**Attachment 9-9: Response to AER Draft Decision on Market Risk Premium**

**9.1 Introduction**

The Market Risk Premium (‘MRP’) is the difference between the expected return on a market portfolio and the risk-free rate, in the context of the CAPM. Envestra’s initial submission was that an MRP of between 6.5% and 8% is consistent with the available evidence and current market conditions. In the Draft Decision the AER determined that an MRP of 6% best met the requirements under the NGR, based on empirical analysis, survey results and a view that investors forward looking expectations about market risk had substantially diminished since 29 October 2010, which was when the AER last allowed a 6.5% MRP[[1]](#footnote-1). The AER appears to have formed the view that the GFC did not have any effect on investors’ perceptions of market risk and required levels of compensation for nearing that risk.

Envestra rejects the AER’s decision that an MRP of 6% is appropriate for the 1 July 2011 to 30 June 2016 regulatory period based on expert opinion and analysis. Accompanying this attachment are three expert reports (i) SFG’s *Issues affecting the estimation of MRP* (ii) *WACC Estimation* by CEG and (iii) *Comments on Market Risk Premium in Draft Decision by AER for Envestra February 2011* by Value Adviser Associates. Envestra has used the advice contained in these reports to evaluate and propose an appropriate value for MRP for use in the Final Decision. These reports form part of Envestra’s submission, and the submission should be read in the context of these reports.

* 1. **Summary of the AER Draft Decision**

In the Draft Decision the AER considered a range of information that included survey based estimates, comments from the OECD, the IMF and the RBA, independent valuation reports, past regulatory practice and its own judgement to inform its view that:

* The empirical estimates of MRP are accompanied by very wide confidence intervals and are therefore inherently imprecise;
* The latest long term historical estimates of the MRP fall within a range of 6.1–6.6 per cent (assuming an imputation credit utilisation rate of 0.65);
* MRP estimates based on arithmetic averages should be interpreted with the understanding that they may overstate the expected forward looking 10 year MRP;
* Survey based estimates of the MRP indicate that the forward looking MRP expected to prevail in the future has not changed as a result of the GFC;
* Survey based estimates of the MRP both before and following the GFC suggests a value of 6% is consistent with the views of market practitioners, academics and independent valuation reports;
* A range of pre-GFC empirical analysis dating back to 1998 supports a 6% value for MRP in the current Envestra Access Arrangement Period;
* The Officer and Bishop method of using implied volatility and a ‘glide path’ approach is not a reliable method for estimating the forward looking 10 year MRP;
* The AER considers that Dividend Growth Model (‘DGM’) based estimates of the MRP can provide some information on the expected MRP. However due to the variability in the estimates over time, and due to the sensitivity of results to input assumptions, they should be limited to providing a general point of reference for assessing the reasonableness of estimates derived from other sources;
* Statements from the IMF, the OECD and the RBA about the macroeconomic performance and capital investment outlook for the Australian economy to infer that equity market conditions have stabilised and that investors are no longer factoring the substantial volatility experienced at the height of the GFC into their MRP expectations.
* An MRP within the range of 6.5 to 8 per cent proposed by Envestra is not the best estimate possible in the circumstances (rule 74(2) of the NGR) and is not consistent with the requirement that the rate of return is to be commensurate with prevailing conditions in the market for funds (rule 87(1) of the NGR).

Each of these issues is examined in the following section.

* + 1. **Envestra Position & Proposal**

* + 1. **Statistical Imprecision of MRP Estimates**

Handley[[2]](#footnote-2) has reported MRP estimates (and confidence interval and standard error information) adjusted for various estimates of the value of imputation credits () using data over the period 1883 to 2010. MRP estimates have been reported using both arithmetic and geometric averages. As discussed in the SFG report, MRP estimates based on geometric averages are not consistent with standard valuation practice and the AERs application of the CAPM. Therefore, for the purposes of this Access Arrangement it is not appropriate to afford any weight to the MRP estimates derived from geometric averages.

The table below reproduces the Handley arithmetic mean MRP estimates over the 1958-2010 period and the associated 95% confidence levels for various assumed values of imputation credits[[3]](#footnote-3). The 1958-2010 period was considered by Handley to contain the most reliable data. We do note though that this is a subjective assessment of the data quality and other experts may not agree. Furthermore, SFG have advised that shifting the sampling periods used by Handley backwards five years would substantially increase the estimate of MRP[[4]](#footnote-4). Consequently, Handley’s reported MRP values should be considered as conservative estimates of MRP.

|  |  |  |  |
| --- | --- | --- | --- |
| **MRP** | **Standard** | **95% Confidence** |  |
| **(1958-2010)** | **Error** | **MRP - Low** | **MRP – High** |
| 6.3% (=0.2) | 3.1% | 0.0% | 12.5% |
| 6.4% (=0.3) | 3.1% | 0.1% | 12.6% |
| 6.5% (=0.5) | 3.1% | 0.3% | 12.8% |

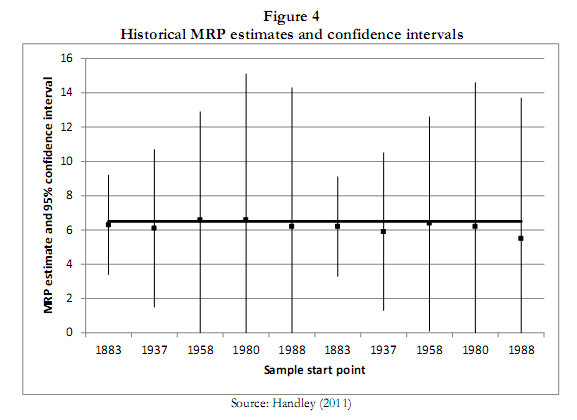
The standard errors highlight the imprecision of the MRP estimates, as there is a 95% probability that the true value of the MRP lies between 0% and 12.5%, using Envestra’s 0.2 estimate of gamma.

Moreover, as the value of gamma increases the mean MRP moves closer to 6.5%, albeit it could be between 0.3% and 12.8% at the 95% probability level for a gamma of 0.5. This is consistent with the SFG advice that:

* Any potential decrease in the estimate of MRP flowing from a decrease in the estimate of theta (pay out ratio x theta = gamma) is tiny compared with the increase in the estimate of MRP that would flow from beginning the historical sample periods five years earlier. Changes in the estimate of theta should have no effect on the AER‘s estimate of MRP, regardless of whether that estimate is 6% or 6.5%, and regardless of whether the economy is suffering GFC effects or not;
* The figure below plots long-term average estimates of MRP over the economic cycle. In this context, 6.5% is a reasonable estimate in that:

1. It certainly cannot be statistically rejected;
2. The point estimates using data from 1958 (which is when the higher-quality data begins) are 6.4% and 6.6% for theta set to 0.65 and 0.3 respectively; and

iii. Those point estimates would be even higher if data from the few years prior to 1958 were also included.



* The turmoil in financial markets surrounding the GFC continues to have some effect on risk premiums in financial markets:

1. The GFC had a pronounced effect on market risk premiums during the height of the crisis;
2. Indicators suggest that this effect has reduced since the peak of the GFC; and
3. Some indicators remain materially above their pre-GFC levels.

* The Handley point estimates of MRP using historical data from 1958 to 2010 (the period for which the most reliable data is available) are 6.6% and 6.4% using theta estimates of 0.65 and 0.3 respectively. These are long-run estimates of MRP over the economic cycle and indicate that 6.5% would be a reasonable estimate of MRP on a long-run average basis – even if one were to conclude that risk premiums in financial markets are currently in line with the long-run average;
* An MRP estimate of 6.5% is a reasonable lower bound for point estimates in the prevailing conditions in the market.

The Handley analysis provides no basis to reject the 2009 WACC Review MRP of 6.5%. Further, the Handley analysis and the SFG advice are consistent with the lower end of Envestra’s proposed MRP of between 6.5% and 8%.

* + 1. **Survey Based Estimates of the MRP**

The AERs survey evidence included pre-GFC MRP estimates from Truong, Partington and Peat (2008), Capital Research (2006) and KPMG (2005). Both SFG and VAA find that market volatility has not reverted to pre-GFC levels and that this higher volatility will be reflected in the compensation sought for market risk by equity investors[[5]](#footnote-5). In addition, the McKinsey paper[[6]](#footnote-6) shows that the global demand and supply of capital to finance infrastructure is shifting and prior expectations about returns and risk premia need to be re-set at higher levels. For these reasons the pre-GFC empirical analysis of MRP is of little relevance in the AERs current task of setting a forward looking MRP for the 1 July 2011 to 30 June 2016 Envestra Access Arrangement period.

The Fernandez and Del Campo (2009 and 2010) survey results purport to provide a more contemporary view about the Australian MRP. However, when the 2010 survey is studied in more detail we find that the conclusions drawn about the Australian MRP were based on only 7 anonymous e-mail responses to the Fernandez and Del Campo information request. This is not a representative sample and therefore the Fernandez and Del Campo survey does not provide any robust or persuasive evidence as to the MRP for use in accordance with NGR 87.

The independent valuation reports referenced by the AER in the Draft Decision canvass a range for the MRP of between 5% to 8%. Indeed, the June 2010 Deloitte report for Arrow Energy comments[[7]](#footnote-7):

*The recent severe decline in worldwide equity values and the difficulty companies are experiencing in raising equity capital may be indicative of investor demanding a greater risk premium. In addition, current prospective measures appear to indicate an increase in the [E]MRP[[8]](#footnote-8)*

Notwithstanding the comments about higher risk all of the independent valuation reports have used an MRP of 6% and not ascribed any value to imputation credits (theta and gamma are zero). This is different to the AERs approach where the value of imputation credits has been incorporated into its 6% MRP estimate. For the two MRP estimates to be comparable, one would have to ―gross-up the Grant Samuel/Deloitte MRP estimate for the value the attribute to imputation credits in the same way as the AER grosses up its estimate to include the assumed value of theta. Advice from SFG is that when the 6% corporate valuation professional estimate of MRP is grossed-up to include the AER‘s valuation of imputation credits then the comparable MRP is 7%[[9]](#footnote-9)This is well within the Envestra’s proposal that the appropriate MRP is between 6.5% and 8%.

* + 1. **The Officer and Bishop method of using implied volatility**

The AER questioned the reliability of the Officer and Bishop implied volatility and their ‘glide path’ approach in estimating a forward looking 10 year MRP. Intuitively the Officer and Bishop approach makes sense, as one would expect that volatility in the equity market to be positively correlated with the required return on equity and therefore MRP. This view is supported by SFG:

*In our view, the available financial market data supports the conclusion that the effects of the GFC have reduced, but they have not vanished completely. The available financial market data does not support the conclusion that investors view the amount of risk involved in hold a broad portfolio of equities and the price of risk (the additional return that is required in relation to each unit of risk) as now being the same as before the GFC. In our view, the turmoil in financial markets surrounding the GFC continues to have some effect on risk premiums in financial markets[[10]](#footnote-10).*

Officer and Bishop respond to the AERs criticisms of their approach and address some misrepresentations in the Draft Decision in the Value Adviser Associates report titled *Comments on Market Risk Premium in Draft Decision by AER for Envestra February 2011.* The SFG and Value Adviser Associates advice indicates that market risk conditions remain above average and therefore an above average MRP is necessary to compensate investors for this risk. When combined with the empirical MRP estimates this is consistent with Envestra’s proposal that an MRP of between 6.5% and 8% is appropriate for use in the CAPM to determine the rate of return under the National Gas Rules.

* + 1. **Dividend Growth Model (‘DGM’)**

The AER considers that DGM based estimates of the MRP can provide some information on the expected MRP. But had concerns about the sensitivity to assumptions and variability in the estimates limiting its usefulness for regulatory purposes. The AER states that the 8% MRP derived using the DGM by CEG and the 9.6% from Bloomberg (as at January 2011)[[11]](#footnote-11) provide some conflicting evidence with respect to the MRP. That may be the case, but both CEG and Bloomberg are significantly higher than the AERs preferred value of 6% and indicate that market risk remains elevated relative to historical averages. Further analysis by CEG using data from APA Group, DUET Group, Envestra, Hastings Diversified Utilities Fund, SPAusNet and Spark Infrastructure, supports its previous findings that the MRP is above 6.5% and a value closer to 8% is not unreasonable in the current market. Details of the analysis are contained in section 5 of the CEG report titled *WACC Estimation*, dated March 2011*.*

* + 1. **Statements from the IMF, the OECD and the RBA to make inferences about MRP**

The AER has taken the unusual step of using statements from the IMF, the OECD and the RBA about the macroeconomic performance and capital investment outlook for the Australia economy as evidence to support the proposition that the MRP has reverted to pre-GFC levels. This is approach is (a) extremely subjective and fails to acknowledge the mining sector boom, its disproportional contribution to the investment outlook, the high returns to equity in that sector (+20%) are driving the unprecedented demand for capital expenditure investment (b) not supported by the observed volatility indicators for the equity market and (c) is not supported by economic theory and/or the academic literature. Indeed Value Adviser Associates comment that:

*We note that the AER quote IMF, OECD and RBA to support the claim that the impact of the GFC on the MRP has passed. The quotes provided in this regard (p90) from the IMF OECD and RBA relate to investment growth rather than market risk which drives the market risk premium. It appears that the link to market volatility expectations was made by the AER (p91) rather than by the quotes cited*

Moreover, the fact that the economy is growing provides no information on the risk in equity markets and on the hurdle rates of return required by companies to invest. Consequently, the AER’s reliance on statements from the IMF, the OECD and the RBA provides no basis to reject the 2009 WACC Review MRP of 6.5% and does not provide any evidence for Envestra to change its proposal that an MRP of between 6.5% and 8% is appropriate for use in the CAPM to determine the rate of return under the National Gas Rules.

* + 1. **Lack of Consistency in AER Decision making**

Prior to the Envestra Draft Decision released on 17 February 2011, the most recent AER regulatory decision was made late in October 2010[[12]](#footnote-12) and this provided an MRP of 6.5% for the regulatory period 1 January 2011 to 31 December 2015. There is substantial overlap (90%) between the 1 January 2011 to 31 December 2015 and the Envestra regulatory period of 1 July 2011 to 30 June 2016. By reducing the MRP from 6.5% for the period 1 January 2011 to 31 December 2015 to 6% for the period of 1 July 2011 to 30 June 2016 it implies the MRP will need to be 0.5% for the 6 months between 1 January 2016 and 30 June 2016, for it to average 6% over the Envestra Access Arrangement Period, which is unrealistic and unreasonable (see table below). There is no reason why the MRP should be so different for those two decisions given the same capital market conditions will apply for 90% of the time. For the reasons noted above, the AER’s justification for such a departure is flawed and not consistent with the evidence.

Equally importantly, is the fact that Envestra is treated differently in this regard versus the other major gas distribution businesses in Australia. This is manifestly unfair given all must compete for the same scarce pool of capital and all have substantially overlapping regulatory review periods.

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| **Time Period** | **6 months** | **12 months** | **12 months** | **12 months** | **12 months** | **6 months** | **6 months** |
| Dates | Jan 2011-June 2011 | July 2011-Jun 2012 | July 2012-Jun 2013 | July 2013-Jun 2014 | July 2014-Jun 2015 | July 2015-Dec 2015 | Jan 2016 - Jun 2016 |
| **Annualised MRP** | 6.5% | 6.5% | 6.5% | 6.5% | 6.5% | 6.5% | **0.5%** |

* + 1. **Conclusion**

Risk premia have reduced since the height of the GFC, however volatility levels remain above pre-GFC levels indicating it is appropriate for the MRP to be set above the pre-GFC average. The 2009 and 2010 Fernandez and Del Campo MRP survey results do not provide any reliable evidence as to appropriate MRP in Australia and should not be afforded any weight in the AERs decision making processes. Statements from the IMF, the OECD and the RBA provide no information on either the risk in equity markets or investors rate of return requirements. Consequently, the IMF, the OECD and the RBA statements provide no basis to downwardly revise the 2009 WACC Review MRP of 6.5%.

MRP estimates from the DGM indicate that the market is currently ascribing a value for the MRP significantly higher than the 6% determined by the AER, with from Bloomberg indicating an MRP of 9.6% as at January 2011. The Handley empirical analysis (taking into account the standard errors) supports an MRP within the bounds originally proposed in Envestra’s Access Arrangement submission. As a result of the updated information and reviewing the AERs Draft Determination Envestra continues to believe that an MRP of between 6.5% and 8% is consistent with the available evidence, consistent with current market conditions and is in accordance with the NGR.

1. The AER final decisions for CitiPower, Powercor, JEN, SP AusNet and United Energy for the period from 1 January 2011 to 31 December 2015 [↑](#footnote-ref-1)
2. John C. Handley, *An Estimate of the Historical Equity Risk Premium for the Period 1883 to 2010*, 25 January 2011. [↑](#footnote-ref-2)
3. Envestra requested the data used by Handley to estimate the MRPs contained in his January 2011 report. The data was not provided and Envestra was unable to verify the accuracy of the information contained in the Handley report. [↑](#footnote-ref-3)
4. SFG report section 6 [↑](#footnote-ref-4)
5. Debt investors are continuing to require higher risk premia for debt investments and it necessarily follows that equity investors would require a higher rate of return as well. [↑](#footnote-ref-5)
6. McKinsey Global Institute publication *Farewell to cheap capital? The implications of long-term shifts in global investment and saving*, December 2010 [↑](#footnote-ref-6)
7. Page 82 [↑](#footnote-ref-7)
8. Refer to Envestra confidential submission [↑](#footnote-ref-8)
9. SFG report section 49 [↑](#footnote-ref-9)
10. SFG report section 34 [↑](#footnote-ref-10)
11. SA Draft Decision page 88 [↑](#footnote-ref-11)
12. The AER final decisions for CitiPower, Powercor, JEN, SP AusNet and United Energy for the period from 1 January 2011 to 31 December 2015 were released on 29 October 2010 [↑](#footnote-ref-12)