**9.11 Response to Draft Decision - Rate of Return**

* 1. **Introduction**

Envestra accepts many of the Draft Decision cost of capital parameters, including the cost of debt, but does not accept the AER’s estimated cost of equity. Envestra’s original rate of return proposal contained in its initial (March 2012) submission can be summarised as:

* employing the CAPM to estimate a 10.8% cost of equity, using internally consistent measures of the risk free rate, the Market Risk Premium (MRP), and the equity beta;
* extrapolating the 7-year ‘BBB’ Bloomberg fair value curve to estimate the 7.91% cost of debt for the benchmark 10-year ‘BBB+’ Australian corporate bond. Envestra proposed to update this estimate over its nominated averaging period for use in the Final Decision; and
* weighting the cost of equity and cost of debt by the benchmark 60:40 gearing assumption to derive the proposed nominal post-tax WACC of 9.06% for determining total revenue and reference tariffs.

The cost of debt and gearing proposals were accepted by the AER in the Draft Decision. Envestra notes that the cost of debt allowance to be used in the Final Decision will be calculated using the methodology set out in the Draft Decision[[1]](#footnote-1) updated to reflect the observed input parameter values over the confidential averaging period nominated by Envestra in its letter to the AER.

The focus of this response is therefore on the cost of equity, particularly the decision of the AER to apply the CAPM in an inconsistent/incorrect way that does not accord with finance theory. The remainder of this attachment explains in more detail the errors made by the AER in applying the CAPM and demonstrates that the resultant cost of equity is not consistent with prevailing conditions in the market for funds.

* 1. **Overview**

In relation to the cost of equity, Envestra explained in its initial proposal that the unusual circumstances in capital markets were causing low yields on Commonwealth Government Securities (‘CGS’) and that this was likely to distort, and indeed negatively bias, the CAPM cost of equity calculated using the AERs standard methodology. These concerns were confirmed before the release of the Draft Decision with the AER’s *Final Decision for the Roma to Brisbane Pipeline,*[[2]](#footnote-2)released in August 2012, where the allowed cost of equity was 7.75%. The Draft Decision for Envestra’s Victorian and Albury networks provided a cost of equity of 7.78%[[3]](#footnote-3).

To demonstrate that the AER sub-8% cost of equity was not commensurate with the prevailing conditions in the market for funds Envestra wrote to the AER (letter dated 21 August 2012[[4]](#footnote-4)) providing examples of relevant and recent market transactions. These examples supported Envestra’s originally proposed WACC of 9.06% as being consistent with prevailing market conditions and the NGR. These examples provided further market evidence that the cost of equity allowed in the Draft Decision is too low and not reflective of investors’ current rate of return requirements.

It is important to note that it is not Envestra’s position that the AER should rely solely on these transactions to set the cost of equity. The information provided by Envestra to the AER on 21 August 2012 was one part of a suite of evidence to be considered by the AER in assessing the cost of equity and the prevailing market conditions in the market for funds. We note however, that no consideration was given to this, or other similar material, in the Draft Decision despite the transactions being well publicised and the information freely available.

Subsequent to the release of the Draft Decision Envestra commissioned additional expert analysis and advice into the cost of equity. The overwhelming weight of evidence supports Envestra’s view that the AERs Draft Decision cost of equity of 7.78% is inadequate and inconsistent with the NGR. Envestra’s submission is that the AER’s cost of equity estimate does not meet the requirements of Rule 87(1) because it does not reflect prevailing conditions in the market for funds and the risks involved in providing reference services.

Ernst & Young has undertaken a comprehensive review of independent expert reports published from January 2008 to October 2012[[5]](#footnote-5). In Ernst & Young’s view, independent expert reports provide the best market evidence publicly available for assessing the cost of equity prevailing in the market for funds. The results from this study demonstrate that the AER’s cost of equity estimate is too low and does not meet the requirements of Rule 87(1).

In particular, Ernst & Young’s opinion is that the AER’s methodology for estimating the cost of equity, with an MRP of 6% and a risk free rate based on CGS yields over a short term averaging period, produces an average market cost of equity (i.e. equity beta =1), being 8.98%[[6]](#footnote-6), which is 1.7% lower than Ernst & Young’s opinion of the prevailing average market cost of equity (10.7%), or 2.7% if the impact of imputation credits is taken into account.

To further test whether the AER’s cost of equity estimate is too low, Envestra obtained expert reports from CEG and SFG Consulting to examine other available market data. These independent expert reports conclude that the AER’s estimate of the cost of equity is inconsistent with the following observable facts in the market:

* The AER’s cost of equity estimate is substantially below the ‘lower bound’ estimates that can be derived from market information on dividend yields.
* Dividend yields have increased as CGS yields have fallen, indicating that the current MRP has increased relative to the current yield on CGS.
* DGM estimates of the MRP are substantially above 6%.
* The spread between low risk assets and the yield on CGS has increased as CGS yields have fallen, which indicates that the MRP has increased.
* The yield on hybrid securities actually exceeds the AER’s estimate for the cost of equity, even though hybrid securities are, by definition, lower risk than equity[[7]](#footnote-7).

The information set out by CEG and SFG Consulting illustrates the range of evidence that shows the AER’s cost of equity estimate is too low.

The expert evidence submitted by Envestra with this submission shows that the reason the AER’s cost of equity estimate is in error is because it is applying the CAPM in an inconsistent and incorrect way.

In summary, the AER’s methodology inconsistently combines a long term average for the market risk premium of 6% with a “spot estimate’ for the risk free rate, calculated as the average CGS yields on 10 year bonds over a 10-40 day averaging period.

In terms of finance theory and UK regulatory practice, Professors Stephen Wright and Alan Gregory have provided separate, independent expert opinions that the AER is making a clear error[[8]](#footnote-8), which is illogical and unreasonable[[9]](#footnote-9).In particular, Professors Wright and Gregory highlight that the AER is effectively using two different estimates of the risk free rate in applying the CAPM. This attachment explains in more detail the error made by the AER in applying the CAPM to estimate the cost of equity.

It should also be noted that the AER’s view that the input parameters for the CAPM must reflect prevailing conditions in the market for fundsis an incorrect reading of Rule 87 and the Tribunal’s recent decisions. It is the outcome of the application of the well accepted approach and well accepted financial model which must reflect prevailing conditions in the market for funds and the risk involved in providing reference services, not the parameters.

The remainder of this attachment provides the information supporting the derivation of Envestra’s proposed rate of return and is structured as follows:

* Section 3 summarises agreed Envestra and AER positions for determining the rate of return;
* Section 4 describes the correct interpretation of Rule 87 of the NGR and the deficiencies in the AERs standard methodology for determining the cost of equity;
* Section 5 outlines the reasons why the AER has erred in determining a 7.78% cost of equity in the Draft Decision; and
* Sections 6 and 7 provide a summary of the rate of return proposed by Envestra for the 2013 to 2017 Access Arrangement period.
  1. **Agreed Positions**

There are many aspects of the Draft Decision rate of return that Envestra and the AER are in agreement upon. The table below (Table 4.1, reproduced from the AER’s Draft Decision – Part 2) sets out the individual WACC parameters and rate of return proposed by Envestra alongside the values determined by the AER.

Table 4.1: AER's draft decision on Envestra's rate of return (nominal)

|  |  |  |
| --- | --- | --- |
| Parameter | Envestra proposal | AER draft decision |
| Nominal risk free rate (cost of equity) | 5.99% | 2.98% a |
| Nominal risk free rate (cost of debt) | 3.99% a | 2.98% a |
| Equity beta | 0.8 | 0.8 |
| Market risk premium | 6% | 6% |
| Debt risk premium | 3.92% a | 3.76% a |
| Gearing level | 60% | 60% |
| Inflation forecast | 2.5% a | 2.5% a |
| Gamma | 0.25 | 0.25 |
| Nominal post-tax cost of equity | 10.80% a | 7.78% a |
| Nominal pre-tax cost of debt | 7.91% a | 6.74% a |
| Nominal vanilla WACC | 9.06% a | 7.16% a |

Source: AER 2012, *Access Arrangement Draft Decision, Envestra Ltd 2013-17,* Part 2 Attachments, pg. 144.

The AER and Envestra agree that:

* The CAPM may be used to estimate the cost of equity.
* The equity beta estimate is 0.8.
* The benchmark cost of debt is the yield on 10 year Australian corporate bonds with a BBB+ credit rating, estimated using the extrapolated Bloomberg BBB rated 7 year fair value curve using paired bond analysis.
* The benchmark gearing ratio is 60% debt and 40% equity.
* The inflation forecast should be based on the Reserve Bank of Australia (RBA) forecasts and the mid-point of the RBA's inflation targeting band.
* The value of gamma is 0.25.
* The methodology for determining the benchmark Debt Raising Costs.

These aspects of Draft Decision are settled, and as such, are not discussed further in this response. This leaves the only area of disagreement being the cost of equity, which matter is discussed in the remainder of this response.

* 1. **Deficiencies in the AER’s Application of the CAPM**

The risk free rate and the MRP are interrelated parameters in the CAPM, which is evident from the following equation:



Where

E(R*i*) is the expected return on asset *i* (or the cost of equity (Re));

R*f* is the nominal risk free rate of return (ie. zero variance in returns);

E(MRP) is the expected Market Risk Premium and is calculated as E(R*m*) − R*f*;

E(R*m*) is the expected return on the market portfolio; and

*i* is the systematic risk of asset *i.*

The value of the MRP is derived by deducting the nominal risk free rate of return (R*f* ) from the expected return on the market portfolio (E(R*m*)). The AER, as we will show, has separately and independently estimates these two parameter values, therefore incorrectly using the CAPM to estimate the cost of equity.

However, Envestra is mindful of the recent Australian Competition Tribunal decisions on this matter[[10]](#footnote-10). In those decisions, the Tribunal concluded that no error was demonstrated in respect of the AER’s/ERA’s MRP estimate of 6% and that if the AER has evidence that supports an MRP estimate of 6%, then the Tribunal will not interfere with that determination, even if the Tribunal considers that there may be a preferable MRP value[[11]](#footnote-11).

Therefore, in light of the Tribunal’s recent findings, Envestra is prepared to adopt the AER’s MRP estimate of 6% in this revised proposal, but only if a consistent measurement approach is adopted in relation to the risk free rate. As explained in this submission, an MRP of 6% is a long term average and consistency requires that it must be matched with a long term average of the risk free rate.

In making this concession in relation to the MRP, Envestra does not resile from the compelling evidence that it submitted in its original proposal, in which four independent experts[[12]](#footnote-12) provided analysis showing that the forward-looking MRP substantially exceeds 6%.

This revised proposal includes updated ‘spot’ MRP analysis from SFG and CEG. SFG and CEG have also conducted an independent re-examination of Envestra’s evidence in relation to the MRP, in light of the criticisms made by the AER and its consultants in the Draft Decision. Both of these independent expert reports, which are provided at Attachments 9.14 and 9.21, confirm that the evidence overwhelmingly supports a forward-looking ‘spot’ MRP substantially in excess of 6% when combined with ‘spot’ estimates of the risk free rate in the CAPM.

Although Envestra is adopting an MRP of 6%, coupled with a longer-term estimate of the risk free rate, for the purposes of this revised proposal, we would welcome the AER’s reconsideration of the MRP if it prefers to address the problems with its cost of equity estimate through the application of an internally consistent CAPM that utilises a ‘spot’ risk free rate and a ‘spot’ MRP estimate.

4.1 AER’s interpretation of Rule 87

In section 4.2.1 of Part 2 of the Draft Decision, the AER sets out its understanding of the operation of Rule 87 of the National Gas Rules as follows:

* *Rule 87(1) describes the objective in determining the WACC but not how to achieve the objective.*
* *Rule 87(2) describes how to achieve the objective, including through the well accepted approach (such as the WACC) and through a well accepted financial model (such as the CAPM).*
* *Rule 87(1) informs the selection of input parameters for the well accepted approach and well accepted financial model.* ***Those input parameters must reflect prevailing conditions in the market for funds and the risk involved in providing reference services. (emphasis added)***

*This interpretation is consistent with the Australian Competition Tribunal’s (Tribunal) position in two recent decisions: The ATCO matter (formerly WA Gas Networks) and the DBNGP matter”*

The AER’s interpretation in the first two dot points above is consistent with the reasons of the Tribunal in *ATCO and DBNGP.*

However, the AER’s view that “*Those input parameters must reflect prevailing conditions in the market for funds and the risks involved in providing reference services”* is incorrect and inconsistent with the Tribunal’s interpretation of Rule 87.

The Tribunal in both *ATCO and DBNGP* interprets the operation of Rule 87(1) and (2) as follows:

1. Rule 87(1) describes the objective for determining the rate of return on capital, which objective is consistent with the national gas objective and the revenue and pricing principles. It provides no guidance as to how the objective is to be achieved.[[13]](#footnote-13)
2. Rule 87(2) serves the function of providing guidance as to how that objective is to be achieved, by prescribing the use of a well accepted approach and a well accepted financial model.[[14]](#footnote-14) The Sharpe‑Lintner CAPM is accepted to be such a well accepted financial model.[[15]](#footnote-15)
3. The inputs into the model are critical and Rule 87(1), importantly, informs the appropriateness of the inputs.[[16]](#footnote-16)
4. The selection of the appropriate input parameters is a critical step to ensuring that the well accepted approach using a well accepted financial model produces an outcome which accords with the objective expressed in Rule 87(1).[[17]](#footnote-17)

Nowhere in the Tribunal’s reasons in either decision does it find that the input parameters must reflect prevailing conditions in the market for funds and the risk involved in providing reference services.

The Tribunal’s reasons make it clear that in selecting the input parameters, regard must be had whether the result arising from the input of that parameter meets the objective in Rule 87(1). That is, the input parameters will only be “appropriate” if their combination produces a result which meets the Rule 87(1) objective.

It does not mean, as the AER contends, that as long as the parameter it selects reflects prevailing conditions in the market for funds, it will produce a result consistent with Rule 87(1). It is this interpretation of Rule 87(1) and (2) that leads the AER into error in estimating the cost of equity. The AER’s mechanical selection of estimates for the MRP, risk free rate and equity beta, without consideration of whether their combination produces a cost of equity estimate that meets the objective in Rule 87(1), is inconsistent with the Tribunal’s reasons and is in error.

4.2 Unusual Market Circumstances

The deficiencies in the AER’s standard approach to estimating the cost of equity in essence arise from the fact that it has failed to accommodate the changed circumstances in capital markets. This point was highlighted by the Reserve Bank of Australia’s Head of Financial Stability Department, Luci Ellis, in a recent speech

*“Before the crisis, global financial conditions could be best described as ‘too good to be true’, and we knew it. Looking back at the* Financial Stability Reviews *we published in 2006 and early 2007, and indeed those from foreign agencies, it is clear that we knew all was not well.[**[1](http://www.rba.gov.au/speeches/2012/sp-so-241012.html" \l "f1)] Investors were accepting very low prices for taking on risk (Graph 1).” [[18]](#footnote-18)*

In relatively low risk and stable capital market conditions combining a ‘spot’ risk free rate with a long-term average MRP in the CAPM, despite being inconsistent with the proper allocation of the CAPM, will provide a reasonable estimate of the cost of equity as the two interrelated parameter values are relatively consistent with each other. As can be seen from the table below average CGS yields were relatively stable over the 2005-2011period, but did decline a little during the GFC period, although not nearly as significantly as they did from 1 January to 31 October 2012.

|  |  |
| --- | --- |
| **Average Yield on 10-Year CGS** | **% per annum** |
| Average 1 January 2005 - 31 Dec 2007 | 5.6 |
| Average 1 January 2008 - 31 July 2011 | 5.4 |
| Average 1 January 2012- 31 October 2012 | 3.4 |

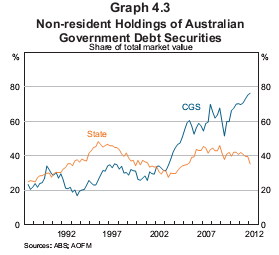
Source: F2 CAPITAL MARKET YIELDS - GOVERNMENT BONDS,

<http://www.rba.gov.au/statistics/tables/index.html#interest_rates>

Clearly CGS market conditions changed in 2012. As has been well documented, the ‘flight to quality’ drove CGS yields lower in 2012, not a reduction in equity investor risk preferences. Indeed, the Reserve Bank of Australia identified the reason for the fall in CGS yields as being primarily due to increased demand for CGS by foreign investors caused by stronger levels of risk aversion.

*As in the major international markets, long-term government bond yields in Australia have reached historically low levels in recent months. The yield on 10-year Commonwealth Government securities (CGS) reached 2.68 per cent in mid July [2012], its lowest level since Federation (Graph 4.2).* ***The low yields mostly reflect strong levels of risk aversion with the spreads between CGS and other debt securities generally much wider than their historic norms.*** [emphasis added] *The AAA rated status of Australia’s sovereign debt has attracted significant foreign investor interest in recent years and, in March, the share of CGS held by non-residents reached a new high of 76 per cent (Graph 4.3).*

***This ongoing shift in the investor base for CGS has not been mirrored to the same extent for other classes of Australian debt and has contributed to the wider yield differentials between CGS and other Australian dollar debt securities.***[emphasis added] *In June, as concerns about the European situation intensified, the spreads between CGS yields and those on state government debt (‘semis’) widened for a time, reaching levels comparable to those prevailing at the start of the year. prevailing at the start of the year.[[19]](#footnote-19)*



The AER’s use of ‘spot’ CGS yields as the proxy for the risk free and a long-term average estimate of the MRP (6%) in the CAPM is effectively incorporating the lower risk preferences of foreign government debt investors into the regulatory cost of equity. This is inconsistent with the use of the domestic CAPM as it will not provide a cost of equity estimate consistent with Australian market requirements. In these circumstances the AER must therefore modify its standard cost of equity estimation methodology so as not to fall into error in setting the rate of return that is compliant with the NGR.

There are a number of valid methods that can be used to remedy the error made by the AER in adopting an inconsistent approach to estimating the MRP and risk free rate within the CAPM.

* Section 4.3 explains why consistency in measuring the MRP and risk free rate is essential.
* Section 4.4 provides compelling evidence which shows that the AER’s MRP estimate is a long term historic average, not a forward-looking spot rate. As a long term historic average, it must be combined with a long term measure of the risk free rate.
* Section 4.5 notes that the experts, including the AER’s advisor, Associate Professor Lally, regard the AER’s MRP estimate as a long term historic average, not a forward looking ‘spot’ rate.

4.3 Why consistency matters

Envestra’s original proposal explained the importance of adopting a consistent approach to estimating the MRP and the risk free rate. To understand the theory that underpins this proposition, it is instructive to examine the following comments from Professor Alan Gregory, a respected finance professor who has advised the UK Competition Commission on cost of capital issues:

At this point it is worth emphasising exactly what asset pricing theory tells us that the basic CAPM relationship is, in terms of deriving the expected return on any asset (Ri):

 (1)

The term in parentheses is often abbreviated to the “equity risk premium” or “market risk premium”, but writing the equation out in its original form serves as a reminder that the precise definition of MRP is the expected return on the market (E[RM]) minus the risk free rate, RF. As Jenkinson (1993) points out, the important point is that there is only one RF term on the right hand side of the CAPM, not two.

A very common error, which has been discussed in recent UK regulatory appeals, is to implicitly assume the two RF terms are different. An example would be where a current estimate of the risk free rate (say the yield on a government bond) is combined with an historically derived estimate of the MRP.[[20]](#footnote-20)

As Professor Gregory explains, an inconsistent approach to estimating the MRP and risk free rate will incorrectly employ two different risk free rate estimates in the CAPM. Professor Stephen Wright from the UK and Dr Tom Hird of CEG independently reach the same conclusion. All three expert opinions are provided as attachments to the Access Arrangement Information.

In its Draft Decision, the AER claims that it has consistently applied ‘forward-looking’ estimates of the MRP and the risk free rate. The AER therefore argues that Envestra has mischaracterised the AER’s approach:

*Envestra suggested the WACC determined by the AER does not provide the best estimate of the cost of equity because the AER adopts an MRP that reflects the long term average and uses a risk free rate that reflects current market conditions. This suggested bias is a mischaracterisation. The AER estimates a WACC that is consistent with the CAPM and requirements of the rules.*

*The CAPM should be estimated at the beginning of the investment period and should reflect expectations for the investment horizon. Accordingly, both the risk free rate and the MRP are estimated at the beginning of the period (or rather, as close as is practically possible) and reflect expectations for the investment horizon.*

*Rule 87(1) of the NGR requires the AER to estimate a rate of return that reflects prevailing conditions in the market for funds. These prevailing conditions can be considered ‘prevailing expectations’ over the relevant forward looking investment horizon, which is 10 years. Accordingly, both the risk free rate and the MRP are forward looking estimates, although estimated using different types of data.*[[21]](#footnote-21)

In sections 4.4 and 4.5 (below), Envestra provides compelling evidence that the AER’s estimate of the MRP is not genuinely forward looking. Before turning to this evidence, however, it is important to highlight a further matter raised by CEG that identifies another inconsistency in the AER’s approach.

CEG explains that the AER regards the spot risk free rate as an appropriate ‘long term estimate’ as it relates to the yield on 10 year CGS. In contrast, however, the AER regards a ‘spot’ estimate of the MRP as inherently short-term and therefore not appropriate for the purpose of estimating the MRP over a 10 year horizon, despite the fact that equity investment typically has a much longer time horizon than 10 years.

The AER therefore approaches the task of estimating the MRP by considering how the ‘spot’ MRP may change over the 10 year time horizon. However, the same approach is not adopted in relation to the risk free rate. For the risk free rate, the AER believes that the ‘spot rate’ is the appropriate measure. In reaching this conclusion, the AER does not consider whether the spot risk free rate – which is at close to its lowest level since Federation – has a reasonable prospect of persisting at this level over the next 10 years. CEG explains the inconsistency in the AER’s approach in the following terms:

The AER may consider that it has the discretion to set the MRP on this basis. However, if its estimate of the MRP is set on this basis then for consistency its estimate of the risk free rate should be set on the same basis. If the AER’s estimate of MRP is predicated upon a resolution to the problems in the international economy, then so too should its estimate of CGS. That is, if the AER considers that the current conditions of uncertainty and perceptions of risk will dissipate in the medium term and that this justifies an MRP based upon an historic average, based upon the evidence that it relies upon elsewhere, the same conditions will cause CGS yields to rise and the same logic would justify a higher risk free rate – such as one might associate with the historic average.[[22]](#footnote-22)

It is noteworthy that the US Congressional Budget Office[[23]](#footnote-23) (CBO) forecasts of 10-year US Treasury bond yields increasing significantly over the next 5 years from their current level of around 1.7% to 4.6% in 2017 and then up to 5% in 2022. Given the interrelatedness of global government bond markets it is reasonable to expect CGS yields to strengthen with US Treasury bond yields, which therefore indicates (a) there are unusual circumstances in global government bond markets and (b) that the spot yield on the 10-year CGS is not the best forward looking risk free rate over the next 10 years for use in the CAPM with a long-term MRP.

*CBO anticipates that, as the economy strengthens, interest rates will return to more-typical levels; the rate on 3-month Treasury bills is projected to be 3.4 percent* ***at the end of 2017, and the rate on 10-year Treasury notes is projected to be 4.6 percent*** *[emphasis added]……….. By late 2022, the unemployment rate declines to 5.3 percent, and interest rates on 3-month Treasury bills and 10-year Treasury notes are 3.8 percent and 5.0 percent, respectively.*

CEG therefore explains that the AER is mixing two alternative methods in applying the CAPM to estimate the cost of equity:

1. Adopt ‘spot estimates’ of the risk free rate and MRP; and
2. Adopt long-term averages of the risk free rate and MRP.

UK professors, Alan Gregory and Stephen Wright, and Dr Tom Hird of CEG each explain that the AER makes an error by combining the ‘spot’ risk free rate from method 1 and the long-term average MRP from method 2. This error produces a cost of equity that is internally incompatible, inconsistent with finance theory, not reflective of prevailing market conditions, manifestly too low, and as such, is inconsistent with the requirements of the NGR and NGL. This error is amplified at a time where the market determined spot - rates are significantly different from their long term averages.

Envestra’s view is that either method 1 or method 2 should be adopted to ensure consistency. The importance of consistency is recognised by the AER, but it is not reflected in the AER’s approach. The AER seeks to establish consistency by claiming that the MRP is estimated ‘as close as possible’ to the commencement of the regulatory period. The AER adopts this language in relation to the MRP because it describes an approach which is consistent with the measurement approach adopted in relation to the risk free rate.

In reality, however, the AER approaches the tasks of estimating the MRP and risk free rate differently. In particular, the AER updates the ‘spot’ risk free rate at a date close to the publication of the Final Decision, but it does not update the MRP. This is because the MRP is measured on a fundamentally different and inconsistent basis to the risk free rate, as explained by CEG.

The AER’s criticism that Envestra is attempting to address a problem with the MRP estimate by adjusting the risk free rate mischaracterises our position, as supported by several independent experts. Envestra’s approach ensures consistency between the methods employed to estimate the MRP and risk free rate and is therefore consistent with the correct application of the CAPM.

IPART recognised the importance of adopting a consistent measurement approach for each of these two parameters in its determination for the Sydney Desalination Plant[[24]](#footnote-24):

*“As noted in section 9.4.1, we recognise stakeholders’ concerns about the inconsistency in using short term data in estimating some parameters and long term data in estimating others. We also recognise there is considerable uncertainty over the market risk premium, due to recent market instability. These factors influenced our decision to set SDP’s WACC towards the top of the possible range, and we are satisfied that this decision adequately addresses stakeholders’ concerns.”*

The AER’s claim that its estimates of the MRP and risk free rate are consistent is not supported by IPART’s comments.

For the avoidance of doubt, Envestra is open to the AER adopting a genuine ‘spot’ estimate for the MRP and combining it with the ‘spot’ rate for the risk free rate. However, the AER’s standard approach has not adopted a consistent ‘spot’ estimate for each parameter.

The next section demonstrates that the AER’s estimate of the MRP is based on historic data. The principle of consistency requires that the adoption of the AER’s 6% estimate for the MRP should be accompanied by a ‘long term average’ for the risk free rate. The evidence presented below strongly contradicts the AER’s claim that its estimates for the MRP and risk free rate estimates are consistent.

4.4 AER’s MRP estimate is a long term historic average

As already noted, the AER seeks to characterise the MRP as being “estimated as close as practical to the beginning of the period”. The purpose of this characterisation is to claim that the estimates adopted for the MRP and the risk free rate are consistent. However, as shown below, this claim is not supported by the facts.

The AER relies on survey data and historic estimates of market returns to establish its MRP estimate. The relevant survey data as presented in Table 4.5 of the Draft Decision Part 2 is set out below. It shows that the most recent survey referred to by the AER was published in July 2011, some 14 months prior to the Draft Decision. This period also predates the recent decline in CGS yields which became evident in 2012. The KPMG survey, which is referred to by the AER, is dated 2005.

Table 4.5: Key findings of MRP surveys

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Numbers of responses | Mean | Median | Mode |
| KPMG (2005) | 33 | 7.5% | 6.0% | 6.0% |
| Capital Research (2006) | 12 | 5.1% | 5.0% | 5.0% |
| Truong, Partington and Peat (2008) | 38 | 5.9% | 6.0% | 6.0% |
| Bishop (2009) | 27 | na | 6.0% | 6.0% |
| Fernandez (2009) | 23 | 5.9% | 6.0% | na |
| Fernandez and Del Campo (2010) | 7 | 5.4% | 5.5% | na |
| Fernandez et al (2011) | 40 | 5.8% | 5.2% | na |
| Asher (2011) | 49 | 4.7% | 5.0% | 5.0% |

Sources: KPMG (2005), Capital Research (2006), Truong, Partington and Peat (2008), Bishop (2009), Fernandez (2009), Fernandez and Del Campo (2010), Fernandez et al. (2011), Asher (2011)).

Contrary to the AER’s position, it is not credible to argue that the survey data is “as close as practical to the beginning of the period, and reflects expectations over the 10 year investment horizon”. Survey data from 2005 cannot be construed to support the AER’s contention that its MRP estimate is genuinely forward-looking, because it does not reflect today’s market conditions. The survey results reflect a period when the risk free rate was substantially higher than the current spot rate. As already noted, combining today’s low CGS spot rate with MRP survey data from 2005 is manifestly inconsistent.

The AER’s claim that the MRP is “measured as close practical to the beginning of the period” is also inconsistent with the remarkable stability in its regulatory decisions since the commencement of energy network regulation in Australia. It is commonly accepted by academics and practitioners that the MRP varies over time. However, the same cannot be said of the AER’s estimates or those of its predecessor, the ACCC, as shown in the table below.

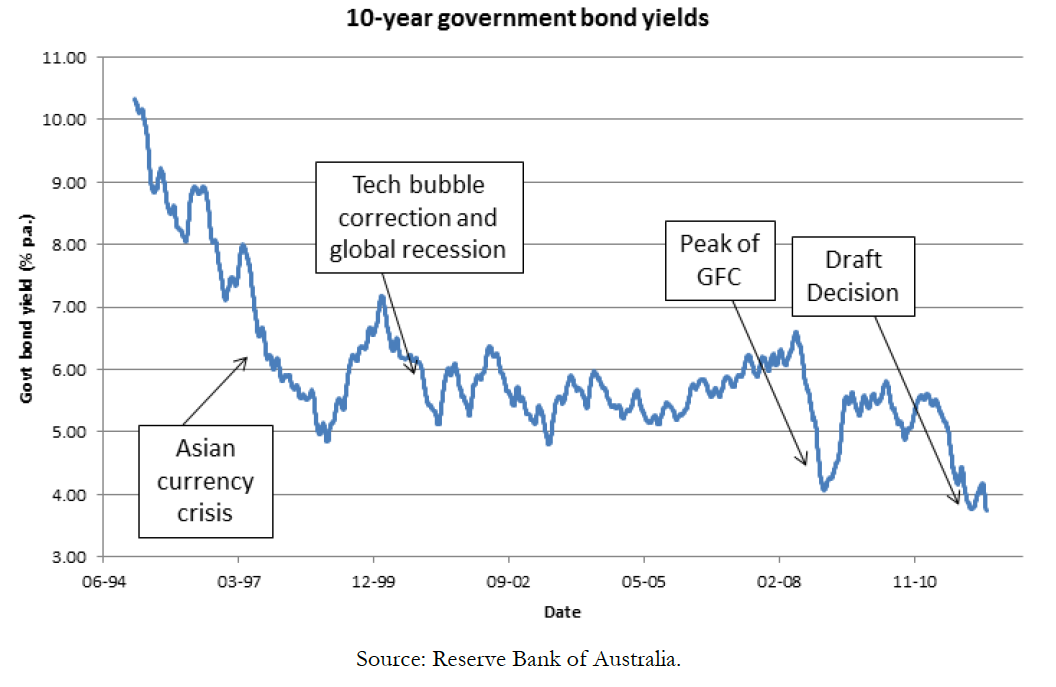
ACCC and AER MRP decisions for regulated energy networks over the period from 1998 to the present

| **Date** | **Final decision** | **MRP adopted** |
| --- | --- | --- |
| Oct 1998 | Transmission Pipelines Australia (GasNet) | 6% |
| Jan 2000 | NSW and ACT Transmission Network Revenue Caps | 6% |
| Jun 2000 | Central West Pipeline | 6% |
| Feb 2001 | Snowy Mountains Hydro-Electric Authority Transmission | 6% |
| Sep 2001 | Moomba to Adelaide Pipeline | 6% |
| Nov 2001 | Queensland Transmission Network Revenue Cap | 6% |
| Nov 2002 | GasNet Australia | 6% |
| Dec 2002 | Amadeus Basin to Darwin Pipeline | 6% |
| Dec 2002 | Victorian Transmission Network Revenue Caps | 6% |
| Dec 2002 | South Australian Transmission Network Revenue Cap | 6% |
| Oct 2003 | Moomba to Sydney Pipeline | 6% |
| Oct 2003 | Murraylink Transmission Network Revenue Cap | 6% |
| Dec 2003 | Tasmanian Transmission Network Revenue Cap | 6% |
| Apr 2005 | EnergyAustralia Transmission Network Revenue Cap | 6% |
| Apr 2005 | TransGrid Transmission Network Revenue Cap | 6% |
| Mar 2006 | DirectLink Transmission Network Revenue Cap | 6% |
| June 2007 | Queensland Transmission Network Revenue Cap | 6% |
| Aug 2007 | Dawson Valley Pipeline | 6% |
| Jan 2008 | SP AusNet transmission determination | 6% |
| Apr 2008 | GasNet Australia | 6% |
| Apr 2008 | ElectraNet transmission determination | 6% |
| Apr 2009 | TransGrid Transmission Determination | 6% |
| Apr 2009 | Transend Transmission Determination | 6% |
| Apr 2009 | ACTEW AGL Electricity Distribution | 6% |
| Apr 2009 | New South Wales distribution determination | 6% |
| Mar 2010 | ACTEW AGL ACT, Queanbeyan & Palerang gas distribution | 6.5% |
| Mar 2010 | Wagga Wagga natural gas distribution network | 6.5% |
| May 2010 | Queensland distribution determination | 6.5% |
| May 2010 | South Australia distribution determination | 6.5% |
| June 2010 | Jemena Gas Networks NSW | 6.5% |
| Oct 2010 | Victorian DNSPs - CitiPower, Powercor and UE | 6.5% |
| Oct 2010 | Victorian DNSPs -SP AusNet | 6.5% |
| Oct 2010 | Victorian DNSPs - Jemena Electricity Networks | 6.5% |
| Jun 2011 | Envestra gas distribution SA and Qld | 6% |
| Jun 2011 | APT Allgas Qld gas distribution | 6% |
| Jul 2011 | Amadeus Gas Pipeline (NT) | 6% |
| Apr 2012 | Aurora Energy | 6% |
| Apr 2012 | Powerlink Transmission | n/a[[25]](#footnote-25) |
| Aug 2012 | Roma to Brisbane Pipeline | 6% |
| Sep 2012 | DRAFT DECISION – Envestra/SPAusNet/Multinet Gas Distribution | 6% |

It is evident from the above table that, apart from a brief (8 month) period between March and October 2010 in which the MRP was increased to 6.5 per cent, the AER and ACCC decisions on the MRP have been fixed at 6% for the past 14 years.

It is instructive to compare the practically fixed view of the MRP with the volatile nature of the spot risk free rate. The figure below shows the yield on 10 year GCS since 1994, and shows that the risk free rate is currently at a low point.

10-year government bond yields since mid 1994



The stability of the AER’s 6% MRP estimate contrasts with the volatility in the spot risk free rate. It is inconceivable that the ‘spot’ MRP does not also vary over time. The fixed nature of the ACCC and AER estimate of the MRP simply reflects the fact that it is derived from a long historic data series, which dates back to the 1880s. It is indicative of an approach that does not appropriately consider the overall cost of equity. It cannot be regarded as a spot estimate of the MRP, which is the only measure that should be combined with the spot risk free rate.

As shown in the table above, the origin of the 6% MRP can be traced back to early ACCC decisions. Statements made by the ACCC highlighted that these estimates were in fact based on historic data. While the ACCC acknowledged that MRP is “in theory” a forward-looking concept, there is little doubt that it is derived from historic data. In particular, in its Draft Statement of Regulatory Principles in May 1999, the ACCC stated:

Theoretically the market risk premium is an ex-ante premium based on a forward view of the market. However, for practical reasons much of the analysis of its value has relied on the premium historically achieved, as a proxy measure.[[26]](#footnote-26)

In its Final Decision for the Moomba to Sydney gas pipeline in October 2003, the ACCC also noted the importance of historic returns in its estimating approach:

Theoretically the market risk premium is an ex ante premium, however, for practical purposes historic data has typically been used as a proxy measure.[[27]](#footnote-27)

In its Final Decision for Transend Networks in December 2003, the ACCC made a similar statement:

Multiplying WACC by the RAB to determine the return on capital for a regulated business is a forward-looking concept. However, estimates of the future cost of equity are not readily available. Practical applications of the CAPM therefore rely on the analysis of historic returns to equity to estimate the MRP.[[28]](#footnote-28)

The AER’s conclusions in its Final Decision on the Statement of Regulatory Intent on Revised WACC Parameters similarly emphasise the primary weight given to historic data:[[29]](#footnote-29)

Rather than placing sole weight on any particular measure of the MRP, it is common practice to have regard to each measure, tempered by an understanding of the strengths and weaknesses of each measure, in determining a ‘final’ MRP. The AER considers this is an appropriate approach in the context of having had regard to the need for persuasive evidence, and is consistent with past regulatory practice. **Following this approach leads the AER to place primary weight on long term historical estimates of the MRP** [emphasis added], though also placing some weight on other measures such as cash flow based estimates and surveys.

The most recent long term historical average excess returns … fall close to 6 per cent.

The AER went on to conclude:[[30]](#footnote-30)

“Consistent with past regulatory practice, the AER considers that primary weight should continue to be placed on long term historical estimates of the MRP.”

At the same time, the AER acknowledged this was the long-established practice of Australian regulators, and that “in the interests of regulatory certainty and stability, and placing primary weight on long term historical estimates, regulators consistently maintained a MRP of 6 per cent”.[[31]](#footnote-31)

The fact is that the long-established regulatory practice in Australia is to adopt an MRP estimate of 6%, based on long-term historic data. For the AER to claim that the forward-looking estimate has been undertaken “as close as practically possible to the commencement of the regulatory period” implies that the AER is constantly fine-tuning and updating its assessment. The reality, however, is quite the contrary – the AER’s evidentiary basis for the 6% MRP is the historic data.

4.5 Experts agree that an MRP of 6 per cent is an historic average

Professor Gregory’s description of the AER’s approach explains that the AER has combined historic estimates of the MRP and the ‘spot’ risk free rate:

*At 2.3.1 in the Roma to Brisbane Pipeline case the AER makes clear that its chosen estimate for RF is an average of 10 year CGS yields for the period 25th June to 20th July 2012, whilst in the Gas Businesses Case the average is for the 20 business days ended on the 10th of August. To consistently apply the CAPM it should, therefore, have used an estimate of the expected RM on a reasonable basis, and subtracted from that the same average of 10 year CGS yields. The evidence in 2.3.2 of the Roma to Brisbane Pipeline case and in the Gas Business cases suggest that they have not done so. Table 2.2 in the Roma to Brisbane Pipeline case and, for example, Table 4.3 (p.87) in the APA GasNet case shows estimates of the historically derived MRP. For the reasons set out above, whilst it would have been correct to use these historical data series to measure historic RM directly, it is not valid to take an MRP from this historical data series and match it with an RF derived from forward looking data*.[[32]](#footnote-32)

The AER’s consultant, Associate Professor Lally, has also acknowledged that the AER’s MRP estimate is based on historic data and survey evidence, and does not adequately consider forward-looking methodologies including the Dividend Growth Model (DGM) and other evidence:

In addition, whilst the AER gives primary weight to historical averaging of excess returns and survey results in estimating the forward-looking MRP, I consider that the AER should give consideration or additional weight to a number of other methods including the Siegel approach, the DGM, and results from a range of other markets. In addition, if historical average returns are used, they should be arithmetic rather than geometric averages.[[33]](#footnote-33)

In light of Associate Professor Lally’s comments alone, it must be concluded that the AER has not in fact adopted a forward-looking estimate of the MRP “as close as possible” to the commencement of the regulatory period. If it had done so, the AER would have looked at other models suggested by Associate Professor Lally. In addition, if the MRP estimate were in fact genuinely forward looking, the MRP would have shown some variation across the 40 regulatory decisions since 1998. However, there has been practically no variation in the MRP values adopted.

The evidence is unequivocal that the AER’s estimate of the MRP is a long term average. It must, therefore, be combined with an estimate of the risk free rate which is also a long term average. Unless this approach is adopted, the AER’s methodology for estimating the cost of equity will be flawed, as explained by Professor Alan Gregory and Professor Stephen Wright. This observation is not simply a theoretical or methodological complaint - it has implications for the AER’s cost of equity estimate.

The next section shows that the application of the AER’s methodology for estimating the cost of equity produces an estimate that is not commensurate with the prevailing conditions in the market for funds and, therefore, does not satisfy the NGR and NGL.

* 1. The AER’s cost of equity estimate is in error

This section provides compelling evidence that the AER’s estimate of the cost of equity is in error. It is structured as follows:

* Section 5.1 summarises CEG’s findings in updating its March 2012 report, which accompanied Envestra’s original proposal.
* Section 5.2 provides evidence that the ‘spot’ MRP exceeds 6%.
* Section 5.3 summarises the findings of Ernst & Young’s review of independent expert valuation reports since 2008.
* Section 5.4 presents statements from a number of investors and fund managers which outline their concerns that the AER’s cost of equity estimates are unprecedentedly low, and do not accord with capital market expectations.
* Section 5.5 sets out the key findings of independent expert reports in relation to UK and US regulatory practice.
* Section 5.6 summarises SFG’s findings that the AER’s reasonableness checks are irrelevant and do not support its estimated cost of equity.
* Section 5.7 examines the AER’s reliance on the “present value principle” in adopting the current (unprecedentedly low) long term Government bond yield as a proxy for the risk free rate.
* Section 5.8 explains that the AER’s estimate of the cost of equity is inconsistent with the NGR and NGL.
* Section 5.9 presents a summary of key findings regarding the errors in the AER’s estimate of the cost of equity.

5.1 CEG’s updated report shows AER error

Envestra’s March 2012 proposal explained that in estimating the cost of equity using the CAPM, it has become standard practice in the AER’s regulatory decisions to combine:

* an estimate of the MRP which is substantially based on historic data averaged over various periods from 1883 to the present day; and
* a current-day estimate of the risk free rate, typically based on observed yields on 10 year Government bonds over 10 to 40 trading days close to the commencement of the next regulatory period.

In circumstances when the capital markets are reasonably free of distortions, the AER’s standard approach would generally result in reasonable estimates of the cost of equity, despite the incorrect/inconsistent application of the CAPM. Ordinarily, therefore, the standard regulatory approach would produce an estimate of the cost of equity that is consistent with Rule 87(1). However, current market conditions are far from normal. As shown in the figure below, the AER’s approach is producing cost of equity estimates that have dropped sharply in recent months, contrary to experience in the real-world capital markets. We will return to capital market evidence shortly.

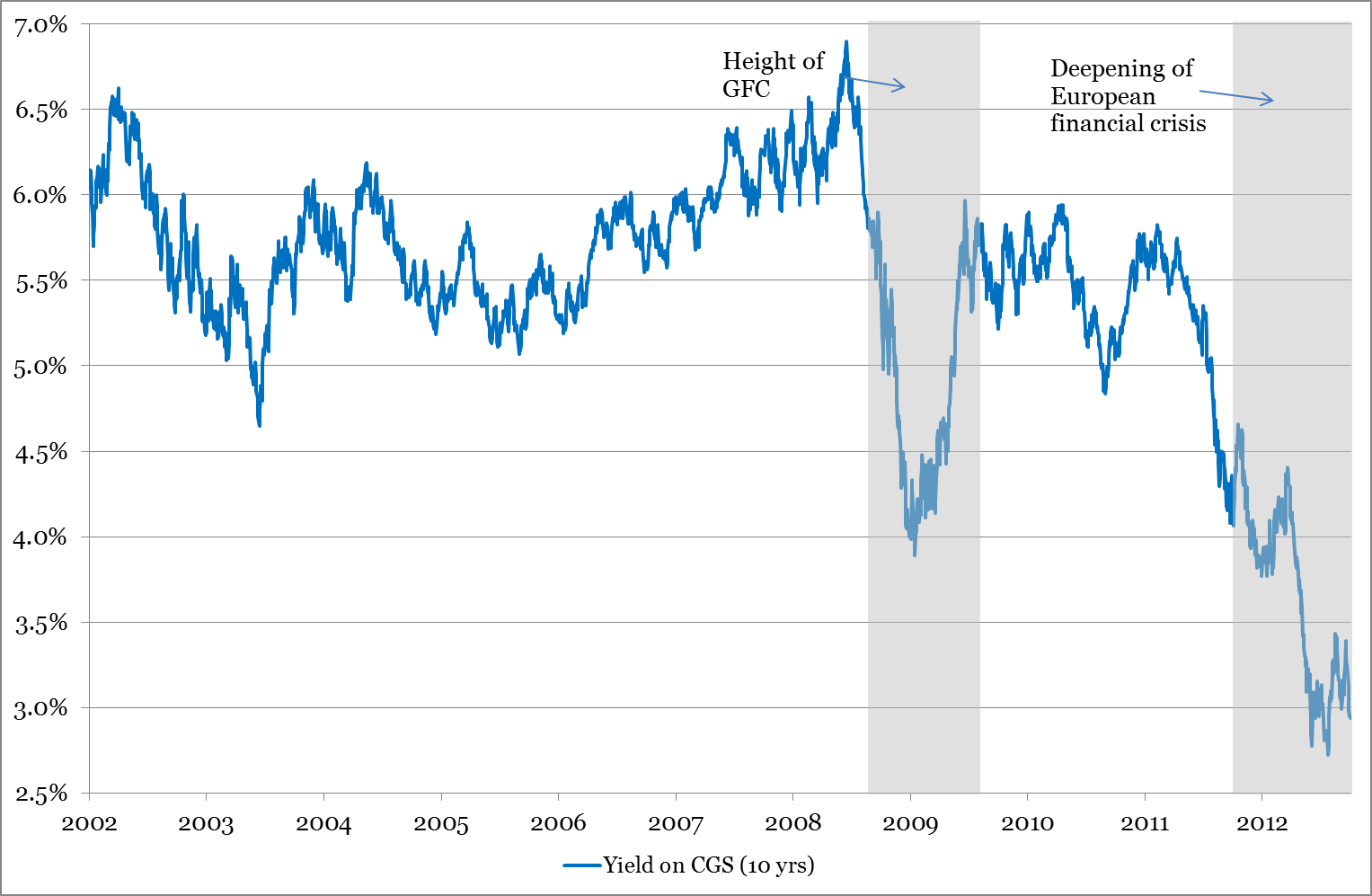
Cost of equity decisions for regulated energy businesses



*Source: CEG*

The reduction in the AER’s estimate of the cost of equity is due to the fall in 10-year CGS yields (the proxy for the spot risk free rate) since the onset of the GFC and the deepening of the European sovereign debt crisis, as show in the figure below. The AERs risk free rate is now at historically low levels, reflecting a flight to quality as investors sell risky assets and buy AAA-rated government debt[[34]](#footnote-34).

Time series for yields on ten year CGS



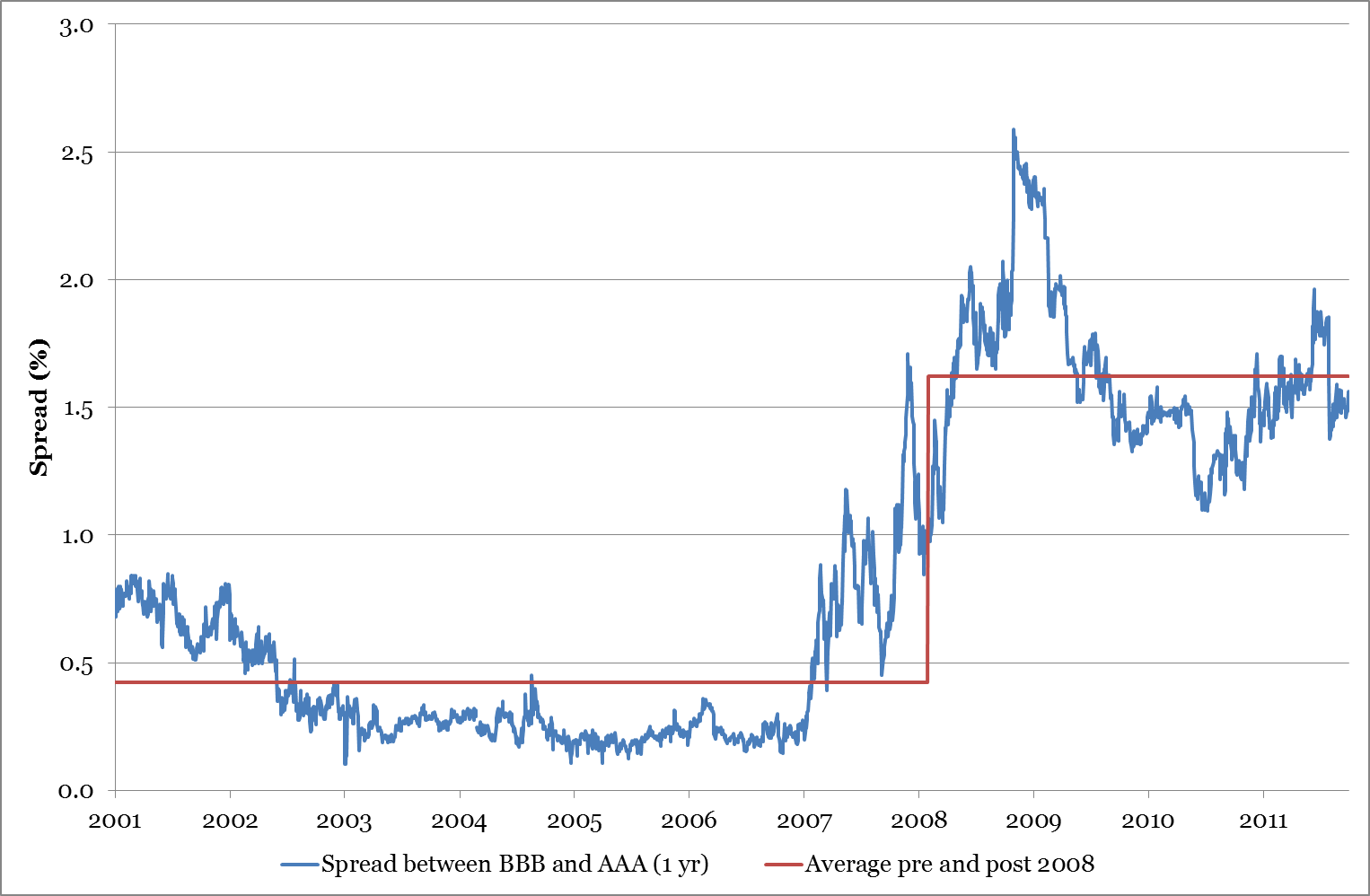
*Source: CEG*

The AER’s mechanistic application of the CAPM - using a market risk premium derived from a long series of historic data, and a spot rate risk free rate - leads it to produce cost of equity estimates that are demonstrably inconsistent with the prevailing conditions in the market for funds. It is erroneous to believe that the reduction in the yield on 10 year CGS – which is driven by increased investor uncertainty and risk aversion – would reduce the returns expected by equity investors and therefore leave the MRP unaffected.

For example, the return on equity determined by the AER for Envestra’s South Australian and Queensland regulated gas networks over the 2011-12 to 2015-16 Access Arrangement period was 10.36%. The same shareholders are now thought to require a return of only 7.78% for their investment in the Victorian and Albury networks over 2013-17 (as per the AER Draft Decision), which is a period with substantial overlap. The drop in the cost of equity by 258 basis points, for assets with comparable risk characteristics, was driven by the fall in the risk free rate rather than a dramatic change in the requirements of equity investors. The significant decrease in the allowed cost of equity is not reflective of investor requirements and has clear capital allocation implications.

Dr Hird of CEG explains that it is common practice to use spreads between low risk assets and BBB rated bonds as a proxy for the level of investor uncertainty and risk aversion. In this regard, it is instructive that the spread between Standard & Poor’s AAA and BBB rated bonds with one year to maturity (shown in the figure below) continues to exhibit elevated levels. This is indicative of greater levels of uncertainty and risk aversion, and is wholly inconsistent with the AER’s view that the cost of equity has fallen over the same period because the MRP remains unchanged from its long-term average.

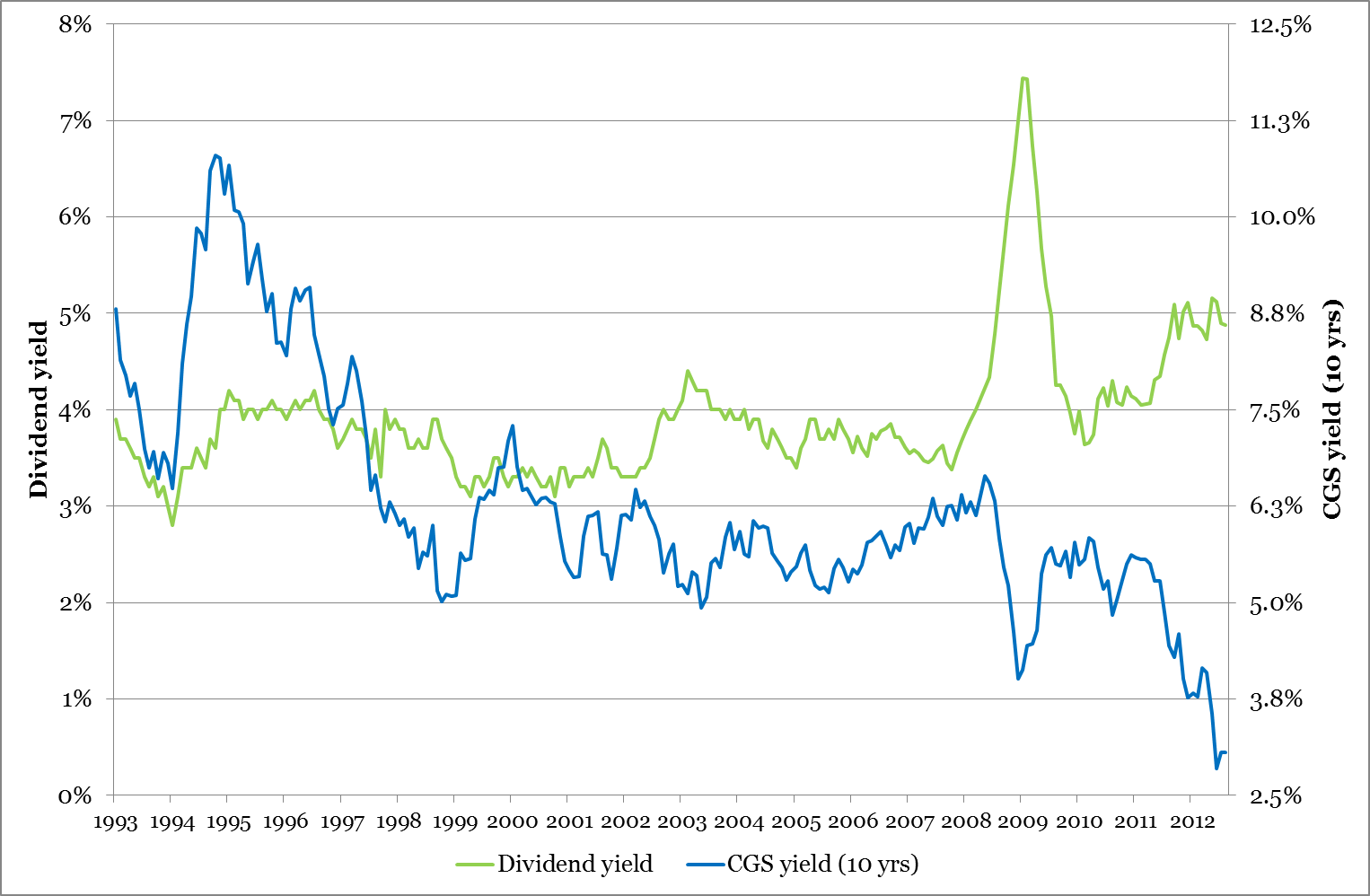
Spreads between AAA and BBB benchmark bonds at 1 year to maturity



Source: Bloomberg, CEG analysis

Dr Hird also explained that it is common practice to use equity dividend yields as a proxy for prevailing levels of uncertainty and risk aversion. The figure below shows that dividend yields have increased since 2009, reflecting increased uncertainty and risk aversion, as the yield on CGS has fallen. The data is totally inconsistent with the AER’s view that the cost of equity has fallen dramatically since 2008.

Dividend yield on ASX versus 10 year CGS yields



Source: RBA, CEG analysis

Dr Hird concludes his report as follows:

Consistent with my March 2012 report, there is persistent and unambiguous evidence that risk premiums in the market for funds have risen to offset the recent fall in CGS yields. The effect of this is that the prevailing cost of equity is at least as high as under normal market conditions – notwithstanding that the CGS yields are at 50 year lows. In these circumstances, it would be an error to estimate the cost of equity using prevailing CGS yields in combination with a historical average estimate of the market risk premium.[[35]](#footnote-35)

Furthermore, Dr Hird concludes that the AER’s estimate of the cost of equity is approximately 200 basis points below the level that could be established using alternative, valid estimation methods. This substantial difference, together with the other evidence presented in this submission, demonstrates that the AER’s cost of equity estimate is not credible and could not reasonably be considered to comply with the NGR and NGL requirements.

5.2 The ‘spot’ MRP exceeds 6 per cent

Envestra’s original proposal included a wide range of evidence on the ‘spot’ MRP and the forward looking cost of equity. The evidence included expert analysis from CEG, discussed above, in addition to the following reports:

* Capital Research (Attachment 9.3), *Forward Estimate of the Market Risk Premium: Update*, March 2012.
* NERA (Attachment 9.4), *Prevailing Conditions and the Market Risk Premium*, March 2012.
* SFG (Attachment 9.5), *Review of NERA regime-switching framework*, March 2012.

Envestra notes that the AER and its consultants have made a number of criticisms of these independent expert reports. Envestra has asked SFG Consulting to respond to the points raised, and its expert opinion is provided as Attachment 9.12 to this revised proposal. In light of SFG Consulting’s comments, Envestra continues to rely on these reports in this submission. Envestra recognises that *any* estimate of the cost of equity is open to criticism because estimating an unobservable parameter – such as the cost of equity – is bound to be imperfect. The task, therefore, is to make a reasonable judgment based on the available evidence. The above reports provide compelling evidence that the ‘spot’ MRP exceeds the 6% estimated by the AER.

In addition to the above reports, CEG has updated its estimate of the MRP using the DGM. CEG estimates a prevailing market cost of equity at 11.94% and MRP at 8.89%. This is based on the AMP method using end September 2012 dividend yields from the Reserve Bank of Australia, long run dividend growth of 6.6% nominal and an assumption that each dollar of dividend delivered to investors comes with 11.125 cents value of franking credits. Assuming a beta of 0.8 and risk free rate of 3.05% as at 30 September 2012 this gives a cost of equity for the reference services of 10.16% and MRP of 7.85%. This estimate is slightly lower than CEG’s March 2012 cost of equity estimate of 10.58% and MRP of 8.52%.

Envestra regards the CEG evidence as supporting our view that the ‘spot’ MRP remains well in excess of 6%making the AER’s cost of equity estimate is manifestly too low.

5.3 Ernst & Young’s market review shows AER error

Ernst & Young has examined all available independent expert reports containing an asset valuation from 2008 to 2012. The purpose of the Ernst & Young report is to assess the prevailing cost of equity in the market for funds. Ernst &Young’s view is that independent expert reports provide the best market evidence publicly available to assess this. The independent experts have legal and reputational responsibilities to ensure that their estimates of the cost of equity are fair and reasonable reflections of investors’ requirements. Market transactions – including company acquisitions – have been based on these independent expert reports. The reports therefore provide compelling evidence of the cost of equity in the real world.

In total Ernst & Young examined 132 independent expert reports. The table below shows the average market cost of equity estimates over the period from January 2008 to October 2012 complied from the independent expert reports. The table also shows the equivalent market cost of equity estimates from the 21 AER decisions over the same period, including the Draft Decision for the Victorian gas distributors.

Comparison of AER market cost of equity estimates with Independent Valuations

| **Year** | **Average cost of equity - market** | **Average cost of equity - AER** | **Difference** |
| --- | --- | --- | --- |
| 2008 | 12.0% | 12.2% | 0.2% |
| 2009[[36]](#footnote-36) | 11.8% | 11.4% | -0.4% |
| 2010 | 11.7% | 12.1% | 0.4% |
| 2011 | 11.1% | 11.5% | 0.4% |
| 2012 | 10.7% | 9.5% | -1.2% |

It must be reiterated that the market cost of equity (i.e. E(R*m*), which is the outcome of using the CAPM with an equity beta of 1) adopted by the AER in its Draft Decision for the Victorian gas companies is 8.98%, which is even lower than the AER average for 2012.

The following observations can be drawn from the above table.

* Independent experts estimate an average cost of equity for the ten months to October 2012 of 10.7%, which is approximately 130 basis points below the equivalent estimate in 2008. The equivalent reduction in the AER’s market cost of equity decisions over the same period is a reduction of 270 basis points. The AER’s reduction is therefore 140 basis points more than the average of estimates contained in independent experts reports.
* For the ten months to October 2012, the AER’s average market cost of equity estimate is 120 basis points lower than the average estimate provided by independent experts. Taking into account the impact of imputation credits increases the gap to 220 basis points.
* For the Victorian gas businesses, the AER’s market cost of equity estimate of 8.98% (for a beta of 1) is approximately 170 basis points lower than the average estimate of the market cost of equity provided by independent experts for the ten months to October 2012 (or 270 basis points taking into account the impact of imputation credits).

The figure below provides a more detailed analysis of the market cost of equity adopted by the independent experts and the AER from January 2008 to October 2012. It shows that the AER’s most recent estimates of the cost of equity are well below the average of the recent estimates produced by independent experts. The analysis suggests that the AER’s pre-2012 market cost of equity (E(R*m*)) estimates tended to marginally exceed those of independent experts, which Envestra regards as consistent the requirements of the NGL, which requires the AER to ensure that network service providers are able to recover at least their efficient costs and consider the consequences of under-investment if the cost of capital is under-estimated.

Analysis of estimates from Independent Experts and AER



In addition, the data shows that in 2012 the market cost of equity does not move on a 1:1 basis with the yield on 10-year CGS, as is embedded in the AER’s application of the CAPM. Most importantly, Ernst & Young show that the consensus amongst independent valuation experts is that the AER’s estimate of the cost of equity in the Draft Decision is insufficient and would not be considered fair and reasonable under the Corporations Law.

Importantly, on the basis of its assessment, Ernst & Young forms the opinion that the 7.78% Draft Decision cost of equity (8.98% market cost of equity) is inconsistent with the requirement set out in Rule 87(1) for the cost of equity to be consistent with prevailing market conditions. It also follows that the 7.78% Draft Decision cost of equity does not provide Envestra with a reasonable ability to recover at least the efficient cost of providing reference services, as required by Section 24(2) of the NGL.

Another important finding from the Ernst & Young study is that independent experts have tended to increase their estimates of the MRP in response to the reduction in the estimated risk free rate. The AER has expressed its view that the MRP and risk free rate are not negatively correlated. However, the evidence from independent experts contradicts the AER’s views. It is a matter of fact that independent experts typically adopt higher MRP estimates when the risk free rate is below 4.5%, as shown in the histogram below.

Histogram of MRP against risk free rate



The above figure shows that the majority (57 per cent) of independent expert reports adopt an MRP above 6 per cent when the risk free rate is less than 4.5 per cent. For risk free rates that are closer to the long term average, the percentage of independent expert reports adopting an MRP of 6 per cent increase to approximately 74 per cent. In other words, the independent expert reports provide evidence that the MRP and risk free rate are negatively correlated. Although this is not a formal statistical test, our analysis suggests that the probability of this effect occurring by chance is less than 2%.

Professor Stephen Wright’s independent expert report explains why the MRP and risk free rate are likely to be negatively correlated. He states that there is an increasing body of academic research and significant indirect evidence, noting that the MRP cannot be observed directly. It is noteworthy, therefore, that Ernst & Young’s compilation of independent expert reports provides further support for this phenomenon.

Contrary to the above evidence, however, the AER continues to apply a constant MRP even as the risk free rate reaches new historical lows. This evidence makes it plain why the AER’s approach produces a cost of equity that is below the prevailing conditions in the market for funds, contrary to rule 87(1).

In summary, the market evidence from the independent experts’ valuation reports contradicts the AER’s conclusions in its Draft Decision. The evidence shows that the AER’s cost of equity estimate is too low and does not meet the requirements of Rule 87(1). This market evidence is consistent with the expert opinions of Professor Alan Gregory and Professor Stephen Wright from the UK, which is discussed shortly. Furthermore, it is consistent with the analysis provided by CEG and SFG, as well as IPART’s view (discussed further in section 6 below) that it is necessary for regulators to adopt appropriate approaches to estimating the risk free rate and MRP given the current market conditions.

5.4 Evidence from investors and fund managers suggests AER error

In a recent submission to the AEMC, the Financial Investor Group[[37]](#footnote-37) stated:

*“Recent regulatory decisions have employed an overly mechanistic approach to the NGR provisions. The mechanical application of these provisions has produced cost of equity estimates that are unprecedentedly low, and which do not accord with capital market expectations*.”

The Financial Investor Group is an affiliation of the major investors in Australian energy network assets. Members[[38]](#footnote-38) have interests in well over $30 billion of Australian energy network assets, most of which are regulated. This is a substantial proportion of Australia’s privately owned energy network assets, and about 40% of those subject to economic regulation.

The Financial Investor Group’s submission drew the attention of the Commission to various statements made by professional investors and fund managers, which outline the concerns of the investment community in relation to the regulators’ recent cost of capital decisions.

The first statement was prepared by Matthew Riordan and John Lake, portfolio managers at Paradice Investment Management Pty Ltd[[39]](#footnote-39):

*Paradice Investment Management is an Australian based Fund Manager that oversees investment worth $6.9 billion. The bulk of this money is invested within Australian Equities.*

*Within the Australian market we have a large number of companies to invest in that are exposed to many sectors and geographies. All of these companies and sectors are ultimately competing against each other for our marginal investment dollar. The Utilities sector is quite minor in the market, representing only 1.8% of our investment universe. As a house we currently hold an overweight position within the Utilities sector. This is a function of the earnings and yield certainty that these assets are expected to provide in what is a very uncertain time within the equities market.*

*We have some concerns over the proposed draft rule changes and their potential implications for the sector. Our main concern is that there is insufficient consideration being given to the interplay between the various factors that are used in the return calculations.*

*For example, the current low risk free rate in the form of the 10 year bond yield is a function of the heightened level of uncertainty that exists in the market at the moment which in turn should be reflected by a higher equity risk premium. There is ample evidence of this higher equity risk premium in the current subdued activity levels in the primary and secondary issuance markets. Additionally, there is also a fair argument that the Australian 10 year bond yield is being artificially subdued by high levels of foreign buying given its place in the increasingly scarce pool of AAA rated securities.*

*“Regardless of the many different views that can be taken on the different factors and outcomes the key for us from an investment point of view is that there needs to be long term consistency in the allowable returns for regulated utilities. In this regard it is important to avoid a situation where investors feel that the rules can be changed on a short term basis and/or we can end up with very different outcomes for an asset based purely upon the date at which a decision is made and the market vagaries at the time. Failure to achieve this within an assets class that is perceived as defensive would certainly result in a flow of money away from the sector. With the ongoing growth of the Australian economy and population in the long term, the need for further capital to be invested into Utilities projects is a given. The private sector is going to be a key source of this capital, Stability in regulatory decisions, not volatility, is needed otherwise there is an elevated risk to us investing our clients superannuation dollars in the listed Utilities sector.”*

The following statement was prepared by Fidelity Worldwide Investment[[40]](#footnote-40), an asset manager providing services to investors all over the world outside the US and Canada, which currently manages over US$210 billion for private individuals and institutions:

*“We acknowledge that the current regulatory approach is overly prescriptive and needs to be better linked to present market conditions. We welcome the implementation of a rate of return framework which will include a number of different models and financial analysis with a focus on market data and real-world market conditions. The framework should also define appropriate guidelines and limitations to ensure that the current regulatory accountability is maintained.”*

The following statement was prepared by an institutional investor with more than $130 billion of funds under management and invested on behalf of its clients, $5 billion of which is invested in utility and infrastructure assets throughout the globe:

*“As a long standing investor in regulated utilities and infrastructure assets. What attracts us and our clients to the sector is the long standing consistent application of a developed regulatory framework, the stable and appropriate level of returns provided by regulated utilities.  Of course, any changes to the framework, return structure and/or appropriateness of the returns provided will increase the risk of investing in the Australian based assets and as a global investor with the competition for capital considerable we very well would need to reconsider the level of investment allocated to Australia.”*

The following statement was prepared by RARE Infrastructure[[41]](#footnote-41), an Australian-based fund manager specialising in global infrastructure:

*“Regulators need to ensure returns are sufficient for companies to attract capital, both debt and equity, to expand networks to meet customer requirements. Global Funds like RARE have a choice whether to invest in regulated assets in Australia. Despite RARE liking the Australian regulatory framework, if allowed returns are insufficient to compensate us for the risk, we will invest our clients’ capital elsewhere in the world.”*

The above statements reflect broad investor concerns about the regulators’ approach to estimating the cost of capital. They were made in the context of the AEMC’s present deliberations on its draft Rule determination on the economic regulation of network services. Nonetheless, they are also highly relevant to the AER’s consideration of Envestra’s estimate of the cost of equity. Specifically, a consistent theme emerging from these statements and the Financial Investor Group’s submission is the concern among investors that recent regulatory decisions have produced cost of equity estimates that are unprecedentedly low, and which do not accord with capital market expectations.

5.5 Evidence from UK and US regulators shows AER error

Envestra commissioned two reports - one from Professor Stephen Wright and the other from Professor Alan Gregory - comparing the AER’s approach to estimating the cost of equity, with the approach adopted by the AER’s UK counterpart, Ofgem. It should be noted that Professor Stephen Wright has advised Ofgem in relation to the cost of equity and was a co-author of the Smithers & Co report, which was commissioned by a consortium of UK regulators in 2003, and which remains an authoritative reference in UK regulatory decision-making on the cost of capital.

Professor Stephen Wright comments:

*“The AER, by assuming that the risk premium is constant, and hence that the cost of equity capital has simply followed the risk free rate down point by point, has in my view made a clear error.*

*This behaviour is particularly inappropriate in the Australian context. By assuming a lower cost of capital, the AER is imposing a lower return on capital for the regulated company, at a time when profitability, and hence returns of unregulated companies are at a cyclical high, which is in turn inducing very strong investment. This puts regulated companies at a potentially severe disadvantage compared to unregulated companies, and implies the serious risk that regulated companies will under-invest.*

*Whilst […] my approach (and that of UK regulators) [implies that] the (estimated) MRP and the risk-free rate must move in opposite directions, this phenomenon cannot be directly observed, since the true MRP is inherently unobservable. However there is a considerable body of academic research that would suggest indirect evidence of this negative relationship, both by looking at economic determinants of the MRP, and at the properties of implied risk premia on other assets, such as corporate and government bonds.[[42]](#footnote-42)”*

Professor Wright also pointed to academic literature that supports the proposition that the risk free rate and MRP are negatively correlated as the economy moves through business cycles. As noted in section 5.3, Envestra also has market evidence that independent expert valuers adopt MRP and risk free rate parameter values that are negatively correlated as the risk free rate falls below 4.5 per cent.

Professor Gregory applies the UK approach to the Australian data and concludes that if the AER had adopted an approach that was consistent with the UK experience, the resulting market cost of equity would have been substantially greater. For example, Professor Gregory comments:

“We can anchor this 1958-2005 estimate by using the most widely-cited international evidence of Dimson, Marsh and Staunton (2012), henceforth DMS. They show that for 1900-2011, the real mean realised RM [market return] for Australia is 8.9% (arithmetic).[[43]](#footnote-43) The mean long run real bond rate is 2.4% (arithmetic). Again applying the forecast inflation rate of 2.5%, were one to use these historical estimates of real RM as an estimate the expected RM, the arithmetic average implies an E(RM) of 11.6%.”

Professor Gregory concludes that the Australian historic data, properly applied, would yield an estimate today of the market cost of equity of 11.6 per cent, compared to the AER’s estimate for the Victorian gas businesses of 8.98 per cent. It is worth recalling that Professor Gregory’s estimate of the market cost of equity is closely aligned with the average cost of equity estimates of independent experts over the 2008-2012 period, which averages 11.5 per cent (as explained in section 5.3 above).

Envestra regards the weight of evidence from a variety of sources and approaches as compelling. It shows that the AER’s cost of equity estimate is unreasonably low.

As already noted, the error in the AER’s estimation method arises from mixing up two alternative methods. By combining the spot risk free rate and the long term average MRP, the AER’s methodology yields an estimate for the market cost of equity that is too low. If the AER adopted an approach similar to that adopted in the UK, or at least adopted consistently measured parameters for the risk free rate and MRP, this error would be overcome.

As has been shown in the preceding sections, the correct application of the CAPM, with the MRP derived from consistent data on the market cost of equity and the risk free rate, promotes stability in the cost of equity estimation process as it symmetrically accommodates unusual CGS market circumstances. That is, when CGS yields are unusually high (low) then, with all else constant, the MRP would be lower (higher) than the long-term average. This should allay the AER’s concerns about gaming or bias in our proposal.

5.6 AER’s reasonableness checks are in error

SFG consulting reviewed the reasonableness checks applied by the AER in the Draft Decision. SFG Consulting explains that some of the AER’s “reasonableness checks” relate to estimates of trading and transaction multiples, which are irrelevant. SFG notes that a sale price or trading multiple in excess of the RAB does not inevitably establish that the regulatory rate of return exceeds that required by investors. Rather, sales of regulated assets at a premium to the RAB could reflect a myriad of factors, which are examined in SFG’s report. Moreover, half of the data relied upon by the AER relates to transactions that occurred over 6 years ago - prior to the GFC and the European sovereign debt crisis. To the extent that the prevailing conditions in the market now differ from the conditions in the market in 2006, transactions completed in 2006 would be of little relevance.

The SFG report explains that the use of broker WACC estimates as a source of evidence with respect to the actual cost of capital faced by regulated businesses is subject to many known limitations, and the weight applied to such evidence should reflect these limitations.

In its Draft Decision, the AER noted that the range of broker WACC estimates in its sample is 7.76% – 10.02%, and that the AER’s proposed allowed WACC of 7.16% is 173 basis points below the mid-point of the range and 60 basis points below the minimum value in this range. SFG notes that from this, the AER concluded that:

*“broker WACC estimates do not demonstrate that the overall rate of return, which is based on the analysis of individual parameters, is not commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services*[[44]](#footnote-44)*”*

SFG then observes:

*“This conclusion begs the question of how a reasonableness check should properly be applied and interpreted. In the case at hand we have the regulatory estimate being checked for reasonableness against a number of alternate (broker) estimates. The regulatory estimate is below the entire range of alternate estimates – it is even materially below the minimum of all alternate estimates. In our view, this should not be interpreted as confirming the reasonableness of the regulatory estimate.*

*Indeed, if this evidence does not lead one to question the reasonableness of the regulatory estimate, it would seem that no evidence would ever do so*.[[45]](#footnote-45)”

SFG has conducted its own reasonableness checks, noting that there are three components to the return to equity holders:

* Dividends;
* Capital gains, and
* Imputation tax credits.

SFG calculate a lower bound on each of the three components of return that investors might reasonably expect to receive from the average comparable firm. Taken together, this provides a lower bound on the aggregated return that investors might reasonably expect to receive from an investment in a comparable firm. This lower bound can then be compared with the allowed regulatory return as one test of whether the allowed return can reasonably be considered to be commensurate with the prevailing conditions in the market for funds.

SFG calculated the following lower bound:

* The return from dividends is based on the average dividend yield currently available from comparable firms (approximately 7%). The lower bound estimate assumes that the firm simply maintains the current dividend and there is no growth in dividends whatsoever;
* The return from capital gains is based on the AER’s estimate of expected inflation (2.5%). The lower bound estimate assumes that the firm’s share price will just maintain its value in real terms and will provide no real return at all to investors; and
* The adjustment for imputation credits is based on the AER’s estimate of gamma (0.25) and the corporate tax rate (30%).

These conservative (low bound) assumptions imply that investors in the shares of comparable firms would reasonably expect to receive a return on equity of at least 10.5%, compared with the AER’s allowed return on equity of 7.78%[[46]](#footnote-46). This lower bound calculation implies that the ‘spot’ MRP substantially exceeds the 6% assumed by the AER.

SFG comments that it is not clear how the AER’s allowed return on equity of 7.78% can be reasonably considered to be commensurate with the prevailing conditions in the market for funds when it is below the minimum observed in the AER’s sample of Broker report and investors in comparable firms can reasonably expect to receive a return that is at least 35% higher than what is being allowed to investors in the benchmark firm.[[47]](#footnote-47)

5.7 AER’s reliance on the ‘present value principle’ is in error

In rejecting Envestra’s approach of combining long term average measures of the risk free rate and the MRP to estimate the cost of equity, the Draft Decision states:

“The use of prevailing CGS yields is consistent with the use of the building block model because this model is designed to uphold the present value principle, as advised by Associate Professor Lally.”

Envestra asked Professor Stephen Wright and Professor Alan Gregory to review and comment on the advice provided to the AER by Associate Professor Lally in two papers[[48]](#footnote-48).

In relation to Associate Professor Lally’s paper titled “The Risk Free Rate and Present Value Principle”, Professor Wright stated:

“Professor Lally’s analysis is theoretically correct, but only given his key assumption, that the income stream of the regulated monopoly is risk-free. When this assumption does not hold (which in all practical instances it does not), the appropriate discount rate in his analysis must – as he acknowledges – contain an additional risk premium. Thus the present value principle is only operational in practice if we make assumptions about the overall cost of equity of the regulated company: i.e., the sum of the risk-free rate and a risk premium. In contrast to the risk-free rate, the overall cost of equity is not directly observable. As a result the practical application of the present value principle is crucially dependent on what assumptions are made about this crucial magnitude: it is emphatically not simply dependent on a market-based measure of the risk-free rate.[[49]](#footnote-49)”

Professor Gregory reached the same conclusion:

“Unfortunately, Lally quite specifically rules out a constant risk free rate and a constant risk adjusted rate in his assumptions and his examples. He assumes that the risk free rate changes each period, and since, elsewhere, he has argued for the use of a constant market risk premium (MRP), the implication is that the appropriate discount rate varies each period in line with changes in the underlying risk free rate. [...] Reduced to basics, the true position is far more complex than Lally suggests, to the point where his conclusions are invalid.[[50]](#footnote-50)”

Both UK experts conclude that the present value principle (PVP) does not prohibit the use of a long run average as a proxy for the risk free rate. Professor Gregory concludes his analysis as follows:

*“I do not believe that either the UK approach or the IPART approach is inconsistent with the PVP, because both methods represent a genuine attempt to establish the WACC as accurately as is possible in a real world setting with uncertainty surrounding each of the parameters (including the risk free rate). There is nothing in this approach that prohibits the incorporation of a long run average risk free rate.[[51]](#footnote-51)”*

5.8 AER’s cost of equity estimate is inconsistent with the NGR and NGL

Envestra asked Mr Jeff Balchin of PricewaterhouseCoopers to provide a detailed examination of the meaning and intended purpose of:

* the “national gas objective” set out in section 23 of the National Gas Law – i.e. to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas – particularly in relation to the rate of return on capital and the cost of equity; and
* the “revenue and pricing principles” set out in subsections (2), (5), (6) and (7) of section 24 of the National Gas Law, particularly in relation to the rate of return on capital and the cost of equity.

Furthermore, Mr Balchin was asked, in light of his findings, whether he considers that the cost of equity and resulting WACC adopted by the AER in its Draft Decision is consistent with the National Gas Objective and the Revenue and Pricing Principles in the NGL.

In his independent expert report, Mr Balchin included analysis on the likely consequences for customers if the cost of capital is set too low. He explained that:

*“In my view, the guidance from the NGO for this task is that the regulated rate of return should be set with reference to an estimate of the “true” cost of capital, but with a consideration as to whether there may be a net benefit from varying from this starting point in view of the imprecision of the estimate and the potential losses from erring on the upside compared to the downside. I consider that the efficiency and consumer components of the clause provide materially the same guidance on this matter. I note the following in particular:*

*• If the regulatory rate of return is set below the true cost of capital, then the incentive and capacity for service provision over the long term would be imperilled. This would amount to an allocative inefficiency as the provision of natural gas services would be withdrawn even though they are valued by consumers by more than other goods and services in the economy. Equally, it would be detrimental to the long term interests of consumers given that they value service provision in excess of the cost.[[52]](#footnote-52)*

Envestra notes that the AER’s Draft Decision has given no consideration to the asymmetric and adverse consequences that would arise if the cost of capital were set too low. If the AER had given consideration to this issue, it would not have set a cost of equity that is significantly lower than AER estimates only 12 months earlier. Furthermore, it is evident that the AER’s estimation method produces volatile cost of equity estimates over time.

Consequently, network companies with substantially overlapping regulatory periods will have markedly different rates of return and network prices[[53]](#footnote-53). This will distort upstream and downstream investment; create allocative and dynamic inefficiencies; and distort efficient investment in, and use of, gas pipelines. All of these outcomes are contrary to the National Gas Objective.

5.9 Summary of the key findings

To summarise, the AER’s approach to estimating the cost of equity is in error because it applies the CAPM inconsistently in that it does not adopt either of the following methods:

1. Adopt ‘spot estimates’ of the risk free rate and MRP; or

2. Adopt long-term averages of the risk free rate and MRP.

Instead the AER takes a mix from method 1 and method 2. The AER’s estimate of the MRP is a long term average, while its estimate of the risk free rate is a ‘spot rate’. This approach is illogical and leads to an unreasonable estimate of the cost of equity that does not meet the requirements of Rule 87(1).

Envestra submits expert opinions from Professor Alan Gregory and Professor Stephen Wright, which say unequivocally that the AER has made an error by applying the CAPM in a manner that is inconsistent with finance theory. While this issue has only recently become apparent in Australia due to the historically low yields on 10 year CGS, the matter has received significant attention in the UK regulatory context.

The AER claims that its estimate of the MRP is a ‘spot’ rate, and it has not made an error. However, it is clear from the long history of regulatory decisions that an MRP of 6% is a long term average. Furthermore, if it were a spot rate, the AER would update it at the time of its Final Decisions, which it does not.

Envestra has submitted compelling evidence that the current MRP exceeds 6%. It is open to the AER to revisit its estimate of the MRP if it so wishes. However, Envestra’s approach in this revised proposal is to adopt a long term average of the risk free rate, and to combine this with a long term average of the MRP to derive an estimate of the cost of equity. This method is supported by UK regulators and IPART, both of whom recognise the problems associated with adopting a ‘spot’ measure of the risk free rate when this parameter is close to an all-time low.

The criticisms that Associate Professor Lally has made of Envestra’s proposed approach are unfounded. Three independent expert reports have identified important deficiencies in Professor Lally’s approach.

Envestra has commissioned a detailed analysis of the available market evidence contained in independent expert reports that value companies in accordance with Corporations Law and ASX requirements. The evidence directly contradicts the AER’s conclusions in its Draft Decision. Most importantly, the market evidence shows that the market cost of equity has not fallen to the extent suggested by the AER and Ernst & Young’s opinion is that the prevailing cost of equity in the market for funds is around 10.7%.

Mr Balchin explains that the AER should have considered the asymmetric consequences that arise from setting the cost of capital too low. To this end, Professor Stephen Wright explained that the AER’s cost of equity estimate is putting regulated companies at a potentially severe disadvantage compared to unregulated companies. He noted that this situation creates serious risk of underinvestment in regulated businesses.

In developing its preferred position in this revised proposal, Envestra had regard to the independent expert opinion of Mr Greg Houston of NERA. In his report, Mr Houston concluded:

*“In my opinion, taking into account the principles I set out in section 4.1, and the observations by respected commentators and market evidence that I set out in section 4.2, current market circumstances give rise to considerable doubt that the acknowledged pre-condition for safe application of the AER’s methodology for determining the risk free rate is satisfied. It follows that the AER’s method of estimating the risk free rate by reference to a date as close as practicable to the commencement of the regulatory period is not, in fact, ‘theoretically correct’ in a context where there is evidence suggesting a material change in investors’ risk appetite and where significant weight is to be placed on historical estimates of the MRP for determining the cost of equity. Rather, the consequence of my analysis is that a departure from the AER methodology for determining the risk free rate component of the cost of equity is warranted.*[[54]](#footnote-54)*”*

Mr Houston, who was one of the architects of the current cost of equity estimation approaches adopted by the AER, sees no difficulty in adopting Envestra’s proposed approach of averaging the risk free rate, given existing market conditions. In the next section, Envestra sets out its cost of equity proposal.

* 1. Envestra’s estimate of the cost of equity

As already noted, Envestra accepts the following aspects of the Draft Decision:

* The CAPM may be used to estimate the cost of equity.
* The equity beta should be estimated to be 0.8.

Envestra has demonstrated that in unusual capital market conditions – such as those prevailing - the AER’s standard approach to estimating the cost of equity fails to produce an outcome that meets the requirements of the NGR for the cost of equity to be consistent with prevailing market conditions. As noted, the AER’s approach combines an estimate of the MRP that reflects a long-term average with a spot risk free rate at a time when yields on government bonds are at unprecedentedly low levels. In these circumstances, it is instructive to examine the approach applied by the NSW independent economic regulator (IPART) in its December 2011 Final Report on its review of water prices for Sydney Desalination Plant (SDP) Pty Limited. Page 80 of IPART’s Final Report stated:

*“We determined the values for the parameters of the WACC based on market conditions over the 20 days to 28 October 2011. The risk free rate and debt margin have been affected by market volatility and the prolonged weak market following the credit crisis of 2008. The change in these factors has potentially created a disparity between these parameters (for which we use short term average data) and the market risk premium (for which we use long term average data).*

*However, the effects of this disparity are mitigated by our decision to use a point estimate of 6.7%, which is 80 basis points higher than the midpoint of our estimated WACC range. In doing so, we had strong regard to the calculated WACC using longer term averages for market parameters.”*

On page 93 of its Final Report, IPART explained its approach as follows:

*“For this review, we consider that the value of the risk free rate is currently well below long term averages and that there is a high level of market uncertainty. We consider the risks in setting a 5-year determination in the current conditions are more significant than under normal market conditions.*

*An alternative approach is to look at the long term averages as a reference point for the sum of the market risk premium and risk free rate.*

*Therefore, to guide our decision-making on the point estimate for the WACC, we estimated the long term averages of the risk free rate, inflation rate and the market risk premium. We found that using these long term averages, the WACC range would be 5.9% to 7.8% with a midpoint of 6.7%. This midpoint is 80 basis points higher than the midpoint of the range we determined for the WACC using short term averages for these parameters, but still within this range.”*

In explaining its approach, IPART commented on page 85 as follows:

*“We also recognise that the risk free rate […] is historically low. Indeed, this was one of the main reasons we decided to set the point estimate for SDP’s WACC towards the top of the possible range we estimated.”*

IPART effectively adjusted its WACC range by using long run averages, in particular for the risk free rate (which became 5.4% as opposed to 3.9% using the 20 day average approach). [[55]](#footnote-55)

It is noteworthy that the approach adopted by IPART is consistent with the approach applied by UK regulators (as explained in the accompanying expert reports provided by Professor Stephen Wright and Professor Alan Gregory). Professor Gregory summarises his assessment in the following terms: [[56]](#footnote-56)

*“To the extent that the 6% MRP adopted by the AER is largely, but not exclusively, determined by the historical evidence, it is difficult to be prescriptive about exactly which estimate of RF is best combined with this in current market circumstances, but the pragmatic solution of both IPART and UK regulators (described in detail below) is to use a weighted average of the more recent historical averages and the current spot rate, with the majority of the weight being on the former. Given considerable uncertainty exists about both the “true” RF and MRP, such an approach is reasonable, in contrast to the AER’s current position which is not.”*

In light of Professor Gregory’s comments and the errors in the AER’s approach already discussed, Envestra maintains its view that a long term historic average MRP of 6% must be combined with a long term average risk free rate. In this revised proposal, Envestra adopts a long term average measure of the risk free rate measured over 10 years.

Although there are numerous alternative measures that could be adopted, the IPART approach has the benefit of regulatory precedent in Australia. Furthermore, it directly addresses the following concern raised by the AER: [[57]](#footnote-57)

*“A difficulty is that the time that is selected for the beginning of the period has a significant influence on the output. The selection of an appropriate averaging period is subjective and therefore subject to manipulation for desired results.”*

Envestra notes that by adopting a 10 year averaging period, as adopted by IPART, there can be no suggestion that the period has been adopted to manipulate the results. Furthermore, Envestra has ensured that the adopted nominal risk free rate takes account of any difference between historic and forecast inflation. In this revised proposal, therefore, Envestra has adopted a nominal risk free rate of 5.00%[[58]](#footnote-58).

Applying an equity beta value of 0.8 (in accordance with the AER’s Draft Decision), an MRP of 6% (which is E(R*m*) − R*f*; or 11% minus 5%) the resulting 9.8% cost of equity is estimated using the CAPM as follows:



= 5.0% +0.8 x 6.0%

= 9.80%

The cost of equity proposed in the original March submission was 10.8% and has now been amended to 9.8% to reflect the new market evidence contained in the Ernst & Young report, the correct application of the CAPM and expert advice from Professors Stephen Wright and Alan Gregory, NERA, PWC, SFG and CEG. It is noted that the corresponding market cost of equity is 11.00% (risk free rate of 5% plus an equity beta of 1 and MRP of 6%), which is closely aligned with Ernst & Young’s market evidence, which shows an average estimate of 10.7%.

* 1. Summary of proposed WACC and constituent parameters

Envestra proposes a nominal cost of equity of 9.8%, derived using historic averages of the risk free rate and the MRP in the CAPM, as shown in the table below.

|  |  |
| --- | --- |
| **CAPM Parameters** | **‘Long-term’ Parameters** |
| Nominal Risk Free Rate | 5.0% |
| Market Risk Premium | 6.0% |
| Equity Beta | 0.8 |
| Cost of Equity (Re) | 9.8% |

For the purpose of this response Envestra has adopted the Draft Decision’s cost of debt estimate as a placeholder. The cost of debt allowance to be used in the Final Decision will be calculated using the methodology described in the Draft Decision. The input parameter values will be observed over the confidential averaging period nominated by Envestra in its letter to the AER dated 31 August 2012.

The resultant nominal post-tax WACC of 7.96% has been derived from the formula below. The rate of return on capital (or WACC) proposed in accordance with the NGR is the cost of equity and the cost of debt weighted by the respective proportions of equity (40%) and debt (60%) in the benchmark capital structure.

WACC (nominal, post-tax) 

where

|  |  |
| --- | --- |
| Re | 9.8%, which is the risk adjusted post-tax cost of equity required by investors derived from the CAPM |
| Rd | 6.74% cost of debt (to be updated over nominated averaging period) |
| E | 40%, which is the benchmark level of equity expressed as a percentage |
| D | 60%, which is the benchmark level of debt expressed as a percentage |
| V | Sum of assumed debt level plus assumed equity level (V = D + E) |

For the reasons set out in this proposal, Envestra submits that a WACC of 7.96% is the value that best gives effect to the requirements of the National Gas Objective, the National Gas Law and the National Gas Rules.

1. Envestra notes that some of the observations made by the AER regarding the cost of debt in the Draft Decision were different to the benchmark financing structure and therefore not consistent with Rule 87. [↑](#footnote-ref-1)
2. AER Final Decision, APT Petroleum Pipeline Pty Ltd Access arrangement final decision Roma to Brisbane Pipeline, 2012–13 to 2016–17 [↑](#footnote-ref-2)
3. The AER’s standard methodology for the cost of equity is to add a fixed equity premium of 4.8% to the short-term average of the 10 year CGS yield. The only difference between the cost of equity allowed in the Roma to Brisbane Pipeline Final Decision and the Envestra Draft Decision was a 3bp increase in the short-term average of the 10 year CGS yield between the respective sampling periods. [↑](#footnote-ref-3)
4. Letter from Envestra Managing Director to AER Chairman, *Current Cost of Capital for Publicly Listed network Companies,* 21 August 2012 [↑](#footnote-ref-4)
5. Ernst & Young - Market Evidence on the Cost of Equity - 8 November 2012 [↑](#footnote-ref-5)
6. The AER’s application of the CAPM with a 2.98% risk free rate, equity beta of 1 and an MRP of 6% yields a market cost of equity of 8.98%. Applying the CAPM with the same parameter values except with equity beta of 0.8 gives the 7.78% cost of equity from the Draft Decision. [↑](#footnote-ref-6)
7. Letter from Envestra Managing Director to AER Chairman, *Current Cost of Capital for Publicly Listed network Companies,* 21 August 2012. [↑](#footnote-ref-7)
8. Professor Stephen Wright, Review of Risk Free Rate and Cost of Equity Estimates: A Comparison of UK Approaches with the AER, 25 October 2012, paragraph iii, page 3. [↑](#footnote-ref-8)
9. Professor Alan Gregory, The AER Approach to Establishing the Cost of Equity – Analysis of the Method Used to Establish the Risk Free Rate and the Market Risk Premium, paragraph 5. [↑](#footnote-ref-9)
10. Application by Envestra Limited (No 2) [2012] ACompT 4 (11 January 2012) and Application by WA Gas Networks Pty Ltd (No 3) [2012] ACompT 12 (8 June 2012). [↑](#footnote-ref-10)
11. Application by WA Gas Networks Pty Ltd (No 3) [2012] ACompT 12 (8 June 2012), paragraphs 105 to 108. [↑](#footnote-ref-11)
12. SFG Consulting; CEG; NERA; and Capital Research Pty Ltd. [↑](#footnote-ref-12)
13. *ATCO* at [62] [↑](#footnote-ref-13)
14. *ATCO*  at [63] [↑](#footnote-ref-14)
15. *ATCO*  at [64] [↑](#footnote-ref-15)
16. *ATCO* at [65] [↑](#footnote-ref-16)
17. *ATCO* at [65] see also *DBGNP* paragraphs 82 to 87. [↑](#footnote-ref-17)
18. **Luci Ellis,** Head of Financial Stability Department, *Five Years of Financial Crisis***, Address to the CPA Australia Finance and Accounting Expo 2012,** Sydney - 24 October 2012. <http://www.rba.gov.au/speeches/2012/sp-so-241012.html> [↑](#footnote-ref-18)
19. RBA, Statement on Monetary Policy, August 2012, page 49 [↑](#footnote-ref-19)
20. Professor Alan Gregory, The AER Approach to Establishing the Cost of Equity – Analysis of the Method Used to Establish the Risk Free Rate and the Market Risk Premium, paragraphs 11 to 13. [↑](#footnote-ref-20)
21. AER, Draft Decision - Part 2, page 184. [↑](#footnote-ref-21)
22. CEG, Update to March 2012 Report on consistency of the risk free rate and MRP in the CAPM, November 2012 [↑](#footnote-ref-22)
23. US Congressional Budget Office, *An Update to the Budget and Economic Outlook: Fiscal Years 2012 to 2022, August 22, 2012* (http://www.cbo.gov/publication/43539) [↑](#footnote-ref-23)
24. IPART, Review of water prices for Sydney Desalination Plant Pty Limited, December 2011, page 91. [↑](#footnote-ref-24)
25. Under clause 6A.6.2(h) of the NER, the AER must use the MRP value set out in the Statement of the Revised WACC Parameters published by the AER in May 2009, for as long as that Statement remains in force. Under the current NER, the May 2009 Statement is due to remain in force until 2014. The May 2009 Statement mandates the adoption of an MRP value of 6.5 per cent in all electricity transmission revenue determinations. [↑](#footnote-ref-25)
26. ACCC, draft Statement of Regulatory Principles, May 1999, page 78. [↑](#footnote-ref-26)
27. ACCC, Final Decision, Moomba to Sydney Pipeline System Access Arrangement, October 2003, page 124. [↑](#footnote-ref-27)
28. ACCC, Tasmanian Transmission Network Revenue Cap 2004–2008/09, Decision, December 2003, page 82 [↑](#footnote-ref-28)
29. AER, *Final Decision: Electricity transmission and distribution network service providers - Review of the WACC parameters* May 2009, p. 236. [↑](#footnote-ref-29)
30. Ibid, p 237. [↑](#footnote-ref-30)
31. Ibid, p. 237. [↑](#footnote-ref-31)
32. Professor Alan Gregory, The AER Approach to Establishing the Cost of Equity – Analysis of the Method Used to Establish the Risk Free Rate and the Market Risk Premium, paragraph 31. [↑](#footnote-ref-32)
33. Associate Professor Lally, The Cost of Equity and the Market Risk Premium, 25 July 2012, page 32. [↑](#footnote-ref-33)
34. Australia is one of only 8 nations rated ‘AAA’ by S&P, Moody’s and Fitch [↑](#footnote-ref-34)
35. CEG, Response to the AER Vic gas draft decisions, Internal consistency of MRP and risk free rate, November 2012 [↑](#footnote-ref-35)
36. The AER market cost of equity estimates in this year reflect the AER’s final decisions as adjusted by the Australian Competition Tribunal [↑](#footnote-ref-36)
37. Financial Investor Group, Submission to AEMC Draft Determination on the economic regulation of network services, 4 October 2012. [↑](#footnote-ref-37)
38. Members include, APA Group, ATCO Gas, Cheung Kong Infrastructure, DUET Group, Envestra, Hastings Funds Management, Power Assets Holdings Ltd, Singapore Power, and Spark Infrastructure. [↑](#footnote-ref-38)
39. See <http://www.pinvest.com.au/>. [↑](#footnote-ref-39)
40. See <http://www.fidelity.com.au/>. [↑](#footnote-ref-40)
41. See <http://www.rareinfrastructure.com/>. [↑](#footnote-ref-41)
42. Professor Stephen Wright, Review of Risk Free Rate and Cost of Equity Estimates: A Comparison of UK Approaches with the AER, 25 October 2012, paragraphs iii, iv and v, page 3. [↑](#footnote-ref-42)
43. Dimson, Marsh and Staunton (2012) Credit Suisse Global Investment Returns Sourcebook (Table 13, p.57) [↑](#footnote-ref-43)
44. SFG Consulting, The required return on equity: Response to AER Victorian Draft Decisions, 7 November 2012, paragraph 232. [↑](#footnote-ref-44)
45. Ibid, paragraphs 233 and 234 [↑](#footnote-ref-45)
46. Ibid, paragraphs 86 and 87 [↑](#footnote-ref-46)
47. Ibid, paragraph 87 [↑](#footnote-ref-47)
48. Associate Professor Lally, The Risk Free Rate and Present Value Principle, 22 August 2012; and Associate Professor Lally, The Cost of Equity and the Market Risk Premium, 25 July 2012. [↑](#footnote-ref-48)
49. Stephen Wright, Response to Professor Lally’s Analysis, 2 November 2012, page 2 [↑](#footnote-ref-49)
50. Alan Gregory, Risk Free Rate and the Present Value Principle, paragraph 13 [↑](#footnote-ref-50)
51. Ibid, paragraph 25 [↑](#footnote-ref-51)
52. PricewaterhouseCoopers - Economic meaning of gas legal instruments, Expert Report, November 2012, page 11 [↑](#footnote-ref-52)
53. For example, the return on equity determined by the AER for Envestra’s South Australian and Queensland regulated gas networks over the 2011-12 to 2015-16 Access Arrangement period was 10.36%. The same shareholders are now thought to require only 7.78% for their investment in the Victorian and Albury networks over 2013-17 (as per the AER Draft Decision). The 258bp decrease in the allowed cost of equity is not reflective of investor requirements and has clear capital allocation implications. [↑](#footnote-ref-53)
54. NERA, Estimating the Cost of Equity under the CAPM, Expert report of Gregory Houston, 8 November 2012, page 30. [↑](#footnote-ref-54)
55. IPART took a similar approach of adjusting its WACC range by using long run averages, including for the risk free rate (calculated over a 10 year period) in subsequent decisions. In particular: IPART, *Changes in regulated electricity retail prices from 1 July 2012, Electricity – Final Report* , June 2012, IPART, *Review of prices for the Sydney Catchment Authority, from 1 July 2012 to 30 June 2016, Water – Final Report* June 2012, IPART, *Review of prices for Sydney Water Corporation’s water, sewerage, stormwater drainage and other services, from 1 July 2012 to 30 June 2016, Water – Final Report* June 2012. See further explanation in the SFG report, Attachment 9.21 [↑](#footnote-ref-55)
56. Professor Alan Gregory, The AER Approach to Establishing the Cost of Equity – Analysis of the Method Used to Establish the Risk Free Rate and the Market Risk Premium, paragraph 54. [↑](#footnote-ref-56)
57. AER, Draft Decision, Part 3, page 18. [↑](#footnote-ref-57)
58. CEG, Response to the AER Vic gas draft decisions, Internal consistency of MRP and risk free rate, November 2012, para 220 [↑](#footnote-ref-58)