



# **Review of Expert Reports on Asset Beta and the Specific Risk Premium for Asset Stranding**

**Report to Open Country Dairy**

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# 1 Introduction and Summary

The Commerce Commission (Commission) has released two expert reports (the Reports) on the asset beta and specific risk premium for asset stranding used in the milk price model:

- The updated report by Dr Alasdair Marsden (the Marsden Update)
- The report by Dr Martin Lally (the Lally Report).

Open Country has engaged Castalia to comment on the Reports. In particular, the risks the notional processor's equity investors would be expected to be exposed to, and in turn, the relative appropriateness of estimating asset beta using:

- The asset beta set by the Commission for electricity lines businesses (ELBs)
- Market data on comparator companies.

The Dairy Industry Restructuring Act 2001 regulates Fonterra, including by requiring that the milk price it pays satisfy both the need to provide Fonterra's management with incentives to be efficient and that the milk price be contestable (practically feasible).<sup>1</sup> There are then limited 'permitted assumptions' which may be used in determining the notional processor's characteristics, regardless of their efficiency or practical feasibility. However, beyond those legally permitted assumptions, the real question the Commission is faced with is: what efficient allocation of risks would equity investors be expected to face in investing in a milk processor—subject to the permitted assumptions within DIRA? And as a result, what asset beta would the firm have?

Both Dr Lally and Dr Marsden envisage the notional processor as a regulated entity and place significant weight on the ex post adjustment of milk prices by Fonterra for the risks the notional processor's equity investors would face. Although their approaches differ, broadly speaking they envisage a notional processor that is close to riskless—primarily only facing the potential for divergence between non-milk costs and regulatory allowances. However, since the notional processor is not regulated by DIRA, the fact of Fonterra's regulation should not be relevant to assessing the risks facing the notional processor's equity investors. In addition, risks are efficiently allocated based on a party's information, abilities and incentives to manage those risks. The efficient way to allocate many of the risks incumbent in the decisions of an investor in and operator of processing assets is to the processor—not its farmer suppliers. It is that allocation that will help provide Fonterra's management with incentives to operate efficiently, since failing to meet the benchmark affects Fonterra's profitability. Since the efficient allocation of risks provides incentives for Fonterra to be efficient, it is this risk allocation that should be used in assessing the notional processor's asset beta.

Framing compliance with DIRA in this way, our view is that market comparators—comparable processors operating currently—are the best approximation of the notional processor's asset beta. To the extent that the permitted assumptions in DIRA drive different risk allocations than would be expected in an efficient market, then they should be taken into account to comply with DIRA. However, starting with market comparators that closely resemble the notional processor is a much more reliable approach than starting with ELBs that operate in a different sector of the economy that faces materially different exposure to macroeconomic fluctuations.

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<sup>1</sup> Section 150A of the Dairy Industry Restructuring Act 2001.

## 2 The Efficient Allocation of Risks for the Notional Processor

Since DIRA requires the milk price to provide incentives to Fonterra's management to be efficient and must be practically feasible, the risk allocations implicit in both the milk price and equity returns should reflect efficient allocations of risk. Keeping this clear understanding of the notional processor in mind helps to focus the discussion on what asset beta would be appropriate for the notional processor.

The discussion on the milk price regulatory oversight regime has generally proceeded on the basis that the notional processor is substantially similar to Fonterra. It appears to be thought of as being subject to the same regulatory environment and operating with the same allocation of risks. Of particular importance is the ex post calculation of the milk price by Fonterra that contributes to Fonterra passing on substantial risks to farmers and leaves Fonterra's equity holders bearing less risk. The Reports by Dr Lally and Dr Marsden appear to be consistent with that framing.<sup>2</sup> However, DIRA places the focus on what a hypothetical efficient and practically feasible milk processing business would be. To the extent that Fonterra diverges from that construct, our view is that focusing on Fonterra's operating arrangements and risks will lead to a misconceptualisation of the notional processor. This would lead to inefficient outcomes that detract from satisfying DIRA.

Risks are efficiently allocated when they are borne by the party with the best information, ability and incentives to manage them:

- Information—processors have better information on processing investment and operation decisions than farmers
- Abilities—processors have the power to decide what plant to invest in, where it should be located, how it should be operated, and how product is sold
- Incentives—processors maximise their profits by optimising their investment and operations, and therefore are well-incentivised to act efficiently.

Although their approaches differ, broadly speaking Dr Lally and Dr Marsden envisage a notional processor that is close to riskless—primarily only facing the potential for divergence between non-milk costs and regulatory allowances. Since the notional processor being close to riskless would not provide Fonterra's management with incentives to operate efficiently, we do not believe that this would be an appropriate way to conceptualise the notional processor to estimate its asset beta. It would be likely to lead to a significantly lower asset beta than we would expect to be efficient. It is also worth noting that this risk allocation is practically feasible, because it appears to be generally evident in the operations of most other milk processors (including the market comparators).

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<sup>2</sup> Dr Lally and Dr Marsden both either disregard or place little weight on market comparators because of the inability of the market comparators to make ex post adjustments in setting the milk price. See: Lally, M. (2016). 'Assessment of the Asset Beta for Fonterra's Notional Business', 19 May 2016, at p.6; and Marsden, A. (2016). 'Update on Asset Beta for Fonterra's New Zealand-based Commodity Manufacturing Businesses and Specific Risk Premium for Fonterra's Notional Business', 10 April 2016, at para E.7.

### 3 Using Electricity Lines Businesses as a Starting Point

ELBs face a materially different operating environment and risk profile to the notional processor. The differences in these operating environments significantly increase the relative relationship that would be expected between the notional processor's earnings with the market as a whole compared to ELBs. The main driver of this difference is that ELBs are natural monopolies where the substitutes for the services they provide are limited (although they may not be in the future). In turn, ELBs are subject to significant regulatory controls which substantially reduce the volatility of their earnings. In contrast, the notional processor is not a natural monopoly and does not appear to be subject to any form of regulation beyond general competition law. Beyond these fundamental differences, three further characteristics suggest that the asset beta of ELBs would not be a reliable starting point for estimating the notional processor's asset beta.

**Consuming electricity from the distribution network is a necessity** whereas dairy products are not or much less so. Since the milk price manual assumes all processed milk is exported, only export customers are relevant to this question. For overseas consumers, processed dairy goods (like infant milk formula) are more of a luxury good (that is, they have a higher income elasticity of demand).<sup>3</sup> The greater income elasticity of demand of goods is a factor that Dr Lally (among others) has previously noted is an important driver of asset beta.<sup>4</sup>

**The notional processor faces a much greater risk of asset stranding than an ELB.** Especially in the current operating environment, we would expect equity investors to take into account significant risks that the notional processor's assets become stranded from structural changes in milk production throughout New Zealand. In addition, because the notional processor faces at least some competition for milk, it cannot simply pass on the costs of stranded assets in the way that an ELB can under Part 4 of the Commerce Act. It faces the risk of losing supply in the contestable market within which it operates.<sup>5</sup>

As Dr Marsden notes, the current dairy commodity prices highlight the risks to New Zealand's dairy processing industry.<sup>6</sup> While the Reports recognise the theoretical existence of asset stranding risk, that is disregarded by Dr Lally and no justification is provided for the scenarios used by Dr Marsden. In an extreme case, Dr Marsden assumed there to be a 5 percent probability of stranding 12.5 percent of the notional processor's assets. Several factors suggest that the extreme case investors would consider could well be worse than this:

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<sup>3</sup> Since asset betas estimate correlation between a firm's returns and that of the domestic market, a further question arises as to the correlation between global stock market returns. While there has not been a great deal of literature on this topic, globalisation and interconnectedness of global economies points to meaningful correlation. Those correlations are not constant over time, but some research on the last century of global equity markets observes relatively high correlation (0.7 to 0.8), and that correlation has grown significantly since the 1980's. See Quinn, D., & Voth, H-J. (2008) 'A Century of Global Equity Market Correlations', *American Economic Review: Papers and Proceedings* 2008, 98:2, 535-540, accessible at [this link](#).

<sup>4</sup> See Lally, M. (2016). 'Review of WACC Issues' 25 February 2016 at p.8, accessible at [this link](#).

<sup>5</sup> This argument has recently been made in the gas sector although it is more pronounced here. See: First State Investments 'Comments on Professor Lally's Review of WACC Issues' 24 March 2016, at para 4.4, accessible at [this link](#).

<sup>6</sup> Marsden, A. (2016). 'Update on Asset Beta for Fonterra's New Zealand-based Commodity Manufacturing Businesses and Specific Risk Premium for Fonterra's Notional Business', 10 April 2016, at para 4.23.

- New Zealand’s role in meeting growing global demand is unclear. The last decade of high dairy prices has driven significant increases in production and processing capacity worldwide with which the notional processor must now compete. In the three years between 2011 and 2013, for example, data suggests that global milk production effectively added another New Zealand<sup>7</sup>
- There is a scientific consensus that climate change is likely to significantly change rainfall patterns in New Zealand.<sup>8</sup> In the next 30 years under a mid-range scenario, the North and East of the North Island is expected to triple the time spent in drought. The West Coast of the South Island is expected to get 5 to 7.5 percent more rainfall, while the north and east of the North Island are expected to receive 2.5 to 5 percent less rainfall. These changes may significantly change the pattern of land use throughout the regions, increasing the risk of asset stranding.

**There are greater growth options for dairy than for ELBs.** The conversion of land to dairy farming in New Zealand over the past decade demonstrates the growth options available to dairy. In contrast, the limited growth options available to ELBs have already been discussed extensively in the Commission’s consultation process on the asset beta for gas pipeline businesses. Dr. Lally (among others) has previously noted the presence of growth options as a factor indicating a higher asset beta.<sup>9</sup> These growth options sit alongside the potential for significant asset stranding. This is not inconsistent—rather, it highlights the volatility of the dairy processing business and its greater exposure to macroeconomic fluctuations.

## 4 Using Market Data on Comparator Companies as a Starting Point

Through clarity on what the notional processor represents and the distinction between the notional processor and Fonterra, our views follow that starting with comparator companies is likely to be far more reliable than using ELBs as a baseline for estimating asset beta.

The Commission’s focus should then be on identifying any justifiable reasons for a discount on the asset beta derived from market comparators to arrive at the asset beta of the notional processor. This should at least include the extent to which comparator companies operate across different business areas that have different exposures to systematic risk.

Taking these factors into account is likely to lead to some form of discount on the observed market asset betas to reach an estimate of the asset beta for the notional processor. Quantifying those factors has its challenges, however, we consider that approach is likely to be much more reliable than starting with a different business and trying to adjust for fundamental differences between industries and regulatory regimes. In addition, issues of quantification arise equally in Dr Lally and Dr Marsden’s approach of adjusting from the ELB asset beta—where conceptual reasons for adjustments are noted but the challenges of establishing empirical evidence has led to no adjustments being made.

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<sup>7</sup> Agriculture and Horticulture Development Board ‘World Milk Production’ 26 October 2015, accessible at [this link](#).

<sup>8</sup> See National Institute of Water and Atmospheric Research ‘Climate Change Scenarios for New Zealand’, accessible at [this link](#).

<sup>9</sup> Lally, M. (2008). ‘The Weighted Average Cost of Capital for Gas Pipeline Businesses’ 28 October 2008 at 5.1.



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