

Cost of capital for fibre input methodologies – response to Dr Lally

Report for Chorus

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Introduction

1. We have prepared this paper, on the request of Chorus, in response to the release by the Commerce Commission (the Commission) of an additional report by Dr Martin Lally on the cost of capital for fibre (2020).
2. In this new report, Dr Lally comments on some of the points made by submitters on matters relating to the cost of capital in the Commission's draft decision on the Fibre Input Methodologies (IMs).
3. He does not discuss all the points made in our earlier paper (or Chorus' submission). It is unclear whether we should interpret his silence as Dr Lally's agreement with our arguments. We will address the issues raised by Dr Lally and re-iterate other key arguments from our earlier paper. Our view has not changed in any material regard, and this paper should be read in conjunction with our earlier work.
4. Dr Lally also responds to four questions put to him by the Commission. The Commission subsequently provided a copy of these questions (2020b).
5. While we have read the Commission's further consultation paper on the initial value of the financial loss asset (FLA) (2020a), we focus our comments on Dr Lally's report. Our comments should therefore be understood in the context of the regulatory approach proposed by the Commission prior to the further consultation paper. This approach reflects the direction provided by the Commission in its further consultation paper (2020a, paragraph 1.12). In particular, we do not comment on the proposed adoption of a DCF method rather than a BBM method when determining the FLA. This is the focus of the further consultation paper (2020a, paragraph 1.19). Given this, we do not comment on Dr Lally's response to the Commission's third question, which relates to this change in method. We may provide additional advice to Chorus in response to the further consultation paper.

A Comments on submissions

Purpose of the cost of capital

6. Dr Lally has focused on compounding of the financial losses to determine the accumulated unrecovered loss. However, it is not clear how Dr Lally proposes the Commission should calculate the normal return on capital component of the financial losses.

Furthermore, and most importantly, regardless of how losses are defined, section 177 of the Act clearly indicates that the ex-post compensation involves compounding the losses forward to the end of the pre-implementation period. (Lally, 2020, p. 3)

Furthermore, even if prices were set in 2011 in the usual way, the current exercise does not concern how prices were set in 2011 but how to compound forward losses to the implementation date... (Lally, 2020, p. 4)

7. One of the consequences of this focus on the compounding is that Dr Lally continues to propose that the debt risk premium component of the cost of capital would be determined for the year corresponding to the median loss. It is not possible to identify the median loss year without first estimating the cost of capital to be applied in determining the losses, which requires an estimate of the debt risk premium. We raised this circularity in our earlier paper (McWha & van Zijl, 2020, p. 20). We noted then that the proposed approach abstracts from the actual link between the annual loss and the debt premium; and, even if it were possible to identify the median loss year without first estimating the debt premium, this approach is an unnecessary approximation of the relevant debt premium. Dr Lally does not discuss or propose a solution to this circularity.
8. The cost of capital is an element of the value of annual losses in the pre-implementation period.¹ Conceptually, this application of the cost of capital is fundamental to understanding the best approach to estimating it. We discuss this in the following section.

Ex ante expectations

9. Dr Lally states that “it seems clear from section 177 of the Telecommunications Act 2001 that losses are defined as the ex post difference between revenues and costs rather than the difference between expected and actual cash flows.” (Lally, 2020, p. 3) We do not agree.
10. Section 177 does not prescribe how the financial loss is to be valued. Section 177(2) says

¹ Clause 2.2.3(27) of the Draft Fibre Input Methodologies Determination (RPR version, 2 April 2020) defines UFB costs as: (opening UFB asset base value × cost of capital) + operating expenditure + tax costs + depreciation. The cost of capital is subsequently defined as the WACC for the relevant year (clause 2.4.10(5)).

Each regulated fibre service provider is treated, as at the implementation date, as owning a fibre asset with an initial value equal to the financial losses, as determined by the Commission, incurred by the provider in providing fibre fixed line access services under the UFB initiative for the period starting on 1 December 2011 and ending on the close of the day immediately before the implementation date.

11. How the Commission is to determine the value of the losses is not prescribed other than that it "must take into account any accumulated unrecovered returns on investments made". How the unrecovered returns are to be determined is not prescribed either: section 177(6) describes them as "the sum (adjusted to reflect the present value, as calculated in the manner that the Commission thinks fit) of the unrecovered returns on investments for each financial year..."
12. Dr Lally says that the decision to reimburse losses was made when the form of the regulation was announced in 2018 (Lally, 2020, p. 4) and offers the view that:

Presumably Chorus understood that its cash flows would be negative in the pre-implementation period and the best it could have hoped for is that these losses would be reimbursed by being compounded forwards and added to the RAB at the implementation date.

We do not agree with this opinion. It would not be rational for a large financially sophisticated company to enter a significant investment without a good basis for expecting $NPV \geq 0$. Therefore acceptance of negative cash flows in the pre-implementation period must have been matched by a solid expectation of compensation for such outflows and normal return on capital.

13. There is good evidence that it was the Government's intention, when the UFB contracts were signed in 2011, to allow the fibre providers to recoup their normal costs of capital. In particular, the 2011 Government Policy Statement on incentives to invest in UFB states:

The Government's economic policy objective is that businesses have incentives to innovate and invest in new or upgraded ultra-fast broadband infrastructure for the long term benefit of end users.

The Government considers that this objective will be achieved by:

1. regulatory stability, transparency and predictability giving businesses the confidence to make long-life investments;
2. regulation taking full account of the long-term risks to consumers of under-investment in new or upgraded ultra-fast broadband infrastructure.
3. ensuring that any price regulation proposed under Schedule 3 of the Telecommunications Act 2001, that may occur in the future, recognises that revenues, over the life of the assets, are sufficient to cover efficient operating costs and a normal return on, and recovery of, capital invested; and
4. ensuring any price regulation proposed under Schedule 3 of the Telecommunications Act 2001 takes into account the start-up risks associated with introduction of new technology.

14. It remains our view, based on the material we have reviewed, that FFLAS providers, by virtue of entering contracts with Crown Fibre Holdings² and providing enforceable deeds of undertaking to the Crown, formed expectations about the return on their investment in 2011 and accepted a level of risk exposure at that time. These contracts and undertakings fixed the services, prices and quality to be provided to 31 December 2019 (and beyond in some cases). As such, these instruments formed the regulatory framework for fibre during this period.
15. When the UFB contracts were tendered, there was an expectation from bidders, shared by the Government (as articulated in the Policy Statement referred to above), that they would be able to achieve a normal return on their capital investment. The implication of this is that the relevant cost of capital for the pre-implementation period should be estimated from the perspective of UFB bidders in May 2011. It is important not to superimpose what is known now, or became known during the period since 2011, on the question.
16. While there was uncertainty in 2011 about the form of the future regulatory regime, this does not disturb the fundamental conclusion: fibre providers were entitled to an expectation of normal returns on their investment and the relevant perspective in terms of when those expectations were formed is from May 2011.
17. As we explained in detail in our previous report (McWha & van Zijl, 2020, pp. 6-10), investors would have had a clear expectation in 2011 that prices were fixed for the period until 2020. This period is therefore the *economic equivalent* of a regulatory period. Dr Lally misinterprets our report when he says that we argue that this is “a normal regulatory situation” (Lally, 2020, p. 4). We acknowledge that there are differences in form, but from an economic perspective, given express Government policy and the contractual undertakings, the situations can be considered equivalent.
18. An investor signing a contract with a fixed price (or price cap) for a long period of time (in this case from 2011 to 2020) would decide whether or not to enter the contract on the basis of their expectations of earning at least a normal return on capital over the period of the contract.
19. Officer and Bishop (2012, paragraph 12) note that an approach of “setting a constant WACC for the life of the asset will ‘tend to’ set prices but the varying costs of capital (reflecting economic conditions) will be reflected in changing values of the business (assets) so that producers absorb these economic costs.” It seems likely that the intention was that fibre providers would bear the risk of varying costs of capital. This is consistent with the Commission’s other regulatory practices. That some (and not all) of the risks have turned out in the providers’ favour is not now a reason to renege.
20. The Policy Statement refers to a “normal” return on capital. As we have explained, it is normal commercial practice to assess the expected returns at the time the investment decision is made. These returns are compared to the cost of capital. Future capital injections are discounted in investment analysis at the same initial rate.

² CFH, now called Crown Infrastructure Partners, or CIP.

21. This does not imply that all the debt is raised when the decision is made. Rather, while it would obviously be recognised that the cost of debt would be incurred only when the debt is raised, the then current estimate of the cost would be included in the analysis. As such we do not agree with Dr Lally's assertion that relying on the estimate of the cost of capital in 2011 "implies that Chorus raised the capital in 2011 for these future expenditures or locked in the cost of capital at that time." (Lally, 2020, p. 6) Rather, the fibre providers made the decision to invest on the basis that the 2011 estimate was the expected cost of capital over the contract horizon and equivalently the expected normal return on capital for the pre-implementation period.

Parameter values

22. The material provided by Dr Lally has not led us to alter our view about the appropriate parameter values for the cost of capital. We summarise these here and then address below the issues raised by Dr Lally. We have made minor modifications to the period over which we recommend the risk free rate and debt premium are estimated to align more closely with the method that the Commission used at the time (i.e. in 2011).
- a) The risk-free rate is the rate estimated to apply as at 1 May 2011 and the term should match the expected term of the period, that is to 31 December 2019. The estimate is the average of one month of daily observations prior to 1 May 2011.
 - b) The debt premium estimate is the estimated prevailing rate for seven-year corporate bonds as at 1 May 2011. This term is consistent with the approach taken by the Commission in the UCLL/UBA decision. Alternatively, if the Commission considers that the appropriate term for the smaller LFCs is shorter than seven years, a five-year term could be adopted with a TCSD allowance that assumes Chorus issues 50% of its debt for a ten year term. We have not considered the appropriate term for the smaller LFCs. Using a one month average prevailing rate is consistent with the approach in the other input methodologies at the time. The premium should reflect a BBB credit rating.
 - c) The asset beta is 0.65.
 - d) Financial leverage is 40%.
 - e) TAMRP is 7.0%.
 - f) An uplift to the "75th percentile" is given, to reduce the probability of underestimation of WACC to 25% and to align with the reasonable expectations as at May 2011 of there being such an uplift.
23. We also recommend an adjustment for stranding risk of 0.1% of the RAB consistent with the approach in the post-implementation period (McWha & van Zijl, 2020, pp. 19-20).

Credit rating

24. We remain of the view that the appropriate credit rating for estimating the debt premium is BBB. We understand that this was Chorus' actual credit rating in 2011. Chorus had a contractual requirement to maintain a rating of at least BBB- during the pre-implementation phase. Chorus

was acting prudently by maintaining a credit rating one notch above this requirement. Adopting a benchmark of BBB+ is two notches above and therefore a significantly higher bar than the contractual requirement and the government's policy intent was clearly that fibre providers would be compensated for their investments. Chorus acted prudently in response to 'at least BBB-' by maintaining a BBB rating.

25. As L1 Capital has submitted, there is no compensating benefit to now penalising Chorus for its choice of a BBB rating. Dr Lally argues that the benefit is "to signal to firms like Chorus the need to improve their credit rating so as to reduce their bankruptcy risk" (Lally, 2020, p. 16) and that the benchmark rating "incentivises a firm to outperform the benchmark...The fact that Chorus's credit rating is below the benchmark therefore reflects inferior operating efficiency and/or a conscious choice of higher leverage and should therefore be irrelevant to the Commission when setting the benchmark cost." These arguments are not relevant to the current situation.
26. The current exercise is not to set *future* prices. It is not possible to provide an incentive to Chorus to perform in a particular way in a past period. The relevant perspective is whether Chorus behaved prudently and efficiently, given the expectations that were established in 2011. Our view is that it did: it exceeded its contractual obligations, it acted in a manner consistent with the comparator sample companies, and we can presume that it acted efficiently in terms of the required return on equity by shareholders who would also be concerned with avoiding financial distress.
27. We discussed our rationale for recommending a BBB credit rating in more detail in our earlier report (McWha & van Zijl, 2020, pp. 14-15, 22-23).

Alternative approach

28. While Dr Lally does not agree with our opinion that the pre-implementation period should be treated as economically equivalent to a regulatory period (see above), he does not discuss our alternative approach. We provided this alternative expressly for the event that the Commission does not accept that the period prior to implementation of Part 6 should be treated as equivalent to a regulatory period.
29. If the pre-implementation period is not equivalent to a regulatory period for the purposes of determining the cost of capital then the cost of capital should be determined from a commercial perspective. The Commission has previously described this commercial rate as "the minimum rate of return that an investment must achieve in order for it to proceed" (Commerce Commission, 2009, p. 15). A firm decides whether to invest based on whether the return is expected to achieve this hurdle rate.
30. In respect of this alternative, we have changed our view on estimation of the risk-free rate and the debt premium, to reflect the approach taken by the Commission at the relevant time. This change is consistent with our argument that the estimation of WACC should reflect investor expectations at the relevant time.

31. Specifically:
- a) The risk-free rate is estimated annually with a ten-year term consistent with common commercial practice and the Commission's recent decision in the study into the retail fuel market. The Commission amended the time period over which the risk-free rate and debt premium are calculated in December 2016. Thus, up until 2017, estimates of the risk-free rate are a one month average, after this date three months of data are used.
 - b) The debt premium is estimated as the prevailing rate (one month average) as at the estimation date until 2017. After this date a five-year historical average is used with subsequent annual estimates based on twelve months of data. The credit rating is BBB. The term is five years plus a TCSD allowance for Chorus that recognises that it issues 50% of its debt for a ten-year term. Alternatively, a seven-year term could be used, consistent with the UCLL/UBA decision.
32. Our view on estimation of the other parameters remains unchanged:
- a) The TAMRP is 7.0% until 2017, 7.25% from 2017 to 2019 and 7.5% thereafter.
 - b) Asset beta is 0.65.
 - c) Financial leverage is 40%.
 - d) An uplift to the 75th percentile is given until 2014, when expectations may have moderated to the 67th percentile.
 - e) Stranding risk is compensated in the same way as in the post-implementation period, with a 0.1% adjustment.
33. The only parameter that Dr Lally comments on is the TAMRP. However, his comments are limited to a discussion of rounding. We suggested a gradual change in TAMRP from 7.0% to 7.25% in 2017 and 7.5% in 2019. The rationale for this approach is that since there have been no exceptional economic events during the four-year period between the two estimates being derived, it is unlikely that TAMRP shifted instantaneously from 7.0% to 7.5% just before the re-estimation in 2019. Similarly, there is no obvious argument for waiting to apply the known 2019 estimate of 7.5% until 2020 and we consider it should be applied to annual estimates of the cost of capital from the estimation date, rather than the IM determination date. This would be consistent with the rest of the method which applies information known at the estimation date.

B Commission questions

34. Dr Lally does not formally state the questions posed by the Commission. We have summarised them below as they were provided by the Commission (2020b).
1. "Instead of being concerned about the specific nature of Crown financing, should we assume the funding to all providers was at the benchmark cost of capital? Is this more consistent with the assumption that the discount rate for calculating the present value of losses is based on a benchmark provider?" We do not comment on this issue as it is outside the scope of our report.
 2. "Can you provide further reasoning as to why the [asset beta] range's lower bound may be zero and upper bound may be the beta applied to the regulatory situation?"
 3. "The Commission was concerned that there would not be equivalence between a net cashflow and building block approach when the cost of capital changes across the preimplementation period and requested further advice on equivalence between these two approaches under these conditions." We do not comment on this question as it relates to the substantive issue in the further consultation paper on FLA (2020a).
 4. "Should the same risk-free rate be used for both the cost of debt and the cost of equity for compounding the losses forwards to 2021?"

Question 2: Asset beta

35. Dr Lally argues that since beta must be positive the lower bound is zero. In our opinion, the reasonable range of beta cannot be assumed to extend to zero on the basis that it is positive. Interestingly, Dr Lally explicitly rejects the suggestion by Spark that zero is a viable option for beta (Lally, 2020, p. 8).
36. If there were no information available about systematic risk of an investment, it would be reasonable to assume an equity beta of one, that is, adopt the average market risk.
37. However, in the current situation, we do have information about systematic risk. Specifically, we have information about systematic risk post-implementation. The Commission has proposed the asset beta of a stand-alone FFLAS provider post-implementation is 0.49. Our estimate is 0.60. Other estimates lie in the range 0.50 to 0.74 (McWha & van Zijl, 2020, pp. 28, 33).
38. In our view, which is supported by a number of other experts, systematic risk is likely to be higher in the early construction phase. The Commission's advisor on beta, CEPA acknowledges this view. Available estimates of the pre-implementation beta range from 0.50 to 0.95 (McWha & van Zijl, 2020, p. 17). Given the range of other estimates and our estimate of the asset beta in the post-implementation period we suggest a reasonable point estimate of asset beta for the pre-implementation period is 0.65.

Question 4: Single estimate of the risk-free rate

39. Dr Lally agrees with the Commission that the same estimate of the risk-free rate should be used in estimation of both the cost of debt and the cost of equity. We also agree with the Commission. The costs of debt and equity are components of the WACC and it would therefore be inconsistent to construct an estimate of WACC that is based on different estimates for the risk free rate when that rate is a component of both the cost of debt and the cost of equity.
40. Dr Lally goes beyond the scope of the question posed by the Commission to propose that for terms of more than 5 years, the cost of equity be formed by a combination of a 5 year estimate and an estimate for the balance of the term. The reason he gives for this proposed approach is that the Commission does not have available estimates of the MRP for year by year terms of more than 5 years. Our view is that such a level of approximation would not be consistent with the requirement to ensure a fair balance between the interests of providers and consumers and therefore the Commission should develop an estimate of the MRP for year by year terms of more than 5 years. However, this issue is specific to Dr Lally's preferred approach to compounding using the different costs of capital ruling at the dates of each of the cash flows. If the Commission accepts our view that the cost of capital for compounding should be the 2011 rate, the issue does not arise.

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