Telecom Corporation of New Zealand Limited

Cross-Submission on Commerce Commission Expert's paper:

Review of the beta and gearing for UCLL and UBA services

Cross-Submission

4 August 2014

pwc

Contents

Introduction

Scope of Report

1. The purpose of this report is to provide our cross-submission comments in response to the Competition Economists Group (CEG) submission, July 2014 (the CEG submission), as it relates to the Commerce Commission's (the Commission's) Expert's WACC Paper entitled "Review of the beta and gearing for UCLL and UBA services", by Oxera Consulting LLP (Oxera) dated June 2014 (the Oxera paper). We have also had general regard to the Commission's other consultation material on assessing the total service long run incremental cost (TSLRIC) for UCLL and UBA services.

2. This report has been prepared by PricewaterhouseCoopers (PwC) on behalf of Telecom Corporation of New Zealand Limited (Telecom).

3. The focus of this report is on the Commission's proposed approach to estimating key parameters of the cost of capital (i.e. beta, leverage and credit rating) for the UCLL and UBA price reviews. It is not intended to provide a full and comprehensive analysis of all matters pertaining to the estimation of the regulatory cost of capital or to comment on other cost of capital parameters.

4. Our position and reasoning on the various issues that arise in deriving a regulatory cost of capital is already well documented in various reports we have previously provided to clients and in submissions we have made to the Commission.

Background Knowledge

5. Cost of capital theory is a specialist technical subject. It is not the purpose of this report to provide a detailed discussion on the theory underpinning the Weighted Average Cost of Capital (WACC) and its components. In presenting our comments, we have assumed that readers of this report have a basic understanding of the theory underpinning WACC and how WACC and its components are derived.

6. Furthermore, we have assumed readers are familiar with the contents of the various reports and papers released by the Commission on the cost of capital for regulated industries and our submissions on the same.

Disclaimers

7. Our report has been prepared to assist Telecom in its submission to the Commission in relation to the regulatory cost of capital that might apply to setting the prices for services that affect Telecom.

8. We accept no responsibility to any other party other than Telecom to whom our report is addressed and, except that the report can be submitted for consideration by the Commission, unless specifically stated to the contrary by us in writing, it should not be copied to any third party without our prior, written permission. We accept no responsibility for any reliance that may be placed on our report should it be used for any purpose other than stated above.

9. We reserve the right, but will be under no obligation, to revise or amend our report and the opinions contained therein if any additional information, which was in existence on the date of this report but was not brought to our attention in preparing our report, subsequently comes to light.

10. The primary contacts for this submission are: Bruce Wattie, Partner, PricewaterhouseCoopers, bruce.wattie@nz.pwc.com; John Redmayne, Director, PricewaterhouseCoopers, john.redmayne@nz.pwc.com.

Asset Beta

CEG's Approach

11. In general terms we are in agreement with many aspects of CEG's asset beta analysis. However, in certain areas we consider that Oxera's approach is preferred. Specific areas where we agree with CEG's approach (all page number references are to the CEG July 2014 submission unless otherwise stated) are:

  - No particular weight should be given to Chorus' own actual beta in the beta analysis (p. 9);
  - Weekly and monthly betas should be evaluated using different days of the week or month (p. 10);
  - Too short a period for historical beta analysis is undesirable (pp. 16-18); and
  - There should be consistency in analysis of comparator companies and derivation of the asset beta, leverage and credit rating assumptions (p. 26).

12. Specific areas where we are in disagreement with CEG's approach are that we consider that:

  - There is no rationale for using the mean asset beta for CEG's broader comparator company sample as a lower bound for the UCLL and UBA asset beta estimate (p. 2 and p. 19, "Response to Commerce Commission UCLL/UBA WACC consultation paper", CEG, March 2014);
  - Too long a period for historical beta analysis is undesirable in the case of the telecommunications industry (pp. 14-18);
  - Oxera's criteria for selecting its "refined comparator set" for its beta analysis generally appear to be reasonable (pp. 12-14);
  - The asset beta for incumbent, copper-based network operators is different from (lower than) that for new entrant, fibre-based network operators (p. 13);
  - Telecom's pre-demerger asset beta would require further analysis before being relied upon as a good UCLL and UBA service provider comparator (p. 13); and
  - No particular weight should be given to BT's beta in the beta analysis (p. 19).

13. Some of the matters noted above have already been discussed in our previous submissions or do not require any further explanation. In other cases we provide additional comments and analysis below.

Day of the Week or Month

14. Daily beta estimates can be affected by thin or non-synchronous trading. For this reason weekly or monthly beta estimates are preferred, ideally averaged over various days of the week or month. We note that CEG has applied this procedure and that the results of CEG's analysis do not appear to identify any serious bias issues with daily betas in this instance.

15. While CEG has provided additional beta analysis, it has only provided means for various comparator sets of companies, but not medians. Furthermore, it has adopted a different (more recent) time period in its latest analysis by comparison to its March 2014 submission and Oxera's June 2014 report. This somewhat reduces the direct comparability of the different analyses (for example CEG's lowest mean monthly asset beta over the last five years for Oxera's refined comparator set, of 0.34 measured on the 7th day of the month, is higher than Oxera's estimate of 0.33).

16. Interestingly, CEG's analysis shows a significant "spike" in Chorus' monthly beta estimates made on the first day of the month (p. 11). This may perhaps be attributable to activity such as portfolio re-balancing by managed funds, which could suggest that less, or no, weight is placed on these observations.

Appropriate Historical Period for Beta Analysis

17. We agree with CEG that Oxera's focus on only the last two years for analysing comparator companies is too short. However, we do not agree with CEG that the appropriate historical period of analysis for the UCLL and UBA asset beta is 20 years.

18. We agree with Oxera that there has been a much greater rate of technological change in the telecommunications sector than in the sectors that were the focus of the Input Methodologies (IMs), such as electricity and gas distribution. Major technological changes in the telecommunications industry over the last two decades have been the rapid growth of mobile and fibre networks, which have been disruptive to existing copper-based network technologies.

19. In turn these technological changes have resulted in structural changes in the telecommunications industry. As Oxera has noted there has been, for example, a move to access-based charging. A material shift towards access-based charges (e.g. fixed monthly charges) as opposed to usage-based charges (e.g. per call minute) has likely fundamentally changed the revenue risk attributes of incumbent / copper-based fixed service operators. That is, their revenue betas and hence their asset betas would be expected to decline in this environment - their systematic risk would trend towards that of, say, an electricity distribution business.

20. While such industry structural changes may have materially affected (adversely) the value of the assets of incumbent / copper-based fixed service operators, these "one-off" shocks to values may have been largely unsystematic in a CAPM sense. Following such "shocks" the revenue structure of these businesses may now carry lower systematic risk. Looking forward, it is the current and projected structure of the industry that is relevant for assessing betas, in particular features such as fixed access charging regimes, not past asset value shocks.

21. Such developments provide an explanation for the downward trend in telecommunications company asset betas identified by Oxera's analysis. It is of course problematic to analyse these matters in an ad hoc, subjective manner. But what is objectively clear is that major changes have and are occurring in the telecommunications industry, which may cause current and future betas to differ significantly from older, historical estimates. In this context reliance on older beta data is difficult to justify in making a current assessment of a UCLL and UBA asset beta. A dated copper-based fixed service operator's asset beta may look nothing like a current copper-based fixed service operator's asset beta. A beta estimate from 20 years ago is likely to be much less relevant for a telecommunications company than for, say, an electricity distribution business.

22. In considering the appropriate historical period for beta analysis, CEG raises the issue of asset lives. In our view this should not be a major consideration. We do not see the physical lives of assets as being directly relevant to the assessment of betas. Looking forward, it is more a question of which historical period (i.e. how far back) is likely to be most representative of the future expected beta relationship?

23. As we have noted in our submission, older beta estimates may also be less relevant to the extent that they were affected by major market disruptions such as the 2000 "tech wreck" and the 2007-2008 Global Financial Crisis.

24. In summary, we consider Oxera's two year historical period to be too short for the historical beta analysis, for the reasons discussed in our submission, and CEG's 20 year historical period to be too long, for the reasons discussed above. In our view a reasonable period for the historical beta analysis is five years, which is a relatively conventional period to select for this type of analysis.

Oxera's Comparator Company Selection Criteria

25. Oxera presents both its full comparator set, based on stated selection criteria, and its refined comparator set (i.e. after applying its further screening criteria). Oxera's criteria seem appropriate - particularly those for liquidity and majority domestic operations (to include companies with majority overseas operations raises the issue of choosing the appropriate market index to measure beta against, among other things). Overall, we consider Oxera's comparator company sample selection criteria, in particular is "refined comparator set", to be reasonable.

26.   We agree with CEG that exclusion of Telecom NZ for liquidity reasons does seem odd, but we still agree with Oxera that it be excluded from its refined comparator set as for the last 2.5 years it has not been a fixed services-type operator. Older Telecom NZ beta information would potentially be included in any earlier analysis, but would ideally require decomposition analysis in order to distil out its fixed service operator asset beta. In any event, for the reasons discussed above, older beta data is likely to be less relevant.

27.   CEG advocates taking as broad a comparator sample as possible. However, if these further comparators are less and less similar to the UCLL and UBA activities, then they may detract from rather than enhance the resulting beta estimate. Taking the "more is better" philosophy to its extreme would result in the sample including all listed firms. Reasonable comparability filters have to be applied, as Oxera has done.

Copper versus Fibre

28.   CEG identifies its own refined comparator sample of fixed line businesses only, comprising seven companies, four of which are also included in Oxera's refined comparator set (BT Group, Centurylink, Frontier and Windstream) and three of which are screened from Oxera's refined comparator set (Cogent Communications, Colt Group and TW Telecom). The former four companies have predominantly copper-based network and incumbent characteristics. CEG argues that latter three companies are also good comparators to a UCLL and UBA service provider, despite them having predominantly fibre-based networks and new entrant characteristics.

29.   It is noticeable that the asset betas for these two sub-samples, as measured over the last five years, do not overlap and indeed appear to be quite distinct. Mean asset beta estimates for the "copper" sub-sample are 0.41 (CEG last five years daily data), 0.42 (Oxera last five years weekly data) and 0.40 (Oxera last five years monthly data). While mean asset beta estimates for the "fibre" sub-sample are 0.90 (CEG last five years daily data), 0. 92 (Oxera last five years weekly data) and 1.09 (Oxera last five years monthly data). A simple statistics t-test on these three data sets rejects, at the 1% significance level, the null hypothesis that the sub-samples have the same mean asset betas.

30.   In our view this vindicates Oxera's exclusion of these three "fibre" companies from its refined comparator set. If these three companies were similarly excluded from CEG's fixed line business only comparator set, then CEG's fixed line business only asset beta over the last five years would be 0.41, being *less than* the mean asset beta of its broader comparator sample set over the same period, of 0.47 (data from CEG March 2014 submission). CEG's conclusion that fixed line operators have higher asset betas than integrated telecommunications companies in general depends, critically, on CEG's inclusion of these three "fibre" companies in its refined sample.

31.   If these are excluded (as Oxera does) then the opposite conclusion is reached; i.e. that fixed line operators have *lower* asset betas than telecommunications companies in general.

32.   The distinction between "copper" and "fibre" networks for these sub-samples may also be viewed as differentiation between incumbent network operators with natural monopoly characteristics versus new entrants operating in more contestable niches of the market. Provision of services that attract regulatory intervention, such as UCLL and UBA services, would generally be regarded as having more in common with the former category of companies.

33.   To the extent there is unresolved debate on the comparability of asset betas for incumbent / copper-based networks versus new entrants / fibre-based networks, this could be addressed by a beta decomposition analysis. At this point one would then have explicit asset beta estimates for both types of business, drawing on information from integrated companies and any "pure play" companies, such as fibre-only network operators.

CEG Broad Comparator Set Mean Asset Beta as a Bound

34.   In its March 2014 submission (p. 19) CEG concludes that "*On the basis of the analysis in this section and the data in Table 2 and Table 3 above, an estimate bounded from below by 0.58 would appear to be appropriate.*" The figure of 0.58 is CEG's mean asset beta estimate for its broader sample. CEG does not provide any further explanation for its choice of this lower bound for a UCLL and UBA asset beta estimate. Presumably this choice is motivated, at least in part, by CEG's conclusion that the asset beta for a fixed line business is higher than for its broader sample. However, as discussed above, that conclusion is critically dependent on including new entrant / fibre-based networks in CEG's refined sample.

35.   Were those companies to be screened out (as is done by Oxera in its refined comparator set), the opposite conclusion is reached - the asset beta for a fixed line business is lower. In these circumstances CEG's broader sample mean asset beta should then be more appropriately viewed as an upper bound for a UCLL and UBA asset beta estimate.

BT as a Comparator

36.   While regulatory analysis of BT Group's network business may have identified Chorus as the best comparator, the same would be expected in analysis of the network business of any integrated telecommunications company. This is simply because Chorus, internationally, is the only listed "pure play" fixed service telecommunications operator. It does not follow that the asset beta for the integrated BT Group is the best comparator in assessing the asset beta of a notional fixed service operator providing UCLL or UBA services (or even of the overall Chorus group).

Regulator Precedent

37.   In our view regulatory "precedent" on the detailed aspects of asset beta assessment in other sectors (such as those covered by IMs) should not cloud proper analysis and assessment of a UCLL and UBA asset beta.

38.   We do not agree with CEG that the Commission should be rigidly bound by the mechanical details of how asset betas were arrived at for other industries under the IMs. The most appropriate beta estimation approach, in particular the choice of historical period used for the beta analysis, should be selected in each particular regulatory case, having regard to the circumstances of the case. Different historical periods will be appropriate for different sectors if they face significantly different rates of technological and structural change. As discussed above, we consider that a period of five years is sufficient and appropriate for estimating a UCLL and UBA asset beta.

39.   If CEG wishes the Commission to be rigidly bound by its regulatory precedent then why is it not advocating that the Commission use its last telecommunications sector asset beta estimate (for the TSO) as the starting point in its UCLL and UBA asset beta assessment?

Recommended Approach

40.   In our view the preferred approach, drawing on the empirical analysis submitted by CEG and Oxera to date, is as follows:

- Use Oxera's "refined comparator set" (refer pp. 23-26, "Review of the beta and gearing for UCLL and UBA services", Oxera, June 2014) as the best comparator set of companies for assessing the UCLL and UBA asset beta, leverage and credit rating;
- Consider both Oxera's daily, weekly and monthly data and CEG's daily, weekly and monthly data on asset betas, for these companies, measured over the last five years (refer pp. 28-29, "Review of the beta and gearing for UCLL and UBA services", Oxera, June 2014, p. 18, "Response to Commerce Commission UCLL/UBA WACC consultation paper", CEG, March 2014 and pp.21-22, "Review of Lally and Oxera reports on the cost of capital", CEG, July 2014); and
- Consider the mean and median leverage for these companies, using this data.

41. Applying this approach, we re-present / assess mean and median asset betas over the last five years for Oxera's refined comparator set of companies as follows:

- Five years to 10 April 2014, Oxera daily data; mean 0.35, median 0.345;
- Five years to 10 April 2014, Oxera weekly data; mean 0.36, median 0.345;
- Five years to 10 April 2014, Oxera monthly data; mean 0.33, median 0.34;
- Five years to 13 March 2014, CEG daily data; mean 0.352, median 0.352;
- Five years to 27 June 2014, CEG daily data; mean 0.36;
- Five years to 27 June 2014, CEG weekly data (average all days of week); mean 0.368; and
- Five years to 27 June 2014, CEG monthly data (average various days of the month); mean 0.365.

42. We note that CEG has not provided sufficient information in its submissions to be able to determine median asset betas for the Oxera "refined comparator set" using weekly and monthly returns.

43. Having regard to an appropriate historical estimation period, an appropriately selected and screened comparator company set and from a technical consistency perspective (i.e. with the estimation of leverage and credit rating), the appropriate asset beta assumption for a UCLL and UBA service provider would therefore be in the range 0.33-0.37, with a rounded point estimate of, say, 0.35 being reasonable.

44. As we have previously submitted, a more refined UCLL and UBA asset beta estimate could be assessed by undertaking a beta decomposition analysis.

Leverage

CEG's Approach

45. In general terms we are in agreement with most aspects of CEG's leverage analysis. However, in certain areas we consider that Oxera's approach is preferred. Specific areas where we agree with CEG are:

   - An assumption of notional leverage of 40% for a UCLL and UBA service provider is reasonable (p. 24); and
   - There should be consistency in analysis of comparator companies and derivation of the asset beta, leverage and credit rating assumptions (p. 25).

46. Specific areas where we are in disagreement with CEG are that we consider that:

   - No particular weight should be given to the regulated service provider's own actual leverage in the analysis, or any regulatory precedent that does so (p. 24); and
   - The most appropriate comparator sample set is Oxera's "refined comparator set".

Recommended Approach

47. In our view the preferred approach, drawing on the empirical analysis submitted by CEG and Oxera to date, is as follows:

   - Use Oxera's "refined comparator set" (refer pp. 23-26, "Review of the beta and gearing for UCLL and UBA services", Oxera, June 2014) as the best comparator set of companies for assessing the UCLL and UBA asset beta, leverage and credit rating;
   - Use CEG's data on average company leverage, for these companies, over the last five years - a period that provides consistency with an appropriate beta measurement period (refer p. 20, "Response to Commerce Commission UCLL/UBA WACC consultation paper", CEG, March 2014); and
   - Consider the mean and median leverage for these companies, using this data.

48. Applying this approach, we assesses mean and median leverage over the last five years for Oxera's refined comparator set of companies, using CEG's company leverage estimates, at 37% and 35%, respectively. Having regard to an appropriate historical estimation period, an appropriately selected and screened comparator company set and from a technical consistency perspective (i.e. with the estimation of asset beta and credit rating), the appropriate leverage assumption for a UCLL and UBA service provider would therefore be in the range 35%-37%. A rounded estimate of, say, 40% would also be reasonable.

Credit Rating

CEG's Approach

49. In general terms, we are in agreement with many aspects of CEG's credit rating analysis. However, in certain areas we consider that Oxera's approach is preferred. Specific areas where we agree with CEG are:

    • There should be consistency in analysis of comparator companies and derivation of the asset beta, leverage and credit rating assumptions (p. 27);

    • Oxera's credit rating review does not report on any analysis of the credit ratings of its comparator company sets (pp. 27-29); and

    • Just because a regulator mandates a credit rating assumption, it does not mean that the regulated firm is able to attain that rating (p. 30).

50. Specific areas where we are in disagreement with CEG are that we consider that:

    • No particular weight should be given to the regulated service provider's own actual credit rating in the analysis, or any regulatory precedent that does so (p. 26); and

    • The most appropriate comparator sample set is Oxera's "refined comparator set".

Recommended Approach

51. In our view the preferred approach, drawing on the empirical analysis submitted by CEG and Oxera to date, is as follows:

    • Use Oxera's "refined comparator set" (refer pp. 23-26, "Review of the beta and gearing for UCLL and UBA services", Oxera, June 2014) as the best comparator set of companies for assessing the UCLL and UBA asset beta, leverage and credit rating;

    • Use CEG's data on current credit ratings, for these companies (refer p. 23, "Response to Commerce Commission UCLL/UBA WACC consultation paper", CEG, March 2014);

    • Convert the credit ratings to numeric 'values', with equal spacing between rating "notches" (i.e. A- to BBB+, BBB+ to BBB etc.);

    • Where more than one rating agency has issued a rating, take an average of the available rating 'values';

    • Consider the mean and median rating 'values' for these companies, using this data; and

    • Convert these mean and median rating 'values' back to their nearest equivalent S&P ratings.

52. Applying this approach, we assesses average current credit ratings for Oxera's refined comparator set of companies, using CEG's company rating data, as having a mean between BBB and BBB-, but slightly closer to BBB and a median of BBB. Having regard to current credit ratings (CEG data), an appropriately selected and screened comparator company set and from a technical consistency perspective (i.e. with the estimation of asset beta and leverage), the appropriate credit rating assumption for a UCLL and UBA service provider would therefore be BBB. If a rounded leverage estimate of 40% were to be used then it would still be reasonable to use a BBB credit rating assumption or, alternatively, a slightly lower credit rating of, say, BBB-.

Debt Beta

CEG's Approach

53.   In its latest submission CEG does not address whether or not it agrees with inclusion of debt betas in Oxera's analysis. However, it is noteworthy that CEG does not actually include debt betas in its own analysis. In its March 2014 submission, CEG assumes debt betas have a value of zero (p. 17 of that submission).

Recommended Approach

54.   In our view the preferred approach, as explained in our previous submission, is to ignore debt betas in the analysis of the comparator companies and the UCLL and UBA service provider. We note that is also the approach adopted by CEG in its submissions. Both PricewaterhouseCoopers and CEG stress the importance of internal consistency between the asset beta, leverage and credit rating analysis of comparator companies which, if followed, makes the use of (non-zero) debt betas redundant.