



**Gladstone Area  
Water Board**

24 August 2021

Mr Charles Millsteed  
Chief Executive Officer  
Queensland Competition Authority  
GPO Box 2257  
Brisbane QLD 4001

Transmission via: [www.qca.org.au/submissions](http://www.qca.org.au/submissions)

Dear Mr Millsteed

The Gladstone Area Water Board (GAWB) appreciates the opportunity to make this submission in response to the Queensland Competition Authority's (QCA) 2021 Rate of Return Draft Decision (the Draft Decision).

GAWB notes that the Draft Decision proposes several significant changes to the QCA's existing rate of return methodology, in particular, in relation to the cost of debt and market risk premium (MRP), which could potentially have a significant effect on the benchmark cost of capital calculated at GAWB's next regulatory review. The Draft Decision also proposes incremental but important changes to the way the QCA sets beta, while the approaches to setting other parameter estimates, such as gamma, remain largely unchanged.

Taken as a whole, the QCA's proposed framework has the potential to result in comparatively lower rates of return on equity at future QCA pricing investigations. Whilst such an outcome will deliver a customer benefit through lower prices, these are only short term as an appropriate return is required to support future investment. GAWB considers that the focus of the QCA's rate of return decisions should be in the long term interests of customers. This is particularly relevant for the Queensland Water Industry where important future investment will be required to:

- meet more stringent legislative safety (e.g. Australian National Committee on Large Dams (ANCOLD) requirements);
- ensure long term water security in the face of climate change; and
- facilitate economic growth opportunities in the State, including in GAWB's case, the emerging hydrogen industry in Gladstone.

In making this submission, GAWB emphasises the importance of the QCA's rate of return methodology recognising in its application the very different types of businesses that the QCA regulates, as measured by type of services, size of asset base and revenues, ongoing capex requirements and customer profile. The requirement that the methodology recognises the specific circumstances of individual businesses in establishing benchmark cost of capital estimates is of fundamental importance to GAWB.

GAWB also emphasises the importance of stability and predictability of rate of return outcomes over time, which is in the long term interests of regulated entities and their customers. GAWB

Page 1 of 21

accepts that regulated WACCs will reflect changes in market circumstances over time. However, this should be contrasted with a situation where regulated rates of return are not truly reflective of the risks facing an entity, including the need to fund significant investments in long-lived assets.

In this context, GAWB is concerned that not all of the QCA's proposed changes will meet the objectives of stability and predictability in the calculation of the WACC. This is particularly the case regarding the proposed changes to the Markey Risk Premium (MRP) and beta, where the QCA is proposing to depart from the previous expert advice it had received on the estimation of these parameters.

GAWB's comments on the Draft Decision are set out in the attached, and focus on the cost of debt, beta and MRP parameters because they represent the most significant deviations from the QCA's prior estimation approach and will potentially have the most impact on the stability and predictability of rate of return outcomes.

If you wish to discuss any of the issues raised in our submission, please do not hesitate to contact Justine Kenny 3020 8018.

Yours sincerely,



Angela Moody  
**Chief Financial Officer**

## Key WACC parameters of concern

GAWB's response to the QCA's Draft Decision has been structured to:

- (1) provide a summary of the changes as we understand them, and
- (2) present GAWB's position on these proposed changes.

## Cost of debt

### QCA's Draft Decision

The QCA is proposing to implement a 10 year trailing average cost of debt approach, without a transition period except in exceptional circumstances.

The current on-the-day approach will not be retained as an alternative option for regulated entities to nominate.

The QCA acknowledges that the preferred timing of revenue (and associated price) updates associated with the annual cost of debt, may differ across the businesses that it regulates. Accordingly, its preliminary view is not to prescribe a uniform updating rule but rather assess on a case-by-case basis whether to adopt annual revenue and associated price adjustments or delay the timing of these adjustments (i.e. an end-of-period true-up at the next regulatory reset).

### GAWB's position

One of the most significant developments in the QCA's Draft Decision is the proposal to adopt a trailing average methodology for the cost of debt, as opposed to the current on-the-day approach.<sup>1</sup> This is a significant change from the Authority's prevailing view in late 2018 and 2019 when the price monitoring review for GAWB's 2020-25 regulatory period was underway.

An important feature of the QCA's trailing average methodology is that it will be implemented *without* transition. For example, under the QCA's Draft Decision, a cost of debt estimated for a determination in 2022 would have regard to the cost of debt that prevailed each year from 2013 onwards. This is in contrast to the AER's introduction of a trailing average, which incorporated a 10 year transitional period.<sup>2</sup>

---

<sup>1</sup> The **on-the-day approach** takes a short-term average of observed corporate bond yields prior to the commencement of the regulatory period. One drawback of this method is that it can be volatile to short-term fluctuations in market conditions, which is exacerbated when the cost of debt is locked in for the full regulatory period. On the other hand, the **trailing average approach** places more weight on historical cost of debt estimates (typically up to 10 years). This methodology emanated from the recognition that, in practice, an efficient debt management strategy for a regulated utility with a significant ongoing funding requirement is to maintain a staggered debt maturity profile and progressively refinance debt over time.

<sup>2</sup> If the QCA were to implement its trailing average with a transition (say from 2022), the trailing average cost of debt in 2022 would give a 100% weighting to the prevailing (i.e. on-the-day) cost of debt in that year. Then, the trailing average cost of debt in 2023 would give a 90% weighting to the prevailing cost of debt in 2022 and a 10% weighting to the prevailing cost of debt in 2023. Each year, the weighting on the 2022 cost of debt would decrease by 10 percentage points, with this weighting transferred to the latest year.



GAWB recognises that the trailing average approach, while a regulatory construct, has a sound underlying basis regarding some regulated entities' assumed debt management practices. It has also become more widely used under Australian regulatory frameworks in recent years. However, GAWB considers that not all entities regulated by the QCA will necessarily manage their debt portfolio closely in line with the underlying 10 year trailing average assumption.

In GAWB's submission to the QCA's Request for Comments paper, we noted that annual updates to GAWB's prices presents a practical contractual challenge and would lead to an additional layer of price uncertainty for customers. A second related issue raised by the Draft Decision is the QCA's view that only small allowable revenue adjustments will arise in applying the trailing average approach. The potential size of any such adjustments is not acknowledged in the Draft Decision. Furthermore, flexibility within the framework, i.e. to choose between the trailing average and on-the-day methods, is required to manage price impacts to customers. Each of these issues is discussed further below.

### *GAWB faces a binding contractual price constraint*

Contrary to the QCA's claim that updating the cost of debt annually would be a straightforward process, GAWB's prices are set at the start of each regulatory period and can contractually only be increased by the consumer price index (CPI) within the regulatory period. Hence, in practice, a revenue 'true-up' that aggregated the revenue effect of each of the annual cost of debt adjustments within the preceding regulatory period would need to occur at the start of each new regulatory period.

Given the constraints that GAWB faces when updating prices within regulatory periods, we emphasised in our submission to the QCA's Request for Comments paper, the need for regulated entities to be able to implement alternative arrangements, provided they appropriately balance the entities' commercial obligations and the resultant pricing impacts for customers.

The QCA cites the example of the Victorian Essential Services Commission, which annually updates prices to reflect the updated trailing average cost of debt lagged by a quarter, in the same manner that CPI is updated. However, this option is not available to GAWB under its current contractual arrangements.

While GAWB acknowledges the trailing average is now widely accepted in Australian regulatory practice, it has also been recognised that a one-size-fits-all approach may not fulfil the regulatory objectives for all businesses to which the approach is applied. For example, in the 2012 rule changes that preceded the Australian Energy Regulator's (AER) transition to a trailing average, the Australian Energy Market Commission (AEMC) left open the possibility that strategies other than trailing averages could be considered. Specifically, the AEMC remarked that:<sup>3</sup>

The best methodology for estimating return on debt may not be the same for benchmark efficient service providers with different characteristics. Therefore, the rules should not prescribe a particular methodology for estimating the return on debt component. However, the rules should provide some guidance as to how the best methodology should be

---

<sup>3</sup> AEMC (2021). Rule Determination - National Electricity Amendment (Economic Regulation of Network Service Providers) Rule 2012 and National Gas Amendment (Price and Revenue Regulation of Gas Services) Rule 2012, 29 November, p.72.



determined. The rate of return guidelines will provide a forum to discuss and analyse the best approaches to estimating the return on debt.

Given the wide range of businesses regulated by the QCA (in contrast to the relatively standardised set of electricity network businesses regulated by the AER), it is imperative that the rate of return methodology reflects the different benchmark debt management strategies best suited to each type of business's operational and financing circumstances.

#### *Flexibility to manage customer impacts*

The QCA argues that annual allowable revenue updating (assuming it were feasible) would not necessarily introduce significant price volatility, as the year-on-year changes in the regulatory cost of debt allowance when using the trailing average approach tend to be small in most years.

However, GAWB considers that the QCA is under-estimating the potential annual revenue adjustments under the trailing average approach, particularly where annual updates are not contractually possible. The under-estimation stems from the relatively large component of GAWB's annual revenue requirement attributed to the allowable return on asset, of which the cost of debt is a key determinant.

GAWB recognises that the annual updating process can result in increases or decreases in allowable revenue, including the potential for offsetting revenue adjustments over a five year regulatory period. However, in the case where a revenue true-up is applied at the start of the next regulatory period rather than through annual revenue updates during the current regulatory period, the compounding and cumulative effect of the annual revenue adjustment carried forward could result in large carryover amounts.

GAWB is also unique in that it has a relatively small customer base. Hence, a situation may arise where a customer leaves at the end of the regulatory period and the carryover amount attributable to their use of the service will need to be borne by remaining customers in the next regulatory period. Given GAWB's small customer base, this could potentially have a significant impact on the remaining customers.

In summary, while GAWB agrees that the trailing average is a theoretically sound approach and supports its introduction as an option available to regulated entities, its implementation is problematic where it is not feasible for prices to be adjusted for changes in the cost of debt during the regulatory period.

Consequently, and especially given the potential for financial market conditions to change rapidly over a short period of time, GAWB considers that both trailing average and on-the-day alternatives should be available as options for regulated entities, having regard to customer preferences. However, GAWB's support for the trailing average approach is contingent on regulated businesses retaining the flexibility to manage the associated revenue true-up process as they see fit.

If both trailing average and on-the-day approaches are made available to regulated businesses, GAWB supports the position that a regulated entity should not be able to switch between options across each regulatory period once it has nominated its preferred option, unless there is a material change in assumptions or market conditions. This would ensure stability and predictability for customers over time, as well as remove any perceptions that the

regulated entity can 'game' its choice of alternative options at each regulatory reset to maximise its commercial interests at the expense of its customers.

## Market risk premium

### QCA draft position

In its most recent rate of return determinations, the QCA has relied on five different MRP approaches with the following weighting scheme:

- Ibbotson (25%)
- Siegel (15%)
- Cornell Dividend Growth Model (DGM) (25%)
- Wright (15%)
- Surveys (20%).

The QCA's Draft Decision is now proposing a major change by retaining only the Ibbotson approach to calculate the MRP.

Based on the QCA's most recent 2020 rate of return determination for GAWB, sole reliance on the Ibbotson approach would result in an MRP estimate of approximately 6.2%, around 80 basis points lower than the 7.0% the QCA approved for GAWB.

### GAWB's position

Sole reliance on the Ibbotson approach has significant implications for how the regulated return on equity is set over time.

In the May 2020 final decision for GAWB, the QCA explained that placing emphasis on methods that are entirely independent of each other will maximise the use of available information, thereby reducing the mean square error (a measure of precision).<sup>4</sup> On this basis, the QCA relied on the five MRP approaches listed above.

The QCA's five-approach methodology recognised that each MRP approach has its advantages and disadvantages (which may be amplified under particular market circumstances) and there is rarely a clear consensus about the "correct" way to determine the MRP. The rationale for using a combination of approaches is to try and nullify the inaccuracies and biases inherent in each approach, such that the end result is more robust and less susceptible to bias than any one approach used in isolation.

In GAWB's view, not only will sole reliance on the Ibbotson MRP lead to more volatile return on equity estimates over time but as discussed below, the implicit assumption of a one-for-

---

<sup>4</sup> QCA (2020). Gladstone Area Water Board price monitoring 2020-25 – Part A: Overview – Final report, p.89.



one relationship between the return on equity and the risk-free rate as implied by the Ibbotson approach is simply not consistent with Australian market evidence.

*Relationship between risk free rate, MRP and total market return*

In terms of impact on the overall MRP estimate, one of the most significant changes that the QCA is proposing is to no longer use the Wright method in any way to determine the MRP as part of future rate of return determinations. The Wright approach is based on the premise that the total market return (i.e. risk-free rate plus MRP) remains relatively stable over time. Accordingly, when the risk-free rate decreases (increases), the MRP increases (decreases) by the same amount to maintain a stable total market return.

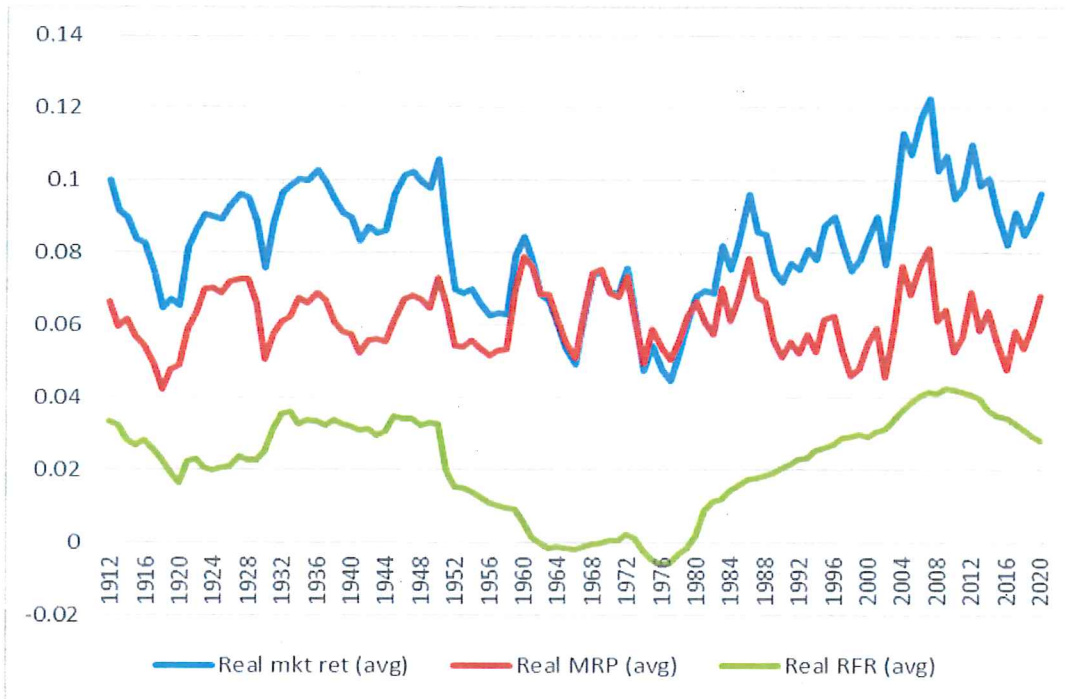
The QCA's Draft Decision argues that while it is unlikely the MRP is perfectly stable over time, it is also unlikely that it is perfectly negatively correlated with the risk-free rate over time as implied by the Wright approach. Although the QCA recognised the possibility for the risk-free rate and MRP to move together at times (including inversely related movements), it found little empirical evidence of a "direct and constant relationship between the risk-free rate and the MRP in Australia".<sup>5</sup>

In support of its decision to remove reliance on the Wright approach, the QCA presented its own high-level analysis of the dynamics between the risk-free rate, MRP and total market return (replicated in Figure 1 below). While the QCA acknowledged the limitations of such an assessment, its findings suggest the Australian MRP is likely to be relatively more stable over time than the total market return (on equity), contrary to the principle underpinning the Wright MRP.

---

<sup>5</sup> QCA (202). Rate of return review – Draft report, June, p.50.

Figure 1 QCA analysis of the real market return, real MRP and real risk-free rate in Australia



Note: Based on rolling 30-year averages. The values on the vertical axis of the QCA's chart are percentages divided by 100 (e.g., 0.1 represents 10%)

Data source: QCA analysis

In Figure 1, the real MRP appears to have ranged between 5% and 8% since 2000 implying a nominal MRP of around 7% to 10% MRP (noting that the QCA ultimately sets a nominal MRP). Over this same period, the QCA's nominal MRP has ranged between 6% and 7%, depending on the assumed term of the risk-free rate.

Moreover, the real MRP appears to closely track changes in the real market return, rather than remaining stable over time. Especially since 2016, the real market return and real MRP have increased even as the real risk-free rate has fallen. Should this trend persist, GAWB considers that the QCA's proposal to treat the MRP as constant over time would be inconsistent with this observed data for the Australian setting. This problem is exacerbated by the way in which the QCA applies the CAPM. By combining a fixed MRP with a contemporaneous risk-free rate, the overall return on equity moves virtually in lock-step with movements in the risk-free rate.

The AER has recently commissioned a comprehensive review of the relationship between the risk-free rate and the MRP, prepared by CEPA.<sup>6</sup> In contrast to the conclusions the QCA has drawn from its own analysis of Australian data, CEPA's assessment indicated that:<sup>7</sup>

- there is acceptance that the MRP is not stable;
- it is possible that there is an inverse relationship between the forward looking MRP and the risk-free rate;

<sup>6</sup> CEPA (2021). Relationship between RFR and MRP, 16 June.

<sup>7</sup> CEPA (2021), pp.6-7.



- there is no good evidence that the MRP should be assumed to be independent of the risk-free rate, the current implicit assumption of the AER's approach (and, by extension, the QCA's Draft Decision position); and
- there is no conclusive theoretical basis for an assumption of independence or dependence between the two parameters.

CEPA used a series of regression analysis specifications to measure the correlation between the MRP and the risk-free rate in Australia over time. Relevantly, the timeframe for CEPA's analysis (1917 onwards) aligned approximately with that of the QCA's own analysis, which uses data from 1912 onwards.

CEPA found evidence of a statistically significant relationship between the MRP and risk-free rate in all the specifications that it estimated. Although the precise magnitude of the relationship varied by specification, the direction of the relationship between the two variables was always found to be negative and significant.

In addition to this latest market evidence, GAWB's WACC submission for the 2020 price monitoring review presented commentary from financial practitioners on the relationship between the MRP and risk-free rate. These included KPMG, which highlighted that "market evidence indicates that bond yields and the market risk premium are strongly inversely correlated,"<sup>8</sup> and Grant Samuel, who observed that academics and valuation practitioners consider it inappropriate to add an MRP of 6% to depressed bond yields.<sup>9</sup>

As an alternative to the Wright MRP, the QCA is proposing to exercise its discretion in deciding whether market conditions warrant an adjustment at the cost of equity level to reflect short-run risk-free rate fluctuations. Whilst adjustments to the cost of equity of this nature may well be necessary if the QCA assumes the MRP is constant over time, the Draft Decision does not present any evidence that this alternative approach is expected to provide superior compatibility with market data relative to retaining the Wright MRP with its current weighting of 15%.

While the QCA acknowledges the possibility that the MRP and risk-free rate are inversely related at certain points in time, the QCA's Draft Decision does not make any attempt to address this phenomenon at a methodological level. It is unclear to what extent the QCA's proposed discretionary adjustments at the cost of equity level will capture these dynamics robustly, especially in the context of the depressed bond yields currently being experienced in Australian financial markets. More generally, GAWB does not favour discretionary adjustments because they lack an underlying methodological basis.

In GAWB's view, the existence of a perfect negative correlation between the MRP and risk free rate should not be a prerequisite for placing some reliance on the Wright approach in estimating the cost of equity, especially given the small weighting the QCA has historically assigned to this methodology. If a similar logic were applied to the Ibbotson approach, the fact the MRP may indeed sometimes move in response to the risk-free rate (contrary to the Ibbotson MRP's principles) would invalidate its use for setting the MRP.

<sup>8</sup> KPMG (2018a). Scottish Pacific Group Limited – Independent Expert report, 24 October, p.97.

<sup>9</sup> Grant Samuel (2018b). Billabong International Limited – Proposal from Boardriders, Inc., 13 February, p.51.

GAWB is not proposing that the QCA should place exclusive reliance on the Wright approach. Nevertheless, the fact that market reality is likely to sit between the two theoretical extremes represented by Ibbotson and Wright reinforces the need to have regard to more than one methodology, rather than placing 100% reliance on the Ibbotson approach alone. However, to the extent the Ibbotson MRP is used, we favour it being estimated using arithmetic returns (consistent with the QCA's Draft Decision), rather than geometric returns, which would bias the MRP downward.

#### *QCA's other proposed MRP changes*

In regard to the other MRP methodologies upon which the QCA is proposing to remove any reliance, GAWB supports the removal of the Siegel MRP, surveys and the Cornell DGM.

The QCA is proposing to remove the Siegel approach from its MRP calculations, given that the only point of distinction between the Siegel and Ibbotson MRP methodologies is the adjustment for unexpected inflation. GAWB considers that the continued inclusion of the Siegel MRP is unlikely to enhance the robustness of the QCA's overall MRP estimate.

In relation to surveys, if MRP estimates from them are interpreted appropriately having regard to the risk-free rate used, they have the potential to be an informative source of market evidence. However, GAWB shares the concerns of other stakeholders about the sample size of surveys, the qualifications of the respondents, and ambiguity surrounding the purpose for which survey respondents use their MRP estimates. The timeliness of surveys has also become increasingly pertinent, with the KPMG Valuation Practices Survey, one of the main surveys relied upon by Australian economic regulators, not being published at all this year.

Finally in relation to the Cornell DGM, GAWB's previous WACC submissions to the QCA have raised concerns that the outputs from this model have historically been outliers compared to DGM estimates calculated by other Australian economic regulators.

Such divergences in DGM estimates are largely attributable to the QCA's long-run cost of equity and growth assumptions underpinning its application of the model, to which DGMs can be highly sensitive.

While there is merit in augmenting the MRP estimate with a forward-looking component, GAWB does not support continued reliance on the Cornell DGM without rectifying these inputs or using the Cornell DGM in conjunction with other DGM approaches, such as those employed by IPART. Nevertheless, GAWB is supportive of the QCA's draft position that there may be a qualitative role for DGM in assessing a forward-looking cost of equity, but the scope of this role for DGMs needs to be clarified (in addition to addressing the downward bias problem noted above).



## Beta

### QCA's Draft Decision

The QCA proposes to continue estimating cost of equity using the Sharpe-Lintner Capital Asset Pricing Model (SL CAPM).

Applying the CAPM, the QCA is not proposing any fundamental changes to its overarching approach to beta. That is, beta for a regulated entity will still be estimated by reference to listed comparators from sectors that the QCA deems to face comparable systematic risk exposure.

However, the QCA has proposed several methodological adjustments including:

- **Sole reliance on weekly returns:** This is a departure from the approach that the QCA's consultants (historically Incenta, and more recently, CEPA) have used in their advice to the QCA. These advisors have usually had regard to both monthly and weekly estimates.
- **Explicitly identifying a market capitalisation threshold of \$US150 million:** halfway between CEPA's and Incenta's past recommendations of \$US100 million and \$US200 million, respectively.<sup>10</sup>
- **Changing its levering formula:** The QCA is proposing to use the Brealey-Myers formula (as per the AER and ERA) instead of the Conine formula, albeit still with a debt beta of 0.12 (the only Australian economic regulator to use a non-zero debt beta).

The QCA also provides indicative comparator samples and beta estimate for a range of sectors – these comparators are all sourced from Australia, Western Europe and North America, with the majority sourced from the US.<sup>11</sup> However, the QCA stressed that it has not yet specified a reasonable beta sample for the firms it regulates.

### GAWB's position

#### *Choice of return intervals*

The QCA has previously estimated beta having regard to both weekly and monthly estimates but notes that Australian and international regulators generally use daily, weekly, or monthly return periods in its determinations. The QCA acknowledges, however, that there is no consensus as to which is the best frequency.

Moreover, this is a significant departure from the approach that the QCA's consultants have used in their beta advice to the QCA. These advisors (historically Incenta, and more recently, CEPA) have usually had regard to both monthly and weekly estimates.

---

<sup>10</sup> The QCA noted that all firms passed IPART's Amihud liquidity filter when a \$US150 million market capitalization filter was imposed.

<sup>11</sup> While the QCA emphasized that the samples in the draft decision were not exhaustive, the regulated energy and water sample consisted of 41 comparators – 30 from the US, 3 from Canada, 3 from Australia, 3 from the UK, 1 from Italy and 1 from Belgium.

One of the overarching factors in the choice of weekly or monthly returns among financial practitioners, academics and certain regulators is the potential for weekly estimates to be downwardly biased for firms with thin trading. For example, Professor Aswath Damodaran notes that (emphasis added):<sup>12</sup>

Using shorter return intervals increases the number of observations in the regression, for any given time period, but **it does come with a cost**. Assets do not trade on a continuous basis, and when there is non-trading on the asset, the beta estimated can be affected. In particular, non-trading on an asset during a return period can reduce the measured correlation with the market index, and consequently the beta estimate.

This non-trading problem can be reduced in one of two ways. One way is to **use longer return intervals**; quarterly and annual returns result in too few observations in the regression, but **monthly returns should provide sufficient observations for firms listed for more than three years**. Betas estimated using daily or even **weekly returns are likely to have a significant bias due to the non-trading problem**, with illiquid firms reporting lower betas than they really should have and liquid firms reporting higher betas than is justified. The other way is to estimate betas using short return interval returns, and then adjusting these betas for the extent of the non-trading.”

GAWB notes that one of the QCA’s advisors on beta, Incenta, has previously advocated for the use of both weekly and monthly returns. In its April 2019 report for the Queensland Rail decision, Incenta concluded that:<sup>13</sup>

It remains appropriate to have regard to beta estimates derived by both weekly and monthly return interval data (i.e. recognising the narrower confidence intervals for weekly estimates, but also the potential for the estimates to be biased).

While the application of a market capitalisation threshold can potentially mitigate liquidity concerns by removing thinly traded firms, we note that Incenta was already applying a market capitalisation filter of \$200 million when making these remarks. In support of this position, Incenta cited extensive literature to support academic analysis that suggests there are other problems that emerge from applying higher frequency data:

- Gilbert et al (2014)<sup>14</sup> showed that differences in betas estimated using higher (daily or weekly) and lower (monthly) frequency may emerge because of differences in the relative “opacity” of information about the prospects of those firms and how their returns will be affected by market movements. If a firm is found to lack readily assessable data that can be analysed by the market, more time is required for the market to incorporate news about the firm in the share price, such that its beta would be expected to be underestimated when using higher frequency returns, relative to the beta estimate made with lower frequency returns that better reflects the underlying information.
- Gregory et al (2018)<sup>15</sup> reported that the differences in beta estimates obtained from using high and low frequency data can be explained by proxies for risk such as opacity, size,

<sup>12</sup> Damodaran, A. (1999). Estimating risk parameters, p.10.

<sup>13</sup> Incenta (2019). Estimating Queensland Rail’s WACC for the 2020 DAU – asset beta, benchmark gearing, and credit rating

<sup>14</sup> Gilbert, T., Hrdlicka, C. Kalodimos, J. & Siegel, S. (2014). Daily data is bad for beta: Opacity and frequency-dependent betas. *Review of Asset Pricing Studies*, 4(1), pp.78-117.

<sup>15</sup> Gregory, A., Hua, S. & Tharyan, R. (2018). In search of beta. *The British Accounting Review*, 50(4), pp.425-441.



illiquidity, and Book to Market ratio. This implies the use of weekly return estimates does not pick up some aspects of systematic risk. Further, standard CAPM tests performed with monthly data perform in a superior manner to those performed using weekly data.

This evidence contrasts with the QCA's draft position that reliance on weekly returns is likely to be sufficient and has more attractive statistical qualities. It is unclear to what extent the QCA's Draft Decision has had regard to this academic evidence previously cited by the QCA consultants. Furthermore, as with the proposed change to estimation of the MRP, the QCA's reliance on a single choice of beta returns represents a departure from its previous principle of using multiple methodologies so as to maximise the use of available data and increase estimation integrity.

GAWB also sees merit in considering the approaches of financial practitioners to beta estimation, which rarely rely on weekly returns in isolation.

Table 1 shows the range of return intervals (e.g. weekly, monthly, daily) used by independent experts. It demonstrates that a range of approaches are used by independent experts, but the most common involve monthly return intervals or a combination of weekly and monthly returns (consistent with the QCA's current approach). Of the reports analysed, BDO is the only independent report author that has placed sole reliance on weekly returns (and, in one report, daily returns).

**Table 1 Return intervals used in independent expert reports**

Return interval	Independent experts using the approach
Weekly and monthly returns	Grant Samuel, Grant Thornton, Deloitte, KPMG, EY
Monthly only	Grant Thornton, EY, Lonergan Edwards
Weekly only	BDO
Daily only	BDO

**Note:** Some independent experts (e.g. BDO) appear in more than one category because their approach differs across reports. Note that we have used indicative reports from the Connect 4 database to identify the approaches generally taken by each expert, and there may still be certain cases where an independent expert departs from the approach listed in the table.

**Source:** Analysis conducted by Synergies Economic Consulting through the interrogation of Connect 4 database

The lack of consensus as to which is the best frequency of returns, as the QCA itself identified in its Draft Decision, further justifies the use of both weekly and monthly returns.

#### *Introduction of market capitalisation threshold*

The QCA's Draft Decision proposes to restrict beta comparators to firms with market capitalisation of more than \$US150 million. This market capitalisation threshold is halfway between CEPA's and Incenta's past recommendations of \$US100 million and \$US200 million, respectively.

GAWB is broadly supportive of the QCA adopting an explicit market capitalisation threshold as it helps to remove firms whose lack of liquidity may impede robust beta estimation. The proposed dollar threshold seems reasonable based on market practice and the sectors being analysed.

### *Use of Brealey Myers formula*

The QCA's Draft Decision proposes to use the Brealey-Myers formula (as per the AER and ERA) instead of the Conine formula to de-lever and then re-lever its beta estimates, albeit still applying a debt beta assumption of 0.12.<sup>16</sup>

GAWB supports this proposed change of leveraging formulas, which will reduce the complexity of beta estimation without any loss of robustness.

---

<sup>16</sup> We note that the QCA is the only regulator to use a non-zero debt beta, even though Australian regulatory precedent has been used to substantiate other positions in the draft decision.



## Other WACC parameters

### Gearing

#### QCA's Draft Decision

The QCA proposes to use the current regulatory benchmark gearing for a regulated entity as the starting point and assess whether this value continues to represent an efficient gearing for the firm, by considering:<sup>17</sup>

- the gearing decisions for relevant Australian regulated entities;
- material changes in the risk profile of the regulated entity; and
- the gearing of relevant comparator firms that have a similar risk profile.

The QCA emphasises that to change a regulatory gearing assumption, there would need to be persuasive evidence that the current gearing no longer represents an efficient benchmark.

#### GAWB's position

GAWB supports the QCA's draft position, including that there would need to be persuasive evidence that the current gearing approved by the QCA no longer represents an efficient benchmark.

### Risk free rate

#### QCA's Draft Decision

The QCA re-affirmed its recently adopted approach of using a 10-year term for the risk-free rate rather than matching the term of the risk-free rate to the length of regulatory period.

The proposed averaging period for the risk-free rate is now proposed to be between 20 and 60 days rather than a compulsory period of 20 days, with the precise period to be nominated by the regulated entity.

#### GAWB's position

GAWB supports the QCA's Draft Decision and considers that the 10-year term is a better match for the long-term nature of our investments than shorter term government securities. This is the same approach that was applied in the 2020 rate of return decision for GAWB.

GAWB also considers that any length of averaging period within the QCA's proposed range of 20 to 60 days is likely to provide a robust estimate for an on-the-day risk-free rate.

---

<sup>17</sup> QCA (2021), p.19.

In addition to 10-year bonds, GAWB notes there is a growing market for 30-year bonds in Australia, with the Commonwealth Government having issued its first 30-year bond in October 2016. While the market is not yet as deep as that for 10-year bonds, GAWB considers that 30-year rates are also a relevant source of information for utilities like GAWB that are investing in very long-life assets. As at 30 June 2021, the 20-day average of the 30-year Commonwealth Government bond yield is 2.44%, approximately 90 basis points higher than the 10-year rate of 1.52%.

GAWB also notes that 10-year Australian Government bond yields are likely to be affected by yield control at the short end of the curve (3-year bonds are effectively targeted/set by the RBA at 0.10%).

The RBA has recently released some analysis of the effect of their recent bond purchasing program on the yields of Australian Government bonds.<sup>18</sup> The report found that bond purchases serve to hold yields lower than they would otherwise have been over an extended period. Specifically, the RBA estimates that the program has reduced longer-term Australian Government Security (AGS) yields by around 30 basis points, relative to the absence of a bond purchasing program. There are three channels through which bond purchases lower yields:

- Portfolio rebalancing (bond prices rise and encourages purchases of other assets)
- Reducing liquidity premia (lower risk of investors being unable to sell bonds)
- Signalling (purchases show commitment to low rates and reinforces expectations for a low policy rate).

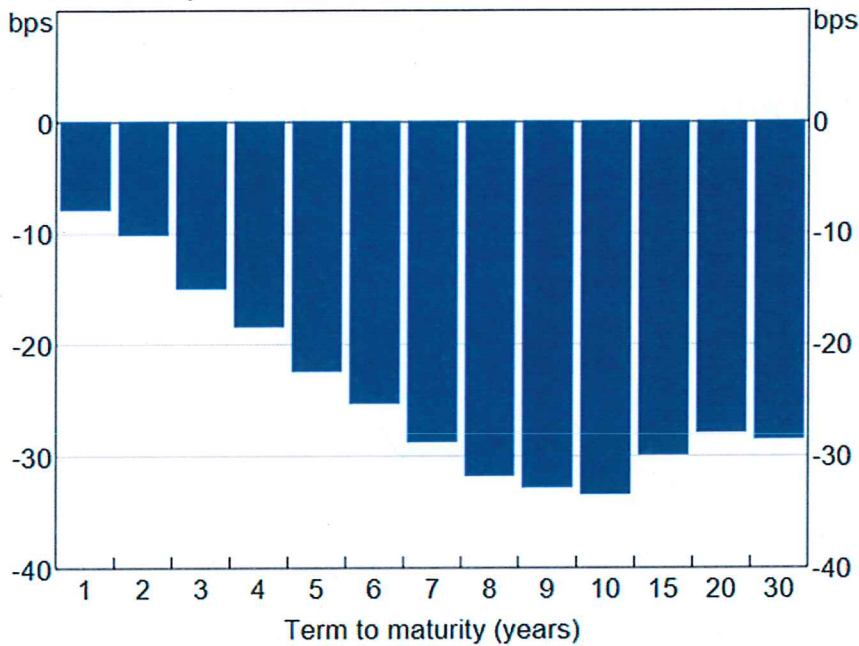
The article notes that it is the expectation of purchases that has a principal effect on the bond yields, rather than the purchases themselves. As such, the analysis focussed on 'key event' study days, such as announcements by the RBA Board or its Governors. The cumulative decline in AGS yields on these key event days was measured against the length of the bonds (term to maturity) and found that the greatest drop in bond yields was for the 10-year bonds, at just over 30 basis points (see Figure 2 below).

---

<sup>18</sup> Finlay, R., Titkov, D. & Xiang, M. (2021). An initial assessment of the Reserve Bank's bond purchase program, RBA Bulletin, 17 June.



Figure 2 RBA analysis of the impact of the announcement of the bond purchasing program on Australian Government bond yields.



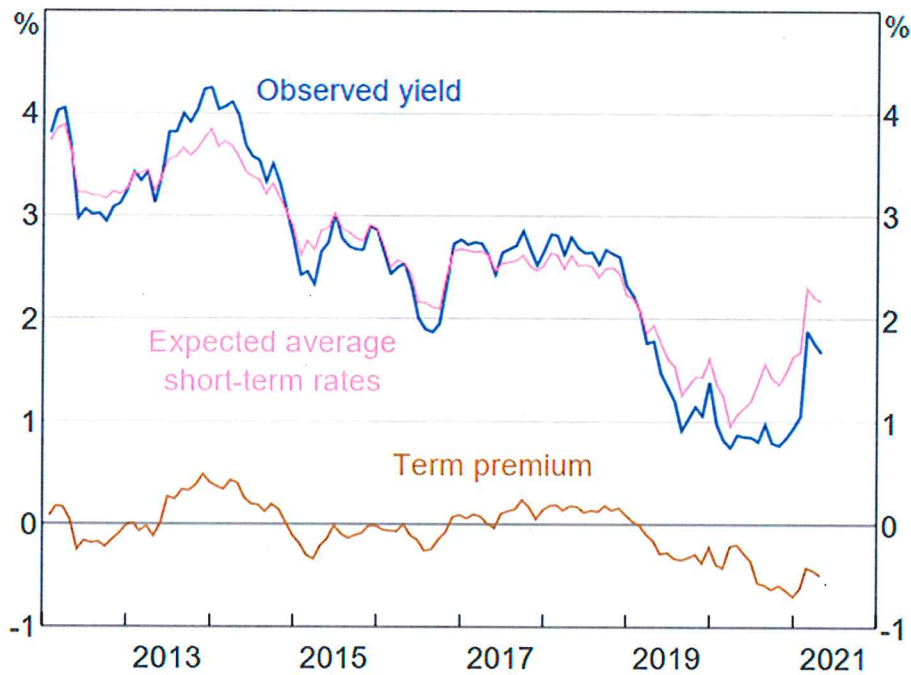
Data source: RBA analysis from Bloomberg and RBA data

The analysis also examined the effect of bond purchases on the two components of the bond yield, rather than on the overall yield. These two components are:

1. The **average short-term interest rate** that is expected to prevail over the life of the bond.
2. The **term premium** that investors demand for holding a long-term bond rather than a series of shorter-term investments.

These can be broken down using an 'affine term structure model', which applies a series of assumptions that allow the components of the yield to be broken down and assessed. These components and overall yield over time can be viewed in the figure below.

Figure 3 Decomposition of Nominal 10-year Yield.



Data source: RBA analysis from RBA data

While the RBA noted that these observed patterns can have multiple causes, the effect of the COVID-19 pandemic was particularly pronounced. As a result of the RBA's bond purchases, the risk of bond yields rising in a disorderly manner was reduced, thereby reducing the term premia, as well as applying downward pressure on term premia directly via the portfolio rebalance channel.

## Debt risk premium

### Choice of benchmark credit rating

#### *QCA's Draft Decision*

The QCA proposes to consider the applicable credit rating benchmark for each entity subject to its regulatory regime on a case-by-case basis at each price review.

The QCA noted that regulated entities with established risk profiles which do not change much over time are also likely to be able to sustain a similar proportion of debt over time. Once established, the credit rating and gearing should only be adjusted after thorough testing of the implications for investors, customers and the financial sustainability of the entity.

The QCA is also considering not using proprietary data sources or in-house models, in the interests of relying on data sources that are publicly available, robust, transparent and replicable.



### *GAWB's position*

GAWB supports the QCA determining the applicable credit rating benchmark on a case-by-case basis at each price review and strongly agrees that credit rating and gearing should only be adjusted after thorough testing of the implications for investors, customers and the financial sustainability of the regulated entity.

GAWB maintains its previously stated position that the use of independent third-party data sources that are reputable and robust is appropriate for calculating the return on debt. GAWB believes that the RBA and Bloomberg data sources meet these criteria and use of these sources is in line with most Australian economic regulators. Moreover, this approach is more readily replicable by stakeholders, which provides greater transparency regarding the resulting return on debt estimate.

The overarching objective of using multiple data sources is to achieve an unbiased estimate of the underlying economic/financial parameter of interest. As noted above in the context of the MRP, GAWB considers that having regard to multiple independent sources of data will increase the integrity of an estimate by reducing its mean square error.

### **Debt raising costs**

#### *QCA's Draft Decision*

The QCA proposes to reduce the allowance for debt raising costs from 10.8 basis points (0.108%) to 9.9 basis points (0.099%). The QCA's position continues to be based on 2013 advice from PwC.<sup>19</sup>

#### *GAWB's position*

GAWB does not support the QCA's proposed reduction in allowable debt raising costs. The PwC advice on which the QCA is relying is becoming increasingly dated, having been prepared eight years ago. If the QCA has concerns about its long-held assumption, GAWB recommends that it should base its future debt raising cost assumptions on a new survey.

### **Sources for cost of debt data**

#### *QCA's Draft Decision*

The QCA proposes to now use only RBA data rather than a combination of RBA and Bloomberg data to estimate the cost of debt. The QCA argued that the RBA is an independent and reputable provider of data series that are readily available, as opposed to other third party data series, which can be accessed only with a paid subscription.

---

<sup>19</sup> The 2013 PwC report estimated direct transaction costs of 10.8 basis points per annum based on one notional debt issue of \$2,500 million, and 9.9 basis points per annum based on 10 notional debt issues of \$250 million. The QCA deems the former to be applicable for an on-the-day debt management strategy (in which the entire debt portfolio is assumed to be issued at a single point in time) and the latter to be applicable for a trailing average debt management strategy (in which debt is issued annually in ten separate tranches). Refer: PwC (2013). Energy Networks Association: Debt financing costs, June, p.19.

## *GAWB's position*

Whilst not explicitly stated by the QCA in its Draft Decision, GAWB understands that the proposed change is linked to the adoption of a trailing average approach without a transitional period. This is because the Bloomberg BVAL 10-year BBB series only commenced reporting in 2014,<sup>20</sup> whereas a 10-year trailing average estimate in 2021 would require data back to 2012. Consequently, any trailing averages estimated by the QCA would have to rely entirely on RBA data until at least 2024.

However, if the on-the-day approach to cost of debt estimation is retained as an option as GAWB has proposed, we consider that a combination of RBA and Bloomberg data should be retained because the different basis of the two data series potentially provides a broader information base to estimate the cost of debt. In the Draft Decision, the QCA's preference for RBA data was attributed to it being the only readily available public data source for this purpose. Although Bloomberg requires a paid subscription, GAWB does not consider that this should prevent its use for calculating the cost of debt. It is acknowledged that Bloomberg data may not be readily accessible to all stakeholders. However, this has typically not been a limitation for economic regulators and cost of debt estimates can also be reported by the QCA for the benefit of other stakeholders as required. In general, while the two data sets provide similar results, there are usually differences in the reported data suggesting that each incorporates useful information that should be used by the QCA in establishing its efficient benchmark.

Moreover, delays in RBA data availability have recently been cited by the AER when proposing to change its requirements concerning the timing of averaging periods for network businesses.<sup>21</sup>

## **Gamma**

### **QCA's Draft Decision**

The QCA proposes to retain its gamma assumption of 0.484, based on a distribution rate of 0.88 and a utilisation rate (or theta) of 0.55. The distribution rate continues to be based on the top 50 firms listed on the ASX, while the utilisation rate continues to be based on equity ownership of Australian-listed companies from the ABS.

However, the QCA mentions that it will periodically update its distribution and utilisation rate estimates, and it also raises the possibility of undertaking an assessment of alternative gamma estimation techniques to validate its proposed approach.

### **GAWB's position**

GAWB has previously argued that the QCA's approach to estimating gamma overestimates both the distribution rate and theta, attributable to both conceptual and data-related

---

<sup>20</sup> QCA (2019). Queensland Rail's 2020 draft access undertaking – Draft decision, April, p.36.

<sup>21</sup> AER (2021). Rate of return – Draft debt omnibus paper, July, p.26. The AER is proposing to require that a network's nominated averaging period finishes no less than five months prior to the commencement of a regulatory year (previously it could be four months prior). The AER cited delays in the publication schedule of RBA data that can cause short turnarounds when finalising WACC estimates.



shortcomings. The product of these parameter estimates leads to a gamma assumption that overstates the value of imputation credits, thereby reducing the after-tax return on equity.

