

Review of Fonterra's 2016/17 base milk price calculation: Dairy Industry Restructuring Act 2001

Final report

The Commission: Sue Begg, Convenor
Dr Mark Berry
Dr Stephen Gale
Graham Crombie

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Executive summary

What this report covers

- X1 This report sets out our conclusions on our statutory review of Fonterra's 2016/17 base milk price calculation (the calculation).

About this review

- X2 We are required to review this calculation as part of the milk price monitoring regime (monitoring regime), under subpart 5A of the Dairy Industry Restructuring Act 2001 (the Act).
- X3 This report builds on our previous reviews of Fonterra's Milk Price Manual and base milk price calculation.¹ We have carried forward two outstanding areas for this year's calculation review for which we provide our detailed conclusions in this report. These areas are:
- X3.1 the asset beta used in calculating the weighted average cost of capital (WACC); and
 - X3.2 the amendment by Fonterra to include off-GDT sales for reference pricing for Whole milk powder (WMP), Skim milk powder (SMP) and Anhydrous milk fat (AMF).
- X4 We have published an overview of the approach we take when reviewing Fonterra's base milk price calculation in a separate paper, which is available on our website.²

Summary of conclusions

- X5 With the exception of the asset beta, we consider that the assumptions adopted, and the inputs and processes used by Fonterra to calculate the 2016/17 base milk price are consistent with the purpose of the monitoring regime as set out in s 150A of the Act.

¹ Our previous reviews can be found on our website: <http://www.comcom.govt.nz/regulated-industries/dairy-industry/review-of-fonterra-s-farm-gate-milk-price-and-manual/>

² Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" (15 August 2017). We have updated this paper as part of this review to clarify our interpretation of practical feasibility and our review roles under the Act. The paper can be found on our website at: <http://www.comcom.govt.nz/regulated-industries/dairy-industry/review-of-fonterra-s-farm-gate-milk-price-and-manual/statutory-review-of-milk-price-calculation-2/review-of-milk-price-calculation-201617-season/>

- X6 In respect of the asset beta, we are unable to conclude that the asset beta used by Fonterra, which informs our overall conclusion of the WACC component of the calculation, is not practically feasible. Our standard methodology for estimating the asset beta differs in a number of ways from that used by Fonterra. This may lead to different estimates of the beta.
- X7 We have reached a position where we cannot conclude that Fonterra's estimate is not practically feasible. We consider that progress has been made from last year as our assessment reflects an improved, yet still insufficient, information set on which to base a decision.³

Consistency with efficiency dimension

- X8 We consider that the assumptions adopted and the inputs and processes used in calculating the 2016/17 base milk price are consistent with the efficiency dimension of the s 150A purpose.

Consistency with contestability dimension

- X9 With the exception of the asset beta, we consider that the assumptions adopted and the inputs and processes used in calculating the 2016/17 base milk price are consistent with the contestability dimension of the s 150A purpose.

Asset beta

- X10 Fonterra's approach for estimating the asset beta differs from our established approach for doing so. However, we cannot conclude that an asset beta estimate of 0.38 for the Notional Producer is not practically feasible for an efficient processor with similar risk exposure.⁴

³ We note Open Country's submission on our draft report that our statutory function to review and report on the consistency of the base milk price calculation components makes it necessary for us to conclude on the asset beta in the absence of evidence to justify Fonterra's approach. However, in our view we cannot conclude on the asset beta where we consider that the presented evidence does not enable us to reach a view on a proper evidential basis. Open Country "Response to the Commerce Commission's Draft Review of Fonterra's 2016/17 Base Milk Price Calculation: The Asset Beta" (1 September 2017), p.4.

⁴ As discussed in paras 2.24 to 2.38 below, we consider that the risk exposure of the Notional Producer is appropriate for determining the asset beta of an efficient processor.

- X11 The asset beta estimate of 0.38 for the Notional Producer differs from the sample mean range of 0.48 – 0.52.⁵ Our assessment to date suggests that there is some evidence to support choosing an asset beta that is below the sample mean. However, at this point we do not consider the evidence is robust enough to support Fonterra's estimate of 0.38.
- X12 We consider our approach for estimating asset beta is appropriate in this instance and for this sector. We therefore anticipate basing our future milk price reviews on this approach. We continue to consider that relying on a sample of dairy comparators is appropriate and welcome robust information to inform our future assessment of both the composition of the sample, and the rationale for any departure from the mean estimate of beta of that sample.

Inclusion of off-GDT sales as a reference for calculating WMP, SMP and AMF prices

- X13 We have concluded that the inclusion of off-GDT reference sales is consistent with the efficiency dimension.
- X14 After completing further analysis in our 2016/17 calculation review, we consider the amendment to include Fonterra off-GDT sales as a reference for prices used for the Notional Producer is practically feasible for Fonterra and an efficient processor. We consider that Fonterra has included the necessary costs for the Notional Producer as a result of including off-GDT sales for WMP, SMP and AMF.
- X15 We welcome Fonterra's commitment to additional disclosures in support of inclusion of off-GDT reference sales.⁶ These were set out in Fonterra's submission on our draft report and are summarised in Table X1.

⁵ Fonterra refined its sample in its submission on our draft report, and reports updated means that range from 0.47 to 0.53, depending on the observation intervals used.

⁶ As provided in Fonterra "Review of Fonterra's 2016/17 Base Milk Price Calculation" (1 September 2017) Attachment 2.

Table X1 Summary of Fonterra's additional disclosures in support of the inclusion of off-GDT sales

Area	Fonterra's additional disclosures
Off-GDT sales impact	Fonterra has advised that it intends to disclose the cents per kgMS impact from the inclusion of the additional off-GDT sales for the full year in the annual Milk Price Statement.
Selling prices	Fonterra also intends to disclose the average full season GDT selling prices for each Reference Commodity Product (RCP) in the annual Milk Price Statement.
Transparency of off-GDT sales criteria	Fonterra has advised that it intends to include definitions of "standard packaging", "specialised plant or technical resources", and "standard product offerings" in its Milk Price Manual.

X16 We note the importance of timeliness of such disclosure. We consider that *ex-post* disclosure four months after the end of a season on its own is less valuable to interested parties than if reference sales information was also provided during the season.

X17 We consider it useful for interested parties to have contemporaneous transparency on the impact of the use of off-GDT sale prices as a reference for the sales of the Notional Producer. In this respect Fonterra has confirmed to us that it will continue to provide quarterly information in its quarterly Global Dairy Update (GDU). We discuss this further in Chapter 2.

X18 The effectiveness of Fonterra's disclosures is still to be tested in practice in future seasons. We have noted the concerns of Independent Processors (IPs) and the responses from Fonterra in Chapter 2 for future reference.

Other revenue and cost components

X19 We did not identify any inconsistencies with our previous analysis of other components of the base milk price calculation model in our 'fit for purpose' review.

X20 As we did not find any inconsistencies with our previous analysis of other components of the calculation, we have relied on our past conclusions. We have summarised our past conclusions in this report. A summary of our past conclusions can be found in Table 2.6, Chapter 2.

Recommendations to Fonterra

X21 To assist us to conclude on the consistency of the asset beta with the contestability dimension of the s 150A purpose in the milk price setting, we recommend Fonterra provide detailed evidence of the extent to which firms in the sample transfer price risk to farmers or others, and how this compares to a Notional Producer that fully passes through that risk. We need to be satisfied that stakeholders have made all reasonable efforts before concluding that obtaining this information is not possible or proportionate.⁷

Engagement with interested parties

X22 We appreciate the willingness of stakeholders to engage with us during our review, including the recent workshop. This has assisted us with our review of the calculation.⁸

⁷ We note Fonterra's view that it is difficult to obtain this information. Fonterra "Draft report submission: Review of Fonterra's 2016/17 base milk price calculation" (1 September 2017)", para 7. We also acknowledge the additional information on the conditions that they consider would have to be present in order for processors to be able to transfer output risk to farmers (or others). We are not persuaded that this additional information supports the conclusion that most comparators will have limited ability to transfer systematic risk to suppliers. Rather, some of the information appears not to support the conclusion. However, we consider that such efforts can help us better understand the comparators in the sample and how much weight to place on them.

⁸ We decide on the extent of our consultation with stakeholders afresh each year (over and above the mandatory consultations with Fonterra) depending on whether or not the consultations may be likely to assist our reviews. We have not made a decision on whether or not to hold another workshop in next year's review.

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 2016/17 base milk price calculation (the calculation) is consistent with the purpose of the milk price monitoring regime (monitoring regime) in the Dairy Industry Restructuring Act 2001 (the Act).
- 1.2 This report is supported by a separate paper (the Framework paper). This provides an overview of the approach we have taken in reviewing the calculation for the 2016/17 dairy season, including:
 - 1.2.1 an overview of how the base milk price is set;
 - 1.2.2 our interpretation of key legislative provisions guiding our views; and
 - 1.2.3 our practical approach to the statutory reviews we undertake.⁹

Scope of our review of the 2016/17 calculation

- 1.3 The key focus areas for this year's review are:
 - 1.3.1 asset beta; and
 - 1.3.2 Fonterra's amendment in including off-GDT sales as a reference for calculating WMP, SMP and AMF prices.
- 1.4 In order to complete our review of key focus areas, we have carried out the assessments set out in Chapter 3 of the Framework paper.¹⁰ We have also carried out a 'fit for purpose' review as set out in that paper of other revenue and cost components (ie, the other inputs, processes and assumptions in the calculation) that are not part of this more detailed analysis.¹¹

⁹ Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" (15 August 2017). We have updated this paper as part of this review. We have updated the paper to clarify our interpretation of practical feasibility and our review roles under the Act given the submissions by IPs on these matters. These updates can be found in paras 21-27 and 38-42 of the paper.

¹⁰ Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" (15 August 2017). paras 76-88.

¹¹ Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" (15 August 2017, paras 73-74.

- 1.5 As stated in the Framework paper, our review builds on conclusions from our previous reviews.

This year's review process

- 1.6 We notified interested parties of our approach for the calculation on 7 April 2017.¹²
- 1.7 As part of this year's review, we held a workshop on selected topics on 23 May 2017.
- 1.8 The purpose of the workshop was to obtain further information and to facilitate meaningful engagement with interested parties on our focus areas for the calculation.¹³
- 1.9 The workshop was attended by milk processors and their experts, our Commissioners, and Commission staff. This was the first workshop held in our five years of completing the statutory reviews of Fonterra's Milk Price Manual and calculation.
- 1.10 We found the workshop useful in engaging with stakeholders, gathering information for our review by hearing participants' views and found common ground on some issues while narrowing differences on others.
- 1.11 We also provided interested parties with an opportunity to comment on Fonterra's Reasons paper and our emerging views on the practical feasibility of the asset beta.
- 1.12 In addition to the statutory requirement to consult with Fonterra on our draft report, we have provided an opportunity for interested parties to consult on our draft report.
- 1.13 We have appreciated the willingness of stakeholders to engage with us on our review. This has again assisted us in our review of the calculation.¹⁴

¹² Commerce Commission "Notification email – process and approach for our review of Fonterra's 2016/17 base milk price calculation" (7 April 2017).

¹³ We also provided independent processors with an opportunity to present their concerns on practical feasibility and transparency.

¹⁴ We decide on the extent of our consultation with stakeholders afresh each year (over and above the mandatory consultations with Fonterra) depending on whether or not the consultations may be likely to assist our reviews.

Information considered in our review process

- 1.14 In reaching our conclusions we considered:
- 1.14.1 information Fonterra provided to us under s 150T of the Act (Fonterra's Reasons Paper on review of 2016/17 base milk price calculation published on 19 July 2017);¹⁵
 - 1.14.2 materials produced for the workshop;¹⁶
 - 1.14.3 comments received from interested parties on the workshop held on 23 May 2017;
 - 1.14.4 comments received on our emerging views paper on asset beta published on 20 July 2017;
 - 1.14.5 submissions received on our draft report;¹⁷ and
 - 1.14.6 additional documentation that Fonterra has provided to us during the course of our review.

How this report is structured

- 1.15 Chapter 2 sets out the conclusions of our review of key focus areas and our 'fit for purpose' review of other revenue and cost components.
- 1.16 Key terms and abbreviations are explained in more detail in the Glossary in Attachment A.

¹⁵ Fonterra "'Reasons' Paper in support of Fonterra's base milk price for the 2016/17 Season" (1 July 2017) available at <http://www.comcom.govt.nz/review-of-milk-price-calculation-201617-season/>

¹⁶ Details of the workshop and workshop materials can be found on our website: <http://www.comcom.govt.nz/review-of-milk-price-calculation-201617-season/>

¹⁷ Fonterra "Draft report submission: Review of Fonterra's 2016/17 base milk price calculation" (1 September 2017); Open Country "Response to the Commerce Commission's Draft Review of Fonterra's 2016/17 Base Milk Price Calculation: The Asset Beta" (1 September 2017).

Chapter 2 Conclusions

Purpose of this chapter

- 2.1 In this chapter we outline our conclusions on the consistency of the components of the calculation with the s 150A purpose statement.

Our conclusions

- 2.2 With the exception of asset beta, we consider that the assumptions adopted, the inputs and processes used by Fonterra to calculate the 2016/17 base milk price are consistent with the efficiency and contestability dimensions of the s 150A purpose statement.
- 2.3 The assumptions adopted and the inputs and processes used in calculating the 2016/17 base milk price are consistent with the efficiency dimension of the s 150A purpose.¹⁸
- 2.4 With the exception of the asset beta, the assumptions adopted and the inputs and processes used by Fonterra to calculate the 2016/17 base milk price are consistent with the contestability dimension of the s 150A purpose.¹⁹
- 2.5 In reaching our conclusions on contestability, we have made the following assessments:
- 2.5.1 We reviewed the asset beta estimate and reached a position where we cannot conclude that an estimate of 0.38 for the Notional Producer is not practically feasible for an efficient processor with similar risk exposure. Therefore, we cannot conclude that Fonterra's estimate of the WACC is not consistent with the contestability dimension.

¹⁸ We have previously stated that, in some instances, the use of actual performance data in calculating the base milk price is reasonable. However, the incentive to operate efficiently is potentially weaker than if notional data was used. We have concluded in previous reports on the consistency with the efficiency dimension where Fonterra has used actual data. This is summarised in our 2015/16 calculation review: Commerce Commission "Final report: review of Fonterra's 2015/16 base milk price calculation review" (15 September 2016), para 3.6.

¹⁹ With respect to the capital charge related components, we have previously concluded that it was appropriate to consider these components together. As a whole, the assumptions adopted and the inputs and processes used in the calculation of the capital charge provide a practically feasible outcome that satisfies the contestability dimension: See Commerce Commission "Final report: review of Fonterra's 2015/16 base milk price calculation review" (15 September 2016), para 4.112.2.

- 2.5.2 We have concluded that the prices used for the Notional Producer are practically feasible and consider that Fonterra has included the necessary costs for the Notional Producer as a result of including off-GDT sales for WMP, SMP and AMF.
 - 2.5.3 We have performed a 'fit for purpose' review on the other revenue and cost components of the Calculation.
 - 2.5.4 We have not identified any inconsistencies in assumptions, inputs or processes with each other.
 - 2.5.5 We consider that the calculation of the individual components of the 2016/17 base milk price is consistent with the 2016/17 Manual provisions.
- 2.6 Further details on our assessments of key focus areas and 'fit for purpose' reviews of other revenue and cost components are provided below.

Asset beta

- 2.7 We consider that the asset beta (and therefore the WACC estimate) is consistent with the efficiency dimension. The WACC rate is notional because it is an estimate of the market-determined cost of capital.
- 2.8 Regarding the contestability dimension, we note that Fonterra's approach for estimating asset beta differs from our established approach for doing so, and therefore also from the estimate we would likely get. We have reached the position where we cannot conclude that Fonterra's asset beta estimate of 0.38 for the Notional Producer is not practically feasible for an efficient processor with similar risk exposure. Therefore, given the materiality of the asset beta in the WACC, we cannot conclude that Fonterra's overall estimate of the WACC is not consistent with the contestability dimension.²⁰ We explain our reasons below.

²⁰ As discussed in paras 2.24 to 2.38 below, we consider that the risk exposure of the Notional Producer is appropriate for determining the asset beta of an efficient processor.

Background to our assessment on the practical feasibility of the asset beta

- 2.9 In our Final Report on the 2015/16 base milk price calculation review (15 September 2016), we were unable to conclude on the practical feasibility of the asset beta used by Fonterra in its calculation of the base milk price, as we considered there was insufficient evidence to justify a downward adjustment to 0.38 from the mid-point estimate of beta from the comparator companies (0.51).²¹
- 2.10 We subsequently signalled in our Final Report on the 2016/17 Milk Price Manual review (14 December 2016) that we would seek to resolve the asset beta issue in the 2016/17 base milk price calculation review, including whether we should assume a shifting of the commodity price risk to farmers in a way that would justify the indicated downward adjustment in the asset beta.²²
- 2.11 As part of our current review:
- 2.11.1 we obtained further information from Fonterra and Independent Processors (IPs) on the asset beta issue;
 - 2.11.2 held a workshop with Fonterra and IPs on the issue and published an emerging views paper;
 - 2.11.3 received follow-up submissions on the workshop and our emerging views paper; and
 - 2.11.4 considered submissions received on our draft report.

²¹ Commerce Commission "Final Report: Review of Fonterra's 2015/16 base milk price calculation" (15 September 2016), para 4.56.

²² See footnote 22 of final report on the 2016/17 Milk Price Manual review (14 December 2016).

Our conclusions on the practical feasibility of the asset beta

- 2.12 We take a pan-sector approach to the cost of capital and have an established approach for calculating and assessing the WACC, which we adopt across all sectors we regulate, including those regulated under Part 4 of the Commerce Act (electricity and gas networks, and airports) and telecommunications. This approach was established following extensive consultation with interested parties and was thoroughly tested in the Part 4 merits appeals to the High Court.²³
- 2.13 We continue to view that approach as the best one to estimate the WACC,²⁴ and we do not depart from it lightly. This approach places most weight on the comparator sample. It allows for departures from the sample mean.
- 2.14 We note that Fonterra's approach to estimating the asset beta differs from our approach in a number of ways. This may lead to different estimates of the beta. While we may choose a different method for estimation and review, Fonterra is entitled to adopt its own approach to estimate the beta. As mentioned in the Framework paper, it is not our role to develop or suggest alternative approaches that we consider would better promote the efficiency and contestability purposes under s 150A.
- 2.15 Fonterra has maintained last year's asset beta estimate of 0.38 for the Notional Producer. Our task is to consider whether this estimate is practically feasible for an efficient processor (ie, the contestability dimension).²⁵

²³ That pan-sector approach to estimating the cost of capital commenced with the release of the draft cost of capital guidelines in 2005, and led to the cost of capital input methodologies for electricity lines, gas pipelines and specified airport services in December 2010. It also underlines our approach to estimating the cost of capital for the final pricing principle for UCLL and UBA in December 2015. The Part 4 Merits Review decision was reported in *Wellington International Airport Ltd & Others v Commerce Commission* [2013] NZHC 3289 (11 December 2013).

²⁴ Commerce Commission "Input methodologies review decisions, Topic paper 4: Cost of capital issues" (20 December 2016).

²⁵ Last year we concluded that Fonterra's asset beta was consistent with the efficiency dimension.

- 2.16 The asset beta estimate of 0.38 for the Notional Producer is a material departure from the sample mean of 0.48 – 0.52, albeit within a standard deviation.²⁶ Our assessment to date suggests that there may be good reasons to go below the sample mean. However, at this point we do not consider the evidence is robust enough to support the extent of the specific departure implied by Fonterra’s estimate.
- 2.17 Instead, we have reached a position where we cannot conclude that an asset beta estimate of 0.38 for the Notional Producer is not practically feasible for an efficient processor with similar risk exposure.²⁷
- 2.18 To explain, there is insufficient information about the sample to support a positive finding. Specifically, there is insufficient information on the extent to which firms in the sample transfer output price risk to farmers or others, and how this compares to a Notional Producer that fully passes through that risk.
- 2.19 The evidence, however imperfect, does provide some support for Fonterra’s view that the asset beta for the Notional Producer should be lower than the sample mean of the comparator companies, but is not in our view sufficient to positively conclude that Fonterra’s point estimate of 0.38 is practically feasible.
- 2.20 This is because we place a low level of confidence on the accuracy of the asset beta estimates from the sub-sample of businesses which pass on pricing risk to farmer suppliers, given our doubts on the quality of the information upon which we constructed the sub-sample.²⁸

²⁶ Fonterra refined its sample in its submission to our draft report, and reports updated means that range from 0.47 to 0.53, depending on the observation intervals used.

²⁷ We note Open Country’s submission on our draft report that our statutory function to review and report on the consistency of the components of the base milk price calculation makes it necessary for us to conclude on the asset beta in the absence of evidence to justify Fonterra’s approach. However, in our view we cannot conclude on the asset beta where we consider that the presented evidence does not enable us to reach a view on a proper evidential basis. Open Country "Response to the Commerce Commission’s Draft Review of Fonterra’s 2016/17 Base Milk Price Calculation: The Asset Beta" (1 September 2017), p.4.

²⁸ To inform the reasonableness of Fonterra’s adjustment, we attempted to refine the sample using Fonterra’s additional pricing information for some of the comparators in the sample.

- 2.21 We note that Fonterra maintains the view that our approach for "estimating asset beta is of limited usefulness in this instance ... and consider it more appropriate in this instance to place primary emphasis on Electricity Distribution Businesses (EDBs)."²⁹ As explained in para 2.95, we are not persuaded that we should change our approach. Specifically, we are not persuaded of the appropriateness of placing primary weight on the estimate of beta for the EDBs, but do consider they provide an informative reasonableness check, as potentially do Gas Pipeline Businesses (GPBs) or other sectors regulated or unregulated that have characteristics in common with the Notional Producer.
- 2.22 We consider that progress has been made from last year, as our assessment reflects an improved (yet insufficient) information set on which to base a decision.

Further information to help reach a more definitive conclusion on the asset beta

- 2.23 We consider the following information will likely help us reach a more definitive conclusion:
- 2.23.1 Detailed evidence of the extent to which firms in the sample of dairy processors transfer risk and especially systematic risk to others, and how this compares to a Notional Producer that fully passes through that risk (largely to farmers). We need to be satisfied that stakeholders have made all reasonable efforts before concluding that obtaining this information is not possible or proportionate.
- 2.23.2 We would welcome IPs' engagement in the empirics. It would also be helpful for a third party, such as IPs, to validate or otherwise Fonterra's statement that:³⁰

"In no other jurisdiction are the milk prices paid by any processor, let alone the market-leading processor, governed by a milk price mechanism like the Milk Price Manual which results in the mechanistic translation of average realised commodity prices into a milk price."

²⁹ Fonterra "Draft report submission: Review of Fonterra's 2016/17 base milk price calculation" (1 September 2017), paras 20-21.

³⁰ Fonterra "2016/17 base milk price calculation review workshop – responses to Commission's request for follow-up comments: Attachment A", p.7.

Allocation of commodity price risk for purposes of the Act

Consistency with s 150C and s 150A

2.24 In our reviews to date of Fonterra's Milk Price Manual, we have concluded that the Manual has been largely consistent with the statutory purpose set out in s 150A of the Act. Inherent to the Manual is an assumption that the Notional Producer (or any other New Zealand commodity milk processor) could shift the risk of changes in international commodity product prices to farmer suppliers via changes in the base milk price.

2.25 This risk allocation under the Manual is consistent with the basis on which the base milk price is required to be determined under the Act; namely, the difference between the revenues achieved for sales of commodities and the efficient costs of producing and selling those commodities. In particular, s 150C(1) requires:

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 [Fonterra]:
- (b) 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

2.26 As a result of this mandatory requirement, the actual commodity prices achieved by Fonterra go into milk price. The risk of changes in commodity prices also goes into the milk price and is therefore borne by its farmer suppliers.

2.27 We therefore consider that it is a necessary implication of the mandatory principles in s 150C that the Notional Producer should be assumed to transfer the commodity price risk to farmers. As the Notional Producer constructed by Fonterra under its Milk Price Manual transfers commodity price risk to farmers in the way directed by s 150C, we consider that the purpose of s 150A will be met if Fonterra's asset beta is appropriate for the Notional Producer.

- 2.28 We note that the IPs disagree with our interpretation of the effect of s 150C.³¹ We have therefore also considered the level of commodity price risk that can practically feasibly be achieved by a New Zealand processor without assuming this follows automatically from s 150C. In our view this assessment does not require a real world processor in New Zealand that actually assumes that level of commodity price risk, but only that it is practically feasible for an efficient processor to do so.
- 2.29 Dr Alastair Marsden (on behalf of Fonterra) argues that "the Manual process results in all NZ processors being able to pass through to suppliers their milk price benchmark levels of commodity price risk, foreign exchange risk, milk supply (or volume) risk and the industry-wide cost risk."³²
- 2.30 Fonterra, in its Reasons paper in support of Fonterra's base milk price for the 2016/17 season, makes essentially the same argument:³³
- Fonterra's milk price, and by extension the milk price paid by Synlait, is established under a quasi-regulatory 'building block' mechanism that by design passes most sources of variances in total returns which might be expected to be systematic through into the milk price. In no other jurisdictions are the milk prices paid by any processor, let alone the market-leading processor, governed by a milk price mechanism like the Milk Price Manual which results in the mechanistic translation of average realised commodity prices into a milk price.
- 2.31 Consistent with Fonterra's position, our view is that there is no reason why it would not be possible for an efficient commodity processor in New Zealand to assume substantially the same commodity price risk as the Notional Producer. In particular, if Fonterra is able to shift commodity price risk to its farmer suppliers, there does not appear to be any reason why other processors could not do the same.
- 2.32 The commodity price risk has to be borne by either the processor or the farmer (or someone else). So if one party reduces the risk it bears, the other party bears more. If a processor transfers risk to the farmer and can therefore pay the farmer a higher price, then the higher price received by the farmer is subject to greater risk. Ie, the risk-adjusted price received by the farmer has not changed. This means many possible combinations of risk borne by the farmer versus the supplier (or potentially others) are possible, and each is feasible.

³¹ For example see Open Country Dairy "Response to the Commerce Commission's Draft Review of Fonterra's 2016/17 Base Milk Price Calculation: The Asset Beta" (1 September 2017), page 3.

³² Dr Alastair Marsden "Asset Beta for Fonterra's Notional Business: Comments on questions raised by the Commerce Commission in the Milk Price Calculation Workshop" available at p.1 of Attachment A.

³³ Fonterra "'Reasons' Paper in support of Fonterra's base milk price for the 2016/17 Season" (1 July 2017), p.42.

- 2.33 Whether an actual processor elects the same commodity price risk exposure as the Notional Producer is another matter. We would expect that if it chose to structure or organise itself differently, it would be because that affords a competitive advantage over the Notional Producer (eg, it may be able to attract more risk averse farmers by offering a less volatile, but lower, price) and so the risk exposure assumptions of the Notional Producer are consistent with promoting contestability.
- 2.34 Our view is that it is possible for a processor to transfer the commodity price risk to its farmer suppliers in the same way as the Notional Producer.
- 2.35 Our above position is also supported by evidence that some processors do transfer commodity price risk to farmers by paying them *ex-post* a milk price that is residual of commodity revenue and notional costs for the year. This fact appears to be accepted in the submissions of IPs, although it is asserted this is only the case for a limited subset of processors (co-operatives or a narrow set of contract processors).³⁴
- 2.36 There are currently New Zealand dairy processors besides Fonterra who operate in a co-operative structure such as Westland. We have also observed dairy processors in addition to Fonterra that transfer commodity price risk to farmer suppliers by paying them *ex-post*, or adjusting their prices both during the season and at the end of the season, like Synlait in New Zealand and Murray Goulburn in Australia.³⁵
- 2.37 We further note Fonterra's views that a commodity milk powder manufacturer would be exposed to higher earnings volatility than Fonterra or the Notional producer because it would be unable to perfectly replicate Fonterra's (or the Notional Producer's) sale phasings, contract phasings or foreign exchange (FX) hedging profile, but that this is not systematic risk.³⁶ However in our view, even if Fonterra is wrong, we do not consider that the Act anticipates or requires a processor to mimic Fonterra's sales schedule. In particular, we consider that there is no reason why a new large entrant cannot achieve what Fonterra can in commodity markets without mimicking Fonterra's sales schedule.

³⁴ Open Country, Miraka, Synlait "Milk Price Calculation Workshop: Follow-up Comments", p.5.

³⁵ See <https://www.nzx.com/companies/SML/announcements/302707>, Synlait revises 2016/2017 forecast milk price. Murray Goulburn is a co-operative and the largest milk processor in Australia.

³⁶ Fonterra "Reasons Paper in support of Fonterra's base milk price for the 2016/17 Season" (3 July 2017), p.42.

2.38 As we consider that it is both required by s 150C and practically feasible for an efficient commodity processor in New Zealand to structure or organise itself so that it substantially matches the commodity price risk exposure as assumed for the Notional Producer, we go on to consider the asset beta proposed for the Notional Producer.

Our approach for estimating the asset beta under Part 4 of the Commerce Act

2.39 Our approach for estimating asset (and equity) betas for sectors regulated under Part 4 of the Commerce Act (electricity and gas networks, and airports) has remained largely unchanged since 2010. It was established following extensive consultation with interested parties and was tested in merits appeals to the High Court, heard in 2012 and 2013.³⁷ We reviewed and confirmed this approach last year in our review of the Input Methodologies.

2.40 Beta is not directly observable so we estimate it empirically. We use historic estimates of average betas because beta is expected to be relatively stable over time and historic betas are indicative of future betas.

2.41 For firms with traded stocks, the beta for the firm can be estimated directly from the historical returns on those stocks, relative to the market's return. However, there are practical difficulties when reliably estimating betas. For example, Fonterra and Synlait are the only publicly listed processors in New Zealand. We therefore consider it necessary to use a sample of international comparator firms when estimating beta.

2.42 Under our approach, we follow a six-step process for estimating beta:³⁸

Step 1: Identify a sample of relevant comparator firms.

Step 2: Estimate the equity beta for each firm in the sample.

Step 3: De-lever each equity beta estimate to get an estimated asset beta for each firm in the sample.

Step 4: Calculate an average asset beta for the sample.

³⁷ See <http://www.comcom.govt.nz/regulated-industries/input-methodologies-2/judgments/>

³⁸ Commerce Commission "Input methodologies review decisions - Topic paper 4: Cost of capital issues" (20 December 2016), para 266.

- Step 5: Apply any adjustments for regulatory differences or differences in systematic risk across services to the average asset beta for the sample.
- Step 6: Re-lever the average asset beta for the sample to an equity beta estimate using the Commission's assumed notional leverage.

2.43 Key attributes of our approach to WACC estimation include (where possible) to:

- 2.43.1 favour empirical evidence over theory;³⁹
- 2.43.2 construct as large a sample as reasonably possible with comparators from the same industry. This limits the need to make subjective judgement calls regarding whether each of the companies in the sample should be included;⁴⁰
- 2.43.3 use the sample average as a starting point, and only depart from it where there are sound reasons for doing so (as per step five above);
- 2.43.4 avoid placing too much weight on a single comparator, including the observed estimate of the company subject to the estimation; and
- 2.43.5 account for uncertainty over the risk parameters through the use of an estimate above the mid-point where the consequences of misestimating WACC are asymmetric and material.

How we have assessed Fonterra's estimate

- 2.44 The nature of our involvement in Fonterra's WACC is different to our WACC work in other regulated sectors. Here, we do not estimate the WACC and its parameters ourselves, but rather assess whether Fonterra's own estimation is consistent with the Dairy Industry Restructuring Act (DIRA) purpose in s 150A.
- 2.45 Nevertheless, we consider that it is desirable to maintain cross-sectoral methodological consistency in how we estimate (or assess others' estimates) of WACC parameters. Among other benefits, this promotes regulatory predictability and certainty.

³⁹ In the IM review, we did not change EDBs asset betas as a result of the change in the form of control. We did not find empirical evidence that companies under revenue caps exhibited lower asset betas compared to those under price caps, even though theory suggests asset betas should be lower.

⁴⁰ Commerce Commission "Input methodologies review decisions - Topic paper 4: Cost of capital issues" (20 December 2016), para 277.

- 2.46 Fonterra's comparator sample of other dairy firms was the starting point of our assessment. As discussed, relying on market evidence is our standard practice and consistent with our WACC assessments for other regulated sectors, where we rely on market evidence from a sample of businesses from the same industry. Our starting point is the sample mean.
- 2.47 We rarely find a comparator sample that is a very close match to the business of interest, but we consider that it generally provides a reasonable first approximation. Step five of our approach allows adjustments for differences in systematic risk between the business of interest and the average asset beta for the sample.
- 2.48 We note and welcome that Fonterra's expert (Dr Marsden) intended to use an approach consistent with the one we used in the latest review of the cost of capital Input Methodology when determining the composition and treatment of the sample.⁴¹ However, after a non-exhaustive review, we noticed the following exceptions:⁴²
- 2.48.1 We generally average asset beta across weekly and four-weekly estimates for the two most recent five-year periods.⁴³ In contrast, Dr Marsden uses weekly estimates for a two-year period and four-weekly estimates for a five-year period. Therefore, Dr Marsden uses observation intervals which are different from our preferred approach.
- 2.48.2 Open Country's submission to our emerging views paper pointed out that Bright Dairy & Food Co was the parent company of Synlait and queried its inclusion in the sample.⁴⁴ We agree. Consistent with our approach to WACC, where a parent company and subsidiary are captured in the sample, we only use the most relevant comparator.⁴⁵

⁴¹ Commerce Commission "Input methodologies review decisions, Topic paper 4: Cost of capital issues" (20 December 2016), chapter 4.

⁴² For example, in terms of sample composition, we have not assessed whether any relevant comparators were excluded, or any irrelevant ones included.

⁴³ This is not a hard rule, but rather a judgement call that should be informed by the relevant specific circumstances and context.

⁴⁴ Open Country "Open Country Dairy Response to the Commerce Commission's Emerging Views on Asset Beta".

⁴⁵ Commerce Commission "Input methodologies review decisions - Topic paper 4: Cost of capital issues" (20 December 2016), para 282.

- 2.48.3 The Murray Goulburn estimate using four-weekly betas with five years of data is -0.59. We consider this to be an extreme outlier.⁴⁶ We consider it might be best if it were excluded from the sample.
- 2.49 The effect of applying the last two changes above is to produce a sample mean of 0.51, across both sets of observation intervals and estimation frequencies.
- 2.50 However, in relation to the first point above, we have not gathered data for the two most recent five-year periods. Doing so may result in different sample means, and therefore asset beta estimate.
- 2.51 We note and welcome that Fonterra have incorporated two of our three observations above. Namely, they refined the sample by excluding Bright Dairy & Food and the Murray Goulburn estimate using four-weekly betas with five years of data. In addition, they created a sub-sample of 22 companies with "significant dairy operations", and considered the impact of further removing some companies that they considered less comparable.⁴⁷
- 2.52 The impact of all these adjustments to the resulting sample means is moderate; resulting in a slightly expanded range of 0.47 to 0.53, depending on the observation intervals used. Their adjusted averages are slightly lower, ranging from 0.47 to 0.49.
- 2.53 However, Fonterra does not appear to have incorporated the first of our three points, relating to the observation intervals. Doing so may result in different beta estimates. Having this additional information would offer us an expanded information set, and therefore help with our decision making.

⁴⁶ Dr Marsden acknowledges that the "extreme variation in the betas observed for Murray Goulburn suggests there is a lot of 'noise' in the empirical estimate".

⁴⁷ We would like to understand how do these companies get their inputs and why is it that their ability to transfer systematic risk to suppliers differs from the rest.

Open Country's submission on our emerging views paper

- 2.54 In its submission on our emerging views paper, Open Country considered that:
- 2.54.1 Fonterra has a strong incentive to under-estimate the costs of the Notional Processor, and hence to over-estimate the milk price;⁴⁸
 - 2.54.2 aside from the above point, the consequences of errors in estimating the costs of the Notional Processor (and therefore the milk price) are asymmetric;⁴⁹ and therefore,
 - 2.54.3 it should be consistent with the Commission's best practice to adjust the asset beta upwards from the mid-point.⁵⁰
- 2.55 Subsequently, in its submission to our draft report, Open Country reiterated their view that Fonterra has an incentive to lower the asset beta.
- 2.56 As mentioned in our draft report, we agree with Open Country that Fonterra may have an incentive to under-estimate the costs of the Notional Processor, but remain of the view that considering it as a strong incentive is overstated for the reasons listed below. As mentioned in the draft report, in our 2016 Dairy competition review we considered Fonterra's incentive and ability to restrict IPs from accessing farmers at length.⁵¹ We concluded that, while Fonterra may have some incentive to restrict IPs from accessing farmers, we considered it is limited in its ability to do so. Constraints on Fonterra's incentive and ability to exclude IPs through a high milk price include:
- 2.56.1 the importance to Fonterra of its Trading Among Farmers (TAF) scheme;
 - 2.56.2 a need to reconcile the divergent interests of its supplier shareholders, outside investors and contract suppliers; and
 - 2.56.3 a need to fund its capital programme and maintain a sustainable business.

⁴⁸ Open Country "Open Country Dairy Response to the Commerce Commission's Emerging Views on Asset Beta", p.1.

⁴⁹ Open Country "Open Country Dairy Response to the Commerce Commission's Emerging Views on Asset Beta", p.2.

⁵⁰ Open Country "Open Country Dairy Response to the Commerce Commission's Emerging Views on Asset Beta", p.5.

⁵¹ Commerce Commission "Review of the state of competition in the New Zealand Dairy Industry: Final Report (1 March 2016)", paras X32-X36.

- 2.57 Putting aside whether or not there is an incentive to under-estimate, the risk of error in estimating asset beta is symmetric (ie, it is as likely to under-estimate the parameter relative to its 'true' value as it is to over-estimate it).
- 2.58 Regarding the asymmetric consequences of unintentionally misestimating the milk price, we consider this is not comparable to the situation in some sectors regulated under Part 4 of the Commerce Act. The magnitude of the consequences (ie, less contestability) associated with estimation error appear substantially lower in this context compared to those in the regulation of energy networks (ie, long-term consequences from under-investment).⁵²
- 2.59 An erroneous underestimation of asset beta, leading to a milk price 'unduly' above the competitive price, could be argued to harm contestability. However, Fonterra still has to invest to collect and process new milk, unlike in Part 4, where the risk is that no one invests. And while we accept the risk of reduced contestability at the margin (eg, an IP could have been more efficient in that marginal investment for new milk), we consider that the DIRA regime acts to counter some of the drawbacks from lack of contestability (eg, the regime places incentives on Fonterra to improve efficiency).
- 2.60 Another reason why this is not comparable to the situation in some sectors regulated under Part 4 is that in the current context, this misestimation of risk is tempered by the annual 'resetting' of the milk price and underlying parameters (ie, a grossly 'distorted' price would be unlikely to outlive several Manual/base milk price reviews, also because the risk of estimation error is symmetric). An 'unduly' low energy WACC used for price setting is fixed for five years and can have negative long-term consequences for consumers from under-investment, including outages.

⁵² A severe outage event resulting from underinvestment could result in a cost with an annualised economic value equivalent to over NZ\$1bn. Source: Oxera "Input methodologies: Review of the '75th percentile' approach" (23 June 2014), p.6.

- 2.61 Furthermore, consistent with our approach in Part 4, the estimation error needs to be material in magnitude and duration to justify an uplift.⁵³

In the Part 4 context for electricity and gas, we assumed that a sustained differential of 0.5–1% between the true cost of capital and the allowed WACC could trigger a material under-investment problem. In other words, it is not necessarily the case that companies would stop carrying out all investment necessary to maintain service levels and reduce the risk of network outages as soon as the allowed WACC was expected to be below the true WACC. Rather, there needed to be a sustained margin between the allowed WACC and the true WACC for the under-investment problem to be triggered. We used the concept of ‘probability of loss’ to capture this effect in our assessment.

- 2.62 Lastly, we did not apply an uplift to the WACC in our 2015 telecommunications pricing review.⁵⁴ Then, as now, we were not persuaded that there were significant consequences of a WACC that was too low compared to one that was too high.
- 2.63 Therefore, we do not consider the case for an asset beta uplift has been made.
- 2.64 Open Country also submitted that "Synlait ... provides the most relevant and robust information", implying that most weight should be placed on it, adding that:⁵⁵

Given the difficulty in constructing a useful and relevant comparator sample, we believe the Commission should carefully consider whether it is possible to improve on the accuracy of simply observing Synlait's beta over the longest possible time period.

- 2.65 As mentioned, we would not depart from our approach without compelling reasons. Under our approach, we use the comparator sample as the starting point and we avoid placing too much weight on a single comparator. This is to minimise the statistical unreliability potentially associated with an estimate from a single firm (eg, the negative asset beta value for Murray Goulburn in Dr Marsden's data).
- 2.66 We have asked and remain open to evidence on the usefulness of the sample (ie, the extent to which firms in the sample transfer output price risk to farmers or others).

⁵³ Oxera "Is a WACC uplift appropriate for UCLL and UBA?" (June 2015), p.31.

⁵⁴ Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews" (15 December 2015).

⁵⁵ Open Country "Open Country Dairy Response to the Commerce Commission's Emerging Views on Asset Beta", p.7.

- 2.67 Finally, Open Country submitted that the five-year average using four-weekly data for Synlait should be used to estimate the asset beta. As mentioned above, when we last considered it in depth, we considered it best to average asset beta across weekly and four-weekly estimates for the two most recent five-year periods, and have not read a compelling enough reasons to deviate from this in this instance.

Our review of Fonterra's evidence

- 2.68 Having noted these points, we have considered the information currently before us – the sample as provided by Fonterra. The descriptive statistics of Fonterra's sample are outlined in Table 2.1 below.

Table 2.1 Fonterra's sample

Number of companies: 40	Weekly observations over a two-year period	Four-weekly observations over a five-year period
Mean	0.52	0.48
Median	0.51	0.52
Standard deviation	0.23	0.24

- 2.69 As mentioned in paras 2.51 and 2.52, Fonterra has refined the sample with a number of adjustments. The impact of all these adjustments to the resulting sample means is minimal, resulting in a slightly expanded range of 0.47 to 0.53, depending on the observation intervals used. Their adjusted averages are slightly lower, ranging from 0.47 to 0.49.
- 2.70 Looking at the market evidence, we cannot conclude that Fonterra's point estimate is not practically feasible. The sample mean is between 0.48 and 0.52 (or 0.47 and 0.53), with a large measurement error (standard deviation of 0.23 to 0.24).⁵⁶
- 2.71 At the same time, we consider that a 0.38 point estimate is a substantial departure from the sample mean of 0.48 to 0.52 (or 0.47 and 0.53). In particular, we estimate that this deviation has an impact on the milk price of around five cents. We consider this to be material.

⁵⁶ The standard deviation of the four-weekly observations over a five-year period falls to 0.17 once Murray Goulburn is excluded.

2.72 As per step five of our approach, we have considered whether there are differences in systematic risk between the Notional Producer and the sample mean. We think that Fonterra has provided some valid reasons (and others which we consider less persuasive)⁵⁷ that provide support for the view that the asset beta for the Notional Producer is likely below that of the sample mean. In particular:⁵⁸

Put differently, in no other jurisdiction are the milk prices paid by any processor, let alone the market-leading processor, governed by a milk price mechanism like the Milk Price Manual which results in the mechanistic translation of average realised commodity prices into a milk price.

2.73 We have not verified this assertion. However, if correct, then it would be unlikely that any of the comparators in the sample would have a greater ability than the Notional Producer to transfer systematic risk to farmers. Therefore, if correct, this argument suggests the observed beta estimate for dairy processors internationally is likely closer to the top-end of the plausible range of beta for the Notional Processor.

2.74 This view is supported by Open Country's submission to our draft report, where they submit that:⁵⁹

a true mechanistic transfer of commodity prices to the milk price would result in processors that were genuinely indifferent to commodity prices -- because all risk would be transferred. This is patently not the case... real world, practically feasible observation tells us, conclusively, that all processors act to mitigate commodity price reduction, and are therefore clearly not indifferent to changes in commodity prices.

2.75 It follows from Open Country's reasoning that processors (including comparators in the sample, and therefore the sample mean) should be expected to have a higher asset beta than the Notional Processor. This is because they have greater exposure to whatever systematic risk is associated with output price risk (in this case commodity price risk) than a Notional Processor that is assumed to transfer all that risk to farmers.

⁵⁷ In Fonterra's view, the comparator's differences in their relative weightings of the commodity and non-commodity business is likely to be a far more significant source of variation in observed asset betas. We continue to consider that the key driver is the ability to transfer downstream price risk (of whatever end product) to upstream suppliers (farmers).

⁵⁸ Fonterra "2016/17 base milk price calculation review workshop – responses to Commission's request for follow-up comments: Attachment A", p.7.

⁵⁹ Open Country "Response to the Commerce Commission's Draft Review of Fonterra's 2016/17 Base Milk Price Calculation: The Asset Beta" (1 September 2017), p.4.

- 2.76 Nevertheless, while these arguments support a downward adjustment to the sample mean, in themselves, they do not allow us to reach a view on the size of any reasonable adjustment. To inform the reasonableness of Fonterra's adjustment, we attempted to refine the sample.
- 2.77 Fonterra provided us with additional pricing information for some of the comparators in the sample (ie, how they transfer systematic risk to farmers).⁶⁰ It is not clear to us whether this information is as complete or accurate as it could be.⁶¹
- 2.78 We used this information to attempt to identify those comparators in the dairy sample with either:
- 2.78.1 some mention of monthly pricing: the idea being that if a processor can change prices monthly, then it likely has the ability to pass through downstream price changes to upstream farmers; and
 - 2.78.2 an ability to change prices throughout the season (ie, NZ and Australian firms): again, the idea being that if a processor can change prices through the season in response to changing market conditions, then it likely has the ability to pass through downstream price changes to upstream farmers.
- 2.79 Table 2.2 summarises the results.

⁶⁰ Fonterra "2016/17 base milk price calculation review workshop – responses to Commission's request for follow-up comments: Attachment A".

⁶¹ The information was high-level and covered only 20 out of 40 firms in the sample, and for those, only included some information on prices.

Table 2.2 Comparator sub-sample asset beta

Firm	Asset beta ⁶²	
	Weekly beta using 2 years of data	Four-weekly betas using 5 years of data
Monthly prices		
Glanbia	0.55	0.49
Dairy Crest	0.47	0.50
Kerry Group	0.53	0.52
Dean Foods	0.37	0.36
Variable prices (ie, changing through season)		
Synlait	0.33	0.52
Bega	0.87	0.65
Murray Goulburn	0.39	-0.59
Fonterra	0.10	0.29
Some ability to transfer risk through price		
Grupo Lala Mexico	0.77	0.62
Average		
Average	0.49	0.37
Average (excl Lala)	0.45	0.34
Average (excl Murray Goulburn & Lala)*	0.45	0.48

Note: * we only excluded Murray Goulburn from the right column (ie four-weekly betas using five years of data).

- 2.80 As expected, the mean asset beta for the sub-sample (0.45 to 0.48) is lower than the mid-point for the whole sample.⁶³ This evidence, however imperfect, does provide some support for Fonterra's arguments that the asset beta for the Notional Producer should be lower than the sample mid-point, given its greater ability to transfer systematic risk to farmers through the setting of the milk price.
- 2.81 Similarly, Fonterra's latest adjusted averages of 0.47 to 0.49 also point in the same direction.

⁶² Note: data sourced from Dr Marsden's May 2017 report, appendices 1 and 2, column labelled "Average all periods". Uniservices "Asset Beta for Fonterra's Notional Business: Further Comments" (12 May 2017).

⁶³ We excluded Grupo Lala as it had a noticeably higher asset beta, to control for the possibility that some other factor (like exposure to emerging market risk) was causing the higher estimate. Including it also results in a lower asset beta than the overall sample mean. We excluded Murray Goulburn from one of the sets as the observation is an extreme outlier.

- 2.82 However, we consider that this evidence is not sufficient to positively conclude that Fonterra's point estimate of 0.38 is practically feasible. This is because we have a low level of confidence in the accuracy of the sub-sample given our doubts on the quality of the information upon which we constructed the sub-sample. Further, Fonterra's estimate of 0.38 is considerably lower than that indicated by our and Fonterra's own sub-sample.
- 2.83 We acknowledge the effort by Fonterra and its advisors in providing additional information on some comparators in the sample. This information has helped us refine our understanding of the risk exposure of some of the comparators in the sample.
- 2.84 While Fonterra provided some details on milk pricing, it focused its efforts on providing information, for some comparators, about the importance/extent of their commodity versus non-commodity business. Fonterra justified this with the following statement:⁶⁴
- ...all the non-NZ businesses in our comparator set have extensive non-commodity businesses. Their observed asset betas will therefore reflect the (value) weighted averages of the asset betas for their commodity and non-commodity businesses respectively. It is our view that differences in the relative value weightings of the commodity and non-commodity businesses of the various comparator businesses is likely to be a far more significant source of variation in observed asset betas than differences in the level of systematic risk to which the comparators' commodity businesses are exposed to, whether as a consequence of differences in milk pricing frameworks or other factors.
- 2.85 We continue to consider that a key driver of the asset beta is the comparators' ability to transfer systematic risk to farmers through the price paid for milk (or to transfer the risk to another of the comparators' stakeholders). To the extent that output prices (be it for commodities or non-commodities) reflect exposure to systematic risk, then comparators transfer systematic risk through the setting of the milk price they pay to farmers.

⁶⁴ Fonterra "2016/17 base milk price calculation review workshop – responses to Commission's request for follow-up comments: Attachment A", p.1.

- 2.86 To illustrate, imagine two different processors, one producing only commodity and the other producing only non-commodity products. If they set the milk price in such a way that they transfer all of the output price risk to their farmers, then we would expect them to have the same exposure to systematic risk, and therefore the same beta. If pricing risk is not fully passed on to farmer suppliers, then differences in systematic risk between commodity and non-commodity products might then affect the asset beta.
- 2.87 Fonterra maintains the belief that non-commodity processors are less able to transfer risk to suppliers and therefore have a higher asset beta. We remain unconvinced, primarily because Marsden's estimates for comparators with different levels of commodity exposure are quite similar (all within a range of 0.49 to 0.53).⁶⁵ This evidence does not suggest substantially different levels of exposure to systematic risk.
- 2.88 In its submission, Fonterra provided additional information including the alternative approach which identifies and discusses some conditions that they consider would have to be present in order for processors to be able to transfer output price risk to suppliers of raw milk.
- 2.89 Among other things, this additional information seems to suggest that some comparators are similar to the Notional Producer (eg US processors largely pass on commodity risk (but not necessarily other risk) and the French processors appear to pass on final price risk to suppliers. As such, the comparator companies from these companies may have a similar asset beta to the Notional Producer.
- 2.90 The new information from Fonterra and Open Country does not allow us to take a confident view on the reasonableness of the departure from the sample mean(s), but does support the argument for a downwards adjustment.
- 2.91 We consider that, in order for us to be confident that the departure from the sample mean based on differences in systematic risk between the Notional Producer and the sample mean is justified, we need better information to inform the size of such an adjustment, such as on the extent to which the comparators pass on systematic risk in the way they set milk prices paid to farmers.

⁶⁵ Uniservices "Asset Beta for Fonterra's Notional Business: Comments on questions raised by the Commerce Commission in the Milk Price Calculation Workshop" (12 June 2017), Table 3.

Relevance of EDBs as comparators

- 2.92 Fonterra maintains the view that our approach for "estimating asset beta is of limited usefulness in this instance on the basis that the differences between most of the real world 'comparators' and the Notional Producer (NMPB) are significant... and consider it more appropriate in this instance to place primary emphasis on EDBs."⁶⁶
- 2.93 Fonterra's expert (Dr Marsden) and our expert (Dr Lally) both found EDBs to be relevant comparators.
- 2.94 Our approach to beta for all sectors includes:
- 2.94.1 using comparators from the same industry as the industry we are interested in; and
 - 2.94.2 favouring evidence over theory. We are not convinced that we should place most weight on EDBs as a comparator on the basis of theoretical similarities to the Notional Producer. Being in different industries and subject to different regulatory regimes would, in practice, be likely to manifest itself in different betas.
- 2.95 We are not convinced that we should change our approach. We continue to consider it appropriate to look at a wider range of evidence to get reassurance as to the reasonableness of our (or in this case Fonterra's) estimate, rather than as the main piece of evidence on which to support an estimate.
- 2.96 We consider that EDBs' asset beta (0.35) provides a useful reasonableness check. GPBs' asset beta (0.40) or other comparators could potentially also provide a valid check.
- 2.97 However, using these businesses as reasonableness checks is different from using them as comparators on which to base an asset beta estimate. The sample of comparator companies used by us to estimate the beta for the EDBs and GPBs comprised a large number of US energy companies, including electricity and gas distribution businesses, most of which were vertically integrated energy businesses. We are not persuaded it is appropriate to place primary weight on the beta estimates for such businesses as the best evidence for estimating the beta of the NZ notional dairy processor.

⁶⁶ Fonterra "Draft report submission: Review of Fonterra's 2016/17 base milk price calculation" (1 September 2017), paras 20-21.

- 2.98 Nevertheless, in their role as reasonableness checks, these wider observations also support our view that we cannot conclude that Fonterra's point estimate of 0.38 is not practically feasible. However, we consider that we would have to place undue weight on EDBs as a comparator in order to conclude that the point estimate is practically feasible.

Conclusion

- 2.99 Based on the information currently available, our view is that we cannot conclude that an asset beta estimate of 0.38 for the Notional Producer is not practically feasible for an efficient processor with similar risk exposure.
- 2.100 We consider that our approach for estimating asset beta is appropriate in this instance and for this sector. We therefore anticipate basing our future milk price reviews on this approach. We continue to consider that relying on a sample of dairy comparators is appropriate and welcome robust information to inform our future assessment of both the composition of the sample, and the rationale for any departure from the mean estimate of beta observed for other milk collecting dairy processors.

Inclusion of off-GDT sales as a reference for calculating WMP, SMP and AMF prices

- 2.101 DIRA s 150C(1)(a) states that to satisfy the purpose of s 150A-
- the base milk price must be set in a way that is consistent with the following...(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.
- 2.102 Fonterra has amended its Milk Price Manual to provide for the use of off-GDT sales as an additional reference for prices to be used in setting the total revenues of the Notional Producer for the milk price calculation.⁶⁷
- 2.103 We note that Fonterra intends to include definitions of key terminology regarding sales criteria in the Milk Price Manual, which will provide additional transparency around the use of off-GDT sales.⁶⁸

⁶⁷ As outlined in Commerce Commission "Review of Fonterra's 2016/17 Milk Price Manual: Dairy Industry Restructuring Act 2001 (14 December 2016), p.16-20.

⁶⁸ Fonterra "Review of Fonterra's 2016/17 Base Milk Price Calculation" (1 September 2017), Attachment 2.

Overall conclusions on the use of off-GDT sales as a reference

2.104 The inclusion of off-GDT reference sales is consistent with the 2016/17 Milk Price Manual. We conclude that the inclusion of off-GDT reference sales is consistent with the efficiency dimension. The inclusion of off-GDT reference sales is also consistent with the contestability dimension.

Consideration of efficiency

2.105 The use of Fonterra's actual prices in the revenues for the milk price calculation potentially provides less incentive for Fonterra to be efficient. However, the calculation revenues have always been based on Fonterra's actual sales as provided for in s 150C(1)(a).

2.106 In our 2014/15 review of the base milk price calculation we considered that using the GDT benchmark set independently of Fonterra's current year performance provides an incentive to Fonterra to operate efficiently.

2.107 Fonterra has noted that although off-GDT sales are now used as an additional reference source for prices, GDT will continue to be the primary reference point for prices, as:

2.107.1 a high proportion of the sales by volume will continue to be on GDT;

2.107.2 GDT sales, as the larger proportion of sales, are expected to be the marginal price point for any changes in sales volume of the Notional Producer; and

2.107.3 off-GDT sales are all cross-referenced to the current GDT prices.⁶⁹

2.108 This means that our past conclusion, based solely on GDT prices, that the efficiency dimension is satisfied, is not changed by this new development.

Consideration of contestability

2.109 After completing additional analysis in our 2016/17 calculation review, we consider the sales prices used for the Notional Producer are practically feasible for Fonterra and an efficient processor.

⁶⁹ In response to Miraka "Miraka Comments to the Commerce Commission in advance of the 2016/17 Milk Price Calculations Review" (31 July 2017), para 2.2.1.

2.110 In coming to this conclusion we considered:

2.110.1 whether the product specifications of the RCPs largely remain the same despite the off-GDT development;

2.110.2 whether the off-GDT reference sales are likely to include any material value-added price component (ie, possible move away from the 'commodity' requirement in the Act); and

2.110.3 the impact of changes to the cost components of the milk price calculation as a result of using the off-GDT reference sales for part of the revenue calculation.

Whether the product specifications of the RCPs remain largely the same

2.111 Fonterra has noted that:

2.111.1 product specifications of off-GDT qualifying sales do not vary materially from GDT specifications;

2.111.2 using off-GDT sales enables greater flexibility on shipping timetables and allows larger customers to make substantial orders; and

2.111.3 off-GDT sales will include sales to additional countries over those covered by the GDT.⁷⁰

Consideration of the product specifications of the off-GDT products which inform the base milk price

2.112 We have assessed the appropriateness of the off-GDT sales which inform the base milk price by comparing the product identification of the off-GDT sales which inform the milk price to those products sold on GDT for WMP, SMP and AMF.

2.113 Based on that review, we conclude that the product specifications of the off-GDT sales for the 2016/17 season are consistent with the commodity definition in the Act and standard specification commodity products.⁷¹

⁷⁰ Fonterra has analysed its off-GDT sales into those that inform the milk price calculation and those that do not. Further details of Fonterra's decision criteria on this are provided in Fonterra "Reasons Paper in support of Fonterra's base milk price for the 2016/17 Season" (3 July 2017), Attachment 5.

⁷¹ See s 150C(1)(a) of the Act.

- 2.114 Because this position could change from year to year based on Fonterra's actual off-GDT sales, we will continue to review the off-GDT products which inform the milk price calculation in future seasons to enable us to conclude each season on the consistency of the product inclusions with the Act.
- 2.115 We do not consider greater flexibility on shipping timetables or the inclusion of guaranteed shipment day, guaranteed supply of products or the off-GDT inclusion of additional countries to alter the commodity status of standard specification commodity products.
- 2.116 These types of features are also included in products on GDT. For example, during the 2015/16 season, Fonterra began offering a Guaranteed Age at Time of Departure (Guaranteed ATOD) product on GDT, noting that there is some price premium for a guaranteed age of product.
- 2.117 We consider such products are a practically feasible commodity product for an efficient processor, as the product specifications are identical to the standard GDT Medium Heat SMP and Regular WMP products.

Sales proportion

- 2.118 We have reviewed the off-GDT sales proportion and the gross-up of actual Fonterra off-GDT sales in the notional revenue calculation. The off-GDT sales are scaled up based on the Notional Producer volume. The actual prices are taken monthly and applied to the Notional Producer's volumes.
- 2.119 We confirm that Fonterra continues to exclude a significant portion of its off-GDT sales, and the Notional Producer milk volume is tested against that of Fonterra. We understand that Fonterra has excluded sales tenders in setting its criteria for those sales which inform the calculation.⁷²
- 2.120 We have been advised that Fonterra is the only New Zealand processor that routinely participates in tender sales. We have not seen strong arguments as to why tender sales should be used to inform the milk price revenues and we consider there may be arguments that such sales do not meet the "globally contested markets" requirement in the Act.⁷³

⁷² In response to Miraka "Miraka Comments to the Commerce Commission in advance of the 2016/17 Milk Price Calculations Review" (31 July 2017), para 2.2.2.

⁷³ See s 5(1) of the Act, definition of "commodity".

Practical feasibility of associated costs

2.121 We have consulted with the industry on the cost categories that are likely to be impacted as a result of the inclusion of off-GDT sales. The IPs believe the inclusion of off-GDT sales would affect the following business cost assumptions:

2.121.1 manufacturing efficiency and costs;

2.121.2 production planning and product mix management;

2.121.3 working capital management and costs; and

2.121.4 sales and marketing infrastructure and costs.⁷⁴

Manufacturing efficiency and costs

2.122 The concern is whether the Notional Producer can still assume long run production with minimal downtime if the specifications are different, because it takes time to calibrate the plants (production scheduling), and potentially decreases efficiency (operation time).

2.123 We consider that there should be no material impact on manufacturing efficiency and costs, as Fonterra has provided that only those off-GDT products using standard material and requiring no additional specialised plant or technical resources are included in the calculation.

2.124 As there are no material differences in product specifications, there should be no downtime affecting yields.

Production planning and product mix management

2.125 Given the product specifications do not materially vary from GDT specifications, we do not consider production planning and product mix management is affected by the off-GDT reference sales inclusion.

Working capital management and costs

2.126 We note that the working capital requirement has changed due to the inclusion of off-GDT sales. However, this is not a result of product specifications, rather due to the timing of revenue and payments.

⁷⁴ Open Country, Miraka, Synlait "Milk price calculation: Follow-up comments" (13 June 2017), p.9.

Sales and marketing infrastructure and costs

- 2.127 The IPs note that Fonterra's off-GDT sales assumption indicates that as much as 23% of the Notional Producer's total sales could in effect be off-GDT, sold to multiple customers across wide geographies. They note this represents a substantive change in the Notional Producer business model and associated sales costs.⁷⁵
- 2.128 We have completed a sensitivity analysis and reviewed the sales and marketing costs in the 2016/17 calculation. The supporting evidence provided by Fonterra as to the impact on sales and marketing infrastructure and costs due to the inclusion of off-GDT sales is consistent with the sales assumptions.
- 2.129 Because the assumed sales proportions between off-GDT and GDT will vary from season to season and this will have a possible impact on sales costs, we will be completing an annual assessment of the impact of the off-GDT sales on sales costs.

Transparency of sales information with the move to off-GDT reference sales

- 2.130 We consider there has been limited public information provided by Fonterra in the lead up to this amendment to the Milk Price Manual and in its implementation this season. We believe that there should be more public transparency of information on the inputs into the setting of the notional revenue to provide annual assurance that s 150C(1)(a) of the Act is being met.
- 2.131 The types of information that interested parties could find useful might include a quarterly running total for the season, and a forecast, of the product mix of GDT to off-GDT sales. This could provide information to interested parties on the ongoing and developing trends on the mix of off-GDT and GDT sales which could provide them with greater clarity as to the prices which will inform the calculation of the milk price for the season.⁷⁶
- 2.132 IPs expressed concerns about the impact of the change to using off-GDT sales on the transparency of the revenue calculation in the base milk price calculation. We summarised those concerns in our draft report and Fonterra has responded to them in its submission on our draft report.⁷⁷

⁷⁵ Open Country, Miraka, Synlait "Milk price calculation: Follow-up comments" (13 June 2017).

⁷⁶ As outlined in the purpose of the Act, s 4(f).

⁷⁷ Open Country, Miraka, Synlait "Milk price calculation: Follow-up comments" (13 June 2017) and Fonterra Fonterra "Review of Fonterra's 2016/17 Base Milk Price Calculation" (1 September 2017) Attachment 2. "

2.133 We welcome Fonterra's commitment to additional disclosures in support of inclusion of off-GDT reference sales in its annual Milk Price Statement. These are set out in Fonterra's submission on our draft report and are summarised in Table 2.3.⁷⁸

Table 2.3 Summary of Fonterra's additional disclosures in support of the inclusion of off-GDT sales

Area	Fonterra's additional disclosures
Off-GDT sales impact	Fonterra has advised that it intends to disclose the cents per kgMS impact from the inclusion of the additional off-GDT sales for the full year in the annual Milk Price Statement.
Selling prices	Fonterra also intends to disclose the average full season GDT selling prices for each RCP in the annual Milk Price Statement.
Transparency of off-GDT sales criteria	Fonterra has advised that it intends to include definitions of "standard packaging", "specialised plant or technical resources", and "standard product offerings" in its Milk Price Manual.

2.134 We note the importance of timeliness of disclosure of information. We consider that *ex-post* disclosure four months after the end of a season on its own is less valuable to interested parties than if reference sales information was also provided during the season.

2.135 We consider it useful for interested parties to have contemporaneous transparency around the impact of the use of off-GDT sale prices as a reference for the sales of the Notional Producer. In this respect Fonterra has confirmed to us that it will continue to provide quarterly off-GDT price impact information in its quarterly GDU, as it commenced to do in October 2016.

2.136 Such disclosure is not required by the Act, but we consider this would improve the transparency of, and confidence in, Fonterra's farm gate milk price setting.

2.137 We note that Fonterra outlined in its submission on the 2016/17 Manual review that it expected to publish periodic updates on both off-GDT margins and historic GDT prices but that it was still considering the format, precise content and timing of this information.⁷⁹

⁷⁸ As provided in Fonterra "Review of Fonterra's 2016/17 Base Milk Price Calculation" (1 September 2017) Attachment 2.

- 2.138 Fonterra has instead committed to continue to publish as a standard feature in its quarterly GDU its current forecast of the cents per kgMS impact from the inclusion of off-GDT sales of WMP, SMP and AMF in the Milk Price Calculation. Each GDU is released to the NZX and is available on Fonterra.com and is therefore readily available to interested parties.⁸⁰
- 2.139 From our experience, this information is difficult to find in the GDU and we invite Fonterra to consider how it may disclose it more visibly.
- 2.140 We have reviewed the Notional Producer's estimated proportions of GDT vs off-GDT sales based on Fonterra's sales for this season (2016/17). The GDT proportion in the milk price calculation continues to be the larger part of sales and therefore we consider that the GDT-based prices continue to provide a reliable reference point for us to assess the reasonableness of the off-GDT prices.
- 2.141 We believe that quarterly information should provide a sufficient level of disclosure without impacting the commercial sensitivity of Fonterra's information.
- 2.142 Although the issues raised by IPs have been responded to by Fonterra, the effectiveness of the responses is still to be tested in practice in future seasons, so we have noted the concerns and the Fonterra responses in Table 2.4 for future reference.
- 2.143 If the more visible GDT prices become a significantly lower proportion of the overall set of data used to set the nominal revenues in future, our confidence level on prices may naturally decrease. We will continue to monitor these percentages as part of future milk price calculation reviews.

⁸⁰ Fonterra "Review of Fonterra's 2016/17 Base Milk Price Calculation" (1 September 2017) Attachment 2, para 3.

Table 2.4 Transparency concerns raised by IPs

Area	Additional transparency of off-GDT price information requested by IPs	Our suggested steps for Fonterra
Sales criteria	IPs request greater transparency of off-GDT sales criteria. ⁸¹	We appreciate that Fonterra has attempted to provide greater clarity here with an Attachment in its Reasons paper outlining further detail on the approach applied in practice and on the product specifications included and excluded from the calculation. ⁸² We welcome Fonterra's intention to include definitions of 'standard packaging', 'specialised plant or technical resources' and 'standard product offerings' in its Milk Price Manual. ⁸³
Selling prices	IPs request monthly GDT selling prices of the reference commodity products (RCPs) expressed in standard specification product (SSP) price equivalents.	We note the IPs' concern but do not believe such disclosure is required for us to conclude on our review. Fonterra concurs with our conclusion.

⁸¹ In response to IP comments in the workshop follow-up comments, we note that the Commission receives sufficient transparency of the off-GDT sales criteria in order to assess this against the statutory criteria. Additional transparency requests are outlined in Synlait, Miraka, Open Country Dairy "Milk Price Calculation Workshop: Follow-up Comments" (June 2017), p.8.

⁸² Further details of Fonterra's decision criteria is provided in Fonterra "Reasons Paper in support of Fonterra's base milk price for the 2016/17 Season" (3 July 2017), Attachment 5.

⁸³ Fonterra "Review of Fonterra's 2016/17 Base Milk Price Calculation" (1 September 2017) Attachment 2. In response to Miraka "Miraka Comments to the Commerce Commission in advance of the 2016/17 Milk Price Calculations Review" (31 July 2017), para 2.2.2.

Sales phasing

IPs request:

- Monthly GDT actual sales phasing (shipment date) of sales from which the prices in (a) are derived (expressed as a percentage).
- Monthly actual sales phasing (shipment date) of the RCP sales (GDT and off-GDT) from which the prices in (a) are derived (expressed as a percentage); and
- Monthly Notional Producer sales phasing (shipment date) for the current milk price season (expressed as a percentage).

We note that increased use of off-GDT sales with limited transparency makes it difficult to assess whether there is potential for impacts on off-GDT sales by holding back or advancing the sales of inventory to achieve a better price (ie, timing advantage). Therefore the assumed monthly Notional Producer sales phasing could be an issue and this would potentially be alleviated by more disclosure of the assumed sales phasing.

We do not consider this level of disclosure is currently justified, and Fonterra has raised issues around commercial sensitivity of this information. We will continue to monitor the sales patterns of off-GDT sales for any unusual trends in sales phasing that impact the base milk price. Fonterra noted the following:

- Sales phasing assumptions have not changed as a result of including off-GDT sales of WMP, SMP and AMF in the Milk price;
- The phasing of sales is a tactical decision made by Fonterra to maximise value. The information available to Fonterra when making this decision is no different from that available to any of Fonterra's competitors. However Fonterra's strategy and tactical decisions about how to act based on that information are confidential to Fonterra and commercially sensitive; and
- Actual and forecast sales phasings across the season are incorporated into the Milk Price forecasts provided by Fonterra under DIRA and in the information regarding the impact of including WMP, SMP and AMF off-GDT sales in the Milk Price across the year.

Selling prices	IPs request monthly Notional Producer selling prices.	We agree that such disclosure would be informative to interested parties and that Fonterra could consider providing monthly off-GDT sales information on a comparative basis to that provided publicly from GDT. However, Fonterra considers that monthly selling prices are highly commercially sensitive as they provide information about pricing decisions and activity to Fonterra's customers and competitors.
Volume	The separate volumes of GDT and off-GDT sales for each RCP included in the milk price calculation.	We recommend that Fonterra discloses the percentage mix of off-GDT to on GDT sales by RCP. Such disclosure would be more valuable to interested persons on a quarterly basis throughout the season rather than just annually on an ex-post basis. Fonterra considers that disclosure of the percentage mix of off-GDT sales and GDT sales will provide commercially sensitive information as to Fonterra's tactical sales strategies. It considers that the information it proposes to continue to provide in the quarterly GDU should provide equivalent information without breaching those commercial sensitivities.

Conclusions on our review of other revenue and cost components

- 2.144 We did not identify any inconsistencies with our previous analysis of other components of the base milk price calculation model in our fit for purpose review.⁸⁴
- 2.145 As we did not find any inconsistencies with our previous analysis of other components of the calculation, we have relied on our past conclusions. These are summarised in Table 2.6.
- 2.146 We discuss specific findings of our fit for purpose review in Table 2.5 and paras 2.147 - 2.155 below.

⁸⁴ Our fit for purpose review approach can be found in our framework paper. Commerce Commission "Our approach to reviewing Fonterra's Milk Price Manual and base milk price calculation" (15 August 2017), paras 73-74.

Table 2.5 Summary of conclusions on our review of other components

Component	Comment
Lactose costs	In our 2016/17 Milk Price Manual review, we concluded that the current methodology for calculating lactose was not consistent with the s 150A purpose. We can confirm that lactose costs were calculated using monthly competitor prices for the season and therefore Fonterra has not retrospectively picked the lower of Fonterra or competitor lactose price. Therefore, we conclude that the calculation of lactose costs is consistent with the contestability dimension. ⁸⁵
Energy costs	There is a decrease in fixed energy costs due to hedging savings. We note that the approach to calculating energy costs has not changed. We previously engaged an independent expert who concluded that Fonterra's approach in calculating the energy costs was practically feasible. ⁸⁶
One-off costs	Fonterra has included one-off costs due to a silo collapse in Edendale and in respect of the Edgumbe floods. ⁸⁷ We have reviewed the costs and recoveries in respect of the silo collapse and we are satisfied that these costs and recoveries included are based on actual amounts incurred by Fonterra. We are also satisfied that Fonterra can recover the costs associate with the silo collapse.
Cost savings due to a decrease in milk supply	Fonterra has assumed that approximately five powder plants were closed by the Notional Processor during the 2016/17 season in response to the fall in milk volumes. ⁸⁸ We comment further on the resulting cost savings below.
Collection costs	Questions have been raised on the consistency of the collection costs and the assumed plant efficiency. We are satisfied that that the allowance for collection costs of the Notional Producer adequately provides for the assumed plant efficiency. We comment further on the consistency below.

⁸⁵ We note that Fonterra has amended Rule 16: Lactose in its 2017/18 Milk Price Manual as a response to our concerns. We will review the amendment with the consistency of the s 150A purpose in our 2017/18 Manual review.

⁸⁶ Strata Energy Consulting "FY 2015 Base Milk Price Energy Inputs Review" (31 July 2015).

⁸⁷ We had previously concluded that costs such as these should be included in the milk price to reflect costs that a real world processor would incur and that ex-ate allowance for these costs would not be appropriate. Commerce Commission "Review of Fonterra's 2014/15 base milk price calculation" (15 September 2015), paras 8.205 and 8.206.

⁸⁸ Fonterra reported that adverse weather, particularly through the peak months placed downward pressure on milk volumes. Fonterra "Global Dairy Update" (February 2017).

Cost savings due to a decrease in milk supply

- 2.147 As a result of the assumption of plants being closed due to the decrease in milk supply, The Notional Producer has assumed to save operating costs (opex) as a result of closures. We expected that there would be opex savings for the Notional Producer if plants are not being used.⁸⁹ However, we note that capital expenditure amounts (ie, capital charge and depreciation) relating to these plants are still included in the milk price calculation irrespective of the milk volume.
- 2.148 Fonterra has calculated the cost savings for the Notional Producer based on:
- 2.148.1 a per plant basis for direct plant related costs; and
 - 2.148.2 the assumed site sizes for site related costs.
- 2.149 The cost savings are practically feasible given the approach taken to calculate these cost components, which we have previously concluded were practically feasible. We note that variable costs did not require manual adjustments in the model, as all variable operating costs are applied on a per tonne basis in the milk price and therefore will not be incurred with reducing tonnage, regardless of whether a plant is assumed to be closed or mothballed.
- 2.150 If there is a continuing decline in milk supply volumes in future seasons, we may re-look at these costs in future reviews. Conversely, if there is an increase in milk supply in the future seasons, we may look at the costs of reopening notional plants that have been taken to be shut in the previous season.⁹⁰

Consistency of collection costs and plant efficiency

- 2.151 In its submission on our emerging views paper Miraka submitted that the Notional Producer milk collection costs are not internally consistent with the assumption that the Notional Producer plants are operating at peak capacity for around 85-90% of their total operating days.⁹¹

⁸⁹ We note that there are costs associated with temporary closing plants such as redundancy costs for staff, ongoing maintenance costs to keep plants in a state where they can be reopened and ongoing site overheads. Allowances for these costs have been included in the calculation.

⁹⁰ We note that it is forecasted that milk production in New Zealand will increase 2-3% for the 2017/18 season. See: <https://www.rabobank.co.nz/media-releases/2017/170623-rabobank-holds-2017-18-farmgate-milk-price-forecast-at-nz6-25-kgms/>

⁹¹ Miraka submits that given the time factories are full (over 85-90% of their operating days), it would appear these inter-site diversions of milk are much larger than actual Fonterra diversions. Miraka "Miraka

- 2.152 Fonterra has clarified that the actual collection costs that Fonterra incurs include transport milk costs to sites that are not the nearest to the farm where the milk was supplied from.⁹² This particularly occurs in the shoulders of the season, when the nearest processing site:
- 2.152.1 is not open; or
 - 2.152.2 is not operating at full capacity.
- 2.153 We have received analysis from Fonterra showing that for the first five months of the 2016/17 season (June – October 2016) a significant volume of the total milk collected by Fonterra from farms was not allocated to the nearest site.
- 2.154 However, we also note that the Notional Producer does not have to deal with product mix manufacturing decisions (eg, manufacturing cheese instead of powders) which require transporting milk to a site that may not be the nearest to that farm.⁹³ On that basis, we would expect that the proportion of milk assumed to be collected by the Notional Producer from farms and delivered to plants that are not the closest to the farms would not be greater than the actual proportion in the case of Fonterra.
- 2.155 Given the above, we are satisfied that that the allowance for collection costs of the Notional Producer in the milk price calculation adequately provides for transporting of milk from farms to sites running at peak capacity for around 85-90% of their total operating days.⁹⁴

Our conclusions on individual components outside key focus areas

- 2.156 Table 2.6 sets out our conclusions on individual components outside the key focus areas:

Comments to the Commerce Commission in advance of the 2016/17 Milk Price Calculations Review" (31 July 2017), para 5.2.

⁹² The diversion costs in the model relate to inter-factory transport of cream and buttermilk to produce the by-products: butter, AMF and BMP.

⁹³ The Notional Producer will still have the same exposure of not all sites being open in the shoulders of the season and a mismatch in site sizes and farm locations.

⁹⁴ We also note that Fonterra has provided an update of its analysis that was used in determining the percentage of total milk price product manufactured at plants operating at full capacity. We are satisfied that this assumption still holds for the 2016/17 season.

Table 2.6 Conclusions on the components outside of key focus areas

Component	Reliance on conclusion from previous reports	Type of data used	Change in methodology in the 16/17 season?	Efficiency dimension: Does it provide an incentive for Fonterra to act efficiently?	Contestability dimension: Is it practically feasible?	Consistency of rule in the Milk Price Manual	Reference to our conclusion on efficiency and contestability dimensions ⁹⁵
Revenues and net working capital							
Production Plan	Yes	Actual	No	Yes	Yes	Yes	Efficiency: paras 7.14 - 7.18, 2014/15 calculation review report Contestability: paras 7.19 - 7.21, 2014/15 calculation review report
Yields	Yes	Actual & Notional	No	Yes	Yes	Yes	Efficiency: para 4.70.1, 2015/16 calculation review report Contestability: paras 4.70 - 4.87, 2015/16 calculation review report
Sales phasing	Yes	Actual	No	Yes	Yes	Yes	Efficiency: paras 7.102 - 7.106, 2014/15 calculation review report Contestability: paras 7.107 - 7.109, 2014/15 calculation report
Foreign exchange conversion	Yes	Actual	No	Safe harbour	Safe harbour	Yes	Paras 7.142 - 7.145, 2014/15 calculation review report

⁹⁵ Our previous reports can be found on our website: <http://www.comcom.govt.nz/regulated-industries/dairy-industry/review-of-fonterra-s-farm-gate-milk-price-and-manual/statutory-review-of-milk-price-calculation-2/>

Component	Reliance on conclusion from previous reports	Type of data used	Change in methodology in the 16/17 season?	Efficiency dimension: Does it provide an incentive for Fonterra to act efficiently?	Contestability dimension: Is it practically feasible?	Consistency of rule in the Milk Price Manual	Reference to our conclusion on efficiency and contestability dimensions ⁹⁵
Net working capital	Yes	Actual	No	Yes	Yes	Yes	Efficiency: paras 7.152 - 7.154, 2014/15 calculation review report Contestability: paras 7.155 - 7.159, 2014/15 calculation review report
Operating costs							
Lactose costs	Yes	Actual & Notional	No	Yes	Yes	Yes	Efficiency: paras 7.86 - 7.89, 2014/15 calculation review report Contestability: paras 7.90 - 7.93, 2014/15 calculation review report
Site overhead costs	Yes	Notional	No	Yes	Yes	Yes	Efficiency: para 8.99 - 8.100, 2014/15 calculation review report Contestability: paras 4.99 - 4.101, 2015/16 calculation review report
Administration and other overhead costs	Yes	Notional	No	Yes	Yes	Yes	Efficiency: paras 8.124 - 8.125, 2014/15 calculation review report Contestability: paras 4.99 - 4.101, 2015/16 calculation review

Component	Reliance on conclusion from previous reports	Type of data used	Change in methodology in the 16/17 season?	Efficiency dimension: Does it provide an incentive for Fonterra to act efficiently?	Contestability dimension: Is it practically feasible?	Consistency of rule in the Milk Price Manual	Reference to our conclusion on efficiency and contestability dimensions ⁹⁵
Plant labour costs	Yes	Actual & Notional	No	Yes	Yes ⁹⁶	Yes	Efficiency: paras 8.59 - 8.61, 2014/15 calculation review report Contestability: paras 4.99 - 4.101, 2015/16 calculation review report
Selling costs	Yes	Notional	No	Yes	Yes	Yes	Efficiency: paras 8.179 - 8.180, 2014/15 calculation review Contestability: paras 8.181 - 8.194, 2014/15 calculation review
Other supply chain overhead costs	Yes	Notional	No	Yes	Yes	Yes	Efficiency: paras 8.163 - 8.165, 2014/15 calculation review report Contestability: paras 4.99 - 4.101, 2015/16 calculation review, paras 8.168 - 8.171, 2014/15 calculation review report
Energy costs	Yes	Notional	No	Yes	Yes	Yes	Efficiency: para 8.13, 2014/15 calculation review report Contestability: paras 8.14 - 8.21, 2014/15 calculation review report

⁹⁶ Miraka has questioned why the Notional Producer uses materially fewer plant labour FTEs than actually engaged by Fonterra. Miraka "Miraka comments to the Commerce Commission in advance of the 2016/17 milk price calculations review" (31 July 2017), para 6.1. We have previously reviewed the FTEs for the Notional Producer and we have explained why the number of plant labour FTEs are materially fewer than Fonterra in our 2012/13 calculation review. See para N10, Final report: Review of Fonterra's 2012/13 base milk price calculation.

Component	Reliance on conclusion from previous reports	Type of data used	Change in methodology in the 16/17 season?	Efficiency dimension: Does it provide an incentive for Fonterra to act efficiently?	Contestability dimension: Is it practically feasible?	Consistency of rule in the Milk Price Manual	Reference to our conclusion on efficiency and contestability dimensions ⁹⁵
Collection costs	Yes	Actual & Notional	No	Yes	Yes	Yes	Efficiency: paras 8.30 - 8.34, 2014/15 calculation review report Contestability: paras 8.35 - 8.43, 2014/15 calculation review report
Water, cleaning and CIP, consumables, effluent and lab testing costs	Yes	Notional	No	Yes	Yes	Yes	Efficiency: paras 8.76, 2014/15 calculation review report Contestability: paras 8.77 - 8.85, 2014/15 calculation review report
Packaging costs	Yes	Actual & Notional	No	Yes	Yes	Yes	Efficiency: para 8.113, 2014/15 calculation review report Contestability: para 8.114 - 8.115, 2014/15 calculation review report
Storage costs	Yes	Actual & Notional	No	Yes	Yes	Yes	Efficiency: paras 8.142 - 8.143, 2014/15 calculation review report Contestability: 8.144 - 8.147, 2014/15 calculation review report
Freight costs	Yes	Actual & Notional	No	Yes	Yes	Yes	Efficiency: paras 8.153, 2014/15 calculation review report Contestability: paras 8.154 - 8.158, 2014/15 calculation review report
Company tax expense	Yes	Notional	No	Yes	Yes	Yes	Efficiency: para 9.12, 2014/15 calculation review report Contestability: paras 9.13 - 9.22, 2014/15 calculation review report

Component	Reliance on conclusion from previous reports	Type of data used	Change in methodology in the 16/17 season?	Efficiency dimension: Does it provide an incentive for Fonterra to act efficiently?	Contestability dimension: Is it practically feasible?	Consistency of rule in the Milk Price Manual	Reference to our conclusion on efficiency and contestability dimensions ⁹⁵
Capital charge and related components							
Capital costs of fixed assets	Yes	Notional	No	Yes	Yes	Yes	Efficiency: paras 6.56 - 6.57, 2014/15 calculation review report Contestability: paras 6.58 - 6.65, 2014/15 calculation review report
Tilted annuity methodology	Yes	Notional	No	Yes	Yes	Yes	Efficiency: paras 6.69 - 6.70, 2014/15 calculation review report Contestability: paras 6.72 - 6.74, 2014/15 calculation review report
Repairs and maintenance	Yes	Notional	No	Yes	Yes	Yes	Efficiency: para 6.86, 2014/15 calculation review report Contestability: paras 6.87 - 6.92, 2014/15 calculation review report
Consistency of capital assumptions	Yes						Contestability: paras 4.112 - 4.135, 2015/16 calculation review report

Attachment A Glossary of terms

Table A1 Glossary

Term/Abbreviation	Definition
The Act, or DIRA	Dairy Industry Restructuring Act 2001
AMF	Anhydrous milk fat
Base milk price	Farm gate milk price expressed per kilogram of milk solids
BMP	Butter milk powder
Capex	Capital expenditure
Dairy season	1 June to 31 May
EDB	Electricity distribution business
GDT	Global dairy trade, Fonterra's online auction platform used to sell commodities
GDU	Global Dairy Update, Fonterra's quarterly publication
kgMS	Kilogram of milk solids
Milk Price Manual or the Manual	Fonterra's Farm Gate Milk Price Manual generally referred to by the version relating to each dairy season (eg, 2016/17 Manual). The Manual contains the methodology used to calculate Fonterra's base milk price
Notional Producer	The notional commodity business that is used to calculate the base milk price. Also referred to as the NMPB (Notional Milk Price Business)
NZX	New Zealand Stock Exchange
Opex	Operating expenditure
RCP	Reference Commodity Product. These products are manufactured and sold by the Notional Producer. This currently consists of WMP, SMP, BMP, Butter and AMF
SMP	Skim milk powder
WACC	Weighted average cost of capital
WMP	Whole milk powder