

REVIEW OF ASSOCIATE PROFESSOR LALLY'S
CRITIQUE OF NERA'S APRIL REPORT

A Report for Johnson Winter & Slattery

Prepared by NERA

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1 INTRODUCTION

1. ETSA Utilities (ETSA) has retained NERA to provide an assessment of Associate Professor Lally's report *The Equity Beta for ETSA Utilities* in so far as it critiques our April 2005 report.¹
2. This paper demonstrates that Lally's analysis is so flawed as to render his conclusions irrelevant.

¹ *Review of ESCOSA's Decision on ETSA Utilities Equity Beta*

2 LALLY'S CRITICISMS

3. Associate Professor Lally (hereafter "Lally") argues that:

"NERA raises a number of arguments concerning the equity beta of ETSA. Most of these points relate to the judgments of other regulators, and I do not consider these to be a source of evidence per se. Nevertheless, they do raise five arguments that are not simply the judgements of other regulators, and these are examined below". (Page 20.)

4. Lally proceeds to dismiss these arguments as variously: irrelevant, invalid, applied at the "wrong level"; or more comprehensively argued by Officer and Gray. In this report we deal with each of Lally's claims in the same order as he makes them. However, we briefly first discuss the relevance of the judgments of other regulators – which Lally does not consider to constitute "a source of evidence *per se*".

2.1 Relevance of Regulatory Judgement

5. We consider that other regulator's decisions are a valid source of evidence in the current context for three reasons:
- a. as we understand it, the NEC and the EPO require ESCOSA to have regard to equity betas adopted in decisions of other jurisdictional regulators;
 - b. other regulators' interpretation of available market data is embodied in their final decisions; and
 - c. ETSA must compete for funds with regulated businesses in other jurisdictions who can offer the rates of return allowed by their regulator. That is, ETSA is competing for scarce investment funds with other similar regulated businesses but if ETSA cannot offer the same returns then this will increase its difficulty in attracting equity.
6. We discussed these issues in more detail in our April report (section 3.6). Lally is incorrect in stating that the judgments of other regulators are not a source of evidence *per se*. We consider that this assertion is ill-conceived in a regulatory context where certainty and stability of regulatory process and outcome is highly valuable.

2.2 Impact of the Technology Bubble

7. In section 3.4.3 of our April report we noted that ESCOSA's reporting of historical proxy betas based on AGSM figures averaged close to 1.0 in the period prior to contamination of data by the 'tech bubble' (as defined by Allen Consulting Group). We argued that ESCOSA placed greater weight on more contaminated recent

estimates when, if anything, greater weight should be placed on a longer period of estimates of historical proxy betas (that were less contaminated by the 'tech bubble').

8. Lally expresses an opinion that this issue is more thoroughly dealt with by Gray and Officer's work than by ourselves. We tend to agree as our report did not attempt to derive any historical proxy betas.
9. Lally appears to accept the view expressed in our April paper, that the 'tech bubble' distorted proxy beta estimates over this period. What is important is that in analysing market data the implications of the tech bubble must be recognised and explicitly considered in any manipulation of raw data. ESCOSA's analysis failed to adequately do this.

2.3 High Average Historical Returns

10. In section 3.4.4 of our April report we noted that, for the entirety of their existence as listed entities,² the actual average annual return on equity for all of ESCOSA's domestic proxy companies was 23% and that this is more than double the average return on the market over equivalent periods.
11. We observed that ESCOSA's final decision lowered the compensation for risk to less than half the average gearing adjusted return on the market.³ Given that these firms have, throughout their history, delivered returns more than double the market average, we argued that it was appropriate to be extremely cautious in arriving at the conclusion that they were less than half as risky as the market.⁴
12. Lally notes that the high levels of returns identified by us do not *prove* that those firms are not low risk. He provides an alternative hypothesis that the level of returns delivered by those firms may have been unexpectedly high and that the market does not expect them to continue.

"...there are alternative explanations for this outcome. One is that the betas of these companies are low and that they earned larger profits during this period than expected, leading to the high average returns relative to the market." (Page 20)

² With the exception of AGL where 10 years of data was used.

³ The asset beta set by ESCOSA is less than half the average for the market -- see para 28 and Table 1 of our April report.

⁴ Table 1 of our April report highlights that the gearing adjusted beta (the asset beta) of the average company on the ASX is 0.70. ESCOSA's decision to set an equity beta of 0.8 for ETSA equates to an asset beta of 0.32. That is ESCOSA's decision presumes that the average ASX company is more than twice as risky as ETSA.

13. We agree with Lally that this is a conceptually valid alternative explanation of the fact that these firms have outperformed the market. However, it does not follow that our argument is therefore “invalid” (see last paragraph in section 4). As a matter of logic, the existence of an alternative explanation does not invalidate all other explanations. As such, Lally’s conclusion is itself ‘invalid’. (As an aside it is worth noting that the imprecision in historical proxy beta data is largely the reason US regulators reject historical estimates of beta and adopt forward looking discounted cash flow models.)⁵
14. Instead our conclusion remains valid and reasonable. That is, it is appropriate to be extremely cautious in arriving at the conclusion that, since their inception, these firms were less than half as risky as the market given their actual returns have been double that of the market.

2.4 The DGM and US Regulatory Precedent

15. In section 3.5.2 of our April 2005 report we argued that ESCOSA was wrong to reject US regulatory precedent on the basis that:

“The method stated in ETSA Utilities’ submission is an alternative method to the CAPM for estimating the cost of equity capital, which is referred to as the dividend growth model in Australia and the discounted cash flow (DCF) model in the US. While it is possible to ‘back out’ an equity beta given an estimate of the cost of equity capital derived using the dividend growth model, such an approach implies, in substance, replacing the use of the CAPM for estimating the cost of equity for ETSA Utilities’ regulated activities with the use of the dividend growth model. While it may well be that the dividend growth model has attractive features, the EPO mandates the use of the CAPM for the current price review, and so the proposed approach must be rejected.” (Page 136 of ESCOSA’s final decision)

16. In that section we showed that the dividend growth model (DGM) was not only consistent with the CAPM but was actually a cornerstone of all finance theory (including the CAPM).
17. Lally accepts that NERA is correct that the DGM and CAPM are consistent. However, Lally claims that this is irrelevant.

“In response to ESCOSA’s argument that these implied beta estimates are inconsistent with the requirement to use the CAPM for estimating ETSA’s cost of equity capital, NERA argues that there is no conceptual inconsistency

⁵ See section 3.4.1 of our April report for explanation of the limitation of historical proxy betas.

between the DGM and the CAPM (ibid paras 67-72). Their statement is true but irrelevant.” (Page 21.)

18. While Lally correctly rejects ESCOSA’s rationale for excluding US regulatory precedent his explanation for why this US precedent is irrelevant is unconvincing.
19. On page 21, Lally presents an example where a set of regulators using the DGM fail to reapply it following a fall in the risk free rate.⁶ As a result, these regulators effectively overestimate the cost of equity (because one would expect a DGM, consistent with the CAPM, to show a lower cost of equity when the risk free rate falls). Lally then argues that it would be incorrect to imply that the true equity beta has risen as a result of this overestimation of the cost of equity.

“Thus, the implied beta estimate obtained from regulators who employ the DGM diverges from the beta estimate explicitly used by regulators who employ the CAPM. The divergence is not attributable to a difference in the regulators’ views about the beta but to a defect in the implementation of the DGM.” (Page 21, emphasis added.)

20. This argument would only have relevance if there were reason to believe that there were defects in the application of the DGM by US regulators. We are not aware of any suggestion that this is so, nor does Lally present any evidence to this effect. Merely because one can hypothesise an example where US regulators might have incorrectly applied the DGM is no reason to reject this US regulatory precedent. One can equally well hypothesise errors in the calculation of the data Lally would rely on in preference but this does not mean that this data is necessarily irrelevant.
21. US regulatory precedence is but one of the several sources of information all of which suggest that the equity beta of an electricity distribution network business should be at least 1.0. We consider that Lally’s grounds for concluding that US regulatory precedent is irrelevant is strained and unconvincing.

2.5 Asymmetric Risk

22. In section 3.8 of our report we argued that the costs to customers of setting the regulatory cost of capital too low were greater than the costs of setting it too high (“asymmetric risk” of regulatory error). Consequently, we argued that it was in the

⁶ The risk free rate does not explicitly appear in a DGM analysis, instead DGM calculates the return on equity as the discount rate that equates the listed share price with expected future dividends. As a result, DGM adjusts for a fall in the required return on equity (by a fall in the risk free rate) by an appreciation in the listed share price. Lally’s example conveniently ignores the impact that a lower risk free rate has on share prices and therefore wrongly concludes that DGM necessarily diverges from results obtained from the CAPM.

long term interests of end users, that is consumers, that ESCOSA should err on the side of caution when setting ETSA's cost of capital.

23. On page 22 Lally agrees with this sentiment. However, Lally argues this should not be achieved by erring on the side of caution in relation to individual estimates of CAPM parameters (such as the equity beta). Rather, Lally recommends a two step process of: first, estimating the WACC without any caution; then second, adding on a value to the WACC so estimated that represents the appropriate level of caution.
24. We note that ESCOSA's final decision does not adopt either of these approaches. That is, ESCOSA neither errs on the side of caution in setting individual parameters nor does it 'add on' a value to the WACC at the end of the process.
25. It appears to us that Lally's recommended approach also suffers from the defect that it does not give effect to Schedule 10 of the EPO – which does not have any obvious provision for an 'add on' to the WACC.
26. ESCOSA have not only ignored the adjustment Lally recommends (albeit at the parameter level) but they have set the return on equity above the risk free rate at some 20 percent below the average for regulated electricity network businesses. Yet the Lally report fails to acknowledge this and settles for a theoretical analysis without analysing the process undertaken (and required to be undertaken) by ESCOSA. Lally's recommendation that ESCOSA's should err on the side of caution, as it is in the long term interests of consumers, is inconsistent with ESCOSA's final determination.
27. The 'level' at which caution is injected into the regulatory cost of capital to be much less important than an acceptance that it should be injected. On this basis, Lally's discussion in the first full paragraph on page 22, is rather a valid criticism of ESCOSA's final decision than it is of our report.

2.6 The Q-Factor

28. In section 3.10 we set out why the reasoning in the three sentences devoted to the Q-factor in ESCOSA's final decision do not justify placing any weight on this as a justification for its decision to reduce ETSA Utilities' equity beta by 0.33%, from 1.13 to 0.8.
29. On page 22 of his report, Lally attempts to deal with this. First, Lally incorrectly interprets our report as saying that there is no theoretical support for a link between electricity sales and returns on the market portfolio. In fact, at paragraph 179 of our report we stated that:

“ESCOSA provides no empirical or theoretical support for why electricity sales would be positively correlated with the return on the stock market.” (Emphasis added.)

We went on to state that:

Had [ESCOSA] attempted this, it would have been forced to concede that a critical driver of energy sales is fluctuations in weather patterns which have nothing to do with the return on the stock market. Had ESCOSA tested this proposition empirically it would likely have come to the same conclusion that we did, namely, that electricity sales have a statistically insignificant relationship with the return on the stock market.

30. Our report correctly claimed that ESCOSA had not provided any theoretical justification for its position. More importantly, our report argued that even if a theoretical justification could be hypothesized (as Lally does on page 22) the empirical evidence simply does not support the contention.

31. Lally’s response to the lack of empirical evidence to support such a proposition is that:

“The explanation for this in both cases is more likely to lie in the extent of noise in the data (which precludes attainment of statistically significant results) rather than the lack of an underlying positive relationship.” (Page 22.)

32. Lally appears to be arguing for decision making by instinct (or more particularly, his instinct that a relationship should exist which, we do not, instinctively share) rather than objective evidence of such a relationship. Putting aside the methodologically unsound approach of Lally, ESCOSA must have regard to the fact that there is no statistically significant relationship between electricity sales and return on the market portfolio. This is especially true when our own expectations (that there would be at most a very weak relationship) is born out by the fact that there is *no* statistically significant relationship.

33. In our April report we noted that, even with ESCOSA’s final decision relating to the Q-factor, ETSA still had considerably more variability in sales revenues than did its peers in the electricity sector. The reason for this was that many of those peers had zero variability in sales revenues (ie, were subject to a revenue cap) and that the variations from forecast sales in South Australia were materially higher than in the rest of the NEM. In response to these arguments Lally states:

“The remaining two arguments from NERA on this matter involve comparisons between ETSA and its peers in the electricity sector, and lead them to the view that ETSA has more volatility in its sales. By implication, ETSA’s cost of capital should be higher than its peers. Whether this conclusion is true or

not does not bear on the question of whether ETSA's revenue adjustments lower its systemic risk. So, these comparisons between ETSA and its peers are irrelevant" (Page 22, emphasis added.)

34. This question that he posits is irrelevant. The relevant question, which was addressed in our analysis, is whether the Q-factor justifies ESCOSA setting an equity beta that is 20% lower than ETSA's peers? And whether the existence of the Q-factor implies ETSA has lower sales volatility than its peers? The answer to these questions are categorically "no, even with the Q-factor ETSA has similar or higher revenue volatility than its peers." Its equity beta should reflect this fact.
35. Significantly, Lally does not address the final argument in our April report. In paragraph 182 of that report we stated:

"...the Q-factor in the Draft Decision actually left ETSA's revenues more exposed to variations in energy sales than any other regulated Australian energy business.⁷ However, in the Draft Decision ESCOSA did not think this source of revenue volatility was material enough to mention – let alone to prevent it reducing the equity beta by 30%. Only in the Final Decision, when the Q-factor is altered such that ETSA faces a more 'normal' sensitivity of revenues to energy sales, does ESCOSA mention the Q-factor as relevant to its decision making."

36. In other words, if ESCOSA believed that the Q-factor were really of any importance in determining ETSA's systemic risk then, other things equal, ESCOSA should have set the equity beta at substantially more than 1.0 in its draft decision - to reflect the fact that the Q-factor in that decision exposed ETSA to substantially more revenue volatility than any of its peers. In fact, the equity beta in ESCOSA's draft decision and final decision are identical. This is more suggestive of a selective use of the facts to justify an *a priori* position than a methodologically sound analysis based on reliable evidence. Lally's silence may be telling. The fact that Lally similarly fails to address this criticism of ESCOSA's final decision might also be suggestive of selective examination of our arguments.

⁷ That is, revenues would vary by more than 85% of the variation in energy sales from forecast. With the possible exception of Western Power in Western Australia, this almost certainly reflected the greatest sensitivity of revenues to energy sales of any regulated energy infrastructure business.