

IRELAND, WALLACE & Associates Limited

VALUE-BASED FINANCIAL ADVISORS

2 December 2005

Ralph Matthes
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The Major Electricity Users' Group
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Dear Ralph,

Draft Guidelines: the Commerce Commission's Approach to Estimating the Cost of Capital ("Draft Guidelines")

You have invited us to comment on the Draft Guidelines attached to an email message dated 20 October 2005.

Questions 1 – 3 (appendix 1)

(a) Application of the Commission's version of the simplified Brennan-Lally ("B-L") CAPM when estimating the cost of capital

Cost of capital as applied by the Commission is dependent on leverage.

Based on the Commission's estimates of the cost of capital for electricity lines businesses in the current Unison Control Inquiry, the effects of changing leverage from 40%, as used for Unison, to zero are contrasted in Table 1.

Table 1

	Unison ¹	Unison (assuming zero debt)	
Cost of Capital Contrasts:			
Commerce Commission Model based on the Unison example			
L (leverage)	40%	0%	
Rf	6.3%	6.3%	
Ti	33%	33%	
Tc	33%	33%	
MRP	7%	7%	
Ba	0.4	0.4	
P (debt margin)	1.2%		
Cost of Equity	8.89%	7.02%	
WACC	7.34%	7.02%	+0.32%

¹ Commerce Commission, *Regulation of Electricity Lines Businesses Targeted Control Regime Intention to Declare Control Unison Networks Limited*, 9 September 2005, para 148 page 39.

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The application of the B-L CAPM as specified by the Commission in calculating the cost of capital results in a WACC 0.32% higher than justified on efficiency grounds. Assuming higher leverage of 60% and debt margin of 2%, the WACC increases to 7.83% (compared to 7.02% at zero leverage, an increase of 0.81%).

As demonstrated by the example in Table 1 under the model as specified by the Commission the cost of capital rate increases with leverage. Logically this suggests the efficient cost of capital (lowest cost) is an all equity capital structure or zero leverage. Given the efficient cost of capital should be the benchmark (that is zero leverage) leverage can be ignored. Further, in the absence of debt the asset and equity betas are the same. The Commission's WACC calculation can therefore be simplified.

The effect of the Commission establishing normal returns higher than justified can be gauged by valuing excess returns relative to the least cost WACC as set out in Table 2. For instance, assuming 60% leverage the value of perpetual annual cash flows of \$1,000 is \$12,771 given a WACC of 7.83%. If the true WACC is 7.02% then value of the excess returns (in excess of a normal return) is \$1,474 or equivalent to an increase of 11.5% in value.

Table 2

Value Contrasts: Commerce Commission Model based on the Unison example			
	Efficient Benchmark	Unison actual	Higher Leverage example²
Leverage	0%	40%	60%
WACC	7.02%	7.34%	7.83%
Perpetual Cash Flow	\$1,000	\$1,000	\$1,000
Valuation			
Perpetuity value	\$14,245	\$13,624	\$12,771
Value of higher than normal returns	0	\$621	\$1,474
		4.6%	11.5%

The significance of the application of the Commission's model can be assessed referenced to *Table 3: Percentiles of the WACC Distribution*.³ Applying the incremental WACC with leverage of 0.31% (40% leverage) and 0.81% (60% leverage) the equivalent percentiles are 60th and 75th respectively.

The Commission in following its draft proposed cost of capital approach (that is, in an environment of dividend imputation and ignoring the debt beta in making an estimate of the equity beta):

- should ignore leverage as the simple assumption of an all-equity capital will produce the least cost WACC and a normal return, and

² Using the proposed Commerce Commission model a utility company, such as Unison, has an incentive to increase gearing to justify a higher WACC.

³ Para 126.

- financial management policies of the company (such as Unison) should be ignored as they are irrelevant for the Commission's calculations⁴.
- (b) **The Commission should reexamine the B-L CAPM formulation that it employs and the resulting estimation of WACC to justify the logic of an effective "penalty to debt" that results.**

Under the assumption of tax neutrality⁵ WACC should be indifferent to capital structure given the stated tax assumptions.

The reason for the "penalty to debt" arises from the B-L CAPM assumption that the debt beta ("Bd") is zero⁶ in conjunction with the cost of debt defined as $R_f + p$ (a margin largely for default risk).

If p is converted to an equivalent debt beta expressed as a function of MRP then WACC does in fact become indifferent to leverage. Based on the Unison example a debt margin of 1.2% is equivalent to a debt beta of 0.115 [$p/MPR * (1-T_i)$]. The equity beta is 0.59 [$B_a + (B_a - B_d) * L / (1-L)$].

Table 3

Cost of Capital Contrasts: Commerce Commission Model based on the Unison example Inclusion of Debt Beta			
	Unison⁷	Unison with debt beta	Unison with zero debt (see Table 1)
L (leverage)	40%	40%	0%
Rf	6.3%	6.3%	6.3%
Ti	33%	33%	33%
Tc	33%	33%	33%
MRP	7%	7%	7%
Ba	0.4	0.4	0.4
P (debt margin)	1.2%	1.2%	
Bd (debt beta)	0	0.115	
Be	0.67	0.59	0.4
Cost of Equity	8.89%	8.35%	7.02%
WACC	7.34%	7.02%	7.02%

Changing the B-L CAPM debt beta specification from zero to 0.115 based on a debt margin of 1.2% results in WACC exactly the same as if leverage of zero is assumed.

In transforming observed equity to asset beta⁸ the Commission should be explicit as to whether or not they are inclusive or exclusive of the debt beta adjustments. Asset beta will be different depending on whether or not an adjustment is made.

⁴ For determining a "discount rate" for calculating the annualised share value under the Dairy Industry Restructuring Act 2001 financial policies do matter as the cost of equity component of WACC is required.

⁵ Footnote 27.

⁶ Equation (6) page 21.

⁷ Para 148.

Question 7

Provided the firm is aware of the Commission's approach or benchmarks it can mitigate risk through its particular debt management strategy. A standard approach is therefore desirable rather than a mix and match with prevailing enterprise debt strategies that could well change during a regulatory period anyway.

Questions 19 – 20

The confidence interval approach is to be commended. The 50% percentile is an unbiased estimate and hence the introduction of a margin, if any, above the 50% percentile needs to be considered in the context of the value consequences rather than an absolute percentage. For example, take the 50% percentile WACC estimate of 7.2%, as per page 26. If the 60% percentile is employed a return of 7.5% is endorsed (a 0.3% margin). However this translates to a value enhancement of 4.2% (i.e. $1 - 0.075/0.072$) on capital, or assuming 50% debt, 8.4% on equity. Employing the 70% percentile the margin is 0.6% but the value enhancement, 8.3% (i.e. $1 - 0.078/0.072$) on capital, or 16.6% on equity value. Hence given the initial unbiased estimate a potential cap on the equity value enhancement should be considered - say 5% which would mean no more than 2.5% on capital and thereby a maximum percentile allowance.

Question 21

Individual WACC parameters should reflect unbiased estimates otherwise the bias compounds.

Question 26

If the Commission assumed an all-equity capital structure for estimating WACC, as set out under Questions 1 – 3 above, the costs of financial distress and leverage issues become irrelevant for the Commission's purposes. Capital structure is a matter for each firm.

Yours faithfully,



Garth Ireland
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⁸ Para 108.