Regulatory estimates of the market risk premium

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The current QCA approach

Four approaches

- Four approaches are considered.
- All approaches given equal weight.
- Mean rounded to nearest full percentage point

Ibbotson	Average of excess stock return (market return less risk-free rate) since 1883.
Siegel	Ibbotson estimate less 1.9% (?) to account for the extent to which inflation is deemed to have been higher than expected.
Cornell	A version of the dividend discount class of models. The market return is estimated as the discount rate that would equate the present value of expected dividends to current stock prices.
Surveys	The mean response for Australian MRP from the unpublished surveys conducted by Spanish academic Pablo Fernandez.

Implications of the current QCA approach

MRP=6% in all market conditions

- During 2001 recession, MRP=6%
- During mid-2000s bull market, MRP=6%
- During peak of GFC and European debt crises, MRP=6%

Fixed MRP implies that the cost of equity varies 1:1 with risk-free rate

- Under the CAPM:

$$r_e = r_f + \beta \times MRP$$

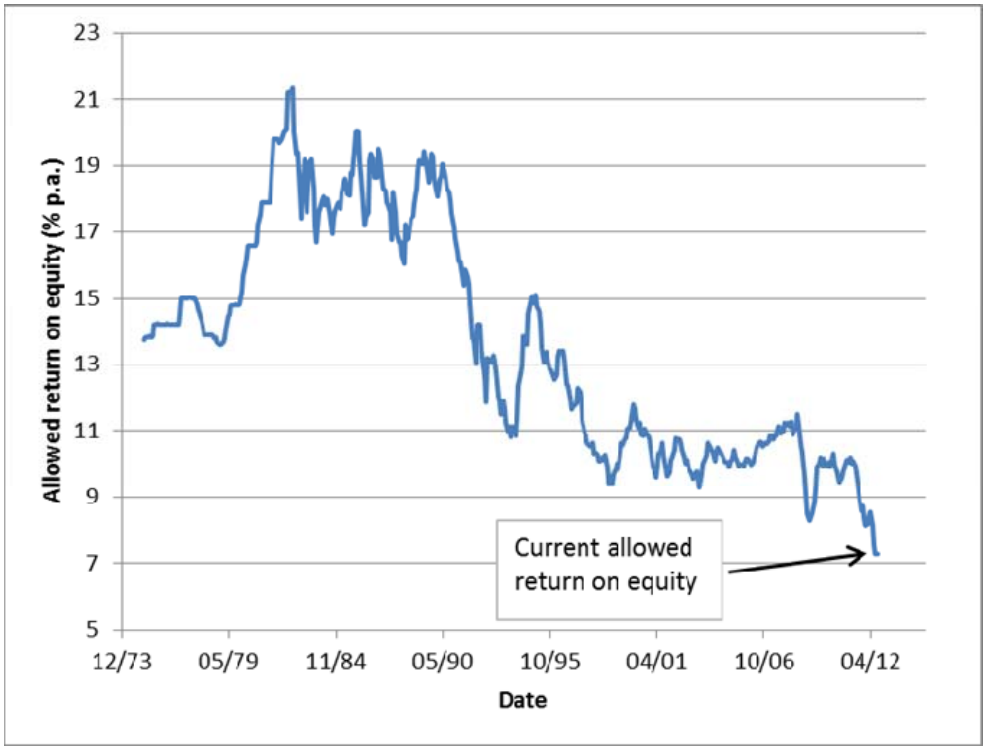
- If beta and MRP are constant, the allowed return on equity will be a fixed margin above the government bond yield.

Government bond yields are at historical lows

- Government bond yields have recently been lower than at any time since World War II.
- This implies that the allowed return on equity is lower than at any time since WWII.

Implications of the QCA approach

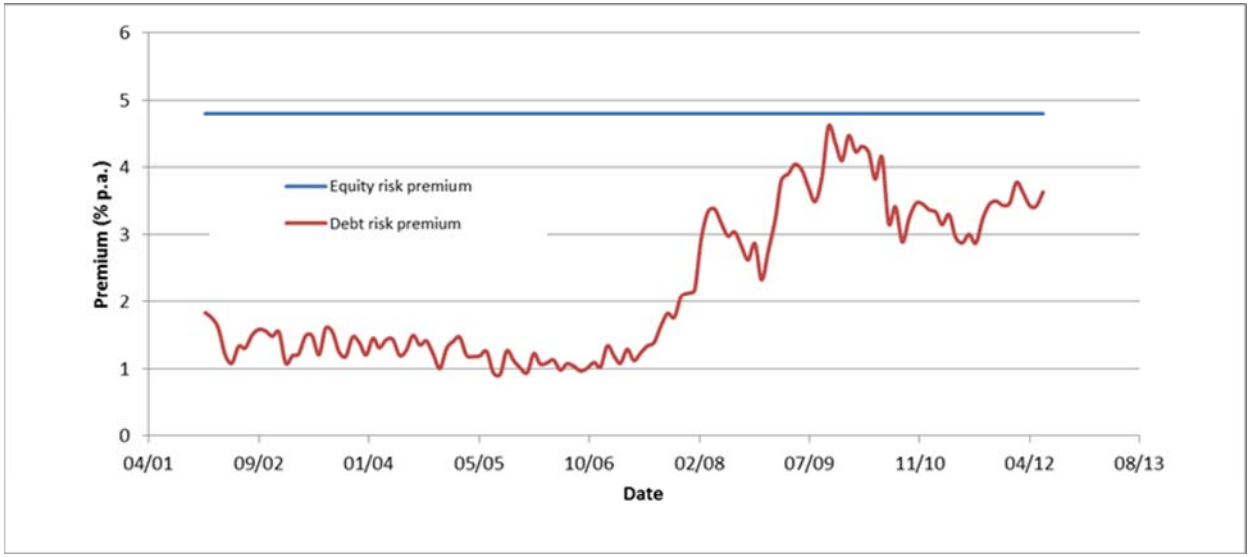
Is the QCA happy with an approach that suggests that equity capital was cheaper than ever before during the GFC and European debt crises?



Source: Reserve Bank of Australia government bond yields.
Estimates of the return on equity are computed as the return that the QCA would have adopted if it had applied its approach and current parameter estimates to the government bond market data at the time.

Implications of the QCA approach

The QCA varies the risk premium that it allows on debt securities, but it holds constant the risk premium that it allows on equity securities in the same firm.

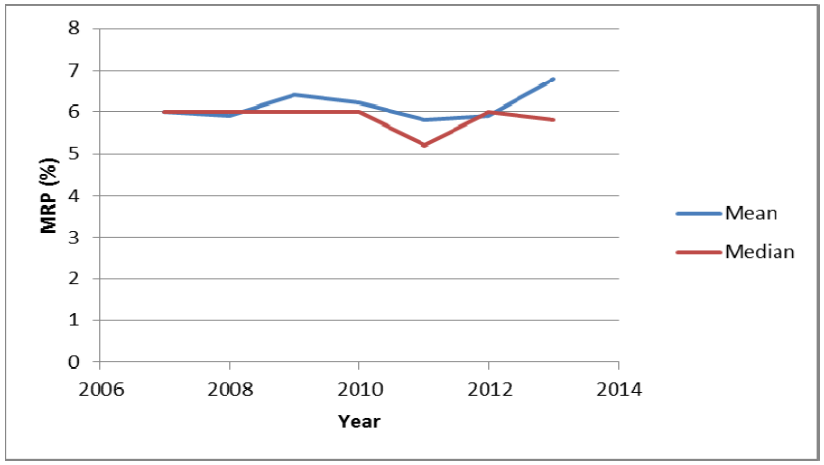


Source: Reserve Bank of Australia, Bloomberg, QCA regulatory determinations.
Estimates are computed as the risk premiums that the QCA would have adopted if it had applied its approach to the relevant market data at the time.

Why does the QCA approach always produce 6%?

3 out of 4 approaches are effectively constant

- Ibbotson and Siegel approaches are based on 100-year averages.
- Fernandez survey results are also very stable.



Source: Fernandez surveys.

Only the Cornell (DDM) approach varies with market conditions

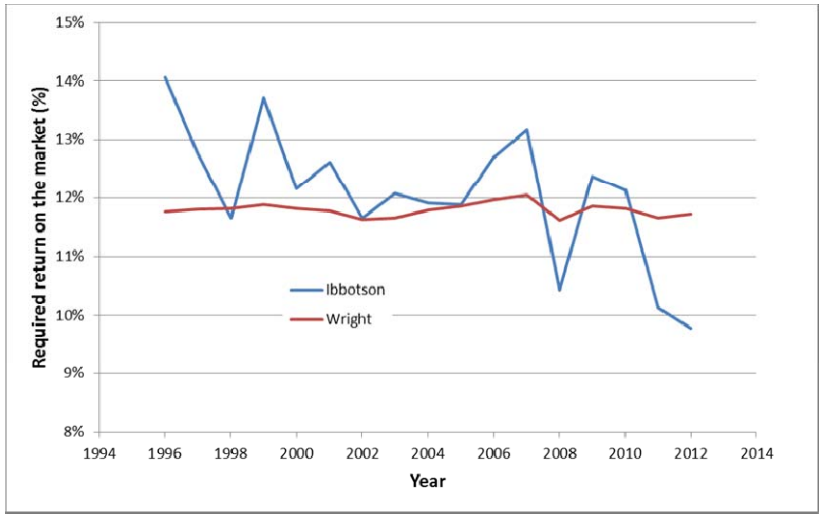
- Long-term historical averages produce estimates of MRP in long-term average market conditions.
- Cornell approach produces an estimate commensurate with contemporaneous conditions in the market for equity funds.
- But the 25% weighting and the rounding to the nearest full percent means this approach cannot move the estimate from 6%.

Lally (2013) recommendations

Consider other approaches

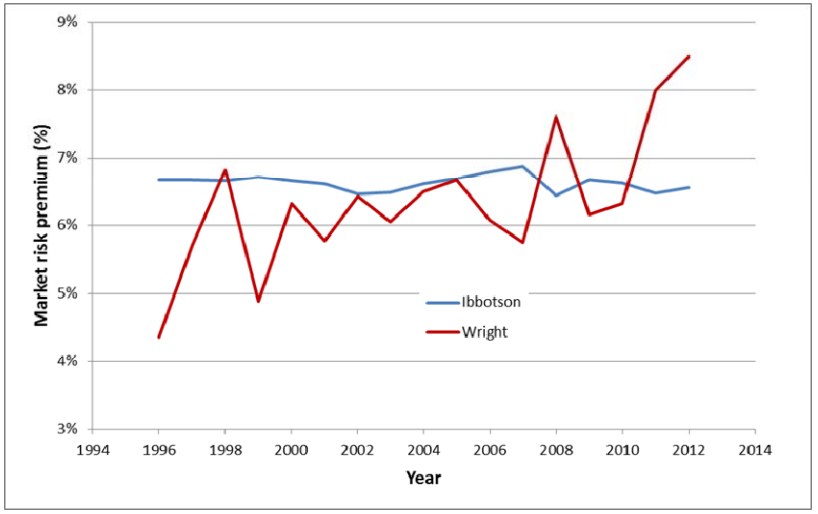
Independent expert valuation reports	Augment Fernandez surveys with MRP estimates from independent expert reports. The mean of the two estimates is used as the "survey" estimate in the QCA approach.
Wright approach	Estimate the expected return on the market as the mean real return over the historical period increased to reflect forward-looking inflation.

Required return on market



Source: Brailsford et al historical data. SFG calculations

MRP



Source: Brailsford et al historical data. SFG calculations

Recommendations to QCA

Lally (2013) recommens that MRP remains at 6%

- Lally (2013) only considers the **median** of the five approaches.
- Even if the Cornell and Wright approaches are dramatically higher than the three effectively constant approaches, they will not affect the median.
- The median is then rounded to the nearest full percentage point, which remains at 6%.

McKenzie and Partington recommend 6%

- Estimate based on Ibbotson and survey data only.
- Siegel method not used.
- Argue against Cornell or any sort of dividend discount model.

QRC submits 5-6%

- 6% based on recommendation from McKenzie and Partington.
- 5% based on “a balanced view of the empirical evidence.”

What should the QCA do?

Estimates should use the latest and cleanest data sets

Ibbotson	Correct the Ibbotson estimate. An error in the Brailsford et al data has been identified and corrected. The corrected estimate should be used.
Siegel	The Siegel estimate should not be used. No other Australian regulator has regard to it. A negligible number of survey respondents have regard to it. If it is to be used, the latest data should be used.
Cornell	Recognise that dividend discount models provide a contemporaneous estimate of MRP and weight accordingly. Consider using a better version of the DDM, commensurate with recent research.
Surveys/Independent expert reports	The Fernandez surveys should not be used. If they are to be used, the most recent 2013 values should be adopted. Similarly, the most recent estimates from independent expert valuation reports should be used.
Wright	Should be based on corrected Brailsford et al data.

What value should be used?

Aurizon submission

- Aurizon has proposed an MRP value of 7% for the current market conditions, to be paired with the current (historically low) estimate of the risk-free rate.

Lally/QCA approach

- The approach set out by Lally (2013) currently produces an estimate of 6%.
- That approach would produce an estimate of 7% if any **one** of the following changes were made:
  - Use the mean, rather than median, of the five approaches.
  - Correct the Ibbotson estimate by correcting the Brailsford et al data error.
  - Eliminate the Siegel approach.
  - Use the 2013 Fernandez survey results instead of the 2012 results.
  - Use an updated estimate of MRP from independent expert reports.
  - Use a Wright estimate based on the corrected Brailsford et al data.
- Any **one** of these changes would be sufficient to produce an estimate of 7%.
- Making **all** of these changes produces a rounded estimate of 8%.
- Making all changes, but including Siegel produces a mean and median above 7%, both of which round down to 7%.

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