QCA WACC Forum

Presentation of the Queensland
Resources Council (QRC)

13 December 2013 (morning session)

Topic 1.
Risk-free rate (Rf) and the market risk premium (MRP)

Risk-free rate methodology

- The QRC agrees with the current approach of the QCA to measuring the risk-free rate, which involves:
  - using Australian Government Commonwealth bonds as proxies for the risk-free asset;
  - estimating the relevant rate over a 20 trading day period close to the commencement of the regulatory cycle;
  - averaging period to be identified in advance of it occurring; and
  - setting the term of the risk-free rate in the cost of equity equal to the term of the regulatory cycle

- This approach is orthodox, consistent with earlier practice and with the advice of the QCA's expert advisor, Associate Professor Lally

- In the interests of consistency, the QCA should maintain its previous approach on this issue unless there is compelling evidence in support of a change, which has not been demonstrated

Market risk premium

- The QRC agrees with the general approach of the QCA to measuring the market risk premium (MRP), which takes into account a range of evidence. The current MRP is unobservable, and as such must be estimated. There is no single correct method for estimating the MRP and therefore it is appropriate to have regard to a range of methods

- This approach is consistent with the advice of Associate Professor Lally, who favours *"an approach that minimises the [mean squared error] and this leads to averaging over the results from a wide range of methodologies"* (Lally, October 2013, p 65)

- This approach is also consistent with the advice of the QRC's experts Professors McKenzie and Partington, who favour *"triangulation"* across multiple sources

Market risk premium (2)

- The QRC agrees with Associate Professor Lally that an increase above 6% is not warranted in current market conditions

- Adopting a value of 6% would be consistent with the most recent regulatory precedent – in a decision made less than 3 months ago, the Australian Competition Tribunal found that it was reasonably open to the AER to adopt an MRP of 6% (*Application by APA GasNet (No 2)* [2013] ACompT 8, [308])

- The expert advice of Professors McKenzie and Partington is that "*while 6% is a justifiable estimate of the MRP, our opinion is that, if anything, 6% is more likely to be too high rather than too low*".
  - estimates of the historical MRP may be upwardly biased, due to 'survivorship bias' – that is, it only reflects returns for companies that are successful enough to have survived, and ignores those that have not
  - estimates of the historical MRP are lower for more recent periods

- The QRC agrees that based on the available evidence, 6% may be too high and therefore **favours a range for the MRP of 5-6%.**

Market risk premium (3)

- The QCA has identified four relevant methods, but notes that one of them (the Cornell method) is "*unequivocally biased upward*" and is an "*upper bound*" only. Accordingly, any averaging of estimates or median value should not take into account the Cornell method (the average and median should only take into account point estimates of the MRP, not upper bound values) – when the Cornell estimates are excluded, **the mean and median MRP are both between 5% and 6%**

- The QCA also considers that historical average estimates are likely to be upwardly biased due to overstated dividend yields in the pre-1958 data and due to other factors such as survivorship bias.

Method	QCA Estimate (as at Oct 2012)
Ibbotson Historical Averaging	6.21%
Siegel Historical Averaging	4.32%
Cornell method	8.70%
Survey evidence	5.80%
Mean (excluding Cornell method)	*5.44%*
Median (excluding Cornell method)	*5.80%*

Source: QCA, *Discussion Paper: The Risk-free Rate and the Market Risk Premium*, November 2012, Table 3.1

The relationship between Rf and MRP

- It has been argued that when the risk-free rate is low (by historic standards) the MRP should be higher (i.e. above its historic average)

- Expert advisors to both the QCA and the QRC do not support an adjustment to the MRP to account for a relatively low risk-free rate:
  - Professors McKenzie and Partington observe that the current risk-free rate does not appear "abnormally low" when a longer view is taken
  - They also note that "*the relation between the risk free rate and the MRP, if any, is not sufficiently well established to form the basis for a regulatory adjustment to the MRP*".
  - Further, Professors McKenzie and Partington state that "*if the inverse relation is really there, it has minimal explanatory power*". They note that the work of Bishop and Officer only points to a correlation of -0.15, which means that changes in the risk free rate only explain 2.25% of variation in the MRP
  - Associate Professor Lally also does not find any persuasive evidence that there is a strong inverse relationship between the risk-free rate and the MRP

Topic 2.
Cost of debt methodology

Debt risk premium methodology

- PwC recommends a "simple portfolio" approach to estimating the DRP, based on econometric analysis of bond samples. PwC also says that "*where possible, reference should be made to the Bloomberg FVC [fair value curve]*"

- The QRC accepts that there may be advantages and disadvantages to the simple portfolio approach, compared to reliance on Bloomberg:

  Advantages of simple portfolio approach
  - the simple portfolio approach is transparent
  - the simple portfolio approach is potentially more adaptable

  Advantages of Bloomberg
  - Bloomberg is an independent data provider
  - Avoids the need for methodological judgements around formation of the bond sample, functional form etc.
  - Use of Bloomberg is orthodox, longstanding and appears to be accepted by all other DRP experts in the UT4 process

Debt risk premium (2)

- QRC would advocate the following approach:
  - continue to use the Bloomberg fair value curve as the primary method, where Bloomberg provides fair value estimates relevant to the benchmark credit rating and term
  - where extrapolation is necessary, use the paired bonds approach, as advocated by Incenta / PwC
  - use the simple portfolio approach as a cross-check
  - only use the portfolio approach as the primary method where either Bloomberg does not provide fair value estimates relevant to the benchmark, or Bloomberg's estimates are demonstrably inaccurate
  - if the simple portfolio approach is to be adopted, there must be clear and transparent rules to guide the selection of data points

- QRC would not favour departure from Bloomberg as the primary method, without good reason – the QRC would generally favour use of an independent data provider over a potentially subjective estimation methodology

Debt raising costs

- The QRC supports a debt raising cost estimation methodology which seeks to determine the costs that would be incurred by an efficient business in raising debt finance

- This approach is preferable to simply applying a fixed margin

- We generally support the approach taken by PwC to estimation of debt raising costs, which results in a debt raising cost allowance of between 9 and 10 basis points

- Adopting the PwC methodology, and a debt raising cost allowance of between 9 and 10 basis points would be consistent with the approach taken by other regulators, particularly the AER

Topic 3. Gamma

General approach to gamma

- Gamma, like the MRP, is unobservable and therefore must be estimated

- The QRC supports an approach which takes a balanced view of all available evidence. This approach is supported by the QRC's expert advisors. Professors McKenzie and Partington state:

> *"… given the difficulties in estimating theta, the estimate of theta and hence gamma should not be based on one study, or on one method. Rather, it should be triangulated across multiple studies and multiple methods."*

- Associate Professor Lally also recommends taking into account a wide range of methods in estimating gamma

Distribution rate

- McKenzie and Partington adopt the widely used estimate for the distribution rate of 0.7, based on ATO data

- Associate Professor Lally argues for a distribution rate of 0.85, based on analysis of company financial statements over the period 2000-2013.

- The QRC favours an approach to the distribution rate which relies on the most robust and up-to-date data. Accordingly, if company financial statements provide a more robust picture of the market-wide distribution rate, then Associate Professor Lally's approach should be preferred.

Utilisation rate (theta)

- McKenzie and Partington recommend that the estimate of theta should not just be reliant on ex-dividend studies (such as the SFG study), which they say are afflicted with many problems. Some of the issues they identify include:
  - 'noisy' data
  - sensitivity of results to data filtering techniques and choice of estimation method
  - evidence of abnormal trading around ex-dividend day, which raises questions as to whether valuations implied by ex-dividend studies actually reflect the valuation of the average investor
  - econometric problems, such as multicollinearity

- McKenzie and Partington note that various market value studies (including both ex-dividend studies and 'simultaneous trade' studies) have produced a wide range of values for theta, with some studies indicating that credits are fully valued by investors (i.e. theta equal to 1)

Utilisation rate (theta)

- The AER has recently undertaken a thorough review of the evidence on theta, and considers an appropriate value to be 0.7 (a shift from its previous position), based on:
  - the fact that approximately 70% of equity in Australian enterprise groups is held by domestic investors, meaning that approximately this proportion of investors are eligible to redeem credits
  - tax statistics, which indicate that between 65% and 81% of distributed imputation credits are actually redeemed by investors (estimates differ slightly depending on the period over which this is measured)
  - estimates of the implied market value of imputation credits from econometric studies indicate a range of values, from 0.35 and 0.8

- Professors McKenzie and Partington also support a value of 0.7 for theta, based on their review of the empirical evidence

- Combining a theta value of 0.7 with a distribution rate of 0.7 leads to value for **gamma of 0.5** – the QRC considers this to be a reasonable estimate in light of all the evidence, and if anything at the *lower end* of a reasonable range