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Economists

Analysis of Further Evidence in the Commerce Commission's Review of the WACC Percentile

A Report for Powerco

30 September 2014

Report Author/s

Greg Houston

Carol Osborne

Brendan Quach

Contact Us

Level 40, 161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800

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1. Introduction

In March this year, the New Zealand Commerce Commission (the Commission) issued a 'notice of intention' to undertake further analysis on the cost of capital input methodologies (IMs) that apply to electricity lines services, gas pipeline services and specified airport services regulated under Part 4 of the Commerce Act. In particular, the Commission has embarked on a review of the appropriateness of the weighted average cost of capital (WACC) percentile that has been used in setting the regulated price-quality paths.

This report is the third we have prepared in this context, in each case at the request of Powerco. Our earlier reports are entitled:

- *Comment on the Commerce Commission's Proposed WACC Percentile Amendment* (29 August 2014) – which we refer to below as our August report; and
- *Analysis of Selected Submissions on the Commerce Commission's Draft WACC Percentile Decision* (12 September 2014) – which we refer to as our September report.

The purpose of this third report is to comment on analysis provided to the Commission outside the specified process timeframes, and on which the Commission has now sought comment in: *Further work on cost of capital input methodologies: Invitation for submissions on further evidence (19 September 2014)*. The particular pieces of further evidence cited in the Commission's paper are:

1. Professor Ian Dobbs' report, on behalf of the Commission, commenting on the August 2014 Frontier Economics submission on behalf of Transpower;
2. further information relevant to the RAB multiples analysis, namely:
   a. information provided by PwC regarding the sale of King Country Electric Power Trust's shares in The Lines Company; and
   b. Ireland, Wallace and Associates (IWA)'s analysis of Horizon Energy's and Otago Power Services' RAB multiples; and
3. new material raised in the MEUG cross submission, namely:
   a. two reports from NZIER, produced on 9 and 12 September respectively; and
   b. legal advice provided by Franks & Ogilvie.

The Commission has requested submissions by 5pm Tuesday 30 September 2014.

This report sets out our comments on this further analysis and is structured as follows:

- section 2 provides brief comment on Professor Dobbs' report;
- section 3 considers the value of the further RAB multiples analysis; and
- section 4 comments on the additional information provided by MEUG, namely the NZIER reports and the economic aspects of the advice provided by Franks & Ogilvie.

2. Professor Dobbs' Report

2.1 Comment

In our opinion, Professor Dobbs' report offers a balanced review of Frontier Economics' implementation of the Dobbs (2011) model. We have no specific comment on the particular matters raised by Professor Dobbs, since these are likely to be better addressed by Frontier Economics.

Notwithstanding, we note agreement with Professor Dobbs as to the need to be cautious in relation to the ability of the model to identify precisely the optimal WACC percentile. In particular, we agree with Professor Dobbs' statement that:[1]

> My other concern lies with the extent to which the model can be used as a quantitative guide to the best choice of percentile to set for the allowed rate of return. This kind of model articulates why a significant uplift is warranted, but in my opinion, it is unclear how much quantitative significance should be placed on the model predictions. For example, there are reasons for considering the uplift should be greater… and reasons for why it should be smaller…

The estimation of the optimal percentile WACC to apply in the context of the IM framework by empirical means is fraught with difficulties, as illustrated by the analysis presented to the Commission by both Oxera and Frontier Economics. The nature of these models is such that they require critical inputs to be based on assumptions that necessarily have wide confidence bounds. This in turn implies that the estimated optimal WACC percentiles will have correspondingly wide confidence bounds, reducing their tractability for the Commission's purposes. The finding of a wide range of potential WACC percentiles from empirical analysis ultimately does little to reduce the Commission's need to make a judgment call.

In sum, the lack of plausible evidence that a shift away from the status quo 75th percentile would be welfare enhancing, combined with the importance of assessing the WACC percentile in the context of the wider regulatory framework, leads us to conclude that the Commission would be well advised to leave the WACC percentile unchanged until a comprehensive review of the IM framework is undertaken in 2017.

[1] Dobbs, Ian, *Comments on the Application of the Dobbs [2011] model*, 17 September 2014, pages 3-4.

3. Further RAB Multiple Analysis

3.1 General concerns regarding the focus on RAB multiples

Once again, we reiterate our concern regarding the Commission's interpretation of analysis of Regulatory Asset Base (RAB) multiples and the weight placed on such calculations in the Commission's decision-making process.

We discussed at some length in our August report that the Commission's RAB multiples analysis suffers from two main failings.[2] First, it does not give due consideration to the reasons why the multiple may exceed one, even if the WACC is set at the level of the cost of capital. Second, it represents an over-reliance on one or two data points.

Our criticisms of the Commission's interpretation and application of the RAB multiples analysis have been echoed in several other submissions. The further information that has been now been provided does nothing to alleviate those concerns and we strongly caution the Commission against using the RAB multiple analysis as a basis for reducing or otherwise the WACC percentile.

Our over-arching concern remains the inappropriateness of the Commission's interpretation of RAB multiples for the purposes of determining the appropriate WACC percentile. Even if the Commission could be certain (which it cannot) that the regulated firms are generally valued at a premium to the asset base, this would not be sufficient information to conclude that the WACC has been set at a level that is above the true WACC faced by these firms. Drawing such a conclusion ignores the fact that observed premiums to the RAB can arise from a number of factors unrelated to the WACC, including that:

- purchasers may be willing to pay a premium in order to gain entry into the market;
- there may be profits from unregulated parts of the business;
- the firm's assets may include intangible assets without a regulatory book value;
- there may be expectations of outperformance, including as a result of the generation of greater efficiencies than expected by the regulator; and
- valuations in workably competitive markets also reflect the 'real options' available to firms, which do not have a regulatory value.

In the remainder of this section we comment on the quality of the further RAB multiple analysis that has been undertaken. This is despite the fact that, even if this analysis were unequivocally to demonstrate RAB multiples significantly above one (which it does not), we remain in disagreement with the Commission's interpretation of the implication of multiples at such levels.

3.2 Comments on the further analysis provided

The Commission suggests that it now has further information upon which to assess the RAB multiples of the lines businesses, in the form of:

- information relating to Marlborough Lines' controlling stake in OtagoNet to Electricity Invercargill and The Power Company, which was announced on 2 September 2014;
- information relating to King Country Electric Power Trust's (KCEPT's) shares in The Lines Company to Waitomo Energy Services Consumer Trust (WESCT) in December 2013; and

[2] HoustonKemp, *Comment on the Commerce Commission's Proposed WACC Percentile Amendment,* 29 August 2014, Chapter 5.

- further analysis provided by IWA regarding RAB multiples for Horizon Energy and the OtagoNet Joint Venture transaction.

We note that PwC expressed the view that The Lines Company transaction took place at a substantial discount to the RAB. In contrast, on the limited public information available it appears case that the OtagoNet transaction took place at a premium to RAB. This further emphasises the point we made previously, that there will be a range of RAB multiples within the sector and so the Commission must be wary about drawing generalisations from a limited number of data points.

We find the analysis undertaken by IWA to be unconvincing, for the reasons set out below.

3.2.1 The Ireland, Wallace & Associates report

IWA was asked by MEUG to review the Commission's draft decision as well as the resultant submissions put forward in relation to the RAB multiple analysis. IWA's report focuses on the RAB multiples of Horizon and the OtagoNet transaction, and concludes that:

- the RAB multiple for Horizon is in the range of 1.3 to 1.5, as opposed to the multiple of less than one estimated by the Commission; and
- the RAB multiple associated with the OtagoNet transaction is between 1.3 and two.

In relation to Horizon Energy, IWA notes that in 2009 Simmons Corporate Finance estimated a RAB multiple for Horizon of between 1.4 and 1.5, based on an enterprise estimate of $120 million and a RAB of $88 million.[3] This estimate is now well out of date and cannot be given weight in the current review.

IWA attempts to update Simmons' analysis. However, in our opinion the analysis has some important shortcomings.

Our principal concern is that IWA has not taken account of Horizon Energy's non-regulated assets, which we understand to be substantial. This omission is evident in the table presented on page 13 of IWA's report, which provides RAB multiple calculations based on:

- 'topping up' the 2009 EV estimate provided by Simmons to account for:
  - an increase in the estimated share value to $4.16 (by PwC) from Simmons' lower bound estimate of $3.96; and
  - an increase in the debt holdings from $26 million to $35 million; and
- comparing the topped up EV range of $134 to $150 million to Horizon's RAB valuation of $104.5 million.

IWA also appears to have presented an 'upper bound' of 1.5 based on a misleading increase in the estimated share value. IWA has not taken account of the fact that Simmons' upper bound of the EV was associated with an estimated share value of $4.68 (not $3.96). Adjusting for this suggests that IWA's analysis arrives at a single estimate of the RAB multiple of 1.3.

In our opinion, IWA's analysis of Horizon Energy's RAB multiple indicates a fundamental misunderstanding of the applicable regulatory framework, and so its interpretation of RAB multiples and should be disregarded.

IWA's analysis of the OtagoNet Joint Venture transaction does not make clear why IWA undertook the analysis it did, rather than relying on the actual transaction information. However, we do agree that publicly available information suggests this transaction may have taken place at a premium to the RAB.

[3] Simmons Corporate Finance (October 2009) *Horizon Energy Distribution Limited Independent Adviser's Report In Respect of the Partial Takeover Offer by Marlborough Lines Limited*, page 45.

3.3 Conclusions

In conclusion, the further information the Commission has received regarding RAB multiples does not alleviate the fundamental concerns we raised in our August report.

Further, the analysis provided by IWA should be disregarded, since it provides no useful information to the Commission.

PwC’s comments on The Lines Company transaction and the publicly available information on the OtagoNet Joint Venture transaction are likely to be much reliable, but thus evidence reinforces that disparate additional data points serve only to illustrate the fallacy of making generalisations from few observations.

Further, our over-arching concern remains the inappropriateness of the Commission’s interpretation of RAB multiples for the purposes of determining the appropriate WACC percentile. Even if the Commission could be certain (which it cannot) that the regulated firms are generally valued at a premium to the asset base, this would not be sufficient information to conclude that the WACC has been set at a level that is above the true WACC incurred by these firms. Such leaps of faith ignore the fact that observed premiums to the RAB can arise from a number of factors unrelated to the WACC.

4. MEUG Information

4.1 Introduction

MEUG's cross submission included further information from NZIER (in the form of two reports, dated 9 and 12 September) and legal advice from Franks & Ogilvie.

The two NZIER papers cover substantively the same material, and so we therefore consider them together in the following section.

Much of the Franks & Ogilvie advice is legal in nature and beyond the scope of our expertise. However, in section 4.3 we comment on the economic dimension of Franks & Ogilvie's expressed view that applying a WACC percentile above the midpoint is inconsistent with the objective of Part 4.

4.2 NZIER's reports

Although we agree with certain aspects of NZIER's report, particular as relate to the need to ground any empirical analysis firmly in the realities of New Zealand's situation, we disagree with several of the underpinning premises on which the reports are based. These include:

- the apparent implicit assumption that adopting a WACC percentile above the midpoint is equivalent to applying the WACC plus uplift;
- that the absence of empirical evidence of asymmetric losses associated with over- and under-compensating regulated businesses should be interpreted as the absence of any evidence of an asymmetric loss;
- that the reliability information and data contained in these reports supports a proposition that no (or limited) further investment is required; and
- the suggestion that other regulatory mechanisms will be better placed to encourage optimal levels of investment.

We comment on each of these premises below.

4.2.1 A WACC above the midpoint estimate does not necessarily imply WACC + uplift

Throughout its 12 September paper, NZIER makes reference to the Commission's approach as providing firms with an uplift to their WACC (rather than as an uplift from the Commission's midpoint WACC estimate). For example, on page 7 of its 9 September report, NZIER states:

> Bear in mind that the network had WACC + uplift to incentivise capital investment in reliability.

We believe it important to reiterate that the Commission's approach is better characterised as providing an uplift to its midpoint estimate of the WACC, which will not necessarily result in regulatory WACCs above actual WACCs, even over the longer-term, because:

- the uncertainty around firms' actual WACC means there will always be uncertainty regarding the level of the midpoint WACC estimate vis-à-vis the true WACC;
- there is considerable evidence that the Commission's WACC estimation methodology is likely to arrive at a downwardly-biased midpoint estimate; and
- certain cash flow risks are not compensated for within the current IM framework.

Given these factors, it amounts to a mischaracterisation to describe the Commission's approach as an uplift to firms' WACC such that they will earn a rate of return above their true WACC. The Commission's approach can be more accurately characterised as opting for a regulatory WACC within its estimation range that reduces the risk of undercompensating firms (compared to selecting the midpoint WACC estimate).

4.2.2 The absence of empirical evidence does not equate to no evidence

In paragraph 3 of its 12 September report, NZIER states:

> ...the persistent assumption in submissions of an asymmetric loss from symmetric errors when estimating the WACC was not connected to evidence on how EDBs made investment decisions, on how investment affected reliability or on how consumers value marginal improvements in reliability. Overall the absence of evidence against uplift did not justify a presumption that uplift was consistent with the purposes of Part 4 of the Commerce Act.

Again, it is important to reiterate the comments we made in our September report (page 9). In particular, the absence of empirical support for a particular WACC percentile should not be interpreted as lack of evidence that the optimal regulatory WACC lies above (rather than at) an unbiased midpoint estimate.

NZIER states that it remains particularly sceptical of WACC uplift because it represents *"certain consumer cost for uncertain consumer benefit".* At a matter of principle, we see no basis for concern in trading off a certain cost for an uncertain benefit if the expected value of the uncertain benefit is sufficiently high to compensate for the associated risk. Such trade-offs are an integral element of making both regulatory decisions and investments more generally.

4.2.3 There is no evidence that future investment requirements are limited

We agree with NZIER in relation to the need to ground any empirical analysis in the New Zealand context. However, we do not believe that the analysis presented in NZIER's paper assists the Commission in its review.

Our principal difficulty with NZIER's analysis is that it appears to confuse the issue of identifying the optimal level of investment with ensuring that network businesses are incentivised to invest in those projects that can be expected to yield net benefits. For example, on page 12 of its 9 September report, NZIER characterises the central question as:

> That is – is it worth continuing to invest (either adding capital to the Regulatory Asset Base (RAB) and/or increasing regulated returns)?

With this premise in mind, NZIER's discussion focuses on identifying whether or not future investment in reliability-related projects might be beneficial to consumers, without taking into account that:

- it is not only reliability-related investment projects that will be affected by the regulated WACC;
- network businesses undertake rigorous internal processes to identify those capital expenditure projects that are expected to yield net benefit to consumers – it is these investment projects that are then incorporated into the capital expenditure plans;
- unless the regulated WACC is at least as high as the true WACC, firms will not have an incentive to invest in those (net beneficial) projects; and
- failure to undertake these investment projects would therefore represent a real loss to consumers.

In addition to this central flaw in NZIER's focus, analysis is also presented to support the apparent conclusion that there may be little benefit to future investments (and therefore, presumably, less harm from allowing the regulated WACC to fall below firms actual WACC).

For example, we are unconvinced by NZIER's view that the benefits from investment are likely to be relatively limited. On page 10 of its 12 September report, NZIER attempts to categorise outages according to whether they stem from causes that are "predictable and concentrated" or "random and diffused". NZIER then makes the claim that only those falling into the first category could be expected to be efficiently addressed through investment. NZIER goes on to suggest this indicates that the reliability problems that can be addressed through investment are relatively limited and so this should inform the assessment of whether a WACC uplift is the most efficient means of encouraging EDBs to improve reliability.

Leaving aside that networks are in the best position to identify investments with net benefits and that the regulatory framework should focus on ensuring firms are incentivised to undertake such investment, NZIER's analysis presents some significant over-simplification of the issues. In particular:

- the analysis is apparently based on an implicit assumption that reliability (and other network performance measures) will remain at current levels without ongoing investment by the network businesses;
- NZIER's categorisation is so 'high-level' as to provide little comfort that it is accurate – for example, it may well be the case that certain faults due to human error could have been avoided by investment in fail-safe technology or that faults due to vegetation could have been avoided by investing in underground cabling in high-risk locations; and
- NZIER makes no attempt to consider the relative costs and benefits of investment decisions that might be associated with avoiding certain outages, but simply assumes that the costs will outweigh the benefits in most cases.

NZIER briefly considers the value of reliability to New Zealand consumers to support its proposition that investment in reliability is likely to be inefficient. NZIER suggests that the value placed on lost load by small connection points (residential customers) is very low at only 41 cents per minute. From this, NZIER concludes that the value of investment in reliability improvements for these customers is such that it may be more efficient for networks businesses to continue to commit opex to outage recovery on an as-required basis.

In our opinion, NZIER has over-simplified the issue while answering the wrong question. NZIER's analysis appears to focus on "what is the optimal level of investment" rather than "how can regulators maximise the likelihood that network businesses are incentivised to invest optimally".

Furthermore, we disagree with NZIER's logic, for the reasons that:

- again, NZIER appears to be assuming that reliability will remain at current levels without ongoing investment by network businesses;
- the length of average outages (90 minutes for unplanned outages) and the large number of small connection points (1,506,974) combine to suggest that the total loss associated with these types of outages is significant – on page 15 of its 12 September report, NZIER estimates the value of such outages to have been over $36.6 million in 2012; and
- such analysis makes no attempt to consider the relative cost of the investment that might be required to improve reliability to these customers – it may well be the case that addressing certain outages through ongoing opex expenditure is considerably more expensive in net present value terms.

Network operators are in the best position to make assessments regarding the relative benefits and costs of investment options. The objective in setting the WACC at a percentile above the midpoint is to minimise the risk that firms will not undertake investment projects that are recognised as providing net benefits to consumers.

4.2.4 Other regulatory mechanisms will not sufficiently reduce the risk of under-investment

The information asymmetries inherent in any regulated industry mean that service providers are substantially better placed to make informed investment decisions than either consumer groups or the Commission. We strongly disagree with any suggestion that relying on other aspects of the regulatory framework to encourage investment would be likely to provide better outcomes than setting the regulatory WACC at a level that takes account of the uncertainty associated with estimating firms' true WACC. This issue has been well-addressed in other submissions throughout the process.

4.3 Franks & Ogilvie's advice

Much of the advice provided by Franks & Ogilvie is of a legal nature. However, we note that Franks & Ogilvie has suggested that:[4]

> The Commission cannot rely on the promotion of incentives to invest to justify setting a regulatory WACC above the best estimate of a normal return, as that would not be consistent with outcomes produced in competitive markets and contrary to the purpose of Part 4.

This statement contains an element of economic reasoning and, in our opinion, represents an over-simplification of the Commission's objectives and the operation of the regulatory framework.

As we pointed out in Section 4.2.1 above, describing the Commission's approach as "setting a regulatory WACC above the best estimate of a normal return" is a mischaracterisation, as there will always be uncertainty around the true WACC firms face and there is considerable evidence that the Commission's midpoint WACC estimate would under-compensate firms, given the failings of the Sharpe Lintner CAPM model and the asymmetric risks in the regulatory framework. In our opinion, the Commission's approach is more appropriately characterised as opting for a regulatory WACC within its estimation range that reduces the risk of under-compensating firms for their cost of capital.

Leaving this the issues to one side, we comment here on Franks & Ogilvie's claim that the Commission's approach is inconsistent with the outcomes produced in a competitive market and the purpose of Part 4.

We agree that in *perfectly* competitive markets, firms can only expect to earn their WACC. However, under *workably* competitive markets this may not be the case. In the context of a regulatory handbook, David Chessler describes workable competition as follows:[5]

> Thus the concept of "workable competition" has two aspects: the first…is that (1) the behavioural and structural characteristics of pure competition (as defined by economists) might not be met, but that the deviations may still be of little economic consequence. The second is that, (2) even where the deviations from competitive behaviour and market structure do have significant economic consequences, there may be other economic benefits derived from the behaviours or structures that are of such benefit to society that they outweigh the losses stemming from the anticompetitive behaviour and structures.

Further, Section 52 of the Act states that the purpose of Part 4 is wider than promoting outcomes consistent with those in competitive markets; rather, the purpose is:

> To promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets…

Therefore, in the current context it seems reasonable to interpret the Commission as fulfilling its objective if it is acting in the long-term interests of consumers and outcomes are broadly consistent with those that would eventuate in a competitive market. The premise of the Commission's approach of setting the WACC at a percentile above the midpoint estimate is:

- to reduce the risk that regulated firms will be under-compensated for their WACC;
- thereby reducing the risk that regulated firms will fail to invest in capital projects that would provide net benefits to consumers;
- in an industry where:

[4] Paragraph 2(b)

[5] David Chessler (1996) *Determining When Competition Is "Workable": A Handbook for State Commissions Making Assessments Required by the Telecommunications Act of 1996,* page 7

  - there is widespread acceptance that there are asymmetries in social losses associated with under- versus over-investment (such that under-investment would be expected to be significantly more detrimental to consumers); and
  - regulatory arrangements are understood to be more effective at reducing over-investment in the situation the regulatory WACC is above the actual WACC than reducing under-investment in the situation the regulatory WACC is above the actual WACC; and
- thereby improving the net expected welfare for consumers, taking into account the inherent uncertainties in actual and estimated WACC.

Therefore, from an economic perspective, this approach and its underlying premise are completely consistent with the Commission's role and the purpose of Part 4.

Level 40, 161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800