ceg COMPETITION ECONOMISTS GROUP

International precedent relevant to the 75th percentile

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COMPETITION ECONOMISTS GROUP

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1 Task

1. Wellington Electricity has asked CEG to provide a comparison of:

   - the New Zealand Commerce Commission's allowed premium above the NZ Government bond rate for New Zealand electricity distribution businesses (EDBs); relative to
   - the allowed premium above the government bond rate for similar businesses in Australia, the UK and the United States of America.

2. Wellington Electricity has also asked CEG to advise on what, if any, implication the results of this analysis has for the Commission's consideration of whether to retain the 75th percentile increment to the midpoint WACC estimate as calculated in the input methodologies (IMs).

3. The following section provides our results and analysis.

2 Results and analysis

2.1 Methodology and results

2.1.1 Methodology

4. We have sourced allowed returns in each the jurisdictions from the following sources:

   - The Commerce Commission's (the Commission's) 30 September 2013 decision "Cost of capital determination for electricity distribution businesses to apply to a customised price-quality path proposal";
   - The Australian Energy Regulator's (AER's) most recent decision for electricity distribution businesses;[1]
   - The UK regulator's (Ofgem's) most recent decision dated February 17, 2014;[2] and
   - 52 (7) different US electric utility regulatory decisions made by 31 (7) different state based regulators since 1 January 2013 (1 January 2014).

5. While these decisions are not perfectly aligned in time, they have occurred substantially over the last year during which market conditions have not changed materially and therefore any timing differences can be expected to have an insignificant impact on the result.

6. In the US there a large number of independent regulators which is why we have reported average decisions across two different time periods (a short period covering just 2014 so far and a longer period covering January 2013 to date).

7. We have used the latest decision in Australia and the UK, rather than an average of past decisions, because both jurisdictions have recently completed a process reviewing the allowed cost of capital – the impact of which has been to reduce the cost of equity allowance.

8. In Australia, the AER reduced its estimate of the equity beta (at 60% gearing) from 0.8 to 0.7.[3] In the UK, Ofgem's "central estimate" of the cost of equity was reduced

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1 AER, Ausgrid, Endeavour Energy, Essential Energy, ActewAGL, Transitional distribution decision, 2014–15, April 2014. Available at: http://www.aer.gov.au/node/11483

2 Ofgem, Equity market return consultation: reducing the cost of capital for electricity distribution companies, February 17, 2014. Available at: https://www.ofgem.gov.uk/press-releases/equity-market-return-consultation-reducing-cost-capital-electricity-distribution-companies

3 At the same time the AER increased its estimate of the MRP from 6.0% to 6.5% - but the net effect is still to reduce the allowed premium above the Government bond rate (from 4.80% to 4.55%).

from 6.3% to 6.0% (expressed in real terms[4]). We use the 6.0% 'central estimate' in our results (i.e., we use the weighted average cost of capital (WACC) based on this value for the cost of equity).

9. However, we note that Ofgem has actually allowed a 6.4% return for Western Power Distribution (WPD) – citing its view that WPD had an efficient expenditure plan. The AER decision reports a range for the WACC of 7.6% to 8.1% but uses the top end of the range to set prices. We use the 8.1% figure ultimately used by the AER in our analysis (using the midpoint of the range would lower our results for Australia by 0.25%). In the case of New Zealand, Australian and UK decisions we have sourced the allowed return on the regulatory asset base (the weighted average cost of capital or "WACC") from the decisions cited. US allowed rates of return have been sourced from the data service SNL.

10. In order to calculate risk premia we have subtracted the contemporaneous 5/10 year government bond rate from the regulator's allowed rate of return. We have sourced Government bond rates in each country from Bloomberg and, in the case of New Zealand, from the Commission decision. The UK decision is expressed in real terms while the New Zealand, Australian and UK decisions are expressed in nominal terms. Consequently, we have sourced inflation indexed government bond yields for UK decisions and nominal government bond yields for the other decisions.

11. For the New Zealand and Australian decisions we have calculated average bond yields over the same period used by the regulator to set the risk free rate in the CAPM calculation. For UK and US decisions the regulator does not base the cost of equity allowance on a specific measurement period for the risk free rate. For the UK decision we have used the average of the 20 days prior to the date of publication of the final decision. For the US we have used the average government bond rates over the two periods we have averaged regulatory decisions (i.e., 1 January 2013/14 to 21 April 2014).

2.1.2 Results

12. The calculations and results are summarised in Table 1 and Figure 1 below. This shows the premia allowed in the various regulatory decisions relative to both the 5 and 10 year government bond rates.

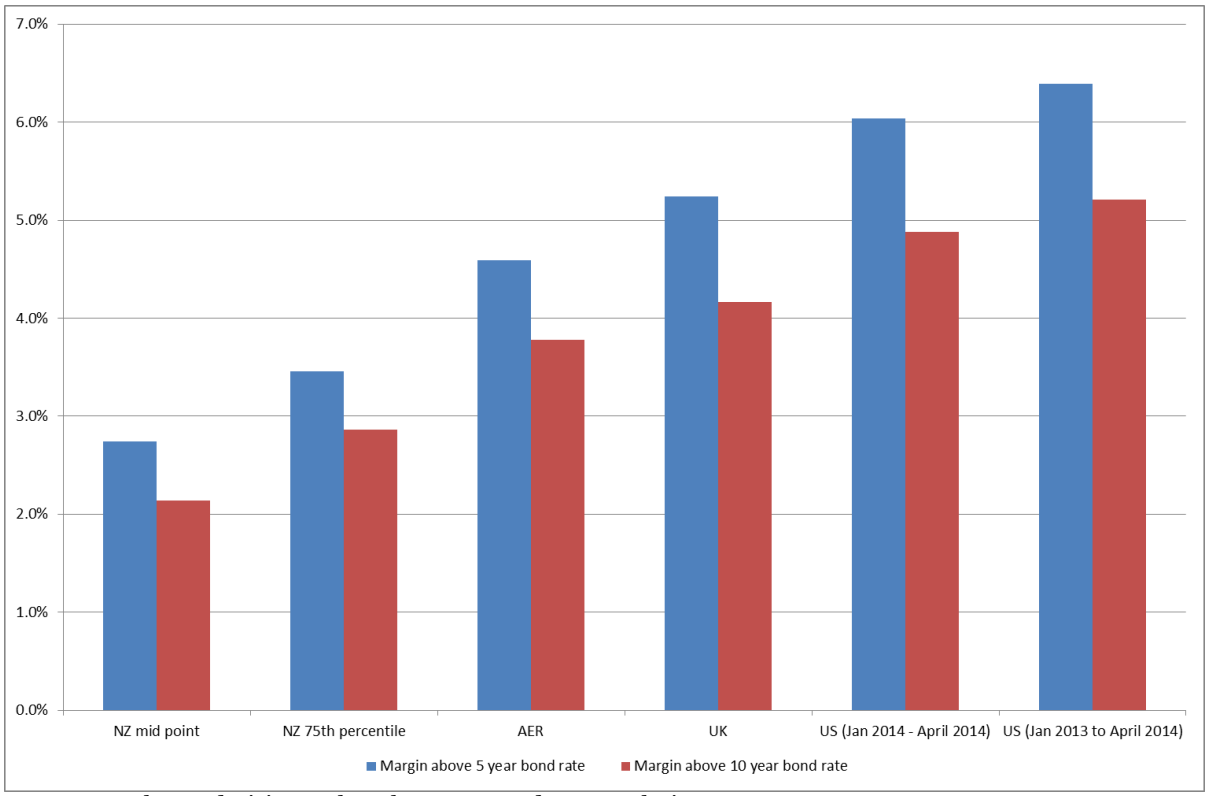
4 That is, this is the return received after removing the effect of inflation.

Table 1: Calculation of international regulatory risk premia

	NZ		AER	UK (real)	US	
	Midpoint	75th percentile			2014	2013-2014
Post tax WACC	6.69%	7.41%	8.10%	3.79%	7.65%	7.66%
5 year Gov. bond rate	3.95%	3.95%	3.51%	-1.45%	1.61%	1.27%
10 year Gov. bond rate	4.55%	4.55%	4.32%	-0.38%	2.77%	2.45%
Risk premium (rel. 5 year rate)	2.74%	3.46%	4.59%	5.24%	6.03%	6.39%
Risk premium (rel. 10 year rate)	2.14%	2.86%	3.78%	4.17%	4.88%	5.21%

Source: Regulatory decisions, Bloomberg, SNL and CEG analysis

Figure 1: International WACC premia allowed by regulators



Source: Regulatory decisions, Bloomberg, SNL and CEG analysis

13. It can be seen that the premium allowed by the Commission, which currently includes the 75th percentile increment, is materially below the premia allowed by other regulators. Obviously, the same conclusion applies, although with more force, when comparing to the premium associated with the Commission's mid-point WACC.

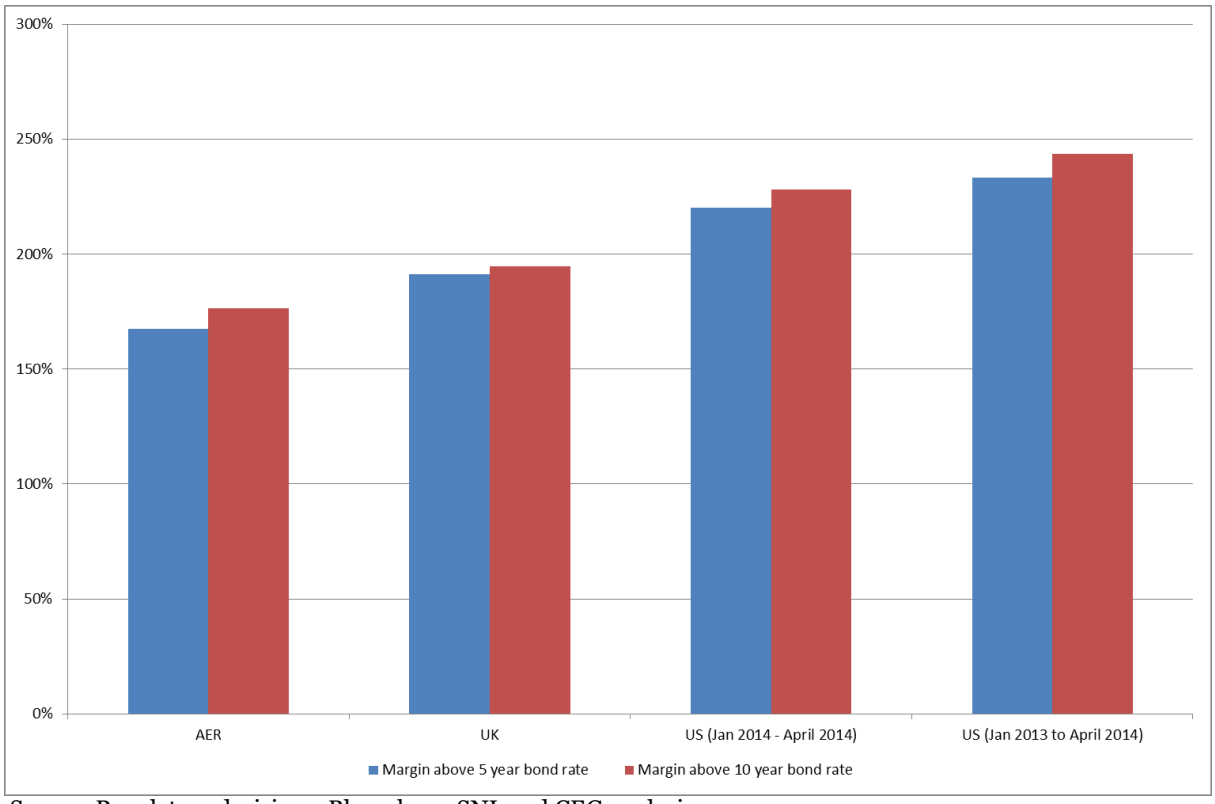
14. The current gap between the Commission's (inclusive of the 75th percentile) and foreign regulators' allowed risk premium relative to 5 year bonds ranges between 1.1% - 2.9% (0.9% to 2.4% relative to 10 year government bond yields).[5] If the Commission were to drop the 75th percentile increment and simply adopt the mid-

5 1.13% is relative to the AER decision and 2.9% is relative to the average US premia since January 2013

point WACC, the range of the gap between it and other regulators would increase to 1.8% - 3.6% (1.6% to 3.1% relative to 10 year government bond yields).

15. Expressing the foreign premia as a percentage of the NZ mid-point WACC premium gives a range of 167% to 233% (177% to 243% measured relative to 10 year bond rates). That is, if the Commission adopted the 50th percentile WACC then foreign regulators' risk premia would be between 1.7 to 2.4 times as large as the allowed New Zealand risk premium. This is illustrated in the Figure 2 below.

Figure 2: Risk premia relative to Commission midpoint WACC risk premium – the former expressed as a % of the latter



Source: Regulatory decisions, Bloomberg, SNL and CEG analysis

2.1 Analysis

2.1.1 Why compare risk premia

16. The local currency government bond rate reflects the risk free returns available to any investor in that currency area. In order to attract investment, a firm operating in that currency area must offer a premium above this risk free rate 'baseline' that reflects the firm specific risk premium. Comparing absolute returns across countries will conflate:

- differences in the 'baseline' between difference currencies; and
- differences between what the return for taking on risk above and beyond the risk free baseline.

17. It is the latter which is relevant when considering whether regulatory allowances in one country are more or less generous than regulatory allowances in another country.

18. One can also approach this question from the perspective of an internationally diversified investor appraising allowed returns in regulated assets in different countries. These investors will focus on the risk premium on offer not the absolute return. This is because arbitrage will ensure that the expected return on risk free assets is more or less the same in different currencies when expressed in the same unit of currency. For example, the expected return on an Australian Government bond cannot depart materially from the expected return on an equivalent maturity NZ Government bond (taking into account the expected movement in the AUD/NZ exchange rate) without creating arbitrage opportunities for investors. If it was the case that expected returns were materially different then investors would profit by selling the bond with the lower expected return and buying the other bond (i.e., arbitrage would force the expected returns together).[6]

19. Consequently, differences in Government bond rates can be used as proxies for the difference in market compensation international investors require for exposure to different exchange rate risk over the relevant maturity horizon. The premium above the domestic currency bond rate can then be compared without having to adjust for differences in exchange rate risk – because these are already captured in the different 'baseline' risk free returns.

2.1.2 Implications of a low risk premium in New Zealand relative to overseas jurisdictions

20. I do not believe that there is any reason to believe that investors in New Zealand EDBs require a lower risk premium than investors in EDBs in Australia, the UK or the US. I am not aware of any argument presented to or by the Commission that this is the case. Moreover, I consider that it is reasonable to assume that regulators in the countries examined share a common objective which is to set a socially optimal allowed return on assets. This socially optimal allowed return will account for the best estimate of investors' required return[7] plus a premium for any asymmetry in the social consequences of regulatory error.

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6 These forces can be thought of as operating on an expected basis (uncovered interest rate parity) or in the context where derivative markets (exchange rate futures and cross currency swaps) are used to convert a bond yield in one currency into a bond yield in another currency with certainty (subject to counterparty risk in the derivative market).

7 Including an allowance for cash-flow asymmetries such as stranding risks and/or exposure to natural disasters.

21. It follows that the differences between the Commission's allowed risk premium and the risk premium allowed by other regulators can be viewed as reflecting a difference of opinion about:

    - The risk premium that best reflects the mid-point premium actually demanded by investors; and/or
    - The appropriate increment to the mid-point risk premium required to account the social consequences of regulatory error.

22. Whichever of these is the correct (or dominant) explanation, both are relevant to an assessment of whether the Commission should continue to include the 75th percentile increment in the IM WACC estimate.

23. If all regulators share the same estimate of the mid-point risk premium required by investors[8] then the entirety of the difference between regulators must reflect differences in their estimate of the optimal increment to reflect asymmetrical consequences of regulatory error. Other regulators currently offer an increment above the Commission's mid-point that is 2.5 to 5.0 times larger than the Commission's estimate of 0.72%.[9]

24. Under this interpretation of the data, each foreign regulatory decision provides a data point reflecting other regulators' assessment of the appropriate increment to the WACC to reflect asymmetric costs of error. Giving weight to these data points suggests that the Commission should not be considering setting this increment at zero. Indeed, if anything, the Commission should be considering raising its allowance for the asymmetric costs of regulatory error.

25. Alternatively, other regulatory decisions might solely reflect the relevant regulator's estimate of the mid-point (i.e., zero allowance is included for any asymmetry in the consequences of regulatory error). This would imply that other regulators' mid-point estimate is 1.8% to 3.6% higher than that of the Commission. Expressed as a percentage of the Commission's 2.7% mid-point estimate this is a range of over 67% to 133% higher.

26. Under this interpretation of the data, other regulators' decisions do not provide evidence of the existence of other regulators' estimates of the optimal increment required to reflect asymmetry in the costs of regulatory error. However, that data does provide evidence that the IM WACC without the 75th percentile would result in

8 That is, all regulators share the Commission's view that the risk premium relative to the 5 year risk free rate is 2.7% - s per the Commission's most recent EDB WACC decision.

9 Other regulators allow a risk premium that is in the range of 1.8% to 6.4% above the 2.7% Commerce Commission estimate of the mid-point risk premium. This compares with the Commerce Commission's 75th percentile increment that is only 0.72% above its mid-point estimate.

an allowed compensation for risk that is well below (around half) the average of the compensation provided by Australian, UK and US regulators.

27. Giving weight to these data points suggests that the Commission should not be considering removing the 75th percentile from the IM WACC without also revisiting the IM mid-point WACC. The fact that the Commission's mid-point risk premia is so far below the risk premia allowed by international regulators is partially offset in the IMs by the fact that the 75th percentile risk premium is used. Any review of the use of the 75th percentile in the IMs without also reviewing the mid-point WACC used in the IMs, and reconciling the differences with international precedent, would be imprudent given how much lower the mid-point risk premia is relative to international precedent.

28. For these reasons, I believe that the same conclusion flows whether the international precedent is explained in terms of foreign regulators having a higher mid-point risk premium or a higher increment for asymmetry in the costs of regulatory error. That conclusion is that this source of evidence suggests that the Commission should not be removing the 75th percentile increment from the IMs – at least not without a simultaneous review of the mid-point estimate.