

## Market risk premium

- 1 The market risk premium (“**MRP**”) is the amount that an investor expects to earn from an investment in the market above the return that can be earned on a risk free investment. The MRP in the CAPM is  $[E(R_m) - R_f]$ . This is an expectation of investors and therefore is not directly observable. The difficulties in estimating the forward-looking MRP are well known. The choice of an appropriate rate is inevitably *ad hoc* and is generally chosen from a range of estimates.
- 2 The QCA has restated its commitment to the 6% rate in its Discussion Paper, The Risk-free Rate and the Market Risk Premium, dated November 2012.
- 3 It is my very strong view that current economic conditions in Australia warrant a higher MRP. This view is supported by copious theoretical and empirical research.
- 4 The Global Financial Crisis has had significant impacts on many aspects of economies, markets, uncertainty and the risk aversion of investors. The possible bankruptcy of developed countries such as Greece, Spain and others is still a global concern. Conditions in securities markets remain unusually uncertain and volatile. A standard result in behavioural economics and related literature is that in times of high uncertainty, particular with downside risk, investor risk aversion increases, which implies a higher MRP.
- 5 All of these factors indicate logically that investors will demand a higher expected return before they will invest in equities. A higher than normal MRP is appropriate.
- 6 It is a well document empirical fact that the two components of the expected return on equity (i.e.,  $R_f$  and the MRP) are very volatile. However, the return on equity is relatively stable. This results from a strong negative correlation between the risk free rate and the MRP. When the risk free rate is unusually low (high), the MRP is unusually high (low).
- 7 The standard regulatory approach to estimating the required return on equity is to use a current measure of the risk free rate. The risk free rate is currently at or very near historic lows.<sup>1</sup> Regulators then use a long run historical average to estimate the MRP. Clearly this ignores the negative relationship between the two factors and results in an understatement of the required return on equity.
- 8 Regulators, including the QCA, are adjusting the risk free rate for current interest rate conditions, but are not adjusting the MRP for those same conditions. The result in the current environment is to understate return to equity.

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<sup>1</sup> The Reserve Bank of Australia’s website has data on the Government 10 year bonds back to July 1969. The lowest bond yields over nearly 44 years were in June and July 2012. The only months when the yield was below 4% were from December 2011 to February 2013 (and continuing on in March 2013). All yields but one month in that period were below 4%.

- 9 IPART provides an excellent discussion of issues surrounding the estimation of the MRP in a recent Discussion Paper.<sup>2</sup>
- 10 If we accept that the MRP is higher than its historic average, which is above 6%, how can we estimate the current MRP?
- 11 There are some forward-looking techniques to measure the MRP but they all have very high estimation error. An alternative is to consider the negative relationship between interest rates and the MRP. There is empirical literature to assist with this approach.
- 12 Maddox, Pippert and Sullivan's<sup>3</sup> results indicate a measure of the magnitude of the relationship. Their research shows that there is approximately a 37 basis points inverse change in risk premium for each 100 basis-point change in US Treasury bond yields. This result is consistent with Harris and Marston<sup>4</sup>, who found a 36 basis point inverse relation between long-term government bond rates and risk premiums for a broader sample over the 1982 to 1991 period. In a related study, Marston and Harris<sup>5</sup> suggested that a one percentage point increase in long-term interest rates would cause the MRP to decrease by approximately one half of a percentage point.
- 13 The average return on long-term Australian government bonds (1883-2010) is 5.7%.<sup>6</sup> The current yield on the long-term bonds is 3.41%.<sup>7</sup> The long-term risk free rate is 2.29% below the long run average. Using this measure with the information above on the negative relationship gives an estimate that the current MRP should be increased by at least 1% over the historic average long run MRP. If we accept 6% as the average rate, the negative correlation between MRP and interest rates indicates the current estimate of the MRP should be at least 7%.
- 14 The high investor risk aversion indicates a further increase in the MRP is appropriate.
- 15 In my opinion, an MRP estimate of 6% based upon recent decisions of the Regulator leads to a significant under-estimate of the current MRP. I believe a reasonable estimate of the current MRP is in the range 7.5% to 8%.

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<sup>2</sup> IPART, op. cit.

<sup>3</sup> Maddox, F., D. Pippert and R. Sullivan (1995), "An Empirical Study of ex ante Risk Premiums for the Electric Utility Industry," *Financial Management*, 89-95.

<sup>4</sup> Marston, F., and R. Harris (1993), "Risk and Return: A Revisit using Expected Returns," *Financial Review* (v28), 117-137.

<sup>5</sup> Harris, R., and F. Marston (1992), "Estimating Shareholder Risk Premia using Analysts' Growth Forecasts," *Financial Management*, 63-70.

<sup>6</sup> T. Brailsford, J. Handley and K. Maheswaran (2008), "Re-examination of the Historical Equity Risk Premium in Australia," *Accounting and Finance*, 48, 73-97, and T. Brailsford, J. Handley and K. Maheswaran (2008), "The Historical Equity Risk Premium in Australia," *Accounting and Finance*, 52, 237-247.

<sup>7</sup> Bloomberg website, 10-year maturity, as at 29 March 2013.