ASSESSMENT OF THE ASSET BETA FOR FONTERRA'S NOTIONAL BUSINESS: FURTHER ANALYSIS

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CONTENTS

EXECUTIVE SUMMARY

Marsden estimates the beta for the Fonterra Notional Business and assesses the appropriate allowances for certain additional risks relating to that business. I have earlier assessed this report. In response to both reports, a number of submissions have been received by the Commerce Commission, and the Commission has also raised a number of questions with me. This paper addresses both the submissions and the Commission's additional questions, and my conclusions are as follows.

Firstly, none of the arguments raised in these submissions warrant any change in my earlier views on these matters.

Secondly, if only sections 150A – 150C of the DIRA were taken into account in estimating the asset beta of the Notional Business, my earlier estimate of this parameter would remain valid. However, if only sections 150A – 150C of the DIRA were taken into account in estimating the ex-ante allowance for stranding risk, this would challenge Marsden's conclusion that the appropriate allowance is sufficiently small that it could be disregarded.

Thirdly, in respect of the question of whether a processing business that is close to riskless would have an incentive to operate efficiently, the net cash flows of the Notional Business are the efficient non-milk costs less actual operating costs, and these efficient costs are reset only four yearly. So, the Notional Business would significantly benefit from reducing its costs and be significantly disadvantaged from an increase in its costs, thereby giving it significant incentives to operate efficiently. Furthermore, these incentives are comparable to those of businesses subject to price or revenue caps.

Fourthly, 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.

Fifthly, in respect of the question of whether the Notional Business would be commercially viable when paying a milk price reflecting the asset beta as described in the previous paragraph, the milk price formula is likely to exert a significant downward effect upon the

asset beta of the Notional Business, this raises the milk price and therefore lowers the net cash flows of the business, but it also lowers its discount rate and these two effects net out. Consequently, the Notional Business would be commercially viable under these circumstances.

Sixthly, in respect of the question of the extent to which the co-operative ownership structure of the Notional Business affects its asset beta, it is possible that the co-operative structure might be abandoned at some future point. Assuming that Fonterra would continue to dominate the industry, the milk price formula could be expected to remain in force in order to restrain the monopsony powers of the business. In that event, the ownership structure would not have affected the asset beta. Thus, so long as the milk price formula would continue to be applied, abandoning the co-operative ownership structure of the Notional Business would not affect its beta.

Seventhly, in respect of the question of whether Marsden has identified all factors distinguishing the asset beta of Fonterra's Actual Business and the Notional Business, the Actual Business differs from the Notional Business in that the Actual Business processes the milk into a more diverse set of outputs than those of the Notional Business, leading to revenue differences ("stream risk") and cost differences. Marsden examines whether stream risk is systematic and concludes that it is not. He does not apply the same process to the cost differences, but these would be harder to identify and unlikely to be systematic because the costs for the two businesses would not be fundamentally different (both involve operating costs, depreciation and cost of capital). So, I consider that Marsden has identified all factors distinguishing the asset betas of the two businesses and assessed whether the relevant part is systematic.

Lastly, in respect of the question of the impact of a possible decline in the milk supply or a rapid and material change in the RCP product mix on the ex-ante allowance for stranding risk (the "specific risk premium"), if either event occurred, some plants might require decommissioning, the allowance for the efficient capital costs would then decline, to the detriment of the Notional Business, and therefore an ex-ante allowance for this possibility might be warranted. Since the Manual specifies notional removal of the oldest plants for the purpose of reducing the allowance for capital costs, the ex-ante allowance for the risk would reflect this notional removal of the oldest plants and therefore be lower. The ex-ante

allowance would also depend upon the probability of these shocks occurring and the percentage of capacity decommissioned in that event. I do not have a view on the values of these two parameters and therefore on the size of the ex-ante allowance.

1. Introduction

In respect of the milk supplied to it, Fonterra pays an amount equal to the revenues it would earn from processing that milk into specific commodities (RCPs) and selling them at specific (GDT) prices, less the efficient costs of such processing including the cost of capital, in accordance with the Milk Price Manual (Fonterra, 2015). This calculation requires an estimate of the cost of capital of a business acting in this way (the "Notional Business"), and therefore an estimate of the asset beta of such a business. Marsden (2016) estimates the asset beta for the Notional Business and assesses the appropriate allowances for certain additional risks relating to that business. Lally (2016) has assessed Marsden's report. In response to both reports, a number of submissions have been received by the Commerce Commission, and the Commission has also raised a number of questions with me. This paper addresses both the submissions and the Commission's additional questions.

2. Review of Submissions

Castalia (2016, section 2) argues that the Dairy Industry Restructuring Act (DIRA) requires the milk price to provide incentives to Fonterra's management to be efficient, and therefore the milk price and the associated estimate of the asset beta should reflect efficient allocations of risk. Consequently, Fonterra as the processor of the milk should bear risks relating to the milk rather than farmers because they have the power to make all decisions regarding the processing of the milk and have superior information on these matters. This implies that the milk price formula does not provide incentives for Fonterra to be efficient.

Castalia's implicit claim that the milk price formula does not provide incentives for Fonterra to be efficient is not correct. In respect of productive efficiency, to which Castalia's claim presumably relates, the milk price formula implies that the net cash flows of the Notional Business are the efficient non-milk costs less their actual counterpart, as shown in equation (3) of Lally (2016). Thus, any improvement in efficiency flows to Fonterra and any reduction in efficiency is borne by Fonterra. Accordingly, Fonterra has an incentive to operate efficiently. The strength of this incentive depends upon how quickly the assessment of efficient costs is revised to reflect any change in actual costs. If the assessment of efficient costs is revised very quickly, the incentive to improve efficiency will be weaker than if the assessment were revised with considerable delay. In respect of Fonterra, the efficient costs are reset every four

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years (Fonterra, 2015, page 86), and this is comparable with the typical five-year period between regulatory resets for firms subject to price or revenue caps. Thus, the efficiency incentives for Fonterra are substantial and comparable with those of businesses subject to price or revenue caps.

Furthermore, I do not agree with Castalia's claim that Fonterra rather than farmers should bear risks relating to the milk because Fonterra has the power to make all decisions regarding the processing of the milk, and has superior information on these matters. The power to make decisions concerning processing of the milk suggests that Fonterra should bear the risk relating to production costs, and this is the case under the current methodology; differences between actual and efficient costs are borne by Fonterra. By contrast, risks arising from the prices of the outputs sold by Fonterra are beyond Fonterra's control and therefore should not obviously be borne by them. Furthermore, whenever a processing industry comprises processors operating in different parts of the world, with each set within a region being the only possible processors of an input arising from that region, such as New Zealand processors dealing with the milk produced by New Zealand farmers, the normal operation of competitive markets would eventually lead to processors paying for that input an amount equal to the actual revenues less efficient costs. If they paid more, firms would leave this subset of the industry because they could not cover their efficient costs (including the cost of capital) and therefore the input price would fall. If they paid less, more firms would enter this subset of the processing industry and bid up prices for the input in that region. This normal operation of a competitive market is perfectly reflected in the milk price formula currently used for Fonterra.

Castalia (2016, section 3) also argues that ELBs are not suitable comparators for estimating the asset beta of the Notional Business, due to ELBs differing from the Notional Business because the ELBs are natural monopolies, they are subject to price regulation, they provide a necessity, they face much less risk of asset stranding, and they have inferior growth options. Instead, Castalia (2016, section 4) favours the use of comparator firms within the same industry as the Notional Business, subject to a reduction in the estimate of the asset beta of these firms in order to provide a suitable estimate for the Notional Business. However, all of these alleged points of difference between ELBs and the Notional Business are either wrong or insubstantial. If firms are very similar on all dimensions that underlie systematic risk, one could conclude that they have similar systematic risk. However, it does not follow that lack

of similarity would imply markedly different systematic risk. Two firms could have similar systematic risk for quite different reasons. In respect of ELBs, these have low systematic risk because they are natural monopolies, provide an essential product, and are subject to price regulation. The Notional Business also faces very low systematic risk, despite being neither price regulated nor being a natural monopoly nor supplying a necessity, simply because of the milk price formula (as discussed in Lally, 2016, pp. 7-10). So, suitable comparators must have similar systematic risk but this does not require similarity on all (or even any of the) dimensions that underlie systematic risk. The ELBs are of this type in relation to the Notional Business.

In respect of "asset stranding risk", the principal concern here is not risk (the possibility of actual outcomes differing from the expected outcome) but expected losses from possible asset stranding, and this is unrelated to the asset beta. In respect of growth options, and in support of their claim that these are much greater for the Notional Business, Castalia refers to the possible conversion of land to dairy farming. However, this is an option possessed by land owners rather than the Notional Business. By contrast, the Notional Business faces the possibility (rather than the choice) of a significant increase in the quantity of milk supplied to it, due to farmers switching to dairying. In principle, this is no different to ELBs facing the possibility of a significant increase in throughput due to consumers switching from gas to electricity. So, in this respect, the ELBs and the Notional Business are similar.

Furthermore, in respect of estimating the asset beta of the Notional Business by starting with the estimated asset beta for firms within the industry (excluding Fonterra) and deducting an allowance for differences between the Notional Business and these other firms, Castalia offers no opinion on the extent of this deduction or even how it might be determined. These (foreign) firms within the industry (except Fonterra) are not subject to a milk price determined in the way that Fonterra is, and this issue would be likely to exert a very significant impact upon the asset beta. Furthermore, the only apparent means of assessing this impact would be to estimate the beta of a firm with risks as similar as possible to the Notional Business. Deducting the latter estimate (β_1) from that of firms within the industry (β_2) would provide an estimate of the differential, and deducting the differential from β_2 would provide an estimate of the beta for the Notional Business (β_{NP}):

$$\beta_{NP} = \beta_2 - (\beta_2 - \beta_1)$$

However, this is equivalent to simply estimating β_1, which is the beta of a firm with risks as similar as possible to the Notional Business, and this is exactly what has been done in Lally (2016, section 2).

Open Country (2016) merely summarises arguments presented by Castalia (2016), and these have been addressed above.

Synlait (2016) claims that Lally (2016) assumes that the Notional Business is close to riskless, that this is not the case, and therefore that my estimate of the asset beta is too low. However, the claim that I *assume* the Notional Business is riskless is not correct; I instead *conclude* that it is has low risk because of the formula used to determine the milk price. It is possible that Synlait in using the word "assume" actually meant "conclude". In that case, it would be incumbent on Synlait to explain why they disagree with my analysis on this matter, but they have not done so.

Synlait (2016) also argues that ELBs are not appropriate comparators for estimating the asset beta of the Notional Business because they face different risks and are in in a different sector. This replicates an argument by Castalia (2016), and has been addressed above.

Synlait (2016) also argues that the best comparators for assessing the asset beta of the Notional Business are firms within the industry, subject to a reduction to reflect the difference in risks. Again, this replicates an argument by Castalia (2016), and has been addressed above.

Miraka (2016a, paras 1.0 to 1.6) argues that the Notional Business is not "practically feasible", and cites an earlier submission elaborating on this matter (Miraka, 2016b). In this earlier submission, Miraka (2016b, pp. 5-6) links the phrase "practical feasibility" to the wording in section 150A of the DIRA. The wording in this section is:

"For the purposes of this subpart, the setting of a base milk price provides for contestability in the market for the purchase of milk from farmers if any notional

costs, revenues, or other assumptions taken into account in calculating the base milk price are practically feasible for an efficient processor".

This means that it must be possible for a processor to process milk into RCPs, sell these outputs at GDT prices, and incur efficient costs. All of these things are possible, and therefore the practical feasibility test is satisfied. By contrast, Miraka (2016a, para 2.4) seems to interpret "practical feasibility" to mean the asset beta used must be for a business that pays a market determined milk price. However, inserting such a beta into Fonterra's milk price formula would be incompatible; the beta must be that for a business matching the Notional Business and therefore facing a milk price determined in the formulaic way rather than a market determined price.

Miraka (2016a, para 1.6) also argues that using the cost of capital of the Notional Business in determining the milk price would discourage investment in the industry. To assess this claim, consider a firm that undertakes an investment to process milk, and which may or may not act in accordance with the behaviour of the Notional Business. Any variation from the behaviour of the Notional Business is at the discretion of the firm and therefore cannot subtract from its value. So, the net present value of the cash flows would be those arising from conducting the Notional Business plus the value increment from any change in behaviour. Thus, there would be no discouragement to the firm's investment so long as the NPV of the investment into the Notional Business were at least zero. To assess this, and merely to simplify the analysis, suppose that all future cash flows arise at a single point in the future (one year hence). Letting *REV* denote the revenues earned by the Notional Business, *MIL* the milk price paid by it, *OPEX* its actual operating costs, and k its actual cost of capital, the present value of the cash flows of this Notional Business would then be as follows:

$$V = \frac{E(REV) - E(MIL) - E(OPEX)}{1 + k}$$

Letting *OPEXE* denote the efficient operating costs of the Notional Business, and *A* the efficient level of investment, the milk payment by the Notional Business would then be as follows with the allowed cost of capital corresponding to the actual rate k:

$$MIL = REV - OPEXE - A(1 + k) \tag{1}$$

Substitution of equation (1) into its predecessor yields the following:

$$V = \frac{E(REV) - E(REV - OPEXE - A - Ak) - E(OPEX)}{1+k}$$

$$= \frac{E(OPEXE) - E(OPEX) + A(1+k)}{1+k} \qquad (2)$$

$$= \frac{E(OPEXE) - E(OPEX)}{1+k} + A$$

For an efficient firm, the actual operating cost (*OPEX*) is necessarily equal to its efficient counterpart (*OPEXE*), and therefore the last equation reduces to

$$V = A \qquad (3)$$

This says that the value of the Notional Business is equal to the efficient investment required for it. So, if a firm wished to act in the fashion of a Notional Business, there would be no disincentive to investment. Furthermore, if the firm wished to act otherwise, such as by processing the milk into outputs other than the RCPs, the benefit from doing so would be the incremental revenue less the incremental costs, and the firm could be expected to do so if the NPV of this course of action was positive. So, there is no disincentive here either. Consequently, Miraka's belief that using the cost of capital of the Notional Business in determining the milk price would discourage investment in the industry is wrong.

Miraka's preferred allowance for the cost of capital is greater than the actual cost of capital for the Notional Business. Denoting this preferred rate as k_1 and substituting it into equation (1), equation (3) would then be as follows:

$$V = \frac{A(1+k_1)}{1+k}$$

So, for a firm that acted as the Notional Business does, the value of the business would exceed that of its efficient investment. Consequently, using a cost of capital in the milk price equation (1) that exceeds the cost of capital of the Notional Business (as Miraka prefers) would be unwarranted.

Miraka (2016, section 2) also argues that ELBs are not suitable comparators for estimating the asset beta of the Notional Business, because ELBs differ from the Notional Business because they are natural monopolies and they are subject to price regulation. This argument replicates one advanced by Castalia, and has been dealt with above.

Miraka (2016, section 3) also argues, in respect of the possibility of asset stranding due to a reduction in milk supply, that the actual plant to be decommissioned could be within the area in which the diminished supply occurred rather than the oldest plant as suggested by Marsden (2016, para 8.12) in the course of estimating the ex-ante allowance for asset stranding. However, the rationale for an ex-ante allowance for asset stranding arises from Fonterra reducing the allowance for capital costs (in determining the milk price) consequent upon the decommissioning of plants. So, the appropriate ex-ante allowance must reflect Fonterra's approach to reducing the allowance for capital costs rather than the number and location of plants actually decommissioned, and the Manual prescribes notional removal of the oldest plants for this purpose (Fonterra, 2015, Rule 34). Since Marsden's analysis of the ex-ante allowance matches this, his analysis is appropriate. Furthermore, Rule 34 prescribes notional removal of plants for these purposes at the next review date (up to four years later) rather than immediately whereas Marsden's analysis of the ex-ante allowance assumes immediate removal. Consequently, Marsden's estimated allowance for asset stranding is too high, which reinforces his conclusion that the allowance is so small that it could be ignored. In addition, Marsden assumes that there is no salvage value from a decommissioned plant, and this also leads to him overestimating the appropriate allowance for asset stranding in so far as there might be salvage value. For example, if the salvage value of the plant were 25% of its value in use, the appropriate allowance for asset stranding would be 25% less than in Marsden's analysis. This also reinforces Marsden's conclusion that the allowance is so small that it could be ignored.

Miraka (2016, section 3) also argues that asset stranding could occur if demand for an RCP declined or disappeared, and that Marsden (2016) has not addressed this point. This is not correct. Marsden (2016, footnote 55) refers to Marsden (2014) on this matter and Marsden (2014, paras 6.27 – 6.31) examines this issue and offers arguments in support of not making an ex-ante allowance for this possibility. Having claimed that Marsden did not address this issue, Miraka does not respond to Marsden's arguments.

In summary, none of the arguments raised in these submissions warrant any change in my earlier views on these matters, as conveyed in Lally (2016).

3. The Impact of the Milk Price Manual

The milk price formula as presented in the Milk Price Manual significantly affects both the asset beta and the allowance for stranding risk of the Notional Business. Accordingly, the Commission has raised the question of how the estimate of the asset beta and the allowance for stranding risk would change if the Manual were not taken into account but sections 150A, 150B, and 150C of the DIRA were taken into account.

Section 150A requires that the base milk price must provide an incentive for Fonterra to operate efficiently and that any revenues and costs used in the calculation are practically feasible for an efficient processor. Section 150B lists a set of assumptions relating to the determination of the milk price that would not be inconsistent with section 150A, and therefore expands rather than narrows the options in determining the milk price. Section 150C states that the milk price must be based upon the actual revenues that would have been earned from the sale of a particular mix of commodities produced using all of the milk supplied to it, net of costs, with the mix of commodities chosen on the basis of Fonterra's physical manufacturing capacity and anticipated profitability from possible mixes over a period of up to five years. So, sections 150A and 150C imply a milk price equal to the actual revenues (REV) that would have been earned from a particular mix of commodities produced using all of the milk supplied to the processor net of the efficient non-milk costs of processing this milk ($OTHE$), per unit of milk processed, i.e.,

$$MIL = REV - OTHE \tag{4}$$

The Manual clarifies the mix of commodities to which REV relates and also clarifies various questions relating to $OTHE$. However, even without these Manual clarifications, equation (4) is still valid. Furthermore, the Notional Business would earn the revenues referred to in equation (4), pay a milk price in accordance with equation (4), and incur the actual counterpart to the efficient operating costs referred to in equation (4), i.e., its net cash flows (NCF) would be as follows:

$$NCF = REV - MIL - OPEX$$

Substitution of equation (4) into the last equation would yield net cash flows as follows:

$$NCF = OTHE - OPEX \qquad\qquad (5)$$

The effect of the Manual is only to determine the precise nature of the costs within equation (5), as a result of specifying the precise mix of RCPs. However, the lack of clarity in the absence of the Manual does not change any of the reasoning underlying the asset beta recommended in Lally (2016). So, replacing the Manual with only sections 150A – 150C of the DIRA would not change my estimate of the asset beta of the Notional Business.

In respect of the allowance for stranding risk, sections 150A and 150C of the DIRA imply that equation (5) holds, as discussed above. Consequently, if there were a supply reduction, the efficient capital costs (part of *OTHE*) would be reduced. However there are a range of possibilities in doing so. The Manual reduces the allowance for capital costs by notionally removing the oldest plants and therefore the ex-ante allowance for this should be determined on the same basis. As argued by Marsden (2016), this points to an allowance that is sufficiently small that it could be ignored. However, an alternative approach might be to reduce the allowance for capital costs by notionally removing an average age plant, and therefore the ex-ante allowance for a possible supply reduction should be determined on the same basis. Doing so would raise the value of the notional plants removed, and therefore also raise the ex-ante allowance, and the increase might be sufficiently large that it would no longer be reasonable to ignore it. For example, if 10% of capacity were decommissioned, only 2.58% of plant value would be removed when notionally removing the oldest plants for the purposes of resetting *OTHE* (Marsden, 2016, page 61). By contrast, if average age plants were notionally removed for the purpose of resetting *OTHE*, the reduction in plant value would be 10%. So, under the latter approach, the allowance for asset stranding would have to be four times that in Marsden's analysis. Thus, Marsden's (2016, para 8.21) estimated allowance for stranding risk of up to 0.2% would become up to 0.8%, at which point it might be too large to ignore.

In summary, if only sections 150A – 150C of the DIRA were taken into account in estimating the asset beta, my earlier estimate of the asset beta of the Notional Business would remain

valid. However, if only sections 150A – 150C of the DIRA were taken into account in estimating the allowance for stranding risk, this would challenge Marsden's conclusion that the appropriate allowance is sufficiently small that it could be disregarded.

4.   Further Questions Raised by the Commission

The Commerce Commission has raised a number of further questions about these matters, as follows. Firstly, the Commission has asked whether a processing business that is close to riskless would have an incentive to operate efficiently. The Notional Business is close to riskless because the only source of risk is variation between its actual and efficient costs apart from milk, for which there is no such risk, and the milk payment represents about 80% of its costs (Lally, 2016, page 7). However, this does not undercut the incentive to operate efficiently. As discussed in the previous section, the net cash flows of the Notional Business are the efficient non-milk costs less actual operating costs, these efficient costs are reset only four yearly, and therefore the efficiency incentives for the Notional Business are both substantial and comparable with those of businesses subject to price or revenue caps.

Secondly, the Commission has asked whether regulatory rules that affect ELBs but not the Notional Business affect the asset beta of the ELBs. It would be difficult to assess the impact of regulatory rules on the asset betas of ELBs, or more generally the impact of any particular factor on an asset beta. However, for the present purposes, it is sufficient to presume that the impact is substantial. Since these regulatory rules do not apply to the Notional Business, it might then be thought that ELBs were unsuitable comparators for estimating the asset beta of the Notional Business. However, the same point has been raised by Castalia (2016) and addressed in the previous section. In short, differences in the factors underlying the asset betas of ELBs and the Notional Business do not disqualify the ELBs as suitable comparators. The significant requirement is similarity in asset betas, and this could occur (and does in this case) despite differences in many of the factors underlying betas.

Thirdly, the Commission has asked to what extent the asset beta for the Notional Business reflects the milk price formula (which immunises the business from a normal competitive market), and whether a processor could be commercially viable paying a milk price reflecting that asset beta. As discussed in Lally (2016, page 7), the effect of the milk price formula is to convert the Notional Business into one that is effectively a cost reimbursement operation in

respect of its milk costs and revenue-capped in respect of its non-milk costs. Collectively, these features are likely to exert a significant downward effect upon the asset beta, and this raises the milk price. On the question of whether such a business would be commercially viable, this is equivalent to asking whether the present value of the net cash flows, with the milk payment determined in accordance with the formula, would be at least the efficient investment into such a firm. This question has been addressed in the previous section and the answer is affirmative. The low beta raises the milk price and therefore lowers the net cash flows as shown in equation (2), but it also lowers the discount rate and these two effects net out as shown in equation (2).

Fourthly, the Commission has asked to what extent the co-operative ownership structure of the Notional Business affects its asset beta. Since the Notional Business is part of Fonterra, and this has a co-operative structure, this is equivalent to asking whether abandonment of the co-operative structure would induce a change in the asset beta.[1] Furthermore, since the asset beta of the Notional Business is primarily driven by the milk price formula, this is equivalent to asking whether the milk price formula would remain in place. Assuming (reasonably) that Fonterra would continue to dominate the industry, the milk price formula could be expected to remain in force in order to restrain the monopsony powers of the business. In that event, the ownership structure would not have affected the asset beta. Thus, so long as the milk price formula would continue to be applied, the co-operative ownership structure of the Notional Business would not affect its beta.

Fifthly, the Commission has asked whether Marsden (2016) has identified all factors distinguishing the asset beta of Fonterra's Actual Business from the Notional Business. As noted by Marsden (2016, section 2), the Actual Business differs from the Notional Business in that milk is processed into a more diverse set of outputs than those of the Notional Business, leading to revenue differences ("stream risk") and cost differences. Marsden (2016, section 3) examines whether stream risk is systematic and concludes that it is not. He does not apply the same process to the cost differences, but these would be harder to identify and very unlikely to be systematic when the revenue differences were not because the costs for the two businesses would not be fundamentally different (both involve operating costs, depreciation and cost of capital). So, I consider that Marsden has identified all factors

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[1] The Notional Business has recently moved somewhat away from a pure co-operative structure, in the sense that its milk suppliers can at least trade equity amongst themselves (Commerce Commission, 2013, pp. 3-4).

distinguishing the asset betas of the two businesses and assessed whether the relevant part is systematic.

Lastly, the Commission has asked what would be the impact on the allowance for stranding risk (the "specific risk premium") of a possible decline in the milk supply or a rapid and material change in the RCP product mix. In respect of a possible decline in the milk supply, this issue has been discussed in section 2. As discussed there, in the event of a decline, some plants may be decommissioned in which case the allowance for the efficient capital costs will decline, to the detriment of the Notional Business. So, an ex-ante allowance for this possibility might be warranted. The size of this ex-ante allowance would depend upon the reduction in the allowance for capital costs in the event of a milk supply decline. In accordance with Rule 34 of the Manual (Fonterra, 2015), the reduction involves notionally removing the oldest plants and this would minimise the ex-ante allowance. The size of this ex-ante allowance also depends upon the probability of a milk supply reduction and the percentage of capacity decommissioned in that event, and Marsden (2016, para 8.21) argues that the allowance for the risk should not then exceed 0.2% of the asset base.

In respect of a change in the RCP mix, this may also warrant decommissioning of plants and therefore a reduction in the allowance for capital costs. So, as with a possible decline in the milk supply, an ex-ante allowance for this possible reduction in the allowance for capital costs might be warranted. If so, the size of the ex-ante allowance should reflect the extent of the reduction in the allowance for capital costs in the event of a change in the RCP mix. In accordance with Rule 33 of the Manual (Fonterra, 2015), the reduction involves notionally removing the oldest plants (with the lowest remaining value) and this minimises the ex-ante allowance. In addition, and as with the ex-ante allowance for a possible decline in the milk supply, the ex-ante allowance for a possible change in the RCP mix depends upon the probability of such an event and the percentage of capacity decommissioned in that event. I am not able to offer a view on either parameter but note that Marsden (2014, paras 6.27 − 6.31) judged these parameters to be sufficiently small that no ex-ante allowance was warranted.

5. Conclusions

My conclusions are as follows. Firstly, none of the arguments raised in these submissions warrant any change in my earlier views on these matters.

Secondly, if only sections 150A – 150C of the DIRA were taken into account in estimating the asset beta of the Notional Business, my earlier estimate of this parameter would remain valid. However, if only sections 150A – 150C of the DIRA were taken into account in estimating the ex-ante allowance for stranding risk, this would challenge Marsden's conclusion that the appropriate allowance is sufficiently small that it could be disregarded.

Thirdly, in respect of the question of whether a processing business that is close to riskless would have an incentive to operate efficiently, the net cash flows of the Notional Business are the efficient non-milk costs less actual operating costs, and these efficient costs are reset only four yearly. So, the Notional Business would significantly benefit from reducing its costs and be significantly disadvantaged from an increase in its costs, thereby giving it significant incentives to operate efficiently. Furthermore, these incentives are comparable to those of businesses subject to price or revenue caps.

Fourthly, 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.

Fifthly, in respect of the question of whether the Notional Business would be commercially viable when paying a milk price reflecting the asset beta as described in the previous paragraph, the milk price formula is likely to exert a significant downward effect upon the asset beta of the Notional Business, this raises the milk price and therefore lowers the net cash flows of the business, but it also lowers its discount rate and these two effects net out. Consequently, the Notional Business would be commercially viable under these circumstances.

Sixthly, in respect of the question of the extent to which the co-operative ownership structure of the Notional Business affects its asset beta, it is possible that the co-operative structure

might be abandoned at some future point. Assuming that Fonterra would continue to dominate the industry, the milk price formula could be expected to remain in force in order to restrain the monopsony powers of the business. In that event, the ownership structure would not have affected the asset beta. Thus, so long as the milk price formula would continue to be applied, abandoning the co-operative ownership structure of the Notional Business would not affect its beta.

Seventhly, in respect of the question of whether Marsden has identified all factors distinguishing the asset beta of Fonterra's Actual Business and the Notional Business, the Actual Business differs from the Notional Business in that the Actual Business processes milk into a more diverse set of outputs than those of the Notional Business, leading to revenue differences ("stream risk") and cost differences. Marsden examines whether stream risk is systematic and concludes that it is not. He does not apply the same process to the cost differences, but these would be harder to identify and unlikely to be systematic because the costs for the two businesses would not be fundamentally different (both involve operating costs, depreciation and cost of capital). So, I consider that Marsden has identified all factors distinguishing the asset betas of the two businesses and assessed whether the relevant part is systematic.

Lastly, in respect of the question of the impact of a possible decline in the milk supply or a rapid and material change in the RCP product mix on the ex-ante allowance for stranding risk (the "specific risk premium"), if either event occurred, some plants might require decommissioning, the allowance for the efficient capital costs would then decline, to the detriment of the Notional Business, and therefore an ex-ante allowance for this possibility might be warranted. Since the Manual specifies notional removal of the oldest plants for the purpose of reducing the allowance for capital costs, the ex-ante allowance for the risk would reflect this notional removal of the oldest plants and therefore be lower. The ex-ante allowance would also depend upon the probability of these shocks occurring and the percentage of capacity decommissioned in that event. I do not have a view on the values of these two parameters and therefore on the size of the ex-ante allowance.

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