



Estimating asset beta for the “Notional Processor”

Fonterra Co-operative Group Limited

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1. Introduction and summary

1. The Commerce Commission is reviewing Fonterra’s calculation of the base milk price for the 2017/18 season. As part of this process, the Commission engaged Cambridge Economic Policy Associates (“CEPA”) and Freshagenda to assess whether a downward (or any) adjustment is required to the average asset beta calculated from a sample of (ostensibly) comparable companies – the analysis of CEPA and Freshagenda is set out in a report dated 28 March 2018 (“the CEPA report”).
2. We have been asked by Fonterra to provide our views on:
 - a. The economic differences between the Dairy Industry Restructuring Act (“the DIRA”) regime and regulation under Part 4 of the Commerce Act, and whether any differences should influence the approach to estimating asset beta for the “notional processor” (“NP”); and
 - b. The appropriateness of using electricity distribution businesses (“EDBs”) as comparators for the NP when estimating asset beta.
3. A summary of our views is as follows:
 - a. Asset beta is hard to estimate, and Fonterra has better information than the Commission about the risks the NP faces. Therefore Fonterra is best placed to assess the asset beta for the NP;
 - b. Unlike the incentives of the monopoly businesses (e.g., EDBs) in respect of which the cost of capital input methodology (“IM”) was developed, Fonterra has relatively balanced incentives when it comes to estimating asset beta for regulatory purposes;
 - c. For the combination of these two preceding reasons:
 - i. The Commission has a review role in respect of Fonterra’s base milk price methodology, not a parameter setting role;¹ and
 - ii. The Commission should be open to asset beta estimation approaches adopted by Fonterra, even if they are not in accordance with the Commission’s application of the IM in the present case, provided those approaches are robust. In particular, if there are good reasons for it, the Commission should be open to the comparator set including non-dairy companies, or indeed excluding dairy companies; and
 - d. An approach proposed by Dr Alastair Marsden and Dr Martin Lally is to use the asset beta estimated by the Commission for EDBs as the asset beta estimate for the NP. In our view this approach is robust and consistent with the policy approach of the DIRA:
 - i. Fonterra, the NP and the DIRA are unique – the simple fact the NP is notionally a dairy company does not make it similar to real world dairy companies. Rather the NP is a regulatory construct; and
 - ii. Indeed, in one important way the systematic risks facing the NP are lower than those facing EDBs – unlike the NP, even an EDB with a revenue cap can face some revenue risk.

¹ Section 150P(3)(b) of the DIRA states the Commission “is not required to, and must not, state the amount of the base milk price according to its own calculations.”

2. Fonterra's incentives

4. Firms that are regulated under Part 4 of the Commerce Act (electricity and gas distribution/transmission and airports) are subject to regulation on the premise they have an unambiguous incentive to raise output prices above the competitive level.²
5. Fonterra is in a different position:
 - a. The DIRA essentially relates to Fonterra's behaviour in *input* rather than *output* markets;
 - b. Fonterra is a co-operative owned by its shareholder suppliers, so it does not have an incentive to exercise market power (by lowering the farm gate milk price) against the interests of these suppliers; and
 - c. Aspects of Fonterra's governance and investor base (e.g., the "Trading Among Farmers" ("TAF") scheme, including the Fonterra Shareholders' Fund) limit its incentive and ability to raise the farm gate milk price above the competitive level, an effect of which might be a reduction in contestability by independent processors ("IPs"). TAF allows shares to be bought and sold by farmers in market transactions that are not specifically related to milk supply. Likewise, subject to constitutional limits, farmers can sell the economic rights to their shares to outside investors through the Fonterra Shareholders Fund. The higher the milk price, the lower the profits of Fonterra, and the lower the value of its shares and units in the Fund.
6. The Commission recognised these points in its 2017 "Review of the state of competition in the New Zealand Dairy Industry" ("the Competition Review"). For example, regarding Fonterra's incentive to exercise market power against farmers by *lowering* the farm gate milk price, the Commission noted (X30):

X30 However, we think that Fonterra would have little or no incentive to exercise its market power in this way despite its ability to do so. This is because:

X30.1 Fonterra is a co-operative owned by its farmer suppliers. This ownership structure protects farmer suppliers from Fonterra's market power in relation to milk purchases, because the suppliers ultimately control the decisions of the company.

X30.2 Even without the milk price regime under DIRA, we consider it likely to be in Fonterra's interests to provide a degree of transparency and independent oversight of base milk price setting. This would provide assurance to farmer shareholders, external shareholders, and contract suppliers that the farm gate price of milk is set at an efficient level, which is important for the success of Fonterra's Trading Amongst Farmers (TAF) scheme.

7. Regarding *raising* the farm gate milk price, the Commission noted (X33, footnotes omitted):

X33 Fonterra's ability to render rivals less competitive by increasing the farm gate milk price is largely the same with and without regulation. Even with the regulation Fonterra could pay a higher price than that which results under the Milk Price Manual. However, Fonterra's ability, both with and without the regulation, is constrained due to:

X33.1 the importance to Fonterra of its TAF scheme;

X33.2 a need to protect the divergent interests of its supplier shareholders, outside investors and contract suppliers; and

² They may also have incentives to lower quality below the competitive level.

X33.3 a need to also fund its capital programme and maintain a sustainable business.

8. Open entry and the obligation to accept all milk may also temper Fonterra's incentive to raise the farm gate milk price above the competitive level, as this might result in Fonterra having to inefficiently invest to cater for increased milk supply.
9. As is clear from this discussion, Fonterra's co-operative nature and stakeholder base are key drivers of the balanced incentives it faces with respect to setting the farm gate milk price. These balanced incentives are also demonstrated by the fact that Fonterra's current approach to setting the milk price predates the DIRA milk price regime by four years. Indeed when the milk price regime was introduced in 2012, it effectively just enshrined Fonterra's existing practice.³ This differs from traditional regulation, which is generally expected to change behaviour. The explanatory statement for the bill introducing the monitoring regime noted:⁴

A review of Fonterra's existing milk price setting methodology found that the approach Fonterra takes to setting its milk price is a reasonable proxy for how the milk price would be set in a workably competitive market.

10. The more balanced incentives faced by Fonterra versus a company regulated under Part 4 are reflected in the policy approach of the DIRA, under which the Commission has a more limited role than it does under Part 4 of the Commerce Act. Under Subpart 5A of the DIRA, the Commission provides its view on whether the milk price manual⁵ and the base milk price calculation⁶ are consistent with the section 150A purpose statement. The section 150A purpose statement is to "promote" the setting of a base milk price that "provides an incentive" on Fonterra to operate *efficiently* while providing for *contestability* in the market for the purchase of milk from farmers. There is a trade-off between these objectives, and it seems unlikely there would be a single perfect price.
11. Regarding the weighting the Commission places on these two factors, the Commission has noted that:⁷

It is our interpretation that to satisfy s 150A the Manual must be consistent with both dimensions, independently. As such, we are not required to choose between the priority of the contestability and efficiency dimensions in s 150A to assess whether the purpose is satisfied.
12. Consistent with the policy choice, when making a report under section 150P on the assumptions adopted and the inputs and process used by Fonterra in calculating the base milk price, the Commission is not required, and indeed is not permitted to, "state the amount of the base milk price according to its own calculations" (section 150P(3)(b)).

³ For example, the explanatory statement to the *Dairy Industry Restructuring Amendment Bill 2012* (page 2) notes that:

The milk price regime will include enshrining Fonterra's existing milk price governance and transparency processes in DIRA and the introduction of a new farm gate milk price monitoring regime undertaken by the Commerce Commission.

⁴ *Dairy Industry Restructuring Amendment Bill 2012*, page 2.

⁵ Section 150I requires the Commission to report on whether the milk price manual is consistent with the section 150A purpose statement.

⁶ Section 150P requires the Commission to report on the extent to which the assumptions adopted and the inputs and process used by Fonterra in calculating the base milk price for the season are consistent with the section 150A purpose statement.

⁷ Paragraph 3.9 of Commerce Commission, *The Dairy Industry Restructuring Act 2001: Review of Fonterra's 2013/14 Milk Price Manual*, 16 December 2013.

13. In contrast, under Part 4 price control the Commission actually determines the cost building blocks and accordingly allowable revenue for controlled firms.⁸ Even in the context of airports, which are only subject to information disclosure, the Commission determines IMs for all the building blocks, including the cost of capital. These then form a benchmark against which performance is assessed. This reflects the emphasis in the purpose statement of Part 4 (section 52A) on, among other things, limiting the ability of firms to extract excessive profits.

3. WACC assessment under DIRA is a different exercise than under Part 4

14. Asset beta cannot be directly observed and is very difficult to estimate with precision. We would expect that the regulated firm generally has better information about the risks it faces, and the characteristics of its business, than the regulator. As well as being generally true, this is likely to be true of Fonterra and the NP, vis a vis the Commission.
15. Despite the likelihood that regulated firms have the best information about the risks they face and their business characteristics, for formally controlled firms under Part 4 the responsibility to determine the asset beta (and WACC more generally) rests with the Commission, precisely because these firms have an unambiguous desire for a higher allowed return.⁹
16. In contrast, Fonterra's incentives to set the farm gate milk price (and by extension WACC/asset beta) too high/too low are more balanced, as we have already discussed. The Commission has itself acknowledged this, as discussed above.
17. The Commission has also acknowledged that the consequences of an error under DIRA are less material than an error under Part 4 regulation.¹⁰ In particular:
- a. Underestimation of asset beta might reduce contestability at the margin. However, Fonterra still has to invest, and the regime places incentives on Fonterra to be efficient. Indeed, we would add that underestimation of asset beta would increase the pressure on Fonterra to be efficient, given the resulting high price for raw milk; and
 - b. The milk price is reset each year, whereas prices or revenue are set for five years under Part 4. This means that mistakes can be corrected quickly, rather than with a 5-year lag.¹¹
18. Fonterra has estimated the asset beta for the NP as 0.38 since the 2014/15 season. We note that since that date, IPs have continued to invest, and Fonterra has continued to lose suppliers to IPs. While we cannot say what IP investment and Fonterra supply share would have been if the asset beta was set higher than 0.38, the evidence does suggest there is continued IP contestability. See, e.g., Figure 1 below, which tracks Fonterra's share of national milk collection over time.

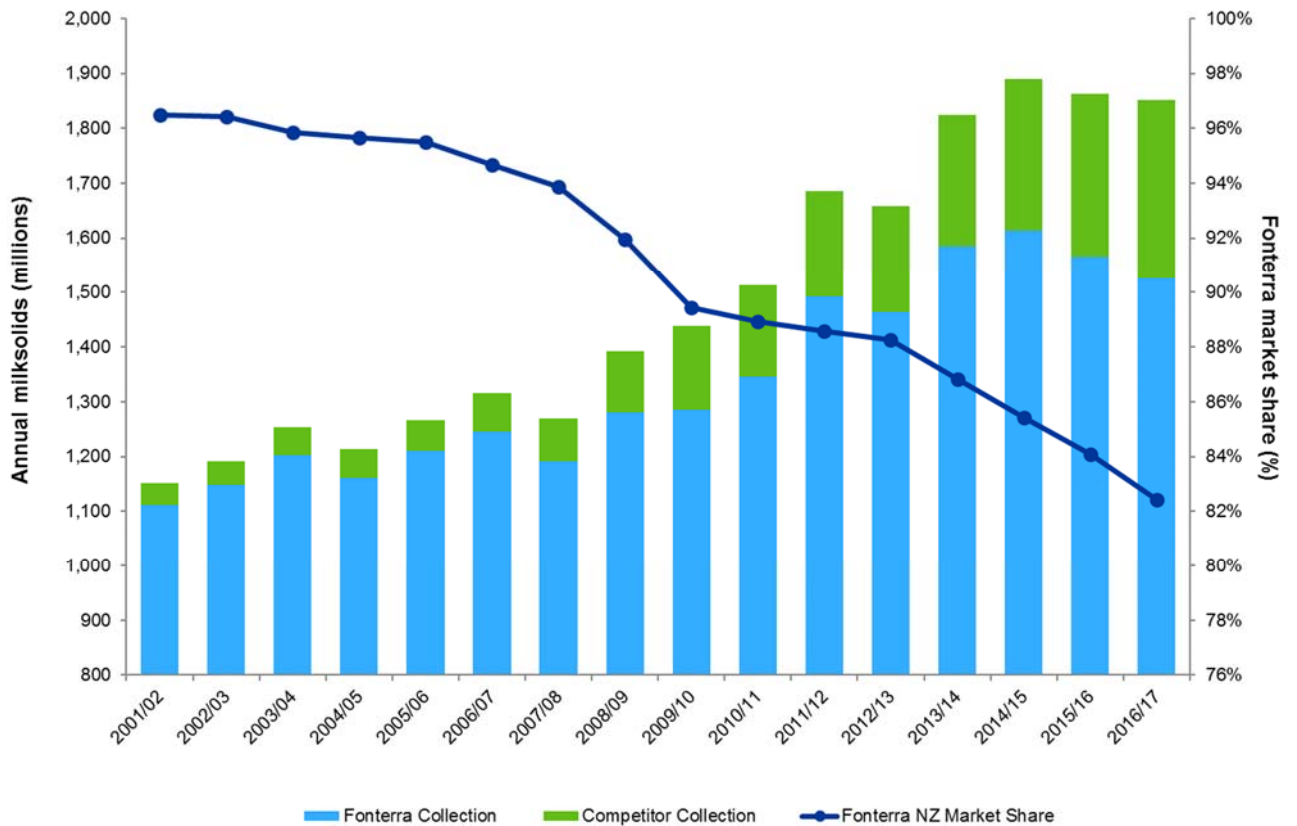
⁸ Technically under the current price cap faced by EDBs the allowable revenue figure is converted into a price path, allowing the EDBs to earn more than the allowable revenue figure if volumes are greater than forecast. Once EDBs transition to a revenue cap, the allowable revenue figure will be a cap on the revenue EDBs can earn.

⁹ The situation is slightly different for airports, although the Commission is still clearly concerned about the incentives of airports to price excessively. We note that for airports the Commission estimates a sector wide, rather than firm specific WACC. In this setting, the Commission is open to evidence that a specific airport's risks, and therefore asset beta, differ from the rest of the sector.

¹⁰ See [2.58 – 2.60] of Commerce Commission, *The Dairy Industry Restructuring Act 2001: Review of Fonterra's 2016/17 base milk price calculation*, 15 September 2017.

¹¹ We note that some costs under the manual are, however, set for 4 years.

Figure 1: Fonterra's national share of milk collection



Source: Fonterra

19. In addition to Fonterra losing market share, the IPs have continued to invest. For example:
- OCD's new Horotiu plant is expected to start taking milk in August 2018,¹² and OCD has consent to expand its Waharoa plant;¹³
 - Synlait has announced a \$260m investment in an infant formula plant in Pokeno;¹⁴
 - Synlait is investing approximately \$125m in a liquid dairy packaging facility to supply Foodstuffs South Island;¹⁵
 - Oceania has announced that it plans to commence stage 3 of its development plan, which will entail a further \$200m investment, taking its total investment to around 600m;¹⁶ and

¹² <https://www.stuff.co.nz/business/farming/dairy/100866398/open-countrys-7th-milk-plant-rises-as-export-demand-grows>

¹³ <https://www.stuff.co.nz/business/farming/dairy/93182583/open-country-dairy-granted-consent-to-upgrade-its-waikato-factory>

¹⁴ <http://nzx-prod-s7fsd7f98s.s3-website-ap-southeast-2.amazonaws.com/attachments/SML/314744/275196.pdf>

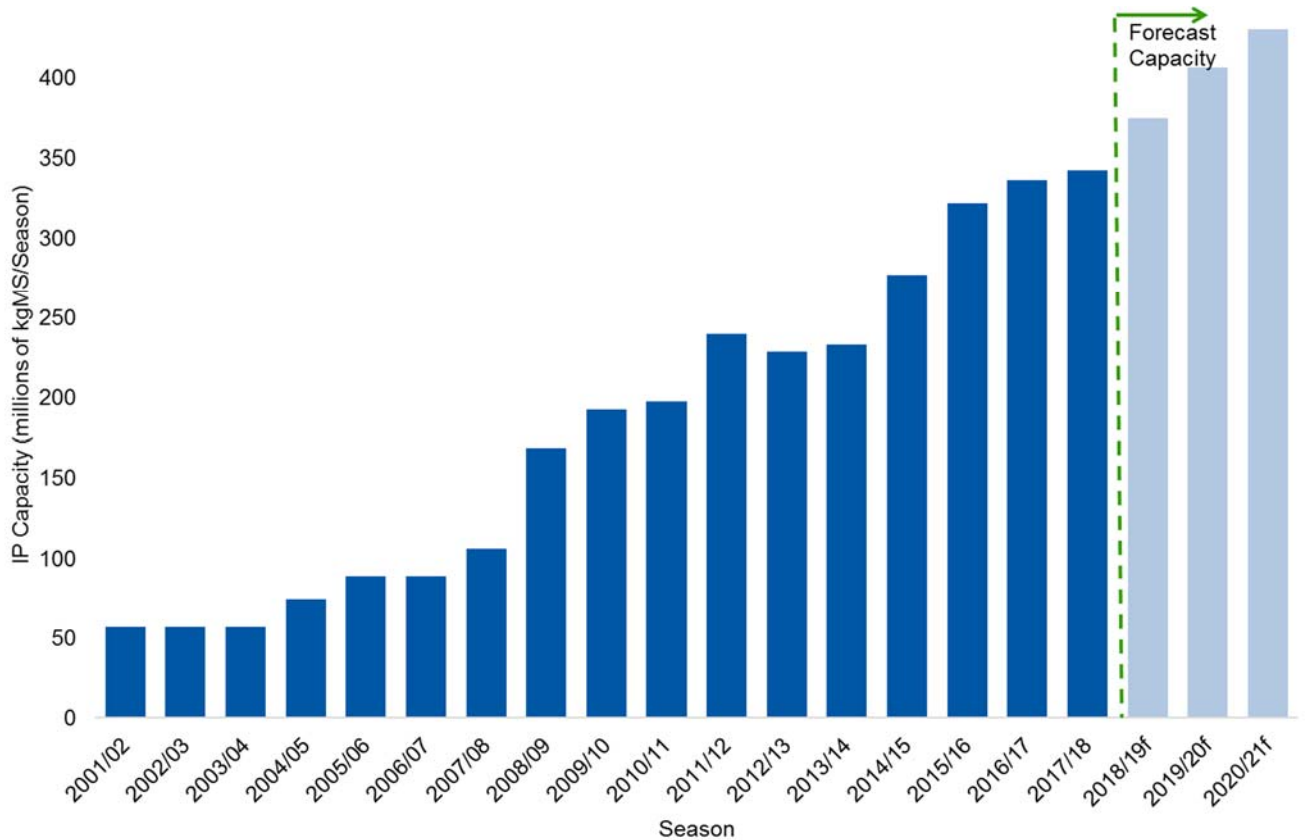
¹⁵ <https://www.synlait.com/site/uploads/2017/12/Synlait-Announcement-Synlait-partners-with-Foodstuffs-South-Island-to-supply-fresh-milk-and-cream.pdf>

¹⁶ https://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11938500

e. Happy Valley has obtained consent for a \$230m plant in Otorohanga.¹⁷

20. Based on public announcements, Fonterra expects IP capacity to increase by approximately 26%¹⁸ over the next 3 seasons, as illustrated by Figure 2 below.

Figure 2: Historic and 3-year forecast capacity of IPs



Source: Fonterra, based on public announcements

21. The Commission’s findings in the *Competition Review* also corroborate that the IPs have continued to invest and gain market share. For example, at [4.95-4.96] the Commission noted:

While the volume of milk Fonterra collects continues to increase, Fonterra is growing at a slower rate than its competitors. Fonterra’s market shares are therefore gradually reducing as its share is eroded by IPs.

This trend may well continue as most of the large IPs are planning to expand their operations and to seek direct farmer supply to meet their increased demand for raw milk.

22. As already noted, the Commission’s role in respect of the base milk price is a reporting one, not a setting one. As the CEPA report notes (page 4):

¹⁷ <https://www.stuff.co.nz/business/farming/dairy/101253786/230m-happy-valley-milk-plant-consent-approved-for-otorohanga>

¹⁸ Fonterra estimates IP capacity for the 2017/18 season to be 342.5m kgMS and this is expected to grow to 430.5m kgMS in the 2020/21 season.

Under DIRA, the Commission is required to review Fonterra's base dairy (farmgate) milk price calculation. The Commission is not required to estimate the WACC and its parameters, rather it is required to assess Fonterra's own estimation for consistency with DIRA.

23. As economists, we obviously cannot give a legal interpretation, but the DIRA policy appears to be to have more trust in Fonterra's assessment of the risk it and the NP face than would be the case under Part 4, whether that be for formally price controlled firms or for those just subject to information disclosure (e.g., airports). Accordingly the Commission should be open to asset beta estimation approaches adopted by Fonterra, even if they are not in accordance with the Commission's application of the IM in the present case, provided those approaches are robust. In particular, if there are good reasons for it, the Commission should be open to the comparator set including non-dairy companies, or indeed excluding dairy companies.
24. Relatedly, the Commission should also be open to considering a range, defined by robust estimation approaches, rather than requiring a point estimate (as it does under the cost of capital IM).¹⁹

4. The Notional Processor is a regulatory construct that bears little risk

25. The NP is a regulatory construct - it is a notional subset of Fonterra's actual business, used to deliver a transparent calculation of the farm gate milk price. The various constraints/assumptions used to define the NP mean it bears little relation to any real-world dairy firm outside of New Zealand. For example, the NP is constrained to only sell the "Reference Commodity Products" ("RCPs")²⁰ and is able to completely pass through price and volume risk to suppliers *ex post*.²¹ The uniqueness of the NP makes the standard approach to estimating the asset beta by finding "comparable" firms a difficult exercise.
26. This contrasts to, for example, EDBs, which are regulated under Part 4. While the details of EDB regulation vary around the world (e.g., the strength of incentives to reduce costs over the regulatory period), the basic approach and objective is essentially similar (i.e., to constrain monopoly pricing while still achieving the desired level of quality).
27. Likewise the characteristics of EDBs around the world are similar (albeit that some may be vertically integrated into retail and/or generation).
28. Therefore it makes sense to choose comparators in the same industry when estimating an asset beta for EDBs under Part 4 of the Commerce Act – not only are the businesses similar, but so is the regulatory framework. The precise make-up of the comparator set can still be imperfect, e.g., using firms subject to slightly different regulatory regimes and with some degree of vertical integration, meaning the resulting estimate is subject to uncertainty when applied to New Zealand EDBs. But in a relative sense, the approach is understandable.

¹⁹ For EDBs, when the Commission sets prices under a DPP it uses the 67th percentile WACC estimate. See Commerce Commission, *Electricity Distribution Services Input Methodologies Determination 2012*, 3 April 2018. For airports, the Commission only publishes the mid-point. See Commerce Commission, *Airport Services Input Methodologies Determination 2010*, 20 December 2016.

²⁰ Being commodity whole milk powder (WMP) and skim milk powder (SMP) and their by-products (buttermilk powder, or BMP, butter and anhydrous milkfat, or AMF). See page 59 of Fonterra, *Markedup version of the 2017/18 Manual for 2017/18 season*, 1 August 2017.

²¹ We note there is some discussion in the CEPA report (page 14) about the NP bearing some price risk. However, there appears to be agreement between CEPA and Dr Marsden that any such effect is small – see page 14 of the CEPA report, and then table 2.1 of the CEPA report, which states that the NP does not bear price or volume risk.

29. In contrast, Fonterra, NP and DIRA are unique. There is no other dairy company in the world subject to even a vaguely similar regulatory regime, and as already noted, the NP is a regulatory construct.
30. Accordingly it is far less obvious that the Commission should look to other dairy companies as the comparators in the present case, compared to when the Commission is choosing a beta for EDBs and should clearly choose other electricity networks. At the end of the day the NP is defined more by its regulatory construction than it is by the notion it buys milk and sells dairy products. To this end, in the specific context of determining asset beta for the NP, we disagree with the following statement in the CEPA report (page 10):

... but the implication is that it is the industry that primarily sets the operating characteristics, rather than the regulatory framework.

31. The question put to CEPA by the Commission, and therefore CEPA's analysis, is premised on the idea that the NP is a dairy company, and therefore using the asset beta derived from the EDB sample is a "downward adjustment" to the "comparator sample" of dairy companies.²² Our point is that because the NP is a regulatory construct that bears little relation to any real world dairy firm outside of New Zealand, dairy companies that operate outside of New Zealand and its regulatory environment have very different risk exposure than the NP, and are not necessarily "comparable".
32. While firms within the same sector are a natural starting point for comparability, even the IMs recognise that firms in other sectors may have comparable risk and accordingly may be useful as comparators. For example, Step 1 of the Commission's beta estimation process, as expanded in Appendix H8 of the EDB/GPB IM reasons paper,²³ is:

Step 1: identify a sample of relevant comparator firms. This includes:

- o New Zealand firms from the service in question;*
- o New Zealand firms from industries with a similar risk profile;*
- o overseas firms from the service in question; and*
- o overseas firms from industries with a similar risk profile.*

33. Similarly, at footnote 893 of the EDB/GPB IM Reasons paper the Commission notes:

In some sectors, the industry is made up of a single supplier. In such cases, the Commission may draw on evidence of comparable businesses both overseas and in other sectors in New Zealand to establish a suitable benchmark cost of capital for the firm.

34. In this context, CEPA itself, in advice to Ofgem on allowed returns for RIIO-2, has argued that UK water utilities are a more appropriate comparator for UK energy networks than using international energy firms:²⁴

²² E.g. at page 2 CEPA note "The key issue that the Commission is seeking our advice on is whether a downward (or any) adjustment is required to the average beta calculated from the sample of 'comparable' companies."

²³ Commerce Commission, *Input Methodologies (Electricity Distribution and Gas Pipeline Services): Reasons Paper*, 22 December 2010.

²⁴ Page 51, CEPA, *Review of cost of capital ranges for Ofgem's RIIO-2 for onshore networks*, February 2018.

The other comparators are regulated water companies. As such, we must factor in the differences between water and energy networks in order to translate this evidence into suitable beta estimates for RIIO-2.

As stated in the framework section, we consider that it is most appropriate to focus on UK-based evidence, as the assets generating returns are based in the UK. While the use of other international energy networks may increase the breadth of the comparator set, more adjustments are required in light of regulatory and commercial regimes and use of a different relative index.

35. Furthermore, the IMs make specific provision for the calculation of a *supplier*-specific as opposed to *service*-specific cost of capital, where the leverage, debt premium and asset beta would be specific to the firm supplier in question.²⁵
36. In this context we note that for multidivisional firms, some regulators place particular weight on the beta of the regulated company itself, and also look at comparators from different sectors. For example, in UK telecoms, Ofcom estimates BT's beta using BT's share price data and then assumes that the value weighted betas of BT's different business lines are equal to the whole of company beta estimated using share price data. To estimate the asset beta for Openreach (the access division), Ofcom used regulated energy and water networks as comparators for the lower bound of its range and BT group's market asset beta as the upper bound.^{26, 27}
37. Both Fonterra's expert Dr Marsden²⁸ and the Commission's expert Dr Lally²⁹ have concluded that the risk exposure of the NP means it is comparable to a regulated EDB. That is, Dr Marsden and Dr Lally have opined that EDBs are an appropriate comparator for the NP, as opposed to using the EDBs to justify a downward adjustment from a different comparator sample.
38. We have reviewed (in draft) Dr Marsden's response to the CEPA report. Dr Marsden replicates CEPA's line-item assessment of the risks faced by the NP and still concludes that EDBs are the best comparator of the systematic risk faced by the NP. We agree with Dr Marsden's conclusion.
39. Indeed, we note there is an important way in which the systematic risks facing the NP may be lower than those facing EDBs. While the NP faces no revenue risk, even an EDB with a revenue cap can face some revenue risk. For example, if there is no unders-overs mechanism³⁰ or there

²⁵ H2.81-H2.82 of *EDB/GPB IM Reasons Paper*.

²⁶ See, e.g., Ofcom, *Business Connectivity Market Review – Annexes: Leased lines charge controls and dark fibre pricing*, 12 June 2015. Note that NERA was an advisor to Ofcom during the BCMR process.

²⁷ Specifically, Ofcom calculated a range for Openreach using BT group's asset beta (estimated using market data) as the upper end of the range and the beta for network utilities as the bottom of the range. The mid point in this range (0.59) was the starting point. Ofcom then took a value below this after comparing it the beta of listed UK telcos Sky (0.61) and TalkTalk (0.60) and the beta of Chorus (0.35-0.52). In the end Ofcom used a value of 0.55 as compared to its midpoint of 0.59. See A30.207-A30.212 of Ofcom, *Business Connectivity Market Review: Final Statement*, 28 April 2016.

²⁸ UniServices, (2014), *Asset beta for Fonterra's New Zealand-based Commodity Manufacturing Businesses and Specific Risk Premium for Fonterra's Notional Business*, 2 December 2014.

²⁹ Lally, M., (2016), *Assessment of the asset beta for Fonterra's Notional Business*, 19 May 2016 and Lally, M., (2016), *Assessment of the asset beta for Fonterra's Notional Business: Further Analysis*, 1 August 2016. The latter paper notes:

... in respect of the question of whether ELBs are suitable comparators for estimating the asset beta of the Notional Business, whilst there are substantial differences between ELBs and the Notional Business (including the application of price control to only the former), their asset betas would both be low. Accordingly, the ELBs are suitable comparators.

³⁰ For example, gas transmission businesses ("GTBs") in New Zealand do not have a wash up mechanism. As explained by the Commission in *IM review Topic Paper 1*, paragraph 13 (footnotes omitted)

are restrictions on the magnitude and frequency of price changes the regulated firm can make (often known as “side-constraints”).³¹ Furthermore, in periods of sustained decreases in demand, it may be difficult for a firm to raise price on its remaining sales.

40. We note that unless there is cost of service regulation, an EDB bears cost risk for the (generally) five-year regulatory period,³² whereas the NP faces it for a, generally, one year period.³³
41. The CEPA report attempts to distinguish the NP and EDBs by arguing that:
 - a. Dairy processing companies have scope to invest to increase value for shareholders as demand for dairy products increases due to economic growth;³⁴ while
 - b. EDB network growth is decoupled from economic growth.
42. The implication is that the asset beta should be higher for the NP than for EDBs. However, this argument appears to overlook the fact that the NP prices raw milk using a net back methodology and therefore is constrained to NPV=0 (or close to it).
43. CEPA also argues that while the NP is exposed to asset stranding risk, EDBs are not because, “The RAB is effectively guaranteed through regulation”.³⁵ We disagree with this claim and note that how to deal with declining demand for the distribution network is an issue that regulators and EDBs are grappling with worldwide. Indeed, as part of the recent review of the IMs, one of the Commission’s topic papers was on, “The future impact of emerging technologies in the energy sector”.³⁶ In this paper the Commission noted [X8]:

We consider that the available evidence is inconclusive on whether the risk of partial capital recovery for EDBs’ regulated businesses has increased, and, if it has, by how much. We consider that partial capital recovery seems unlikely to be a significant concern in the short

The revenue caps we have set for Transpower and GTBs operate in a different manner. A key difference is that the revenue cap applied to Transpower includes a mechanism to transfer certain positive or negative revenue adjustment balances from one year to the next. We therefore see a clear distinction between a revenue cap which effectively ensures allowable revenue is recovered and a revenue cap which uses lagged quantities and therefore does not. In this paper, we refer to a revenue cap which effectively ensures allowable revenue is recovered (because it does not use lagged quantities) as a ‘pure’ revenue cap.

³¹ For example, the proposed revenue cap for EDBs in New Zealand includes:

- A limit on the average price increase;
- A cap on the accumulation of voluntary undercharging; and
- A cap on the wash up amount.

See pages 31-39 of *IM review Topic Paper 1*.

³² Note that the precise length of the price control period for EDBs varies by jurisdiction. In New Zealand and Australia, the EDB price control is set for 5 years, while in the UK RIIO scheme the control period for EDBs is 8 years (with a review at 4 years).

³³ We understand that most costs are rebased annually but that some costs are benchmarked every 4 years with a CPI adjustment in the interim.

³⁴ See the discussion at the bottom of page 1 and top of page 2. Similarly at the bottom of page 2, the CEPA report states: “... the scale of long term growth opportunities for the Notional Processor are likely to be similar to those of other dairy businesses.”

³⁵ Page 40, CEPA.

³⁶ Commerce Commission, “Topic paper 3: The future impact of emerging technologies in the energy sector”, *Input methodologies review decisions*, 20 December 2016.

term, but may be an issue over the longer term. The longer-term view on how electricity networks might be used in the future has become more uncertain compared to 2010.

44. As a result, the Commission will allow EDBs to reduce the remaining life of assets by up to 15% at the next default price path (DPP) reset. Given the long life of network assets, even a 15% reduction could still leave EDBs exposed to material risk, a point recognised by the Commission (paragraph 94):

This is a precautionary and modest solution that is only aimed at partially mitigating the downside risk of network economic stranding, in the context of a DPP. We consider that bearing this risk places incentives on suppliers to improve the efficiency of their expenditure (eg, in certain circumstances, an opex solution may be superior to committing capital to a 40-year asset).

45. In Australia there has also been an ongoing debate about “writing down the RAB”³⁷ of EDBs. It is therefore overly simplistic to assert that EDBs face no stranding risk.

³⁷ See, e.g., Grattan Institute, *Shock to the system: dealing with falling electricity demand*, December 2013, ENA, *Written-down value? Assessing proposals for electricity network write-downs*, August 2014 and Grattan Institute, *Down to the wire: A sustainable electricity network for Australia*, March 2018.

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