COMMERCE COMMISSION

Input Methodologies

Cost of Capital

Post-workshop Submissions

Report to Major Electricity Users' Group

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1. Introduction

The Major Electricity Users' Group has instructed Ireland, Wallace & Associates Limited to participate in the Commerce Commission's workshop on 12 and 13 November. On 18 November the Commission invited all workshop participants to make submissions on any matter raised during the workshop including responses to specific matters it listed.

Garth Ireland has agreed to abide by the Code of Conduct for Expert Witnesses as contained in Schedule 4 of the New Zealand High Court Rules Code when providing opinion, advice or comment at the Commerce Commission's cost of capital workshop and now in respect to the post-workshop submissions.

2. Note: "WACC and Leverage"

Dr. Lally confirms that the Commission does have a problem with the proposed WACC model in his Note to the Commission headed "WACC and Leverage":

> "… there are some deficiencies in the WACC model currently employed by the Commerce Commission, but these are not readily correctable, leaving the choice between the status quo (which overstates WACC) and a simple alternative in the form of setting WACC equal to the unlevered cost of capital (which would understate WACC). Choosing between these two options is a judgement matter for the Commission."

The fundamental assumption underlying Brennan Lally CAPM is tax neutrality. The implication therefore is the WACC should be indifferent to the way the firm is financed as there are no tax advantages when both corporate and personal taxes are considered. WACC should be a straight line. As Dr. Lally points out "… you get this upward slope because there's a debt premium." [Workshop transcript P113, lines 14-15]

WACC as proposed by the Commission does not reflect tax neutrality. Dr Lally says it can't be fixed. "… WACC (even if measured in a way that properly deals with these issues) would rise with leverage." [Note p6]

However when the assumed leverage is zero the cost of equity does equal WACC and tax neutrality assumption is satisfied. The WACC model is validated when leverage is ignored. The Brennan Lally CAPM is not broken and doesn't need to be fixed.

The Commission should adopt a WACC that is indifferent to leverage as it reflects the fundamental assumption of tax neutrality. A WACC that increases with leverage is just wrong. A WACC that is indifferent to leverage is appropriate.

The "over/understatement" of WACC referred to by Dr. Lally in the quotation above largely arises from relative liquidity between debt and equity (and also the

presence of bankruptcy costs at high leverage). He suggests that even if this difference is corrected WACC will still increase with leverage. [Note p5]
It is not clear whether or not the Panel of Experts canvassed the issue of relative liquidity. The view of the Panel should be sought by the Commission if not. Regulatory precedents should also be researched. If Brennan Lally CAPM or WACC needs to reflect relative liquidity then the Commission should make the case for the additional variable.

Even if WACC does rise with leverage, as stated by Dr. Lally, then for the commission's purposes under Part 4 WACC should be still the "least cost" or "efficient rate of return".

Detailed capital structure is not relevant for the Commission's purposes. Choice of capital structure is a matter for the firm not the Commission. Even more so as under the Commission's proposed WACC it increases with leverage based on an acknowledged flawed WACC formulation.

In the real world firm capital structure can include debt. This is not incompatible with leverage equals zero as WACC should be indifferent to leverage. Therefore, the firm's allocation of returns/costs between debt and equity capital is not of interest to the Commission under Part 4. Calculating the cost of equity assuming no debt defines WACC for any leverage.

Dr. Lally offers reasons why firms borrow. He suggests that change in the tax neutrality assumption, where differential tax advantages caused by inability to fully benefit from imputation credits may generate a WACC that falls with leverage. Foreign investors who gain only partial benefits from imputation credits and their recognition may reduce tax advantages of equity. Again, WACC may fall with leverage.

It is clear that WACC is likely to fall if the tax neutrality assumption is relaxed.

The qualitative advantages of debt are not incorporated in the Commission's proposed WACC. Even if they were to be incorporated in the model WACC would not be expected to increase with leverage.

Dr. Lally's explanations of why firms prefer debt suggests that WACC should be at worst indifferent to leverage and certainly not increase with leverage.

A poll at the workshop participants supported the widespread usage of Brennan Lally CAPM in New Zealand. The follow on question should have been: "who assumes leverage equals zero in WACC calculations?"

A number of practitioners have adopted Brennan Lally CAPM and assume leverage equals zero for WACC calculations. Public examples include: The Treasury[1], Cameron Partners[2], PricewaterhouseCoopers[3], Airways Corporation of New Zealand[4] and Ireland, Wallace & Associates (since 1993), among others.

If the Commission made just one change to its proposed WACC model of assuming leverage is zero it would align itself with this sample of market practice.

In our view the Commission should:

2.1 adopt WACC assuming leverage is zero as it preserves the integrity of Brennan Lally CAPM given the assumption of tax neutrality;

2.2 review the issue of relative liquidity by engaging with the Panel of Experts if necessary;

2.3 consider that a "grand average" or "split the difference" outcome is not an adequate response to WACC model definition especially as it is not broken for the Commission's particular purposes;

2.4 avoid the risk of double accounting by upward ticks of cost of capital variables and model adjustments which should be done at the overall WACC level to better satisfy the Part 4 Purpose Statement;

2.5 avoid the temptation to protect its past WACC decisions by compromises to its proposed WACC Input Methodologies; and

2.6 if and when considering alternative CAPM/WACC formulations include the "Officer" model.

Our submission[5] on the Input Methodologies Discussion Paper related to cost of capital proposed by the Commission outlined how recommendation 2.1 above can improve Part 4 outcomes, better satisfy WACC principles and not adversely affect social net benefit. Refer to paragraphs: 5.16 and 5.17, 6.1 to 6.5 and 7.7.

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[1] http://www.treasury.govt.nz/publications/guidance/costbenefitanalysis/discountrates/discount-rates-jul08.pdf and, "Treasury Circular 2008/13", 19 August 2008

[2] http://www.comcom.govt.nz//IndustryRegulation/Gas/CommissionReportsandDocuments/ContentFiles/Documents/MEUG%20Cameron%20and%20Partners%20sub.pdf

[3] Inferred from the statement by Mr. Bruce Wattie of PricewaterhouseCoopers: "… within the New Zealand tax regime of course we have this assumption that enterprise value of a business should be indifferent to gearing. So whatever mechanism is adopted presumably it will create an indifference when setting price**s."** [Input Methodologies Conference transcript p384-385]

[4] http://www.airways.co.nz/ Annual Reports.

[5] http://www.comcom.govt.nz//IndustryRegulation/Part4/ContentFiles/Documents/MEUG%20attached%20Ireland%20Wallace%20-%20IM%20Paper%20-%20875570_1.pdf

3. Note: “Effects of Leverage on WACC under Two Different CAPMs”

In the comparison of the WACC models the following changes should be incorporated:

3.1 debt issue costs should be included in Commission’s WACC examples even though the Commission proposes to include then in cash flows;

3.2 the fixed debt premium should be modeled as a function of leverage (the Commission acknowledges this point); and

3.3 the range of leverage should be extended to leverage = 0%.

4. Asset Beta Estimation Question

Reference: workshop transcript at page 196, lines 6-7.

My generalised approach to estimating an asset beta for the Electricity Lines Businesses is to:

4.1 identify the relevant US SIC code for industry using for instance Morningside/Ibbotson publicly available data and related asset beta;

4.2 review the Commission’s asset beta decisions and reasoning since 2000;

4.3 based on PricewaterhouseCoopers’ internet published beta information estimate asset beta of comparable businesses in New Zealand, if appropriate; and

4.4 form a view of the relevant risk allocation cross checked against the question of: “what risks does the industry/firm really bear as reflected in the contract/regulatory bargain?”

An indicative example for Electricity Lines Businesses (as an industry):

SIC 49 (45 companies) median asset beta unadjusted 0.29

> “… engaged in the generation, transmission and or distribution of electricity energy for sale.”

SIC 492 (14 companies) median asset beta unadjusted 0.21

> “Natural gas transmission and distribution, mixed, manufactured, or liquefied petroleum gas production and or distribution.”

The range of 0.21 to 0.29 includes some generation in SIC code 49.

Price Path Control is assumed for 5 years. The Commission has previously adopted an asset beta adjustment of 0.20 reflecting the difference between the US rate of return (1 year) regime generally applicable to SIC 49 and 492 and the UK price control (5 year) regime. The Commission adopted 0.10 (0.20 times 50%) for regime difference relevant to Electricity Lines Businesses.

In summary the asset beta range would therefore be 0.31 (0.21 + 0.10) to 0.39 (0.29 + 0.10), say, 0.30 to 0.40.

This range compares with the Commission's "Straw Person Example – Electricity distribution industry" asset beta of 0.30 to 0.40. However the Commission's range apparently did not include a regime adjustment.

The Commission's "Table 3 Betas" includes two NZ electricity generators with asset beta of 0.82 and 0.63. If these are excluded on the grounds they are not in the distribution industry then the simple average of non-US sample is 0.20 rather than 0.33.

5. Real Options

The Commission has considered real options in past regulatory decisions. An allowance for growth options was included in the Gas Pipelines 2007 asset beta assessment[6].

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[6] Authorisation for the Control of Supply of Natural Gas Distribution Services by Powerco Ltd and Vector Ltd Draft Decisions Paper, 4 October 2007 para. 1072, p263.