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Dr Malcolm Roberts
Chairman
Queensland Competition Authority
GPO Box 2257
Brisbane QLD 4001

6 August 2013

Dear Malcolm

Submission in response to split cost of capital discussion paper

Unitywater welcomes the opportunity to make a submission to the Queensland Competition Authority's (QCA) discussion paper on split cost of capital. Unitywater, Gladstone Area Water Board, Gold Coast Water, and Queensland Urban Utilities jointly cooperated to appoint consultants to prepare expert responses to the matters raised in the discussion paper on split cost of capital, these reports are attached.

Unitywater understands the central proposition of the split cost of capital in QCA's discussion paper is to permit a regulated entity to earn a higher Weighted Average Cost of Capital (WACC) on assets during their construction, but once they are completed the WACC is reduced to an amount equivalent to the cost of debt.

Unitywater does not support the split cost of capital approach on the basis that it represents a departure from commitments to the National Water Initiative to progress cost reflective pricing irrespective of differences in government or private sector ownership.

Further, Unitywater considers the split cost of capital discussion paper would likely have an adverse effect on investment incentives and the ability of regulated businesses in Queensland to raise capital because of lower allowable returns on regulated assets compared to other jurisdictions or non-regulated infrastructure.

In addition to the responses to specific matters raised in the Discussion Paper, a report by the Queensland Treasury Corporation is also provided outlining an alternative approach for calculating the benchmark cost of debt that dampens WACC volatility. This approach will contribute toward more stable long term prices for customers and reflects the long term nature of water and sewerage infrastructure.

Unitywater

Should you have any further queries in relation to this matter please contact Damian Platts, Manager Regulatory Affairs on 0488 980 763.

Yours sincerely

[redacted]

George Theo
Chief Executive Officer

CC: Louise Dudley, Chief Executive Officer, Queensland Urban Utilities
John Fallon, Director, Queensland Competition Authority

Attachments:

1. Synergies Economic Consulting: Response to the QCA's Split Cost of Capital Discussion Paper
2. Queensland Treasury Corporation: An alternative approach for calculating the benchmark cost of debt
3. Nera Economic Consulting: A Split Cost of Capital – Review of the QCA's Discussion Paper
4. SFG Consulting: The Split Cost of Capital

Response to the QCA's Split Cost of Capital Discussion Paper

Report prepared for Gladstone Area Water Board, Queensland Urban Utilities and Unitywater

July 2013

Synergies Economic Consulting Pty Ltd
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Executive Summary

Synergies Economic Consulting has been requested to prepare a report for Gladstone Area Water Board, Queensland Urban Utilities and Unitywater (the water businesses) in response to the Queensland Competition Authority's (the Authority's) Discussion Paper on the concept of a split cost of capital (the Discussion Paper). It is accompanied by reports prepared by NERA, SFG Consulting (SFG) and Queensland Treasury Corporation (QTC).

The Discussion Paper raises some fundamental economic and policy issues that are considerably broader than the rate of return, including:

- the implications for competitive neutrality, noting that the effectiveness of these reforms (including issues such as whether the level of competitive neutrality fees are appropriate) is a question for government that would necessitate a more comprehensive review;
- the presumption that government owned regulated businesses have been incentivised to over-invest because rates of return have been too high – this is a significant claim that is not supported by evidence and ignores the governance and monitoring arrangements that have been put in place by government owners;
- the extent to which this proposal could undermine the continued move to full cost pricing under the National Water Initiative (NWI), which explicitly allows for an equity return on new investments (and not just in the construction phase).

If the Authority is to continue to progress its split cost of capital concept the nature and magnitude of the policy changes the Authority is invoking here must be evaluated in this wider context.

In summary, our responses to the questions in the Discussion Paper are as follows.

Please comment on the advantages and disadvantages of applying a split cost of capital approach rather than the Authority's standard 'single WACC' approach to determining the return on capital.

We are not able to identify advantages and disadvantages of the split cost of capital because this is not considered to be a valid approach to assessing the cost of capital. As noted in the accompanying report by SFG, the approach has been rejected by all of the UK regulators that have considered it, with the reasons being summarised as follows:[1]

[1] SFG Consulting (2013). The Split Cost of Capital: Report for Gladstone Area Water Board, Queensland Urban Utilities and Unity Water, p.1.

a) By definition, separating a regulated business into its component pieces does not change the total amount of risk – a pizza has the same amount of calories even if cut into thin slices. If the total risk is the same, the total required return is the same, so there would seem to be no point in using the split cost of capital approach;

b) The total risk to investors in the regulated firm would only be reduced if some of that risk is transferred to government via the provision of a guarantee. There is no reason to suggest that government would provide such a guarantee;

c) In practice, no businesses are separated into component pieces in accordance with the split cost of capital approach, so it would be impossible to reliably estimate the risk and required return for each component piece;

d) It is no accident that actual businesses have not separated into component pieces in accordance with the split cost of capital approach. There are sound economic reasons for operating as a combined business;

e) The split cost of capital approach assumes that the RAB can be financed with 100% investment grade debt, but there is no evidence to suggest that this is possible in practice; and

f) If the split cost of capital approach was applied to existing assets, it would be a manifestation of the very regulatory expropriation risk that the split cost of capital approach assumes away.

In particular, to what extent do stakeholders consider that the existing regulatory design and arrangements effectively guarantee the existing regulatory asset base?

There is no evidence to show that the RAB is guaranteed. In any case, as explained in the accompanying paper by NERA, the relevant issue is the riskiness of the cash flows generated by the assets, not the value of the RAB itself. There is certainly no evidence to show that a regulated business has 100% certainty that it will eventually recover the full return on, and return of, capital over what is typically a long economic life. Indeed, if such a guarantee were provided it would fundamentally alter the incentives of the regulated business and could give rise to a moral hazard problem.

As highlighted by both SFG and NERA, if such a guarantee was provided by Government (and taxpayers), it does not change the total risk of the assets – it simply reallocates it to a different party. Given the cost of capital is intended to reflect the riskiness of the assets rather than the sources of capital, it is reasonable to expect that

the party/ies bearing the risk would require the same return and total prices should therefore remain unchanged.

The Authority's proposal effectively assumes that if this risk was borne by government, as a consequence of the transfer of risk the assets are now effectively riskless, or the government is willing to provide that guarantee for free. In addition to providing that guarantee, the acceptance of a cost of debt return on regulated assets would therefore need to be agreed to by government.

As SFG points out, there are a number of reasons why government would not want to provide such a guarantee. It is also questioned how this guarantee would operate in the case of regulated businesses that are privately owned.

In addition, to what extent do stakeholders consider that the 'single WACC' approach is likely to under-compensate investors for major capital expenditure projects?

The Authority's proposal, which is based on applying a higher WACC for the purpose of interest during construction, addresses the risks borne during the construction phase but not beyond it. The extent to which the infrastructure provider bears design and construction risks will also vary depending on the risk-sharing arrangements reflected in the contracts for design and construction (and regulation should not alter the assessment of how these risks should be allocated as it is a commercial decision). As noted by NERA, this raises other questions that are beyond the scope of the Discussion Paper.

The key question here is whether it is appropriate to assume that owners of regulated assets would ever invest on the basis that regulated prices can only assume a cost of debt return on those assets. In effect, this has to assume that the assets are 100% debt funded, which is unlikely to be feasible. If not, it assumes that equity investors (whether that be government or private owners) would be willing to accept a return that is equivalent to the cost of debt. As highlighted by SFG, if the Authority was to implement this proposal it should not be applied retrospectively.

In our view, the split cost of capital approach would likely have a material and adverse effect on investment incentives and the ability of regulated businesses in Queensland to raise capital because of lower allowable returns on regulated assets compared to other jurisdictions (as well as unregulated infrastructure). We would consider it particularly important for the Authority to test its proposal, which is highly theoretical, with investors that invest in regulated assets.

To what extent are the current arrangements inadequate in the context of incentivising operating and maintenance expenditure and how could incentive-based regulation be applied to better improve them?

We agree that this is an important question but is a much broader issue that is not within the scope of the Authority's Discussion Paper. It requires a proper examination of the available evidence within the context of the incentives currently provided, the strongest discipline being an inability to claw back overspends unless it was due to costs increases that are not directly within the control of the regulated business (as approved by the regulator). It is also noted that the Authority scrutinises operating and maintenance expenditure allowances in detail. Changes to the regulatory framework should only be made if:

- there is clear evidence that incentives are currently inadequate; and
- the change would provide a clear and effective incentive on the business to improve efficiency without having unintended adverse consequences (for example compromising service quality, safety and reliability).

Do stakeholders consider that indexing the regulated firm's cost of debt on an annual basis is appropriate?

There is now increasing recognition of the problems associated with the current 'rate on the day' approach, including the concentration of refinancing risk. We consider that this is best addressed by the trailing average approach, which assumes that ten year debt is progressively refinanced each year. The prevailing ten year rate for each year is also applied to any new borrowings undertaken in that year. The benchmark cost of debt must therefore be updated on an annual basis as new borrowings are made and a percentage of the existing borrowings are refinanced at the then prevailing rates. Apart from replicating a more efficient debt management strategy, this will have the important benefit of smoothing prices paid by consumers through time.

To what extent does a firm's status as a government-owned business affect the above considerations? Should the regulatory arrangements provide for a different cost of capital for these businesses in comparison to otherwise equivalent private sector firms?

The Authority's proposal raises some important economic and policy questions. This includes competitive neutrality, the effectiveness of which is an issue for government. It also has implications for the achievement of upper bound pricing under the NWI, which all Australian states have committed to progress towards.

It also contradicts a fundamental tenet of finance theory, which has been previously acknowledged by the Authority, being that:[2]

> …the cost of capital relates to assets and is independent of the source of financing. Consequently, the financing of an asset from public rather than private sources will not alter the cost of capital that attaches to the asset. Rather, it is the riskiness of the asset which will determine the cost of capital…

We note that this proposal was also considered and rejected by the AEMC as part of its recent rule change process for regulated energy network businesses. It has also been directly considered and rejected by other Australian regulators in the context of recent water price reviews, including the ESC and ESCOSA.

The Authority should therefore not differentiate between government and privately owned businesses in setting the cost of capital.

[2] Queensland Competition Authority (2003). Burdekin Haughton Water Supply Scheme: Assessment of Certain Pricing Matters relating to the Burdekin River Irrigation Area, p.81.

Contents

Glossary

AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
CAPM	Capital Asset Pricing Model
ESC	Essential Services Commission
ESCOSA	Essential Services Commission of South Australia
GFC	Global Financial Crisis
GOC	Government Owned Corporation
IRP	Independent Review Panel
NSP	Network service provider
NWI	National Water Initiative
QTC	Queensland Treasury Corporation
RAB	Regulated Asset Base
WACC	Weighted Average Cost of Capital

1 Introduction

1.1 Scope

Synergies Economic Consulting has been requested to prepare a report for Gladstone Area Water Board, Queensland Urban Utilities and Unitywater (the water businesses) in response to the Queensland Competition Authority's (the Authority's) Discussion Paper on the concept of a split cost of capital (the Discussion Paper). It is accompanied by reports prepared by NERA, SFG Consulting (SFG) and Queensland Treasury Corporation (QTC).

The purpose of our report is to:

- identify and assess the broader policy implications of the Authority's proposal; and
- summarise the findings of the other accompanying reports.

It does this having regard to the questions posed by the Authority in the Discussion Paper as well as other issues that are considered relevant to this proposal.

In particular, our report identifies some fundamental policy questions that extend beyond the assessment of the rate of return. We also note that the scope of the Authority's Cost of Capital Methodology review remains unclear, as does the implications of any findings for future regulatory determinations.

The potential significance of the Discussion Paper for businesses regulated by the Authority cannot be understated. This is not simply another way of looking at the rate of return. Apart from the materiality of the potential outcomes in revenue terms and the adverse impact this could have on the incentives for regulated businesses to invest, it also raises some fundamental questions that go the heart of competition policy, competitive neutrality, incentive regulation and in the case of the water businesses, water pricing reforms. While the Discussion Paper acknowledges these impacts they are not given any detailed consideration or analysis, nor are they identified as key considerations for stakeholders (with the exception of competitive neutrality).

In our view, if the Authority is to continue to progress its split cost of capital concept the nature and magnitude of the policy changes the Authority is invoking here must be evaluated in this wider context.

1.2 Structure of this report

This report is structured as follows:

- section 2 examines the economic and policy implications of the split cost of capital proposal, including a summary of the issues raised by NERA;
- section 3 summarises SFG's critique of the work of Helm and the concerns that have led it to be rejected by every regulator in the UK that has considered it;
- section 4 responds to the question of indexation of the cost of debt by proposing the adoption of the trailing average approach (based on the work of QTC); and
- section 5 summarises our response to the six questions in the Discussion Paper.

2 Economic and policy considerations

2.1 Competitive neutrality

One of the criticisms raised by the Authority of the current cost of capital approach is the extent to which it is appropriate for government owned businesses and the competitive neutrality arrangements that apply to them.

One of the main aims of competitive neutrality was to remove the advantages (and disadvantages) of government ownership from the business. This could result in inefficient production and pricing causing "an excess flow of resources to the public sector, limiting resource availability to the private sector and increasing the overall cost of service provision to the community."[3]

The Authority expresses concern with the assumption that the playing field is levelled with the payment of competitive neutrality fees, arguing that:[4]

> …these fees are not necessarily high enough to reduce the incentive to borrow, and in any case, they are paid to the owners of the firms.

The fact that the fees are paid to government does not dilute the need for business to operate in its own market in a competitively neutral way (although the Authority also argues that this incentivises government to over-invest in the Regulated Asset Base (RAB), which is discussed below). The question of whether competitive neutrality fees are set at the appropriate level is a separate issue.

Indeed, we note that the Authority has previously supported applying the same cost of capital for public and private sector businesses. In its 2003 decision for the Burdekin Haughton water supply scheme it stated:[5]

> The Authority notes that:
>
> - compliance with the principle of competitive neutrality between the public and private sector requires the use of the same cost of capital for similar assets;
> - the cost of capital relates to assets and is independent of the source of financing. Consequently, the financing of an asset from public rather than private sources

[3] Queensland Treasury (1996). Competitive Neutrality and Queensland Government Business Activities, Queensland Government, p.6.

[4] Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital, p.5.

[5] Queensland Competition Authority (2003). Burdekin Haughton Water Supply Scheme: Assessment of Certain Pricing Matters relating to the Burdekin River Irrigation Area, p.81.

will not alter the cost of capital that attaches to the asset. Rather, it is the riskiness of the asset which will determine the cost of capital;

- to ensure the efficient use of resources, investment decisions in the public sector should be based on the same cost of capital as used in the private sector for assets of the same risk characteristics;
- where a lower cost of capital is applied to an investment because of government ownership, inappropriate investment and consumption decisions will result; and
- government equity investments are not costless or riskless. The government does face an implicit cost or opportunity cost from funds invested in BRIA infrastructure and these investments do involve risks.

Consequently, public sector investments require an appropriate risk premium for the same reasons as do private sector investments.

All of these principles remain relevant. In particular, it recognises the basic tenet of finance theory, which is that the cost of capital reflects the riskiness of the cash flows generated by the assets being funded rather than the source of capital:[6]

> The key fact to grasp is that the cost of capital associated with an investment depends on the risk of that investment. This is one of the most important lessons in corporate finance, so it bears repeating:
>
> The cost of capital depends primarily on the use of the funds, not the source.
>
> It is a common error to forget this crucial point and fall into the trap of thinking that the cost of capital for an investment depends primarily on how and where the capital is raised.

We also note that the issue of whether a different rate of return should be set for regulated government owned businesses was recently considered by the Australian Energy Market Commission (AEMC) as part of the rule change proposals for energy network service providers (NSPs). The Energy Users Rule Change Committee had submitted that the return on debt for state-owned network service providers (NSPs) should be determined differently from privately owned NSPs. This proposal was rejected by the AEMC:[7]

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[6] Ross, S., Westerfield, R. and Jordan, B. (2010). Fundamentals of Corporate Finance, 9th edition, McGraw-Hill Irwin, p.438.

[7] Australian Energy Market Commission (2012). Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper, 29 November, p.v.

> The Commission considers that the most appropriate benchmark to use in the regulatory framework for all service providers, regardless of ownership, in general is the efficient private sector service provider.

It was also considered and rejected by the Essential Services Commission in its most recent price review for metropolitan water businesses, stating that:[8]

> …the Commission considers the estimate of the cost of capital should be based on an industry benchmark (that reflects efficient financing arrangements) rather than utility specific costs.

ESCOSA also considered the implications of government ownership of SA Water as part of its most recent price review and rejected the proposal that it be assessed on the basis of its government ownership, particularly in relation to financing. In addition to noting that SA Water pays a competitive neutrality fee to government, ESCOSA stated:[9]

> …a firm's cost of capital depends on the riskiness of the firm's assets, not its owner. That risk does not disappear if the firm is government-funded; it is simply transferred from the firm to the government and, therefore, taxpayers. Borrowing additional debt increases the risk profile of the government, which in turn, increases the cost of all government debt. This indirect cost is borne by taxpayers and is not reflected in the risk-free rate.

It also considered that assigning a government cost of debt (that only government owned businesses have access to) would be inconsistent with the objectives of its governing legislation, including the need to facilitate entry into the relevant markets.

In its interim report as part of the review of its WACC methodology, the Independent Pricing and Regulatory Tribunal is proposing that the benchmark firm should be assumed to operate in a competitive market, facing similar risks to the regulated business.[10]

If competitive neutrality principles and their application need to be revisited, including the adequacy of competitive neutrality fees, this is an issue for government, not the regulator (unless it is specifically directed to do so). In effect, the Authority's proposal could have the effect of undermining these principles in the context of a rate of return

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[8] Essential Services Commission (2013). Price Review 2013: Greater Metropolitan Water Businesses, Final Decision, p.104.

[9] Essential Services Commission of South Australia (2012). Advice on a Regulatory Rate of Return for SA Water, Final Advice, p.15.

[10] Independent Pricing and Regulatory Tribunal (2013). WACC Methodology: Research – Interim Report.

review. This is a policy matter for government and we expect would need to be subject to a more detailed review of the Queensland Government's implementation of the *Competition Principles Agreement* and the outcomes it has (or has not) achieved.

2.2 Investment incentives

As noted above, the Authority suggests that competitive neutrality arrangements (including the payment of competitive neutrality fees, dividends and tax equivalents) incentivise government owned businesses to over-invest in regulated infrastructure. It states:[11]

> …the combination of the current regulatory model and government ownership provides an incentive to choose capital projects that will be rolled into the RAB as soon as possible in order to earn excess returns.

Most state governments have governance and performance monitoring arrangements in place for government owned businesses. For example, in Queensland, government owned businesses are subject to a Code of Practice in relation to their financial arrangements[12], Cost of Capital principles[13], and Investment Guidelines (which includes shareholding minister pre-approval of investments). For example:[14]

> Provision has been made for investments contemplated within decisions by the regulators on monopoly rates of return, to be reviewed and endorsed by shareholding Ministers prior to GOCs proceeding with projects, subject to the regulated investment approval thresholds.

To suggest that governments would knowingly allow their businesses to over-invest in regulated infrastructure in order to generate high revenues from dividends, competitive neutrality fees and tax equivalents (reflected in higher prices for consumers) is a significant claim. This would clearly not be in the public interest.

Further, if such claims are seen as providing support for a change in the approach used to estimate the cost of capital for regulated businesses that are owned by government, they need to be substantiated. This in turn requires evidence of excess capacity in the

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11 Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital, p.6.

12 Queensland Treasury (2009). Code of Practice for Government Owned Corporations' Financial Arrangements, Queensland Government.

13 Queensland Treasury (2006). Government Owned Corporations - Cost of Capital Principles, Queensland Government.

14 Queensland Treasury and Trade (2013). Government Owned Corporations, Investment Guidelines for Government Owned Corporations, Version 5.0, Queensland Government, p.6.

relevant network or system, having regard to any prescribed reliability and service standards (including in the case of water, secure supplies in the event of drought).

It is certainly the case that the issue of setting appropriate reliability standards (that meet the community's expectations, if known) is a significant issue for essential infrastructure, particularly in energy, which is the subject of the paper by Mountain and Littlechild relied upon by the Authority as evidence of systematic over-investment by regulated government owned businesses.

The question of service quality and reliability standards is fundamental to determining the level of investment required in natural monopoly infrastructure and this is particularly contentious in the energy sector.[15] For example, the Independent Review Panel (IRP) on Network Costs commissioned by the Queensland Government to investigate the reasons for the very large increase in electricity prices in Queensland in recent years (amongst other things) found:[16]

> …a trend towards higher levels of involvement by Government in the operations of the GOCs [Government Owned Corporations]. The capital programs and operating costs of the GOCs have increased sharply and unsustainably in response to prescriptive system design standards, such as the N-1 security standard and the Minimum Service Standards (MSS) imposed by Government.

In contrast, there was no discussion in the IRP's inquiry report about the role, if any, played by purported 'excess returns' built into the regulated WACC in contributing to electricity price increases, nor in the Queensland Government's acceptance of the IRP's recommendation to replace prescriptive security and reliability standards.[17]

It is also necessary to examine wider evidence from other jurisdictions and industries, including those currently regulated by the Authority. For example, the Central Queensland coal region in which Aurizon Network operates (having been government owned until 2010) has essentially been capacity constrained since the coal boom emerged in the middle of the last decade. Infrastructure Australia's 2010 review of urban water security identified a number of drivers of reform in this sector, including a legacy of underinvestment in water infrastructure:[18]

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[15] For example, the importance of setting reliability standards at the level that is valued by consumers is one of the key findings for the Productivity Commission's recent review of Electricity Network Regulatory Frameworks. Refer: Productivity Commission (2013).

[16] Independent Review Panel on Network Costs (2013). Electricity Network Costs Review, Final Report, p. iv.

[17] Queensland Government (2013). Queensland Government Response to the Interdepartmental Committee on Electricity Sector Reform, p. 4.

[18] PWC (2010). Review of Urban Water Security Strategies, Report prepared for Infrastructure Australia, May, p.10.

> Until recently, expenditure on water infrastructure to service urban populations has been relatively small (compared to other essential services). This has been due to a combination of capital/funding constraints (at least partially as a result of prices that do not allow for a commercial rate of return on existing assets), political constraints to the construction of new dams and the belated recognition of a changing climatic pattern.

The Productivity Commission also examined the issue of whether governments have been using their water utilities as 'cash cows' in its review of Australia's urban water sector and concluded that, while this is a legitimate concern, its evidence suggests that "it is unlikely that excessive dividend payments have been extracted from utilities to any significant degree, and notes that more often there have been concerns that dividend payments are too low."[19] Indeed, it reinforces the importance of not setting rates of return too low:[20]

> Determining an appropriate rate of return is important. If the rate of return is set too high, this means businesses might recover revenues that exceed costs which might encourage 'under-consumption' of infrastructure relative to efficient levels. If the rate is set too low, this can deter investment in infrastructure. The Commission considers this latter prospect to generally be a worse outcome as in the long run it is likely to involve greater efficiency losses.

In conclusion, significant caution needs to be exercised in claiming there has been over-investment in regulated infrastructure and then directly attributing this to rates of return being set too high.

2.3 The National Water Initiative and full cost pricing

Consideration also needs to be given to the implications of the Authority's proposal in the context of the transition to full cost pricing under the National Water Initiative (NWI). For example, the NWI pricing principles requires that cost recovery for new capital expenditure is based on the application of a rate of return that "should be consistent with the Weighted Average Cost of Capital (WACC) with the cost of equity derived from the Capital Asset Pricing Model (CAPM)."[21] Under this principle, full cost recovery is achieved via either:[22]

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[19] Productivity Commission (2011). Australia's Urban Water Sector, Productivity Commission Inquiry Report Volume 1, p.303.

[20] Productivity Commission (2011). Australia's Urban Water Sector, Productivity Commission Inquiry Report Volume 1, p.274.

[21] Steering Group on Water Charges (2010). National Water Initiative Pricing Principles, Chapter 1, p.6.

[22] Steering Group on Water Charges (2010). National Water Initiative Pricing Principles, Chapter 1, p.6.

a) a return of capital (depreciation of the RAB) and return on capital (generally calculated as rate of return on the depreciated RAB); or

b) a renewals annuity and a return on capital (calculated as a rate of return on an undepreciated asset base (ORC)).

In other words, this rate of return, which includes a return on equity, is applied over the life of the assets, not just during the construction phase.

The Authority has also cited the Queensland Government's direction to apply a return on debt to drought assets as 'implicit' application of the split cost of capital concept. As noted by the Authority, this decision reflected a desire by the Queensland Government to constrain the impact of this expenditure on prices paid by consumers.

We do not consider that this decision in any way provides support for the Authority's split cost of capital proposal. Indeed, we note that the National Water Commission expressed some concerns regarding this decision as part of its 2009 biennial assessment:[23]

> With the exception of the Northern Territory and Queensland, jurisdictions have demonstrated that they have achieved lower-bound pricing and that price setting processes are consistent with, or moving towards being consistent with upper bound pricing for metropolitan water storage and delivery. The Northern Territory has announced significant price increases designed to move towards lower-bound pricing by 2011–12. Queensland recently made a transparent decision to subsidise new water grid assets. The Commission notes that such a subsidy, although transparent, is inconsistent with Queensland's NWI commitments to implement upper-bound pricing in metropolitan areas.

In summary, the QCA's proposal "eliminates any further role for equity"[24] once new expansion assets are included in the RAB. We consider that the Authority needs to reconcile its proposal with the NWI's pricing principles, including the explicit recognition of a cost of equity in determining the rate of return.

[23] National Water Commission (2009). Australian Water Reform 2009, Second Biennial Assessment of Progress in Implementation of the National Water Initiative, p.165.

[24] Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital.

2.4 Guarantees of RAB values

Another important policy question raised by the Discussion Paper is the extent to which the value of the RAB is guaranteed. This is critical to the Authority's premise that once approved, a RAB is effectively riskless.

However, as highlighted in the accompanying report by NERA (and summarised below), it is not the value of the RAB that is the issue here: it is certainty in relation to the recovery of the cash flows generated by those assets. In other words, in proposing the existence of a guarantee the relevant question is whether regulation provides the infrastructure owner with 100% certainty that it will earn a full return on, and return of, capital over the life of the assets, which in this case is typically a very long period.

The Authority infers the existence of a "regulatory contract" that "guarantees the regulated firm that reasonable costs will be recovered".[25] However, there is no evidence of any explicit guarantee provided by the Authority to the firms it regulates that they will recover a full return on and return of capital until that asset is fully depreciated.

Reference is made by the Authority to the 'line in the sand' approach that has been taken by Australian regulators in establishing initial Depreciated Optimised Replacement Cost values and their reluctance to re-open these values other than in very limited circumstances. This in turn is seen as supporting the proposition that RAB values are guaranteed (which as noted above, is not considered the relevant question in any case).

This approach was designed to prevent windfall gains and losses (and potentially volatile prices) if the RAB was re-valued each regulatory period. It is this objective that underpins general Australian regulatory practice in relation to not revaluing the RAB – not because it was seen as providing an explicit guarantee to the regulated business. The Australian Competition and Consumer Commission has stated:[26]

> The RAB value, once set, must not be subject to revaluation. Revaluation of an existing RAB can create uncertainty for the regulated business **and its customers** and can result in price shocks and windfall gains or losses to the business. [emphasis added]

As highlighted in the accompanying report by SFG, even if the government explicitly guaranteed these assets, which transfers the risk to taxpayers, the Authority's proposal

[25] Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital, p.9.

[26] Australian Competition and Consumer Commission (2011). Pricing Principles for Price Approvals and Determinations under the Water Charge (Infrastructure) Rules 2010, July.

suggests that this guarantee is costless. However, as SFG points out, this shifting of risk onto taxpayers does nothing to change the riskiness of the cash flows generated by those assets. Further, despite the Authority's contention that once the value of the RAB is set "there is nothing managers can do to change the RAB"[27], the provision of an explicit guarantee by the government would alter the incentives on the business and give rise to principal-agent issues (akin to a 'moral hazard' problem).

In conclusion, the Authority's significant presumption that the RAB is guaranteed has been inferred. There is no explicit guarantee of RAB values and more relevantly, there is no explicit guarantee that the business will be able to recover the full return on, and return of, capital on those assets. There is a difference between an entitlement to recover efficient costs (including a return on and of capital) and a guarantee that this will happen. There nothing in the regulatory framework, including the *Queensland Competition Authority Act 1997*, that provides 100% certainty to regulated businesses as to the full recovery of a return on and of capital.

2.5 Relevant risk is the cash flows generated by the assets

As clearly shown in the accompanying report by NERA, the relevant issue is not the riskiness of the value of the RAB itself, but rather the cash flows generated by these assets. It states:[28]

> …the capital investment is only a means to an end, and is not an end in itself. The need for capital is incidental to the need of the firm to generate earnings that are sufficient to remunerate its capital requirements. Put another way, it is the generation of earnings (via the provision of goods and services) that is the core function of the firm and its assets. Indeed, an asset is defined as "something that provides a flow of money or services to its owner". It follows that the critical function of a capital asset is its ability to generate this flow of earnings.

NERA also highlights the important distinction between physical capital and financial capital. The value of the RAB reflects the value of the physical assets whereas financial capital reflects the equity that has been built up in the business via the cash flows that have been able to be generated from the use of those assets. The key issue from the perspective of firm value is the extent to which the infrastructure owner has been able to generate sufficient cash flow to deliver a return on, and return of, capital.

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[27] Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital, p.vii.

[28] NERA Economic Consulting (2013). A Split Cost of Capital – Review of the QCA's Discussion Paper, A Report for Queensland Water Service Providers, p.3.

NERA examines the risks that could impact this, showing that managerial effort can impact the returns received by the firm. These risks include differences between actual and forecast costs, demand and non-payment by customers.

2.6 The riskiness of new capital expenditure

While the Authority's Discussion Paper contends that regulated businesses are being over-compensated for the risks associated with the RAB, it questions whether applying a single WACC also under-compensates the business for the risks associated with new capital expenditure.

As discussed in the accompanying paper by NERA, given the relevant question here is the riskiness of the cash flows generated by the assets, it is questioned whether the riskiness of the returns on new capital expenditure will be any different from the risk associated with the existing assets.

In any case, the proposal to apply a higher WACC to new investments in effect only applies to interest during construction. The extent to which the infrastructure provider bears design and construction risks will also vary depending on the risk-sharing arrangements reflected in the contracts for design and construction. Regulation should not alter the assessment of how these risks should be allocated as it is a commercial decision. As noted by NERA, the appropriate regulatory treatment of regulated assets during the construction phase is a broader issue than just the rate of return.

In our view, the Discussion Paper materially overstates the significance of the application of a different WACC to new investments because as soon as these assets are commissioned, they will also earn the cost of debt over what tends to be very long economic lives. This is the rate of return that would need to be assumed in the project evaluation. The fundamental question is whether an infrastructure owner would choose to invest on the basis that it can only earn a cost of debt over the life of the assets, which in effect assumes that the assets will be 100% debt funded. As highlighted in the accompanying paper by SFG, this is not an appropriate assumption to make.

If an infrastructure owner does invest, the key issue for an expansion is whether the infrastructure provider will be able to earn a full return on and return of capital over the life of those assets. One of the most significant risks here is asset stranding risk. As previously acknowledged by the Authority, WACC does not provide compensation for asset stranding risk.[29]

[29] Queensland Competition Authority (2010). Draft Decision: QR Network's 2010 DAU - Tariffs and Schedule F, June, p.48 (footnote 13).

3 Critique of Helm

The accompanying paper by SFG very clearly demonstrates the absence of any regulatory precedent for Helm's split cost of capital approach, despite it having being considered by a number of UK regulators. The Authority states that:[30]

> …regulators have not formally adopted the split cost of capital to date, these precedents demonstrate that views are developing in this area that are consistent with the principal elements of such a framework.

The SFG report shows that it is not just a matter of regulators not having "formally" adopted the proposal – they have clearly rejected it. It shows that every regulator that has considered the proposal has rejected it, including the:

- UK Competition Commission
- Office of Gas and Electricity Markets
- Water Services Regulation Authority
- Office of Rail Regulation
- the Civil Aviation Authority
- Northern Ireland Authority for Utility Regulation.

SFG analyses the reasons why the proposal has been rejected. One of the most important reasons is that it cannot change the total amount of risk. The Authority rejected this argument, on the basis that:[31]

> The potential effect of disaggregating total risk is not to reduce risk directly but to provide more accurate price signals at the margin of the regulated firm's functions.

However, even if it were valid to disaggregate risk in this way, the Authority does not address the fundamental question of how this disaggregated risk can be reliably measured, which is critical to the validity of the proposal. Instead, it uses Helm's estimates in its own indicative modelling.

As highlighted by SFG, it is impossible to reliably estimate the split cost of capital elements, given:[32]

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30 Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital, p.32.

31 Queensland Competition Authority (2013). Discussion Paper, Split Cost of Capital, p.9.

32 SFG Consulting (2013). The Split Cost of Capital: Report for Gladstone Area Water Board, Queensland Urban Utilities and Unity Water, p.17.

> …there are no businesses operating in this way. Firms in the real world have not organised themselves in this way. That is, there is simply no relevant data available for the regulator to separately estimate the risk of the two component businesses.

In light of this, SFG raises the question as to why a regulator should set the rate of return on the basis of a "theoretical proposition" regarding firm structure instead of how firms are actually structured.

As highlighted by SFG, Helm proposes that the firm would effectively be split into two components – one that owns the RAB assets and another that operates the assets and manages the construction of new assets (which would be subsequently transferred into the asset holding company). The application of the cost of debt to the existing RAB also assumes that this part of the business can be financed with 100% investment grade debt, which as SFG highlights is not supported by any evidence and is a further reason why the UK regulators have rejected this proposal. If that presumption is not made, the only alternative view that can be taken is that equity investors would be prepared to accept a return equal to the cost of debt.

The Authority refutes the need for physical separation although it clearly infers a distinction between RAB and non-RAB 'activities'. As highlighted by SFG:[33]

> One of the key problems that has led other regulators to reject the split cost of capital approach is the fact that the asset business and the operating business are inextricably linked. The assets only continue to have value so long as the operating business performs its function efficiently.

NERA also highlights this point, arguing that in terms of incentives, the firm still only faces a single revenue stream. For example, in the case of new expansions, the firm is not facing a separate revenue stream that might impact its incentives to undertake high risk expansions.

The examples the Authority cites as precedent for the split cost of capital approach do not support the application of different WACCs to the same asset (one reflecting the return on the RAB and the other the return on 'non-RAB' or operating and maintenance activities). This included:

- the application by the Queensland Government of a cost of debt to water assets constructed in response to the recent drought (as discussed above), which is not an example of a different WACC for 'RAB and non-RAB' activities;

[33] SFG Consulting (2013). The Split Cost of Capital: Report for Gladstone Area Water Board, Queensland Urban Utilities and Unity Water, p.15.

- the application of a different cost of capital to existing assets versus expansion assets, which is not an example of a different WACC for 'RAB and non-RAB' activities; and
- the provision of a lower asset beta for BT's copper network access business, which is a clearly separable business activity with its own risk profile (not different betas for 'RAB and non-RAB' activities).

This in turn reinforces the point that the Authority's approach should not result in a different outcome than estimating and applying a single WACC at the firm level.

It is therefore questioned how this approach can result in a better estimate of the rate of return when it assumes a disaggregation of risk (and management effort) that does not exist in practice. This also means that there is no reliable estimation approach or benchmarks that can be used to assess the reasonableness of the estimates. The Authority relies on the argument that existing regulated returns contain economic rent. If this is actually the case, it is questioned how this proposal will address the problem in the absence of a robust methodology to estimate the split cost of capital. This introduces considerable regulatory risk.

SFG points out that the only way that this approach would reduce the cost of capital is if risk was transferred to government (and ultimately taxpayers) via an explicit guarantee. As discussed above, there is no evidence that such a guarantee exists or would be provided. Further, because it would be rational to assume that government (and taxpayers) would require a fair premium for bearing this risk – which continues to reflect the same risk of the underlying assets – regulated prices should not change. As SFG argues, the only way that prices could be reduced is if the risk was priced at less than a fair premium, or in this case, the guarantee is effectively provided for free. This in turn would require explicit acknowledgement by government that it is willing to accept a lower return for bearing this risk.

SFG also highlights reasons why government would not be willing to do this. For example, it could affect the government's ability to borrow and it could also run counter to competitive neutrality principles. We also question how this could possibly be applied in the case of regulated businesses that are not owned by government. SFG concludes:[34]

[34] SFG Consulting (2013). The Split Cost of Capital: Report for Gladstone Area Water Board, Queensland Urban Utilities and Unity Water, p.15.

> An even more concerning scenario would be one in which government did not provide any guarantee in relation to the regulated firm's debt, but where the regulator set the allowed return as though it did.

If the Authority is to proceed with this proposal, SFG highlights the importance of it not being applied retrospectively. This is because the investment decision would need to be made on the basis of the assets only earning the cost of debt, which will fundamentally alter the economics of a project (particularly compared to investments in other regulated assets that earn a return on debt and equity, or unregulated infrastructure assets more broadly). Indeed, we would consider it particularly important for the Authority to test its proposal, which is highly theoretical, with investors that invest in regulated assets.

4 Cost of debt

While it is not discussed in detail, the Authority has also canvassed the option of indexing the cost of debt (which as noted by NERA, is a separate issue to the split cost of capital). This issue has received more attention in the context of regulation in recent times because the problems associated with a concentrated refinancing task – apart from being inherently inefficient – became more pronounced following the commencement of the GFC.

4.1 The trailing average approach

In our view, the preferred approach is the 'trailing average' approach, initiated by Queensland Treasury Corporation (QTC), assumes that debt is issued based on a staggered maturity profile. It has been examined by the Australian Energy Market Commission (AEMC) and is now permitted under the National Electricity Rules and National Gas Rules. For example, under the National Electricity Rules, in addition to continuing to allow the return on debt to be estimated based on the current approach, which assumes that all debt is raised at or shortly prior to the regulatory determination, it also allows the estimate to be based on:[35]

> …the average return that would have been required by debt investors in a benchmark efficient entity if it raised debt over an historical period prior to the commencement of a regulatory year in the regulatory control period…

As we have previously submitted in a recent report prepared for Unitywater[36], regulation should complement efficient practices that would occur in a competitive market. Efficient practice for an infrastructure services provider is to issue long-term debt and manage the consequent refinancing risk by maintaining a staggered portfolio of long-term debt instruments maturing through time – not having all of the debt maturing on or around a single point in time.[37] Staggering the refinancing task has been acknowledged as an option by the Authority's own consultant, Associate Professor Martin Lally:[38]

> In addition, in the presence of debt refinancing risks, the firm might seek to stagger the roll-over of their debt, so that approximately the same proportion is rolled over

[35] National Electricity Rules version 56, Chapter 6 – Economic Regulation of Distribution Services, clause 6.5.2(j)(2).

[36] Synergies Economic Consulting (2013). Review of the WACC to apply to Unitywater for the 2013-15 Price Monitoring Period,

[37] This holds regardless of whether the exposure is being managed on a physical basis (i.e. the buying and selling of bonds), via derivatives, or a combination of both.

[38] Lally, M. (2010). The Appropriate Term for WACC Parameters for the SEQ Interim Price Monitoring, p.8.

> each year, and also to seek a sufficiently long average term on their debt that the proportion rolled over each year, and also to seek a sufficiently long average term on their debt that the proportion rolled over each year is sufficiently small. For example, the firm might seek an average debt term of ten years so that, in conjunction with staggering of the maturity dates, approximately 10% of its debt requires roll-over in any one year.

The key features of the trailing average approach are highlighted in the accompanying paper by QTC. In essence, it is assumed that one-tenth of the debt portfolio is refinanced each year, with the maturing debt replaced with new ten year fixed rate debt based on the then prevailing market rates. The prevailing ten year rate for each year is also applied to any new borrowings undertaken in that year. The benchmark cost of debt must therefore be updated on an annual basis as new borrowings are made and a percentage of the existing borrowings are refinanced at the then prevailing rates.

Given the benchmark cost of debt is currently based on a different debt management practice, it is assumed that the business transitions to this approach over a ten year period. Initially, the benchmark cost of debt is determined based on prevailing rates (consistent with the current approach). Each subsequent year, it is assumed that one-tenth of the benchmark portfolio is refinanced at prevailing market rates.

As highlighted above, it is important to maintain the distinction between the benchmark debt portfolio and what businesses actually do. The benchmark debt portfolio is an objective reference point for establishing the benchmark cost. The assumption that one-tenth of that portfolio is refinanced each year does not mean that the businesses exactly replicate this in practice – this only determines the level of compensation recoverable through prices.

In practice, businesses may choose to refinance more or less frequently depending on their individual circumstances and market conditions and indeed they should be incentivised to do so as this could generate efficiency gains (noting that this strategy can vary through time as these circumstances and/or market conditions change). However, for the purpose of establishing the benchmark cost of debt based on a staggered refinancing strategy, it is considered appropriate to assume that 'on average', this is executed evenly through time.

Apart from ensuring that the benchmark cost of debt is set with reference to a prudent and efficient debt management strategy, this approach will result in a considerably smoother cost of debt compared to a periodic reset (noting that periodic resets are not relevant under price monitoring). This in turn reduces any price shocks to consumers. It also means that they immediately benefit if interest rates fall.

4.2 Support for the trailing average approach

While the application of this approach in a regulatory context is a new concept, it is gaining support. As noted above, the Authority's own consultant has also acknowledged that the refinancing task may be staggered through time.

The AEMC concluded that the most appropriate methodology for estimating the benchmark cost of debt may vary between different service providers with different characteristics (which may influence their ability to implement particular debt management strategies).[39] Accordingly, it concluded that the Rules should not prescribe a particular benchmark strategy although should provide some guidance on how this should be determined. It has allowed for three approaches to be used, being:

- the prevailing cost of funds approach;
- an historical trailing average approach; or
- some combination of the two.[40]

The AER is currently considering implementation of this in the review of its WACC guidelines, including transitional issues. While it recognised that there are arguments in favour of the current 'on the day' approach, its preliminary views on this issue included:[41]

> We agree with stakeholders that refinancing risk is a relevant consideration and, as such, a benchmark efficient entity may be better served by holding a portfolio of staggered debt issued at different dates. This is particularly true in light of the known issues with the "on the day" approach, as described above. Additional considerations in favour of such a portfolio approach are as follows:
>
> 1. It smooths movements in the return on debt over a number of years, which would result in lower price volatility for energy consumers and more stable returns for investors than the "on the day" approach.
> 2. It minimises the consequences of a single measurement error.
> 3. It is more reflective of the actual debt management approaches of non-regulated businesses and, therefore, is more likely to represent efficient financing practice.

[39] Australian Energy Market Commission (2012). Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper, 29 November.

[40] Australian Energy Market Commission (2012). Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services, Final Position Paper, 29 November p.90.

[41] Australian Energy Regulator (2013). Consultation Paper, Rate of Return Guidelines, p.80.

The Australian Competition and Consumer Commission's Regulatory Development branch also supported this approach in a paper released in April 2013.[42] Issues it identified with the current approach include:

- how a regulated business that issues ten year debt can practically hedge its debt exposure if the cost of debt is reset once every five years (which is the case for energy network businesses); and
- businesses are exposed to risk on borrowings undertaken during the regulatory period, which could have a detrimental impact on investment if the cost of debt has risen from the reset date.

It states:[43]

> While the current regulatory framework provides the regulated business with an incentive to issue all of its debt at the start of the access arrangement with a term of debt equal to the period of regulation, refinancing risk creates a counterbalancing incentive for the business to:
>
> - limit the percentage of debt refinancing in any particular year
> - issue debt with a longer term.
>
> Given the current incentives in the regulatory framework and given that regulated businesses do not issue all of their debt to match the regulatory period, one can conclude that it is efficient for a regulated business to spread its borrowing over time rather than to issue all of its debt at the start of the access arrangement.

It therefore supports the trailing average approach although we note that it does not currently support the annual update of the benchmark cost of debt, although this in turn is linked to a practical constraint, being whether annual updating is actually allowed for under different regimes.

Implementing this approach without the annual updates will materially undermine its effectiveness and expose the business to ongoing risk. As noted in the accompanying paper by QTC, the alternative is to implement a 'true up' at the end of each regulatory period however this could still result in larger step changes in prices, largely negating the benefits to consumers of smoothing over the regulatory period.

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[42] Australian Competition and Consumer Commission (2013). Estimating the Cost of Debt, A Possible Way Forward, Regulatory Development, April.

[43] Australian Competition and Consumer Commission (2013). Estimating the Cost of Debt, A Possible Way Forward, Regulatory Development, April, p.13.

5 Summary: response to the questions in the Discussion Paper

The preceding analysis has identified a number of framework issues that are not specifically canvassed in the Discussion Paper. This submission, and the accompanying reports by NERA, SFG and QTC, has also addressed the questions posed by the Authority in the Discussion Paper. In summary, the responses to the questions are as follows.

Please comment on the advantages and disadvantages of applying a split cost of capital approach rather than the Authority's standard 'single WACC' approach to determining the return on capital.

We are not able to identify advantages and disadvantages of the split cost of capital because this is not considered to be a valid approach to assessing the cost of capital. As noted in the accompanying report by SFG, the approach has been rejected by all of the UK regulators that have considered it, with the reasons being summarised as follows:[44]

a) By definition, separating a regulated business into its component pieces does not change the total amount of risk – a pizza has the same amount of calories even if cut into thin slices. If the total risk is the same, the total required return is the same, so there would seem to be no point in using the split cost of capital approach;

b) The total risk to investors in the regulated firm would only be reduced if some of that risk is transferred to government via the provision of a guarantee. There is no reason to suggest that government would provide such a guarantee;

c) In practice, no businesses are separated into component pieces in accordance with the split cost of capital approach, so it would be impossible to reliably estimate the risk and required return for each component piece;

d) It is no accident that actual businesses have not separated into component pieces in accordance with the split cost of capital approach. There are sound economic reasons for operating as a combined business;

e) The split cost of capital approach assumes that the RAB can be financed with 100% investment grade debt, but there is no evidence to suggest that this is possible in practice; and

[44] SFG Consulting (2013). The Split Cost of Capital: Report for Gladstone Area Water Board, Queensland Urban Utilities and Unity Water, p.1.

f) If the split cost of capital approach was applied to existing assets, it would be a manifestation of the very regulatory expropriation risk that the split cost of capital approach assumes away.

In particular, to what extent do stakeholders consider that the existing regulatory design and arrangements effectively guarantee the existing regulatory asset base?

There is no evidence to show that the RAB is guaranteed. In any case, as explained in the accompanying paper by NERA, the relevant issue is the riskiness of the cash flows generated by the assets, not the value of the RAB itself. There is certainly no evidence to show that a regulated business has 100% certainty that it will eventually recover the full return on, and return of, capital over what is typically a long economic life. Indeed, if such a guarantee were provided it would fundamentally alter the incentives of the regulated business and could give rise to a moral hazard problem.

As highlighted by both SFG and NERA, if such a guarantee was provided by Government (and taxpayers), it does not change the total risk of the assets – it simply reallocates it to a different party. Given the cost of capital is intended to reflect the riskiness of the assets rather than the sources of capital, it is reasonable to expect that the party/ies bearing the risk would require the same return and total prices should therefore remain unchanged.

The Authority's proposal effectively assumes that if this risk was borne by government, as a consequence of the transfer of risk the assets are now effectively riskless, or the government is willing to provide that guarantee for free. In addition to providing that guarantee, the acceptance of a cost of debt return on regulated assets would therefore need to be agreed to by government.

As SFG points out, there are a number of reasons why government would not want to provide such a guarantee. It is also questioned how this guarantee would operate in the case of regulated businesses that are privately owned.

In addition, to what extent do stakeholders consider that the 'single WACC' approach is likely to under-compensate investors for major capital expenditure projects?

The Authority's proposal, which is based on applying a higher WACC for the purpose of interest during construction, addresses the risks borne during the construction phase but not beyond it. The extent to which the infrastructure provider bears design and construction risks will also vary depending on the risk-sharing arrangements reflected in the contracts for design and construction (and regulation should not alter the assessment of how these risks should be allocated as it is a commercial decision). This raises other questions that are beyond the scope of the Discussion Paper.

The key question here is whether it is appropriate to assume that owners of regulated assets would ever invest on the basis that regulated prices can only assume a cost of debt return on those assets. In effect, this has to assume that the assets are 100% debt funded, which is unlikely to be feasible. If not, it assumes that equity investors (whether that be government or private owners) would be willing to accept a return that is equivalent to the cost of debt. As highlighted by SFG, if the Authority was to implement this proposal it should not be applied retrospectively.

In our view, the split cost of capital approach would likely have a material and adverse effect on investment incentives and the ability of regulated businesses in Queensland to raise capital because of lower allowable returns on regulated assets compared to other jurisdictions (as well as unregulated infrastructure). We would consider it particularly important for the Authority to test its proposal, which is highly theoretical, with investors that invest in regulated assets.

To what extent are the current arrangements inadequate in the context of incentivising operating and maintenance expenditure and how could incentive-based regulation be applied to better improve them?

We agree that this is an important question but is a much broader issue that is not within the scope of the Authority's Discussion Paper. It requires a proper examination of the available evidence within the context of the incentives currently provided, the strongest discipline being an inability to claw back overspends unless it was due to costs increases that are not directly within the control of the regulated business (as approved by the regulator). It is also noted that the Authority scrutinises operating and maintenance expenditure allowances in detail. Changes to the regulatory framework should only be made if:

- there is clear evidence that incentives are currently inadequate; and
- the change would provide a clear and effective incentive on the business to improve efficiency without having unintended adverse consequences (for example compromising service quality, safety and reliability).

Do stakeholders consider that indexing the regulated firm's cost of debt on an annual basis is appropriate?

There is now increasing recognition of the problems associated with the current 'rate on the day' approach, including the concentration of refinancing risk. We consider that this is best addressed by the trailing average approach, which assumes that ten year debt is progressively refinanced each year. The prevailing ten year rate for each year is also applied to any new borrowings undertaken in that year. The benchmark cost of

debt must therefore be updated on an annual basis as new borrowings are made and a percentage of the existing borrowings are refinanced at the then prevailing rates. Apart from replicating a more efficient debt management strategy, this will have the important benefit of smoothing prices paid by consumers through time.

To what extent does a firm's status as a government-owned business affect the above considerations? Should the regulatory arrangements provide for a different cost of capital for these businesses in comparison to otherwise equivalent private sector firms?

The Authority's proposal raises some important economic and policy questions. This includes competitive neutrality, the effectiveness of which is an issue for government. It also has implications for the achievement of upper bound pricing under the NWI, which all Australian states have committed to progress towards.

It also contradicts a fundamental tenet of finance theory, which has been previously acknowledged by the Authority, being that:[45]

> …the cost of capital relates to assets and is independent of the source of financing. Consequently, the financing of an asset from public rather than private sources will not alter the cost of capital that attaches to the asset. Rather, it is the riskiness of the asset which will determine the cost of capital…

We note that this proposal was also considered and rejected by the AEMC as part of its recent rule change process for regulated energy network businesses. It has also been directly considered and rejected by other Australian regulators in the context of recent water price reviews, including the ESC and ESCOSA.

The Authority should therefore not differentiate between government and privately owned businesses in setting the cost of capital.

[45] Queensland Competition Authority (2003). Burdekin Haughton Water Supply Scheme: Assessment of Certain Pricing Matters relating to the Burdekin River Irrigation Area, p.81.

An alternative approach for calculating the benchmark cost of debt

QUEENSLAND TREASURY CORPORATION

Background

This report provides a high level description of an alternative approach for calculating the benchmark cost of debt for businesses that are subject to economic regulation or price monitoring arrangements. The approach is based on replicating the cost that would be produced by a benchmark portfolio of fixed rate debt with evenly spaced maturity dates out to ten years. Over time the cost produced by this type of portfolio will be similar to a ten-year trailing average of the ten-year fixed rate corporate cost of debt.

Rationale for adopting an alternative cost of debt approach

Most Australian regulators calculate the benchmark cost of debt by estimating a risk-free rate and corporate debt risk premium over a short averaging period just prior to the start of each regulatory period (the 'on the day' approach). Although regulators do not explicitly prescribe the use of a particular debt strategy, calculating the benchmark cost of debt in this way implies the use of a strategy that unintentionally creates risks for businesses and consumers.

Outcomes for businesses

The debt management strategy implied by the 'on the day' approach requires a business to fully refinance and reprice its entire debt balance during each averaging period. This requires the business to adopt a highly concentrated debt maturity profile with all borrowings either maturing or being repurchased during the next averaging period.

Some regulated businesses may be able to use interest rate swaps to lock in a fixed base rate on their total debt balance for the term of each regulatory period. However, there are no hedging instruments that can be used to manage the debt risk premium component of the total cost of debt in the same way. Furthermore, this type of hedging strategy is not typically used by unregulated infrastructure businesses, which suggests that it is a rational response to a regulatory distortion rather than efficient practice.

Outcomes for consumers

A full reset of the benchmark cost of debt over a short averaging period exposes consumers to the risk of prices being set during a period of relatively high corporate interest rates, with the outcome being locked in for the next five years. This approach may lead to large 'step changes' in prices at the start of each regulatory period.

Using a portfolio approach to calculate the benchmark cost of debt will create incentives for regulated businesses to adopt efficient debt financing practices and will produce more stable regulated revenues and consumer prices by reducing volatility in the benchmark cost of debt.

Efficient debt financing costs

A fundamental principle of economic regulation is that a business should be provided with the opportunity to recover the efficient costs of providing a regulated service, and this principle also applies to price monitoring arrangements. The way in which compensation is provided for debt financing costs should also create an incentive for the business to adopt efficient debt financing practices.

Efficient debt financing costs are the costs that would be expected to be incurred by a business that prudently structures and manages its borrowings based on a range of market-based constraints and risks as refinancing and interest rate risk. Efficient debt financing costs can be viewed as the *outcome* from adopting and maintaining efficient debt financing strategies.

Characteristics of efficient debt financing strategies

An efficient debt financing strategy will result in a business's equity providers being exposed to an acceptable level of refinancing and interest rate risk. Refinancing risk is the possibility that a borrower is unable to raise new debt to repay a maturing debt, or if new debt can only be raised on unfavourable terms. Interest rate risk is the potential for a mismatch between a business's revenues and its scheduled interest payments.

For businesses that operate long-lived infrastructure assets, employ above market average gearing and have relatively stable revenues, refinancing and interest rate risks can be kept at an acceptable level by:

- maintaining a portfolio of fixed rate debt with equally spaced maturity dates out to ten years (or longer if possible)
- having approximately ten per cent of the total debt maturing each year, and
- refinancing each maturing debt with new ten-year fixed rate debt.

Evidence of the efficiency of maintaining a diversified debt maturity profile can be found by examining the debt maturity profiles of borrowers that are not subject to economic regulation. Although the business risk profiles of some of these borrowers may differ from a regulated business, they are exposed to a common risk of having to refinance maturing debt or fund new investment when credit market conditions are unfavourable.

Appendix A displays the debt maturity profiles for a range of businesses, some of which operate long-lived infrastructure assets such as Sydney Airport Corporation, Brisbane Airport Corporation, Telstra and Transurban. The profiles are well-spaced and extend out to at least ten years. As at 30 June 2012, the average remaining debt tenor for these businesses was 7.1 years, which is consistent with an average debt issue tenor in excess of ten years.

Over time, the average cost produced by this type of benchmark debt portfolio will be similar to a ten-year trailing average of the ten-year fixed corporate cost of debt. The cost of debt will be relatively stable on a year-by-year basis and will be largely protected from short-term volatility in corporate interest rates. This is considered to be a significant improvement over the current 'on the day approach', which exposes consumers and businesses to unnecessary risks.

Annual updating of the benchmark cost of debt

Annual updates to the benchmark cost of debt are essential to the proper application of a portfolio approach where a percentage of the existing debt balance is regularly refinanced at the prevailing cost of debt.

The average cost of debt for a benchmark portfolio with annually spaced maturity dates will change each year as a percentage of the existing debt balance is refinanced at the prevailing cost of debt. As this variation is the result of following an efficient debt financing strategy, the same annual change should also be reflected in the benchmark cost of debt allowance. If annual updates are not made, mismatches will be created between a regulated business's efficiently incurred debt financing costs and the cost of debt allowance.

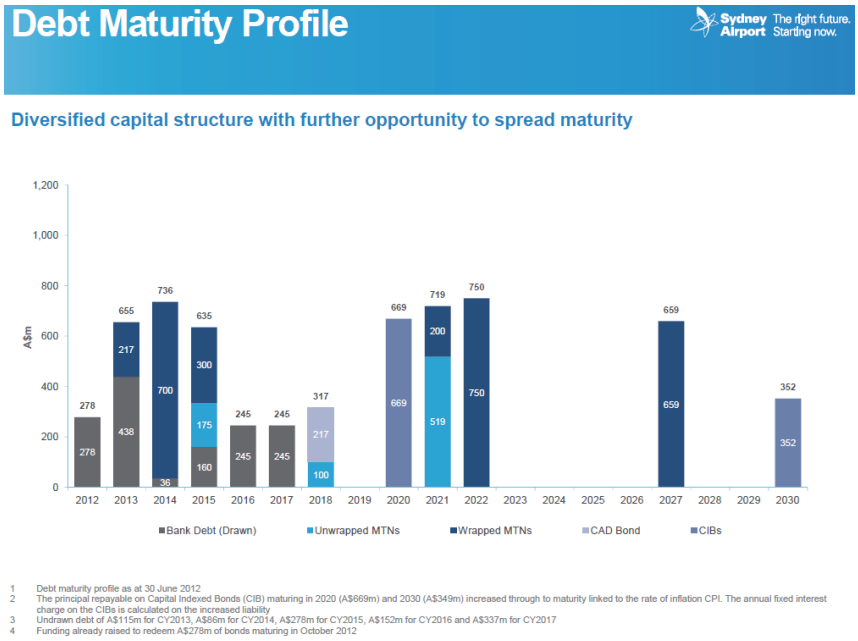
The contractual nature of interest payments means that a regulated business (like all other borrowers) has no ability to change the size or timing of the payments. As a consequence, any shortfall between the efficiently incurred debt financing costs and the cost of debt allowance must be funded when it occurs, possibly by reducing operating expenditures or new investment. For this reason, the time series properties of the benchmark cost of debt are considered to be just as important as the long-term average benchmark cost of debt.

An alternative to annual updating is to apply a fixed benchmark cost of debt and perform a 'true up' adjustment at the end of each regulatory period to account for any mismatches between the portfolio and benchmark debt costs during the period[1]. This approach is considered to be inferior to annual updating as it may still result in large step changes in prices at the start of each regulatory period and will produce price/revenue adjustments that are positively correlated with changes in the benchmark cost of debt. Furthermore, a regulated business will still need to fund shortfalls between its efficiently incurred debt financing costs and the cost of debt allowance when they occur.

[1] The benchmark cost of debt would still be based on the average cost of debt for the benchmark debt portfolio at the start of each regulatory period.

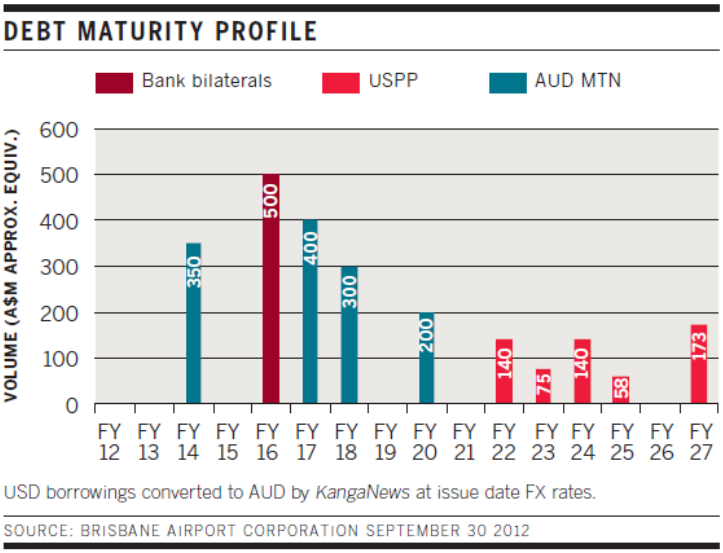
Appendix A – Debt maturity profiles

Sydney Airport Corporation



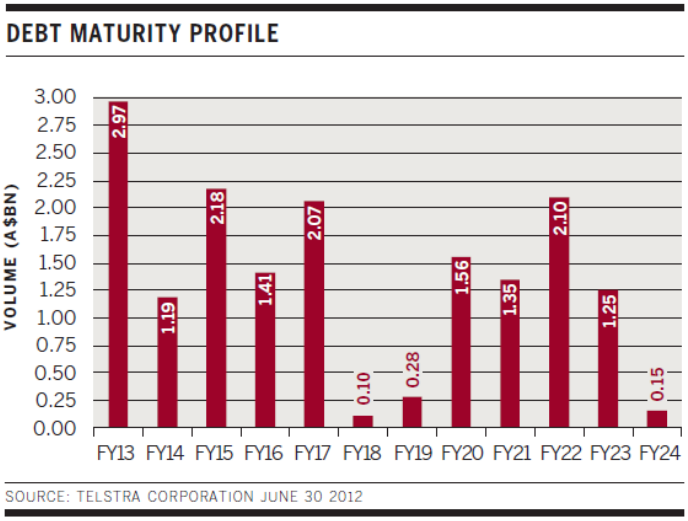
Source: Sydney Airport – AUD, CAD & US144A Debt Investor Update, 19 September 2012

Brisbane Airport Corporation



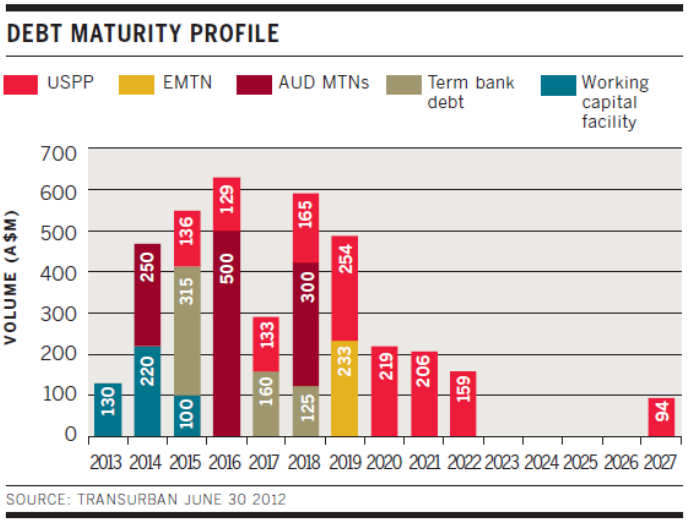
Source: KangaNews issuer profile

Telstra Corporation



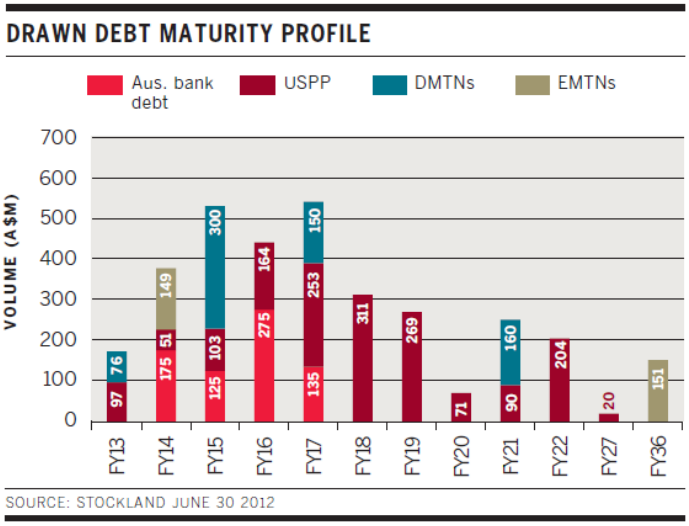
Source: KangaNews issuer profile

Transurban



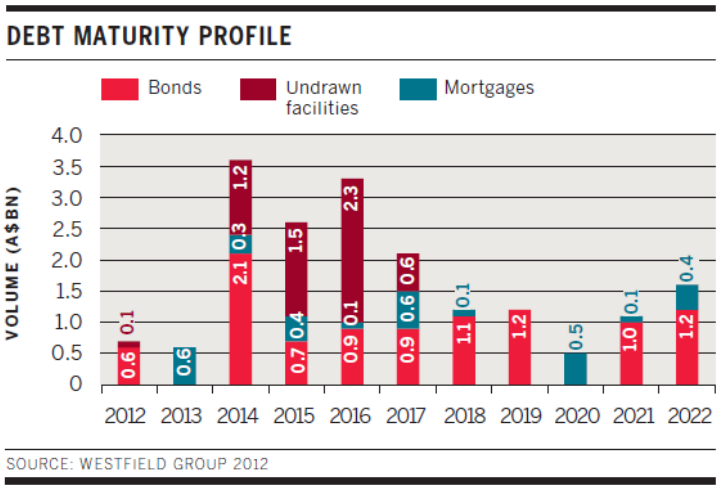
Source: KangaNews issuer profile

Stockland



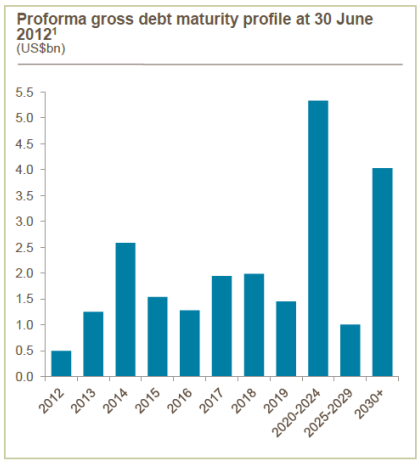
Source: KangaNews issuer profile

Westfield Group



Source: KangaNews issuer profile

Rio Tinto

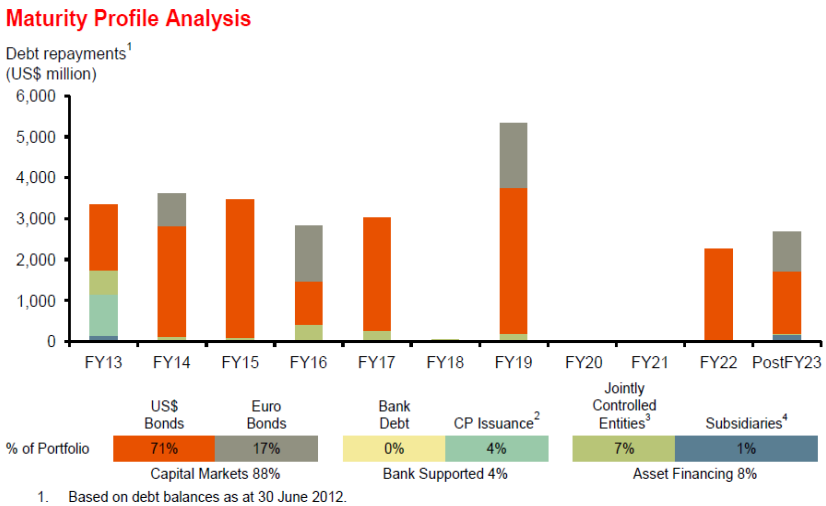


- Aim to maintain a single A credit rating
- Long term and smooth debt maturity profile
  - Weighted average maturity of over nine years
  - $5.5 billion of bonds issued in 2012 with a weighted average maturity of around 12 years and coupon of 3.6%
  - $1.7 billion of bonds falling due over next 18 months
- Approximately two thirds of gross debt at fixed interest rates

RioTinto

Source: Rio Tinto Investor Seminar, London/New York, 9 October 2012

BHP Billiton



Source: BHP Billiton Credit Summary as of 30 Jun 2012

NERA
ECONOMIC CONSULTING

A Split Cost of Capital – Review of the QCA's Discussion Paper

A report for Queensland water service providers

31 July 2013

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Contents

1. Introduction

This report has been prepared at the request of three Queensland water service providers, ie, Gladstone Area Water Board, Queensland Urban Utilities and Unity Water. Its subject is an April 2013 discussion paper published by the Queensland Competition Authority (the "Authority"), entitled "Split Cost of Capital" (the "Discussion Paper"). The Discussion Paper has been released by the Authority as part of a broader review of its cost of capital methodology.

We have been asked by the Queensland water service providers to review the Discussion Paper and comment on its core propositions, from the perspective of good economic and regulatory policy.

The Discussion Paper explores the concept of the split cost of capital, as developed and promoted by Professor Dieter Helm of Oxford University in the United Kingdom. The essence of the split cost of capital proposal is that, rather than applying a single cost of capital to the regulated firm's regulatory asset base ("RAB") in the process of determining its allowed revenues and so price levels, separate and different rates of return should be applied to:

- the existing RAB, being the regulatory value of all existing assets, once commissioned, which would attracted a lower rate of return; and
- major new capital expenditure, which would attract a higher rate of return during the period of construction through until commissioning, after which such assets would enter the RAB and receive the different, lower return referred to above.

The rationale for this split cost of capital is that:

- the RAB reflects the value of past investments, and there is nothing managers can do that changes its value – the RAB is therefore subject only to residual political and regulatory risks and, because these are relatively low, the investment value of the RAB should be compensated on the basis of a lower cost of capital (at, or just above, the cost of debt); and
- in contrast, new capacity expansion requires active management, and is inherently more risky than the RAB – new capital expenditure should therefore be compensated on the basis of a relatively higher cost of capital, reflecting the cost of equity, until the point at which it is commissioned.

Our report is organised into four sections:

- in section 2 we discuss the fundamental economic nature and function of 'capital' in securing the production and delivery of goods and services, and its implications for evaluating key propositions put in favour of adopting a split cost of capital allowance for price regulated services;
- in section 3 we evaluate the central proposition, as developed by Professor Helm, that the RAB is a relatively low risk financial asset;

- in section 4 we discuss the implications of the Authority's observation that new capital investment is subject to higher risks and so needs a higher level of return than reflected in a single cost of capital, but that these risks arise and are realised (or not) prior to the commissioning of any new capital asset;
- in section 5 we discuss some critical implementation problems in giving effect to the postulated conceptual distinction between low and high risk elements of a regulatory price determination; and
- in section 6 we discuss the related aspect of the split cost of capital proposal that, for the purposes of regulatory price determinations, the cost of debt allowance should be set annually, in line with an index-linked bond rate.

2. Nature of Capital Investment

In evaluating the analysis and conclusions set out in the Authority's Discussion Paper it is helpful first to set out a brief discussion of the fundamental economic nature and function of 'capital' in securing the production and delivery of goods and services. This assists in clarifying the nature and extent of the risks to which the providers of capital are exposed, and so the returns that are necessary to guide the allocation of capital towards one form of economic activity or another.

These principles apply equally across all firms, irrespective of whether their outputs are subject to price regulation. They also provide a helpful framework for evaluating some of the key propositions put in favour of adopting a split cost of capital allowance for regulated services.

It is uncontroversial that firms – including regulated firms – exist to provide goods or services to other business and/or households in the economy. In all forms of such economic activity, firms need to incur cash outlays prior to the subsequent point in time at which those cash flows can begin to be recovered, when goods or services are provided and paid for. The timing mismatch between the point at which cash outlays are incurred and that at which cash is returned to a firm as customers purchase and pay for its output represents the 'capital' needed to finance that activity.

The mismatch in cash flows that gives rise to the need for capital may be represented by the creation of physical assets, or the need to develop intellectual or non-tangible property, as well as the need to pay suppliers for inputs before a firm will be paid for its output. In many respects, the precise activity undertaken by the firm is irrelevant to the underlying capital requirement. Rather, the critical characteristics of the capital requirements for any firm are:

- the magnitude of the capital investment that is required in order to secure the production of the good or service;
- the time profile over which that investment will be recovered; and
- the riskiness of the mismatch in timing and quantum as between cash out and cash in, and so the rate of return that an investor requires in order to undertake the investment.

This fundamental perspective underlines the critical role of capital investment in facilitating the provision of goods or services, thereby generating inward cash flows for firms. Nonetheless, capital investment is a means to an end, rather than an end in itself. The need for capital is incidental to the need of the firm to generate earnings that are sufficient to remunerate its capital requirements.

Put another way, it is the generation of earnings (via the provision of goods and services) that is the core function of the firm and its assets. Indeed, an asset is defined in the economics literature as:

> "something that provides a flow of money or services to its owner".[1]

It follows that the critical function of a capital asset is its ability to generate this flow of earnings. On this perspective, it cannot meaningfully be said that a physical asset is itself inherently risky or riskless; rather, risk arises from uncertainty as to the expected flow of cash earnings from the asset.

In their introductory microeconomics textbook, Pindyck and Rubinfeld (2009, p.177) define a risky asset as one that:

> "provides a monetary flow that is at least in part random. In other words, the monetary flow is not known with certainty in advance",

while a riskless asset:

> "pays a monetary flow that is known with certainty".[2]

The crucial point is that it is the riskiness of the monetary flow, or equivalently the return on and return of the financial capital of the asset owner, that indicates the riskiness of the asset itself.

It follows that, in the context of a firm providing services subject to price regulation, it is not the assets in the RAB or their value *per se* that is subject to risk; rather it is the cash returns that are enabled by the existence of the assets represented by the RAB that define the relevant risks and so dictate the appropriate required return.

There is also an important distinction to be drawn between physical capital and financial capital. Physical capital refers to the actual assets held by the firm, and the value of the RAB reflects the agreed value – for price setting purposes – of the firm's physical capital. In contrast, financial capital reflects the mismatch between the negative (or outwards) cash flow from the firm's expenditure on physical capital, and the positive (or inwards) cash flow that the firm generates by providing goods or services in the market.

It can be quite some time before a business that outlays cash (financial capital) in order to establish a production capability of one form or another then starts generating inwards cash flow. It follows that a firm's financial capital is not necessarily equivalent to the value of its physical assets at the time that the latter are either constructed or acquired.

In the case of a firm whose output is subject to price regulation, although a regulator may place a financial value on the relevant physical assets by means the RAB, the process of generating positive inwards cash flows as a consequence of that deemed RAB value involves many discrete steps. Significantly, each of these steps introduces a degree of uncertainty into both the timing and quantum of the cash flows that will ultimately accrue to the firm.

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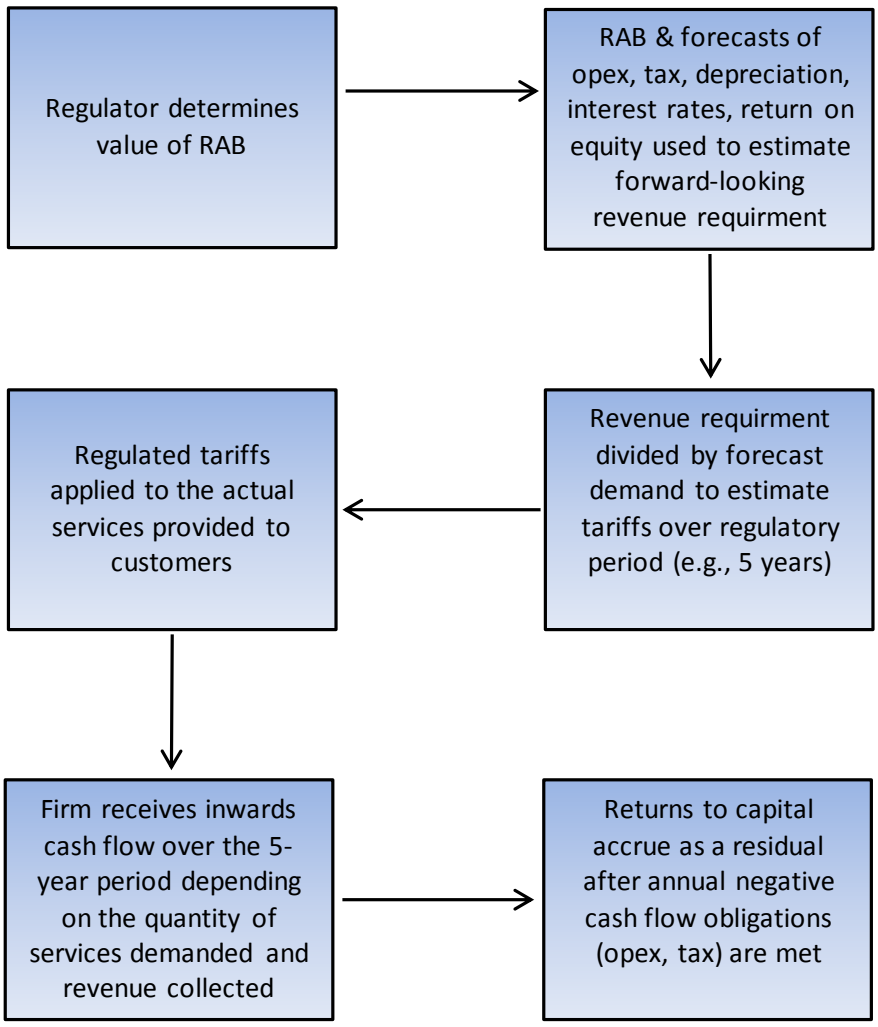
1 Robert S. Pindyck and Daniel L. Rubinfeld (2009), *Microeconomics*, Seventh Edition, Pearson Prentice Hall, p.177.

2 *Ibid.*

Figure 1, below, presents a flow chart of the main elements of this process. The focus of the Authority's Discussion Paper is the first step in that process, ie, the determination of the value of the RAB. In contrast, the Discussion Paper gives much less attention to the many additional steps that stand between the value of the RAB and the cash inflows that represent the return on that RAB value.

Figure 1
Flow chart of process from determining RAB to earning a return on RAB



The critical attributes of the process depicted at Figure 1 are that, at each step in the process after the RAB has been determined and through to the firm receiving cash in the form of a return on that RAB, there are uncertainties and risks. We discuss some of these risks in more detail in later sections of this report.

Notwithstanding, the many steps set out in Figure 1 underline that the process of moving from a deemed value for the RAB through to cash returns on that value is substantially more complex than that for a debt financing instrument. This highlights the essential flaw in the Authority's Discussion Paper, when it states that:

> "...the RAB is an accounting construct that reflects the value of past investments and, once set….should earn at, or just above, the cost of debt."[3]

In our opinion, in drawing a close analogy to the risks associated with debt finance, the Discussion Paper mischaracterises the complexities, uncertainties and so risks that lie between a deemed value for the RAB and the residual cash flows that accrue to a regulated service provider.

Those risks principally arise in relation to:

- the five year forecasts that typically underpin each of the key inputs into the revenue requirement and demand; and
- the extent of variability associated with outturn values for each of these revenue requirement inputs and demand – irrespective of the robustness of forecasts made in relation to them – and the ability to collect revenue from customers.

It follows that it is not correct to view the regulated firm's return on its RAB as being either risk free or of intrinsically low risk.

[3] Queensland Competition Authority, *Split Cost of Capital,* Discussion Paper, April 2013, page 1.

3. Riskiness of the RAB

The Discussion Paper proceeds on the central proposition, as developed by Professor Helm, that the RAB is a relatively low risk financial asset. This contention is critical to the Authority's suggestion that, on the basis of a 'stylised' model that it presents, if the split cost of capital concept were to be implemented:

- the firm's rate of return would decrease by 1.8 per cent; and
- revenues and customer bills would decrease by 12.3 per cent.

In this section we identify the critical elements of the Authority's contention that the RAB is a low risk asset and present our assessment of them.

The Authority states that, once assets are in the RAB, actions taken by managers of the regulated firm cannot change their value. In effect, the value of the RAB is implicitly guaranteed, and may even be explicitly guaranteed by statute or regulation.

Professor Helm cites the 'guaranteed' nature of the RAB value as the basis for contending that there is very little equity risk to the firm associated with the RAB. The only residual risk to the value of the RAB is political or regulatory risk, eg, that the regulator will alter its value. Helm argues that these residual risks are beyond the control of the managers of the regulated firm and so should be allocated to (or, paid for by) consumers or taxpayers. Accordingly, since there is very little risk associated with the value of the RAB, Helm's view is that it should be financed through debt rather than equity, and so returns on it should be set by reference to the cost of debt.

In contrast, Professor Helm argues that major new capital expenditure ("capex") – say, for the purpose of capacity expansion – involves a range of potential risks, such as in relation to planning and design, construction, management, cost and schedule variability, and political and environmental planning. These risks are largely within the scope of managerial control and give rise to a "great deal" of equity risk.[4] However, Helm argues that as project completion and commissioning draw nearer, the role of equity diminishes since the majority of these risks are "realised".[5] At that point, Helm argues that the regulatory framework effectively removes this risk, because the completed project is effectively 'purchased' by the RAB at an agreed value.

Since a single weighted average cost of capital ("WACC") is likely to be "too low" for the firm to earn a return on new capex, Helm's argument is that new capex should be financed at a higher cost of capital, based on the cost of equity. Importantly, however, this higher rate of return applies only for the period from commencement of construction or development of an asset to the date at which it is commissioned and so enters the RAB. From that point onwards, the relevant return would be that commensurate with the contended low risk nature of the value of the RAB.

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[4] Dieter Helm (2009), "Infrastructure investment, the cost of capital, and regulation: an assessment", *Oxford Review of Economic Policy*, 25(3), 307-326.

[5] Queensland Competition Authority, *Split Cost of Capital*, Discussion Paper, April 2013, page 14

In evaluating these propositions, perhaps the most important observation is that there appears to be some confusion in the Discussion Paper as to whether Helm's argument is that managerial effort cannot change the *value* of the RAB, or whether managerial effort cannot change the *return* on the RAB. For example, the Discussion Paper states:

> "Helm argues that, once the RAB value is set, there is nothing managers can do to change its **value**."[6] [emphasis added].

However, this statement is immediately followed by:

> "In other words, their managerial effort cannot change the **return** on the RAB."[7] [emphasis added].

The Authority also devotes a considerable amount of discussion at pages 11-13 of the Discussion Paper to the suggestion that the *value* of the RAB in Australian regulation is protected, and will not be reduced once it is set. It is possible that this is intended to be tied in to the idea that the protection of the value of the RAB also protects or de-risks the *return* on the RAB, as indicated by the statement that:

> "Importantly, protection of the RAB means that the financial capital that is represented by the RAB is also protected. Therefore, even if physical capital should fail to provide a service or be under-utilised, the financial capital is still protected and will be recovered in capital charges."[8]

Irrespective of whether the Authority intends to refer to the *value* of or the *return* on the RAB, it is important to note that:

- it may be that there is nothing that managers of a regulated firm can do to change the value of the RAB, and that the value of the RAB is protected by regulators – however, we explained in section 2 that it is not the value of the RAB that determines its riskiness; rather it is the variability of the monetary flow generated by the RAB, ie, the actual cash return that accrues from selling the services that the physical assets reflected in the value of the RAB facilitate; and
- contrary to the contentions of Professor Helm, the actual cash return that a regulated firm earns on its RAB each year is not simply a fixed or largely fixed annual payment, but rather is an amount determined as the residual outcome of both the process and its associated risks that we depict in Figure 1.

For any business, whether regulated or not, there is neither an implicit nor explicit guarantee that it will earn a certain or even near-certain annual cash return on the value of its investment. Rather, there is in fact substantial risk that a firm's returns will vary for a range of business-specific as well as market or economy-wide factors.

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6 Queensland Competition Authority, *Split Cost of Capital*, Discussion Paper, April 2013, page 10.

7 *Ibid*.

8 *Ibid*.

Drawing on the framework of Figure 1, it is clear that there are significant risks for each element of the process by which the value of the RAB is set and, ultimately, the firm receives a return on its RAB.

The first of these risks relates to the forecasting of each of the variables that underpins the revenue requirement that is typically established every five or so years. The regulated firm's revenue requirement is determined by reference to forward-looking estimates of key variables such as operating expenditure ("opex") and interest rates. Forecasting is inherently an imprecise process, and there is absolutely no guarantee that the actual, realised, values of these variables for the regulated firm will match those determined by the regulator.

This is particularly the case for opex, with firms exposed to the risk that their actual opex is materially different from that allowed by the regulator. Circumstances under which this might arise include where input prices are higher (or lower) than expected, or where asset maintenance requirements are higher (or lower) than was expected. Regulated firms in Australia can recover variations from forecasts for certain "uncontrollable" operating costs, however these are limited to certain risks and these costs typically only relate to a small fraction (between 1 and 8 percent) of the regulated firm's total operating costs.[9]

The second principal risk applying to all regulated firms is demand risk. Regulated firms are not entitled to recover from their customers their forecast revenue requirement *per se*. Rather, firms must levy the regulated tariff, as determined by the revenue requirement divided by (forecast) demand across each charging parameter.

It follows that, if demand fluctuates materially from the forecast level used to determine the regulated tariff, then the inwards cash flow actually received by the firm will be different from the revenue requirement and so more or less than sufficient for the firm to earn the target return on its RAB. In the presence of economies of scale and so a declining average cost curve (circumstances that are often the case for price regulated infrastructure service providers), a reduction in demand can make it significantly more difficult for the firm to recover the average costs on which its revenue requirement was based.

The effects of demand risk are often highly material, to the point where if demand falls sufficiently assets may become stranded. By way of example, the closure of a large industrial water user will have a material effect on the water infrastructure owner's ability to recover the relevant portion of its real financial capital (at the regulated tariff), at least within a particular regulatory period and, in the longer term, may also be incapable of being recovered at all from remaining customers.

The third area of risk relates to the ability of the regulated firm actually to collect its allowed charges from customers. The regulatory determination of maximum tariffs involves no guarantee that customers will actually pay those tariffs, and it is up to the firm to implement procedures to ensure that it does collect sufficient revenues. Again, the risk that forecast

[9] See NERA's report for Aurizon, "Review of QCA's Discussion Paper "Risk and the Form of Regulation", 28 March 2013.

revenues cannot actually be collected may be substantial, particularly in circumstances where regulated service providers serve a large number of major industrial users.

It is clear from this discussion that returns to a regulated firm are subject to significant influence by managers and, more generally, significant uncertainty that is also associated with influences outside managerial, political, or regulatory control. For example, demand risk and many cost risks are driven by the fortunes of the macroeconomic or business environment.

Further, managers – through the means by which they anticipate and respond to such risks – have a significant influence on the returns earned by the firm, at all levels of the process in which the firm earns those returns. Managerial action can influence the actual operating costs borne by the firm, the actual level of demand faced by the firm (say, through tariff design), and the actual inwards cash flows received by the firm. In our opinion, it is not correct to suggest that managerial effort cannot influence the actual returns received by the firm, or that those returns are in some way guaranteed or assured.

4. Riskiness of New Capital Investment

In contrast to the (purportedly) low risk nature of the financial capital embodied in the RAB, Professor Helm contends that new capital investment is subject to higher risk and so needs a higher level of return than is reflected in a single cost of capital. The Discussion Paper identifies these risks as relating to "risks in delivery" and as including:

> "planning and design, construction, management, cost and schedule variability, and political and environmental risk".[10]

Professor Helm contends that these risks arise and are realised (or not) prior to commissioning of any new capital asset. In this section we discuss the implications of these observations, and the effect of attempting to distinguish and remunerate them under distinct arrangements within a regulatory regime.

It is important to note that the risks of new capital investment referred to by the Authority are essentially those associated with the cost of actually getting new construction work done. Put another way, these risks do not relate to and are independent from the risks associated with the variance in residual cash returns that arise on that new capital investment once it is commissioned.

For long-lived assets of the sort that are typically owned by infrastructure service providers subject to regulation (eg, water and gas pipeline networks, electricity distribution and transmission networks, rail networks, and ports), the period of construction is generally only a small fraction of the economic life of the asset. We recognise that the risks associated with the construction phase may indeed be significant and will ultimately dictate the quantum of the capital commitment needed to supply the service. However, from the perspective of an investor, the critical question is the extent to which it receives an adequate return over the entire life of the asset, not just the period during its construction through to when the asset is commissioned.

Further, it is something of a misnomer to suggest that any cash return accrues during the period of an asset's construction – rather, the cost of new construction dictates the baseline level of capital commitment, from which cash returns accrue over the ensuing and lengthy period for which services are both demanded by customers and physically able to be provided.

It follows that the relevant risks associated with new capital investment are driven by the variability of financial returns over the life of the asset that can be expected to be earned once that asset is commissioned – in just the same way as they are for the RAB. Again, these returns are risky on account of the same forecasting, demand and cost variations that we identify in section 3 above. It follows that, once brought into the RAB, the risks for new capital investment are no different from those for existing assets captured in the RAB: both are determined by the variability of returns flowing from the use of the financial capital, as represented by the physical assets required to supply the relevant goods or services of the regulated business.

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[10] Queensland Competition Authority, *Split Cost of Capital,* Discussion Paper, April 2013, page 14.

To the extent that concern arises in relation to the design of a regulatory regime so as to ensure the appropriate incentives and rules for projects under construction, we note that this is a complex area that extends well beyond the scope of either the Discussion Paper or our comments on it. The identification and treatment of such risks, and the design of incentive and reward mechanisms directed at encouraging efficient new capital project outcomes, generally needs to be specifically addressed for each particular infrastructure service. At a minimum, it is important to emphasise that the range of issues that need to be addressed for projects under construction extend well beyond the rate of return to be applied for the period during which an asset is constructed.

5. Implementation Problems

In the preceding sections we set out the conceptual difficulties with the Authority's core proposition that the return on the RAB is inherently low risk, and explained that the regulatory and commercial factors governing the achieved return on the RAB introduce considerable risk to that process. In this section we discuss some critical implementation problems in giving effect to its postulated conceptual distinction between low and high risk elements of regulatory price determination.

The Authority appears to recognise the principle that the RAB may in fact be subject to demand risk in section 5.3.7 of its Discussion Paper. However, in drawing conclusions in light of that recognition, the Authority notes that:

> "These points have some validity but rather than implying the RAB is not risk-free, they might mean that there is some residual risk (but it still might be less than is currently reflected in regulatory compensation). Thus, the Helm argument has more immediate appeal where it is clear that market circumstances or regulatory arrangements and political factors provide a strong case that the RAB is low risk."[11]

In suggesting that the appeal of the split cost of capital proposition might be dependent upon an assessment as to extent to which market circumstances mean that the RAB is indeed low risk,[12] the Authority appears to contemplate the need for a conceptual debate on the extent to which the returns on the RAB are "low risk" for any particular regulated infrastructure service provider.

Although the proposition that the validity of the split cost of capital concept is contingent upon a finding in relation to the level of risk may be superficially attractive, in our opinion the Authority's implied suggestion that such a line of inquiry may be capable of objective resolution is unsatisfactory. The problem with any process that seeks to evaluate such a proposition is that, although as we explain above it needs to take full account of all the risk-inducing steps in earning a return on the RAB, such a conceptual debate is unsatisfactory because it is necessarily qualitative.

Rather than attempting to undertake a qualitative assessment of the risks to which a regulated firm is exposed, it is important to recognise that there are empirical tools for measuring the riskiness of the variability of cash flows arising from one asset or firm relative to another. The asset or equity beta is perhaps the best known such tool, but there are many other financial models that also seek to measure the risk/return trade-off.

In our opinion, these empirical measures of risk should be given much more weight than any qualitative assessment, particularly where such an assessment involves drawing a distinction between individual elements of a single regulatory regime (such as the differences in risk arising before and after commissioning of a new capital asset). Independent, market-based

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[11] Queensland Competition Authority, *Split Cost of Capital,* Discussion Paper, April 2013, page 25.

[12] We note again that the Authority's reference to the RAB itself being low risk overlooks that the relevant consideration is the variability of the residual cash returns on the RAB, not the deemed value of the RAB itself.

evidence on the relative riskiness of the firm's cash flows is readily available, and applied to the whole business (via estimates of the debt and equity elements of the WACC), rather than the sum of its parts. The WACC is the only market-based empirical framework that is available to measure the riskiness of the firm's cash flows. Notwithstanding any conceptual or empirical shortcomings that the WACC framework may involve, it remains by far the best available tool for use in such circumstances.

Even if the returns on the RAB could be said to be relatively less risky than the returns (pre-commissioning) on new capex, there are insuperable practical difficulties in separating a regulated firm's residual cash flows into two separate income streams. Indeed, the Authority's example of the split cost of capital approach (section 6 of the Discussion Paper) uses only a single revenue stream. Customers of the regulated firm pay a single tariff that gives rise to a consolidated revenue stream; it defies conception that these arrangements could somehow be delineated into two identifiable income streams and their distinct risk characteristics evaluated.

These implementation challenges have implications for the Authority's claim that the separate pricing of risk via the split cost of capital would have beneficial economic efficiency effects. The Discussion Paper sets out an example which suggests (see page 6) that, by pricing risk to reflect average risk, the single cost of capital leads to allocative and dynamic efficiencies, since the firm's incentives are to undertake lower risk investments that can be quickly transferred to the RAB and avoid higher risk marginal investments.

However, given that each customer pays a single tariff (albeit, perhaps, with different charging parameters) and there is only a single revenue stream, it is unclear how either customers or the regulated firm would have the scope to act differently in response to the proposed differential pricing of risk.

For example, the Authority suggests that the single cost of capital provides a return that is too low for higher risk activities such as capacity expansion and, as such, there is too little investment in major capacity expansions with high risk. However, the split cost of capital approach does not provide for a separate (higher) revenue stream for high risk capacity expansions. Rather, it merely adjusts the single revenue stream to reflect the application of a different rate of return to the RAB itself, and to the determination of the value at which new capex enters the RAB. It follows that there is no means by which a split cost of capital provides a revenue stream commensurate with the risk for new capex, and so no means of providing an increased incentive to invest in major capacity expansions.

To put this point another way: the regulated firm is allowed to set prices on the basis of a single allowed revenue stream; irrespective of whether this revenue stream is derived by reference to a single cost of capital or one that is split into two elements, the regulated firm's incentives in terms of the prices that are presented to customers are based only on this single revenue stream.

Taking the Authority's example calculation in section 6 of the Discussion Paper; we have replicated the first year of this calculation in Table 1. The first column of Table 1 calculates the annual revenue requirement using a single WACC, which the Authority in its example has assumed to be 6.7%, giving an annual revenue requirement of $177.50m. In the second

column we use the Authority's figures for the split cost of capital, giving a lower annual revenue requirement of $148.38.

However, the third column of Table 1 shows that this same annual revenue requirement can be achieved by using a single WACC of 4.85%. Essentially, the Authority's proposed split cost of capital in this example is equivalent in annual revenue terms to a single, and lower, cost of capital.

It is not clear why a lower cost of capital would generate the desired effects of more efficient investment in the RAB and new capex, even if these did have different risk profiles. Instead, the lower cost of capital is likely to be harmful to the regulated firm's investment incentives, since it cannot achieve the appropriate cost of capital on average across its entire business. For example, if the regulated firm is considering whether to invest in the $65m expansion capex, it has a stronger incentive to make this investment under the single WACC approach, where it would earn an average return of 6.7% on its investment, versus the split cost of capital approach, where it would only earn an average return of 4.85%.

The point of this example is simply to illustrate that the regulated firm faces only a single revenue stream, and changes in the way this revenue stream is calculated will not have the beneficial economic efficiency effects that the Authority expects.

Table 1
QCA Split Cost of Capital Example - Year One

	Single WACC	**Split WACC**	**Single WACC to replicate split WACC revenue**
RAB (A)	$1,458.90m	$1,458.90m	$1,458.90m
Incremental capex (B)	$50m	$50m	$50m
Expansion capex (C)	$65m	$65m	$65m
Total asset base (D=A+B+C)	*$1,573.90m*	*$1,573.90m*	*$1,573.90m*
Cost of capital (E)	6.7% x D = $105.45m	(4.3% x A) + (7.7% x B) + (15.0% x C) = $76.33m	4.85% x D = $76.33m
Inflationary gain (F)	2.5% x D = $39.35m	2.5% x D = $39.35m	2.5% x D = $39.35m
Depreciation (G)	3.0% x (D+F) = $48.40m	3.0% x (D+F) = $48.40m	3.0% x (D+F) = $48.40m
Variable opex (H)	$8.7m	$8.7m	$8.7m
Fixed opex (I)	$54.3m	$54.3m	$54.3m
Annual revenue requirement (E-F+G+H+I)	**$177.50m**	**$148.38m**	**$148.38m**

6. Indexing the Cost of Debt

One component of Professor Helm's argument for a split cost of capital is that the cost of debt should be set annually, equal to an index-linked bond rate. Typically in fixed term price cap regulation, the cost of debt is set *ex ante* and Professor Helm has noted that this is often justified on the basis that it gives the regulated firm the incentive to "beat the market". Professor Helm has argued that the cost of debt is beyond the firm's control, and it is unable to beat the market when interest rates are determined by monetary authorities. This leads Helm to conclude that UK regulators have systematically overestimated the cost of debt for price controlled firms in the UK. We address these propositions below.

In assessing this aspect of the Helm proposal, it is helpful to note first that the cost of debt applied in regulatory determinations is typically a forecast developed by reference to forward-looking interest rates prevailing at the time of the determination. As such, it is known and measurable with near-perfect precision. By contrast, the actual cost of debt incurred by a regulated service provider is subject to many forms of decision as to the timing, duration and form of its debt raising decisions. A regulated firm will therefore bear the risk of gains and losses between its actual cost of debt and the forecast regulatory allowance. There is no guarantee that the firm will incur the cost of debt exactly as it is forecast, and this alone suggests that the returns to debt are not risk free, and cannot be made so.

Moreover, the broader market dynamics are an important influence on Professor Helm's apparent implication that the above process involves some form of systematic bias. Helm's observation that the cost of debt has generally been over-estimated is based on the experience of regulation in the UK in the 1990s and 2000s, which was a period of declining nominal and real interest rates.[13] It is highly likely that, had financial market conditions moved in the other direction, and so interest rates had or were to increase steadily over time, the cost of debt would have been underestimated, to the benefit of consumers.

In any case, the question of whether or not the regulatory allowance for the cost of debt should be indexed annually and, if so, to what index in particular, is a quite separate question from whether or not a split cost of the capital makes economic and financial sense. A different form of regulatory allowance for debt costs could be implemented with or without a split cost of capital (and vice versa). In our opinion, the optimal approach to determining regulatory allowances for the cost of debt should be approached from first principles, adopting a process quite separate from that applying to any consideration of the split cost of capital.

In our opinion, the determination of the allowance for the cost of debt can properly be characterised as a risk allocation decision – choosing between an *ex ante* and *ex post* interest rate is effectively a decision as to whether consumers or firms should bear the interest rate risk. Whether such interest rate risk is best assigned to consumers or to a service provider is a question that may also vary across the different regulated industries.

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[13] Which Helm acknowledges – see p.15 of Dieter Helm (2008), "A New Regulatory Model for Water: The Periodic Review, Financial Regulation and Competition", Unpublished paper, University of Oxford, May.

Finally, we observe that, to the extent there is evidence that regulatory allowances for the cost of debt have been over-generous, this represents an issue that should be addressed in its own right, within the framework of the relevant regulatory jurisdiction. This contention (which itself seems questionable) provides no form of support for adopting a split cost of capital. Rather, under the split cost of capital concept, there would be an equal need to identify and apply an estimate of the cost of debt in circumstances where the range of conceptual and practical considerations to be addressed were no different from those arising in any conventional approach to determining the regulatory WACC.

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The split cost of capital

Report for Gladstone Area Water Board, Queensland Urban Utilities and Unity Water

30 July 2013

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Contents

1. Background and conclusions

Overview and instructions

1. SFG Consulting (**SFG**) has been retained by the Gladstone Area Water Board, Queensland Urban Utilities and Unity Water to provide an opinion about the split cost of capital proposal in the Consultation Paper released by the Queensland Competition Authority (**QCA**).

Summary of conclusions

2. The essence of the split cost of capital approach is that a regulated business would receive an allowed return above the cost of investment grade debt on assets while they are being constructed, but only an investment grade debt return for the remainder of their lives.

3. A number of regulators have had reason to formally consider the split cost of capital approach. Every regulator that has considered the split cost of capital approach has rejected it. If the QCA were to adopt the split cost of capital approach it would be doing so in the absence of any regulatory precedent.

4. The reasons why other regulators have rejected the split cost of capital approach include:

    a) By definition, separating a regulated business into its component pieces does not change the total amount of risk – a pizza has the same amount of calories even if cut into thin slices. If the total risk is the same, the total required return is the same, so there would seem to be no point in using the split cost of capital approach;

    b) The total risk to investors in the regulated firm would only be reduced if some of that risk is transferred to government via the provision of a guarantee. There is no reason to suggest that government would provide such a guarantee;

    c) In practice, no businesses are separated into component pieces in accordance with the split cost of capital approach, so it would be impossible to reliably estimate the risk and required return for each component piece;

    d) It is no accident that actual businesses have not separated into component pieces in accordance with the split cost of capital approach. There are sound economic reasons for operating as combined business;

    e) The split cost of capital approach assumes that the RAB can be financed with 100% investment grade debt, but there is no evidence to suggest that this is possible in practice; and

    f) If the split cost of capital approach was applied to existing assets, that would be a manifestation of the very regulatory expropriation risk that the split cost of capital approach assumes away.

2. The split cost of capital proposal

5. The split cost of capital approach has been advocated by UK academic Dieter Helm. The essence of Helm's proposal is as follows:

    a) Every regulated business would be split into two separate businesses:

        i) One business that owns the regulated assets (PropCo); and

        ii) A separate business that operates the assets and constructs additions and augmentations (OpCo);

    b) OpCo sells new assets to PropCo on completion;

    c) The assets owned by PropCo (the regulatory asset base or **RAB**) are financed by 100% investment grade debt and would be allowed a low debt-like regulatory return;

    d) OpCo would be riskier than the current combined business and would be allowed a commensurately higher rate of return (although it is not clear what that return would be applied to, given that PropCo holds all of the assets in the RAB); and

    e) The regulatory allowance for the return on debt should be updated annually throughout the regulatory period.

6. The essence of the split cost of capital approach is that a regulated business would receive an allowed return above the cost of investment grade debt on assets while they are being constructed, but only an investment grade debt return for the remainder of their lives.

3. The split cost of capital has been rejected by every regulator that has considered it

Overview

7. In its recent Discussion Paper, the QCA states that:

> While to date the split cost of capital has not been explicitly implemented, there have been several important regulatory precedents that are consistent with one or more of the key propositions underlying the concept.[1]

8. However, that statement appears to be at odds with the facts. A number of regulators have had reason to formally consider the split cost of capital approach. Every regulator that has considered the split cost of capital approach has rejected it. The list of regulators that have rejected the split cost of capital approach includes:

   a) The UK Competition Commission;

   b) The Office of Gas and Electricity Markets (**Ofgem**);

   c) The Water Services Regulation Authority (**Ofwat**);

   d) Office of Rail Regulation;

   e) Civil Aviation Authority; and

   f) Northern Ireland Authority for Utility Regulation.

UK Competition Commission has rejected the Helm split cost of capital approach

9. The UK Competition Commission has summarised the key elements of the Helm split cost of capital approach as follows:

> Professor Helm had last year been critical of our decision to use a single rate of return in the calculation of price caps for Heathrow and Gatwick airports, arguing that it is better for a regulator to apply different rates of return to the RAB and to on-going opex and capex. His proposition, in its original form, is that a regulated income stream combines two very different types of cash flow:
>
> (a) the return of and on the RAB, where risk is (very) low so long as the regulator commits to including the costs of historical investment in future price controls; and
>
> (b) payment for on-going opex and capex, where risks are considerably higher.
>
> In Professor Helm's view the RAB has a low cost of capital and the capex and opex have a high cost of capital, and these distinct costs of capital should be reflected in a regulator's price cap calculations via a split rate of return.

10. The Competition Commission gave the proponent of the split cost of capital approach every opportunity to make the case for the adoption of that approach:

[1] QCA Discussion Paper, p. ix.

> Members of the CC's Cost of Capital Panel **met with Professor Helm** during our review to make sure that they had **properly understood** Professor Helm's ideas and to discuss with him some of the questions that they had about his proposals.[2]

11. One of the major problems identified by the Competition Commission was the viability of separating revenues into explicit RAB and non-RAB categories:

> The main difficulty that they had with the split cost of capital framework was the idea that Stansted's revenues could **somehow be separated into two component parts with very different risk profiles**. In practice, **airlines pay one set of regulated charges**, capped according to a formula set by the CAA, and an airport **delivers one overall profit to one set of investors**—a return that, by definition, varies according to all the risk factors that Professor Helm has identified.[3]

12. The Competition Commission concluded that the standard regulatory approach of **not** using a split cost of capital was entirely appropriate:

> This regulatory design means that the return that investors earn on historical investment (as reflected in the RAB) is inextricably linked to the demand at the airport, the cost of operating, maintaining and renewing built assets, and the ongoing service quality provided to customers. The convention of using the RAB as an input into the calculation of price caps gives investors the opportunity to recoup their investments, but deliberately puts that return at risk (i.e. it is conditional upon the efficient and competent operation of the assets that are built). As such, it is entirely conceivable (and, indeed, desirable) that the actual return on the RAB will turn out to be higher or lower than the expected return seen in the WACC x RAB calculation.[4]

13. The Competition Commission unambiguously rejected the Helm split cost of capital approach:

> **Professor Helm was not able to persuade Panel members** that the return of and on Stansted's RAB is **somehow 'safe'** and capable of being **disentangled** from an airport's performance against its price cap, or that the financiers of historical investment included in the RAB would not see the value of their capital increase or diminish in line with the fortunes of the regulated business. As a consequence, it was **not appropriate for us to use a split cost of capital** in this review.[5]

Ofgem has rejected the Helm split cost of capital approach

14. Ofgem has also considered the Helm split cost of capital approach, setting out the key features of the approach as follows:

> We have considered alternative approaches to setting the allowed return. One such alternative is the —split cost of capital. Under this model, different elements of a regulated business would be remunerated in different ways: there would be a —low risk sunk investment (the RAV), which would be remunerated at the cost of debt; and a

[2] Competition Commission, Stansted price control review; Final report, Appendix L, Cost of capital.
[3] Competition Commission, Stansted price control review; Final report, Appendix L, Cost of capital.
[4] Competition Commission, Stansted price control review; Final report, Appendix L, Cost of capital.
[5] Competition Commission, Stansted price control review; Final report, Appendix L, Cost of capital.

> —higher risk operating expenditure and capital expenditure operation, which would be remunerated at the cost of equity.

15. Ofgem rejected the split cost of capital approach due to the disadvantages of creating new boundaries between existing assets and new investment.

> We think that Sustainable Network Regulation addresses the issues raised without **the disadvantages associated with creating new boundaries between RAV and new investment**, or between RAV and price control expenditure.

Ofwat has rejected the Helm split cost of capital approach

16. Ofwat has also considered the Helm split cost of capital approach, noting the concerns that stakeholders had raised in relation to such a fundamental change in the approach to regulation:

> Respondents, particularly investors, were strongly **opposed to the split cost of capital** proposal because it was considered to **undermine investors' expectations** of the returns they would receive on their investment. This might **increase perceptions of regulatory risk**. Respondents also raised concerns that such a **fundamental change** would diminish the role of equity and cited difficulties with distinguishing between and segregating the risks associated with growth and maintenance for the portfolio of assets that typifies a mature regulated water business.[6]

17. Ofwat agreed with the concerns raised by stakeholders and disagreed with the premise of the split cost of capital approach:

> We note the points made, in the argument for a split cost of capital, between the average and marginal cost of capital. We do not think that there is evidence that there needs to be an increase in marginal returns to facilitate new capital investment. Neither do we agree that returns on 'sunk' investment should be lower than the average return for the reasons set out above. It is also **questionable whether a split cost of capital would reduce the required level of return unless total risks were reduced**.[7]

18. Having considered the arguments, Ofwat rejected the split cost of capital approach:

> Taking account of these issues we have concluded that the concerns raised by respondents outweigh the potential benefits and **we will not adopt a split cost** of capital.[8]

Ofgem and Ofwat have jointly rejected the Helm split cost of capital approach

19. Ofwat and Ofgem have also considered the Helm split cost of capital approach in a joint report. They first note that firms in the real world cannot borrow 100% of the RAB and maintain an investment grade credit rating:

[6] Ofwat 2008, PR09.
[7] Ofwat 2008, PR09.
[8] Ofwat 2008, PR09.

> Given that under these proposals the equity risk is contained to operating the business and delivery of the capital programmes, this could form a low proportion of the capital required in these businesses. This could result in **levels of gearing** significantly higher than observed to date and perhaps even **higher than the threshold for investment grade rating**. Current market evidence suggests that a lower level of gearing may be required to absorb the risk entailed in operating regulated businesses than might strictly flow from Helm's proposals.[9]

and that it may simply be impossible to finance the RAB entirely with debt:

> There may be practical issues associated with the proposal that once capital expenditure is "sunk" in the RAV, it enables **regulators to assume that capital provided by equity investors can immediately be replaced by debt**.[10]

and that it is not good regulatory practice to drive the structure of the regulated business:

> The proposals may lead to a **reduction in the flexibility** available to regulated businesses by driving them to take on essentially a **mechanistic approach to capital structure**. The present arrangements allow for a degree of differentiation in capital structures which has allowed for innovative financing structures.[11]

The Office of Rail Regulation has rejected the Helm split cost of capital approach

20. The Office of Rail Regulation has also rejected the split cost of capital approach, concluding that it is simply unnecessary:

> We have considered whether we should use a split cost of capital approach, in line with that set out by Professor Dieter Helm..... we think that the most significant issue highlighted by the split cost of capital concept is the importance of understanding the risks that Network Rail faces. In order to understand those risks, **the split cost of capital structure does not need to be put in place**.[12]

The Civil Aviation Authority has rejected the Helm split cost of capital approach

21. The Civil Aviation Authority (**CAA**) has also formally rejected the split cost of capital approach. In their report for the CAA, PWC conclude that:

> The split cost of capital approach has been proposed for a number of years, but to date has not been adopted by any UK regulatory authorities.
>
> We recommend the CAA does not adopt the split cost of capital approach. This is primarily for the following reasons:
>
> Regulated businesses are integrated with revenues and risks which cannot be meaningfully split along the lines suggested in the split cost of capital approach. The value of the RAB is closely linked to on-going capital and operating expenditures, and in combination makes up the regulated business. Any split to the regulated business would be arbitrary and not reflect meaningful commercial entities.

[9] OFWAT/OFGEM (2006), 'Financing Networks, A discussion paper.
[10] OFWAT/OFGEM (2006), 'Financing Networks, A discussion paper.
[11] OFWAT/OFGEM (2006), 'Financing Networks, A discussion paper.
[12] ORR (2012), "Periodic Review 2013: Financial issues for Network Rail in CP5: Decisions", December.

> The existing RAB is unlikely to be risk-free, or even of sufficiently low risk to be entirely debt financed, as the existing regulatory framework does not provide for such certainty.
>
> Given the relative shares of the RAB and non-RAB components of the business, the implied cost of equity for the non-RAB business could be substantial. This does not necessarily invalidate the approach, but does make it harder to estimate and benchmark the cost of capital for the non-RAB component.
>
> If such a split is carried out, with no change to the regulatory framework, it would not change the overall cost of capital, nor the level of regulatory charges. As merely splitting the business into component parts should not affect its aggregate risk profile and the returns required by investors for exposure to such risks. This limits the benefit of such an approach.[13]

The Northern Ireland Authority for Utility Regulation

22. The Northern Ireland Authority for Utility Regulation (**NIAUR**) has also expressly rejected the split cost of capital approach in its 2011 determination in relation to Northern Ireland Electricity (**NIE**). In that case, the split cost of capital approach was proposed by First Economics. In responding to the split cost of capital proposal, NIE made the following points:

> The First Economics proposal appears to bring nothing new to the debate. In our view, it is essentially a modest evolution of Dieter Helm's idea of a split cost of capital. The notion of splitting the RAB in this way was considered explicitly by Ofgem in its RPI-X@20 review and rejected. Indeed, Ofgem has now rejected the split RAB approach twice, following its consideration in their financing networks consultation from 2006. The starting point for any debate over the introduction of a split RAB model should be Ofgem's careful consideration of this proposal, yet the First Economics paper does not even provide a summary of Ofgem's conclusion.
>
> We foresee a range of material issues with the split RAB proposal.
>
> Separation of RABs to reduce risks in one component of the business, as postulated by First Economics, has the inevitable consequence of raising the level of risk (and associated financing costs) in the other component(s).
>
> Fundamental business risks will not evaporate as a result of structural modifications. First Economics recognises this point in their conclusion that any overall reduction in financing cost would have to come from a transfer of risk to customers.
>
> The First Economics proposal to have bank debt underwritten by primary legislation is undesirable and unworkable. The public finances are under severe stress in any event and do not have the capacity to offer guarantees of this kind to private companies.
>
> First Economics takes no account of the likely increase in the cost of capital that would arise simply from adopting a model that is materially different from standard international practice, which would add to the reality and perception of increased regulatory risk. Investors are likely to regard moves in this direction as a material specific risk arising from investing in NI utilities.
>
> First Economics does not consider the need for a root and branch re-evaluation of the incentives associated with investment and stewardship of networks to ensure that they

[13] PWC (2013), pp. 3-4.

> continue to provide adequate reliability and quality of service, which would inevitably add further to the reality and perception of increased regulatory risk.
>
> First Economics' analysis ignores the need for a level of debt funding to purchase the RAB at market rates, which would typically involve a premium, and to cover the need for debt service and maintenance reserve accounts. Other transaction costs of restructuring, such as investment bank fees, are also ignored.
>
> First Economics ignores the important role that debt finance plays in increasing the resilience of the sector to substantial shocks. Under the traditional equity model a company subject to a severe shock could restructure its debt and continue to operate. Under First Economics' proposal, the costs of such a shock would need to be borne by customers (or the taxpayer) as payments to debt holders would be guaranteed.
>
> Under the equity model, companies are provided with strong incentives to minimise the cost of any debt financing they put in place. Such incentives would be materially weakened (potentially removed entirely) under the First Economics proposal.
>
> Creating operational / interfacing risks and reducing the clarity of responsibility and accountability under all foreseeable circumstances, bring the grave danger of increasing the customers' exposure to additional electricity supply risks as well as those related to cost.
>
> In summary, we do not believe that the prospective customer benefits that are practically capable of delivery under the alternative financing mechanism suggested by First Economics are sufficiently material or sufficiently secure to merit the transactional complexity and the overall risks arising from such a significant departure from the proven regulatory approach.[14]

23. After considering these submissions, NIAUR stated that:

> We accept that the hurdle for change however should be a high one and fully recognize the threat to the cost of capital of inappropriate or poorly explained changes to standard practice.[15]

and concluded, in relation to the split cost of capital approach, that:

> we judge the potential benefits do not justify the potential risks.[16]

[14] Northern Ireland Electricity (2011), pp. 6-7.
[15] NIAUR (2011), Paragraph 28.
[16] NIAUR (2011), Paragraph 30.

4. There is no regulatory acceptance of the split cost of capital approach

Overview

24. As set out above, in its recent Discussion Paper, the QCA states that:

> While to date the split cost of capital has not been explicitly implemented, there have been several important regulatory precedents that are consistent with one or more of the key propositions underlying the concept.[17]

25. The previous section of this report demonstrates that a number of regulators have formally considered the Helm split cost of capital approach and all have rejected its use. In this section, we investigate whether any of the "key propositions" of the split cost of capital approach have received any regulatory endorsement.

26. They "key propositions" of the split cost of capital are those elements of the approach that distinguish it from the standard regulatory approach. The key propositions are:

    a) Two different levels of return should be allowed on the same asset – one return on the firm's assets in the RAB and a different return on the firm's operations, including new capex; and

    b) Assets in the RAB can be financed with 100% investment grade debt and should be allowed a return commensurate with that assumption.

27. Indeed, these two points are what the QCA itself refers to as the "key propositions" in its recent Discussion Paper.[18]

28. Neither of these key propositions has received any support whatsoever in any regulatory determination.

29. The QCA argues that there are three components of regulatory precedent that are consistent with the split cost of capital approach:

    a) One of the components of the regulatory building block approach is an allowance for the return *of* capital;

    b) The allowed return depends on the risk of the asset being regulated; and

    c) One regulatory decision allowed a sub-commercial rate of return on a government-owned asset.[19]

30. However, none of these are "key propositions" of the split cost of capital approach. In fact, in every case that the QCA cites, the regulator:

    a) Applied the *same* cost of capital to the RAB, new capex and operations; and

    b) Did *not* assume that the RAB could be financed with 100% investment grade debt.

[17] QCA Discussion Paper, p. ix.
[18] QCA Discussion Paper, p. vii, section titled "Key Propositions and Recommendations."
[19] QCA Discussion Paper, p. ix.

31. That is, the cases cited by the QCA are, in fact, demonstrably inconsistent with the key propositions of the split cost of capital approach.

32. By way of analogy, the key propositions of a soccer game are that the players are not allowed to touch the ball with their hands and the objective is to manoeuvre the ball into the net at one end of the field. One could observe matches in a cricket competition and note that (a) the game is played by two competing teams; (b) the game is played on a grass field; and (c) a round ball is used. But it would be wrong to conclude that the cricket competition is following the rules of soccer – even though some aspects of the two sports are consistent, the key aspects are quite different. The QCA Discussion Paper effectively points out that a round ball is used by some other regulators, but ignores the fact that fact that it is being hit by a bat in those other cases, whereas the QCA is proposing that it should be kicked with a foot.

33. In the remainder of this section, we address each of the regulatory precedents that is said to support the key propositions of the split cost of capital approach.

Return of capital

34. Under the Australian regulatory framework, a "building block" approach is used to determine the regulated firm's annual revenue requirement. One of the building blocks is the return *of* capital in the form of regulatory depreciation. The QCA states that these arrangements "in effect 'protect' the RAB."[20] Every Australian regulatory determination provides for a return of capital and therefore "protects the RAB." However, none of them allow two different levels of return on the same asset and none of them assume that assets in the RAB can be financed with 100% investment grade debt.

35. In terms of the analogy above, the QCA is organising a cricket competition, arguing that it should be played according to the rules of soccer. It is claiming support for its fundamental change of the rules by noting that other cricket competitions use a round ball, which is consistent with its proposal.

Allowed return based on risk

36. Under the Australian regulatory framework, another of the building block components is the allowed return *on* capital. The standard approach is to determine the return on capital that is commensurate with the risk of the regulated asset – higher risk investments require a higher rate of return. The Discussion Paper[21] simply cites cases where different rates of return have been applied to different assets commensurate with their different levels of risk. None of the cited cases allow two different levels of return on the same asset and none of them assume that assets in the RAB can be financed with 100% investment grade debt. That is, none of the cited cases adopt either of the key aspects of the split cost of capital approach. Rather, they all specifically reject the split cost of capital approach and adopt the standard regulatory approach of assigning a single allowed return and *not* assuming that the RAB can be financed by 100% investment grade debt.

37. In terms of the analogy above, the QCA is organising a cricket competition, arguing that it should be played according to the rules of soccer. It is claiming support for its fundamental change of the rules by noting that other cricket competitions use a grass field, which is consistent with its proposal.

[20] QCA Discussion Paper, p. ix.
[21] QCA Discussion Paper, p. ix and p. 18.

Sub-commercial return on government-owned assets

38. The Discussion Paper[22] also refers to a recent decision by the ICRC in the ACT dealing with the government-owned water and sewerage business. In that decision, the regulator noted that the owners of the business (ACT taxpayers) were also the customers of the business. Consequently, if the regulated return is set below a commercially fair return:

    a) Owners would receive a less-than-fair return; but

    b) Customers would pay a less-than-fair price for the service.

39. The ICRC then allowed a sub-commercial return on the basis that the owners and the customers were the same group of people in this case.

40. Two key points must be made in relation to this determination:

    a) It does not apply to commercially-owned assets. The decision hinged on the fact that the owners and customers were the same group of people in that case; and

    b) Other regulatory agencies have considered whether sub-commercial returns should be allowed on government-owned businesses and have concluded that commercial returns must be allowed. For example, the Australian Energy Markets Commission (**AEMC**) considered a proposal on exactly that point as part of its recent determination about potential changes to the National Gas and Electricity Rules. On this question, the AEMC concluded that:

> As part of its rule change request, the EURCC [Energy Users' Rule Change Committee] proposed that the return on debt for state-owned NSPs [network service providers] to be determined differently from privately-owned NSPs. The Commission has considered this and does not support this aspect of the EURCC's rule change request. The interest rates that State treasury corporations can secure reflect the credit rating of the relevant state government and not the service provider. If state-owned service providers were to access debt capital markets directly then they would face debt financing costs that reflect their stand-alone credit ratings. If such costs are not reflected in the regulatory framework then investment and resource allocation decisions may be distorted. The Commission considers that the most appropriate benchmark to use in the regulatory framework for all service providers, regardless of ownership, in general is the efficient private sector service provider.[23]

    Moreover, every Australian regulatory decision other than this single decision in relation to ACT water and sewerage has been based on an estimate of a commercial return for an efficient private sector service provider. That is, this determination might better be described as a rogue outlier that is curiously at odds with every other determination, rather than as an "important regulatory precedent."

41. In relation to sub-commercial returns on government-owned assets, the QCA Discussion Paper also cites as "relevant regulatory experience" the political decision (imposed via a Ministerial Direction) to apply the cost of debt rather than a standard regulatory WACC to certain water assets constructed in response to a drought.[24] Clearly, such a Ministerial Direction should not be taken to have any

[22] QCA Discussion Paper, p. ix.
[23] AEMC, Final Determination, 2012, p. v.
[24] QCA Discussion Paper, p. 18.

relevance at all to regulatory practice – the direction was only necessary because the regulator would otherwise have adopted a different approach.

5. Key issues

Overview

42. The preceding sections of this report document the fact that every regulator that has had to consider the split cost of capital approach has rejected it. No regulator has ever split a regulated business into an asset-holding component and an operating component and allowed different returns on each. This section sets out some of the reasons why all other regulators have rejected the split cost of capital approach.

Risk does not disappear

43. Every regulated firm has a particular amount of risk associated with it. Changing the ownership or regulatory structures does not change the total amount of risk – rather, these things simply act to redistribute risk between various parties. In the context of the split cost of capital approach, Cooper (2012) notes that:

> Splitting a given amount of risk does not change the overall amount of risk.[25]

and that:

> splitting a firm into two parts should give asset betas for the two parts which, if they are averaged together in the correct way, have the same asset beta as the whole firm. Therefore, Professor Helm's contention that his split will result in a different asset beta is inconsistent with this standard result.[26]

and further that:

> This is a simple version of the Modigliani-Miller proposition that risk cannot be created or destroyed by reallocating it (Brealey et al (2011) Chapter 17).[27]

44. Helm proposes that each regulated firm should be split into one firm that simply owns the assets in the RAB (PropCo) and another firm that operates the assets and arranges the construction of any new assets (OpCo). He suggests that the PropCo business is very low risk and should receive a commensurately low return and that the OpCo business is higher risk and should receive a commensurately higher rate of return. However, one of the most basic principles in corporate finance (dating back to the work of Modigliani and Miller in the 1950s) is that the total amount of risk remains the same, no matter how it might be distributed. That is, the sum total of the risk of PropCo plus the risk of OpCo is identical to the total risk of the combined firm. Risk cannot be eliminated simply by distributing it among different parties.

45. In the regulatory setting, this means that the division of risk between two firms (PropCo and OpCo) would have no effect at all on the regulated price of the service being provided. The integrated firm consists of a mixture of the lower-risk asset business (PropCo) and the higher-risk operating business (OpCo). Overall, it has an average level of risk, so the required price would have to be set to provide an average level of return. If the firm is split into two, as proposed by Helm, the PropCo business requires a lower return and the OpCo business requires a higher return – but these must average out

[25] Cooper (2012), Paragraph 1.6.
[26] Cooper (2012), Paragraph 2.3.
[27] Cooper (2012), Paragraph 3.28.

to be identical to the required return on the combined firm. The same regulated price would have to be set to provide the same overall required rate of return.

46. In its recent Discussion Paper, the QCA notes that:

> The RAB does not need to be physically separated from non-RAB activities. The split cost of capital concept is about the pricing of risk not necessarily about the separation of RAB and non-RAB functions.[28]

47. If the regulated firm is not separated into its component pieces, so that a single regulatory return is set for a single regulated firm, it is even more apparent that the risk of that single firm does not change under the split cost of capital approach.

48. A further possibility is that government could provide a guarantee on the debt raised by PropCo. As in all cases, total risk remains constant and is simply distributed among different parties. In this case, risk is simply shifted from PropCo's lenders to taxpayers. If taxpayers (via their government) charge PropCo's lenders a fair price for assuming their risk, the regulated price will not change – previously PropCo's lenders would have been charging a return that included a premium for the risk they were bearing. Now, instead of charging that premium for risk, they would be paying exactly the same amount to taxpayers to assume the risk for them. This does nothing to change regulated prices.

49. If, however, government guarantees PropCo's debt free of charge, the regulated price would fall as PropCo's lenders would require a lower return (commensurate in the reduction to their risk) without having to pay fair compensation. Even in this case, the total risk remains the same and no free lunch has been created.

50. There are, of course, a number of important issues to address in this **free government guarantee** scenario:

    a) The government would have to agree to provide free guarantees over the debt used to fund the RAB of the regulated entity. The provision of such guarantees would restrict the government's ability to borrow and would affect financial metrics used to determine the government's credit rating;

    b) The regulator would have to ensure that the government had provided the free guarantee prior to the regulatory determination. That is, it would be wrong for the regulator to simply *assume* that government would provide a free guarantee or that lenders would provide debt finance *as if* a free government guarantee had been provided;

    c) Many regulated entities are owned by the private sector. Governments may be concerned about the signal and precedent that would be set by providing free guarantees to private sector businesses; and

    d) The provision of free government guarantees may run counter to National Competition Policy and competitive neutrality principles.

51. Cooper (2012) also addresses the issue of the government guarantee that is implicit in Helm's split cost of capital approach. He notes that the transfer of risk from the regulated business to the government would change incentives for the regulated firm. For example, a firm is likely to behave quite differently if it knows that every dollar of debt it issues will be guaranteed by government:

[28] QCA Discussion Paper, p. vii.

> if the Government were to give a perpetual guarantee of the value of the RAB (as implied in Helm (2011) page 12) it could materially reduce the risk to the [regulated firm] by transferring risk to the Government…Also, this risk transfer would change the incentives of the operator.[29]

52. An even more concerning scenario would be one in which government did not provide any guarantee in relation to the regulated firm's debt, but where the regulator set the allowed return as though it did.

It is impossible to borrow 100% of the RAB value

53. The Helm split cost of capital approach is based on the assumption that 100% of the assets in the RAB can be financed with 100% investment grade debt. In this regard, the Discussion Paper states that:

> there is a minimal need for equity to finance RAB-related activities. As such, ongoing low risk debt capital is the primary capital required.[30]

54. The Discussion Paper is unable to provide any evidence of a regulated asset-holding company that is financed with 100% debt. Indeed, the Discussion Paper is unable to provide any evidence of the existence of a regulated asset-holding company at all. It would be wrong, and inconsistent with regulatory and basic administrative law principles, to *assume* that separate asset-holding companies exist, that they can finance themselves with 100% debt, and that a credit rating agency would assign an investment grade rating to such a company – without any evidence to support any of these propositions.

Components cannot be separated

55. One of the key problems that has led other regulators to reject the split cost of capital approach is the fact that the asset business and the operating business are inextricably linked. The assets only continue to have value so long as the operating business performs its function efficiently. It is for this reason that the actual commercial practice is for a single firm to own and operate the assets in question. It is clearly not the actual commercial practice for the relevant firms to split into component pieces as Helm suggests they should do. In its Discussion Paper, the QCA notes that, in rejecting the split cost of capital approach, a number of other regulators have identified that the two components of the business are inextricably linked. The Discussion Paper notes that a number of other regulators have recognised that:

> investors' returns on historical investment are conditional upon the efficient operation of the assets reflected in the RAB and consequently the risk factors for the RAB cannot be separated from the ongoing operations and capacity expansion functions. As a result, the RAB is at risk if the firm fails to deliver those services.[31]

56. In this regard, the Discussion Paper specifically notes the conclusions of the UK Competition Commission:

[29] Cooper (2012), Paragraph 1.8.
[30] QCA Discussion Paper, p. 20.
[31] QCA Discussion Paper, p. 20.

> This regulatory design means that the return that investors earn on historical investment (as reflected in the RAB) is inextricably linked to the demand at the airport, the cost of operating, maintaining and renewing built assets, and the ongoing service quality provided to customers.[32]

57. The Discussion Paper also notes that:

> The main difficulty they had with the split cost of capital framework was the idea that Stansted's revenues could somehow be separated into two component parts with very different risk profiles. In practice, airlines pay one set of regulated charges, capped according to a formula set by the CAA, and an airport delivers one overall profit to one set of investors−a return that, by definition, varies according to all the risk factors that Professor Helm has identified.[33]

58. In summary, when other regulators have had to consider the split cost of capital approach, one of the grounds for rejecting it is that the two components of the business are inextricably linked. This implies that they should not be separated as Helm suggests, which is also consistent with the observed reality that in commercial practice the relevant business are not separated.

59. However, even in light of this, the Discussion Paper concludes that:

> it is still meaningful to conclude that the risk of the RAB capital recovery function differs from risk of the operating and capacity expansion functions.[34]

60. However, it is likely that every one of the firm's functions has a different degree of risk. For example, even within Helm's operating company (OpCo) it is likely that the operation of existing assets would have a different degree of risk than the construction of new assets. Does this mean that OpCo should be further disaggregated into a pure operation business and a separate business that is called upon to develop new assets when required? But even then, construction that replaces existing assets is likely to have a different risk than construction of new expansion assets.

61. Moreover, within any firm different cash flow lines are likely to involve different levels of risk. For example, wages are likely to be more stable and controllable than fuel costs, and some cash flows are more strongly correlated with economic conditions than others. But when valuing firms the standard practice is not to separate out each individual activity and to try to separately quantify the risk of each component. Rather, the standard practice is to estimate the risk at the firm level – with reference to comparable firms that engage in the same combination of activities. This is also the standard regulatory practice. An NSP is valued as an NSP with reference to other NSPs. The practice is not to seek to separately identify different risks for every different activity that is undertaken by a standard NSP business.

62. In practice, we observe that the sorts of businesses that are the subject of infrastructure regulation are integrated – the same business owns and operates the regulated assets. As set out above, there are sound economic reasons for this. This implies that the integrated business that is being regulated should be compared with the integrated businesses that are observed in practice.

63. In this regard, Cooper (2012) notes that:

[32] Competition Commission (2008), L. 2.
[33] Cooper (2012), pp. 4-5, 10-11.
[34] QCA Discussion Paper, p. 20.

> separation of the RAB and non-RAB businesses it will change the boundaries of the firm. That will necessitate coordinating the amount and type of asset investment and operational management while these are in different organizations. This co-ordination will then have to take place via markets or contracts rather than internally within the firm. This raises the issue of whether the natural organizational boundary of an airport operator is between one entity which owns all assets and another entity which rents the assets and runs the business.[35]

64. Moreover, if a regulator decided that regulation should be on the basis of a business being separated into component pieces it would face substantial estimation difficulties – parameters for the separate components would be difficult to estimate because separate components do not exist in the real world, as set out in the following section.

Components cannot be measured

65. The standard regulatory approach is to estimate the risk of a particular business with reference to comparable firms. For example, when estimating the risk of an energy network service provider (**NSP**), regulators will examine empirical data from a range of actual energy NSPs. The actual NSPs that operate in the real world own and operate energy networks. This makes them ideal comparables under the standard regulatory framework, which requires an estimate of the risk of a business that owns and operates an energy network.

66. Under the Helm approach, however, ownership and operation are split into two separate businesses – PropCo and OpCo. The regulator's task would then be to separately estimate the risk of each component business and to assign each an appropriate return commensurate with its risk. This would require separate estimates of the risk of the asset business and the operating business. However, there are no businesses operating in this way. Firms in the real world have not organised themselves in this way. That is, there is simply no relevant data available for the regulator to separately estimate the risk of the two component businesses.

67. In summary, there are two key issues in relation to the estimation of the risks of the component businesses:

    a) Firms in the real world have not organised themselves in the manner that Helm suggests they should. This begs the question of why firms are not, in practice, structured as Helm suggests they should be. It also begs the question of whether it is appropriate for a regulator to set returns on the basis of a theoretical proposal about how firms should be structures rather than on the basis of the long-standing commercial practice of how firms are actually structured; and

    b) Given that there is no sound basis for separately estimating the risks of the asset and operating businesses, the regulator should ensure that the combined risk of the two components is commensurate with the empirical evidence that is available from the combined firms that exist in practice. If this is done, the regulated price will be the same as it would have been under the standard regulatory approach. If it is not done, the price will differ from that under the standard regulatory approach due entirely to estimation error caused by the attempt to estimate component pieces that do not exist in practice. In this regard, Cooper (2012) notes that:

[35] Cooper (2012), Paragraph 3.2.

> The non-RAB business would have a degree of operating leverage unlike any business which exists in reality, as far as I am aware.[36]

Fundamental changes should not be applied retrospectively

68. Lenders to firms that are currently regulated by the QCA have provided loans to businesses that own and operate infrastructure assets. These lenders have assessed the risks of lending to such businesses and have agreed a return that is commensurate with those risks.

69. If the QCA was to fundamentally change the regulatory framework by assuming that (a) all of this debt should be applied to the RAB and (b) the appropriate return is materially lower than what is currently in place, the regulated businesses will inevitably face a funding gap. That is, the regulatory allowance (which would be based on an assumed scenario) would be lower than the actual cost of servicing the debt (which would be based on the actual loan agreements that are currently in place).

70. Consequently, if the QCA were to introduce the split cost of capital approach, it should not do so retrospectively. Rather, it should consider a full set of transition arrangements to ensure that regulatory revenues are sufficient to cover the efficient costs of servicing the existing debt – that was entered into under the current regulatory rules with no indication of the possibility of a fundamental change in the rules.

71. In its recent Discussion Paper, the QCA notes that the "regulatory expropriation" issue is one reason that a number of other regulators have cited when specifically rejecting the split cost of capital approach:

> the regulators explicitly accepted stakeholders' arguments that implementing a split cost of capital would undermine investors' expectations of the returns they would receive on their investment, as investors did not make their initial investment expecting a split cost of capital framework to apply. In other terms, as a split cost of capital reflects a fundamental change in the current regulatory framework, implementing it would realise the very regulatory and political risks that concern investors (e.g. an expropriation of expected returns).[37]

72. The Discussion Paper notes that one response to this issue would be to implement the split cost of capital approach "on a forward-looking basis only."[38] This is consistent with the transition arrangements proposed above. In particular, the split cost of capital approach would only be applied to new assets that are yet to be financed and constructed. The QCA would clearly inform the regulated firm and their investors about the return that they would be allowed during the construction phase and that they would be allowed only a cost-of-debt return on the entire value of the asset once it becomes part of the RAB. The firm would then decide whether it could possibly raise finance on this basis in the real world, and consequently whether the new capital expenditure would actually be made.

73. However, the QCA's primary response to the regulatory expropriation argument is the assertion that current allowed returns embed a degree of economic rent.[39] According to this assertion, regulatory allowed returns currently exceed required returns. Consequently, if the allowed return is reduced to the required return, regulated firms would still have an incentive to invest in new assets. This

[36] Cooper (2012), Paragraph 3.7.
[37] QCA Discussion Paper, p. 20.
[38] QCA Discussion Paper, p. 20.
[39] QCA Discussion Paper, p. 20.

argument relies on the assertion that the entire Australian regulatory framework systematically allows excess returns.

74. Even if this assertion could be substantiated with evidence, a fundamental change such as the introduction of the split cost of capital approach should only ever be introduced on a forward-looking basis whereby the QCA clearly articulated the terms of the new regulatory contract and the regulated firm would then determine whether new capital expenditure was economically viable under those terms.

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