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**RE: Notional Processor asset beta**

Dear Diego,

Under the Dairy Industry Restructuring Act 2001 (DIRA), the purpose of section 150A includes the promotion of a base milk price that provides for “*contestability in the market for the purchase of milk from farmers*”. In order to provide for contestability, the milk processing costs used in the calculation must “*be practically feasible for an efficient producer*.” This means that the asset beta should support an expected return through a cost of capital estimate that would be acceptable to investors in an efficient existing or potential dairy processor operating in New Zealand.

The New Zealand Commerce Commission (the Commission) has asked CEPA to provide advice on the asset beta used to calculate processing costs as part of the calculation of the farmgate milk price by Fonterra. In particular, it has asked us to consider the 2019 paper prepared by academics Graham Partington and Stephen Satchell (P&S) to assess whether it changes the conclusions of our papers of 2018, and whether there is anything else in the paper that warrants reconsideration of our approach to estimating the asset beta.

In our review of P&S, we have focused on the most important issues raised in their report, in particular those set out in their executive summary (P&S ES):

- P&S reject the use of all the data from comparators arguing that they have different characteristics to a Notional Processor (P&S ES points 1 and 2). However, the detailed analysis set out in CEPA (2018) indicates that the systematic risk of the comparator group is similar to that of a Notional Processor and therefore provides relevant evidence. Many companies, like the Notional Processor assumed by Fonterra, can pass through commodity price risk to suppliers, albeit with a lag, which would not materially affect long term value and beta. In addition to the impact of short term revenue changes, the focus of P&S, asset beta is influenced by the long-term value that investors attribute to companies. Our analysis in CEPA (2018) indicates that the factors that affect long-term value are best reflected in the comparator group.
- P&S reject the use of all data from companies outside New Zealand (P&S ES point 2). They argue that betas from companies in different countries are measuring different things. However, if betas are compared across markets where the equity market risk premium is similar (like developed

markets) beta can represent systematic risks that can be compared and with careful judgement can be used for the determination of cost of capital parameters. It is open to the Commission to make adjustments for the differences between markets.

- P&S assert that Fonterra's beta provides good evidence of the beta for an efficient processor (P&S ES point 3). However, while its corporate structure meets the needs of its shareholders, its distinct structure influences the way it trades making its beta a poor proxy for that of an efficient processor. First, the shareholders of Fonterra are also suppliers to it, and it has a stated objective to maximise the value of a package of rights that its farmer suppliers enjoy rather than the value of the shares. Changes in the value of the processing business therefore don't necessarily feed through to the listed share value, but rather may be reflected in a change in the value of the supply contracts, which are unobserved. Second, the bulk of shares traded in Fonterra and linked rights to the Fonterra Shareholder Fund are bought or sold by farmers. These transactions are likely undertaken to meet obligations to own shares related to milk supply volumes, rather than being the portfolio decisions of diversified investors. Therefore, its share price movements are unlikely to have the same relationship to general stock market movements that other shares do. Third, investors do not see the Fonterra Shareholder Fund as an investment substitute for electricity lines businesses (ELBs).
- P&S assert that the systematic risk associated with the value of assets in the long-term is close to zero for a notional processor (P&S ES point 4). However, evidence from asset betas in regulated industries are sufficiently high that changes in the value of businesses in the long-term must be a key determinant of the asset beta. We consider that the size of "long-term" beta is also too large to be caused by regulatory errors in the cost of capital. The asset betas for different regulated industries with varying growth opportunities but the same type of price control is different. Industries with prospects that are more highly correlated to the economy have higher asset betas even though the approach to and structure of price controls is similar. The assertion by P&S that systematic risk associated with the long-term is small is not consistent with the evidence.
- P&S assert that the form of regulation of a Notional Processor is similar to that of ELBs, and therefore the beta for a Notional Processor will be the same as that of ELBs (P&S ES point 5). However, the Commission has itself reported that there is no empirical evidence that differences in regulation have a measurable impact on asset beta. Moreover, the analysis of different members of the comparator set in CEPA (2018) shows that exposure to different levels of commodity risk doesn't have a material impact on the beta estimate. As noted above, in our view, this is because it is industry characteristics that affect the long-term value of the business. The way that value changes in response to changes in the economy for a Notional Processor is much more likely to reflect the way that value changes for the comparator group rather than ELBs.

Therefore, we confirm our conclusion from our work in 2018 that we consider the evidence from the comparator companies produces an estimate of the asset beta of an efficient processor in New Zealand that is consistent with the DIRA. Further explanation of the above points is set out in the attachment to this letter.

Yours sincerely

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# ATTACHMENT – DETAILED RESPONSE

## Introduction and context

In this short note, we are responding to points raised in a report by Partington & Satchell (2019) (henceforth P&S).<sup>1</sup> P&S in turn comments on a number of other papers on the asset beta that should apply to a “Notional Processor” in the New Zealand Dairy industry, including CEPA (2018) and the decisions by the Commission.

Before responding in detail on points on the asset beta, it is worthwhile to recall the statutory framework and its intention. Section 150A of the Dairy Industry Restructuring Act 2001 states that:

- (1) The purpose of this subpart is to promote the setting of a base milk price that provides an incentive to new co-op to operate efficiently while providing for contestability in the market for the purchase of milk from farmers.
- (2) For the purposes of this subpart, the setting of a base milk price provides for contestability in the market for 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.<sup>2</sup>

Accordingly, to give effect to the overall contestability purpose in section 150A(1) the application of Fonterra’s Milk Price Manual should lead to a farmgate milk price that allows for contestability in the market for the purchase of raw milk. The essence of contestability is that efficient firms are able to compete, or potentially compete, in the market. The allowed return on capital is therefore one that would at a minimum satisfy investors in an efficient processor. That means that the allowed return embedded in the milk price calculation should reflect the returns on investments that investors would consider to be investment substitutes for a Notional Processor.

Further, the law does not rely on an assumption that there is one efficient company that dominates the processing market and indeed is neutral on what the actual market structure is. However, a Notional Processor, which sets the farmgate milk price in New Zealand, is by definition not a monopsonist, as suppliers may choose to switch to or from it to other processors. The risk for a firm that is competing, or potentially competing, as required by contestability, is higher than for a firm with market power, and some of the risk is likely to be systematic and affect beta.

In addition, the allowed returns capture all the returns on capital that are required by an efficient processor. There is no cross-subsidy between profits of an efficient processor and the payments to farmers for their milk (which is a possibility when the owners of a processor are also suppliers/ users of the processor’s service).

The returns embedded in the milk price calculation are calculated using a particular form of the Capital Asset Pricing Model (CAPM) appropriate for New Zealand. The asset beta, the subject of this paper and that of P&S is an important parameter in that model. The Commission, in line with previous decisions, also

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<sup>1</sup> Partington, Graham & Stephen Satchell (2019). Report to Fonterra: discussion of the asset beta for use in Milk Pricing.

<sup>2</sup> New Zealand Legislation (2001). The Dairy Industry Restructuring Act 2001. The approach to section 150A is also subject to the ‘safe harbours’ in section 150B and the mandatory principles in section 150C.

needs to ensure that the combination of the decision on asset beta with other parameters leads to a return that investors in an efficient processor would expect.

In the remainder of this note we set out some of the key views that have led P&S to their conclusions, and our response.

## Other dairy processors as comparator companies

### P&S view

P&S argue that a Notional Processor has a low asset beta that is significantly lower than that for other dairy processors. It is argued that a Notional Processor's unique pricing arrangements for milk mean that the effect of operating leverage will be low and also lower than for other processors.

### Our view and response

P&S do not make a comparison between Notional Processors and the companies in the comparator set. They argue that all the companies in the comparator set are different from Notional Processors, and they conclude that none provide evidence of the asset beta of a Notional Processor.

P&S assert that "*the extent to which members of the comparator set are able to pass through volume and price risks ... is likely to be substantially less than in the case of Fonterra*".<sup>3</sup> They provide no evidence in support of this. Our analysis, reported in our report of March 2018, has shown that the risks faced by a notional processor and those of the comparator group are rather similar. In particular, they face similar cost risks, risks of asset stranding and financing risks.

There are greater lags in the pass through arrangements of the comparator group than for a Notional Processor. However, if price changes are symmetric over time then the impact of the lag will likely be low so long as the volumes do not vary significantly over time. While comparator companies' ability to pass-through all price risk in a prompt manner is unlikely, our research showed that there was scope for them to pass on some of this risk. As companies that were able to pass-through price risk did not have a lower average asset beta than the average for the full sample it indicated that the ability to pass on price risk in this sector is unlikely to contribute significantly to a positive asset beta.

P&S also argue that pass through risks for Fonterra (and thus for Notional Processors) are lower because of the ownership structure "*Fonterra's particular structure, where it is owned by its members, gives it more capacity in this regard*".<sup>4</sup> We accept that the structure of the business could have an effect on the asset beta if it was accepted that price risk was systematic. However, as noted above, in this sector exposure to different levels of commodity risk doesn't have a material impact on the beta.

P&S's view on the determinants of asset beta relates only to revenue risk and operational leverage. In practice, market assessment of risks takes account of longer-term issues.

## Use of a heterogenous sample of companies

### P&S view

P&S state "*the sample is heterogenous and sample members have different characteristics than the notional processor. Adding a large number of unsuitable companies to increase the sample size for estimating betas does*

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<sup>3</sup> P&S, page 25.

<sup>4</sup> P&S page 25.

*not improve matters, but actually makes them worse*".<sup>5</sup> They say that "the current approach of filling up the comparator set with inappropriate information simply muddies the waters"<sup>6</sup>, and that "the fallacy here is to assume that the additional companies contain positive information about the risk of [the] notional processor. It is quite possible for the additional firms to take us away from the correct answer".<sup>7</sup>.

## **Our view and response**

Our approach to estimating the beta has relied on the Commission's established methodology. Its approach to estimating equity beta follows a six-step process, involving identifying relevant comparator firms, and estimating an average asset beta for the sample which is then relevered. There is scope within this methodology for the Commission to "apply any adjustments for regulatory differences or differences in systematic risk across services to the average asset beta for the sample".<sup>8</sup> This method has been set out for example in section H8.14 of Commerce Commission (2010),<sup>9</sup> and the approach considered in detail again in Commerce Commission (2016).<sup>10</sup> The aim of this methodology is to obtain a "service-wide" asset beta and not to adjust for individual variations in systematic risk.

It is obviously the case that where a focused set of comparators with precisely the same balance of risks can be identified that is very likely to provide a sound estimate of beta, as suggested by P&S.

However, for many companies, very close comparators simply do not exist. Companies are rarely focused simply on one business line, in one industry, in one country and with exactly the same operating characteristics. Companies within the same sector have similar factors which determine their systematic risk, for example macroeconomic developments are likely to lead to similar changes in demand for products, and the investment cycle. An individual company is likely to have an asset beta within the range of betas from the sample. Without further information, an average beta value for the sample will represent a sensible estimate of the beta of a company within the sector.

P&S are right to say that more observations are not necessarily more reliable. However, including a range of firms in a sample of companies from the same industry with similar operating characteristics and similar systematic risks is not "muddying the waters", but rather a sensible examination of relevant evidence on what the beta for an efficient processor is.

Additional information – e.g. a detailed analysis of relative systematic risk – can help provide context to set out the reasons for the inclusion of companies in the sample. It can also be used to support decisions by a regulator to adjust asset betas for known effects that increase or decrease systematic risk for companies with particular characteristics.

P&S make a suggestion in their paper that "fuzzy sets" might be used to assess the betas of comparator companies. Weights would be assigned to the estimated beta of different companies and/or sectors, depending on their deemed relevance to the decision. We see merit in this idea in theory. For example, it

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<sup>5</sup> P&S page 5

<sup>6</sup> P&S page 14.

<sup>7</sup> P&S page 30.

<sup>8</sup> Commerce Commission (2010). Input methodologies (electricity distribution and gas pipeline services). Reasons Paper. Page 510.

<sup>9</sup> Commerce Commission (2010). Input methodologies (electricity distribution and gas pipeline services). Reasons paper.

<sup>10</sup> Commerce Commission (2016). Input Methodologies Review Decisions Consolidated Reasons papers.

could be decided that European and US companies should be given equal weight, despite a different number of companies in each sample. Under the Commission's methodology, all companies are given equal weight. There are other undesirable consequences of the approach: a merger of two companies would lead to halving of the weighting of the assets of the companies involved.

Making such an approach work in practice, though, would be challenging because decisions on the weights would involve subjective judgements. In estimating betas as part of an investment process, that would be acceptable, but it may be too hard to make it work in a regulatory context. The challenges are evident from the discussion in Commerce Commission (2016), pages 692-697, which looks at alternative asset beta estimates which vary depending on the approach to sample selection.

P&S state that "*it is quite possible for the additional firms to take us away from the correct answer*".<sup>11</sup> But a careful selection of the firms, so that they operate in the same industry, and have similar characteristics guard against this risk. We consider it rather likely that ignoring the evidence of firms in the same industry, with similar characteristics, and credible investment substitutes, would take us away from the correct answer.

We accept that there are arguments for the use of narrower samples of companies for which all companies have a risk profile that more closely matches that of the company for which a beta is being estimated. However, this may not be possible, and the asset beta estimates for those comparator companies which are not commodity exposed had a similar beta to those that are. Narrowing the sample in this instance would not materially change the result.

## Average betas for different market indices

### P&S view

P&S consider that "*[i]t is wrong to average betas calculated against different market indices, since they mean different things*"<sup>12</sup> and "*[t]here is no obvious justification for this, it is just wrong*"<sup>13</sup>.

P&S suggest measuring betas against a common index or using a world market index.

### Our view and response

The approach of averaging across markets to arrive at an average beta statistic is well established in the Commission's approach. The approach was set out in Commerce Commission (2010) and in the revision of the Input Methodologies in Commerce Commission (2016).

Measuring betas against a common index implies the use of an International form of the CAPM. The Commission has considered the use of an international CAPM but it rejected this "*because of difficulties in estimating data inputs*"<sup>14</sup>. We are not aware of regulatory decisions in developed countries that have been based on an international CAPM.

Regulators in other jurisdictions do use beta estimates from international companies in particular where data from local comparators is not available or does not provide a reasonable indication of the systematic risk with betas measured against local market indices. For example, in the UK, there is no independent

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<sup>11</sup> P&S page 30.

<sup>12</sup> Partington and Satchell (2019), page 5.

<sup>13</sup> Partington and Satchell (2019), page 13.

<sup>14</sup> Commerce Commission (2016), page 788.

listed airport company and the CAA uses data on betas from other airport companies, in particular, in Europe.<sup>15</sup> Possible differences in systematic risk from choice of index are considered by regulators and stakeholders, but the evidence provided by this data forms a crucial part of the decision.

P&S are of course correct that betas in different markets are measuring different risks. Market movements measured against indices depend *inter alia* on the sector composition of that index, and average financial gearing. However, just because there are differences in risk measures it does not follow that averaging is inappropriate in all circumstances.

It is helpful in this context to consider how the beta statistic is used. It is a parameter in the estimation of the cost of capital. Differences in the cost of capital between companies in different markets is due to different risk-free rates, market risk premia, or systematic risk. The differential risk-free rate will reflect expected currency movements and other country-related risks. So, a beta multiplied by the local market risk premium reflects the expected additional return for an investor bearing systematic risk. It follows that if the market risk premia for different markets is similar, then the beta for different markets will be a reasonable representation of the price of risk. In these circumstances, for the purpose that the Commission is using beta estimates, averaging is legitimate.

For example, consider the case of two companies A and B in developed markets with equity beta of 0.5, risk free rates of 1.0% and 3.0% respectively and each has a market risk premium of 5.0%. The nominal expected return of A and B are 3.5% and 5.5% respectively (risk free rate + beta x market risk premium). However, because of the anticipated depreciation of the currency of B vs A embedded in risk free rates, the nominal return of B measured in country A would be 3.5%. Likewise, the nominal return of A in country B would be 5.5%. From an investor perspective, the companies offer the same return. In practice, there are a range of other complications (e.g. term structure and tax). But if the equity market risk premia are similar, then betas can be compared.

So, are expected returns in New Zealand and the markets which are the domicile of the comparator companies sufficiently similar? A full comparison of expected risk premia is beyond the scope of this paper. The historic equity risk premium, over the period 1900-2018 measured by Credit Suisse (2019),<sup>16</sup> is around 4.6% for New Zealand, compared to 4.2% for the world, 5.3% for the USA, 6.0% for Germany, and 4.4% for the UK. If expected future returns match historical returns, that suggests a New Zealand beta for a company of similar risk would need to be higher than a US one.

Alternatively, one forward looking measure of market risk premia can be obtained from surveys. One of these is Fernandez et al (2019).<sup>17</sup> While the absolute level of the survey estimate of MRP is not considered by many practitioners to be reliable, the comparison of MRP estimates between markets is informative. In the latest survey, the market risk premium for New Zealand is 5.9%, USA 5.6%, Australia 6.5%, Germany 5.7%, UK 6.2%.

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<sup>15</sup> PwC (2019). Estimating the cost of capital for H7 – response to stakeholder views. Report prepared for the Civil Aviation Authority.

<sup>16</sup> Credit Suisse (2019). Global Investment Returns Yearbook 2019. Credit Suisse.

<sup>17</sup> Fernandez, Pablo, Mar Martinez & Isabel Acin (2019). Market Risk Premium and Risk-Free Rate used for 69 countries in 2019: a survey. IESE business school.



P&S assertion that the data from different markets are not comparable, which implies that they provide no useful information. We consider that comparisons can be made provided that equity risk premia are similar, and the evidence suggests sufficient similarity.

## Fonterra as a comparator

### P&S view

P&S assert that Fonterra is a good proxy for an efficient processor, and that its shares should be used as a major source of evidence on its asset beta. They state that “[a]s long as the fundamental principle of no-arbitrage holds there is no reason to believe that Fonterra’s shares are priced any differently to other shares in the market”.<sup>18</sup>

### Our view and response

The market for the shares of Fonterra and the shares of the Fonterra Shareholders’ Fund has a distinctive design. Fonterra is a cooperative, and shares in the company are owned by its supplying farmers. The farmers are required to hold shares in Fonterra, with the size of the holding linked to the amount of milk that they supply. Since 2012, farmers have been able to buy or sell shares in Fonterra to meet their obligations via the Fonterra Shareholders’ Market. This is a market operated by the New Zealand Stock Exchange in which only authorised participants may participate, primarily the farmers supplying Fonterra along with other organisations responsible for the operation of the market.

In order to maintain liquidity in the Fonterra Shareholders’ Market a special instrument was created, units in the Fonterra Shareholders’ Fund (FSF). Each unit effectively gives the holders economic rights to a share in Fonterra, but do not allow the holder to vote. Farmer shareholders may exchange shares in Fonterra for units in the FSF, and vice versa. Farmers may therefore adjust their holdings in Fonterra when no other farmers wish to buy or sell shares. Within limits, farmers can sell economic rights and retain voting rights to shares, thereby complying with the requirement to own a certain number of shares.

The number of units in the FSF varies as farmers exchange shares in Fonterra for units in the FSF and vice versa. The purchase and sale of units is managed to ensure a close relationship between the price of Fonterra shares and the price of FSF units. This is in contrast to shares in most other companies with differential voting rights where non-voting or limited voting shares typically trade at a material discount to shares with full voting rights.

This structure has been designed to ensure that the farmer shareholders retain control of Fonterra, allowing third parties to provide liquidity, but without giving those third parties the opportunity to control the company, or even to influence it e.g. through the appointment of directors. The Shareholder Council does not have a representative of owners of units in the FSF.

While the structure achieves the objectives of the farmer shareholders, it has two implications for:

- the governance of Fonterra; and
- share trading in Fonterra.

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<sup>18</sup> P&S page 30.

In terms of governance, Fonterra does not have pressure from shareholders to maximise returns to the processing activity, and Fonterra does not aim to maximise value for its shareholders. Its stated “*number one priority is, and always has been, to maximise the total payout to our farmers*”.<sup>19</sup> Farmers receive their payment for milk, other milk related benefits, and the dividend, and it is the sum of these three that Fonterra aims to maximise. The consequence of this is that changes in the economy and/or the stock market that would flow through to shareholders for a normal company are less likely to do so for Fonterra shareholders, with changes in value appearing through other parts of the relationship between Fonterra and its shareholders.

Share trading activity which determines the share price of Fonterra, and the FSF is largely driven by decisions by farmer shareholders. The prices of the twin securities are driven by trading decisions for both shares. For example, the traded volume in Fonterra (FCG) in the year to July 2018 was 84.6m shares, or 335k average daily volume. The traded volume in FSF was 113m shares, or 450k average daily volume. During the year, units were both issued and redeemed as farmer shareholders exchanged shares between the two markets. On average, approximately 84k units were issued each trading day, with redemptions of 141k units, a total volume of approximately 224k. This is roughly half of the volume of trades on NZX for the fund, close to the average daily volume traded on the NZX. Out of total trades on both securities of 785k per day, at least 70% is determined by farmer-shareholder decisions.

The price of Fonterra shares, and the FSF, is therefore largely determined by buy and sell decisions of farmer shareholders. These are driven by decisions on milk supply, and business management. The timing of these buy and sell decisions, and thus their relationship with general market movements are unlikely to be the same as that for diversified investors which determines share price movements of other shares, and is an assumption in the CAPM.

This indicates that Fonterra’s beta is low not because of anything fundamental about the assets, but rather the unique structure of the market for its shares and units.

Over the last 10 years there has been an increasing demand from institutional and retail investors for infrastructure investment opportunities. These investors have allocated funds to unlisted and listed investment funds. Those focused on listed funds choose a universe of stocks to invest in with infrastructure characteristics. Listed electricity lines businesses are considered by these funds to be “core infrastructure”, and often feature in the list of holdings of these funds. None of these fund managers are on the register of shareholders in the Fonterra Shareholders Fund. Investors do not see the Fonterra Shareholder Fund as an investment substitute for ELBs.

We note that Fonterra shares also have relatively low liquidity. The Commission has in the past excluded low liquidity shares from its calculations of beta. The most important reason to exclude Fonterra and the FSF as evidence of the asset beta of a Notional Processor, though, is that share trading in Fonterra is driven by factors that are very different from that of other shares and should not be used to inform decision about beta of an efficient processor. This is consistent with the low equity and asset beta that is observed for Fonterra.

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<sup>19</sup> Fonterra (2019). Good things happen when we work together. <https://www.fonterra.com/content/dam/fonterra-public-website/phase-2/new-zealand/pdfs-docs-infographics/pdfs-and-documents/pdf-stronger-together-booklet-web-layout.pdf>. Accessed on 14/6/19. Page 10.

## Regulation and beta

### P&S view

P&S argue that the form of regulation for a Notional Processor is similar to that of an ELB, and therefore that the asset beta will be similar, and it is possible that it will be lower.

### Our view and response

The P&S view, along with other academic advisors to the industry, have all made the following argument: an NP is regulated like an ELB, an ELB has a low beta, therefore an NP has a low beta.

This relies on a further assumption, that the form of regulation is the key determinant of betas, rather than characteristics of the industry. The Commission has considered this issue extensively, and has an excellent summary in Commerce Commission (2016). It finds that in theory the form of regulation matters for beta, but that there is insufficient empirical evidence for it to be relied on for regulatory decisions.

The Commission quote a paper by Dr Lally that states “*there is no empirical study that provides a clear conclusion on the effect of regulation on beta*”.<sup>20</sup>

In comparing the betas of ELBs and a Notional Processor, P&S consider the importance of regulation: “... *the question is whether risks and returns are largely due to the effects of regulation, or the underlying nature of the businesses. If the former the betas are likely to be similar, if the latter the betas may differ significantly.*”<sup>21</sup>

Given the analysis indicates that the form of regulation has not been demonstrated to affect beta, it must be the underlying nature of the business. This points to looking at comparator companies that are in the same industry rather than an unrelated sector.

The form of regulation affects short term value. Most of the value of a company is reflected in the terminal value after the end of a price control period. It is therefore the covariance of that value with the market that determines the asset beta, and within price-control variation is of second order. The academic advisors, including P&S, have all asserted that short term variation in revenues has a low beta and therefore the beta must be low. While this is sensible, it disregards the variation in terminal value that we observe in infrastructure stocks, and the changes in perception of value as a result.

## Systematic risk and growth options

### P&S view

P&S note that growth options are riskier than assets in place and are therefore likely to increase asset beta. They consider that growth options for a Notional Processor are low, and of low value. They expect growth options are likely to be greater for ELBs, and therefore more likely that the beta for ELBs is higher than for a Notional Processor.

### Our view and response

These comments appear to have missed the point on growth options. It is not the size of growth options that affects beta, but about how their value varies with the change in the market. Our knowledge about ELBs indicates that changes in investment plans are at present only linked very loosely to economic growth but more to the technical transformation of the industry including decarbonisation. In contrast, growth, and

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<sup>20</sup> Commerce Commission (2016), page 698.

<sup>21</sup> P&S page 33

therefore the value of growth options, for a dairy processor is related to economic growth and thus likely to be more correlated with the performance of the stock market.

P&S also rely on an argument that growth options have a zero NPV for a Notional Processor. In CEPA (2018), we explain that the empirical evidence is that investors do place a value on growth opportunities both for ELBs and the sample, and thus a Notional Processor.

The drivers of growth for a Notional Processor are far more similar to those of the comparator sample than they are to ELBs. This component of systematic risk is therefore much more similar to that of the sample than ELBs.