price calculation: Dairy Industry Restructuring Act 2001" \(15 August 2023\) p. 11-13](#)

		<p>model calculations have included the correct book values in all instances.</p> <p>The finalised opening book value for 2021/22 has now been reported to the Commission as \$6,638.5 million and for 2022/23 as \$6,677.4 million.</p> <p>With respect to the IDP's comments on depreciation, Fonterra's reported depreciation underlying the 2023 Reason's Paper for 2022/23 is \$255.0 million, 10 % below the \$283.2 million reported for 2021/22. The IDPs appear to have mis-interpreted the (mis-reported) 2021/22 depreciation figure of \$266.5 million reported in the 2023 Reasons Paper as depreciation for 2022/23.</p>
<p><b>Joint IDP Submission</b></p>	<p>The IDPs raised concerns that the capital expenditure of \$349.4 million for 2022/23 was low.</p>	<p>The reported capex of \$349.4 million in Fonterra's 2023 Reasons Paper represents capex for 2021/22, not the current year. Nevertheless, we sought assurance from Fonterra that the appropriate escalators are included in the calculation of capex for 2022/23. Fonterra affirmed that JLL's cost escalators are included in the replacement cost figures used to determine capex.</p> <p>A four-yearly review of capital costs is to be completed by Fonterra in 2024. Fonterra noted that previous reviews generate cost estimates close to JLL's.</p>

## Attachment B

## Glossary of terms

<b>AMF</b>	Anhydrous milk fat
<b>Approach Paper</b>	Our approach to reviewing Fonterra's Milk Price Manual and Base Milk Price calculation
<b>Base milk price</b>	Price per kilogram of milk solids that is set by Fonterra for that season
<b>BMP</b>	Butter milk powder
<b>Calculation</b>	Fonterra's 2022/23 base milk price Calculation
<b>Calculation review</b>	Review of Fonterra's base milk price Calculation
<b>Dairy season</b>	1 June to 31 May
<b>DIRA, or the Act</b>	Dairy Industry Restructuring Act 2001
<b>GDT</b>	Global Dairy Trade, online auction platform used to sell dairy commodities
<b>IDPs</b>	The Independent Dairy Processors (the IDPs); Miraka, Open Country Dairy, Synlait Milk and Westland Milk Products
<b>IPC</b>	Incremental product costs
<b>ISMP</b>	Instantised skim milk powder
<b>kgMS</b>	Kilogram of milk solids
<b>Manual review</b>	Review of Fonterra's Milk Price Manual
<b>MPG</b>	Milk Price Group, the independent group responsible for calculating the base milk price
<b>Milk Price Manual or the Manual</b>	Fonterra's Farm Gate Milk Price Manual generally referred to by the version relating to each dairy season (e.g., 2022/23 Manual). The Manual contains the methodology used to calculate Fonterra's base milk price
<b>MT</b>	Metric tonne
<b>Notional Producer, or NP</b>	The notional commodity business that is used to calculate the base milk price
<b>NMPB</b>	Notional Milk Price Business, an alternative name given to the Notional Producer in Fonterra's Farmgate Milk Price Manual
<b>PTMRP</b>	Post Tax Market Risk Premium
<b>RCP</b>	Reference Commodity Product. These products, manufactured and sold by the Notional Producer, are in the Reference Basket. They are WMP, SMP, BMP, Butter and AMF
<b>Reference Basket</b>	The RCPs used to calculate the base milk price
<b>Reasons paper</b>	Fonterra's Reasons paper which is provided alongside the Manual for each dairy season (this is also provided when Fonterra discloses its base milk price calculation at the end of each dairy season)
<b>SMP</b>	Skim milk powder

<b>SRP</b>	Specific risk premium
<b>WACC</b>	Weighted average cost of capital
<b>WMP</b>	Whole milk powder

## Attachment C      Inflationary cost variances and cost drivers

Cost line	% change	Unit cost update basis	Usage rate basis
<b>Variable manufacturing costs</b>			
<b>Packaging</b>	+12.2%	Actual unit packaging costs for Milk Price base Product Specifications	Packaging usage items as per Fonterra Product Specification, Wastage as per Fonterra actuals after outlier data exclusions.
<b>Energy</b>	+21.7%	Actual rates	Actual usage rates from Milk Price Energy Audits on Fonterra Plants (Darfield/Pahiatua), equipment supplier data for Butter, AMF and BMP.
<b>Water</b>	+16.0%	Budget rates	Equipment supplier information.
<b>Cleaning &amp; CIP</b>	+24.4%	Actual rates	Equipment supplier information and Plant acceptance testing information.
<b>Consumables</b>	+86.4%	Actual rates	Equipment supplier information.
<b>Effluent</b>	+14.3%	Budget rates	Effluent kg's Fat/Protein from Milk Price Loss audit of Actual Fonterra Plants.
<b>Laboratory</b>	+2.6%	Prior year actuals + Inflation (PPI)	Unit testing requirement as per Fonterra product specification, in process testing requirements as per Fonterra actual in process costs for Benchmark plants comparable to NMPB plants.
<b>Total</b>	+20.5%		

Cost line	% change	Unit cost update basis	Usage rate basis
<b>Fixed manufacturing costs</b>			
<b>Wages &amp; ERE</b>	+6.1%	Actual rates	Staffing requirements, by level, for each of Fonterra's standard plants, Average per cent Overtime as per Fonterra's actuals, Average per cent temporary labour as per Fonterra's actuals, Average per cent Employee related expenses as per Fonterra actuals.
<b>Repairs &amp; Maintenance</b>	+10.6%	Actual rates	Actual R&M spend as a per cent of total replacement cost of eight most similar manufacturing sites of Notional Producer. Total replacement cost of Milk Price Asset Base.
<b>Energy - Fixed</b>	+2.4%	Budget rates	Equipment supplier information for peak energy demand.
<b>Site Overheads</b>	+3.1%	Actual rates	Average Direct and Indirect cost rates as per Fonterra's actuals, FTE provisions for non-plant site labour
<b>Total</b>	+7.7%		
<b>Other Cash Costs</b>			
<b>Commission</b>	+10.1%	Notional unit costs.	Calculated; Once every four years an update is made to Sales overheads.
<b>Collection Costs</b>	+10.9%	Actual rates	Calculated usage rates from production plan using asset footprint and product mix.
<b>Lactose</b>	+29.0%	Notional/actual rates	Yield calculations as per Fonterra actuals and Loss allowance based on Fonterra actuals.
<b>Inland Freight costs</b>	+10.7%	Actual rates	Calculated production volumes of each RCP at each site, with respect to actual volume milk allocated by Fonterra
<b>Other supply chain costs</b>	+2.6%	Actual/notional rate	Fixed usage rates for certain activities, reviewed at 4-year review



Cost line	% change	Unit cost update basis	Usage rate basis
<b>Storage costs</b>	13.1%	Actual rates and notional rates	Peak production MT of RCPs and lactose requirements based notional, Fixed storage
<b>Administration</b>	+3.7%	Actual rates	Adjustments to exclude activities not incurred by Notional Producer
<b>Miscellaneous costs</b>	-1146.5%	Actual rates	As incurred as per Fonterra actuals
<b>Total</b>	+16.3%		