The required return on equity commensurate with current conditions in the market for funds: Response to BHP Billiton submission

Report prepared for DBP

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Instructions and background

1. The Strategic Finance Group: SFG Consulting (SFG) has been engaged by DBP (various Dampier to Bunbury Natural Gas Pipeline entities) to provide a short response to the submission of BHP Billiton in relation to the Dampier to Bunbury Natural Gas Pipeline Access Arrangement.[1]

2. We have previously prepared a report for DBP titled *The required return on equity commensurate with current conditions in the market for funds*, dated 31 March 2010. In that report, we use two approaches to estimate the returns that would be available to investors in comparable firms:

   a. We show that the average return available from comparable firms in the form of dividends alone is 10.5%. If real capital growth is in the (conservative) range of 0-1% and inflation is 2.5% (the mid-point of the RBA target range), the average return on equity available from comparable firms is 13-14%.

   b. We apply a simultaneous estimation technique to jointly estimate the required return on equity and long-term expected growth. This is done in a way that reconciles an analyst's dividend and long-term growth forecasts with that same analyst's price target. This analysis also produces estimates in the range of 13-14% for the required return on equity (from dividends and capital gains) for the set of comparable firms.

3. The role of this analysis is to provide direct estimates of the returns that investors would anticipate from an equity investment in comparable firms. This is then an estimate of the opportunity cost of providing equity to the DBNGP. In our view, this is one of the relevant considerations in determining the return on equity that is commensurate with current conditions in the market for funds and the risks involved in providing regulated utility services.

Use of our analysis

4. BHPB submit that:

   > DBP have effectively ignored the results of the Capital Asset Pricing Model (CAPM) and other financial models, preferring instead to adopt an approach based on analyzing dividend yield forecasts.[2]

5. BHPB conclude that:

   > CAPM is the most appropriate model to use and the other models should be disregarded.[3]

6. The CAPM does not automatically produce an estimate of the required return on equity that is commensurate with current conditions in the market for funds. To implement the CAPM, one must estimate a number of parameters and then insert them into the CAPM pricing formula. There is debate and uncertainty about what data and what statistical processes should be used to produce estimates of the input parameters. Reasonable minds may differ on these questions and this will result in different estimates of the required return on equity.

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[1] Public submission by BHP Billiton in response to the proposed revisions to the Dampier to Bunbury natural gas pipeline access arrangement, 9 July 2010.

[2] BHPB submission, p. 15.

[3] BHPB submission, p. 18.

7. In our view, having adopted a particular data set, chosen a particular statistical method, and produced a particular estimate of the required return on equity, there is no guarantee that this is commensurate with current conditions in the market for funds. For example, if the available data set is too small there is a high probability of spurious results, the statistical method that is chosen may fail to correct for known biases, and so on.

8. For these reasons, it is our view that any estimate that is produced (using a particular data set and a particular statistical method) should not be mechanically adopted, but should be examined for reasonableness and consistency with the current conditions in the market for funds. For example:

   a. An estimate of the required return on equity that is lower than the required return on debt for the same firm is nonsensical and must be rejected on the basis that the data or statistical methods that have been used have produced an estimate that defies common sense and is clearly inconsistent with the current conditions in the market for funds;

   b. An estimate of the required return on equity that is at historical lows at a time when financial markets are in severe crisis also must be rejected – the particular process that has been used has produced an estimate that is inconsistent with current conditions in the market for funds.

9. Our view is that these sorts of checks for economic reasonableness should be performed on any estimate of the required return on equity and that estimates produced in a CAPM framework are not exempt from this.

10. Moreover, our view is that our estimates of the returns that would be available to investors in comparable firms should also be used to assess economic reasonableness. Questions should be raised about any estimate that is substantially below the sort of return that investors might reasonably expect to receive from comparable firms.

11. In summary, our view is that all of the evidence, all of the estimates, all of the checks and tests for economic reasonableness should be considered in a holistic manner. It is inappropriate to mechanically estimate a set of parameters, insert them into a pricing formula, and then to adopt the result without question.

Dividend yield technique

12. The BHBP submission argues that the examination of dividend yields is "overly simplistic" [4] and that:

> ...estimates for the cost of equity based on such dividend yields are highly sensitive to input assumptions, many of which have significant uncertainty in their own right.[5]

13. The approach set out in our earlier report is indeed very simple – we set out the dividend yields that are currently available to investors in comparable firms and suggest that this is one factor that should be considered when determining whether a proposed estimate of the required return on equity is commensurate with the current conditions in the market for funds. This requires no

[4] BHPB submission, p. 17.

[5] BHPB submission, p. 17.

other input assumptions with significant uncertainty in their own right. Our view is simply that one should question whether a proposed estimate of the required return on equity is commensurate with the current conditions in the market for funds if one could currently obtain a higher return just from dividends in comparable firms.

14. In particular, comparable firms are presently providing a dividend yield of 10.5%. A fully-franked dividend provides 43 cents of franking credits for every dollar of dividend that is paid. Consequently, a $100 stock would pay $10.50 in dividends each year and would distribute $4.52 of franking credits. Setting the value of gamma to 0.65 implies that the franking credits have a value of $2.93 (0.65 × 4.52). Conditional on this assumed value of gamma, the fully-franked dividend provides a return of 13.4%.

15. Now suppose that these comparable firms are only just able to maintain their current dividends – there is no growth in dividends, not even to keep up with inflation. Also suppose that there are no capital gains – the stock price stays stuck at its current level forever (again, not even keeping up with inflation). Even under these conditions, if gamma is set to 0.65 the current fully-franked dividends of comparable firms would provide investors with a return of 13.4% p.a. In our view, this is a relevant consideration in determining whether a proposed required return on equity really is consistent with the current conditions in the market for funds.

Analyst forecast technique

16. The BHPB submission correctly notes that there is empirical evidence that the earnings forecasts of equity analysts are somewhat optimistic on average.[6] One approach that has been used to infer the required return on equity is to solve for the discount rate that equates the present value of forecasted earnings (or dividends) with the current stock price. If the forecasted earnings series is systematically optimistic, then of course a higher discount rate will be needed to reconcile their present value with the current stock price. This is the point that is made by Easton and Sommers (2007), which is cited in the BHPB submission.

17. But this is *not* what is done in our earlier report. We are well aware of the documented forecast bias and have used a methodology that is not contaminated by it. Our approach is to reconcile the future earnings forecasts of an individual analyst with the present target stock price of that same analyst. We then aggregate over all analysts and all stocks in our sample. The resulting estimates of the required return on equity are not contaminated by any optimism bias because individual analyst earnings forecasts are reconciled with the present value target price of the same analyst. Consequently, even if an individual analyst does suffer from an optimism bias, that same bias is present in their earnings forecasts and target price.

18. The mistake that has been made by previous research is to attempt to reconcile analyst forecasts of future earnings with current observable stock prices. This apples-with-oranges comparison does result in upwardly biased estimates of the required return on equity – but that is not what is done in our report and is not the basis for our estimate of 13-14%.

[6] BHPB submission, p. 17. See especially the papers cited in Footnote 33.