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Analysis of Selected Submissions on the Commerce Commission's WACC Percentile Draft Decision

A Report for Powerco

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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 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 percentile (WACC percentile) that has been used in setting the regulated price-quality paths.

On 22 July, the Commission released its *Proposed amendment to the WACC percentile for electricity lines services and gas pipeline services* (the Draft Decision). The central conclusion of the Draft Decision was to amend the WACC percentile used within the IM framework from the 75th to the 67th percentile.

Powerco engaged HoustonKemp to assess the economic rationale and merits of the Draft Decision, and our resultant report ('our earlier report')[1] was submitted to the Commission on 29 August 2014 and subsequently released on the Commission's website, along with a number of other responding documents.

The Commission is now seeking cross-submissions and Powerco has requested that we assess the analysis presented in the following submissions and their accompanying expert reports:

- The Board of Airline Representatives New Zealand (BARNZ) (29 August 2014) *Submission on proposed amendment to the WACC percentile for energy businesses,* and its accompanying report:
  - Covec (28 August 2014) *WACC Percentile Issues*; and
- The Major Electricity Users' Group (MEUG) (29 August 2014) *Submission on proposed amendment to the WACC percentile*, and its accompanying reports:
  - Ireland, Wallace & Associates Limited (29 August 2014) *Commerce Commission's Proposed Amendment to the WACC Percentile for Electricity Lines Services and Gas Pipeline Services dated 22 July 2014*; and
  - NZIER (29 August 2014) *Changing the WACC percentile*.

This report sets out our comments on these submissions and reports and is structured as follows:

- section 2 considers BARNZ's submission and accompanying report from Covec; and
- section 3 considers MEUG's submission and accompanying reports from IWA and NZIER.

[1] HoustonKemp (29 August) *Comment on the Commerce Commission's Proposed WACC Percentile Amendment*.

2. BARNZ's Submission

2.1 Overview of BARNZ's Submission

BARNZ states that it has three main concerns with the Commission's draft proposed determination, namely:[2]

- the lack of recognition that in workably competitive markets returns often fall below the mid-point of the cost of capital and therefore an expectation of earning a normal, mid-point return is more consistent with the outcomes in a workably competitive market;
- certainty, rather than above normal returns, is the central means of achieving the objective of promoting incentives to innovate and invest; and
- the use of a total welfare standard is inconsistent with the s52A purpose statement, a conclusion that, in part, relies on advice provided by Covec.

In this section, we comment briefly on the first two points before considering the use of the total welfare standard in more detail below.

2.2 Returns in workably competitive markets

In assessing the merits of setting the WACC above the midpoint level, it is important to be mindful that the intention is not to provide firms with a rate of return that is above their cost of capital but to reduce the risk of setting the WACC at a level that is below the cost of capital.

It is therefore inappropriate to characterise the Commission's use of a WACC above the midpoint as a decision to provide firms with an above normal return in order to encourage investment. Rather, the Commission's choice hinges on balancing the probabilities, and so the risks, of over- versus under-compensating firms and the associated losses that would arise from such errors. We discuss this issue in more detail in the following section, in relation to NZIER's submission.

2.3 Certainty as a means of ensuring investment

Having certainty around the regulatory regime assists to reduce the cost of providing network services by reducing the return on capital required by investors. In a regulatory environment characterised by uncertainty, investors will demand higher returns to compensate for the risks associated with that uncertainty.

Although certainty can affect the required rate of return, a high degree of certainty is not a substitute for providing firms with a rate of return that is at least sufficient to cover their cost of capital. In the words of the Court, quoted by BARNZ,[3] certainty is a *pre-requisite* for ensuring appropriate incentives to invest. It is not, on its own, a sufficient incentive for investment.

2.4 Use of the total welfare standard

BARNZ's submission set out the reasons why it considers that Part 4 requires the application of a consumer welfare rather than total welfare standard. This view is further supported by the economic analysis presented in the accompanying Covec report.

2 BARNZ (29 August 2014), page 1.

3 BARNZ (29 August 2014), page 4.

The Commission recognises the importance of considering the impact of its regulatory arrangements on both total and consumer welfare, and states in its Draft Decision:[4]

> *Our analysis, and that of our experts, therefore adopts both consumer welfare and total welfare approaches. This means that in reaching our draft decision as to what will best promote the long term benefit of consumers by promoting outcomes consistent with outcomes produced in competitive markets, we have had regard to transfers from suppliers to consumers, but have also had regard to aggregate efficiency considerations.*

In our opinion, the total surplus measure - by virtue of targeting overall economic welfare - is the better measure of the effect of the Commission's decisions on New Zealanders as a whole. It ultimately provides a standard that protects the long-term interests of consumers. We therefore strongly disagree with BARNZ's proposition that only a consumer welfare standard is relevant.

BARNZ relies in part on the analysis provided by Covec to support its view that the consumer welfare standard alone is appropriate. We consider Covec's analysis in the following section.

2.4.1 Covec's advice on the use of the total welfare standard

The Covec report makes three key points; namely, that:

- the Commission should apply only a consumer welfare standard, demonstrated by Covec's analysis that a total welfare standard does not make sense in the context of the 'whether to regulate' provisions in s52G of the Commerce Act 1986;
- the Economic Insights work is more robust than the Commission indicates; and
- the RAB multiples analysis is useful.

We commented extensively on the Economic Insights analysis and the conclusions that can be drawn from observed RAB multiples in our earlier report.[5] In Chapter 3 of this report, we discuss the RAB multiples analysis, both in relation to MEUG's submission and the analysis of IWA. We do not repeat these arguments here but, suffice to say, we disagree with Covec's opinion. Our comments in this section are therefore limited to Covec's analysis regarding the use of the consumer rather than total welfare standard.

Covec starts from the premise that the standard that applies under the s52G must also apply to s52A. Under s52G, regulation can only be imposed if three conditions are met, the third of which is that:

(c) the benefits of regulating the goods or services in meeting the purpose of this Part materially exceed the costs of regulation.

Covec postulates that assessing the benefits of regulation under a total welfare standard would mean that the more vulnerable are customers to market power, the less likely would be the regulation of such a market, because the effect of a price increase on total welfare will be smaller under those circumstances. Covec concludes that:[6]

> *A total welfare standard would therefore be utterly perverse as a threshold for imposing economic regulation… Why would Parliament restrict regulation to situations where consumers are clearly and durably exposed to the exercise of substantial market power*

4 Commerce Commission (22 July 2014), paragraph 2.17

5 HoustonKemp (29 August 2014), chapters 5 and 7.

6 Covec (28 August 2014), page 3.

and then impose a welfare standard that would make regulation virtually impossible in exactly that situation?

This conclusion is clearly counter-intuitive.

Covec reaches this view on the basis of two fundamental tenets of economics, namely:[7]

(a) the price elasticity of demand facing a firm is a sufficient statistic for assessing its market power. For example, a very low price elasticity of demand indicates very high market power, because very few consumers will stop buying even in the face of very big price increases; and
(b) total surplus in a market *only* changes when consumers change the amount of goods or services they buy.

However, in forming this conclusion Covec has omitted one very important detail. A firm is far more likely to exercise market power by increasing prices when the elasticity of demand is low than when the elasticity of demand is high. Thus it is asinine to compare two theoretical suppliers who raise prices by the same amount when one faces highly elastic demand and the other faces inelastic demand. Suppliers simply would not respond in the same way under such varying market conditions.

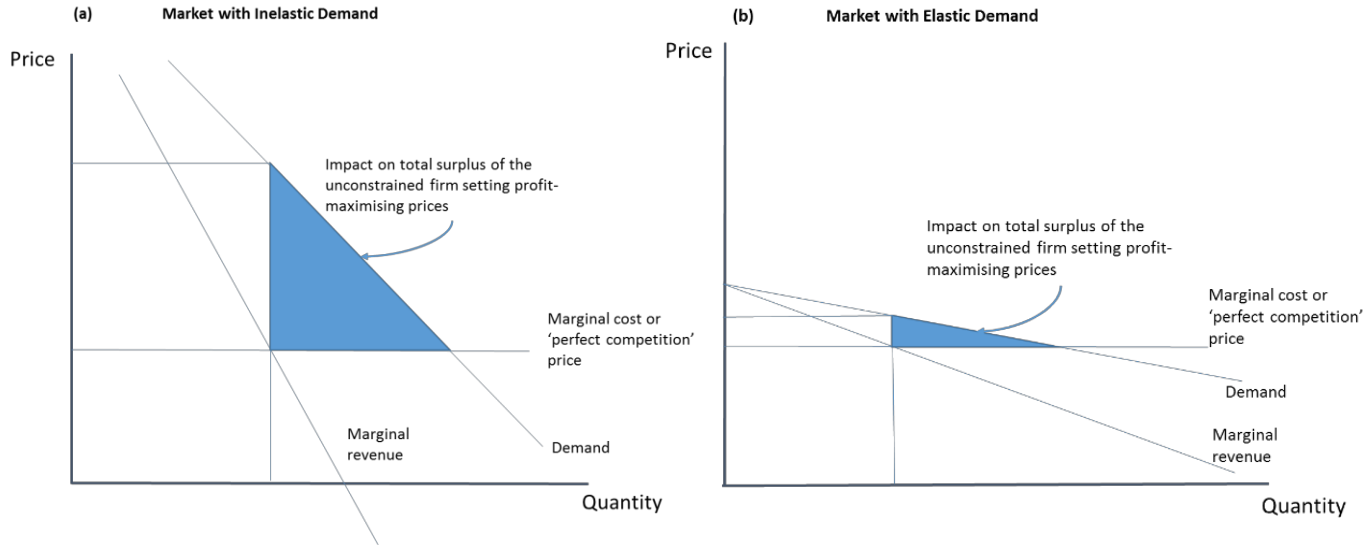
The appropriate comparison is not the effect on total surplus of a same-size price increase under varying elasticity of demand assumptions – this clearly leads to the perverse result that regulation should be applied more frequently in competitive markets.

Rather, the appropriate comparison is the effect on total surplus of the conduct of a profit-maximising firm when faced with demand curves with differing elasticities. We demonstrate, using very simple (linear) demand curves in the figures below. Figure 1(a) illustrates the profit-maximising behaviour of a firm facing inelastic demand while figure 1(b) illustrates the profit-maximising behaviour of a firm facing relatively elastic demand. The shaded areas depict the loss in total welfare as a result of the firms' conduct in each market.

Under the (very simple) scenario of linear demand curves and identical horizontal marginal cost curves, profit maximising conduct will lead to equivalent reductions in output in each market (due to the relationship between the marginal revenue and demand curves). Thus the 'driver' of the relative reductions in total surplus in the two markets is the variation in the prices applied, rather than output.

[7] Covec (28 August 2014), page 3.

Figure 1



This indicates that applying a total surplus standard in the assessment of regulation under s52G will lead to the intuitively sensible outcome that regulation is more likely to be imposed when a firm is able to exercise market power by setting prices above (workably) competitive levels. Although the above illustrations are highly simplified, the result – that prices and total welfare will be affected to a greater degree the higher is the supplier's market power – is robust to generalisation.

We conclude that no weight should be placed on Covec's conclusion that the consumer welfare standard must be applied under Part 4.

3. The Major Electricity Users' Group Submission

3.1 Overview of the MEUG's submission

MEUG commissioned expert advice from NZIER and Ireland, Wallace and Associates (IWA), which is largely used to substantiate the points raised in MEUG's submission.

MEUG considers the Commission's RAB multiple analysis to be useful evidence that the regulatory WACC set at the 75th percentile exceeds the true market WACC.[8] IWA's report provides alternative approaches to estimating the multiples, which derive higher estimates. On the basis of this advice, MEUG suggests that these multiples indicate a persistent regulatory bias towards excessive returns. We comment on the merits of RAB multiples analysis in general in section 3.2 and IWA's analysis in particular in section 3.3.

NZIER's report focuses on refuting the analysis put forward by Oxera and argues that, in the absence of sound empirical analysis, the default WACC percentile should be the midpoint. We discuss NZIER's report in section 3.4.

3.2 The merits of RAB multiples analysis

Before considering in detail the financial analysis put forward by IWA it is worth reiterating the shortcomings of relying on any analysis of RAB multiples to assess the appropriateness of the regulatory WACC.

We discussed at some length in our earlier report that the Commission's RAB multiples analysis suffers from two main failings:[9]

- it does not give due consideration to the reasons why the multiple may exceed 1, even if the WACC is set at the level of the cost of capital; and
- it represents an over-reliance on one or two data points.

We do not restate our reasoning here, but it is helpful to refer to recent statements that lend further support to our earlier conclusion.

For example, in relation to the first point, AMP Capital has stated that its assessment of the price it was willing to pay for its interest in Powerco reflected the following:[10]

> *The factors which were taken into account in determining our offer price included a wide range of factors not limited to unregulated business value, cashflow timing, tax efficiencies, merits review outcome, asset disposals, terminal value, and capex/opex outperformance, and further growth and efficiency gains through industry consolidation in New Zealand's fragmented market structure.*

8 MEUG (29 August 2014), page 3.

9 HoustonKemp (29 August 2014), chapter 5.

10 Energy News (4 September 2014) *ComCom's RAB multiple analysis 'unsound' – AMP Capital*

On the Commission's over-reliance on one or two data points, we note that our concern has been reiterated by several other commentators. For example, we note that MEUG's advisor, NZIER states:[11]

> *Second, we are concerned that the Commission places too much reliance on two observations of the sale of shares in regulated lines companies at an apparent premium over the value of the regulated assets in the financial accounts….the Commission should be cautious not to apply a false level of precision, especially when they admit that there is little understanding as to the drivers of the apparent regulated asset base (RAB) premium. It may be prudent to accept that, in the same way as for the probability of loss analysis, there are too many unknowns and that these approaches should not be relied upon to support a quantitative decision.*

Such statements provide further support for the views we expressed in our earlier report.

3.3 The Ireland, Wallace & Associates Report

MEUG engaged IWA to review the Commission's RAB multiples analysis, as set out in its Draft Decision, with particular focus on the calculations and conclusions relating to Powerco and Vector.

In its Draft Decision, the Commission estimated RAB multiples of 1.33 for Powerco and between 1.09 and 1.16 for Vector.[12] IWA presents several alternative methodologies for estimating the enterprise value (EV) based on the statutory book values of assets and liabilities, and arrives at the following estimates of the EV to RAB multiples:[13]

- 1.45 for Powerco; and
- 1.29 to 1.35 for Vector.

IWA appears not to understand the context of the Commission's original analysis and the regulatory environment within which it is being applied. In particular, IWA misapprehends the theory around RAB multiples and the factors that may influence them. IWA notes:[14]

> *An RAB multiple greater than 1 indicates that the expected corporate return exceeds the regulatory cost of capital. The return in excess of the regulated return should have a net present value being the difference between the EV and the RAB.*

This statement misconstrues the premise behind the Commission's assessment of the RAB multiple. The Commission's hypothesis is that a RAB multiple greater than 1 indicates that the regulatory WACC has been set such that it allows the firm to earn a return that exceeds its actual cost of capital. Although we strongly disagree with the over-simplification of this statement, it is clear that IWA has fundamentally misinterpreted the implications of RAB multiples.

The alternative methodologies that IWA proposes for estimating the EVs are not appropriate or meaningful in the current context. They are based predominantly on the book values of assets and liabilities, which provide little information on the current value of the assets that have claims to future capital-related revenues.

11 NZIER (29 August 2014), page 20.

12 Commerce Commission (22 July 2014), page 79.

13 IWA (29 August), page 20.

14 IWA (29 August), page 4.

IWA argues that including other sources of financial liabilities in the EV is logical, since these support the operating assets of the business. However, such an approach introduces an element of double-counting. As a matter of principle, the market value of equity is equivalent to the net present value of expected cash flows less the proportion of those cash flows that will be required to repay debt. The expected operating cash flows will reflect the benefits and costs of the firm's assets and non-debt liabilities. Thus, the market value of equity already takes account of these other financial liabilities.

IWA claims support for its 'Economic Capital' estimate by noting that the approach is based on the methodology developed by McKinsey & Company and Professor Damodaran and practiced by Ernst & Young in an SOE performance review for the Treasury.[15] However, the analysis presented in IWA's paper bears no resemblance to the analysis presented in the Ernst & Young report, which considers the difference between the actual returns and associated WACC for a number of SOEs in each year over a period of ten years, to assess the 'economic profits' over this (historic) period.[16] By contrast, Table 2 of the IWA report sets out a calculation based on the balance sheet capital for Powerco in 2013.[17]

IWA also presents the difference between the book value of equity plus reserves (which are negative) and the market value of equity as the 'Market Value Added.' IWA interprets this as a measure of the NPV of future 'excess returns' to shareholders. However, such an interpretation is entirely false. There are many reasons for differences between the book and market values of equity and such comparisons do not provide any information as to whether the regulated WACC is above or below firms' actual cost of capital.

In our opinion, aside from our more fundamental criticisms of the Commission's interpretation of RAB multiples, IWA's analysis serves only to confuse the relevant issues and should be given no weight in the Commission's deliberations.

3.4 NZIER's Report

NZIER's report comments mainly on the empirical analysis undertaken by Oxera and concludes that it is insufficiently robust to be used as a basis for making major judgment calls. NZIER is of the view that, in the absence of sound empirical analysis, it is not convinced there are asymmetric losses associated with under- as distinct from over- compensating businesses for their cost of capital. On this basis, NZIER suggests that the Commission should set the WACC at the midpoint, rather than applying any uplift.

NZIER states[18]

- *…we do not see persuasive evidence that a percentile other than the mid-point should be used. Nor do we see evidence that mis-estimating the WACC mid-point will result in losses or that potential losses will be asymmetric about the mid-point.*

In support of this view, NZIER also observes that:

- there is no evidence that lines business investment decisions have been constrained by the current WACC, and current reliability levels suggest the loss associated with any shortfall in the WACC may not be as great as estimated by Oxera; and

15 IWA (29 August), pages 9-10.

16 Ernst & Young (25 November 2011) *The Treasury SOE Economic Profit Analysis*

17 IWA (29 August), page 11.

18 NZIER (29 August), page 9.

- other mechanisms exist for the Commission to ensure investment levels do not fall to sub-optimal levels.

We comment on these three aspects of NZIER's analysis below.

3.4.1 Comment on the 50th percentile as default

NZIER argues that, in the absence of sound empirical analysis, the Commission should set the WACC at the midpoint level. Although we agree with NZIER's assessment of the utility of Oxera's analysis, we disagree with the premise that, in the absence of suitable empirical analysis, the WACC should be set at the midpoint level.

The absence of empirical support for a particular WACC percentile should not be interpreted as a lack of evidence that setting the regulatory WACC above a midpoint estimate will be more likely to maximise consumer and total welfare. NZIER's conclusion goes directly against the vast majority of evidence submitted to the Commission.

By its very nature, there is an inherent risk that any regulatory WACC will deviate from firms' actual WACC by an indeterminate amount. The sources of the costs associated with such deviations can be summarised as:

- the social costs associated with setting the WACC below the actual WACC, which include:
  - the loss associated with over-consumption of services given the true cost of providing those services;
  - the costs of financial distress imposed on the service providers; and
  - the longer-term effects of under-investment in infrastructure, which may take the form of poorer reliability, higher on-going costs or poorer quality due to less innovation;
- the social costs associated with setting the WACC above the actual WACC, which include:
  - (for consumers) the cost of facing higher prices for network services; and
  - the resource cost of over-investment in infrastructure assets (net of the benefits accruing from those 'excess' assets) – which, for consumers, materialises in the form of higher future prices due to a higher RAB.

Only if the social losses of setting the regulatory WACC above or below the actual WACC are symmetric will it be welfare maximising to set the WACC at a midpoint estimate. There is a widely held view that the social losses associated with setting the WACC too high are lower than those associated with setting it too low, principally on account of the disproportionate costs associated with any under-investment in these infrastructure assets. The nature of the asymmetry has been widely accepted by regulators and experts, as well as being supported by the empirical analysis that has been undertaken to date.

Further support for this conclusion arises from the fact that regulatory arrangements are generally more successful at limiting excess investment expenditure should the WACC be set too high, than at encouraging additional investment should the WACC be set too low.

Taken together, these factors indicate that setting the regulatory WACC too high is likely to be less harmful than setting it too low. This suggests that a prudent regulator aiming to maximise welfare (consumer or total) in the face of uncertainty would choose to err on the side of caution by setting the WACC above its midpoint estimate (thereby reducing the risk of the regulatory WACC falling below the actual WACC).

It follows that we disagree strongly with NZIER's view that, in the absence of empirical support for a specific WACC percentile, the Commission's default should be the midpoint.

3.4.2 Comment on the interpretation of current levels of investment

NZIER examines the historic and forecast levels of investment and reliability performance of Transpower and the EDBs and concludes that:

- investment has not been constrained by regulated rates of return; and
- the current level of reliability suggests the network is performing well.

On this basis, NZIER questions the future link between the regulated WACC and investment, and whether future shortfalls in the WACC are likely to result in poorer reliability outcomes.

This conclusion is at odds with common sense, which dictates that:

- if a firm does not expect to earn its rate of return on invested capital, it is likely to choose to avoid investing; and
- if investment falls below optimal levels, there will necessarily be an impact on some measure of quality (whether this is reliability, connectivity, losses, ongoing maintenance and operating costs, or some other measure of the benefits from investment).

Reviews of past levels of investment and improvements in reliability provide very little information in relation to the future trade-offs that would be made if the regulatory WACC is set at a level that is either too high or too low. We discussed the shortcomings of such conjectures in our submission.[19]

Rather than an assessment of past levels of investment and reliability, we indicated that a proper consideration of the forward-looking relationship between reliability and the WACC is required. This should be based on a review of future planned capital investment expenditure, the benefits expected from these projects and the risk of firms deferring investment in such projects should the regulated WACC fall below the actual cost of capital.

In summary, the analysis presented by NZIER cannot be taken as support for the proposition that the current WACC percentile is too high or that there would be no impact on reliability of increasing the risk that the regulatory WACC falls below the actual WACC.

3.4.3 Comment on the use of alternative regulatory instruments

NZIER considers the option of using alternative regulatory mechanisms to encourage optimal levels of investment.

It is important to keep upper-most in mind that the point in setting the WACC above the midpoint level is to lessen the risk that the regulatory WACC falls below the actual WACC. Thus, NZIER appears to be suggesting that alternative regulatory instruments can be relied upon to offset the incentive to under-invest should the regulatory WACC prove to be too low. We caution against such propositions and note that this issue has been commented on in several submissions.[20]

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19 HoustonKemp (29 August 2014), chapter 6.

20 See for example: Electricity Networks Association (29 August 2014) *ENA submission on Commerce Commission draft decision on choice of WACC Percentile,* Paragraph 8; NZ Airports (29 August 2014) *Submission on Commerce Commission's proposed amendment to the WACC percentile for electricity lines services and gas pipeline services,* page 23-24; Transpower (August 2014) *Commerce Commission consultation: proposed amendment to the WACC percentile,* chapter 6;

NZIER sets out a theoretical basis for selecting price versus non-price regulatory mechanisms for encouraging investment. Although we recognise the theory behind the examples NZIER provides when considering the instrument of choice under uncertainty, it is important to bear in mind the difficulties of applying such theories in practice. For example, NZIER suggests that non-price incentives (or rules) would be less costly than WACC uplifts under certain circumstances. However, being able to implement such rules properly would require the Commission to take a very 'hands-on' approach to regulating lines businesses. This would require the Commission to identify and specify optimal investment levels (or all aspects of service quality) and have the power to compel firms to make investments that are not in their financial interest. Such arrangements are likely to prove impracticable.

HOUSTONKEMP
Economists

Level 40, 161 Castlereagh Street
Sydney NSW 2000
Phone: +61 2 8880 4800