APPENDIX 19

Competition Economists Group, *Nominal risk free rate, debt risk premium and debt and equity raising costs for Transend,* May 2008

Nominal risk free rate, debt risk premium and debt and equity raising costs for Transend

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Executive Summary

Scope

Under the National Electricity Rules (the Rules), the network service provider can put forward a proposal for:

- The averaging period over which the risk free rate will be observed (noting that Section 6A.6.2(c) of the Rules require the use of RBA data to actually set the risk free rate);
- The methodology by which the debt risk premium (DRP) will be set; and
- An estimate of the cost of raising both debt and equity capital required by the business to finance its operations.

In this report we advise on the appropriate approach to addressing each of the above three issues.

Analysis and recommendations

Averaging period

Each regulated business will have competing objectives to consider when selecting the averaging period for the risk free rate. There are two dimensions to the selection of an averaging period: 1) how long the averaging period will be (eg, 10 or 20 trading days?); and 2) when it will begin (eg, before or after the AER draft decision?).

The earlier the averaging period is set the greater the certainty (for both the AER and the business) about the cost of capital that will be used in the final decision. For example, if the averaging period is set for a period soon after the revenue proposal is lodged, then the cost of capital will be set for the draft decision and will not change in the final decision.

However, this certainty may come at a cost to the business if a later averaging period would better match the time period during which it plans to refinance debt and/or raise new capital.

Ultimately, the weighing of these considerations is a matter for the businesses given its particular circumstances and preferences. However, assuming a preference for knowing the cost of capital earlier in the regulatory process we recommend adoption of an averaging period that is for the 10 or 15 business days starting more than 20 business days after the date of the submission of the revenue proposal.

A methodology for setting the DRP

The Rules state that

> "The debt risk premium for a *regulatory control period* is the premium determined for that *regulatory control period* by the *AER* as the margin between the 10 year Commonwealth annualised bond rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating from Standard and Poors and a maturity of 10 years."

However, it is not necessarily a simple task to observe the "annualised Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating from Standard and Poors and a maturity of 10 years".

The AER has previously used a methodology for doing this which involves the use of Bloomberg Fair Value corporate bond data (and making some adjustments to that data to reflect the fact that a 10 year BBB+ rate is not always published by Bloomberg).

In this report we have tested the accuracy of the AER method relative to alternative methods. We conclude that the AER method is accurate and have recommended its adoption.

Estimating the cost of raising debt and equity

A business must raise new debt to refinance existing debt as it becomes due. Similarly, a business must raise new debt and equity to finance expansion of its regulatory asset base (net capital expenditure). These activities involve costs for the business, such as the cost of paying underwriters to market the capital issue.

In this report we have surveyed the empirical finance literature on the magnitude of these costs. This survey shows that the two main costs of raising capital can be characterised as:

- Direct payments to third parties involved in organising the sale of the debt/equity capital (such as underwriting costs); and
- Indirect costs in the form of 'underpricing' the debt/equity capital being sold.

For example, Saunders, Palia, and Kim [1] state.

[1] Saunders, Anthony , Palia, Darius and Kim, Dongcheol, "The Long-Run Behavior of Debt and Equity Underwriting Spreads" (January 2003). NYU, Stern School of Business, Finance Working Paper No. FIN-03-004.

> "*… transaction costs can be broken into two broad categories, "direct costs" to the issuer (or the gross fees charged by an investment or commercial bank), and "indirect costs" to the issuer (any underpricing that might have occurred on the first day of issue)."* (Page 2)

As a matter of economics, these costs are equivalent and this can be easily demonstrated. Let us start by examining underwriting fees. These are a direct cost of raising capital and involve the payment to a third party (generally an investment bank) in return for that party agreeing to undertake the costs associated with organising and marketing the capital raising.

Now consider a company that needs to raise new equity. It must both agree a fee with an underwriter (to organise the marketing of the equity) and agree a price at which it is willing to sell the equity. Acting in the interests of its existing shareholders, the firm will wish to raise the equity at the highest possible price at which it can be confident of raising the necessary capital. However, it must be careful not to set the price too high because, if it does so, it runs the risk that it will have difficulty raising the desired capital and will either:

a) have to pay significantly more to the underwriter to meet the costs of marketing the capital raising (ie, in persuading investors that the equity raising is a 'good deal' at the selected price) or

b) have to repeat the costly capital raising process should it fail to raise the requisite capital; or

c) be unable to finance the project for which the capital was being raised.

This is a simple reflection of a general economic rule. The higher a commodity's price the harder it is to sell – be that product a physical commodity (such as cabbages at a vegetable market) or a financial product (such as newly raised capital).

Thus, direct costs of marketing a capital raising can be reduced by lowering the price at which the firm is willing to sell the capital. However, by lowering the price at which new capital is sold the firm will, in effect, transfer value from existing shareholders to new shareholders. This is known as an 'indirect cost' of capital raising (the cost of 'underpricing').

It is the delicate balance between these direct and indirect costs that must inform how a firm sets the price (or sets the price setting methodology) by which capital will be raised. The higher the indirect costs (lower the price) the lower will be the direct costs of marketing the capital. By contrast, the lower the indirect cost (higher the price) the higher will be the direct costs.

In the past the AER has only provided compensation for capital raising based on the estimated level of direct costs and has not included any consideration of indirect costs. In our view, this is inconsistent with both the finance literature and sound economic principles. Moreover, there has been a documented trend towards greater reliance on indirect costs[2] and less reliance on direct costs[3] to sell new equity issues. By only focusing on direct costs the AER's methodology will incorrectly perceive a falling cost of raising equity when all that is occurring is a change in the mix between direct and indirect costs – with no change in total costs.

We recommend that the cost of raising debt and equity be set by reference to both direct and indirect costs. Based on our survey of the empirical evidence we recommend that this would require:

- the cost of raising equity to be set at 7.6% of the amount of equity to be raised and
- the cost of raising debt be set at least equal to 15.5bppa of the amount of debt to be raised.

[2] Altinkili, O. and Hansen, R., Journal of Financial Economics, 2003, vol. 69, issue 2, pages 285-323.

[3] Saunders, Anthony , Palia, Darius and Kim, Dongcheol, "The Long-Run Behavior of Debt and Equity Underwriting Spreads" (January 2003). NYU, Stern School of Business, Finance Working Paper No. FIN-03-004.

1. The Nominal Risk Free Rate

1.1. Averaging period

1. Section 6A.6.2(c) of the National Electricity Rules (the Rules) require the nominal risk free rate to be estimated as a moving average over a predetermined averaging period. The use of an averaging period rather than a single day to determine the risk free rate has two effects:

   - it reduces the likelihood that the risk free rate will be determined on a given day where trading might be characterised as 'unusual' (and reduces the prospect of any attempt being made to artificially influence market prices on that particular date) and

   - it increases the probability that the averaging period will include unusual events (but reduces the impact of any such 'unusual events' on the average of the observations).

2. There is no clear optimal averaging period. In our opinion a 10 or 15 trading day averaging period would be reasonable.

3. A building block proposal must contain a proposal for the commencement and length of the period nominated by the Transmission Network Service Provider for the purposes of section 6A.6.2(c) of the Rules (ie, the specific period for observing the nominal risk free rate).

4. It will be up to the individual businesses to choose this period consistent with their own circumstances. This may vary from business to business. For example, one particular business may wish for greater early certainty about the allowed rate of return and hence desire an earlier sampling period than another.

5. As CEG understands it, this was a driving consideration in having the other WACC parameters (eg, equity beta and MRP) set in the Rules. This means that businesses will have greater certainty surrounding the compensation they will receive for the capital expenditure programmes that they are proposing. Applying the same logic to the averaging period for the risk free rate would suggest an early averaging period – for example, one that may be set prior to the AER releasing its draft decision. If this is done then both the AER and the businesses will have a better understanding of the cost of capital for the expenditure programmes under consideration .

6. A counter to this consideration may be that the businesses wish to better match the determination of the risk free rate to the refinancing of debt and/or the raising

of new capital. The impact of such considerations will depend on the circumstances of the individual businesses.

7. Assuming a preference for greater certainty earlier in the regulatory process we recommend adoption of an averaging period that is for the 10 or 15 business days starting more than 20 business days after the date of the submission of *the building block proposal*

1.2. Indicative estimate of the risk free rate

8. Consistent with section 6A.6.2(c) we have used indicative mid rates published by the Reserve Bank of Australia to estimate the nominal risk free rate. However, by convention, these figures are reported as two times the semi-annual yield rather than the compound return over one year. In order to convert them to an annualised figure, as required under 6A.6.2(c) we must apply the following formula:

$$\text{Annualised rate} = (1+ \text{semi-annual rate})^2 - 1$$

9. For example, over the ten trading days to 30 April 2007 the risk free unadjusted average risk free rate was 6.27% but when this is annualised according to the above formula it becomes 6.37%.

2. The Debt Premium

10. 6A.6.2(e) of the Rules require:

> "The debt risk premium for a *regulatory control period* is the premium determined for that *regulatory control period* by the *AER* as the margin between the 10 year Commonwealth annualised bond rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a BBB+ credit rating from Standard and Poors and a maturity of 10 years."

11. This wording is not identical to that of section 6A.6.2(c) in that it does not require the use of an averaging period. Nonetheless, to the extent that the debt premium is to be estimated using current market evidence it is natural to apply the same averaging period to observations of the debt premium as is applied to observations of the risk free rate.

12. The Australian Energy Regulator (AER) has established a methodology for setting the debt premium based on the use of Bloomberg Fair Value curves. The use of Bloomberg Fair Value curves is consistent with the approach outlined by Prof Bruce Grundy and Dr Tom Hird in their report for the ENA.[4] Bloomberg does not publish a BBB+ Fair Value yield, however, Bloomberg's long dated BBB Fair Value yields are based solely on observed yields for BBB+ bonds. As such, use of the Bloomberg BBB Fair Value curve satisfies the requirements of 6A.6.2(e).

13. The only difference is that at the present time there are insufficient BBB corporate bonds with ten years to maturity for Bloomberg to publish a 10 year bond rate. Faced with this difficulty the AER proposed in the SP AusNet final decisionto estimate the 10 year BBB+ Bloomberg Fair Value yield:

AER estimate of 10 year BBB+ Bloomberg Fair Value Yield	=	8 year BBB+ Bloomberg Fair Value Yield	+	10 year A Bloomberg Fair Value yield	-	8 year A Bloomberg Fair Value yield

14. In our opinion this approach is reasonable and the AER has shown that it does not result in a material error or an obvious bias (at least when measured against recent history).

15. Nonetheless, we have tested this estimation technique against an alternative formula. Specifically, instead of adding the difference between 10 and 8 year A rated yields to the 8 year BBB yield we add two times the difference between the

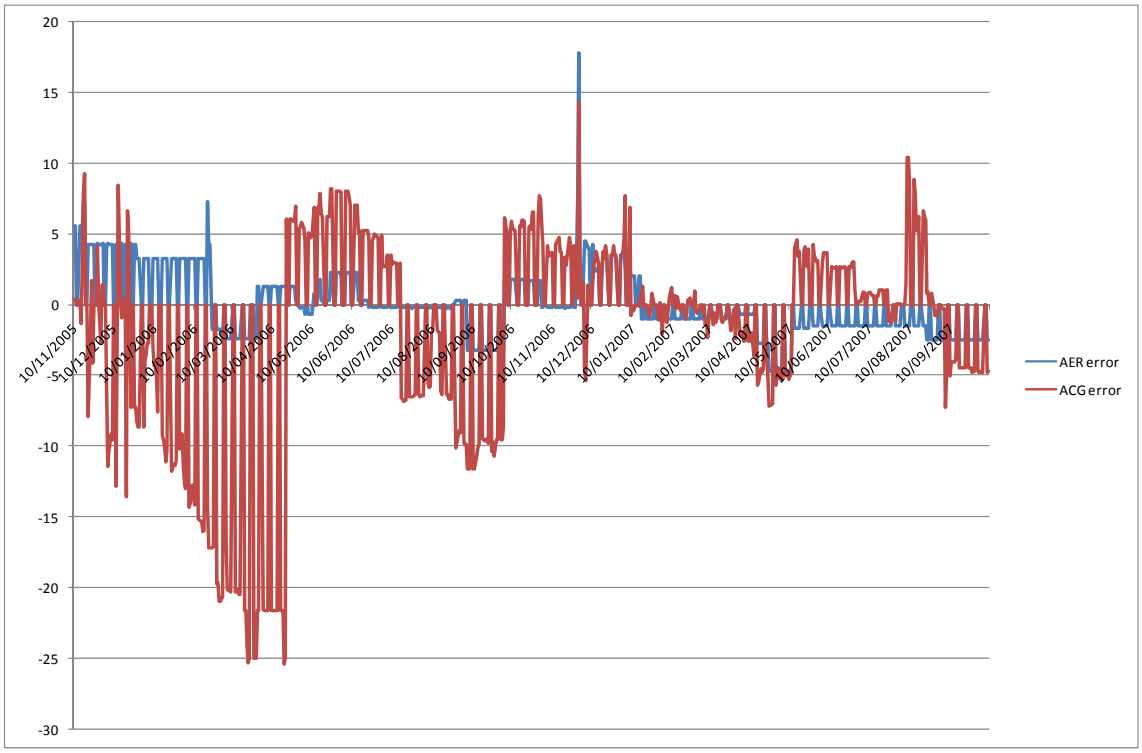
[4] See http://www.qca.org.au/files/Envestraproposedaccessarrangementinfo_4.pdf

8 and 7 year BBB yields. This is the same approach adopted by ACG in its recent report for the ESCV.[5]

> *"For both points in time, Bloomberg does not provide predictions of yields on 9 and 10 year bonds. In this memorandum, yields (and debt margins) for tenors of 9 and 10 years have been derived by linear extrapolation using the difference in predicted yields between 7-year and 8-year bonds."* (Page 5)

16. In the most recent period when 10 year Bloomberg BBB Fair Value yields were published (10 November 2005 to 9 October 2007) both approaches provided a reasonably accurate average prediction of the 10 year BBB Fair Value yield. The AER methodology had an average error of only 0.1 basis point (bp) (overestimation) over this period while the ACG method had a larger (but still small) error of 2.5bp (underestimation). However, the average figures mask considerably higher volatility in the errors associated with the ACG method – which just happened to cancel out over the period. By contrast, the AER method was consistently more accurate. This is demonstrated in the below figure.

Figure 1: AER vs ACG errors in predicting BBB+ 10 year yield



[5] http://www.esc.vic.gov.au/NR/rdonlyres/7BA26818-34D6-45F4-8EC7-0537B15F0869/0/GAAR2008updatingestimatesofdebtmarginsfor20DaysTradingNovandDec2007.pdf

17. On the above basis we have adopted the AER approach in this report. Over the 10 trading days to 30 April 2008 the AER method predicted a debt premium of 313bp.

3. Debt and Equity Raising Costs

3.1. Direct and indirect costs

18. The AER and other Australian regulators have accepted the need to compensate businesses for the cost of refinancing existing debt and raising incremental equity. However, the approach taken to date has incorporated a serious methodological flaw that has led to an underestimate of the cost of raising capital. Specifically, regulators have only recognised transaction costs associated with a direct payment to a third party. They have failed to recognise the, often higher, costs associated with underpricing the issue in order to ensure its success.

19. As noted by Saunders, Palia, and Kim [6] when discussing the transaction costs of raising capital.

> "*These transaction costs can be broken into two broad categories, "direct costs" to the issuer (or the gross fees charged by an investment or commercial bank), and "indirect costs" to the issuer (any underpricing that might have occurred on the first day of issue).*" (Page 2)

20. Both direct and indirect capital raising costs are identical economic costs. The only difference between them is that the first involves a direct payment to a third party (eg, the underwriter) while the second involves an indirect payment to a third party in the form of underpricing (in this case to the provider of capital).

21. The equivalence of these costs can be easily demonstrated. Let us start by examining underwriting fees. These are a direct cost of raising capital and involve the payment to a third party (generally an investment bank) in return for that party agreeing to undertake the costs associated with organising and marketing the capital raising. (This will often be associated with a requirement that the underwriter will buy some or all of any under-subscribed debt/equity - in order to ensure that the underwriter has the appropriate incentives to do their job appropriately.) .

22. For example, a company may need to raise $100m in equity. It must then decide the price at which it will issue that equity.[7] Acting in the interests of its existing shareholders, the firm will wish to raise the equity at the highest possible price at which it can be confident of raising the necessary capital. However, it must be careful not to set the price too high because, if it does so, it runs the risk that it will have difficulty raising the desired capital and will either:

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[6] Saunders, Anthony , Palia, Darius and Kim, Dongcheol, "The Long-Run Behavior of Debt and Equity Underwriting Spreads" (January 2003). NYU, Stern School of Business, Finance Working Paper No. FIN-03-004.

[7] And the process through which it will raise the equity (eg, such as a 'book build' auction process).

d) have to spend significantly more on the costs of marketing the capital raising (ie, in persuading investors that the equity raising is a 'good deal') or

e) have to repeat the costly capital raising process; or

f) be unable to finance the project for which the capital was being raised.

23. This is a simple reflection of a general economic rule. The higher a commodity's price the harder it is to sell – be that product a physical commodity (such as apples at a vegetable market) or a financial product (such as newly raised capital).

24. These direct costs of marketing a capital raising can be reduced by lowering the price at which the firm is willing to sell the capital. However, by lowering the price at which new equity is sold the firm will, in effect, transfer value from existing shareholders to new shareholders. This is known as the cost of 'underpricing' or as an 'indirect cost' of capital raising.

25. It is the delicate balance between these direct and indirect costs that must inform how a firm sets the price (or sets the price setting methodology) by which capital will be raised. The higher the indirect costs (lower the price) the lower will be the direct costs of marketing the capital. By contrast, the lower the indirect cost (higher the price) the higher will be the direct costs.

26. Clearly, the magnitude of the underwriting fee will depend on the price that is set for the equity. The lower the price set for the equity the lower will be the underwriting fee the company has to pay. In the extreme, if the business sets a low enough price for the equity it would not need to pay any underwriting fee as, at a low enough price, the investment bank being paid to market the capital will gladly purchase it all itself.

27. Put simply, there are two costs associated with maximising the probability that a capital raising is fully subscribed:

- direct payments to an investment bank to underwrite the issue; and
- under-pricing of the issue.

28. Both involve identical costs to existing shareholders. Existing shareholders would need to expect to recover both types of costs in order to justify raising new capital. That is, the returns from investments made from the new capital would have to be high enough to recover both sets of costs.

29. Underwriting fees can be thought of as paying an investment bank to engage in marketing that ensures the success of an issue while under-pricing can be

thought of as paying new capital subscribers (giving them a discount) to ensure the success of the issue. It is an empirical fact, as discussed below, that underpricing has increased in importance since the early 1990s and, consistent with this, underwriting costs have fallen. That is, the empirical evidence is that firms are tending to rely more on underpricing and less on underwriting than they used to.

30. It is important to note that underpricing is a transaction cost just as are the marketing costs undertaken by investment banks. They are simply two mechanisms by which a firm can attract a new investor to provide finance (or an existing investor to increase their weighting in the debt/equity). The investor is, by definition, not already doing so and needs to be convinced to do so. There are essentially two ways in which they can be convinced:

    - First, they can be convinced by giving them information that leads them to increase their incremental valuation of the capital on offer; or

    - Second, they can be convinced by lowering the price to them until it falls below their incremental valuation of the capital on offer.

31. The level of underpricing and underwriting chosen will reflect the mix of these two costs that the firm believes minimises their total costs of raising equity.

32. It is relevant to note that in a world with perfect information and where all investors had the same views (homogeneity of investor expectations) then there would be no costs of raising capital. However, this assumption does not reflect the real world. In the real world information is imperfect and costly to acquire. Consequently, different investors have different expectations about the risks and rewards associated with particular debt and equity.

33. The ACCC has itself recently accepted this fact and used it to argue against the idea that there are clear asymmetries in the social welfare costs associated with misestimating the cost of capital.[8] Essentially the ACCC argues that there is no single 'unique' cost of capital above which all investors will be willing to provide unlimited finance and below which no investors will offer finance. Rather, the ACCC argues that investors have heterogeneous expectations and that, while a lower cost of capital may reduce available finance it will not necessarily make it instantaneously 'dry up'.

34. We agree with the ACCC that this logic is sound and that it reflects both reality and finance theory within a generalised CAPM framework.[9] We note that the

[8] Telstra/Adam LSS Access Dispute: Reasons for Final Determination (December 2007) paragraphs 471 to 473.

[9] Note that Lintner (who, along with Sharpe and Mossin are often attributed as originators of the CAPM) generalised the CAPM framework to deal with heterogeneous investors expectations in 1969. See, Lintner, John, "The

same logic applies to regulated activities other than those provided by Telstra. We also note that precisely this logic implies that when firms wish to raise new capital they must convince some of these heterogeneous investors to increase their exposure to the firm and, to do that, the firm must either provide them with more information or give them a lower price for the capital than they can currently access. However, information is not costless to provide and, for the investors, not costless to absorb. It is for this reason that we observe both direct and indirect costs of raising capital.

35. As a matter of empirical observation, the magnitude of under-pricing relative to underwriting costs depends on whether equity or debt is being raised and on whether equity is being raised in an initial public float or incrementally in new equity issues (seasoned equity offerings or 'SEOs'). Relativities between direct and indirect costs of capital raising are summarised by Saunders, Palia, and Kim[10]:

> *"Over the 30-year period, we find average IPO* [underwriting] *spreads of 7.06%, with average underpricing on day of issue of 31.37%. Thus the long-term average ratio of direct to indirect costs for IPO issuers has been of the order of 25%. For SEOs we find average underwriting spreads of 5.01%, compared to average underpricing of 2.63% (a ratio of direct to indirect costs of 190%). This supports the widely held view that the direct costs of issuance are higher for SEOs than are the indirect costs. For corporate debt, we find average spreads of 1.15%. Given the difficulty of generating one-day returns for a sufficient number of debt IPOs, we did not directly calculate one-day returns. Nevertheless, for a very small sample of 50 firms, Datta, Datta, and Patel (1997) estimate first day returns on corporate debt to be close to zero (0.15%)."*

36. Jiao and Chemmanur summarise the empirical literature on SEOs as follows. [11]

> *"The discounting and underpricing of Seasoned Equity offerings (SEOs) have been extensively documented by the empirical literature (see, e.g., Corwin (2003); or Chemmanur, He, and Hu (2005)). The SEO discount is defined as the difference between the issuing firm's closing market price on the last trading day prior to the offer day and its SEO offer price; SEO underpricing, on the other hand, is defined as the difference between the issuing firm's SEO offer price and its closing price on the first trading day after the SEO is priced (both are usually expressed as a percentage of the offer price). Altinkilic and Hansen (2003) report*

Aggregation of Investor's Diverse Judgments and Preferences in Purely Competitive Security Markets" *The Journal of Financial and Quantitative Analysis*, Vol. 4, No. 4, (Dec., 1969), pp. 347- 400

[10] It should be noted that the database used by Saunders, Palia, and Kim does not include utilities.

[11] Jiao, Yawen and Chemmanur, Thomas J., "Institutional Trading, Information Production, and the SEO Discount: a Model of Seasoned Equity Offerings" (March 2007). EFA 2007 Ljubljana Meetings Paper Available at SSRN: http://ssrn.com/abstract=891193.

that, in the 1990s the average SEO discount was 3.2%, which often exceeds half the underwriting syndicate's fee, and the aggregate discounts of SEOs in this period amounted to $2.6 billion. Chemmanur, He, and Hu (2005) document an average 4% underpricing for SEOs in their sample period from 1999 to 2001."

3.2. Regulatory precedent only captures direct costs

37. ACG's report to the ACCC in 2004[12] has formed the basis of ACCC and AER decisions to date and has heavily influenced other regulators. However, ACG reported only direct costs of raising debt and equity. We set out below some evidence on the indirect cost of capital raising in the literature relied on by ACG.

38. Lee, Lochead and Ritter (1996)[13] is heavily referenced the ACG report. For example, ACG state:

    "In 1996 a comprehensive review of the cost of raising capital in the US was undertaken by Lee, Lochhead, Ritter and Zhou, and was published in The Journal of Financial Research. "Gross spread" (GS) was defined as the "commissions paid to investment bankers when securities are issued" and "other direct costs" or "expenses" (E) were said to include the "legal, auditing, and printing costs associated with putting together a prospectus." Total Direct Cost (TDC) was the sum of gross spread and expenses. The results for IPOs, expressed as a percentage of the gross proceeds, are summarised in Table 3.1 below."

    "In the table, the average Total Cost of 11% is weighted by the fact that the average size of IPO was only $24.4 million. For IPOs in the USD200–499.99 million category, for example, the average Total Cost was 6.53%. On the basis of this evidence, it was concluded that "substantial economies of scale exist in both the gross spreads and other expenses." It was also concluded, like Bhagat and Frost had previously, that "spreads and direct costs are lower for utilities than for non–utilities", possibly due to their "relative non complexity."

39. This quote summarises Lee, Lochead and Ritter's (1996) results as they relate to "Total **Direct** Costs" of capital raising. However, Lee, Lochead and Ritter (1996) also report underpricing. For example, Lee Lochead and Ritter state:

    "In table 4 we report not only the direct costs for IPOs but also the indirect costs of short run under-pricing. Inspection of the table reveals that, consistent with previous findings, IPOs are underpriced on average. With average direct costs of 11.0 percent and average initial returns of 12.0 percent, a typical issuer with an offer price of $10.00 receives net proceeds of $8.90 on a share that trades at

[12] Allen Consulting Group, 2004, *Debt and Equity Raising Transaction Costs*

[13] I.Lee, S. Lochhead, J. Ritter and Q. Zhao (Spring 1996), "The costs of raising capital", The Journal of Financial Research, Vol. XIX, No. 1, pp. 59–74.

$11.20. Taking the difference between the market price and the amount realized of $8.90, the total direct and indirect costs amount to $2.30, which is 20.5% of the market value of $11.20." (pp. 67-68)

40. The above provides a good illustration of how the total costs of raising capital should be estimated (and how it is estimated in the finance literature).

41. ACG also reference a paper by Altinkilic and Hansen, published in 2000, regarding the estimation of the costs of raising capital for seasoned equity offers (SEOs). Atlinkilic and Hansen have also authored a more recent (2003) paper which examines the cost of underpricing in SEOs – entitled *Discounting and Underpricing in Seasoned Equity Offers*.[14] In that paper Atlinkilic and Hansen conclude:

> *"The discounting of seasoned equity offers has become commonplace and is of a larger order of magnitude in the 1990s than in earlier periods. Discounting is the logarithm of the ratio of the closing market price the day before the offer to the offer price. In the 1990s it averaged 3.2%, which often exceeds half the underwriting syndicate's fee and aggregates to over $2.6 billion."* (Page 286)
>
> *"Discounting of the offer price in firm-underwritten seasoned equity offers is economically large and common, remaining stable around 3.0% throughout the 1990s."* (Page 320)

42. Bhagat and Frost (1986)[15] examined indirect costs and found that, during the 1970s, underpricing was insignificant and even slightly negative. However, this is not a surprise given the findings of Atlinkilic and Hansen (quoted above) that the role of under-pricing has become significant only since the 1990s.

43. ACG also reference and quote from a paper by Chen and Wu.[16]

> *"Chen and Wu found that in Hong Kong, the average cost of SEO issues was 2.85%, which is significantly below the US figure, irrespective of the size of offer.... The UK results for SEOs (all rights issues), with an average 2.8% gross underwriting fee, demonstrate a similarity with the Hong Kong findings.* (Page 10, ACG 2004.)

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[14] Altinkili, O. and Hansen, R., Journal of Financial Economics, 2003, vol. 69, issue 2, pages 285-323.

[15] Bhagat and Frost, "Issuing Costs to Existing Shareholders in Competitive and negotiated Underwritten Public Utility Equity Offerings", *Journal of Financial Economics*, Vol 15, (1986).

[16] Chen, K.C. and Lifan Wu, (July–December 2002), "Cost of raising capital – initial public offerings (IPOs) and seasoned equity offerings (SEOs) – in Hong Kong", *Journal of Financial Management and Analysis*, Vol. 15, Issue 2, pp. 27–37.

44. However, in the first page of their paper (page 27 of the journal) Chen and Wu state:

> *"...the costs of equity offerings consist of both direct costs and indirect costs."*
>
> *"...indirect costs include the underpricing of the new issues and the foregone time that the senior management spent working on the IPO rather than managing the business. The former can be measured by the difference between the offering price and the first day closing price divided by the offering price whereas the latter certainly carries a cost even if it cannot be easily measured."*

45. On the next page they go on to say:

> *"In this study, we will investigate the magnitude of issuing costs, both direct and indirect costs, associated with IPOs and SEOs in Hong Kong..."*

46. Critically, Chen and Wu find higher indirect costs than direct costs for SEO's. In the first full paragraph on page 2 of their paper in the sentence after they report their 2.85% estimate for direct costs they state:

> *"The average indirect cost, measured by post-issue on-day initial returns, is 15.14 per cent for IPOs and 6.26% for SEOs, respectively."*

47. Chen and Wu go on to conclude that the reason the measured direct costs were low in Hong Kong because they were balanced by higher indirect costs. That is, underpricing was being used as a substitute to underwriting (as theory and common sense suggests is the case). On page 31 they state:

> *"The finding in Table 2 showing that HK SEOs experienced lower direct costs but higher indirect costs than their US counterparts may indirectly explain why the underwriters in HK would have accepted lower underwriting commission."*

48. Rather than estimating a total cost of raising equity through SEOs of 2.85% Chen and Wu estimated a total cost of 9.12%. This result is clearly reported in Table 2 of their report which reports Direct Costs, Indirect Costs and Total Costs (being the sum of the other two) side-by-side.

3.3. Debt raising costs

49. There is a strong regulatory precedent for allowing 12.5bppa (12.5 basis points per annum) in direct transaction costs for debt raising. In its decision for SP AusNet the AER adopted a lower estimate based on updating the methodology set out by ACG in its 2004 report to the ACCC.

50. This approach involves starting with a market estimate of gross underwriting fees (which is assumed to be a constant proportion of the issue size) and then adding other smaller costs to this amount (costs that are assumed to be invariant with the issue size). Adopting this approach the AER finds that gross underwriting fees account for 6bppa for five year debt issues (see its SP AusNet decision).

51. However, the AER derives its sole estimate of underwriting fees from Bloomberg estimates of underwriting fees for Australian companies issuing debt privately in international markets.[17] This is despite the fact that the AER uses observed interest rates on publicly issued debt (with its higher information disclosure requirements) to determine the cost of debt for regulated businesses

52. We have two problems with this approach. First, little effort is made to justify the reliance on this subset of privately issued debt. Observed underwriting costs across a range of debt issuance activities are materially higher. As noted above, Saunders, Palia, and Kim estimate average underwriting fees of 1.15% (or 29bppa amortised over five years at an 8% discount rate) based on the average underwriting fees in the US over the period 1970 to 2000. It is true that Saunders, Palia, and Kim find that underwriting fees have been falling over this period and in 2000 were 56bp on average. However, this still equates to 14bppa over five years (at an 8% discount rate) – more than double the AER's estimates.

53. Second, there is no attempt to question whether the lower underwriting fees for this subset are offset by higher other costs – such as higher indirect costs of underpricing. Precisely this point was made previously by NECG[18]

> *"US data suggest that a premium for debt issuance equivalent to up to 50 basis points on the cost of debt may be appropriate. Debt can be issued either directly by private placement or through a public issue. The issuance costs of a direct placement are considerably lower than a public issue (as considered by the ACCC).* ***However, the interest rates paid on private placements are usually higher than those on a public issue. So there is a trade–off when issuing debt by private placement – issuance costs are lower but interest rates are higher…****Hays, Joenk and Melicher conducted an empirical study of the difference in rates between public and private debt issues and found that the*

[17] Consistent with the original advice of ACG (2004) who stated: "*We found two objective sources of data for fees applied by investment banks in bond issues made by Australian companies, including regulated utilities: Bloomberg, and the benchmarking survey undertaken by Osborne Associates. The Bloomberg data are only available for Australian companies accessing the Euro–dollar, Japanese Yen and US* ***private placement markets*** *or for Australian MTN issues jointly sold in Australia and these international markets. These data are limited to the gross underwriting fees charged. The Osborne benchmarking data are for domestic bond issues, and are derived from an on–line survey that is contributed to on a voluntary basis by the bond issuing companies. Given the extent of international competition in bond markets and the fact that these markets should equilibrate over time, ACG considers that the Bloomberg data for international bond issues by Australian firms are a reasonable proxy for underwriting fees in the Australian bond market."* [Emphasis added.]

[18] NECG (November, 2003) *2003 Review of the Draft Statement of Principles for the Regulation of Transmission Revenues*, Submission to the ACCC for the electricity TNSPs from Network Economics Consulting Group. Pages 64 to 65

yield to maturity on private placements was 0.46% higher than on similar public issues… Even if issuance costs of private placements were nil, which of course they are not, it would indicate issuance costs for private debt issues of about 0.50%." (Emphasis added.)

54. In this quote NECG make the correct point that it is wrong to look solely at direct costs. Businesses attempt to minimise the sum of direct and indirect costs. In this case, debt issued through private placement results in higher interest rates being paid than through public issue of corporate bonds. Hays, Joenk and Melicher estimate this to result in 46bppa higher costs. It is a form of cherry-picking to set the cost of debt based on observed yields for corporate bonds that have gone through a public issue but to set the cost of raising debt based on private placements that must be underpriced relative to corporate debt.

55. ACG addressed this quote from NECG in their 2004 paper but, in our opinion, did not do so adequately. ACG argued that the issues raised by NECG were not relevant because:

"It is difficult to see why a single US empirical study by Hays, Joenk and Melicher published in 1979 would be relied upon as evidence."[19] *In the last chapter we reviewed a number of international studies of debt issuance costs. A comprehensive recent study conducted by Livingston and Zhou was quite clear in its conclusion that:*

'*Underwriter fees for Rule 144A [private placement] issues are not significantly different from fees for publicly issued bonds*.'"

56. However, the main findings of Hays, Joenk and Melicher (1979) were confirmed in Livingston and Zhou (2002). Specifically, while it is true that Livingston and Zhou (2002) find underwriter fees for private placement are not significantly different to public placement, they also agree with Hays, Joenk and Melicher (2007) that interest rates paid on private placement are significantly higher.

57. Livingston and Zhou report that the average debt margin (spread to Government bonds) at the time that private placement bonds are issued is over 200bp higher than for publicly issued bonds.[20] Livingston and Zhou note that this is likely explained by a greater proportion of riskier bonds being privately placed than publicly issued. However, even after accounting for this a significant difference remains. Specifically for BBB rated bonds, privately placed debt has a yield to

[19] Page 19 of the ACG report.

[20] See Table 1 on page 12.

maturity at the time of issue that is, on average, 42bp more than then publicly issued bonds.[21]

58. Livingston and Zhou also perform regression analysis across their whole data set where they include dummies for, amongst other things, credit ratings and whether the debt is privately issued. On the basis of these results they conclude:

> *"...rule 144A issues [private placement] have on average a yield premium of 19 basis points over public debt, everything else equal."* (Page 19)

59. Given the inverse relationship between price of issue and yield to maturity, higher yield to maturity at the time of issue is just another way of saying that bonds placed privately get sold at a lower price than bonds issued publicly. In other words, the indirect costs of private placement are higher than for public placement.

60. It would be internally inconsistent for regulators to base their cost of debt calculations on:

    - interest rates paid on publicly issued debt (capturing the upside of public issuance); but

    - issuance costs for privately placed debt that excludes the higher indirect costs of private placement (ignoring the downside associated with private issuance – namely higher interest rates).

61. If private placement markets are to be used to set the cost of debt then internal consistency demands that they be used to set all the costs of debt – debt issuance *and* interest rates. Based on the work of Livingston and Zhou this would be associated with at least 19bppa (and up to 42bppa) higher interest rate. This is at least three (and up to seven) times higher than the AER's 6bppa estimate of underwriting costs in the private placement market (as used in its SP AusNet decision).

62. Based solely on this evidence, the appropriate debt raising costs, based on private placement markets for BBB rated debt is at least 25bppa (being the sum of 6bppa for underwriting of private placement debt and19 bppa to reflect the lower price received for private placement debt relative to public debt).

63. However, even this is an underestimate as the 19bppa figure above only reflects the *difference* between indirect costs of private placement and public placement.

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[21] See Table II, page 15, of M. Livingston and L Zhou (2002), "The impact of rule 144A debt offerings upon bond yields and underwriter fees," Financial Management, Vol. 31, Iss. 4, pp.5–28.

It does not capture the indirect costs associated with issuing public debt itself. This form of indirect cost is difficult to measure because it requires not only knowing what price debt was issued at (all that is required in the Livingston and Zhou analysis) but also what price it trades at immediately after it is issued.

64. This information is not easy to obtain because corporate bonds are not exchange traded so it is difficult to measure the change in price of these bonds on the day they first trade. For example, Saunders, Palia, and Kim state:

> "*For corporate debt, we find average* [underwriting] *spreads of 1.15%. Given the difficulty of generating one-day returns for a sufficient number of debt IPOs, we did not directly calculate one-day returns. Nevertheless, for a very small sample of 50 firms, Datta, Datta, and Patel (1997) estimate first day returns on corporate debt to be close to zero (0.15%)"* (Page 5.)

65. Saunders, Palia, and Kim go on to state that the general assumption in the literature is that one-day returns on corporate debt issues are 'extremely small'. However, more recently underpricing of corporate bond issues has been examined in an article entitled "*Underpricing of Corporate Bonds*" by Cai, Helwege, Warga (2006). [22]

> *"We find that underpricing occurs with both IPOs and seasoned offering and is highest among riskier, unknown firms."* (Abstract)

66. They find that average underpricing of corporate bonds (not issued in an IPO[23]) that are not investment grade is 14.9bp.[24] By contrast the average for bonds issues that are investment grade is -0.01bp. However, the average for investment grade is skewed by the high number of highly rated bonds in the sample (1,085 bonds are rated at A or better while only 861 are rated at BBB).

67. We note that BBB rated bonds are on edge of investment grade and, based on the comparison between investment and non-investment grade, one can reasonably assume that BBB rated bonds will have higher underpricing than the average for investment grade. Cai, Helwege, Warga do not separately report the figure for BBB rated bonds, however, one can reasonably assume that it is between -0.01 and 14.9bp. This is broadly consistent with the findings of Datta, Datta, and Patel (referred to by Saunders et al) of first day returns on corporate debt averaging around 15bp.

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[22] Cai, Nianyun, Helwege, Jean and Warga, Arthur, "Underpricing in the Corporate Bond Market" . Review of Financial Studies, Forthcoming Available at SSRN: http://ssrn.com/abstract=1004072

[23] Debt issued in an IPO has a significantly higher underpricing cost at an average o .37bp.

[24] See table III on at the end of the document.

3.3.1. Conclusion: debt raising costs

68. Regulators must take account of indirect costs when establishing the cost of raising debt. Raising debt through private placement has higher indirect costs than raising debt through public debt issuance. The costs of raising debt on the private placement market are at least 25bppa based on:

    - the AER's 6bppa estimate of underwriting costs in the private placement market; plus

    - Livingston and Zhou's lowest estimate of 19bppa higher cost of underpricing associated with private placement relative to public debt issue.

69. This 25bppa estimate does not include any compensation for other direct costs (eg, internal and external legal costs, road shows etc). Neither does it include the costs of underpricing associated with public debt issue (ie, it only includes the cost of underpricing in private placement *relative* to public issue). Finally, the 19bppa figure is based on the results of Livingston and Zhou's regression analysis across all debt categories – while 42bppa is the estimate if we rely solely on Livingston and Zhou's sample of BBB rated debt

70. If private placement markets are to be used to set the cost of raising debt then the above suggest that at least 25bppa of compensation is required. By contrast, if public debt issues are used to benchmark capital raising costs then we can expect the cost of underpricing to be lower. Based on the work of *Datta, Datta, and Patel (1997)* and Cai, Helwege and Warga (2006), [25] underpricing of BBB+ rated public debt issues is likely to be between 0.00% and 0.15% (or 0 and 4bppa amortised over 5 years at a discount rate of 8%).

71. However, based on the work of Saunders, Palia, and Kim (quoted at paragraph 64 above) the average direct underwriting costs of debt issues over their entire sample was 1.15% or around 29bppa amortised over 5 years at 8%. In the same work Saunders, Palia, and Kim find average underwriting spreads were 0.56% in 2000 (or 14bppa amortised over 5 years at 8%) – where 2000 is the most recent year in their study. This does not include any compensation for other direct costs (eg, prospectus lodgement etc) or the costs of underpricing.

72. The lower of these figures (14bp per annum) is still above the standard regulatory precedent of 12.5bppa for direct debt raising costs (even though it does not include all direct costs). On this basis we do not believe that the AER has properly justified its departure from regulatory precedent of allowing 12.5bppa for the direct costs of issuing corporate bonds in its SP AusNet decision. Indeed, if

[25] Cai, Nianyun, Helwege, Jean and Warga, Arthur, "Underpricing in the Corporate Bond Market" . Review of Financial Studies, Forthcoming Available at SSRN: http://ssrn.com/abstract=1004072

any departure is to be made it appears clear that it should be in the opposite direction.

73. Starting with 14bppa underwriting costs, a further 2bppa can be added to this, consistent with AER precedent, to reflect other direct costs (such as legal costs). This gives an estimate of 16bppa for direct costs. If we also add 3bppa to reflect the costs of underpricing in public debt issues we arrive at an estimate of 19bppa. This is still less than the estimate of the costs of raising debt through private placement (at least 25bppa).

74. A more conservative approach would be to maintain regulatory precedent in setting direct costs at 12.5bppa plus a 3bppa allowance for indirect costs. (Despite the evidence described above that direct costs alone account for 16bppa.) This gives a total cost of raising debt of 15.5bppa.

3.4. Equity raising costs

75. Precisely the same issues arise in relation to estimating the costs of raising equity. We will not repeat the same arguments here except to reiterate that any attempt to measure equity raising costs must capture both direct and indirect costs of equity raising.

76. The AER has previously set the costs of equity raising at 3% based on the advice of the ACG. The ACG advice is based on estimates of the direct costs associated with a small sample of firms who ACG considered comparable with regulated utilities.

> *"ACG selected five companies from the group, three of which are infrastructure providers (Australian Infrastructure Fund, Macquarie Airports and Macquarie Infrastructure Fund), and two property trusts that exhibit stable cash flow characteristics (Bunnings Warehouse Property Trust and Macquarie Office Trust). The median (average) SEO transaction cost for this group was 2.97% (2.92%). This indicates that an SEO cost of 3% may be an appropriate benchmark."* (Page 65 of ACG's 2004 report.)

77. However, ACG does not examine underpricing associated with this sample. This makes this source of information less than fully informative of the total costs of SEOs. Underpricing of SEO issues is an economically important cost. The results from the literature already described above are summarised here:

- Chemmanur, He and Hu (2005)
  - average underwriting costs - not reported.

- average underpricing costs = 3.50%[26]

- Saunders, Palia, and Kim (2003):
  - average underwriting costs = 5.01%
  - average underpricing costs = 2.63%
- Altinkilic and Hansen (2003):
  - Average underwriting costs – not directly reported but states that underpricing costs "*often exceeds half the underwriting syndicate's fee"*
  - average underpricing costs = 3.2% "*which often exceeds half the underwriting syndicate's fee"*
- Chen and Wu (2002)
  - average direct costs = 2.85%
  - average underpricing costs = 6.26%
- Lee Lochead and Ritter (1996)
  - average direct costs = 7.1% on average (4.9% for utilities);
  - average underpricing costs = not reported for SEOs but 12.0% for IPOs.

78. We also note that the use of underpricing in capital raisings has been increasing over time and especially since the early 1990's (see Altinkilic and Hansen (2003)). This has, as theory predicts, been associated with falling underwriting fees. As a result, it would be inappropriate to take estimates of under-pricing costs from earlier periods and combine it with more recent estimates of under-writing cost.

79. Based on the above studies, total underwriting and underpricing costs of raising capital through SEO is in the range of 7.6% (Saunders, Palia and Kim) and 9.1% (Chen and Wu) – with Altinkilic and Hansen's estimate seeming to fall either within or above this range. The range for underpricing costs is from 2.63% to 6.26% with a simple average of 3.9%.

[26] See Table 2 page 38.

80. In addition to these studies described earlier in our paper there is a more recent 2007 paper by Bortolotti, Megginson and Smart[27] which examines underwriting and underpricing costs in both the US and Europe. The authors note the trend for increasing underpricing costs and the interrelationship of this with underwriting costs (noting that prior to the 1990 underpricing was much less common in SEOs). They also note that the US tends to have the lowest underpricing costs in the world. Their focus is on the difference between accelerated transactions (ATs) and other types of issues – explaining the reference to 'ATs' in the below quote.

> *"For the whole sample, we report an average underpricing of slightly less than 3 percent for ATs, while it is 4.8 percent for non-AT transactions. Thus accelerated deals leave less money on the table than other types of SEO. As Table 3 shows, as compared with non-ATs, average underpricing is quite similar when mixed or pure ATs are considered, while some interesting regional differences appear. As Tables IV-VI show, average undepricing in the U.S. is markedly lower than any other region of the world, and especially so as far as non-AT offers are concerned. The U.S. also reveals the lowest difference in underpricing between ATs and non-ATs (78 basis points) while ATs become particularly appealing in comparison to fully marketed offering in Europe, boasting a difference of 4.8 and 4.3 percentage points for mixed and pure ATs, respectively."* (Page 24)

81. The tables referred to in the above quote have the following findings based on SEOs

Table 1: Bortolotti, Megginson and Smart results

	Mean underpricing	Mean underwriting	Total
Global	4.48%	4.58%	9.06%
US	2.54%	2.53%	5.07%
Europe	7.32%	7.07%	14.39%
Rest of the world	6.48%	6.51%	12.99%

82. On this basis, the current 3% estimate by the AER is a significant underestimate. In terms of its derivation this measure only captures underwriting costs – not the underpricing cost. As a consequence, it is methodologically flawed. Adding even the lowest estimate of average underpricing (2.54%) would raise the estimated cost to 5.54%.

[27] Bortolotti, Bernardo, Smart, Scott B. and Megginson, William L., "The Rise of Accelerated Seasoned Equity Underwritings" (March 14, 2006). AFA 2007 Chicago Meetings Paper Available at SSRN: http://ssrn.com/abstract=890640

83. However, performing such an adjustment would be problematic as it would effectively take underwriting costs from one sample (a small sample of Australian firms) and add underpricing from another sample (a large and comprehensive sample of US SEOs gathered by Saunders, Palia and Kim). This would be inconsistent with the main theme of this report which is that:

    a. direct and indirect costs are interdependent; and

    b. therefore, direct and indirect costs should be taken from the same sample.

84. One option would be to adopt an estimate of 5.07% based on the US estimate of Bortolotti, Megginson and Smart. This is the lowest estimate of the sum of underwriting and underpricing that we are aware of in the literature covering the post 1990 time period. However, this approach would be problematic on the basis that the same authors clearly find the US capital market is the lowest cost place to raise equity. Arguably the authors' finding of a total cost of 12.99% in the 'rest of the world' is most relevant for Australia.

85. We recommend adopting an estimate of 7.6%. This is approximately the same result as adding Bortolotti, Megginson and Smart's estimate of average global underpricing (4.5%) to the AER's current estimate of direct costs (3%). It is also consistent with the 7.6% estimate of total costs based on the work of Saunders, Palia and Kim (2003). It is also consistent with Lee Lochead and Ritter (1996) estimate of direct SEO costs for utilities (4.9%) plus the lowest available estimate for underpricing in SEOs (2.5% based on US estimates by Bortolotti *et. al*.).[28]

[28] However, we also note that in very large capital raisings relative to the size of the underlying business the cost of under-pricing tends to rise above the average. This reflects the fact that the larger the relative size of the capital raising the more likely the firms overall success will depend on the success of the project for which capital is being raised. This increases the information costs associated with assessing the value of the new capital being issued and therefore increases the costs of raising that capital. This is consistent with the observation above that under-pricing for IPO's averages around 31%.

4. Estimating Required Equity Raising

86. The methodology for determining how much capital has to be raised follows ACG's methodology submitted on behalf of ElectraNet.[29] In describing this methodology the AER states:

> *"This cash flow approach to determining an allowance for equity raising costs was considered by the AER in its recent Powerlink determination to be reasonable and consistent with the principles of benchmark financing arrangements, subject to some adjustments."* (Page 181 of the ElectraNet draft decision).

87. The 'adjustments' described by the AER appear to relate to the treatment of dividends and the extent to which a firm can costlessly sacrifice dividends in order to increase retained earnings. (See page 100 onwards of the Powerlink final decision). ACG disagreed with the proposed amendments in the AER draft decision in their submission for ElectraNet. They have argued that the AER's assumed dividend distribution policy is inconsistent with the assumed value of imputation credits ("gamma").

> *" ACG believes that a payout ratio in the order of 80% to 90% or more must be assumed for a regulated benchmark entity. If the payout ratio were assumed to be any lower, it would imply lower dividend yields and lower annual equity raisings than the ones calculated below. However, in that case it would be difficult for the AER to propose that a gamma of 0.50 is appropriate to apply in the WACC as an input to the revenue formula. Professors Neville Hathaway and Bob Officer, in one of the key studies that has estimated gamma empirically, have estimated that the 'theta' component of the gamma equation is around 0.50, but on average payouts have been around 70%. In that case, Hathaway and Officer have held that the average firm could experience a gamma of around 0.35 (i.e. payout ratio times theta). This, in turn, implies that a benchmark regulated business would need to have a payout ratio well in excess of 70% to justify a gamma of 0.50."* (Page 7 of the ACG memo to Electranet.)

88. We note that the AER has not responded to ACG's above position on the basis that the ElectraNet draft decision did not require it to (as draft decision capex was lowered to a point where no incremental capital would have to be raised). Given that the AER is yet to respond on this issue we have retained ACG's methodology in whole.

[29] Memorandum dated 29 May 2007 from ACG to ElectraNet entitled "Estimation of ElectraNet's equity raising transaction cost allowance"

89. In addition to the above observations in relation to the tax costs of reducing dividends, we note that it is inconsistent to assume that the non tax costs of reducing the dividend payout ratio are zero. It is clearly *possible* for a business to reduce its dividend payouts to something below the ACG's benchmark estimate of 8%. However, it is unreasonable to assume that doing so will be costless. Changes to a company's dividend policy cannot be simply assumed in order to reduce modelled equity raising costs without also modelling the cost to shareholders of changing the dividend policy.

90. The pecking order theory of capital structure provides a rationale for why a firm can prefer financing new investment via retained earnings in preference to paying a dividend and then raising new capital—the information asymmetry between insiders and outsiders can be such that it can be rational for outsiders to reduce the price at which they are willing to purchase newly issued securities. But there can also be reasons why investors prefer firms to pay dividends and issue new securities. In particular, and as noted by ACG, under Australia's imputation tax system deferring the distribution of dividends also means the deferral of the distribution of franking credits. Low tax-bracket investors such as superannuation funds will have a tax-based preference for firms to distribute dividends and raise new capital rather than fund investment via retained earnings.

91. Moreover, there are sound reasons to believe that a failure to issue new equity will raise the cost of debt financing. Easterbrook (1984)[30] argues that this explains the commonly observed practice of the distribution of dividends to shareholders coupled with the simultaneous issuance of additional shares. The reason provided is that the information provision and external review of the new investment by the new investors and the underwriters reduces agency problems associated with the unchecked reinvestment of firm free-cash flows. Absent this commitment mechanism agency problems would increase and security holders would be less willing to provide capital. Put simply few investors would be willing to provide capital to firm that did not also distribute dividends. The distribution of dividends is a signal that the firm is prudently managed and able to pay a return on capital provided.

92. Finally, requiring a business to finance new equity out of retained earnings is equivalent to requiring investors to accept a more heavily backdated cash-flow (ie, a cash-flow with smaller near term returns and larger returns in the future). This exposes the stock to a greater degree of interest rate risk (ie, the risk that market discount rates will change over time in either direction). This increased risk will have a significant systematic (undiversifiable) component as all assets will be affected by movements in market discount rates. In short, it would be inconsistent to assume the use of retained earnings to raise equity without

[30] Easterbrook, Frank H., 1984, "Two Agency-Cost Explanations of Dividends," The American Economic Review, 74, pp. 650-659.

simultaneously raising the compensation for systematic risk (ie, the equity beta). That is, by assuming that businesses retain earnings to finance capital expenditure the AER would be requiring businesses with large capital programs to take on higher systemic risk than businesses with small capital programs – higher systemic risk for which there is no compensation.

93. The below graphic describes the calculation by Transend of the total equity raising costs required.

EQUITY RAISING COSTS*

Dividend Yield	8.00%				
Seasoned Equity Offering Costs	7.60%				
Nominal Pre-Tax Cost of Debt	9.50%				
Benchmark Gearing	60%				
Benchmark Gamma	50%				
($ million, nominal)	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening RAB	987.3	1,130.7	1,294.0	1,390.6	1,498.8
Closing RAB	1,130.7	1,294.0	1,390.6	1,498.8	1,614.1
Smoothed Revenue	190.5	207.8	226.7	247.2	269.7
Capex	168.3	189.4	119.2	136.1	146.4
Opex	55.1	57.5	58.9	64.1	67.1
Tax Expense	10.8	12.5	13.6	15.6	17.1
Midpoint RAB	1,059.0	1,212.4	1,342.3	1,444.7	1,556.5
Debt Share of RAB	635.4	727.4	805.4	866.8	933.9
Equity Share of RAB	423.6	484.9	536.9	577.9	622.6
Interest	60.4	69.1	76.5	82.4	88.7
Dividend Yield	33.9	38.8	43.0	46.2	49.8
Internal Cashflow	64.3	68.7	77.7	85.2	96.7
Retained Cashflow	30.4	29.9	34.8	38.9	46.9
Equity Requirement for Capex	67.3	75.7	47.7	54.5	58.6
Equity Funding Required	36.9	45.9	12.9	15.5	11.6
Total Equity Funding Required	122.9				
Equity Raising Allowance to Fund Capital Expenditure	9.3				

* *Based on methodology described in ACG,* Estimation of Electranet's Equity Raising Transaction Cost Allowance*, May 2007*

94. If recovered during the 5 year regulatory period this $9.3m allowance would result in the recovery of around $2m per annum. However, we tend to agree with the ACG that the most appropriate way to recover this cost is to amortise the cost of raising equity in perpetuity.

95. Under the latter approach real annual opex costs would be increased by $9.3m*(real WACC).