Report prepared for the

Australian Energy Regulator

A Note on the Costs of Raising Debt and Equity Capital

John C. Handley

University of Melbourne

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1. INTRODUCTION

Pursuant to the National Electricity Rules (NER), the Australian Energy Regulator (AER) is currently undertaking a determination for certain electricity transmission and distribution businesses for the 2009–14 regulatory control period. The relevant electricity transmission businesses are TransGrid and Transend. The relevant electricity distribution businesses are ActewAGL, Country Energy, Energy Australia and Integral Energy. Collectively, these businesses are referred to as the Network Service Providers (NSPs). As part of the process, the AER released a Draft Decision[1] in November 2008 and in relation to which a number of interested parties have since made submissions.

The AER has now sought advice on certain matters relating to proposed debt and equity raising costs. In particular, a number of arguments have been made to justify substantial allowances for debt and equity raising costs within the regulatory proposals currently under assessment by the AER. The arguments essentially fall into the following three categories:

- allowance for indirect costs (debt and equity);
- measurement of direct costs (debt and equity); and
- cash flow assessment to determine required new equity (equity only).

These are now considered in turn.

[1] For example, Australian Energy Regulator (2008)

2. ALLOWANCE FOR INDIRECT COSTS

2.1 Underpricing Costs

The Key Issue

There are two types of costs that may be incurred when a firm raises capital by issuing new securities. The first are direct costs which consist of cash payments by the firm on items directly related to the issue. The second are indirect costs which consist of all other costs. An important example of a direct cost is underwriting (and management) fees paid to underwriters. An important example of an indirect cost is underpricing (or discounting), which represents the discount, to the fair market price, at which the new securities are issued to investors. The key issue concerns the legitimacy of compensation for indirect costs and in particular, compensation for underpricing.

The NSPs have expressed the view that underpricing should be an allowed cost of raising both debt and equity capital. For example, CEG state:

> *"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 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."*[2]

The argument is based on the proposition that direct underwriting costs and indirect underpricing costs are equivalent and since direct costs are allowed by the regulator, then so should indirect costs:

[2] Competition Economists Group (2008a p.10).

> *"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)."*[3]

and further:

> *"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.*
>
> *Both involve identical costs to existing shareholders."*[4]

Similar views have also been expressed by the other consultants acting on behalf of the NSPs.[5]

Although underpricing refers to issuing a security at a discount to the fair market price, there is an important difference in the mechanics of the underpricing of equity securities compared to debt securities. Accordingly, underpricing of equity and underpricing of debt are considered separately in this report.

Underpricing of Equity Capital

The AER has argued that compensation for underpricing costs associated with raising equity capital is not required since it would be inconsistent with the regulatory framework and that rights issues could be used to avoid underpricing costs:

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3 Competition Economists Group (2008a p.10).

4 Competition Economists Group (2008a p.11).

5 For example, Gray (2009) suggests that underpricing is a way of reducing direct marketing, regulatory and compliance costs and *"In summary, underpricing offsets (or is a substitute for) some of the direct costs of the SEO. If the direct costs of the issue is an allowable operating cost, the extent to which underpricing reduces this cost should also be allowable." (p.8)*.

"Even if underpricing for equity raising does occur, the AER considers that:

- *no compensation is required for such costs because it would be inconsistent with the benchmark regulatory framework applied to determine the weighted average cost of capital (WACC)*
- *the efficient benchmark network service provider should be able to raise capital without incurring underpricing costs."*[6]

The suggestion that there may be substantial indirect costs, and in particular, substantial underpricing costs associated with raising capital is not controversial. Indeed, in relation to U.S. style seasoned equity offerings, Eckbo, Masulis and Norli (2007 p. 272) suggest that *"Underpricing is typically the most important indirect flotation costs in a security offering."* It is noted that underpricing costs may be measured in a number of different ways[7] and further, that a reference to underpricing is not a reference to the stock price reaction that may occur on announcement of the security issue.[8] In fact, there is disagreement in the literature as to whether the stock price reaction on announcement of a security issue constitutes an indirect cost of raising capital.[9] So for clarity, the claim by the NSPs for compensation for indirect costs relates to the underpricing of an issue rather than any associated announcement effect:

"when Ofgem refers to "indirect costs" it is not referring to the same concept that CEG has referred to and which is well established in the finance literature. The Smithers and Co report on which Ofgem bases its conclusion only examines the 'announcement effects' associated with capital raising ... We agree with

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6 Australian Energy Regulator (2008 p.190).

7 See for example, Altinkilic and Hansen (2003 p.286), Eckbo, Masulis and Norli (2007 p.272) and also Carlton (2009a p.12).

8 Consistent with the efficient market hypothesis, Altinkilic and Hansen (2003 p.285) suggest that shareholders incorporate predictable discounting in stock prices when equity offers are first announced and so part of the stock price reaction will be attributable to discounting.

9 For example, Eckbo, Masulis and Norli (2007 p.261) state: *"There is some disagreement on whether a security announcement is an expected floatation cost. Some researchers argue that a security offering announcement effect simply conveys negative information about the issuing firm that managers always knew, which would become public at some future date anyway, so why should it represent an issue cost? In contrast other researchers view this information effect as capitalizing the direct and indirect effects of raising new equity capital, including empire building. At this point, we don't have a resolution on this question."* and Ritter (2003 p.263) states: *"How this negative announcement effect should be interpreted is a subject of debate ... If this 2% drop is viewed as a cost of an equity issue, then external equity capital is very expensive. On the other hand, if this 2% drop would have occurred when the basis for management's opinion regarding firm value was disclosed in some other manner, then the downward revaluation is not a cost of the equity issue for long term shareholders."*

> *Ofgem's conclusion that announcement effects are not a good basis for determining the indirect cost of raising equity. If an announcement of equity raising signals to investors an unanticipated cash-flow problem at the firm then any consequent fall in the firm's share price cannot be presumed to be a cost of raising equity."*[10]

The NSPs have argued that underwriting and underpricing are substitutes. This is certainly true when examining alternative ways by which a firm can ensure the success of a capital raising. However, it does not follow that underwriting and underpricing are substitutes for the purposes of determining the appropriate level of compensation for capital raising costs. There are two important differences which need to be taken into account. First, underwriting costs are incurred at the firm level whereas underpricing costs are incurred at the shareholder level. Second, although underwriting costs are (usually) paid to third parties,[11] it is not necessarily the case that underpricing costs are "paid" to third parties. If a firm raises capital by issuing shares at a discount to the current market price then there is a transfer of wealth from the owners of the existing shares to the owners of the new shares i.e. underpricing represents the transfer of wealth (claim on the existing assets of the firm) from the owners of the existing shares to the owners of the new shares. Importantly, the set of investors who take up the new shares may include one or more existing shareholders of the firm, one or more new shareholders to the firm or a combination of both existing and new shareholders. For example, in a recent media release, the Commonwealth Bank of Australia states:

> *"The Commonwealth Bank of Australia (the Group) has successfully completed the accelerated institutional placement of new equity to fund the acquisition of the Bank of Western Australia Limited (BankWest) and St Andrew's Australia Pty Ltd (St Andrew's) ... The placement has raised $2.0 billion of new capital for the Group at a price of $38.00 per share, which results in the issue of 52.6 million new ordinary shares. The placement was oversubscribed and had strong, broad-based support from the Group's existing institutional shareholder base as well as a number of new shareholders."*[12]

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10 Competition Economists Group (2009b p.2-3).

11 A new share issue may be underwritten by one or more existing shareholders of the firm.

12 Commonwealth Bank of Australia (2008).

It is also noted that there are important differences in the capital raising and underwriting practices undertaken in Australia and the U.S. In particular, the typical placement in Australia is not equivalent to the typical firm commitment offering in the U.S. In the former case, the new shares are offered to a small number of (usually institutional) investors and the issue may or may not involve a standby underwriting agreement. In the later case, the underwriter commits to buy the entire issue from the firm and subsequently offer the shares for sale to the public.

In my opinion, underpricing costs associated with raising equity capital (by way of a non pro-rata issue) is not a legitimate cost for compensation for the following reasons:

(i) Impact on Participating Shareholders

An existing shareholder who participates in the issue (referred to here as a Participating Shareholder) will suffer a loss in wealth on his existing shares but will also enjoy a gain in wealth on the new shares taken up. Whether a particular Participating Shareholder incurs a net cost or a net gain depends on: (i) the extent to which the underpricing cost (on the existing shares) is shared with the other existing shareholders – which in turn depends on the proportion of existing shares owned by the shareholder; and (ii) the extent to which the underpricing gain (on the new shares) is shared with the other investors in the issue – which in turn depends on the proportion of new shares taken up by the shareholder.[13]

The critical recognition that existing shareholders may participate in a (non pro-rata) stock issue has effectively been missed by the NSPs. In fact, CEG's entire argument is based on the unreasonable assumption that the new shares are wholly taken up by third parties. Carlton makes a similar assumption in his report, but considers it important enough to warrant a specific mention:

[13] This is why underpricing costs can be avoided in a fully subscribed rights issue.

> *"The discount allows us to measure the wealth transfer cost to existing shareholders. Using the estimates of discounts assumes that all investors in a placement are new investors."*[14]

and again:

> *"As noted earlier, using the discount to estimate the cost assumes all investors in the placement are new. We are not aware of any information on the participation of existing shareholders in placements."*[15]

As Carlton suggests, the amount of publicly available information on share allocations in placements is likely to be limited.[16] Notwithstanding, it is easy to imagine that some (many?) institutional and other large investors would be concerned if a firm's management did not ensure (or at least request) that they be given an opportunity to participate in a proposed placement by a firm.

(ii) Impact on Investors to the Issue

Investors who participate in an issue, whether they are existing shareholders or new investors, enjoy a gain in wealth on the new shares taken up. Compensating the firm for underpricing costs would therefore overcompensate these investors, to the extent that they share in the compensation – and which in turn would depend on the proportion of the firm's total capital that is represented by the new shares. Importantly, this reflects the fact that underpricing costs are not borne by the firm but rather represents a transfer of wealth from one group of investors to another.

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14 Carlton (2009a p.18).

15 Carlton (2009a p.20). Further, on page 35, Carlton describes a placement as *"a small number of large investors are given the opportunity to purchase newly issued shares. Process is operated by an investment bank, and can be effected in a day or overnight. These investors <u>need not</u> be existing shareholders"*. [emphasis added here].

16 Substantial shareholders who participate in placements would be required to lodge an update notice following the issue.

(iii) Impact of Benefits of the Issue

It is well understood that underpricing causes all existing shareholders to suffer a loss in wealth on their existing shares, and further that this is a particularly important matter for existing shareholders who do not participate in the issue (referred to here as a Non-Participating Shareholder).[17] If management acts in the best interests of all existing shareholders (and this is an appropriate assumption to make) then despite the apparent dilution in wealth, it is reasonable to assume further that, at the time of raising the capital, management also expected certain benefits to flow from the issue i.e. management decided to raise the capital because they thought it was a good idea to do so. For example, according to CEG:

> *"Existing shareholders would need to expect to recover both types of costs [underwriting and underpricing] 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."*[18]

Therefore, in the current context, focusing only on the costs of an issue is arguably incomplete. As with the costs of raising capital, in my opinion, one can partition the benefits of raising capital into direct and indirect components. Possible direct benefits include the wealth created from investing the issue proceeds in a positive NPV project or a reduction in agency costs (from better monitoring from institutional investors).[19] Possible indirect benefits include a reduction in expected bankruptcy costs from using the issue proceeds to repay debt and an increase in liquidity from diversifying the investor base. In some (many?) cases the expected benefits from raising capital may be difficult or even impossible to measure, but nonetheless, one can assume that they are real – otherwise we wouldn't observe the level of capital raising that actually occurs.

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17 For example, in its submission to the Australian Securities and Investments Commission (ASIC) regarding the ASIC Consultation Paper 103: Review of Share Purchase Plan Threshold, the Australian Shareholder's Association (ASA) states *"The preferred position of the ASA is for companies to offer all existing shareholders an opportunity to participate in the raising of new capital through a pro-rata rights offer."*

18 Competition Economists Group (2008a p.11).

19 For example, Wruck (1989) argues that, in relation to U.S. style private placements, increasing shareholder concentration often increases shareholder wealth by improving firm efficiency and alignment of interests with outside shareholders, but at times, can adversely effect outside shareholder wealth if instead it increases the likelihood that firm resources will be diverted to private benefits.

(iv) Inconsistency with the Regulatory Framework

Last but not least, the key difficulty with the NSP's claim for compensation for underpricing costs is that it would be inconsistent with the current regulatory framework. This conclusion applies irrespective of the magnitude of the underpricing and irrespective of the extent to which existing shareholders participate in the issue. The fundamental problem with the NSP's argument is a failure to recognise an important implication of the fact that underpricing costs associated with raising equity capital are incurred at the shareholder level rather than the firm level i.e. although underpricing is a cost to shareholders it is not a cost to the firm.

Observed returns based on dividends, capital gains and (the value of) imputation credits are usually described as being expressed on an after company but before personal tax basis. The extent to which a capital raising is wealth dilutive (with respect to the existing shares) is determined by the market and reflected in the post announcement stock price. Accordingly, in the current context, observed returns based on dividends, capital gains and (the value of) imputation credits are more fully described as being expressed on an after company tax, before personal tax, after underpricing costs but before other personal (transactions) costs basis. In other words, observed stock prices already incorporate underpricing costs i.e. are after (the impact of) underpricing costs.

The regulatory framework requires the determination of allowed revenues to the regulated firm to be undertaken on an after company but before personal tax basis. In the current context, this is more fully described as a requirement to be undertaken on an after company tax, before personal tax, after underpricing costs but before other personal (transactions) costs basis. The consistency principle therefore requires that regulatory cash flows be defined on a similar basis. In other words, cash flows should be after company tax, before personal tax, after underpricing costs but before other personal (transactions) costs.

The requirement for cash flows to be after underpricing costs means that no explicit adjustment to the cash flows at the corporate level is necessary. If instead underpricing was allowed as an explicit cost of raising capital – by including the costs of underpricing – then the resultant cash flows would be expressed on a before

underpricing costs basis, which would then be inconsistent with the regulatory framework.

The requirement for cash flows to be before other personal (transactions) costs means that any other personal costs (and benefits) that occur at the shareholder level, but not at the firm level, should not be explicitly taken into account in determining the allowed revenue of the regulated firm.

It is important to note that not making an explicit adjustment to the cash flows for underpricing or other personal transactions costs does not mean that these costs are either ignored or assumed not to exist. Rather, underpricing and other costs are already implicitly taken into account by investors in determining the required rate of return. By way of illustration, we know that shareholders incur personal taxes. But when we undertake the analysis on a before personal tax basis, the consistency principle requires both cash flows and returns to be before personal taxes. Although there is no explicit recognition of personal taxes in the cash flows and no explicit recognition of personal taxes in the returns, personal taxes have not been ignored or assumed away.

Since underpricing reduces observed shareholder returns, then another way of looking at this is to recognise that a claim for compensation for underpricing is tantamount to a claim for a higher rate of return on equity. However, under the regulatory framework the appropriate return on (equity) capital is determined by the CAPM and therefore any allowance for underpricing costs would effectively amount to an increment being added to the CAPM – a position which could only be justified on policy rather than theoretical grounds.

In my opinion, this is exactly the point that the AER was trying to convey in the Draft Decision when it states:

> *"The efficient benchmark firm is also assumed to be able to raise capital by offering a given return (the awarded WACC). This rate of return implicitly includes compensation for all systematic risk. Therefore, the efficient benchmark firm already includes full compensation for all investor risk that requires compensation under the CAPM and an underpricing allowance—an extra form*

of compensation for risk for new investors—is not required. The allowed WACC is already determined to be sufficient to induce new investment, and further compensation is unnecessary and inconsistent with the assumptions of the benchmark regulatory framework, and the use of the capital asset pricing model (CAPM). Importantly, the CAPM (a requirement of the NER) assumes all investors have the same required return. This also implies that there should be no allowance for underpricing for new investment".[20]

It appears that the NSP's consultants have unfortunately misinterpreted this as a suggestion by the AER that underpricing is unnecessary in or inconsistent with a CAPM world (perhaps due to the last two sentences of the above quote).[21] However, as discussed above, the relevance here of the term "inconsistency" relates to appropriate definitions of cash flows and returns for determining allowed revenues rather than relating to the assumptions underlying the CAPM.

The second reason used by the AER in the Draft Decision to argue that compensation for underpricing costs associated with raising equity capital is not required is that rights issues could be used to avoid underpricing costs. It is certainly true that a firm can substantially, although probably not completely, eliminate underpricing costs by offering shares at a deep enough discount and making the offer renounceable (so that shareholders who do not wish to participate in the issue can sell their rights and therefore extract at least some value from the right to take up the new shares). This is acknowledged by CEG:

"With a deeply enough discounted rights issue a firm can avoid both underwriting and (direct) underpricing to new investors."[22]

However, as the NSP's consultants suggest, there are other indirect costs associated with a rights issue which influence the choice of method by which the capital will be raised[23] i.e. avoiding underpricing is not the only reason why a firm would choose to

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20 Australian Energy Regulator (2008 p.191).

21 For example, section 2.3 in Competition Economists Group (2009a), pages 6-7 in Gray (2009) and section 1.2 of Carlton (2009a).

22 Competition Economists Group (2009a p.15).

23 These are discussed in section 2.3.

undertake a rights issue. Rather, the choice involves a balance of a number of considerations including timing, equality (underpricing), certainty of outcome and voting control. Accordingly, I do not believe the second argument used by the AER in the Draft Decision is a strong one but in any event it is not required to justify the AER's position.

On a related matter, the AER suggested in the Draft Decision that in the case of an underwritten capital raising, it may be appropriate to disallow (as a direct cost of raising equity capital), the option component of the underwriting fee on the basis that:

> *"the underwritten firm should expect to get a payoff with a present value equal to the fair value of the option. Therefore, if anything, CEG's argument appears to support the proposition that the current estimate of direct equity issuance costs should be reduced by the fair value of the option component of the underwriting fee. However, the magnitude of such an adjustment, if required, is yet to be resolved. These matters are the subject of further analysis and investigation by the AER."*[24]

The NSP present the counter argument that the above suggestion by the AER is a further reason to allow compensation for underpricing costs, since the underpricing cost can be modelled as the sum of the value of the call option to take up the new shares at the (discounted) offer price less the value of the put option purchased from the underwriter:

> *"Thus the cost to the original shareholders can be expressed as the underwriting fee (the direct cost) plus the net value of the options provided/received by the firm via the underwriting agreement (the indirect cost). The indirect cost is the value of the call option that the firm provides to the underwriter less the value of the put option the underwriter provides to the firm."*[25]

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24 Australian Energy Regulator (2008 p.191).

25 Grundy (2009 p.3).

It is noted that Grundy has based his argument on a typical firm commitment offering in the U.S. rather than on a typical (standby) underwritten placement or rights issue in Australia. Notwithstanding, the presence of a number of technical differences and other complications,[26] it is reasonable to consider the underpricing cost as representing the net value of the options provided/received by the firm. However, as argued above, underpricing costs associated with raising equity capital are not a legitimate cost for compensation and so the AER's suggestion to disallow the option component of the underwriting fee is not appropriate.

In summary, it is my view that underpricing should not be allowed as a cost of raising equity capital.

Underpricing of Debt Capital

The basis for the NSP's view that underpricing should be an allowed cost of raising debt is summarised by CEG as follows:

> *"both debt and equity tends to be issued at prices below the price that they subsequently trade at. In the case of debt, a lower price implies a higher interest rate. The AER sets the cost of debt based on the interest rate prevailing after debt is issued. However, businesses pay interest costs based on the price at which debt is actually issued. The difference is the cost of underpricing and is recognised as such in the finance literature we have identified. Clearly, if all businesses issue debt in the primary market at a lower price than it subsequently trades at in the secondary market then the AER will underestimate interest rate costs actually paid by businesses if it only examines the prices in the secondary market."*[27]

[26] For example, whereas Grundy (2008 p.3) explains that a firm commitment offering in the U.S. means that the firm is short and the underwriter is long a forward contract on the new shares, in the Australian case, the firm is long a put option with the underwriter and short a call option on the shares offered to the new investors. Further, over-allotment options are a common feature of U.S. style firm commitment contracts.

[27] Competition Economists Group (2008a p.44-45).

In contrast, the AER has argued that compensation for underpricing costs associated with raising debt capital is not required since firms are already appropriately fully compensated:

> *"The AER considers these estimates for the debt risk premium and debt issuance costs are the best estimates of the cost of raising public debt currently available. As such, the AER considers that there is no inconsistency or under compensation to firms from using this approach."*[28]

At the outset it is important to recognise that the mechanics of underpricing associated with an issue of debt securities differs from underpricing associated with an issue of equity securities, in a critical way – if a firm issues debt securities at a discount to the fair market price then there is a immediate gain to the new investors (who acquire the securities at a lower price) and an immediate cost to the firm in the form of lower proceeds received from the issue. In other words, unlike with equity securities, the higher the underpricing the lower the proceeds raised at the time of issue.[29] Arguably, one could regard the discount as being equivalent to a cash payment by the firm to new investors who have otherwise subscribed for the securities at fair market value. In this way, underpricing costs associated with raising debt capital are arguably a direct cost rather than an indirect cost, and so prima facie, should be compensated.

As indicated above, CEG correctly argues that the appropriate cost of (new) debt – equivalently the rate of return required by debt investors – is the yield at the time of issue i.e. after taking into account the effect of any underpricing. But in addition, they suggest that the use of secondary market data to estimate the cost of debt will mean that any underpricing of debt securities that occurs at the time of issue will not be picked up (in the observed cost of debt). In this case, the cost of debt will be too low and so underpricing will require specific recognition as a legitimate cost of raising debt capital. So the key issue is whether the AER's approach to estimating the cost of debt for the benchmark regulated firm is appropriate. If it is then, by definition, no compensation

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[28] Australian Energy Regulator (2008 p.186).

[29] For example, assume a firm wishes to raise $90 million (before direct costs) by way of a private placement of ordinary shares. Assume the current share price is $100. If the shares are issued at a 10% discount to the current market price, then the firm will issue 1,000,000 new shares. If instead, the shares are issued at a 5% discount to the current market price, then the firm will issue 947,368 new shares. In both cases, $90 million (before direct costs) is raised.

for underpricing is necessary, otherwise double counting would arise. On the other hand, if the estimated cost of debt is too low (due to underpricing) then an adjustment for underpricing is necessary. In my view, such an adjustment should then be made to the cost of debt rather than as a allowance for capital raising costs.

It is noted that the AER considers that the current approach to estimating the cost of debt is appropriate. It is also noted that there appears to be an inconsistency in the NSP's claim for debt underpricing since they too are happy with the current approach to estimating the cost of debt:

> *"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 ... On the above basis we propose the adoption of the AER approach in this report."*[30]

There is ongoing debate between the NSPs and the AER concerning a number of issues in relation to how best to estimate the underpricing costs of debt including:

- whether data from private or public debt markets is more appropriate;[31]
- whether domestic or foreign (U.S.) debt markets are most appropriate;[32] and
- whether average data relating to investment grade debt (BBB or above) is appropriate for BBB+ debt.[33]

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30 Competition Economists Group (2008a p.7-9).

31 CEG (2009a section 5.3) suggests that: (i) the best estimate of the cost of a public debt issue is data on the costs of public debt issues – data which is summarised in Kim, Palia and Saunders (2003); and (ii) consistency requires that if private placement debt is used to estimate the direct costs of raising debt then the private placement market should also be used to estimate the indirect costs of raising debt.

32 Carlton (2009a p.32-33) suggests that: (i) U.S. debt market underpricing is likely to represent a lower bound for Australian debt market underpricing, given the more liquid nature of the US market; and (ii) U.S. data is relevant as a benchmark firm would be prudent to source debt from a mix of local bond market debt, bank debt and offshore capital markets.

33 CEG (2009a p.45-46) suggest that the available evidence only distinguishes between investment grade and non-investment grade debt and since BBB+ debt "is on the edge of investment grade" then it is reasonable to assume that BBB+ debt will have a higher level of underpricing than the average for investment grade.

There is also ongoing debate concerning the extent of underpricing. The AER suggests that:

> *"CEG has, however, not provided any supporting evidence that BBB+ or even BBB debt is on average issued at a discount (underpriced)."*[34]

whilst CEG states:

> *"If underpricing exists it is a cost that should be compensated – it cannot be assumed away. We have provided evidence in support of a modest level of underpricing for BBB+ bonds." [emphasis added here]*[35]

Importantly, the recent paper by Cai, Helwege and Warga (2007) finds no evidence of any significant underpricing on investment grade seasoned bond offerings in the U.S. corporate bond market.

In summary, assuming allowed revenues are determined using an appropriate estimate of the cost of debt (and noting that both the AER and CEG believe this to be the case), then it is my view that, underpricing should not be allowed as a cost of raising debt capital.

34 Australian Energy Regulator (2008 p.186).
35 Competition Economists group (2009a p.46).

2.2 Indirect Costs of Retained Earnings

The NSPs have expressed the view that there are indirect costs associated with using retained earnings to fund the ongoing capital requirements of the regulated firm and that these costs are legitimate costs for the purposes of compensation. For example, according to CEG:

> *"even if retaining earnings come at a lower cost, it does not follow that it is costless. That is, even if it is reasonable to assume that retained earnings are the most efficient means to fund equity expansions, it does not follow that the AER should provide zero compensation for the costs of raising equity this way."*[36]

and according to Grundy:

> *"The cost of financing with retained earnings is not zero. For a firm optimally distributing dividend while issuing new equity, the marginal cost of financing via retained earnings is identical to the cost of financing via a new equity issue."*[37]

The NSPs present a stylised model to estimate the cost of retained earnings involving the concepts of a "minimum" dividend policy/yield and a "normal" dividend policy/yield whereby the cost of retained earnings is assumed to increase linearly from zero (at the "normal" dividend policy) to an amount equal to the cost of raising external equity capital (at the "minimum" dividend policy).[38]

The suggested indirect costs of using retained earnings to fund ongoing capital requirements are:

(a) reduction in the distribution of imputation of imputation credits;
(b) increase in agency costs;

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36 Competition Economists Group (2009a p.21).
37 Grundy (2009 p.9).
38 See Competition Economists Group (2009a p.33).

(c) 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); and

(d) forcing investors to reinvest in the firm or else incur transactions costs in selling stock to reduce their investment in the firm.[39]

The question of the cost of retained earnings is just another way of examining whether dividend policy is relevant in the presence of market frictions. In fact, Grundy nicely states that:

> *"The optimal dividend policy for a regulated utility can not be determined without reference to the costs imposed on the current clientele if the regulatory regime assumes a lower payout ratio than that which attracted that clientele to the firm."*[40]

So in order to determine the amount of external capital to fund the ongoing capital requirements of the firm, it is necessary to assume some optimal dividend policy of the firm. However, this does not imply that the firm should then be compensated for any indirect costs of using retained earnings. In fact none of the above suggested costs warrant compensation. Specifically, the timing and risk considerations associated with (a) and (c) are already taken into account in the discounting process.[41] Observed returns already incorporate shareholders expectations concerning agency costs and (d) relates to personal (transactions) costs, which as argued in section 2.1 above, should not be explicitly taken into account in determining the allowed revenue of the regulated firm.

In summary, it is my view that indirect costs associated with using retained earnings should not be allowed as a cost of raising equity capital.

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[39] See Competition Economists Group (2009a p.29-30) and Grundy (2009 p.9-10).

[40] Grundy (2009 p.9).

[41] In calculating the NPV of a project, the timing and risk of the expected free cash flows (and/or imputation credits, in the case of the vanilla WACC) are taken into account via the discount rate. So any "cost" arising from deferring the distribution of free cash flow (and/or credits) for one or more periods, say due to a higher retention of earnings in the current period, is automatically taken into account by discounting that cash flow (and/or) credits at the time it is eventually paid out.

2.3 Indirect Costs of a Rights Issue

The question of the indirect costs of a rights issue has arisen in the context of identifying the optimal method of raising (external) equity capital in Australia. As mentioned in section 2.1 above, in response to the AER's suggestion that underpricing can be avoided by undertaking a deep discount rights issue, the NSP's consultants suggest that there are other indirect costs associated with a rights issue which influence the firm's choice of method by which the capital will be raised. They further suggest that the optimal method – defined in terms of lowest total cost – is the placement, on the basis that this is what we observe in practice.

> *"The fact that firms generally prefer external placements over rights issues suggests that the costs of a rights issue are generally higher than the costs of a placement. In other words, the preference for placements suggests, assuming that companies act in the interests of their shareholders, that the cost of placements is, on average, perceived as being lower than the cost of rights issues."*[42]

For further support for the proposition that firms have a preference for placements over rights, the NSP's refer to the study by Chan and Brown (2004) who conclude that: (i) most companies prefer a placement that does not require shareholder agreement to other methods of raising new equity capital; and (ii) "voluntary" rights issues are rare.[43]

The suggested indirect costs of a rights issue are neatly summarised by Gray:

> *"The CEG, Grundy and Carlton reports identify the following costs associated with rights issues:*

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[42] Competition Economists Group (2009a p.17).

[43] On the matter of obtaining shareholder approval (under ASX Listing Rule 7.1), the Australian Stock Exchange (2003 p.10) states: *"ASX recognises that if a transaction is in the best interests of shareholders, it should not be difficult to present a persuasive case and obtain the necessary approval for the transaction. However, the need to obtain shareholder approval imposes direct and opportunity costs. The approval process may prevent the company from pursuing opportunities that require quick decision-making, or where the other party to the transaction is unwilling to accept any risk that investor approval will not be obtained."*

a. *If the existing shareholder takes up the rights, they will (by definition) be over-invested in the firm. If the shareholder wanted a larger proportion of their wealth invested in the firm they would have already done this. Consequently, the investor must either sell some of their existing shares to finance their subscription to the new shares, or borrow and then sell the new shares after the issue. This involves:*
    i. *transaction costs including brokerage and commissions;*
    ii. *liquidity impact costs (the weight of selling pressure depresses prices and increases bid-ask spreads); and*
    iii. *capital gains tax implications being crystallised.*
b. *If the rights are renounceable, the existing shareholders are effectively required to market the issue to new investors. This also imposes costs on them.*
c. *When new shares are priced at a deep discount to the existing share price, the price of the existing shares falls significantly, on average. Consequently, the existing shareholders suffer a loss in the value of their existing shareholding.*
d. *There is a risk of failure. As set out above, there is some chance that the stock price might fall below the offer price during the weeks that are required to complete the rights issue. If this occurs, the issue will fail. The probability of failure can be reduced by greater discounting, but this simply converts the costs to occur via a greater decline in the price of existing shares.*
e. *Rights issues require a greater level of management involvement than do placements.*
f. *On average, only 66% of existing shareholders elect to participate in a rights issue".*[44]

It is noted that the NSPs have not requested compensation for indirect costs associated with rights issues, since they have argued that placements provide the best guide to the

[44] Gray (2009 p.10-11).

cost of raising equity capital.[45] Nonetheless, it is worthwhile to briefly comment on the legitimacy of a claim for compensation for such costs.

In my view, none of the above suggested indirect costs of a rights issue would warrant compensation. Costs (a) and (b) relates to personal (transactions) costs, which as argued in section 2.1 above, should not be explicitly taken into account in determining the allowed revenue of the regulated firm. Cost (c) refers to underpricing whilst costs (d) and (f) can be reduced by underpricing. Cost (e) does not represent an incremental cost to the firm. So whilst these indirect costs are certainly relevant in explaining the rights offer paradox, they are not relevant costs for the purposes of compensation.[46]

Two final comments are considered worthwhile. First, CEG refers to the indirect cost arising from the so called "gun-to-the-head" element of a rights issue:

> *"a deeply discounted rights issue is like a 'gun to the head' of existing shareholders. It can be used to force them to take undertake the functions of an external underwriter – but it is nonsensical to argue that this eliminates the costs of this function. Rather, it simply shifts those costs onto existing shareholders."*[47]

In my opinion, this is a flawed concept since it ignores the fact that a right is a (long) option and by definition, a (long) option cannot rationally have a negative value. In other words, the right allows shareholders to choose to participate in the issue in order to claw back (net of transactions costs) at least some of the loss of wealth that they would otherwise certainly have suffered if they were given no choice to participate from the very start.

Second, whilst placements are a very important feature of Australian capital markets, the proposition that placements are the most common form of capital raising is a matter of contention when one recognises that rights issues and dividend reinvestment plans

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45 Competition Economists Group (2009a p.19).

46 As Eckbo, Masulis and Norli (2007 p.298) explain *"The paradox highlights the fact that a focus on direct issue costs alone fails to adequately explain the near disappearance of the rights offer method for large, publicly traded corporations in the U.S."*.

47 Competition Economists Group (2009a p.50).

are essentially equivalent. This view of equivalence is shared by the Australian Stock Exchange who state:

> *"ASX has granted waivers [with respect to Listing Rule 7.1] in a number of circumstances, as follows … to permit issues of securities under dividend and distribution reinvestment plans (DRPs) without shareholder approval, on the basis that DRPs are analogous to a non-renounceable pro rata issue."*[48]

and also by Carlton:

> *"in estimating the cost of a DRP, it is important to observe that a DRP is effectively a non-renounceable rights issue."*[49]

According to Chan and Brown (2004), Australian listed companies raised $29 billion by rights issues over the 10-year period from 1991 to 2000 compared to $40 billion by placements. An additional $32 billion was raised by dividend reinvestment plans. So although placements exceed rights, this is not the case if one widens the definition of a rights issue to include dividend reinvestment plans. A similar conclusion is drawn from more recent data presented by KPMG.

TABLE 1
Equity Capital Raised by Australian Listed Companies ($billions)

Period	Rights Issues	Placements	DRPs
1991 – 2001 [1]	29.0 *29%*	39.9 *40%*	31.6 *31%*
1999 – 2008 [2]	62.7 *27%*	110.1 *47%*	60.1 *26%*
2004 – 2008 [2]	46.3 *30%*	67.5 *44%*	39.7 *26%*

Notes: 1 – data is from Chan and Brown (2004 p.302) and relates to calendar year ends. 2 – data is from KPMG (2008 p.11) and relates to financial year ends.

48 Australian Stock Exchange (2003 p.12).
49 Carlton (2009a p.32).

In summary, it is my view that indirect costs of a rights issue should not be allowed as a cost of raising equity capital.

2.4 Indirect Costs of a Dividend Reinvestment Plan

Carlton suggests that indirect costs associated with dividend reinvestment plans represent a legitimate cost for compensation:

> *"Shareholders who participate receive shares at a discount, generally in the order of 2.5% - 5%. However shareholders who do not wish to participate either incur costs in subscribing and then selling shares, or are simply diluted; in both cases incurring costs ... This level of participation implies two thirds of shareholders do not participate and are being diluted, and therefore suffering the wealth transfer effect due to the issue discount. This should be considered a true indirect cost of raising new equity."*[50]

However, based on the discussion in the above sections, it is my view that indirect costs of a dividend reinvestment plan should not be allowed as a cost of raising equity capital.

[50] Carlton (2009a p.29-30).

3. MEASUREMENT OF DIRECT COSTS

3.1 Direct Costs of Raising Equity Capital

There are two related issues here. The first concerns the selection of the most appropriate proxy for estimating the direct costs of raising equity capital. The second concerns the actual estimate.

An important source of information in determining an appropriate estimate of the direct costs of raising equity capital is the 2004 study by ACG, in which they conclude:

> *"In order to derive a benchmark for SEO costs, we analysed data for SEOs undertaken by 28 companies, with market capitalisations greater than $200 million, between 2001 and 2004. The data indicated an overall median (average) SEO cost of 2.97% (3.05%) of gross proceeds. We selected four companies from the group, two of which are infrastructure providers (Australian Infrastructure Fund 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 2.93% (2.97%). We conclude that an SEO transaction cost benchmark of 3% is appropriate for regulated infrastructure companies."*[51]

Four items require specific mention. First, only Australian SEOs are included in the sample.[52] Second, the ACG definition of an SEO includes share purchase plans, private placements, rights issues and public offers but not dividend reinvestment plans.[53] Third, the sample is dominated by rights issues undertaken for the purposes of funding an acquisition or new investment and fourth, ACG suggests that whilst the 3% is

[51] Allen Consulting Group (2004 p.xiii).

[52] Given its ready availability, it is my view that only Australian data is relevant for the purposes of estimating the direct costs of raising equity capital. Accordingly, I do not agree with the claim by CEG (2009b) that the allowance contained in the 2006 OFGEM decision is relevant to the current decision.

[53] Allen Consulting Group (2004 p.62).

appropriate it *"should be viewed as an upper limit of the likely cost of an SEO associated with capital expenditure within existing regulated activities."*[54]

CEG argue that placements provide the best guide to the cost of raising equity capital on the basis that they are the most commonly used method and that the costs are more transparent – although this second reason likely refers to the measurement of indirect rather than direct costs. Nonetheless, CEG considers the ACG estimate of direct costs to be appropriate:

> *"For the purpose of this report 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%)."*[55]

and:

> *"Accepting the 3% estimate of direct costs as accurate …"* [56]

The AER also considers the ACG study to be a reasonable basis upon which to estimate the direct costs of raising equity capital and have subsequently updated the estimate from 3% to 2.75%.[57]

In relation to direct costs associated with dividend reinvestment plans (and retained earnings), ACG suggest the appropriate estimate is zero[58] on the basis that:

> *"Companies will often underwrite a DRP with a broker since there may be only a 30% take–up rate on the DRP. Initially fees of 1%–2% were applied for this service, however competition among brokers has reduced this to zero, with*

54 Allen Consulting Group (2004 p.65).
55 Competition Economists Group (2008a p.25).
56 Competition Economists Group (2008b p.23).
57 Australian Energy Regulator (2008 p.197).
58 Allen Consulting Group (2004 p.xii).

brokers earning their fee from placing stock at less that the standard DRP price discount applied by the firm."[59]

However according to Carlton (2009a p.30) there is anecdotal evidence which suggests that underwriting fees of around 2.5% are now being charged.

A key element of CEG's argument concerning the appropriate approach to estimating (direct and indirect) costs of equity capital is that:

"The AER should have regard to what firm's actually do when raising equity."[60]

This is a sensible. However, whilst CEG present this in the context of arguing in favour of using placements instead of rights issue, in my view, there is no reason to exclude the role played by dividend reinvestment plans. In other words, based on the data set out in Table 1 concerning the actual capital raising activity of Australian listed firms, in my view, it is appropriate to assume that around 30% of new equity would be raised by way of a dividend reinvestment plan.

Making an allowance for a dividend reinvestment plan is supported by Carlton:

"In practice the issuing entity would also utilise a Dividend Reinvestment Plan and possibly a Share Purchase Plan. These are often regarded as low cost equity, and in the case of a benchmark entity with similar characteristics to Energy Australia a Dividend Reinvestment Plan ("DRP") would be expected to operate".[61]

In my view, a reasonable estimate of the direct costs of raising (external) equity capital is in the range 2–3% of the amount raised. This estimate is based on three assumptions: (i) the direct cost of raising equity capital from placements and other sources (other than by way of a dividend reinvestment plan) is in the range 2.75–3%; (ii) the direct cost of

59 Allen Consulting group (2004 p.63).
60 Competition Economists Group (2009a p.19).
61 Carlton (2009a p.29).

raising equity capital by way of a dividend reinvestment plan is in the range 0–2.5%;[62] and (iii) 30% of new external equity capital is raised using a dividend reinvestment plan.[63] In other words, this estimate represents a weighted average of the costs of a reasonable set of alternative sources of external equity capital. For clarity, the appropriate equity base to which this cost should then be applied is the total amount of new external equity capital required each period to fund the ongoing capital requirements of the firm.[64]

3.2 Direct Costs of Raising Debt Capital

In the Draft Decision, the AER suggests the appropriate estimate of the direct costs of raising debt capital is between 8.0 and 10.4 basis points per annum (bbpa), depending on the number of issues required to (notionally) refinance the firm's debt at the start of the regulatory period.[65] The AER have arrived at this (updated) estimate after following the methodology contained in the 2004 study by ACG.[66] It is noted that the variable nature of the allowance is solely attributable to company credit rating fees and that ACG considered Bloomberg data for international bond issues by Australian firms, to be a reasonable proxy for estimating underwriting fees in the Australian bond market:

> *"ACG's analysis indicates that the only objective source of data for gross underwriting fees charged by investment banks in bond issues by Australian companies is that provided by the Bloomberg service. These data are only available for Australian companies accessing the Euro–dollar and US private placement markets or for Australian MTN issues jointly sold in Australia and these international markets. Given the extent of international competition in bond markets and the fact that these markets should equilibrate over time, ACG*

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62 It is recommended that Carlton's claim that 2.5% underwriting fees on DRPs are now being charged should be investigated further.

63 The resultant range of 1.92% to 2.85% has been rounded to 2% to 3%.

64 An alternative yet equivalent approach to using a weighted average cost would be to apply separate direct costs (i.e. the cost relating to dividend reinvestment plans and the cost relating to placements and other sources) to the corresponding amounts of capital required each period (i.e. the amount raised by way of divided reinvestment plans and the amount raised by placements and other sources).

65 Australian Energy Regulator (2008 p.188).

66 Allen Consulting Group (2004).

believes that this benchmark is a reasonable proxy for Australian bond underwriting fees."[67]

In contrast, CEG suggests the appropriate estimate of the direct costs of raising debt capital is 12.5 bbpa.[68]

There is ongoing debate between the CEG and the AER concerning a number of issues in relation to how best to estimate the direct costs of raising debt capital including:

- whether data from private or public debt markets is more appropriate;[69]
- how to take account of current market conditions;[70]
- whether the data sample on which an estimate is based must contain regulated utilities;[71] and
- the interpretation of certain empirical studies.[72]

In my opinion, much of this discussion is moot. The difference in the proposed estimates is 4-5 bppa or 0.04-0.05% per annum. Notwithstanding the substantial size of the regulatory capital base to which the estimated cost is applied, it is my view that arguments concerning matters of this magnitude involve spurious accuracy. It is important to recognise that estimation is inherently imprecise. By way of comparison, it is worthwhile mentioning that in relation to estimating the expected market risk premium, Officer and Bishop are of the view that the use of a decimal point involves spurious accuracy i.e. their current estimate of the expected market risk premium is

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67 Allen Consulting Group (2004 p.53).

68 Competition Economists Group (2009a p.35). It is noted that CEG suggest the appropriate estimate of direct and indirect cost of debt is 15.5 bbpa (consisting of 12.5 bbpa for direct costs and 3 bppa for indirect costs) but have also suggested on page 2 of the same report that *"Our recommendation of 15.5bppa is supported on the basis of direct costs alone."*

69 As previously noted, this issue has also arisen in the debate concerning the estimation of debt underpricing costs.

70 CEG (2009a p.42) suggests that the cost of issuing public debt is likely to be at historically high levels – suggesting an estimate from the top end of an historical range is appropriate.

71 CEG (2009a p.43) notes that whilst the Kim, Palia and Saunders (2003) study on which they rely does not contain any regulated utilities in the sample, this does not mean the results are irrelevant given the assumed (high) gearing and (low) credit rating of the benchmark firm.

72 CEG (2009a p.39) suggest the best use of the study by Livingston and Zhou (2002) is to provide a direct estimate of the underwriting cost of publicly issued debt (by a utility with 10 year maturity) in the U.S., which they calculate to be 61.6 to 67.2 bp (over 10 years). It is noted that this translates, using the AER's simple approach to annualisation, to a cost of 6.2 to 6.7 bppa. In comparison, the AER has used an estimate 6 bppa in the Draft Decision (Australian Energy Regulator (2008 p.188)).

expressed to the nearest percentage point, per annum.[73] Notwithstanding the expected market risk premium is highly variable, it too (through the WACC) is applied to a substantial capital base in order to determine the allowed revenues. Now to be clear, it is not suggested here that the estimate of the direct cost of raising debt capital should be rounded to the nearest percentage point. Rather, I simply wish to highlight that arguments to finess the estimate of the debt cost parameter in terms of basis points (and in fact the purported finessing is in terms of $1/10^{th}$ of a basis point) implies a level of precision that is one hundred times (one thousand times) better than what Officer and Bishop suggest in relation to one of the more significant parameters used in the determination of allowed revenues.

For similar reasons, I regard the suggestions by CEG that: (i) estimates of debt costs should be amortised over the life of the bond (rather than simply divided by the life of the bond); and (ii) that the 2004 estimates of the non-underwriting components of the estimated debt costs should be escalated for inflation since 2004, would inject spurious accuracy in the allowance for debt capital raising costs.[74]

In summary, it is my view that a reasonable estimate of the direct costs of raising debt capital is in the range 8-12 bppa.

[73] See Officer and Bishop (2009 p.10).
[74] Competition Economists Group (2009a p.47-49).

4. CASH FLOW MODELLING OF NEW EQUITY CONTRIBUTIONS

The current approach used by the AER to determine the allowance for the costs of raising equity capital, is described in the Draft Decision as follows:

> *"The methodology applied to determine benchmark equity raising costs is summarised by the following steps:*
>
> - *revenues less expenses (including opex, interest payments and tax) provides the internal cash flow*
> - *internal cash flow less dividends to shareholders provides the retained cash flow*
> - *retained cash flow is used to fund the equity component of capex*
> - *unused retained cash flow, consistent with the pecking order theory, is carried over to the following year to fund the equity component of capex*
> - *equity component of capex less retained earnings (where it is insufficient) indicates the additional equity required*
> - *equity raising cost is then calculated by multiplying the additional equity required with the assumed benchmark transaction cost for subsequent equity issues (discussed below)."*[75]

The NSP's suggest that there are two problems with the above approach. First, no allowance is made for the repayment of debt when determining the amount of new equity capital required each period and second, the assumed dividend yield is too low and in particular, is inappropriately based on accounting rather than economic profits and is insufficient to enable the firm to fully payout all imputation credits generated each period. It is argued that the effect of both factors is to understate the amount of equity capital required to be raised each period and therefore understate the allowed compensation for the costs of raising equity capital

The assumptions concerning: (i) the amount of debt to be repaid each period; and (ii) the dividend paid each period are "arbitrary" in the sense that they are simply inputs to

[75] Australian Energy Regulator (2008 p.192).

the modelling process. However, the key issue is to ensure that any assumptions made here are consistent with the overall regulatory framework.

In relation to the first modelling assumption, the NSPs suggest that the current AER approach is inconsistent with the assumed gearing ratio of the regulated firm. For example, CEG states:

> *"In order to maintain a consistent 60% gearing assumption, the benchmark cash-flow analysis must include the assumption that cash outflow of 60% of regulatory return of capital (that is depreciation of the RAB) is used to pay back principal on existing debt."*[76]

In response, KPMG has proposed the following solution:

> *"This assumption raises an important question – how are repayments of capital to debt providers serviced? This is a critical question since the AER's calculations of required revenue assume a benchmark business that is hypothetically geared at 60% of the value of its regulatory asset base ('RAB'). In order to maintain this level of gearing as a percentage of RAB, year to year movements in the RAB must be reflected in the corresponding movement in debt levels, scaled to 60%. The value of the RAB changes from year to year as a result of: 1 capex; 2 depreciation; and 3 inflation. Therefore to ensure that debt levels are fixed at 60% of RAB, it is necessary for debt balances to also: 1 increase by 60% of capex; 2 decrease by 60% of depreciation; and 3 increase to account for the impact of inflation. Similar movements in relation to equity capital are required to maintain the assumption that equity as a ratio of the RAB is 40%."*[77]

In relation to the second modelling assumption, the NSPs suggest that the current AER approach is inconsistent with the regulatory framework from a valuation point of view. For example, Carlton states:

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[76] Competition Economists group (2009a p.23).
[77] KPMG (2009 p.16).

> *"There is a clear discrepancy between the two forecasts. Both analyses demonstrate that dividend payments resulting from the 70% payout policy assumption are insufficient to ensure that available imputation credits are distributed to shareholders. Equity holders receive imputation credits worth $292 million for the purposes of calculating the return to equity holders (Table 1), but only receive imputation credits worth $130 million when calculating new equity funding requirements (Table 2). In this latter case it is therefore not possible for equity holders to receive the required equity return, as there is a shortfall of $162 million in the value of imputation credits received by equity holders ... This indicates that 70% payout policy is therefore fundamentally inconsistent with the valuation parameters used by the AER. The forecast equity requirements resulting from this methodology are therefore inconsistent with the valuation parameters used by the AER."*[78]

In a previous report to the AER, I expressed the view that:

> *"for valuation purposes, it is appropriate to assume the distribution ratio is equal to one. In other words, the appropriate assumption is a 100% distribution of a firm's free cash flow and therefore a 100% distribution of (associated) imputation credits"*[79]

To be clear, it is not suggested here that firms actually payout 100% of their free cash flow each period but rather, that this is the standard assumption for valuation purposes. In particular, the assumption of a 100% payout of free cash flow is consistent with both the standard WACC valuation framework (within a classical tax environment) due to Miller and Modigliani (1961) and the influential WACC framework (within an imputation tax environment) developed by Officer (1994).

In my opinion, both issues raised by the NSPs concerning the AER's cash flow modelling of new equity requirements are valid and accordingly, the AER should make appropriate adjustments to give effect to their comments. Specifically, the modelling should be consistent with the assumption that the firm maintains the benchmark gearing

78 Carlton (2009b p.5).
79 Handley (2008 p.4).

ratio at the end of each period and dividend policy provides for the full distribution of imputation credits each period.

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