

11 October 2013

Mr Warwick Anderson
General Manager – Network Regulation Branch
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601

Dear Mr Anderson

Draft Rate of Return Guideline

Queensland Treasury Corporation welcomes the opportunity to provide comments to the Australian Energy Regulator on the Draft Rate of Return Guideline.

A copy of our submission is enclosed along with an attachment that outlines an alternative method for estimating the 10-year BBB+ corporate yield.

Should you have any queries in relation to our submission please contact Brian Carrick on (07) 3842 4716 or David Johnston on (07) 3842 4782.

Sincerely



Philip Noble
Chief Executive

Submission to the Draft Rate of Return Guideline



QUEENSLAND
TREASURY
CORPORATION

11 OCTOBER 2013

Summary of QTC's views

QTC's views on the proposals in the Draft Rate of Return Guideline (Draft Guideline) relating to the return on debt are as follows:

- QTC supports a trailing average portfolio approach to calculate the return on debt. This approach is considered to be reflective of efficient practice provided the benchmark debt tenor and averaging period are an appropriate length, which QTC considers to be 10 years.
- QTC supports the proposal to make annual updates to the return on debt, and to allow each service provider to nominate the averaging periods used to re-calculate the return on debt. However, QTC considers that it would be appropriate to allow service providers to nominate averaging periods that end no later than 3 months prior to the start of the next regulatory year, rather than the proposed 6 months.
- QTC does not support the proposal to shorten the benchmark debt tenor from 10 to 7 years:
 - The observed financing practices of regulated and non-regulated infrastructure businesses, and businesses operating in capital intensive industries, support a benchmark debt tenor of 10 years.
 - A 7-year tenor will significantly increase refinancing risk for firms that seek to align their cost of debt with the return on debt as 1/7th of the total debt will need to be refinanced each year compared to 1/10th under the current benchmark tenor.
 - The 'effective term of debt' analysis incorrectly assumes that issuing 10-year floating rate debt and overlaying a swap to lock in a 5-year fixed base rate is equivalent to issuing 7-year fixed rate debt. Furthermore, the analysis is based on hedging practices associated with the previous 'on the day' approach, which are not relevant to assessing benchmark efficient funding practices under a trailing average portfolio approach.
 - There are options available to the AER to mechanically extrapolate the Bloomberg 7-year BBB yield to a 10-year tenor. Attachment A to this submission sets out an alternative method to mechanically estimate the 10-year BBB+ yield on a daily basis.
 - The AER has not demonstrated that the term premium between 7- and 10-year BBB+ yields is immaterial. The time period considered by the AER is relatively short, atypical of market conditions over the past 20 years, and does not include the effects of the global financial crisis or the sovereign debt crisis.
- QTC does not support the use of an unweighted average to calculate the return on debt. This approach implies that a service provider issues debt at historical rates to fund new investment, which is not possible in practice. In making investment decisions an efficient business will consider the difference between the return on debt and the cost of debt on

incremental borrowings, and not the average cost of past borrowings. As large and persistent differences will naturally occur between the prevailing and trailing average interest rate, an unweighted average will significantly increase the potential for investment distortions.

- QTC supports the proposed transitional arrangements (but based on the original 10-year benchmark debt tenor and transition period), which are appropriate for service providers that have attempted to align their funding with the ‘on the day’ method, although we note that different transitional arrangements may be appropriate for other service providers.
- Given the importance of the starting value of the return on debt, QTC considers that service providers should be able to nominate a suitably long initial averaging period (ie, not the 10 to 40 day averaging period used under the ‘on the day’ approach).
- The Draft Guideline has not addressed the issue of compensation for the costs associated with early debt issuance to manage refinancing risk. In QTC’s view, the early issuance of debt is an efficient financing practice that is used by regulated and non-regulated businesses. It follows that compensating these costs is consistent with the allowed rate of return objective.

General comments

The proposal to adopt a trailing average portfolio approach represents significant and welcome change to calculation of the benchmark return on debt for network service providers. The Draft Guideline acknowledges the benefits that will be delivered by this approach, such as:¹

- a reduction in price volatility for energy consumers compared to the ‘on the day’ approach, and
- a greater likelihood that it reflects efficient practice, given that it reflects the actual debt management practices of non-regulated businesses.

The Draft Guideline also acknowledges the relationship between the trailing average parameters and the degree of risk that applies to the service provider:

‘Thus, if the parameters of the trailing average are chosen to reflect the degree of risk that applies to the service provider in respect of the provision of regulated services, the trailing average portfolio approach is consistent with the NEL and NGL.’²

QTC agrees that a risk-based approach is required to determine the trailing average parameters.

The long-term nature of network assets and the limited availability of very long-term debt will require the service provider to refinance its debt several times during the life of its assets. The significance of this task is magnified by the 60 per cent benchmark gearing assumption, which is significantly higher than the average gearing for listed firms. However, benchmark gearing of 60 per cent benefits consumers as it minimises the overall cost of capital.

It follows that refinancing risk is one of the most significant risks faced by service providers, and that a benchmark return on debt methodology that reduces refinancing risk is in the long-term interest of consumers. As such, it is difficult to reconcile the proposal to shorten the benchmark debt tenor and overlook the impact of new borrowings, with the acknowledgement

¹ AER, *Explanatory statement - Draft Rate of Return Guideline*, August 2013, p. 84 (AER Draft Guideline)

² AER Draft Guideline, p. 84

in the Draft Guideline that the trailing average parameters must reflect the degree of risk that applies to service providers.

It is also essential that practices unique to the previous approach are not inappropriately reflected in the new approach, given the problems created for consumers and service providers by the 'on the day' approach.

Section 1 – Benchmark debt tenor

QTC does not support the proposal in the Draft Guideline to shorten the benchmark debt tenor from 10 to 7 years. If adopted, this proposal will:

- lead to a material increase in refinancing risk for firms that attempt to align their cost of debt with the return on debt (ie, by issuing 7-year debt rather than the current practice of issuing 10-year debt), and
- create a mismatch between the return on debt and the cost of debt for firms that continue to issue 10-year debt to keep refinancing risk at an acceptable level.

The first outcome is inconsistent with the Australian Energy Market Commission's (AEMC) conclusion that the return on debt should create incentives for service providers to adopt efficient financing practices³. The second outcome appears to be at odds with clause 6.5.2(k)(1) of the Rules, which refers to:

'the desirability of minimising any difference between the return on debt and the return of debt of a benchmark efficient entity referred to in the allowed rate of return objective.'

The increase in refinancing risk is reflected in the assumption that the benchmark firm will need to refinance 1/7th of its existing debt balance each year compared to 1/10th under the current benchmark tenor. Assuming a modest 5 per cent annual growth rate in the debt balance, under a 7-year benchmark the annual funding requirement for the benchmark firm will be approximately 20 per cent. When combined with benchmark gearing of 60 per cent, this annual funding requirement will create a significant exposure to unfavourable funding market conditions, such as those experienced between 2008 and 2010.

In addition, a 7-year benchmark debt tenor will:

- result in an average remaining term to maturity of just 3.5 years for the benchmark portfolio
- create incentives for some service providers to adopt riskier shorter-term funding practices, and
- not create an incentive for service providers to adopt efficient financing practices which, based on the long-term nature of network assets and benchmark gearing of 60 per cent, involves issuing long-term (ie, 10-year) debt.

³ AEMC, *Final Rule Determination, Economic Regulation of Network Service Providers, and Price and Revenue Regulation of Gas Services*, November 2012, p. 73 (AEMC Final Rule Determination)

Reasons for shortening the tenor

The Draft Guideline outlines three reasons to justify shortening the benchmark debt tenor from 10 to 7 years.⁴

1. It is claimed to be efficient practice for service providers to use interest rate swaps to shorten the term of the base interest rate on their borrowings, thereby reducing the 'effective term of debt' to about 7 years. This hedging practice is assumed to be relevant when a trailing average portfolio approach is used to calculate the return on debt.
2. Due to the difficulty in automating the AER's current extrapolation method, a 7-year tenor is required in order for the automatic updating of the trailing average portfolio return on debt to be mechanistic.
3. The term premium between 7- and 10-year BBB+ yields is not considered to be material.

In QTC's view, these reasons do not justify shortening the benchmark debt tenor to 7 years.

Firstly, the AER's conclusion implies that issuing 10-year floating rate debt and overlaying a swap to lock in a 5-year fixed base rate is equivalent to issuing 7-year fixed rate debt, which is not valid. The annual interest payment profiles and level of refinancing risk for these two debt structures are completely different. The fact that the average cost may be the same over a sufficiently long period of time (assuming no change in interest rates, on average) is irrelevant from a risk management perspective, which is concerned with the variation in outcomes through time.

Furthermore, the AER's estimate of a 7.37 year effective term of debt is based on a point in time observation in 2009 of hedging practices used by some service providers to reduce interest rate risk under the previous 'on the day' return on debt approach. These practices are not relevant under the new trailing average portfolio approach, which is based on a portfolio of fixed rate debt with staggered maturity dates.

Secondly, a 7-year benchmark debt tenor is not required in order for the yield on the debt benchmark to be determined mechanistically. The alternative extrapolation method set out in Attachment A to this submission provides a simple way for the AER to mechanistically estimate the 10-year BBB+ yield on a daily basis.

Thirdly, the AER has not demonstrated that the term premium between 7- and 10-year BBB+ yields is immaterial. The time period considered by the AER is relatively short and atypical of market conditions over the past 20 years. In addition, it does not include the effects of the global financial crisis or the sovereign debt crisis.

Finally, even if there was no material difference between 7- and 10-year BBB+ yields, it is unclear why the AER has proposed a benchmark that creates an incentive for service providers to issue 7-year debt rather than 10-year debt. If the term premium is not material, a service provider could reduce refinancing risk by issuing 10-year debt at no additional cost compared to 7-year debt. However, doing so will create a mismatch between the actual cost of debt (which reflects a 10-year trailing average) and the benchmark return on debt (which reflects a 7-year trailing average).

⁴ AER Draft Guideline, p. 105

QTC notes the first and second reasons for shortening the benchmark debt tenor may be inconsistent:

- the first reason suggests that a 7-year tenor is appropriate based on the observed debt financing and hedging practices of service providers, while
- the second reason suggests that a 7-year tenor is only being used because it is not possible to mechanically estimate the 10-year BBB+ yield.

If the observed financing and hedging practices of service providers supported a material reduction in the benchmark debt tenor (and it is QTC's conclusion that they do not), it would not be necessary to attempt to automate the paired bond extrapolation method, or to consider other extrapolation methods.

Debt management practices in the absence of regulation

In its draft and final rule determinations the AEMC reached the following conclusion on how the return on debt should be determined:

*'... the long-term interests of consumers are best served by ensuring that the methodology used to estimate the return on debt reflects, to the extent possible, the efficient financing and risk management practices that might be expected in the absence of regulation.'*⁵

In QTC's view, it follows from this reasoning that:

- If certain financing practices are observed among regulated and unregulated firms in similar industries, this provides strong evidence of the prudence and efficiency of those practices. To the extent possible, these practices *should* be reflected in the return on debt methodology.
 - Examples of these practices include the issuance of long-term debt by firms that operate long-lived infrastructure assets, and the early issuance of debt to ensure funds are available to repay a soon-to-mature borrowing. Both practices are part of a prudent and efficient strategy for managing refinancing risk.
- If certain practices are only observed among regulated firms, this may indicate the presence of a regulatory distortion that regulated firms are rationally responding to. To the extent possible, practices that are a response to the regulatory framework *should not* be reflected in the return on debt methodology.
 - An example of such a practice is the use of interest rate swaps to lock in a fixed base interest rate for the term of the regulatory period.
- The choice of the benchmark debt tenor should be based on sound financial risk management principles. The benchmark tenor should not be inferred from or informed by arbitrary factors such as the length of the regulatory period.
 - This is consistent with SFG Consulting's advice to the AEMC that the length of the regulatory period represents 'a trade-off between administrative efficiency and timeliness of reviews.'⁶

⁵ AEMC Final Rule Determination, p. 76

⁶ SFG Consulting, *Preliminary analysis of rule change proposals: Report for AEMC*, February 2012, para. 180

Evidence on the weighted average term of debt

AER's effective term of debt analysis

In its final decision for the 2009 WACC Review, the AER presented an analysis of the 'effective term of debt' for a small sample of Australian regulated utilities. The AER defined the effective term as follows:

*'The effective term represents the equivalent fixed term-to-maturity that best reflects the cost of a floating rate bond.'*⁷

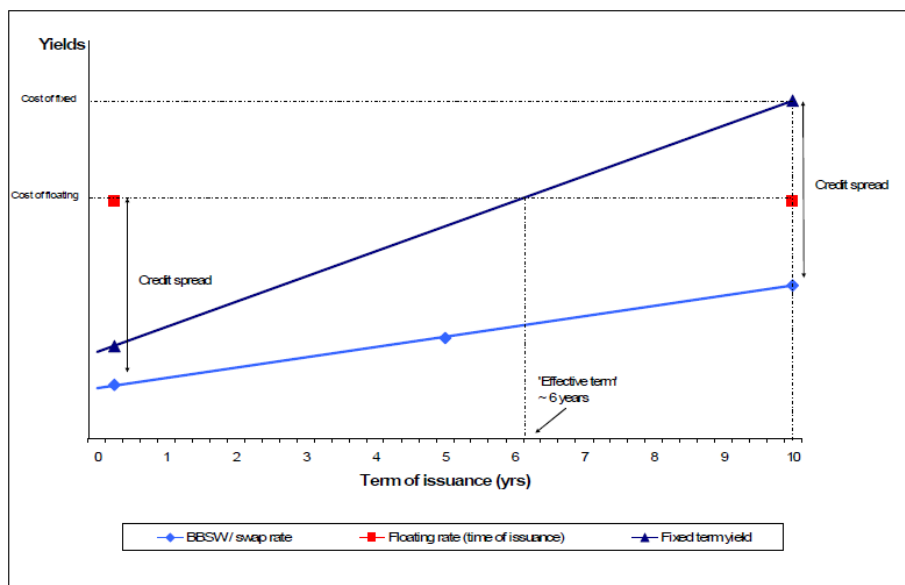
The standard meaning of an 'effective term' or an 'effective maturity date' applies to debt instruments that have an uncertain final maturity date due to the presence of embedded options (eg, callable and puttable bonds) or prepayment features (eg, mortgage-back securities). In contrast, the AER's definition of the effective term is a type of average that is calculated using credit margins and based swap rates that are fixed for different periods of time.

The Draft Guideline cites the effective term of debt analysis from the 2009 WACC review and considers it to be relevant to the determination of the benchmark debt tenor under a trailing average portfolio approach⁸.

AER's approach

The approach used to estimate the effective term of debt is summarised in Figure 1, which has been reproduced from the 2009 WACC Review:

FIGURE 1: EXTRACT OF FIGURE 6.2 FROM THE 2009 WACC REVIEW



Source: AER analysis

According to this analysis, if a firm issues 10-year floating rate debt and interest rates remain unchanged, the total cost will equal the current 3-month bank bill rate plus the 10-year fixed credit spread. Based on the graph in Figure 1, this 'cost of floating' is the same as the yield on 6-year fixed rate corporate debt. Based on this observation, the AER concluded that 10-year

⁷ AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, p. 161 (2009 WACC Review)

⁸ AER Draft Guideline, p. 106

floating rate debt has an ‘effective term’ of 6 years at the time of issuance, on average⁹. QTC notes that this conclusion does not take into account the difference in refinancing risk between 6-year and 10-year debt.

The 2009 WACC Review extended the analysis to include the base interest rate hedging strategy that was employed at the time by some service providers, involving:

1. issuing 10-year floating rate debt (directly or by issuing 10-year fixed rate debt and entering into a 10-year receive fixed/pay floating swap), and
2. entering into a 5-year pay fixed/receive floating swap to lock in a fixed base rate for the term of the regulatory period.

Including the swap hedging transactions produced an effective term of debt of 7.37 years¹⁰. According to the AER, the total cost of issuing 10-year floating rate debt and swapping the base rate to a 5-year fixed rate is the same as the yield on 7.37-year fixed rate corporate debt (assuming no change in interest rates, on average).

Potential use of the effective term of debt by the AER

Regarding the potential use of the effective term of debt, the AER said (in 2009):

*‘The AER considers that **the weighted average effective term after hedging, of 7.37 years, is directly relevant to the benchmark term assumption for the cost of debt.**’¹¹ [emphasis added]*

This implies that a firm that issues 10-year floating rate debt and swaps the base rate to a 5-year fixed rate would be correctly compensated (on average) if the AER used a 7.37 year fixed corporate yield to determine the benchmark return on debt.

QTC does not consider this to be a valid conclusion. Two debt structures are not ‘equivalent’ simply because they have the same average yield under a certain set of assumptions about future changes in interest rates. In particular:

- The time series properties of the annual interest payments for each debt structure are completely different, which will expose the service provider to a mismatch between its actual interest payments and the return on debt allowance. The importance of minimising these mismatches is acknowledged in the Draft Guideline by the proposal to make annual updates to the return on debt.
- The only way for a service provider to align its cost of debt with the return on debt is by issuing 7.37 year fixed rate debt. However, as noted previously this will increase the level of refinancing risk compared to the previous strategy of issuing 10-year debt.

It follows that issuing 10-year floating rate debt and overlaying a swap to lock in a 5-year fixed base rate is not the same as issuing 7.37 year fixed rate debt. The interest payment profiles and the level of refinancing risk associated with these debt structures are completely different and, as such, they cannot be treated as being equivalent. The fact that the average cost may be the same over a sufficiently long period of time (assuming no change in interest rates, on average) is irrelevant from a risk management perspective. As depicted in Figure 4, the relationship

⁹ 2009 WACC Review, p. 161

¹⁰ 2009 WACC Review, p. 164

¹¹ 2009 WACC Review, p. 164

between 7- and 10-year BBB+ yields has varied considerably over the last 12 years, and even if the effective term of debt analysis was valid, its results would be very different through time.

The effective term of debt is not relevant under a trailing average portfolio approach

The AER has applied the same reasoning when deciding on the benchmark debt tenor under a trailing average portfolio approach, where a 7-year tenor has been proposed:

*'The available evidence that suggests that the average term of debt is less than 10 years (**that is, the average effective term of debt, which takes into account the 'swapping of the risk free rate', may be shorter than the average term at issuance**).'¹² [emphasis added]*

'... we consider that the average effective term of debt to be relevant in determining the average term of debt for a benchmark efficient entity.'¹³

The first quote suggests that the debt issue term is still considered to be 10 years, and that the shorter 'effective term' is *contingent* on the use of an interest rate swap to lock in a fixed base rate for a term less than 10 years.

Even if the 7.37 year estimate was a valid estimate in the context of the previous 'on the day' approach, the past practice of swapping the risk-free rate is of no relevance under a trailing average portfolio approach. This practice was only adopted by some service providers because the return on debt under the previous approach was reset every 5 years. Furthermore, this past practice is inconsistent with the description of the trailing average approach in the Draft Guideline, which is based on the regular issuance of fixed rate debt:

*'A service provider can implement such a debt management strategy [the trailing average portfolio approach] by holding a portfolio of **fixed-rate debt with staggered maturity dates**. It could also engage in some other financing practice and enter into hedging arrangements to replicate a borrowing cost structure that would arise if it held a portfolio of fixed-rate debt with staggered maturity dates.'¹⁴ [emphasis added]*

It is unclear if the second sentence in the above quote is referring to the financing and hedging arrangements that gave rise to the 7.37 year effective term of debt estimate. As explained previously, issuing 10-year floating rate debt and overlaying a swap to lock in a 5-year fixed base rate does not replicate a 7-year fixed rate borrowing. As such, this past practice is inconsistent with the description of the trailing average approach in the Draft Guideline.

The Draft Guideline specifically links the use of interest rate swaps to the hybrid portfolio approach, which is not the proposed approach for calculating the return on debt:

*'A service provider can implement such a debt management strategy [the hybrid portfolio approach] by holding a portfolio of floating-rate debt with staggered maturity dates and using an interest rate swap overlay. It could also engage in some other financing practice that would result in the same borrowing structure. **We note that this approach relies on the assumption that the benchmark efficient entity would engage in hedging practices, for example, through entering into interest rate swap contracts.**'¹⁵ [emphasis added]*

¹² AER Draft Guideline, p. 105

¹³ AER Draft Guideline, p. 107

¹⁴ AER Draft Guideline, p. 82

¹⁵ AER Draft Guideline, p. 82

By issuing fixed rate debt, there is no need for a swap-based hedging strategy to be maintained to implement the trailing average portfolio approach. As such, the only relevant term under the trailing average portfolio approach is the term of debt at issuance, which the AER has confirmed as being 10 years:

*'... the AER has verified that the weighted average maturity of debt portfolios at the time of issuance for these businesses is 10.14 years.'*¹⁶

Lally's advice on the benchmark debt tenor

The irrelevance of the previous swap-based hedging strategy to the choice of the benchmark debt tenor under the trailing average portfolio approach was also noted in advice provided to the AER by Martin Lally:

*'Observation of the swap contract behaviour of the firms in the presence of regulation will not be a satisfactory substitute because this swap contract behaviour will be influenced by the nature of the regulation.'*¹⁷

Lally's advice to the AER also considers the potential use of interest rate swaps under a trailing average approach, but from the perspective of an efficient unregulated firm. These considerations are largely conceptual as the firm of interest is a natural monopoly that provides an essential service.

Lally's analysis can be summarised as follows:

1. Refinancing risk can be reduced by issuing long-term debt (eg, 10 years).
2. Due to the positive slope of the yield curve, the efficient firm is 'likely' to enter into a swap contract to lock in a fixed base rate for a term that is shorter than the debt issue term.
3. In deciding on the term of the swap contract the efficient firm will optimally trade-off the increased interest rate risk and transaction costs associated with a shorter-term swap against the expected interest savings compared to the base swap rate implicit in 10-year fixed rate debt.

Lally's conclusion in the third point implies that shorter-term swap contracts have a lower *risk-adjusted* cost (including transaction costs) compared to the base swap rate implicit in 10-year fixed rate debt. Lally refers to a trade-off between cost and risk, but provides no basis for concluding that the trade-off will identify a shorter-term swap as being less expensive once the additional interest rate risk and transaction costs are considered.

If the efficient unregulated firm has relatively stable revenues, a shorter-term base interest rate exposure will increase the potential for a mismatch between the firm's revenues and its debt servicing costs. This will increase the probability of financial distress, especially if the efficient unregulated firm has relatively high gearing. Lally does not explain why the lower interest rate on a shorter-term swap (including transaction costs) would more than offset this risk.

In addition, the debt portfolios that follow from Lally's assumptions will consist of floating rate debt and an interest rate swap overlay. These portfolios are more aligned with the hybrid portfolio approach, which is not the proposed approach in the Draft Guideline.

¹⁶ 2009 WACC Review, p. 159

¹⁷ M. Lally, *Estimating the cost of debt of the benchmark efficient regulated energy network business*, 26 June 2013, p. 11

Finally, it should be noted that Lally's ultimate conclusion is that the term of the base rate under the trailing average approach is indeterminable¹⁸. As a consequence, Lally's advice cannot be used to support a 7-year benchmark debt tenor.

The only term that can be reliably observed is the debt issue term, which is 10 years. As the trailing average portfolio approach is based on the issuance of fixed rate debt, it follows that the term of the base interest rate should also be 10 years.

Inability to replicate the benchmark return on debt

Using a 7-year benchmark debt tenor and averaging period to calculate the return on debt will:

- lead to a material increase in refinancing risk for firms that attempt to align their cost of debt with the return on debt (ie, by issuing 7-year debt rather than the current practice of issuing 10-year debt), and
- create a mismatch between the return on debt and the cost of debt for firms that continue to issue 10-year debt to keep refinancing risk at an acceptable level.

The first outcome is inconsistent with the AEMC's conclusion that the return on debt should create incentives for service providers to adopt efficient financing practices. The second outcome appears to be at odds with clause 6.5.2(k)(1) of the Rules, which refers to:

'the desirability of minimising any difference between the return on debt and the return of debt of a benchmark efficient entity referred to in the allowed rate of return objective.'

Debt issuance practices of other firms

Appendix A displays the debt maturity profiles for a range of businesses including non-regulated infrastructure businesses and businesses operating in capital intensive industries.

Although the business risk profile of these firms differ from a regulated network service provider, both groups are exposed to a common risk of having to refinance maturing debt or fund new investment when credit markets are unfavourable. This risk is especially important for regulated service providers because the assumed benchmark gearing of 60 per cent is higher than the gearing of the firms in Appendix A.

As such, QTC considers the debt maturity profiles of these businesses to be relevant to the benchmark debt tenor for a regulated network service provider.

In the context of a debt portfolio with staggered maturity dates, a 7-year benchmark debt tenor implies an average remaining term to maturity of just 3.5 years. This is shorter than the average remaining terms of the debt profiles in Appendix A. This indicates that a 7-year benchmark debt tenor implies an average annual refinancing task that is larger than the average annual task for infrastructure firms and firms operating in capital-intensive industries, which both have gearing of less than 60 per cent.

¹⁸ Lally, 26 June 2013, p. 11

The AER's implied conclusion that issuing 10-year floating rate debt and overlaying a swap to lock in a 5-year fixed base rate is equivalent to or replicates issuing 7-year fixed rate debt is not valid. The annual interest payment profiles and level of refinancing risk for these two debt structures are completely different.

In addition, the AER's effective term of debt analysis is based on hedging practices associated with the previous 'on the day' approach, which are not relevant to assessing benchmark efficient funding practices under a trailing average portfolio approach.

Based on these considerations, it is QTC's view that the effective term of debt analysis cannot be used to justify shortening the benchmark debt tenor from 10 to 7 years.

A trailing average portfolio approach is based on the regular issuance of fixed rate debt. As service providers have displayed a clear preference to issue 10-year debt to manage refinancing risk, it follows that a 10-year benchmark debt tenor is appropriate under a trailing average portfolio approach.

The observed financing practices of non-regulated infrastructure businesses, and businesses operating in capital intensive industries, also support a benchmark debt tenor of 10 years.

Automatic updating of the trailing average portfolio return on debt

The AER currently estimates the 10-year BBB+ corporate yield as follows:

$$10yr\ BBB+ \text{ yield} = (10yr\ CGS + \text{Bloomberg } 7yr\ BBB\ \text{DRP}) + \text{DRP term premium}$$

The 10-year Commonwealth Government Security (CGS) yield and the Bloomberg 7-year BBB+ DRP (debt risk premium) are both directly observable. The DRP term premium is the margin between 7- and 10-year BBB+ DRPs. The AER estimates the DRP term premium based on difference in DRPs for pairs of bonds with different tenors that are issued by the same firm.

The Draft Guideline outlines a number of practical difficulties in automating the paired bond method. It also identifies issues regarding the accuracy and reliability of alternative extrapolation methods¹⁹. The proposed solution to these problems, which QTC does not support, is to shorten the benchmark debt tenor from 10 to 7 years.

QTC appreciates the difficulty in automating the current paired bonds method, especially if estimates are likely to be required on a daily basis. We are also aware of the issues associated with alternative extrapolation methods such as a straight line extrapolation based on the 5- and 7-year Bloomberg fair value yields. However, QTC does not agree that a 7-year tenor is required in order for the yield on the debt benchmark to be determined mechanistically.

In QTC's view, it is unreasonable for the AER to propose a 7-year benchmark debt tenor simply because a relatively small, but not insignificant part of the 10-year BBB+ yield is perceived to be difficult to estimate.

To address this issue, QTC has developed an alternative method to extrapolate the Bloomberg 7-year BBB+ yield to a 10-year tenor. The method is simple, accurate and will allow the AER to mechanistically estimate the 10-year BBB+ yield on a daily basis. A description of the method is set out in Attachment A to this submission.

¹⁹ AER Draft Guideline, pp. 108-109

Materiality of the term premium between 7- and 10-year BBB+ yields

The Draft Guideline states that the term premium is not material based on the 21 basis point difference between the average Bloomberg 7- and 10-year BBB fair value yields from 4 December 2001 to 9 October 2007²⁰.

This claim is not supported by a longer-term analysis of the historical term premium. It is also inconsistent with the term premiums implicit in the AER's recent return on debt decisions since early 2012. Furthermore, the sample period relied on by the AER does not include the effects of the global financial crisis and the sovereign debt crisis.

Longer-term analysis of the CGS term premium

The term premium that is of interest is the margin between 7- and 10-year BBB+ yields. Although a lack of data makes it difficult to analyse this particular term premium over a long period of time, the margin between 7- and 10-year par CGS yields can be used to make some general observations about the likely behaviour of the BBB+ term premium²¹.

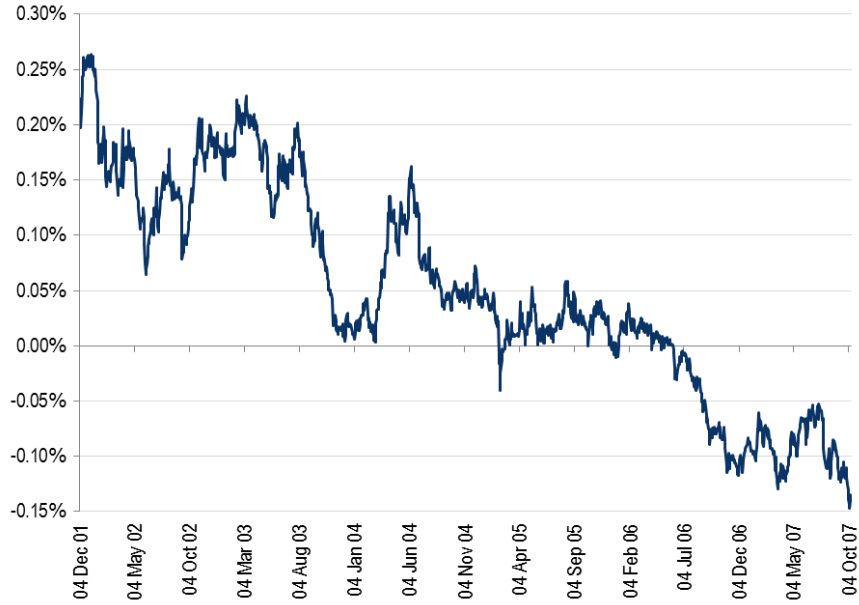
Figure 2 displays the CGS term premium during the sample period considered by the AER²². During this period, the CGS term premium steadily declined; it was negative (ie, the CGS yield curve was inverse) from June 2006 onwards. However, including data pre-December 2001 and post-October 2007 (Figure 3) confirms the atypical behaviour of the CGS term premium during the AER's sample period. Figure 3 also shows the effects of the global financial crisis and the sovereign debt crisis.

²⁰ AER Draft Guideline, p. 105

²¹ The term premium between 7 and 10-year BBB+ yields can be expressed as: $(10\text{yr CGS} - 7\text{yr CGS}) + (10\text{yr DRP} - 7\text{yr DRP})$. As such, the size of the CGS term premium will understate the size of the BBB+ term premium. However, changes in the CGS term premium should provide some information regarding changes in the BBB+ term premium.

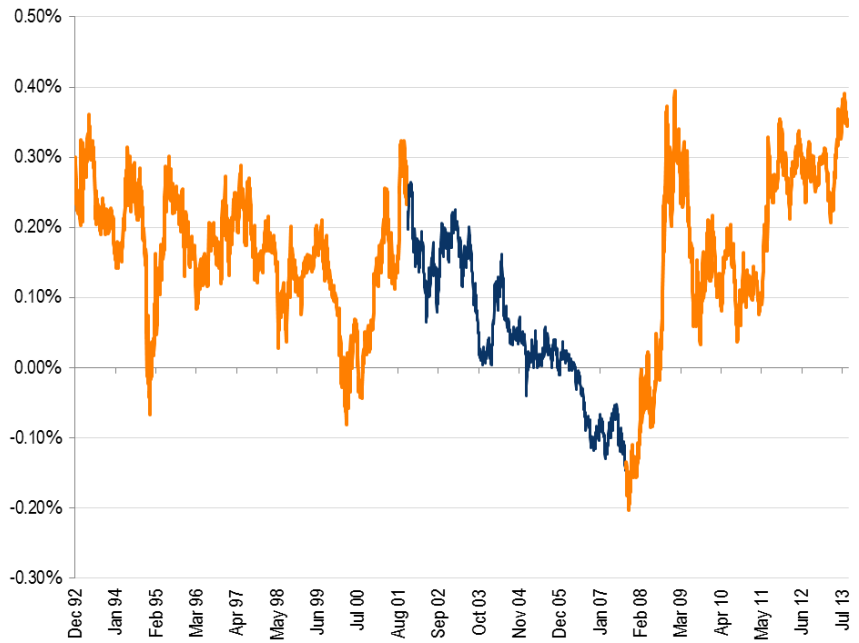
²² The 7- and 10-year par CGS yields have been produced using the zero coupon CGS yields from the RBA website.

FIGURE 2: CGS TERM PREMIUM BETWEEN 7 AND 10 YEARS – DECEMBER 2001 TO OCTOBER 2007



Source: RBA

FIGURE 3: CGS TERM PREMIUM BETWEEN 7 AND 10 YEARS – DECEMBER 1992 TO SEPTEMBER 2013



Source: RBA

The average CGS term premium during the AER’s sample period is 5 basis points. The average term CGS premiums prior to and after the AER’s sample period are 16 basis points and 17 basis points respectively.

Term premiums implicit in recent AER decisions

Since early 2012 the AER has used the paired bond method to extrapolate the Bloomberg 7-year BBB DRP to a 10-year tenor. Table 1 provides a summary of the DRP term premiums implicit in these decisions, and the CGS term premiums.

TABLE 1: RECENT AER DECISIONS USING THE PAIRED BOND EXTRAPOLATION APPROACH

Service provider	Averaging period	10-year DRP (bp)	Bloomberg 7-year DRP (bp)	DRP term premium (bp)	CGS term premium (bp)	BBB+ yield term premium (bp)
Aurora	10 Jan 2012 to 6 Feb 2012	411	380	31	28	59
Powerlink	6 Feb 2012 to 30 Mar 2012	393	364	29	25	54
APTPPL	25 Jun 2012 to 20 Jul 2012	406	371	35	29	64
APA GasNet	13 Sep 2012 to 26 Sep 2012	346	319	27	30	57
Multinet Gas	24 Oct 2012 to 20 Nov 2012	332	301	31	27	58
SP AusNet	12 Nov 2012 to 7 Dec 2012	335	303	32	26	58
Envestra	31 Jan 2013 to 20 Feb 2013	323	281	42	31	73
ElectraNet	18 Feb 2013 to 15 Mar 2013	318	273	45	28	73
Murraylink	27 Feb 2013 to 26 Mar 2013	317	271	46	26	72
SP AusNet (draft)	24 Jun 2013 to 19 Jul 2013	300	263	37	35	72
Average		348	313	35	29	64

The average DRP and CGS term premiums are **35** basis points and **29** basis points respectively, which combine to produce an average term premium between 7- and 10-year BBB+ yields of **64** basis points.

Term premiums implicit in PwC's pair bond analysis

PricewaterhouseCoopers (PwC) has also produced estimates of the 10-year DRP by using paired bonds to extrapolate the Bloomberg 7-year BBB DRP. Table 2 shows the DRP term premiums implicit in the PwC estimates, and the CGS term premiums.

TABLE 2: PwC PAIRED BOND EXTRAPOLATIONS

Averaging period	PwC 10-year DRP (bp)	Bloomberg 7- year DRP (bp)	DRP term premium (bp)	CGS term premium (bp)	BBB+ yield term premium (bp)
40 days to 1 April 2011 ²³	456	412	44	11	55
40 days to 14 Oct 2011 ²⁴	408	381	27	26	53
20 days to 18 Nov 2011 ²⁵	381	354	27	28	55
40 days to 9 Dec 2011 ²⁶	391	361	30	30	60
20 days to 16 Dec 2011 ²⁷	392	369	23	34	57
20 days to 7 Dec 2012 ²⁸	328	302	26	26	52
Average	393	363	30	26	56

The average DRP and CGS term premiums are **30** basis points and **26** basis points respectively, which combine to produce an average term premium between 7- and 10-year BBB+ yields of **56** basis points.

The Draft Guideline refers to PwC's 23 basis point (7.6 basis point per annum) DRP term premium estimate for the 20 days to 16 December 2011 to support the claim that the term premium is not material²⁹. Although QTC does not consider a 23 basis point margin to be immaterial, the term premium between 7 and 10-year BBB+ yields during this period was **57** basis points. This reflects a 23 basis point DRP term premium and a 34 basis point term premium between 7 and 10-year CGS yields.

Term premiums implicit in QTC's alternative extrapolation method

QTC's alternative extrapolation method, which is set out in Attachment A to this submission, has been used to estimate the term premium between 7- and 10-year BBB+ yields on a daily basis (Figure 4). As the method is based on the Bloomberg 7-year BBB fair value yield, the estimation period starts on 4 December 2001.

²³ PwC, *Powerlink: Methodology to estimate the debt risk premium*, April 2011, p. 16

²⁴ PwC, *Powerlink: Debt risk premium and equity raising costs*, January 2012, p. vi

²⁵ PwC, *ElectraNet: Estimating the benchmark debt risk premium*, May 2012, p. 22

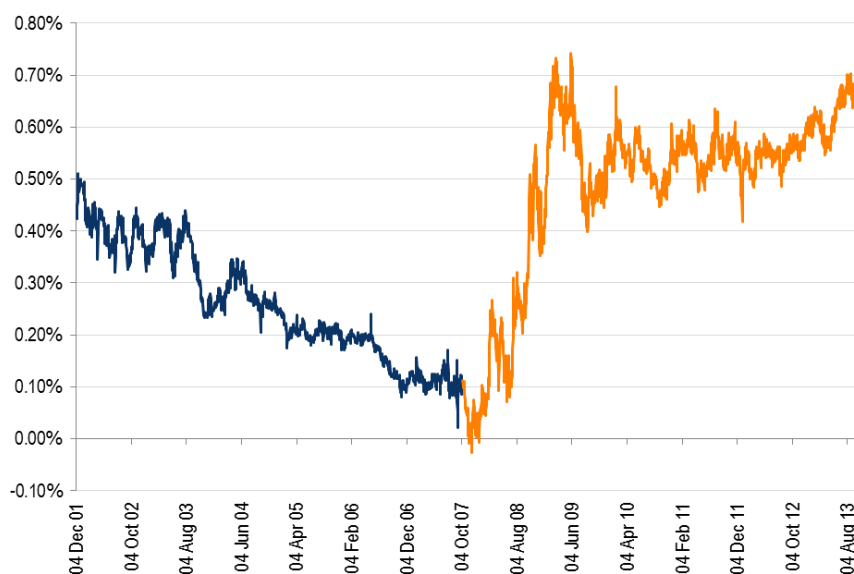
²⁶ PwC, *Powerlink: Debt risk premium and equity raising costs*, January 2012, p. vi

²⁷ PwC, *SP AusNet, Multinet Gas, Envestra, & APA Group: Estimating the benchmark debt risk premium*, March 2012, p. 22

²⁸ PwC, *SP AusNet: Debt risk premium for the 2013 Victorian Transmission Revenue Review*, March 2013, p. 14

²⁹ AER Draft Guideline, p. 109

FIGURE 4: QTC ESTIMATED BBB+ YIELD TERM PREMIUM BETWEEN 7 AND 10 YEARS – DECEMBER 2001 TO SEPTEMBER 2013



Source: QTC analysis, Bloomberg

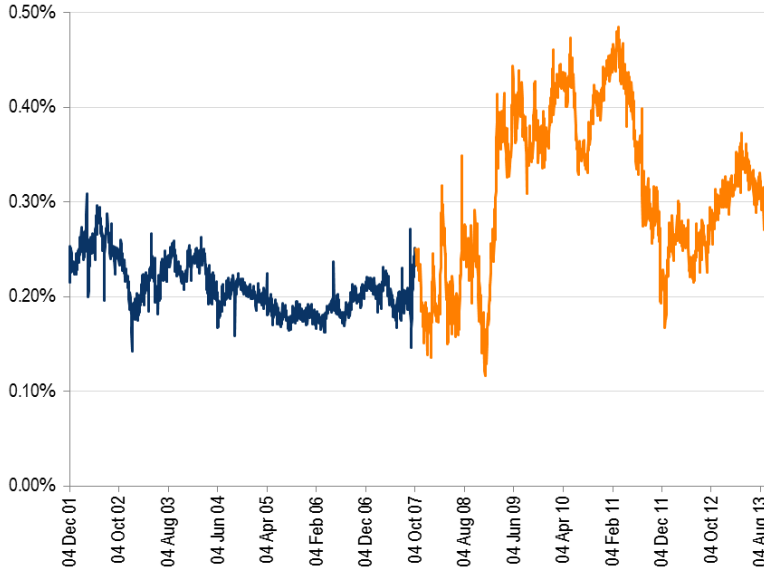
Consistent with the behaviour of the CGS term premium, the estimated term premium between 7- and 10-year BBB+ yields increased significantly immediately after the end of the AER’s sample period. The components of the estimated term premium are summarised in Table 3.

TABLE 3: QTC AVERAGE ESTIMATED TERM PREMIUMS BETWEEN 7 AND 10 YEARS

Averaging period	DRP term premium (bp)	CGS term premium (bp)	BBB+ yield term premium (bp)	Bloomberg 7-year DRP (bp)
4 Dec 2001 to 9 Oct 2007	21	5	26	122
10 Oct 2007 to 30 Sep 2013	31	17	46	338
4 Dec 2001 to 30 Sep 2013	26	11	37	232

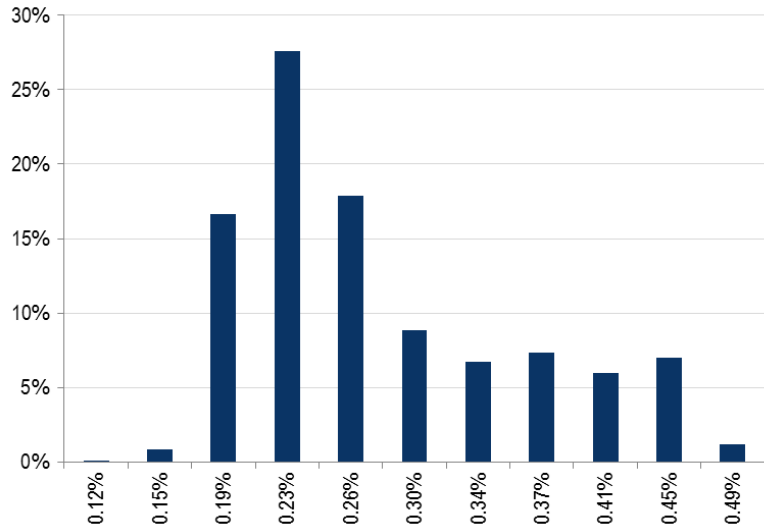
Figures 5 and 6 display the estimated BBB+ DRP term premium between 7 and 10 years from December 2001 to September 2013. These data provide some insight into the size and variability of the only component of the 10-year BBB+ yield that cannot be directly observed. Despite the considerable variation in debt market conditions during this period, the BBB+ DRP term premium was generally between 20 and 40 basis points.

FIGURE 5: QTC ESTIMATED BBB+ DRP TERM PREMIUM BETWEEN 7 AND 10 YEARS



Source: QTC analysis, Bloomberg, RBA

FIGURE 6: HISTORICAL FREQUENCY DISTRIBUTION OF THE BBB+ DRP TERM PREMIUM



The AER has not demonstrated that the term premium between 7 and 10-year BBB+ yields is immaterial. The time period considered by the AER is relatively short and atypical of market conditions over the past 20 years. In addition, it does not include the effects of the global financial crisis or the sovereign debt crisis.

The AER’s claim is also inconsistent with the term premiums implicit its own return on debt decisions since early 2012 and the term premiums based on PwC’s paired bond extrapolations.

Even if the term premium was immaterial, the AER should still be creating incentives for service providers to issue 10-year debt rather than 7-year debt.

QTC’s alternative extrapolation method is one way for the AER to mechanically estimate the 10-year BBB+ yield on a daily basis.

Section 2 – Weighted versus unweighted averaging

QTC does not support the use of an unweighted average to calculate the return on debt. Compensating increases in the debt balance at historical rather than prevailing rates is contrary to the allowed rate of return objective as any meaningful estimate of efficient debt financing costs must reflect the costs that can be achieved in practice. Similarly, using historical rates to compensate new investment is inconsistent with achieving allocative efficiency:

‘Allocative efficiency can be achieved by setting the allowed return on debt such that it reflects the lowest debt financing cost that a benchmark efficient entity could realistically achieve.’³⁰

An unweighted average is not robust

It is possible that an unweighted average may perform adequately if normal circumstances are assumed to occur in the future, with interest rates relatively near to their longer-term average and a relatively low rate of growth in regulated asset bases (RAB).

However, experience over the past 10 years has shown that models based on assumptions of normality are vulnerable to rapid changes in market conditions. The global economy and global capital markets have clearly not returned to normal conditions, and the continuation of unusual monetary policy in most major economies suggests it would be imprudent to assume normal conditions as the basis for adopting an unweighted average.

An unweighted average is likely to prove problematic in circumstances where interest rates are volatile, and where interest rates are persistently higher or lower than the trailing average value. These are the conditions which currently exist: interest rates have moved substantially lower in the past two years because of unusual monetary policy settings in developed economies, with the potential for large one-off or step-change movements in interest rates as monetary policy settings revert to normal over time (eg, the US Federal Reserve tapering of US Government bond purchases). For example, in June 2013, the 10-year CGS yield increased by more than 100 basis points in a matter of days in response to comments by the Chairman of the Federal Reserve hinting at a withdrawal from the bond purchase program.

An unweighted average is likely to suffer the same fate as the previous ‘on the day’ approach, which became unworkable as interest rates turned out to be more volatile than expected, and markets turned out to be less liquid, particularly during the global financial crisis. Much like the ‘on the day’ approach, an unweighted average approach is simple, but it is not robust.

Differences between the prevailing and unweighted cost of debt

If an unweighted average is used, a service provider’s investment decisions will be affected by the difference between the prevailing cost of debt and the trailing average return on debt. Due to the use of overlapping data, large differences between these rates will naturally occur on an annual basis. Therefore, it is inappropriate to incorporate a bias towards under (over) investment when the prevailing cost of debt is above (below) the trailing average return on debt. To do so assumes that any difference between the rates is evidence of mis-pricing in the market, which is clearly incorrect.

The use of overlapping data also means that the difference between the prevailing cost of debt and the trailing average return on debt will display persistence over time, which creates the risk

³⁰ AER Draft Guideline, p. 77

of sustained periods of over or under-compensation if an unweighted average is used. This is confirmed by the AER’s modelling in the Draft Guideline³¹:

FIGURE 7: EXTRACT OF TABLE I.7 FROM THE DRAFT GUIDELINE (10 PER CENT ANNUAL GROWTH IN DEBT BALANCE)

Year/Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007												0.06
2008	0.07	0.09	0.10	0.10	0.10	0.13	0.13	0.10	0.11	0.09	0.07	0.07
2009	0.09	0.11	0.13	0.13	0.15	0.20	0.18	0.15	0.17	0.18	0.15	0.15
2010	0.16	0.17	0.18	0.18	0.18	0.20	0.18	0.16	0.19	0.21	0.21	0.23
2011	0.22	0.22	0.21	0.21	0.19	0.18	0.15	0.12	0.13	0.13	0.12	0.11
2012	0.12	0.11	0.10	0.07	0.04	0.00	-0.02	-0.03	-0.04	-0.05	-0.05	-0.05
2013	-0.06	-0.07	-0.09	-0.12	-0.14	-0.17	-0.16					

Source: Bloomberg, AER analysis.

Based on the AER’s figures, a service provider would have been persistently under-compensated between December 2007 and May 2012 if an unweighted trailing average was used to calculate the return on debt. When evaluating the performance of an unweighted average, consideration should be given to the size of the cumulative mismatches over time, rather than the mismatch at a point in time.

Materiality

The conclusion that the difference between the weighted and unweighted average approaches is not material rests on the assumption that businesses consider their total cost of debt rather than the incremental cost of debt associated with each new investment decision. This is inconsistent with finance theory and practice, where new projects are evaluated at prevailing market rates, and historical or ‘sunk’ costs are ignored.

If the unweighted average return on debt is lower than the prevailing cost of debt, a firm undertaking new investment at that time will be entering into a transaction with a negative net present value (NPV). If this loss of value dilutes equity returns on the new investment below an acceptable level, a rational business would defer its investment to the extent possible.

The suggestion that a business would look through the unders and overs resulting from an unweighted average return on debt seems inconsistent with optimising capital structures and maximising cash distributions to equity holders, which are common practices in the regulated network sector. At the very least, the need to consider differences between the prevailing cost of debt and the unweighted average return on debt is likely to introduce uncertainty in forward planning and create the potential for sub-optimal investment decision making in network planning and development.

³¹ AER Draft Guideline, p. 227

It is foreseeable that a service provider could have its return on debt set under the proposed transitional method at a time when rates are relatively low (eg, due to continued quantitative easing), but then a change in monetary policy could result in a sustained increase in rates back to, or even above, the levels seen prior to the global financial crisis. Under the AER's unweighted average approach, it would take 7 years for the return on debt to fully reflect higher rates on new investment. The service providers in these circumstances would face higher uncompensated debt funding costs for additions to the RAB combined with a relatively low allowed return on equity (ie, if the Sharpe-Lintner CAPM is applied when CGS yields are still low), which would dilute its equity returns. In these circumstances, there would be a strong incentive against investing in new projects, subject to the service provider having the flexibility to do so. The extent of the dilution in equity returns would depend on the size of its investment program relative to the existing asset base, as well as the size of the difference between the prevailing cost of debt and the unweighted trailing average return on debt.

Specific concerns raised in the Draft Guideline

In regards to the three specific concerns raised by the AER, we note the following³²:

- The use of different weights for each service provider is not a departure from benchmark regulation, as the efficient cost of debt for the benchmark efficient firm will depend on its investment and funding profile during a period. If the benchmark efficient capital expenditure for a particular service provider involves substantial new borrowing relative to its existing debt, then the efficient debt funding cost will be more reflective of the prevailing cost of debt during the period than for a service provider that has a small investment program. An unweighted average approach will provide an outcome which is more reflective of the service provider with a relatively smaller investment program relative to its existing asset base. In contrast, a service provider with a large investment program faces the risk that the prevailing cost of debt is higher than the unweighted trailing average return on debt.

The Draft Guideline proposes to allow each service provider to nominate the averaging periods used to re-calculate the trailing average return on debt. As different service providers are likely to choose different averaging periods (in terms of timing and length), it follows that a single return on debt will not apply to all service providers even if a single set of weights are used.

- A weighting scheme based on the actual increase in the RAB would provide incentives for efficient financing practices, because the service provider is incentivised to fund at a lower cost relative to prevailing rates at the time of the investment. If an unweighted average approach is used, the service provider would have a windfall gain if the prevailing cost of debt was lower than the trailing average, even if its particular funding strategy was inefficient, or a windfall loss if the prevailing rate is higher, even if it uses the most efficient available source of funding. The advantage of weighting using the actual increase in RAB is that the service provider is not influenced by the absolute level of interest rates in regards to the timing of its investment.
- Weighting using the PTRM values introduces risk for a service provider if it does not follow the investment pattern in its regulatory determination. It is correct to say that this approach would tend to influence the service provider to invest in line with the PTRM profile, in order to minimise the potential for mismatch between its actual and allowed cost of debt. However, it is incorrect to equate this with inefficient financing practices, because it is not possible to know with any certainty the direction of future interest rates.

³² AER Draft Guideline, p. 90

Importance of the PTRM debt balances

The PTRM debt balances, which are ultimately approved by the AER, reflect the new funding required to maintain and expand a service provider's network. Whether a service provider follows this borrowing profile is their decision, but this is not relevant to the calculation of the benchmark return on debt.

Provided the AER makes an accurate estimate of the yield on the debt benchmark, this yield should be applied to the assumed refinancing transaction *and* the change in the PTRM debt balance for the purpose of calculating the benchmark return on debt. It is internally inconsistent to compensate the benchmark refinancing and new borrowing transactions at different rates when the transactions are performed at the same time.

The PTRM debt balances will be used to determine the dollar value of the return on debt allowance regardless of how the return on debt is calculated. As such, the AER's proposed approach still involves an implicit weighting scheme, but it is one that is based on the historical return on debt rather than prevailing cost of debt.

QTC considers that a weighted average based on the PTRM debt balances is appropriate to ensure that changes in the debt balance are correctly compensated at the prevailing cost of debt. An example of the proposed approach is provided in Appendix B.

An unweighted trailing average will create a bias towards under (over) investment when the prevailing cost of debt is above (below) the trailing average return on debt. This effectively assumes that any difference between the AER's estimate of the prevailing cost of debt and the trailing average return on debt is evidence of mis-pricing in the market, which is clearly incorrect.

Compensating increases in the debt balance at historical rather than prevailing rates is contrary to the allowed rate of return objective as any meaningful estimate of efficient debt financing costs must reflect the costs that can actually be achieved in practice.

A weighted average is robust to changing market conditions because new investment is compensated at the prevailing cost of debt, which reflects prevailing market conditions.

Assuming size and timing of the changes in the PTRM debt balance (which are ultimately approved by the AER) are important, incentives should be created for service providers to follow the PTRM profile. This requires the changes in the PTRM debt balance to be compensated at the prevailing cost of debt.

Section 3 – Timing of the averaging periods to calculate the return on debt

QTC supports the proposal in the Draft Guideline to allow each service provider to nominate the averaging period used to re-calculate the return on debt within each regulatory year.

For service providers with regulatory years based on financial years (ie, 1 July to 30 June), the Draft Guideline states that an averaging period can be any 10 or more consecutive day period within the latest calendar year before they submit their annual pricing proposals³³. This means the latest end date for the averaging period is 31 December of the previous calendar year.

QTC considers an averaging period that ends 6 months prior to the start of the next regulatory year to be unnecessarily long. In practice, very little primary debt issuance is performed in the domestic market in November and December³⁴. If a service provider nominates the month of October as the averaging period, there will be an 8 month lag before the interest rates on the assumed refinancing transactions are reflected in the return on debt. The lag will be longer for larger service providers who are likely to nominate longer averaging periods (possibly up to 12 months) to allow their refinancing transactions to be spread over a longer period of time.

The Draft Guideline states that the purpose of the 6 month lag is to provide service providers with sufficient time to calculate the return on debt that will be used in their annual pricing proposals to the AER³⁵. However, some of the information that is required to prepare the annual pricing proposals, such as the March quarter Consumer Price Index (CPI), is not available until late April. Allowing the averaging period to end closer to the start of the next regulatory year should not create any delays in preparing the annual pricing proposals.

QTC considers that it would be appropriate to allow service providers to nominate averaging periods that end no later than 3 months prior to the start of the next regulatory year. For example, if a service provider with regulatory years based on financial years nominates a 12-month averaging period, this would include each business day between 1 April and 31 March (inclusive).

³³ AER Draft Guideline, p. 104

³⁴ QTC's submission to the Consultation Paper proposed using the average daily benchmark yields during March, June, September and December to update the trailing average return on debt. The reason for this proposal was to provide a smoother return on debt estimate and to reduce the impact of non-systematic estimation errors. This approach was considered to be a reasonable proxy for daily averaging, but without requiring the AER to make daily estimates of the yield on the debt benchmark.

³⁵ AER Draft Guideline, p. 103

Section 4 – Compensating early debt issue costs

QTC's submission to the Issues Paper provided evidence of the early issuance of debt being used to reduce refinancing risk by regulated utilities and infrastructure businesses such as Sydney Airport Corporation and Transurban. Details of QTC's liquidity management policy and the approach taken to ensure that a maturing bond is paid in full, and on time, were also provided³⁶.

Subsequently, QTC's submission to the Consultation Paper outlined a simple method for estimating these costs, and demonstrated that the average cost between March 2006 and March 2013 was 25 basis points per annum based on a 6-month 'pre-issue' period and a 10-year benchmark debt tenor³⁷.

In QTC's view, issuing debt early to ensure that funds are available to repay a soon-to-mature borrowing is a part of a prudent and efficient strategy to manage refinancing risk. This is especially the case for firms with above-average gearing as the consequences of an adverse refinancing outcome must be absorbed by a relatively small amount of equity capital. It follows that the costs associated with this practice are an efficient financing cost.

Providing compensation for the costs associated with early debt issuance is consistent with the allowed rate of return objective and the AEMC's conclusion that the return on debt approach should create incentives for service providers to adopt efficient debt financing practices.

The allowed rate of return objective requires the AER to compensate service providers for efficient debt financing costs. The Draft Guideline has not addressed the costs associated with the early issuance of new debt, despite evidence being provided to support the efficiency of this practice.

³⁶ QTC, *Submission to the Issues Paper*, February 2013, p. 24

³⁷ QTC, *Submission to the Consultation Paper*, June 2013, pp. 22-24

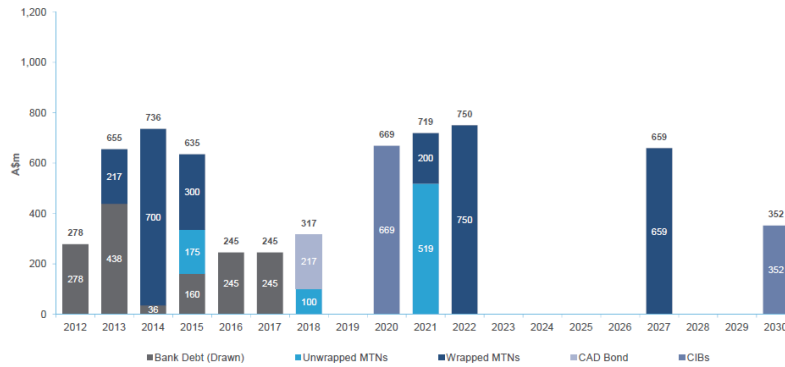
Appendix A – Debt maturity profiles

Sydney Airport Corporation

Debt Maturity Profile



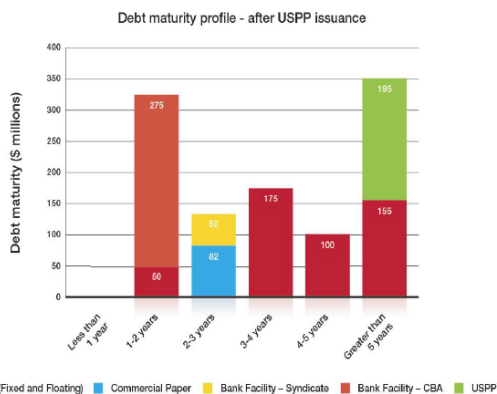
Diversified capital structure with further opportunity to spread maturity



1 Debt maturity profile as at 30 June 2012
 2 The principal repayable on Capital Indexed Bonds (CIB) maturing in 2020 (A\$669m) and 2030 (A\$349m) increased through to maturity linked to the rate of inflation CPI. The annual fixed interest charge on the CIBs is calculated on the increased liability
 3 Undrawn debt of A\$115m for CY2013, A\$66m for CY2014, A\$278m for CY2015, A\$152m for CY2016 and A\$337m for CY2017
 4 Funding already raised to redeem A\$278m of bonds maturing in October 2012

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

Auckland Airport



Debt is based on contractual maturities at par excluding interest rate swap valuations.

Commercial Paper maturities are less than three months but are supported by committed bank facilities that mature in March 2013.

The above graph shows debt maturities assuming the repayment of \$125 million of the Bank Facility – Syndicate in February 2011 and \$75 million Bonds in July 2011 which have been refinanced with USPP debt issuance which has maturities of February 2021 (\$64.8m), July 2021 (\$65.6m) and February 2023 (\$64.8m).

Finalised agreement on refinancing for US\$150 million in the US Private Placement (USPP) market in December 2010 to replace debt maturing in March and July 2011.

This issuance into a new international debt market achieved:

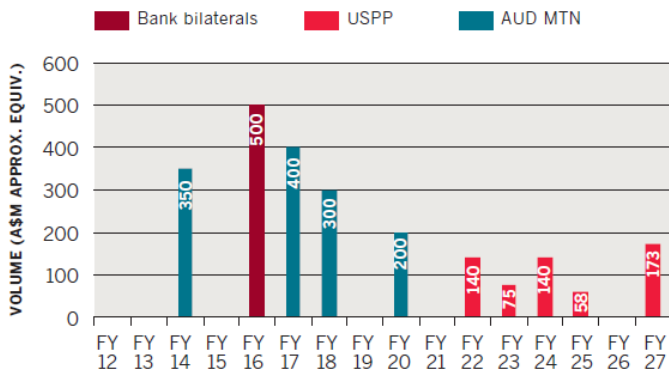
- attractive pricing;
- delayed draw downs to match the debt repayments; and
- tenors of 10 and 12 years to extend Auckland Airport's average debt maturity to 4.56 years.



Source: Auckland Airport – Citigroup London Conference – March 2011

Brisbane Airport Corporation

DEBT MATURITY PROFILE



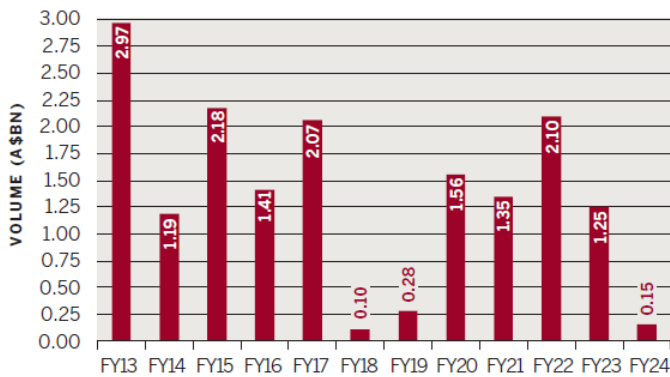
USD borrowings converted to AUD by KangaNews at issue date FX rates.

SOURCE: BRISBANE AIRPORT CORPORATION SEPTEMBER 30 2012

Source: KangaNews issuer profile

Telstra Corporation

DEBT MATURITY PROFILE

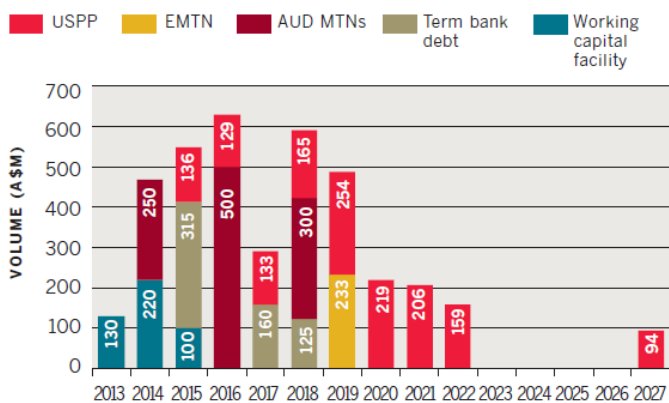


SOURCE: TELSTRA CORPORATION JUNE 30 2012

Source: KangaNews issuer profile

Transurban

DEBT MATURITY PROFILE

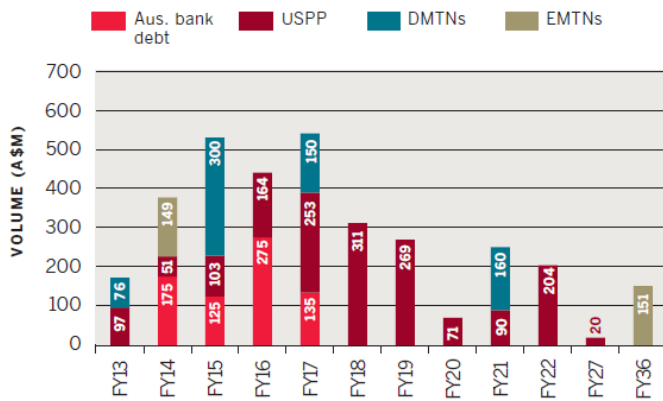


SOURCE: TRANSURBAN JUNE 30 2012

Source: KangaNews issuer profile

Stockland

DRAWN DEBT MATURITY PROFILE

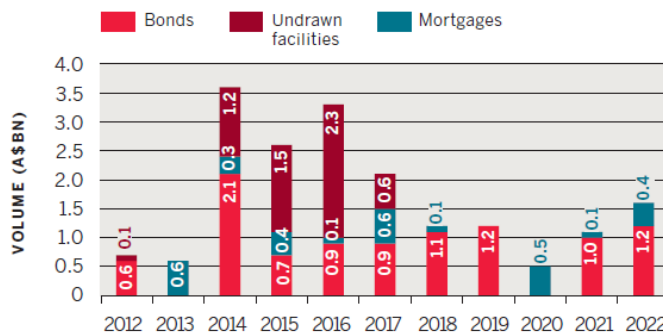


SOURCE: STOCKLAND JUNE 30 2012

Source: KangaNews issuer profile

Westfield Group

DEBT MATURITY PROFILE

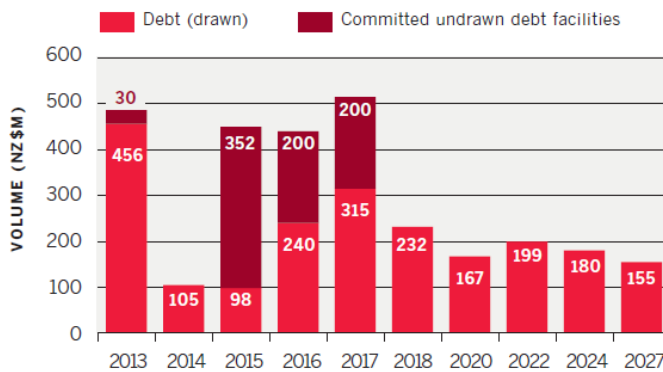


SOURCE: WESTFIELD GROUP 2012

Source: KangaNews issuer profile

Fletcher Building

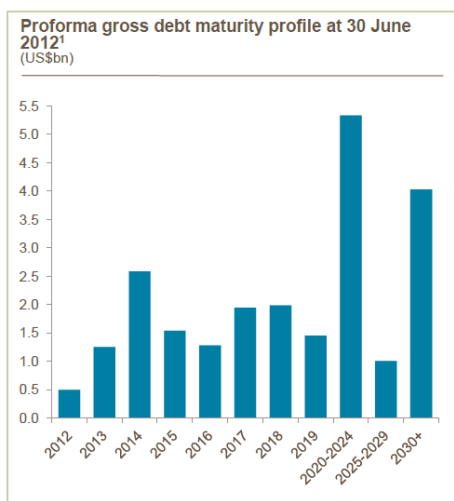
DEBT MATURITY PROFILE



SOURCE: FLETCHER BUILDING JUNE 30 2012

Source: KangaNews issuer profile

Rio Tinto



¹ 30 June 2012 maturity profile adjusted for \$3 billion bond issue August 2012 and \$0.5 billion bond maturity September 2012

- 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

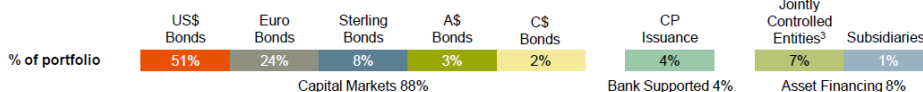
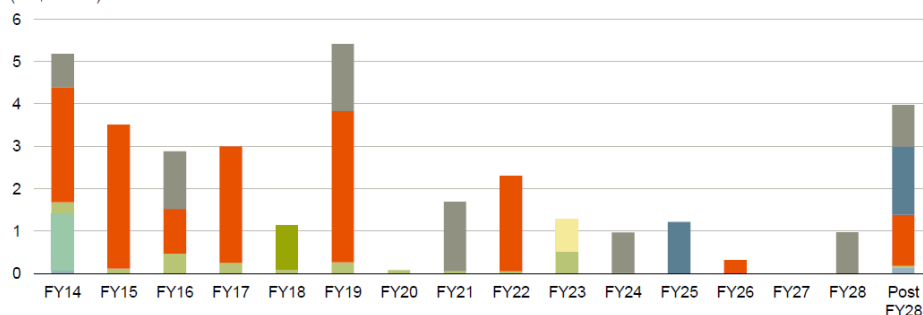
Source: Rio Tinto Investor Seminar, London/New York, 9 October 2012

BHP Billiton

Maturity profile analysis

Debt balances¹

(US\$ billion²)



1. Based on debt balances as at 30 June 2013.
 2. All debt balances are represented in notional US\$ values and based on financial years.
 3. Jointly Controlled Entity debt represents BHP Billiton share subject to governing contractual arrangements.
 4. Subsidiary debt represents BHP Billiton share of subsidiary debt based on BHP Billiton effective interest.

Source: BHP Billiton – Preliminary results for the year ended 30 June 2013

Appendix B – Practical implementation of a weighted average based on PTRM debt balances

One way to implement a weighted average approach is by using the prevailing cost of debt and the change in the PTRM debt balance to adjust the underlying rates in the trailing average calculation. This approach is computationally simple and transparent, which should alleviate any concerns around complexity. A simple spreadsheet model can be used to perform the calculations.

The return on debt would be calculated as a simple average of the adjusted rates. This approach is consistent with the use of a single set of weights (eg, 10 per cent for each annual observation based on a 10-year debt tenor), but still results in the changes in the PTRM debt balance being compensated at the prevailing cost of debt.

Worked example

Consider an example where the PTRM debt balance increases from \$100 to \$115 over a 1-year period. The service provider is assumed to have been operating under the trailing average approach for at least 10 years, so the underlying interest rates in the trailing average reflect the historical rates over the last 10 years. For the purpose of this example, a series of hypothetical rates have been used to populate the trailing average.

Regardless of how the return on debt is calculated, the final estimate will be applied to the PTRM debt balance to determine the dollar value of the return on debt allowance. As such, the following weights will apply (either explicitly or implicitly) to the interest rates associated with the existing and new debt:

$$\begin{aligned}\text{Weight applying to existing debt} &= \$100 \div \$115 = 0.8696 \\ \text{Weight applying to change in debt} &= \$15 \div \$115 = 0.1304\end{aligned}$$

Table 4 displays the adjustments to the rates in the trailing average based on QTC's proposed method, which compensates the increase in the debt balance at the prevailing cost of debt (6.25 per cent). Table 5 displays the weighting approach implicit in the AER's proposed approach, where the increase in the debt balance is compensated at the average rate over the last 10 years (7.38 per cent).

Both sets of calculations assume that the refinancing of the maturing portion of the existing debt balance (ie, 10 per cent) is performed immediately prior to funding the \$15 increase in the debt balance.

TABLE 4: ADJUSTED RATES USING THE PREVAILING COST OF DEBT AND CHANGE IN THE PTRM DEBT BALANCE

Observation	Rates before new borrowing (%)	Rate adjustments based on change in PTRM debt balance	Rates after new borrowing (%)
-9	8.00	$8.00 \times 0.8696 + 6.25 \times 0.1304$	7.77
-8	8.50	$8.50 \times 0.8696 + 6.25 \times 0.1304$	8.21
-7	9.00	$9.00 \times 0.8696 + 6.25 \times 0.1304$	8.64
-6	8.00	$8.00 \times 0.8696 + 6.25 \times 0.1304$	7.77
-5	6.00	$6.00 \times 0.8696 + 6.25 \times 0.1304$	6.03
-4	6.00	$6.00 \times 0.8696 + 6.25 \times 0.1304$	6.03
-3	7.00	$7.00 \times 0.8696 + 6.25 \times 0.1304$	6.90
-2	8.00	$8.00 \times 0.8696 + 6.25 \times 0.1304$	7.77
-1	7.00	$7.00 \times 0.8696 + 6.25 \times 0.1304$	6.90
Prevailing	6.25	$6.25 \times 0.8696 + 6.25 \times 0.1304$	6.25
Return on debt	7.38		7.23

The method in Table 4 uses the same weights as the AER’s approach in Table 5, with the only difference being the interest rates that are assigned to the increase in the debt balance.

TABLE 5: IMPLIED AER WEIGHTING USING THE HISTORICAL COST OF DEBT AND CHANGE IN THE PTRM DEBT BALANCE

Observation	Rates before new borrowing (%)	Implied AER adjustments based on change in PTRM debt balance	Rates after new borrowing (%)
-9	8.00	$8.00 \times 0.8696 + 8.00 \times 0.1304$	8.00
-8	8.50	$8.50 \times 0.8696 + 8.50 \times 0.1304$	8.50
-7	9.00	$9.00 \times 0.8696 + 9.00 \times 0.1304$	9.00
-6	8.00	$8.00 \times 0.8696 + 8.00 \times 0.1304$	8.00
-5	6.00	$6.00 \times 0.8696 + 6.00 \times 0.1304$	6.00
-4	6.00	$6.00 \times 0.8696 + 6.00 \times 0.1304$	6.00
-3	7.00	$7.00 \times 0.8696 + 7.00 \times 0.1304$	7.00
-2	8.00	$8.00 \times 0.8696 + 8.00 \times 0.1304$	8.00
-1	7.00	$7.00 \times 0.8696 + 7.00 \times 0.1304$	7.00
Prevailing	6.25	$6.25 \times 0.8696 + 6.25 \times 0.1304$	6.25
Return on debt	7.38		7.38

The return on debt for both approaches is a simple average of the ‘rates after new borrowing’. These rates would be carried over to the next year and adjusted in the same way based on next year’s prevailing cost of debt estimate and change in the PTRM debt balance. In QTC’s view, the return on debt calculated in Table 4 is more reflective of the efficient financing costs of the benchmark efficient entity because the refinancing of existing debt and the funding of new borrowings are compensated based on the prevailing cost of debt.