

COST OF RAISING EQUITY¹

INTRODUCTION

Current regulatory models employ the following hierarchy of sources for new finance during a price control:

1. **Internal equity** – A company initially at notional gearing first uses retained profits subject to the constraint that dividends pay a fixed yield.
2. **New debt** – Any further financing requirements are from new debt, subject to the constraint that the resulting financial structure is consistent with an investment grade credit rating.
3. **External equity** – Any further financing requirements come from raising external equity, for which an allowance is given for the cost of raising equity.

The above hierarchy highlights the key variables that lie behind any allowance for the cost of raising equity:

- [A] the calculation of the quantum of finance required;
- [B] the assumed dividend yield;
- [C] the cut-off point beyond which no further new debt can be assumed; and
- [D] the allowed cost of raising equity percentage (CORE).

This note focuses on the last of these variables and how it can be applied in practice within this framework.

THE CORE

The CORE is a difficult value to establish for a number of reasons:

- it is usually unobserved;
- it varies by country, invalidating international evidence;²
- it varies with the amount of equity being raised and company size;³

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² See for example Oxera (2006) “The cost of raising capital: an international comparison” http://www.oxera.com/cmsDocuments/Agenda_July%2006/Cost%20of%20raising%20capital.pdf or Torstila, S. (2003) “The Clustering of IPO Gross Spreads: International Evidence”, Journal of Financial and Quantitative Analysis http://www.hse.fi/NR/rdonlyres/8C71FDD8-9BF0-41A3-812F-06E73FE1B009/0/Torstila_TheClusteringofIPOGrossSpreadsInternationalEvidence_compressed.pdf

- it varies with the means by which equity is being raised;⁴
- it varies based on whether a company is regulated or not;⁵ and
- it varies with stock market liquidity.⁶

Nonetheless it is a real cost for companies, and care should be taken to ensure that an appropriate allowance is established.

The starting point for any investigation of its value is that it has two elements:

- direct costs; and
- indirect costs.

Direct costs refer to the costs incurred through transaction advisors, banking fees, lawyers etc. These are undeniable and measurable, but rarely observed.

Indirect costs are more controversial but there is reason to believe that these can be ignored for regulated utilities. Indirect costs are those which are realised as a result of raising equity. This is largely the revaluation of existing securities issued by the company as a result of new information released during and implied by an equity raising exercise – this is not the impact of under-pricing of the secondary offer since existing shareholders will have rights that make any under-pricing a zero sum game for them. Rather this is the impact on the overall share price if a reduction greater than the rights issue discount is observed. These are important for some companies but there are reasons to believe that this effect is negligible for regulated utilities. Smithers & Co argue that these effects are vanishingly small for utilities on the basis that equity issues do not result in any new information that should result in the revaluation of existing securities for two reasons:

- utility companies issue equity as the result of regulatory pressures rather than insider views on their market value; and
- it is not clear that utility managers have much insider information valuable to investors.

This position has been supported by the recent Provisional Findings Report published by the Competition Commission with respect to Bristol Water (published June 18th).

Therefore direct costs are the important factor to consider for utilities. While there may be some indirect costs, the fact that these are low may in fact result in lower direct costs, as it becomes

³ Hennessy & Whited (2007) "How Costly Is External Financing? Evidence from a Structural Estimation," <http://faculty.haas.berkeley.edu/hennessy/papers/STRUCTUREJF.pdf>

⁴ Arnold (2005), Corporate Financial Management, 3rd ed., FT Prentice Hall

⁵ Smithers & Co (2006) "Report on the cost of capital" http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR4/ConsultantsReports/Documents1/15576-smithers_co.pdf

⁶ Butler et al. (2005) "Stock Market Liquidity and the Cost of Issuing Equity" http://www.ruf.rice.edu/~grullon/pub/JFQA_2005.pdf

less expensive to underwrite and market new issues. This may mean that the overall cost for these companies may in fact be lower than the estimated direct cost in other industries.⁷

IS FIVE PERCENT THE RIGHT NUMBER?

An explicit allowed CORE has been applied in two UK regulatory determinations to date, both of which selected five percent as the appropriate level:

- Ofgem’s TPCR4; and
- Ofwat’s PR09.

Ofgem’s decision appears to be based on the Smithers & Co cost of capital report which provided an estimated CORE range of 5-12 percent.⁸ Ofgem selected the bottom of this range, which was consistent with the estimated cost for large companies. Ofwat’s decision appears to be based on the NERA cost of capital report for Water UK.⁹

NERA’s estimate is based on evidence from water company stakeholder consultations, to which we are not party. The Smithers & Co report uses a range of evidence, summarised in Table 1 below. Table 1 also compiles a number of other sources of evidence on the CORE.

Table 1: Empirical evidence on the cost of raising equity

Source	Country	Notes	CORE estimate
Sources for Smithers & Co			
Hennessy and Whited (2006)	USA	Econometric study of US data from 1988 to 2001	Large company 5% for first \$1m, 0.03% thereafter
Arnold (2005)	UK	LSE main list, AIM	5 – 12 %
Zervos (2004)	Chile	\$100m equity issuance	1.64 %
	Mexico		3.93 %
	Brazil		4.39 %
Other sources			
NERA (2009)	UK	“about 3-4% underwriting fees and 1-2% other costs such as legal and accounting charges”	5 %
Arnold (2008) ¹⁰	UK	LSE main list, AIM £20m	5.1 – 11.1 %

⁷ Smithers & Co (2006)

⁸ Ibid.

⁹ NERA (2009) “Cost of Capital for PR09: A Final Report for Water UK”
http://www.nera.com/image/PUB_Cost_of_Capital_PR09_Jan2009_update.pdf

¹⁰ Arnold (2005), Corporate Financial Management, 4th ed., FT Prentice Hall

Source	Country	Notes	CORE estimate
OFT ¹¹	UK	Total UK average for 2009	2.9 %
Allen Consulting Group (2004) ¹²	Australia	Median for four regulated infrastructure companies	3 %
CEG (2008) ¹³	Australia	“Bortolotti, Megginson and Smart’s estimate of average global underpricing (4.5%) to the AER’s current estimate of direct costs (3%)”	7.6 %
Handley (2009) ¹⁴	Australia	Direct cost of 2.75-3 but 30% weighting on dividend reinvestment costs of 0.2.5%	2-3 %

An important factor in establishing the CORE is its specificity to circumstances. This is evident in Smithers & Co’s selection of a range matching that of their only UK source. Consequently the greatest weighting must be placed on UK estimates, and those for utilities in particular. Therefore despite its opacity, the CORE found by NERA provides some of the most useful evidence and five percent may indeed be the right number (at least for initial determinations).

It may be worth Ofgem commissioning a new study into the CORE. This could take the form of company consultations, or more credibly, an econometric study along the lines of the Hennessy and Whited (2006) investigation. This could also help to establish a basis on which the CORE could be adjusted for factors such as stock market liquidity.

It is also likely that useful evidence may come out of the Office of fair Trading (OFT) market study into equity underwriting and associated services. The OFT previously investigated the market three times in the 1990s. The subsequent 1999 Monopolies and Mergers Commission report on underwriting services for share offers provided useful evidence on the fees charged for transactions. Figure 1 below is drawn from this report, highlighting the relationship between fees incurred and size of issuance. This kind of evidence would be useful for Ofgem to set its CORE to reflect the economies of scale in equity raising.

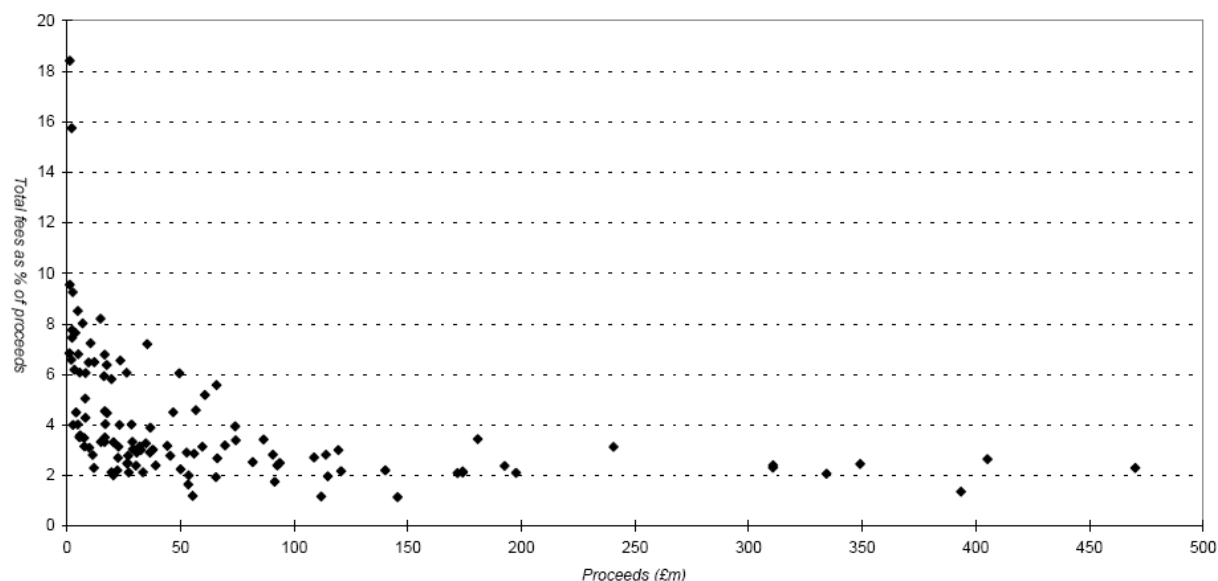
¹¹ OFT (2010) “Equity Underwriting market study: scoping document”
http://www.offt.gov.uk/shared_offt/market-studies/scoping-document.pdf

¹² Allen Consulting Group (2004) “Debt and Equity Raising Transactions Costs”
<http://www.aer.gov.au/content/item.phtml?itemId=681036&nodeId=cf20db57985ad638309c4f746aa430d6&fn=Debt%20and%20equity%20raising%20transaction%20costs.%20A%20report%20by%20ACG%20%28December%202004%29.pdf>

¹³ CEG (2008) “Nominal risk free rate, debt risk premium and debt and equity raising costs for TransGrid”
<http://www.aer.gov.au/content/item.phtml?itemId=720407&nodeId=ef711e246d43b9460edc979812e41a0e&fn=Appendix%20O%20-%20CEG%20report%20-%20Debt%20and%20Equity%20Raising%20Costs.pdf>

¹⁴ Handley (2009) “A Note on the Costs of Raising Debt and Equity Capital”
<http://www.aer.gov.au/content/item.phtml?itemId=728114&nodeId=0999f3e8fcc48ed375f38ce6ffa7fe7e&fn=Handley%20report%20on%20debt%20and%20equity%20raising%20costs%20%28April%202009%29.pdf>

Figure 1: Total (advisory and underwriting) fees in rights issues 1995-1997



Source: MMC¹⁵

The conclusion is therefore that without further primary evidence, it is not possible to provide an improvement to the current UK utility CORE estimate of five percent (although noting that for larger companies this may be an over-statement and the figures quoted recently by the OFT closer to three percent may be more appropriate but this must be subject to further verification). We recommend further primary research in this area or use of new analysis by the OFT when it becomes available. When there is a sufficient evidence base for this assessment, further detail can be considered for the CORE, particularly regarding the size of and means by which equity is raised. Until that time, retaining the regulatory precedent of five percent would seem to be appropriate.

Box 1: CORE in Australia

AER's distribution and transmission price controls from 2009-14 currently allow companies to recover an allowed CORE. Their calculation has three elements:

- Dividend/imputation payout ratio 70 percent
- Benchmark Secondary Equity Offering raising cost 2.75 percent
- Benchmark Dividend Retention Policy cost 1.00 percent

This gives companies an allowed CORE of 2.23%. This approach is different to that taken by UK regulators to date in as far as that the CORE is discounted by the assumption that some of the equity raised can come from reducing dividend yields.

¹⁵ MMC (1999) "Underwriting services for share offers A report on the supply in the UK of underwriting services for share offers"

http://www.competition-commission.org.uk/rep_pub/reports/1999/fulltext/424c4.pdf

Box 2: National Grid Rights Issue Title

National Grid announced a £3.2bn rights issue (net of expenses) on 20th May 2010, the largest amount of equity ever raised by a UK utility. This was announced as an issue on the basis of two new ordinary shares for every existing five shares. The exercise was fully underwritten and incurred direct expenses of £111m. The rights issue was taken up by 94.2 percent of National Grid's shareholders.

National Grid's declared intention for the equity raising exercise is to strengthen their balance sheet to put it in a position to maintain its 'A' target credit rating as it ramps up its capex programme over the next five years. Steve Holliday, National Grid's CEO said that all of the new equity would be going to strengthen its UK transmission assets. The rights issue is equivalent to over a quarter of their UK transmission assets but obviously smaller when compared to the worldwide operations of the group.

Table 2: National Grid Assets

Asset group	Date	Value
UK Electricity Transmission RAV	31/03/2010	£7,500m
UK Gas Transmission RAV	31/03/2010	£4,533m
UK Transmission RAV	31/03/2010	£12,033m
UK Gas Distribution RAV	31/03/2010	£7,001m
Total UK RAV	31/03/2010	£19,034m
National Grid US rate base	31/12/2009	US\$14,924m

Source: National Grid¹⁶

National Grid's CORE

Here direct costs are clear as National Grid have disclosed expenses of £111m, 3.4 percent of all equity raised. Indirect costs are less clear. As reported by several equity analysts, National Grid's announcement of the rights issue was unexpected and shocked the financial markets for three reasons:

- they were unaware that a rights issue was required (especially given previous statements by the company);
- they were surprised by the large size of the rights issue; and
- it is an expensive time to raise equity given current financial markets.

While National Grid's value took a hit, we do not believe this should be the case for other regulated utilities, especially if the regulator sets out a framework where they can be anticipated.

Post announcement of the rights issue, early analyst reports currently show a premium of National Grid's estimated equity value to its transmission RAV. This also suggests that the cost of capital may currently be generous for transmission assets.

¹⁶ National Grid (2010) "2 for 5 underwritten Rights Issue of 990,439,017 New Shares at 335 pence per Share" http://sites.cantos.com/national-grid/10/announcement-may2010/public/content/other/u08763_d%20Final_IM.pdf

APPLYING A CORE

The introduction to this note highlights four variables that define the allowed cost of raising equity. The final three listed must be defined at the start of the price control period. The only variable to be revealed over time is the calculation of the quantum of finance required. The primary determinant of this variable is allowed capex, which may vary under a number of mechanisms.

The question at TPCR4 was whether to provide this allowance during the current price control when this first variable is still uncertain, or when it is known at the end of the period, and then recovered over the following price control period.

There were therefore three options, an:

1. ex-post allowance;
2. ex-ante allowance with no adjustment to ex-post values; or
3. ex-ante allowance with adjustment to ex-post values.

At the “Updated Proposals” stage,¹⁷ Ofgem appeared to be backing an ex-post approach on the basis that it “may be more practicable.” However they were persuaded by transmission companies that the increased regulatory uncertainty from the ex-post approach would deter equity investors.”¹⁸ Ofgem’s Final proposals¹⁹ give full details of how these adjustments are made. The basic approach was:

- an ex-ante allowance based on the modelled need for new equity (including agreed baseline capex, TIRG and half the proposed additional capex as contained in the final business plan); and
- an ex-post “true-up” based on re-running the model but with actual capex.

So, this approach was a hybrid which tried to retain some of the incentives of an ex-ante approach but also allows the company protection to take decisions about how to fund while not unduly penalising customers through the capex related true-up.

Table 2 provides an assessment of each of these options. These remain the most pertinent options for Ofgem in the current framework.

¹⁷ Ofgem (2006) “Transmission Price Control Review: Updated Proposals”
http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR4/ConsultationDecisionsResponses/Documents/1/15578-170_06.pdf

¹⁸ Ofgem (2006) “Transmission Price Control Review: Final Proposals”
http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR4/ConsultationDecisionsResponses/Documents/1/16342-20061201_TPCR%20Final%20Proposals_in_v71%20%20Final.pdf

¹⁹ Ibid. pp106-106

Table 2: Ex-post – ex-ante comparison

	Option 1 Ex-post allowance	Option 2 Ex-ante allowance with no adjustment to ex-post values	Option 3 Ex-ante allowance with adjustment to ex-post values
Cash flow	Company cannot recover costs incurred until the following price control	Cost are recovered in line with forecasts and are adjusted to be recovered in whole, but the company may lose out if the forecast financing requirement is too low	Cost are recovered in line with forecasts and are adjusted to be recovered in whole
Certainty	There may be scope for the regulator to change parameters B, C and D, but at the cost of lost credibility.	There is regulatory certainty, but there may be a mismatch between actual costs and those allowed	Regulatory certainty is highest, but not much stronger (or stronger at all) if the regulator is credible
Incentive properties	There may be an interaction with the timing of capex if there is a mismatch between the actual cost of raising new equity finance and the allowed cost. Clearly acts against cutting dividends as a cheap way of raising equity.	Only companies that are expected to be risky get the allowance – may provide an incentive to look risky in some cases	Same as Option 1
Simplicity	Simplest as does not require forecasts	Simple as it does not require adjustments to be calculated	Requires running the model twice, but should not be too onerous (?)

Ofwat seem to be taking a variant of the third route with their application of a CORE at PR09, which is to provide an ex-ante allowance for certain companies that is clawed back if actual equity is not raised in the price control period. While this is a form of ex-post adjustment and true-up like Ofgem’s TCPR4, it is a very different approach in terms of incentives.

Ofwat’s approach has the large benefit of a strong incentive to raise equity. However it could constitute excessive interference in the capital structure by being so direct. It may also encourage companies to inefficiently raise expensive external equity when cheaper internal funds exist. Further downsides of this approach are that it does not allow for unanticipated costs of equity in as far as that only companies modelled to need injections can draw on this benefit.

While Ofwat’s strong emphasis on raising equity is worthy, it is unclear that Ofgem should take such a strong approach should it wish companies to take responsibility for their financial

structures.²⁰ This approach is based on a notional gearing level and financial ratio tests set by the regulator, which retains some responsibility for the regulator. However, if Ofgem wished to move away from this altogether, they would have to set the allowance on an ex-post basis in a manner that allowed for costs to be recovered based on actual equity raised – it is not clear that is desirable to do that. Continuing with an appropriately structured/incentivised approach based on Option 3 above is our preferred way forward. However it is essential to have clarity regarding how adjustments based on realised values will be applied.

CONCLUSIONS

This note builds on existing regulatory approaches to allowing a within-period CORE. Evidence on the impact of a CORE is currently thin on the ground partly as the debate has tended to focus on the size of equity injections modelled (as in the current CC Bristol Water case) and whether equity is the right response at all.

Key issues that have to be considered when thinking about the CORE is:

- whether just direct or both direct and indirect costs are to be allowed;
- what level of allowance is appropriate;
- is the payment linked to just the new equity raised or all equity; and
- how should the allowance be paid

We recommend that:

- the focus should be only on direct costs;
- keep CORE at five percent for time being but with some scepticism and awaiting either the completion of the ongoing OFT study or independent analysis conducted for Ofgem before making any revision of the number;²¹
- utilise the existing Ofgem framework – keep it as an ex-ante incentive with ex-post adjustment based on actual capex but allowing the company the freedom to raise funds as it sees best; and
- more general consideration of whether end of period adjustments to gearing should be incorporated with an allowance for CORE could be undertaken.

In some respects this may be a generous position – the CC on Bristol Water considered the historical payment of dividend to shareholders and perceived that a gearing-up of the company should not then be rewarded with customers facing additional costs. As such, some historical analysis could also make sense to place the equity raising need into context, but this approach also benefits from hindsight which could create other regulatory problems.

²⁰ However, were Ofgem to take an approach based on actual equity raised, we would recommend that it would be based on an ex-post assessment, as set out in our main Financeability report.

²¹ It could make sense to commission reviews of CORE for UK utilities – there could be scope for collaboration across regulators on this – or utilise other new evidence as it becomes available.

ANNEX: CASE STUDIES FROM THE MAIN FINANCEABILITY REPORT

Box 11.1: Ofwat PR09 equity injections and issuance costs²²

As part of its PR09 determination, Ofwat included equity injection assumptions for three companies:

- Thames Water – 20 percent opening notional equity;
- Bristol Water – 10 percent opening notional equity; and
- South East Water – 7.5 percent opening notional equity.

These injections were supported by an allowance to cover equity issuance costs at a rate of five percent of the modelled equity to be raised. These costs will be clawed back by Ofwat if they do not issue equity during the price control.

The above companies were identified as needing equity injections as a result of the impact of their large investment programmes on their financial ratios. Indeed, these were the three companies with the largest RAV projections. The financeability standards against which these companies were tested are summarised in Table 11.3.

Table 11.3: PR09 Financeability ratios

Ratio	Water and sewerage companies	Water only companies
Funds from operations to gross interest	About 3 times	About 3.5 times
Funds from operations less capital charges to net interest	About 1.6 times	About 1.8 times
Funds from operations to debt	About 13 percent	About 17 percent
Retained cash flow to debt	About 8 percent	About 10 percent
Net debt to regulatory capital value	Below 65 percent	Below 60 percent

This approach was consistent with Ofwat's view that:

“We remain of the view that equity injections or rights issues are legitimate means of easing the financing constraint brought about by continuing large capital programmes. This is particularly the case where new equity supports RCV growth for a company operating under a stable regulatory regime.”

Despite this, and the fact that injections did not have to be made, they were not well received by the companies. Equity injections have been raised as an issue by Bristol Water in their appeal to the Competition Commission. South East Water has stated that they do not believe that injections are a suitable response, and that it provides a “get out of jail card” for Ofwat. It is not clear that these criticisms are valid. Clarification will be provided in Bristol Water's referral.

Source: Ofwat (November 2009) “Future water and sewerage charges 2010-15: Final determinations” Section 5.6.2

http://www.ofwat.gov.uk/pricereview/pr09phase3/det_pr09_finalfull.pdf

²² Please note that numberings refer to the main Financeability report.

Box 11.2: Ofgem TPCR4 equity injections and issuance costs

As part of the TPCR4 review, Ofgem modelled equity injections to determine *ex ante* equity issuance costs required over 2007-12. Ofgem had previously indicated that should a company not be able to maintain an appropriate credit rating, they would support the raising of new equity through a notional allowance for equity issuance costs. The decision to allow issuance costs on an *ex ante* basis (which they would then “true up” at the following review) required forecast equity injections to be modelled as part of the price control determination.

This exercise found that SPTL would require injections of up to £43m, and SHETL would require between £39m and £165m. Equity injections were calculated such that companies would achieve certain thresholds based on the following three financial ratios:

- debt to RAV (gearing);
- funds from operations to RAV; and
- funds from operations plus interest to interest.

The transmission models published alongside the determination give some insight into the ratios Ofgem tested in the review. Table 11.4 shows the financial ratios embedded in these models.

Table 11.4: TPCR4 Financeability Ratios

Ratio	Electricity	Gas
Debt to RAV	Below 70 percent	Below 68 percent
Funds from operations to RAV	Above 9 percent	Above 10 percent
Funds from operations plus interest to interest	2.7 times	3.0 times

When two or more of the above ratios were materially below thresholds that ratings agencies believed would achieve at least a BBB+ /Baa1 rating in 2012, or in any year in which gearing exceeded 60 percent, an injection would be triggered that would bring these measures back into line. Following re-profiling and tax adjustments, an assumed equity issuance cost of five percent was applied. This resulted in equity issuance costs of £1m being allowed for SPTL and £5m for SHETL, implying expected equity injections of £20m and £100m respectively (approximately the mid-points of the modelled equity injection ranges).

Source: Ofgem (December 2006) “Transmission Price Control Review: Final Proposals” Sections 8.30 to 8.40 and Appendix 2 sections 1.53 to 1.59:

http://www.ofgem.gov.uk/Networks/Trans/PriceControls/TPCR4/ConsultationDecisionsResponses/Documents1/16342-20061201_TPCR%20Final%20Proposals_in_v71%206%20Final.pdf