



Vodafone New Zealand Submission on further expert advice from Dr Martin Lally

20 August 2020

Thank you for the opportunity to provide comment on the expert advice of Dr Martin Lally – *Further Issues Concerning the Cost of Capital for Fibre Input Methodologies*. This submission responds to section 2.2 of the paper from Dr Lally regarding the nature of risk in the pre-implementation period.

In this submission we:

- highlight that none of the normal risks apply during the pre-implementation period;
- set out our understanding of the unique risks that Dr Lally has identified in the pre-implementation period;
- note that the risks identified by Lally are not the same as the risks that beta compensates for;
- propose a value at risk approach to more accurately compensate for the risks faced by the LFCs; and
- discuss the implications of investor expectations.



None of the normal systematic risks apply in the pre-implementation period

In previous submissions we argued that the LFCs receive a return during the pre-implementation period in two ways: cash revenues and the losses asset. If the losses asset is worth its face value to the LFCs, then the total return received by the LFCs would perfectly compensate for all risks, and therefore the Commerce Commission (the Commission) should set the asset beta for this period to zero.

- If costs are higher than expected in any given year, the losses asset will perfectly adjust to compensate because the losses are calculated on actual expenditure.
- There is no consumer demand risk, if revenues are lower than expected, the losses asset will increase to perfectly adjust so LFCs are fully compensated.
- There would also be no risk from asset stranding, if the Commission decides to not remove stranded assets from the RAB during this period.

While the losses asset may appear similar to the wash-up mechanism that will be applied in the post-implementation period, the nature of the risks are vastly different. The wash-up mechanism only compensates for under-or-over recovery of revenues due to fluctuations in demand. This is necessary for the implementation of a revenue cap. But the LFC is still subject to forecasting risk because the overall revenue cap is set in advance. The wash-up also often has particular requirements attached to it. For example the Commission required Transpower's pre 2011 wash-ups to be recovered before the end of March 2020.¹

So while we agree that the WACC with the normal asset beta should be used to carry forward any wash-up amounts, the losses asset must be considered differently. None of the risks applying to the wash-up apply to the losses asset.

¹ Commerce Commission, 2014, *Setting Transpower's individual price-quality path for 2015 – 2020*, [2014] NZCC 23, para 3.36.



Our understanding of Dr Lally's view

Dr Lally agrees that during the pre-implementation period the LFCs do not face any of the systematic risks they are usually compensated for.² However, he argues that the Commission cannot treat the losses asset as worth its face value because of likely regulatory error in the post-implementation period. In other words risk is inherent in converting the losses asset into cash revenues because the Commission may get some estimates in future WACC calculations wrong - most notably the market risk premium.

Dr Lally also highlights that demand errors may be a risk factor in the recovery of the losses asset. However, we note that in the first period Chorus will be subject to a revenue cap removing all demand risk. Even if Chorus were subject to a price cap in future periods, the Commission has determined that the demand risk is 'not material'.³ If the Commission chooses to consider demand risk as a factor for recovery of the losses asset, it must also reduce the beta for the first regulatory period to account for the elimination of this risk under a revenue cap.

Dr Lally has further argued that the Commission's decision to not compensate for regulatory error for the rest of the RAB⁴ is not relevant because the losses asset is a special case. The Commission considers that its estimate of WACC is without bias so there is equal chance of an under-estimate of the WACC as there is of an over-estimate. Over the long run this should maintain NPV=0.⁵

However, for the losses asset Dr Lally noted that "possible error in the estimate at the beginning of the regulatory period induces systematic risk".⁶ We interpret this to mean that if there is under-recovery early in the regime it may exceed any potential over-recovery later in the regime when the losses asset is partially depreciated. The losses asset is unique in this regard because it is not replenished like other assets in the RAB, so depreciation is not compensated for by more capital expenditure.

² Lally, M. 2019. *The Cost of Capital for Fibre Network Losses*, report prepared for the Commerce Commission, p8.

³ Commerce Commission, 2019, *Fibre Input Methodologies: Draft decision: reasons paper*, para 3.942

⁴ Commerce Commission, 2019, *Fibre Input Methodologies: Draft decision: reasons paper*, p309.

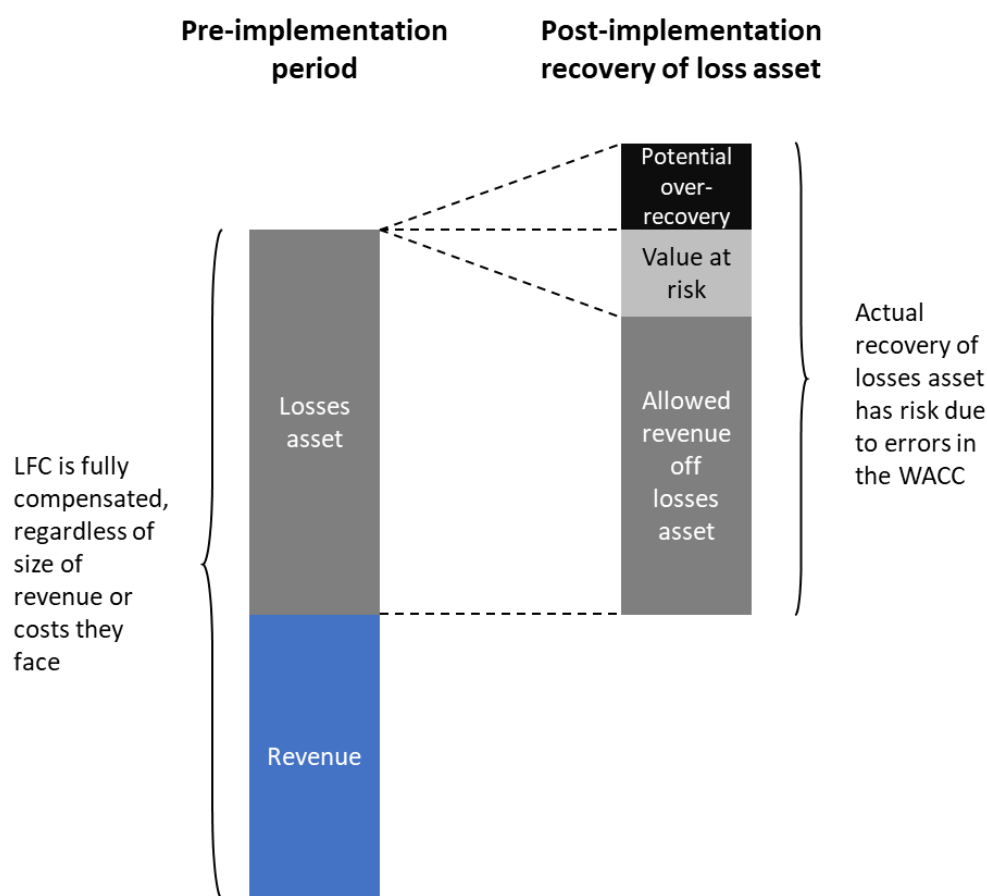
⁵ Commerce Commission, 2014, *Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services: Reasons Paper*, Paras 4.25 – 4.27.

⁶ Lally, M., 2019, *Review of Submissions on the Cost of Capital for Fibre Network Losses*, report prepared for the Commerce Commission, p3.



Figure 1 below shows our understanding of the risks facing LFCs identified by Dr Lally in the pre-implementation period, and in the recovery of the losses asset. Dr Lally notes that this risk is not the same as the estimated asset beta, but he considers that it must be higher than zero risk.

Figure 1: Nature of risk associated with the losses asset



Beta may not be the right tool to compensate for this risk

Dr Lally notes that the risk associated with the recovery of the losses asset is likely to be systematic, so is best captured through the asset beta. This is because the regulatory WACC does not appropriately adjust to changes in market volatility. So when volatility is highest (typically during a downturn), then the WACC will be too low, and vice versa. Therefore WACC error will have a correlation with the market.



Dr Lally goes on to note that calculating a beta that reflects this risk may be near impossible. This is because few if any other firms are in the same circumstances as LFCs and face a similar risk, therefore no comparator set exists to estimate beta.

We agree with Dr Lally. The comparator set for the pre-implementation period is not well suited to the nature of the risk faced by the LFCs. It is not reasonable for the Commission to use a number not at all suited to the risk the Commission should be estimating. It is not acceptable for this to be ignored simply for reasons of convenience when faced with analytical complexity. Use of this value in the current circumstances would in fact represent a significant error on the Commission's part.

Value at risk may be a better approach

Given that the existing beta is not well suited to the nature of the risk faced by the LFCs, it is the Commission's duty to seek out a more accurate measure.

We propose an alternative approach where the Commission considers the market value of the losses asset. In other words, if this asset were tradeable, what price would it achieve? As noted above, if the losses asset is worth its face value then it fully compensates for all risks during the pre-implementation period. However, if the losses asset is valued below its face value because of risks in its recovery, then the LFCs should be compensated for the difference.

One approach to the valuation of the losses asset would be to use a value at risk calculation. This would be the equivalent of the LFC valuing the losses asset at a discount to remove say 95% of the risk of not recovering all of the asset in future cash revenues. That is, the market value of the losses asset is worth a certain percentage less than its face value. The LFCs should then be compensated for the difference to account for the risk they face.

The standard value at risk equation is:

$$VAR = E_r - (Z \times S_E \times \sqrt{n}) \times L$$



Where:

E_r = expected return

Z = z-score at a given confidence level

S_E = standard error

n = years the investment is held for, in this case the asset life

L = the face value of the losses asset

However for a depreciating asset we have to take account of the fact that in the future the size of the asset value will decrease. We therefore propose the amended formula below

$$VAR = \sum_{i=1}^n \frac{E_r - (Z \times S_E \times \sqrt{i})}{n} L$$

Most of the inputs for this calculation are already known.

- Because the regulatory regime applies an NPV=0 approach, the present value of the expected recovery of the losses asset is equal to the opening value of the losses asset. Therefore, the expected return in the value at risk calculation can be set at 0.
- Since the risk of recovering the losses asset is due to potential errors in the future WACC the Commission can use its existing estimate of the WACC's standard error.
- The asset life for the losses asset will be determined by the Commission.
- The only unknown factor in this calculation is the appropriate confidence level, which the Commission should be able to apply its judgement to determine.

We recommend that the Commission should apply a 95% confidence level. This results in a value at risk over 30 years of:

$$VAR\% = \sum_{i=1}^{30} \frac{-1.65 \times 0.0124 \times \sqrt{i}}{30} = 7.6\%$$



The compensation for the difference between the face value and the market value of the losses asset would best be provided as an asset. The Compensation itself will then be subject to the same risk of recovery as the losses asset. This pattern will continue with subsequent compensations resulting in a geometric series, slightly inflating the necessary uplift as below.

$$0.076(1 + 0.076 + 0.076^2 + 0.076^3 + \dots) = 0.076 \frac{1}{1 - 0.076} = 8.3\%$$

This could then be applied by:

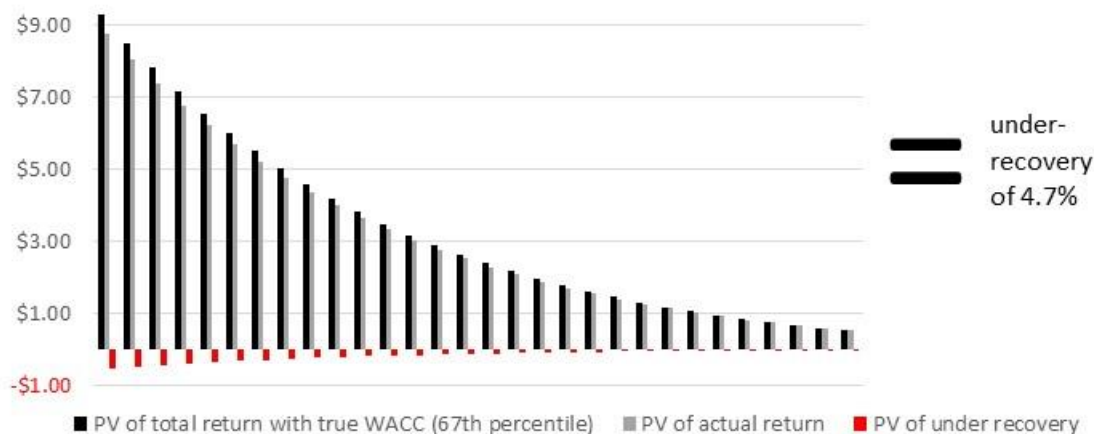
- setting the beta at zero for the DCF calculation of the size of losses during the pre-implementation period; then
- inflating the losses by the value at risk so that there would be a 95% confidence that the LFCs would at least recover the losses asset $\frac{L}{1-8.3\%}$.

Setting the confidence level at 95% is very generous. In the Part 4 regime the Commission considers the appropriate uplift to account for the risk of regulatory error is to apply the 67th percentile to the WACC. Figure 2 below provides an estimate of the present value of the under-recovery the LFCs would face on a \$100 losses asset over 30 years if the actual WACC was at the 67th percentile in every single year.⁷

⁷ For this calculation we used the 30 year risk free rate as published by NZ Treasury: 2.67%, and applied all other WACC inputs as specified by the Commission



Figure 2: Under-recovery of the losses asset if the true WACC is at the 67th percentile every year



Even under this extraordinarily unlikely series of events, the PV of the under-recovery is only 4.7% of the value of the opening losses asset. By comparison the 7.6% uplift from assuming a 95% confidence level in the value at risk calculation makes the recovery of at least the face value of the losses asset extremely safe.

The value at risk approach will be substantially more accurate at estimating the risk faced by the LFCs during the pre-implementation period than using beta. While it may face its own estimation error, this will be significantly less than applying a beta estimate that has little to do with the actual risks faced.

While the WACC rate will vary over the life of the loss asset, the factors that are subject to the greatest level of estimation error do not vary as much. It is not common for the Commission to adjust the asset beta, the TAMRP or the debt premium frequently. Any small adjustments to these parameters would introduce less error into this method than using a beta estimating an entirely different risk. The Commission may also consider amendments to the size of the losses asset to accompany any change to these parameters in future periods.



Investor expectations

Changing to a value at risk approach could have a material effect on the returns provided to LFC's investors. We are sensitive that this may affect investor confidence if it is not in line with expectations.

We therefore propose that the value at risk approach only applies to the extent that investors could have reasonably foreseen the granting of the losses asset. If this were true, investors would have also foreseen that the risk they faced was only related to future recovery of the losses asset, not the size of the total return (revenue + loss asset) during the pre-implementation period. If they did not have this expectation then they could reasonably argue there was an opportunity cost to the capital equal to the full WACC.

In making this assessment we propose adopting Vector's recommendation to consider the losses as two distinct periods:

- 1) before the Telecommunications (New Regulatory Framework) Amendment Act 2018 was passed; and
- 2) after it was passed.⁸

In the first period between December 2011 and 11 November 2018, it is likely that investors would have foreseen the losses asset. Chorus' business plan from December 2011 noted that the regulatory model would need to compensate for costs incurred in the pre-implementation period.⁹ Furthermore, as discussed in our cross-submission to the Emerging Views paper, it would have been financially irresponsible to invest in Chorus if investors didn't have an expectation of at least a risk free return.¹⁰

In the second period between 12 November 2018 and 31 December 2021, investors had full certainty that they would be compensated via the losses asset. They were therefore aware that they faced no risk in the accumulation of return (revenue + loss asset). The value at risk approach must at a minimum be applied to this period.

⁸ Vector, 2020a. *Vector Communications Submission to the Commerce Commission Fibre Input Methodologies Project*, paras 14-16.

⁹ Oxaera, 2019, *Compensation for asymmetric type 2 risks*, Prepared for Chorus, section 3A.1

¹⁰ Vodafone 2019, *New regulatory framework for fibre: Cross-submission on fibre regulation emerging views – cost of capital*, pp10-11



If the Commission considers that the value at risk method should only be applied to the second period then any positive or negative loss during this period must be added to the losses in the first period, rather than considered in isolation. That is, if LFC revenues were greater than the risk free cost during the second period, the additional revenues must be netted off the loss incurred in the first period rather than capped as a zero loss. The Commission must consider the pre-implementation period as a whole, rather than in isolated chunks.