

**Telecom New Zealand Limited**

Cross Submission on the Commerce Commission's Cost of  
Capital Workshop

2 December 2009



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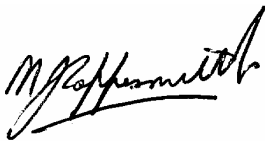
Attention: Mr A Srzich

Dear Sir

We present our report which provides our cross submission comments on matters arising from the Commerce Commission's Cost of Capital Workshop, held in Wellington on 12 and 13 November 2009 ("the Workshop").

We would be pleased to discuss these matters with you further, if required.

Yours faithfully



Murray Coppersmith  
Partner



John Redmayne  
Director

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## 1. Introduction

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### Scope of Report

1.1. The purpose of this report is to provide our cross submission comments on matters arising from the Workshop. The focus of this report is on the specific matters raised during the course of the Workshop, rather than to provide a full and comprehensive analysis of all matters pertaining to the estimation of the regulatory cost of capital. The headings in this report follow the seven Workshop session headings used by the Commerce Commission (“the Commission”).

1.2. We have not set out in this report a fully detailed analysis of the various issues that arise in deriving a regulatory cost of capital as our position and reasoning on these matters is already well documented in various reports we have previously provided to you (and hence to the Commission) and submissions we have made to the Commission. Accordingly, this report should be read in conjunction with our earlier cost of capital reports in order to obtain a comprehensive view on our position on regulated telecommunication business cost of capital matters.

### Approach

1.3. In preparing this report we have used and relied on the transcripts of the Workshop and the additional analysis released by the Commission following the Workshop.

### Background Knowledge

1.4. WACC theory is a specialist technical subject. It is not the purpose of this report to provide a detailed discussion on the theory underpinning 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.

1.5. 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 telecommunications and our submissions on the same.

### Disclaimers

1.6. 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 services provided by Telecom.

1.7. 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.

1.8. 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.

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## 2. Cost of Capital Framework

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### Cost of Capital Guidelines and Input Methodologies

2.1. In our opinion the Cost of Capital Guidelines (“the Guidelines”) should sit above and be broader than the Input Methodologies (“IM”). For example, the Commission should remain open in the Guidelines to the use of models other than, and in addition to, the simplified Brennan-Lally CAPM. However, in the IM we recognise the need for the Commission to define which models are to be used and how.

2.2. We consider that the IM cost of capital parameters should be reviewed, although not necessarily updated, each time they are to be applied. While the Commission has proposed regular review of debt premia, we note that market factors that affect debt premia, are also likely to affect leverage, beta and the market risk premium (“MRP”). Accordingly, frequent review of parameters should not be restricted to just the risk free rate and the debt premium.

### The ‘Low Beta’ Problem

2.3. It is well understood that academic tests of the CAPM rely critically on correct identification and measurement of the ‘market portfolio’. However, from a practical perspective even if the wrong ‘market portfolio’ is being used in academic testing of the CAPM, if that same wrong ‘market portfolio’ is then used in applying the CAPM then the tests are still informative on the efficacy of the model from a pragmatic practitioner’s perspective.

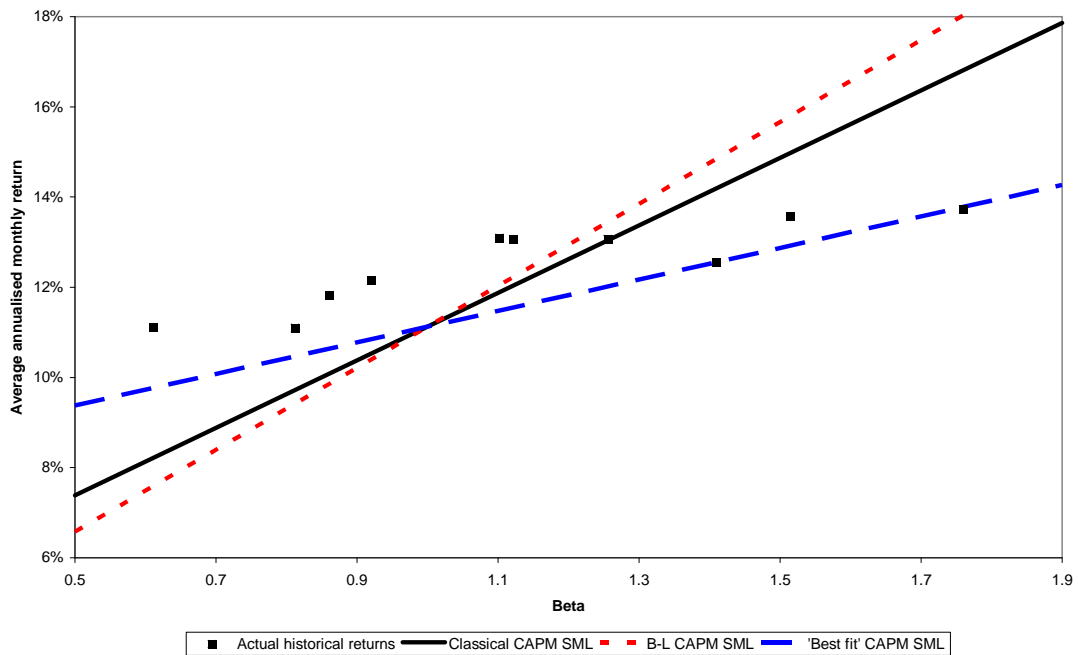
2.4. It is widely recognised that the CAPM has only weak explanatory power, in particular it tends to underestimate the cost of capital for firms with low betas and overestimate the cost of capital for firms with high betas; i.e. the slope of the CAPM model Security Market Line (“SML”) is steeper than the empirical SML (the Fama French 2004 paper<sup>1</sup> provides a useful summary and analysis on this issue). While this may, in academic terms, be due to the use of the wrong market index for measuring betas this is still a practical problem since the Commission is generally regulating firms that it assesses as having below average betas - its use of the CAPM in this way will tend to underestimate the cost of equity (and hence the overall cost of capital) for such firms. This problem is exacerbated using the Brennan-Lally (“B-L”) specification of the CAPM; i.e. the slope of the model SML becomes even steeper – the Brennan-Lally specification is a better tax specification of a ‘bad’ model, while it ‘fixes’ taxes it makes the ‘bad’ aspects of the model worse. This point has been acknowledged by Professor Myers in the expert panel’s report on the cost of capital<sup>2</sup>.

2.5. The chart below is modified from the Fama French 2004 paper and illustrates the nature of the problem. A ‘best fit’ SML has been fitted to the empirical returns data points on the chart, subject to the constraint that the SML is pivoted about the model SMLs at the point where the market average equity beta is equal to 1.0.

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<sup>1</sup> Fama, E. F. and French, K. R., 2004, “The Capital Asset Pricing Model: Theory and Evidence,” *Journal of Economic Perspectives*, vol. 18(3), pp. 25-46.

<sup>2</sup> Franks, Lally and Myers, “Recommendations to the Commerce Commission on an Appropriate Cost of Capital Approach,” 2008, para. 22, p 9.



2.6. The quantum of the adjustment to the Classical CAPM figures in the chart above, in order to arrive at the 'best fit' SML, is to use an equity beta estimate of 0.53 plus 0.47 of the unadjusted equity beta estimate. The quantum of the adjustment to the Brennan-Lally CAPM figures in the chart above is to use an equity beta estimate of 0.62 plus 0.38 of the unadjusted equity beta estimate. Although such adjustments may not be consistent with the theoretical underpinnings of the CAPM, they are a pragmatic solution to the problem the Commission faces in seeking to apply the CAPM to low beta situations. Similar beta adjustments, titled 'Blume' or 'Merrill Lynch' adjustments, are sometimes made by some academics and practitioners, albeit for different technical reasons.

2.7. In response to the discussion on the 'low beta' problem with the CAPM, Dr Lally has raised the "errors-in-variables" problem with empirical testing of the CAPM. We note that the Fama-French 2004 paper (and other similar studies) uses well established econometric techniques to control for this problem. For example, by estimating the betas for portfolios rather than individual stocks, sorting the portfolios by beta and using month-by-month cross-section regressions.

2.8. We consider that the Commission should use the classical CAPM, at the least as a cross-check, whenever the Brennan-Lally CAPM is being applied to low beta firms (with the two models calibrated so that they produce the same cost of equity estimate for a firm with an equity beta of 1.0). Other ways in which the Commission could address the low beta deficiencies of the CAPM are:

- i.) Allowing an increment to the WACC;
- ii.) Choosing a WACC from a higher point from its assessed WACC range;
- iii.) Allowing a mean reversion-type adjustment to the beta (i.e. taking an average of the firm's assessed equity beta and the market-wide average equity beta of 1.0 – not as a means of improving the beta estimate but as a

practical way of generating a flatter Security Market Line, which accords with empirical evidence); or

- iv.) Use estimates from other models to assess the level of model error, for inclusion in the analysis of the range of the final cost of capital estimate.

## Practical Application of Other Models

2.9. While the Classical and Brennan-Lally CAPMs are practical to apply in the New Zealand context, we have concerns about the practicality of being able to reliably estimate the parameters required by other models in order to produce reasonable cost of capital estimates from those models at this time. These other models are the International CAPM, the Dividend Discount (or DCF) model and the Fama-French three factor model. It is noted that cost of capital estimates obtained from overseas markets (e.g. the USA or Australia) using the latter two models may provide some information vis-à-vis CAPM based cost of capital estimates from those same markets.

## Straw Person Example

2.10. It is noted that the 'straw person' cost of capital example provided by the Commission does not address some key framework issues, such as asymmetric risk and real options. Nor does it deal with adjustments to and a final conclusion on an asset beta for New Zealand Electricity Distribution Businesses ("EDBs"). Furthermore, assessment of a WACC range and selection of a point estimate from within that range are also not considered. It is acknowledged that the 'straw person' example was not intended to cover these matters, but for the record we note that these are all framework-type issues that are relevant to Telecom's regulated activities and which would need to be covered before the Commission could conclude on a WACC estimate.

## Industry-wide vs Firm-specific

2.11. In principle we support use of industry-wide cost of capital estimates for the purpose of Default Price Paths ("DPPs"). However, once a firm is to be under a Customised Price Path ("CPP") we consider that firms should be able to elect to use firm-specific cost of capital estimates, where they can provide supporting evidence (e.g. actual leverage, actual debt costs and relative risk characteristics of the firm – as may affect assessment of beta). It is noted that the DPP / CPP regulatory instruments are not applicable to the telecommunications services provided by Telecom. In general, insofar as regulatory cost of capital estimates are required for telecommunications services, the use of service-specific estimates is recommended.

2.12. Under the Brennan-Lally CAPM model favoured by the Commission, the risk free rate, the investor tax rate and the tax adjusted market risk premium ("TAMRP") can be viewed as market-wide parameters. Under DPPs it would therefore be necessary to obtain industry-wide estimates for the asset beta, leverage and the debt premium. An industry-wide asset beta estimate can be obtained from analysis of the betas for comparable companies (i.e. companies that primarily operate in the same industry), listed in New Zealand or overseas. Industry-wide leverage and debt premium estimates can be obtained from

analysis of these parameters for the same companies and for New Zealand companies of similar credit quality.

## PricewaterhouseCoopers Approach

2.13. At the Workshop the Commission asked that valuation practitioners provide publicly verifiable support for their position on cost of capital parameters. PricewaterhouseCoopers New Zealand publishes quarterly cost of capital estimates on its website (<http://www.pwc.com/nz/en/cost-of-capital/index.jhtml>), with which the Commission is familiar. We use the simplified Brennan-Lally CAPM, although this is arrived at by virtue of applying more detailed tax assumptions to the full Brennan-Lally CAPM. Our current market-wide parameter estimates are an investor tax rate of 30% and a TAMRP of 7.5%. We use this model and market-wide parameters in all of our cost of capital work in New Zealand. We also typically employ a range of cross-checks, including use of the classical CAPM where international investors might be involved.

2.14. As noted at the Workshop, our TAMRP estimate is normally applied in valuing long term cash flows (i.e. into perpetuity) so we are less inclined to adjust it in response to shorter term market conditions, which may be mean reverting. However, the position facing the Commission is different in that it is required to estimate the cost of capital for horizons of one to five years (in the case of the TSO the horizon is one year).

2.15. Our TAMRP estimate is primarily based on analysis of historical realised returns in the New Zealand market, measured relative to 'short term' government bonds. The data series for the later has typically been for bonds of a term of one to three years. If our historical TAMRP estimate were to be rebased off 'medium term' government bonds, with a term of around five years, then tentative analysis suggests that the historical TAMRP might be in the order of up to 0.1% lower. However, this tentative conclusion is based on analysis of only part of the time period of interest due to data limitations. Moreover, we have regard to other data sources and studies and as a result at the present time we would not conclude that the New Zealand TAMRP should be less than 7.5% if a longer term government bond were being used as the risk free rate in the simplified Brennan-Lally CAPM.

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### 3. Expectation of Normal Returns

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#### NPV=0 Objective

3.1. NPV=0 is an appropriate regulatory objective for businesses regulated under part 4 of the Act, over the long term, but only providing allowance is made for sharing of efficiency gains and that asymmetric risk and real options have been accounted for.

3.2. The Expert Panel on the cost of capital noted that NPV>0 could be allowed as an incentive for pursuing efficiencies, although we understand that in the IM the Commission has not made any specific allowance for this - other than the 'headroom' that is implicitly allowed for within a price path for the duration of the regulatory period.

#### Effect of Regulation

3.3. Regulatory decisions that defer the recovery of cash are viewed in the market as increasing risk for investors in a way that is arguably not captured by the CAPM. Examples of such regulatory issues are the treatment of revaluations, depreciation and regulatory tax. There is some US evidence<sup>3</sup> that the regulatory tax approach that delays recovery of taxes (being the approach that the Commission terms the 'tax payable' approach) increases the observed cost of debt for regulated firms. This would imply that the unobservable cost of equity is likely also increased if the regulator defers recovery of tax costs.

3.4. Regulation itself can create asymmetric risks and diminish or destroy valuable real options. In his submission and at the Workshop Professor Guthrie has proposed that real options be incorporated by way of a scalar or multiplier applied to the Regulatory Asset Base ("RAB"). This is a practical way of incorporating real options into the regulatory framework, with use of an industry-wide scalar or multiplier likely to be more appropriate than firm-specific estimates.

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<sup>3</sup> Refer page 83, "Regulatory Finance: Utilities' Cost of Capital," R. A. Morin, Public Utilities Reports Inc., Arlington, Virginia, 1994.

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## 4. Cost of Capital and the Global Financial Crisis

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### Effect of Global Financial Crisis

4.1. The Global Financial Crisis (“GFC”) has seen observable increases in debt margins and markets’ volatility over the past year or so compared with levels observed in the preceding few years. Government bond rates (i.e. ‘risk free’ rates) have also declined over the same period. There is likely to be an (as yet unobservable) increase in the required equity market risk premium, particularly over the forthcoming period of relevance to the Commission.

4.2. Financial markets appear to have moved from a period where risk was priced at levels below longer run averages to levels that are now above those longer run averages. In the longer run the pricing of risk may be mean reverting or it is possible that for the foreseeable future risk premia have increased to a new level. Either way, the Commission’s focus is necessarily on the short to medium term so even a temporary increase in risk premia will be relevant to its estimates of the regulatory cost of capital.

4.3. In light of the GFC we request that the Commission seek the opinion of the Expert Panel members, Professor Franks & Myers and Dr Lally, on their current estimates of the New Zealand TAMRP for horizons of from (the next) one to five years.

4.4. It is noted that the GFC has resulted in it being more difficult for firms to raise debt and equity capital. Debt refinancing risk has also been exposed. Furthermore, at the present time some firms are effectively excluded from longer term debt markets at reasonable pricing. These factors need to be taken into account when assessing the true, full cost of capital (in particular the cost of debt) in the current environment.

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## 5. Leverage

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### Internally Consistent Assumptions

5.1. There needs to be consistency between the assumed level of leverage, the assumed credit rating, debt premium estimation and the implied key financial ratios (e.g. interest cover). This level of analysis and internal consistency is not evident in the straw person example.

### Industry-wide vs Firm-specific

5.2. The use of an industry-wide leverage assumption is reasonable for firms subject to DPPs. The industry-wide estimate should be estimated with primary reference to listed comparator firms in New Zealand and overseas that have 'normal' ownership arrangements. Under CPPs we consider that firms should be able to submit on use of their own actual leverage, debt premium and (if practicable) asset beta, if they so choose, otherwise the industry-wide assumptions could continue to apply as the 'default' option.

### Model Choice and Leverage

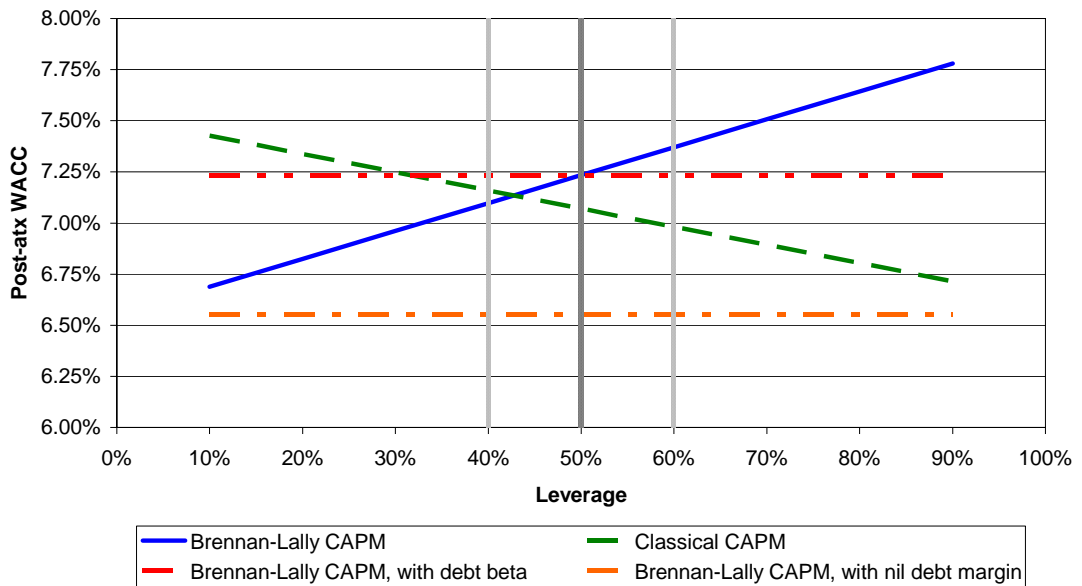
5.3. The issue raised in the Ireland Wallace submission, as reflected in the charted example / note provided by the Commission, that under the simplified Brennan-Lally model the WACC increase with leverage has been analysed in technical terms in the note prepared by Dr Lally titled "WACC and Leverage", 17 November, 2009. As covered in that note, if a significant part of the debt premium is attributable to systematic risk (which is the conclusion of at least one recent study<sup>4</sup>) then incorporating debt betas into the analysis restores the expected outcome of the WACC being (largely) invariant to leverage. However, as covered in other submissions, the introduction of debt betas makes little difference to the final WACC estimates, providing the firm of interest has broadly similar characteristics (e.g. leverage, cost of debt and asset beta) to the comparator firms that have been analysed. The chart below illustrates<sup>5</sup> the relationship between the WACC and leverage under these alternative modelling assumptions.

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<sup>4</sup> Elton, J.E., Gruber, M.J., Agrawal, D. and Mann, C., 2001, "Explaining the Rate Spread on Corporate Bonds," *Journal of Finance*, vol 56 (1), pp. 247-277.

<sup>5</sup> The example follows that provided by the Commission, which uses simplifying assumptions such as the same debt margin applying at different leverage ratios and no allowance being made for the costs of financial distress (which if allowed for would see the slope of all of the WACC curves increase at higher leverage levels). The WACC lines in the chart for the Brennan-Lally CAPM and the Classical CAPM are as per the Commission's example.

Effect of leverage on WACC



5.4. Hence, there are technical grounds to demonstrate that a more complex analysis can restore the expected invariance of the WACC to leverage, but from a practical perspective the Commission can continue to use the simplified Brennan-Lally model and ignore debt betas, providing it is estimating WACC parameters in accord with the leverage norms for comparator companies. Practical application of a simplified modelling setup should not be allowed to be used as a theoretical framework for arguing for an extreme (nil) leverage position.

5.5. It is not at all evident that use of the simplified Brennan-Lally CAPM by the Commission will drive firms to adopt higher leverage. Firstly, the effects on the Commission’s assessed WACC are small, so the presence of an economically significant incentive is questionable. Secondly, if the Commission is using industry-wide / benchmark WACC parameters, including having regard to overseas firms, it is unlikely that the leverage decisions of individual regulated New Zealand firms will have much effect on the industry-wide estimates. Thirdly, the nature of any incentive is unclear – would firms try to increase leverage leading up to WACC determinations, then decrease it once a price path is set? It is unlikely that many firms would have sufficient flexibility over their capital structures to ‘play’ such ‘games’. Fourthly, firms and their shareholders make capital structure decisions based on a range of factors, not just the output of a WACC formula. They are also subject to monitoring and pressure from shareholders and bankers.

5.6. The key point from a practical perspective, and one which then makes the leverage issue insignificant, is to ensure that the regulated entities’ cost of capital is estimated using comparable leverage, asset beta and debt margin assumptions as measured for the comparator entities. Dr Lally’s analysis concludes that the technically correct WACC specification, using the SBL CAPM, is somewhere between the Commission’s current model (the blue solid line on the chart above) and treating the full debt margin as attributable to a debt beta (the red dashed line on the chart above). The difference between these two

WACC curves, within the leverage range of 40% to 60% assessed in the straw person example, is not significant - being at most +/- 0.14% in the WACC value.

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## 6. Cost of Debt (and Risk Free Rate)

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### Term of the Risk Free Rate

6.1. The risk free rate appears in the WACC formula as a building block for both the cost of debt and the cost of equity. PricewaterhouseCoopers prefers the use of longer term risk free rates in estimating the cost of equity in the WACC, consistent with market convention and the investment practice of firms. Were sufficiently liquid markets in existence for New Zealand government bonds of terms of 10 years or more, we would favour use of a 10 year (or longer) bond rate in estimating the cost of equity using the CAPM. However, the illiquid market in longer term bonds generally results in use of a five year bond as the liquid long term risk free rate benchmark in this country.

6.2. We note that the Dr Lally's analysis justifying use of a risk free rate matching the regulatory reset period ignores the presence of any term risk premium in the term structure of interest rates. In our view the existence of such a premium invalidates Dr Lally's proof. As investors in long term government bonds demand such a premium, long term equity investors in regulated businesses should also be provided the same premium.

6.3. It is acknowledged that, theoretically, the term of the risk free rate used in the cost of equity should be the same as that used for estimating the MRP, but in practical applications this may not be a significant issue.

### Swap Rates

6.4. Submissions have noted that there may be grounds for using swap rates, rather than government bond yields, as the risk free rate. We recommend that the Commission keeps a watching brief on this topic, but support continued use of government bond yields at present.

### Measurement Period

6.5. The Commission practise of averaging measurement of government bond yields over the one month prior to the commencement of a regulatory period is reasonable. It is noted that where regulatory decisions are to be made in advance of the regulatory period it would be helpful for regulated firms wishing to manage interest rate risk if the Commission were to inform them of the specific measurement period and measurement basis it intends to use to determine the regulatory risk free rate.

### Debt Betas

6.6. We support the Commission's current practise of excluding estimation and application of debt betas as for most companies this should have no material effect on their WACC estimates. Inclusion of debt betas would add additional complexity and parameter estimation issues, for no apparent gain in the accuracy of the resulting WACC estimates.

## Estimation of Debt Premia

6.7. The Commission should estimate debt premia based on the best practice / optimal term of borrowings for firms operating in unconstrained credit markets. If the Commission is minded to notionally 'swap' the term of this borrowing to that of the regulatory period, then it should make allowance for interest rate swap costs. It is our view that since it is not practical for firms to swap the entire term of their debt premium, the Commission should not assume that this can be done 'notionally'. This is the methodology that has been applied by the Commission in its latest TSO decisions.

6.8. If firms are able to provide details of their own, actual, current borrowing costs then this constitutes one of the best sources of data. In the absence of such data an alternative is to review the yields on publicly traded bonds for companies with comparable credit risk. Information on swap and hedging costs can generally be obtained from trading banks. Different debt margins may apply to different services within a firm.

## Straw Person Example

6.9. We note the straw person example does not include the raw data used to derive the risk free rate used in the example. Accordingly it is not possible at this time for us to critique and comment on its derivation, although we do not envisage that there should be any issues with deriving this estimate. Nevertheless, at the time the Commission releases actual, as opposed to straw person, parameters for consultation it would be helpful if the Commission released all underlying raw data, calculations and a detailed description of methodology in order that interested parties can (more efficiently) review and comment on the estimates.

## Financeability Issues

6.10. In response to any financeability test problems, the second course of action proposed by the Commission is to reduce the assumed level of gearing. It is our view that this proposed course of action renders financeability tests meaningless – assumed leverage is reduced until the financeability issues simply 'disappear'. Accordingly, this proposed course of action should be dropped. We support the third and fourth courses of action proposed by the Commission, after first checking the building block inputs, being to review the allowed timing of cash flow recovery and to review the allowed WACC. We consider that the Commission should be cognisant of the effect its decisions on cash flow timing (e.g. regulatory treatment of revaluations, depreciation and taxes) can have on investors' perception of risk.

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## 7. Cost of Equity

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### Market Risk Premium

7.1. At the Workshop the advisers that stated the TAMRP's used by their respective firms gave the following responses:

Mr Redmayne (PwC)	7.5%
Mr Ireland (Ireland Wallace)	7.5%
Mr Newton (KPMG)	7.75%
Dr Marsden	7.5%
Dr Layton (NZIER)	7.0%

7.2. The median estimate from this sample is 7.5%, compared to the Commission's current estimate of 7.0%. Furthermore, one advisor (Mr Newton) and two of the company representatives at the Workshop stated that they had recently increased their TAMRP estimates in response to current market conditions (KPMG +0.25%, Auckland International Airport +0.5% and Powerco +0.5%). The current market practice among valuation practitioners and the overall trend in revision of TAMRP estimates lend weight to the view that the Commission should increase its TAMRP estimate at this time to a figure of 7.5%, or more for shorter term horizons.

### Beta Estimation

7.3. On the topic of beta estimation, we are strongly opposed to "qualitative assessment" of betas by the Commission. Industry betas should be estimated from objective analysis of the closest possible group of comparator companies, not from subjective judgement. The focus should be on selecting a good comparator group sample and thoroughly estimating the betas for these companies. While cross-checks can be considered these should be used to inform decisions about selecting a WACC within the range, not as the basis for making subjective adjustments to the beta estimate.

7.4. If the comparator company group is rigorously selected and analysed using the appropriate econometric techniques, then there is little that can be added by referring to analysis undertaken by others. All it is likely to reveal is that the other analyses may have excluded some relevant companies of interest, may have included non-comparable companies, may have used inadequate or inappropriate econometric techniques and / or may have been undertaken over a different time period. With the current ready access to international capital markets data the Commission should not seek to rely on potentially inadequate or inappropriate beta analysis by other parties. These comments also pertain to the desirability of the Commission avoiding any reliance on 'fair value curves' and the like that are calculated and provided on a proprietary basis by third party service providers.

7.5. Insufficient information has been provided to be able to critique the straw person beta estimates in any detail. However, it is noted that these estimates may be affected by factors such as the choice of measurement period, the choice of measurement interval and thin trading. As for other parameter estimates, when the Commission consults on actual estimates it would be helpful for

interested parties if the raw data and underlying calculations can be released by the Commission at that time. This will allow for informed consultation to occur in an efficient manner.

### **Investor Tax Rate**

7.6. We accept as reasonable the Commission's current assumption that in New Zealand the investor tax rate for use in the simplified Brennan-Lally CAPM is presently 30%. However, we note that the increased flow of investment funds into Kiwisaver and PIE investment products may lead to a more reasonable investor tax rate assumption being somewhat below 30% in future years.

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## 8. Estimating the Cost of Capital

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### Model Risk

8.1. When assessing a WACC range the Commission should account for model risk as well as parameter estimation risk.

### Monte Carlo Simulation

8.2. Monte Carlo simulation can provide a useful tool to generate the cost of capital range where the individual parameter estimates are partially correlated and / or have non-normal distributions. There are strong grounds to expect that certain of the WACC parameters will be correlated. For example, there is likely to be a positive correlation between the debt premium and the MRP. There may also be a negative correlation between the risk free rate and the MRP. Furthermore, as noted by Professor Guthrie, there may be positive correlation between parameter estimates from individual analysts (e.g. their beta and MRP estimates).

### Selection of a WACC Estimate From the Assessed Range

8.3. If the Commission is not going to address the 'low beta' CAPM problem through some other means, then the presence of this issue is a factor that should influence its assessment of the WACC range and where it selects a point estimate from within that range.

8.4. Given that it is generally recognised that the costs of setting the regulatory WACC too low are greater than those of setting it too high, the Commission's default position should be to select a WACC above the mid-point of its assessed WACC range. At the Workshop Dr Lally expressed his view<sup>6</sup> that the regulatory WACC point estimate should be drawn from above the 75th percentile of the WACC range. It is our view this is an area that warrants further research, but for now the Commission's default position should be to choose a WACC estimate no lower than the 75th percentile.

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<sup>6</sup> We note that at the Workshop Dr Lally stated that in his view that the 75<sup>th</sup> percentile of the assessed WACC distribution is probably the lower bound at which the regulatory cost of capital should be selected and that one could easily choose a value well above this. (refer lines, 12-14 page 225, Workshop transcript).