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IERs – a conservative and consistent approach to WACC estimation by valuers

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SUMMARY

Value Adviser Associates recently reviewed the method and practice of professional valuers when estimating the weighted average cost of capital ("WACC") in valuations for Independent Expert Reports ("IERs").

Interestingly there was a challenge in finding IER reports that both used DCF analysis and provided sufficient description to capture full details of how the WACC was estimated. When sufficient detail was provided, it appears professional valuers take a classical tax 'standard' approach to WACC estimation. They certainly take a 'conservative' approach to imputation tax benefits, i.e., these were usually ignored. This contrasts with regulators who explicitly recognise a value for imputation tax benefits with the most recent Australian Energy Regulator decision valuing them at 65¢ per dollar.²

Our review focused on valuers rather than IERs, i.e., our assumption was that valuers would use a similar approach across reports so the sample selection was based around valuers rather than IERs (we cross-checked this assumption and it held for those cross-checked). This approach is in contrast with Lonergan (2001) and KPMG (2006) where the sample was based on IERs rather than valuers.

Our sample of valuers was taken from all IERs from 1 January 2003 to 12 June 2008 listed in the Connect 4 database. There were 142 different experts who prepared 1,173 reports for 1,046 transactions. Approximately one half of the experts prepared more than one report in the period examined.

Reports prepared by each valuer were reviewed until one was found that used DCF and then had enough information to answer questions about the WACC used. This process required reading 546 reports to obtain the sample of 27 – many did not use DCF or provide a sufficient description to meet our needs.

¹ The support of Gareth Thompson in collating the information is very much appreciated.

² "Australian Energy Regulator, "Electricity transmission and distribution network providers: Review of the weighted average cost of capital (WACC) parameters " May 2009

...it appears the professional valuers take a classical tax 'standard' approach to WACC estimation

Twenty seven independent experts had produced reports that both used DCF analysis and provided sufficient information to answer our predetermined questions on practices followed when estimating the WACC (or at least the CAPM).

Nine of the 27 reports used an equity rather than total enterprise valuation method consequently a cost of equity rather than a WACC was used. However, a number of these still had a section discussing the discount rate generally which revealed, what we assumed to be, their standard approach to estimating the WACC. We used this information to complete our broader questions about WACC estimation practices in Australia.

The interesting findings include:

General

- » Relatively few IERs use DCF analysis and provide enough detail to understand the calculation of the WACC;
- » At least cross-check of the value outcome was performed in all but one report. The most common cross check was the share market value, followed by net assets then by a multiple-based valuation;
- » Many valuers made adjustments to the CAPM output to reflect factors such as the small firm effect, specific risk, lack of trading and/or reporting history.

WACC

- » Most experts work in nominal terms with no apparent single source for the inflation estimate. In fact, very few revealed the source of inflation but most rates used were in the range 2.5 – 3.0%;
- » All but one used the 'Classical' tax version of the WACC with one using an Officer³ version that includes the imputation tax adjustment in the discount rate rather than the cash flows;
- » Most state that they assess the market value gearing for weights in the WACC based on their own analysis and, as best can be determined, that is derived from a comparables analysis;
- » It was difficult to assess how the cost of debt was determined from the reports;
- » Use of CAPM to estimate the cost of equity is more widespread than the prior surveys with all but two using it. Of the two non users, one used a 'venture capital' rate the other was not explicit; and
- » In 10 of the 27 reports reviewed, the valuer adjusted the CAPM derived cost of equity for 'other risks'.

Parameters of the CAPM

- » All but one expert used 10 year Treasury Bonds as the risk free rate in the CAPM. The other stated that a long term risk free rate was used. The spot rate was the most prevalent source of the rate used but a large minority used an average, usually over one month or less;
- » All used an MRP of 6% or greater with no explicit comment about whether the 6% included an allowance for imputation tax credits or not;
- » Generally a 'raw' beta was derived from comparables with some making explicit adjustments to reflect the assumed higher risk of a start-up, little earnings history or being an early stage company. Three valuers applied a 'Blume' adjustment to the raw beta; and
- » Only one IER reviewed included a value for imputation tax benefits with the others generally citing lack of clarity about the value and that industry practice is to ignore them. This contrasts with regulatory decisions which place a positive value on them.



The WACC is central to business valuations.

INTRODUCTION

The weighted average cost of capital ("WACC") is a central construct in finance theory and application. It reflects the minimum rate of return a business or project must earn on invested capital in order to attract funding. It is the required reward for capital bearing risk and for the time capital is tied up in assets or projects. It is also an essential input to price determination hearings in a number of regulatory price jurisdictions in Australia. These determinations consider a return on capital to be an appropriate cost of doing business and an estimate of it is built into an assessment of regulatory revenue requirements.

The WACC is a core input to discounted cash flow ("DCF") valuations used by experts, advisers and internal corporate personnel for business valuations used for a variety of purposes including strategic decisions, compliance needs (e.g., asset impairment testing) and transaction analysis.

Measurement of key parameters that determine a cost of capital is not precise. This gives rise to much analysis and debate about an appropriate cost of capital, particularly in regulatory hearings and between valuers in disputes. This paper documents the practice of professional valuers in estimating a cost of capital when preparing IERs. It is potentially useful for contrasting what each group involved in valuations does relative to other groups (e.g., professional valuers for IERs versus corporate advisors) when estimating the cost of capital.

This brief paper contributes information derived from a review of the written method pursued by valuers who prepare Independent Expert Reports. It is structured to:

- Provide a brief outline of the sample and sample selection method,
- Summarise the findings from the review.

SAMPLE

Rather than survey the professional valuers directly, we undertook an analysis of the output they presented to investors to assist in share related decision making. Consequently our selection process was to identify all firms that have prepared such reports in the last 5½ years that are on the Connect 4 database. The Connect 4 database lists reports and also enables them to be accessed and downloaded.

There are 1,173 independent reports prepared by 14 different experts on Connect 4 over approximately the last 5½ years (from 1 January 2003 to 12 June 2008) there being 578 in the last 3 years.

Our interest is in the 'views' on cost of capital of each professional valuer. Consequently the sample was not derived from the 'population' of reports (as was the case for Lonergan and KPMG) but rather from the 'population' of report preparers. There were 142 different independent experts in the period examined, with around one half producing more than one report as is captured in the table below.

Number of reports prepared by a Valuer	Frequency	Total reports prepared	% of all reports
1	69	69	6
2	18	36	3
3	11	33	3
4	5	20	2
5	5	25	2
6	6	36	3
7	0	0	0
8	1	8	1
9	2	18	1
10	3	30	3
11+	22	898	76
Total	142	1,173	100%

Reports prepared by each valuer were reviewed until one was found that used DCF (or a cost of capital) and then had enough information to answer our predetermined questions about the estimation of the WACC.

Twenty seven (27) independent experts had produced reports that met these criteria, i.e., both used DCF analysis and provided sufficient information to answer the questions on the WACC, or at least the questions on the CAPM.

Nine of the 27 reports used an equity rather than total enterprise valuation method consequently a cost of equity rather than a WACC was used in these 9 cases. However, a number of these still had a section discussing the WACC and cost of equity which therefore revealed, what we assumed to be, their standard approach to WACC calculations. We used this information to complete our predetermined questions about WACC.

Since our focus was on the practices of the experts around the cost of capital, the IERs prepared by each expert were examined firstly to find one IER that used a discounted cash flow approach ("DCF"). The following process was followed for each report:

Of the 142 experts preparing IERs, only 27 provided DCF valuations...

- If the report uses DCF and a WACC then analyse the report to answer the predetermined questions. Except for the consistency check discussed later, other reports prepared by the expert were ignored once a suitable report for review was identified;
- If the report used DCF but with a direct valuation of equity rather than an enterprise valuation (combined value of debt and equity) then it was noted and the search continued for an enterprise valuation using WACC. If none was found then the equity based valuation was reviewed to answer the relevant questions;
- For each valuer, reports that didn't use DCF (or details were too sketchy to address the questions) were ignored and the search for a DCF and WACC based report continued;
- A consistency check was carried out by examining all reports prepared by a number of valuers to test our assumption that a consistent method (and parameters) we used across reports (in general valuers were consistent in this regard).

As summarised below, of the 142 experts identified, only 27 provided DCF based valuations with enough information to address most of the relevant survey questions.

Suitable report analysed	27
All reports unsuitable	106
Not pursued*	9
Total Experts	142

*A total of 9 experts were ignored. 7 were overseas experts and 2 were duplicate experts ("BDO Corporate Finance Pty Ltd" when we already had a suitable report for "BDO Kendalls"; and "Deloitte Corporate Finance Pty Ltd" when we already had a suitable report for "Deloitte & Associates").

There was a concentration of reports in the Metals and Mining industry with one third of reports in the sample being from that industry. Overall there were 14 industry sectors represented as below.

Industry sector	Number of reports
Automobiles and Components	1
Capital Goods	2
Chemicals	1
Diversified Financials	1
Energy	1
Food, Beverage and Tobacco	1
Health Care Equipment and Services	2
Media	2
Metals and Mining	9
Pharmaceuticals, Biotechnology and Life Sciences	1
Property Development	1
Software and Services	2
Technology Hardware and Equipment	1
Telecommunication Services	2
Total	27

FINDINGS

Our intent was to answer as many predetermined questions as possible about estimation of the variables in the WACC from the review of the IERs. The questions were designed to tease out consistency with theory and to determine how many of the judgements necessary play out in practice. The longer term intent is to compare the practices of professional valuers with other groups that undertake valuations for a range of purposes.

3.1 Methods Employed / Cross Checks

Our focus was matters surrounding the cost of capital in DCF analysis. Consequently IERs with DCF analysis were our point of interest. While the IERs we reviewed contained DCF based valuations, 26 of the 27 valuers employed some form of cross-check of the valuation numbers reported. The most common number of cross-checks was 2 with 11 of the valuers undertaking 2 cross-checks while 5 used 3 or more.

The most common cross-check was to the market price of the target. Net assets was the next most popular followed by an EBITDA multiple or a KPI (or rule of thumb) of some form e.g., value related to funds under management for valuing fund managers or a multiple of exploration expenditure for early stage exploration companies.

3.2 Real versus Nominal Analysis

Theoretically the use of a real or a nominal approach to DCF valuations should provide the same answer if the discount rate and all cash flows are estimated on a consistent basis. Both approaches require a view on inflation - either to forecast nominal cash flows or to derive a real discount rate from the nominal base.

Approximately 74% (20) of the 27 used nominal analysis (i.e., forecasts and the discount rate include inflation) while 7 used real. Of the 7 using 'real' analysis, 6 were in the Metals and Mining industry with the 7th classified as Energy.

Only 5 revealed the source of the inflation estimate used and all were different. The stated sources were:

- Analyst's forecasts;
- Recent inflation rates in Australia;
- Melbourne Institute – Westpac Consumer Survey;
- Australian CPI for the previous 10 years;
- The inflation rate implicit in long-term bonds over the duration of the cash flows.

The actual rates used (as revealed) were very similar with most (9 of 12) falling in the 2.5 – 3.0% range. Those outside the range were one at 3.0 – 3.8%; one at 2.0%, and one at 3.1%.

The Fisher equation was explicitly stated as the means of adjustment from nominal to real in the 7 cases using real analysis. This approach uses the yield on nominal treasury bonds and indexed bonds to 'back-out' an implicit market expectation of inflation. Recent thin trading of indexed bonds makes this approach less reliable.

3.3 WACC formulation

There is a requirement that there be consistency between the definition of the cash flows used and the definition / formulation of the WACC. While the consistency was not examined, we did examine the formulation of the WACC to assess whether one form dominated and, if not, in what circumstances different formulations were used.

Of the 22 revealing the WACC formulation, 21 used the classical version. Only one included an imputation term. The remainder used a direct valuation of equity therefore a cost of equity was used rather than a WACC.

WACC formulation	Number of respondents	%
Re E/V + Rd(1-t) D/V (classical)	21	96
Re E/V + Rd D/V (plain vanilla)	0	0
Re $[(1-t)/(1-t(1-\gamma))]$ E/V + Rd D/V (classical but imputation adjusted)	1	4

3.4 Adjustment to the formula output

Of interest was whether the 'mechanically' estimated WACC was adjusted in some way – perhaps to meet prior expectations or to relate to a cross-check. Ten experts stated that they rounded the output. Some then made statements that can be summarised as them:

- Using judgement to select an appropriate discount rate, using computed values from CAPM and expected rates of return for investors in private equity;
- Computing WACC for both Australian and US investors, then selecting lower value;
- Ignoring output from WACC calculations and using venture capital cost of equity instead;
- Using judgment to select different WACCs (within computed range) for different operations;
- Considering the rates used in similar recent valuations however it appears the adjustment made was only rounding.

3.5 Gearing

Theory dictates the use of market values of debt and equity to estimate the cost of capital. The practical application of this requirement is the use of target market value based weights.

All IERs that revealed the basis of gearing used market value weights in the WACC calculation which is consistent with theory. However many did not reveal the basis of the weights.

Basis of gearing	Number
Market based	9
Book Value based	0
Not relevant (used cost of equity)	5
Not stated	13
Total	27

Most experts appear to assess the appropriate gearing weight based on their own analysis (13 of 19). The other six used the company's historical (5), target mix (1) or the company's mix post transaction (1).

When revealed, the experts used comparables, an assessment of debt capacity and a mix of comparable analysis and the company's target mix to assess the gearing weights.

The 'classical' formulation of the WACC was almost universally used...



3.6 Cost of Debt

Theory dictates that the cost of debt should reflect the current cost of raising debt to finance the business. Clearly there are challenges in defining the maturity of the debt to use. Practical guidance to fund raising usually is to match the asset life and funding life as far as is practicable but to the extent that this is not possible then maturing debt should be spread over time to minimise roll-over risk.

If the 'classical' version of the WACC is used then the cost of debt should be adjusted to 'correct' the overstatement of tax paid in the cash flow estimates. The tax rate used should be consistent with that used in the cash flow estimates, which also considers the ability of the business to access the interest deductions.

It was difficult to assess exactly how the experts had estimated the cost of debt in most IERs. For 12 of the 20 where we could make some form of assessment, six used a margin over some base rate. One used the RBA indicator overdraft rate for small businesses; another used a weighted average of the facilities used to implement the transaction.

Typical statements that made it hard to assess exactly what was done (because the statements were too broad to be meaningfully interpreted) can be classified as those that took into account:

- The company's current and expected future financing arrangements;
- Expected future cost of borrowing for comparable companies;
- Long-term cost of debt for comparable companies;
- The company's historical cost of debt and current market rates for similar types of debt finance; or
- The appropriate cost of debt for the company's capital structure and nature of operations.

3.7 Cost of Equity

The cost of equity is not as 'directly' observable as is the cost of debt. Consequently a model of some form is required to estimate it. Two of the key contenders are the CAPM and the dividend valuation model, with a three factor empirical model presented by Fama and French as another possibility⁴.

Most respondents (93%) use the CAPM to estimate the cost of equity with those not explicitly using it making reference to it. This is higher than was found in the Lonergan and KPMG surveys.

Method of estimation	Number	%
CAPM	25	93
Venture capital rate	1	3
Appropriate value considering CAPM and other factors	1	3
Cost of debt plus premium for equity	0	0
Three factor model	0	0
Total	27	

3.7.1 Risk Free Rate

The CAPM is a single period model that does not define the length of the period. Consequently what rate to use is often related to both that used to estimate the MRP (for consistency) and to the life of the item being valued⁵.

The most common proxy for the risk free rate is Australian Treasury Bonds. Twenty six of the 27 in the sample used this source.

Of these, 24 used 10 year Treasury bonds as the risk free rate, one simply stated 'long term' and the other did not provide a maturity. The use of a 10 year bond is consistent with the existing historical estimates of the MRP which, in the main, uses 10 year bonds as the proxy for the risk free rate.

Risk free proxy	Less than 5 year	5 year	10 year	Long term
Australian Treasury Bonds	0	0	24	1
% of respondents	0%	0%	96%	4%

A spot rate for the yield on a 'risk free' bond is a forward estimate of the desired rate. An average over a short period is used in regulatory hearings we assume to minimise gaming of the rate and possible to smooth out noise in trading.

The rate used was generally a spot rate (56%). Interestingly, those using an average risk free rate tended to average over a relatively short horizon.

Basis of risk free rate	Number of responses	%
Single spot	10	56%
Average	7	39%
Other	1	5%
Total	18	100%

Most used the valuation date as the date of the spot rate.

Averaging over 1 month was common with most averaging over a period of less than 3 months.

Time period	Number of respondents
10 days	1
1 month	1
2 months	1
3 months	3
'Several years'	1

3.7.2 Market Risk Premium

The market risk premium is a challenging number to estimate with accuracy. Recommendations from research usually derive the estimate from a long term historical average of the premium over 10 year Commonwealth Bonds. There have been some attempts to assess a forward looking MRP directly but these are (also) fraught with estimation problems.

A spot 10 year risk free rate was commonly used along with an average MRP of 6%...

⁵ The risk free rate also varies with the 'form' of the CAPM. For example the Sharpe Lintner version uses a 'pure' risk free rate whereas the Black version uses a zero beta instrument.



Clearly the use of the historical series assumes the past influences a view of the future. Most valuers take a long term view on this premium and use a constant rate. We do know that the forward rate changes in the short term but there is no well accepted model as to how to identify and account for this over the life of a business. Consequently the default is usually a constant MRP.⁶ The norm for regulatory bodies in Australia (e.g. Essential Services Commission, IPART, QCA) has been 6% however the recent AER decision increased the MRP to 6.5%.

When a MRP is estimated from the historical series of actual market returns less the risk free rate, it is important that the market return include imputation tax credits. Failure to do so will underestimate both the market return and the MRP. The market return in most published indexes does not include such an adjustment. The valuers in our review all used a MRP of 6% or higher.

Rate used	Number of responses	%
4%	-	-
5%	-	-
5.5%	-	-
Between 5.5% and 6%	-	-
6%	18	67
Between 6% and 7%	2	7
7%*	3	11
7.8%	1	4
Not stated	3	11
Total	27	100%

* Includes two stating 6.0% – 8.0%

Twelve said the MRP used was an Australian MRP while five said it was an “Australian and US’ MRP. The other 10 did not reveal the geographic basis of the MRP.

Five reports did not identify the basis of the MRP. Seventeen of the 27 experts cited US and Australian published research with 8 citing generally accepted practice as a source and two referenced regulatory hearings as a source (note that more than one source was sometimes quoted).

Source	Number of respondents
Published research papers	17
Generally accepted practice	8
Regulatory precedent	2

Ten reports identified the historical time period used to determine the MRP used. These are summarised below with most being around 100 years and 3 being around 30 years. Despite this disparity in historical time period, the MRPs used were similar, i.e., all used 6% with one citing a range of 6-8%.

Historical time period of estimate	Number of responses	MRP used
28 – 31 years	3	2 at 6%, 1 at 6–8%
100 or 101 years	2	both at 6%
105 years	1	6%
119 – 120 years	2	both at 6%
100+ years	2	both at 6%
Total	10	

⁶ For further discussion on the MRP and a the latest data see Officer RR & S Bishop “Market Risk Premium: A Review Paper” August 2008 and Officer RR & S Bishop, “Market Risk Premium: Further Comments” January 2009

Only one expert mentioned imputation tax benefits in relation to the market risk premium. The report cited an adjustment of 75 basis points from AGSM research but the same report referenced an historical MRP without adjusting for imputation credits of 5.81% then adopted 6% as the MRP – presumably with an imputation tax allowance of 19 basis points.

No comment was passed by the other experts as to whether the MRP chosen did or did not contain an adjustment for imputation tax benefits.

3.7.3 Beta

Beta is an estimate of the risk of the business of interest relative to the risk of a market portfolio. The market portfolio, under the CAPM, is defined theoretically as containing all risky assets. Practically a broadly based stock-market return index is used as a proxy. With increasing international investment there is debate as to whether the index should be a domestic index, an international index or perhaps some combination.

Although it should be a forward looking estimate, beta is generally estimated from historical data under an assumption of stationarity in the underlying return distributions of the stock and the market and in the relationship between them.

Known drivers of the beta of equity are a revenue beta (cyclicality of revenue), operating leverage and financial leverage or gearing. Textbook guidance is usually to estimate betas (of unlisted businesses or of business units of listed companies) from comparable companies and then adjust for differences in target gearing.

Data services, such as Bloomberg, Aspect Huntley, AGSM provide both betas value and data to enable users to estimate their own betas.

Of the sample IERs reviewed, 13 used a beta service as the source of the beta estimates and / or return data for own estimation. We cannot tell which just extracted a beta and which extracted the data to undertake their own analysis. Services mentioned were CRIF at AGSM, Aspect Huntley, Bloomberg and Commsec.

Source of equity beta	Number of responses
Beta service	13
Own estimate	8
Not stated	6

Of those stating that they used their own estimate, four defined the market index the beta was estimated relative to. Three said it was relative to the domestic market while one said it was relative to the international and domestic market.

Sixty percent stated that they applied a “delever / reliever” process to comparable companies to estimate a beta for the firm of interest.

Only six stated the number of observations used to estimate beta. Two used 48 months, which is the number used by CRIF at AGSM, and 3 used 60 months, which is the Bloomberg default for monthly observations.

Number of observations	Number of respondents
4 years of monthly	2
5 years of monthly	3
5 years of weekly	1



Four respondents used overseas comparables when estimating beta. Fifteen did not, while 8 did not state whether they did or overseas comparables were used. We assume the beta for overseas comparables were estimated relative to its domestic market index but this was generally not made clear.

Three made a 'Blume' adjustment to betas. A 'Blume' adjustment is in response to research by Marshall Blume⁷ that found estimated betas had a tendency to move closer to 1 over time. Consequently the 'adjusted beta' is typically $0.67 * \text{raw beta} + 0.33 * 1$.⁸

The following comments or adjustments were apparent from the reports:

- One selected a much larger beta (3 – 4) than those of comparables, because the target company: is smaller; is in start-up phase; is expecting rapid growth; or has overseas operations;
- One added 0.5 – 1.3 to beta from comparables to reflect extra risk of a small unlisted company with no profit record;
- One used a higher beta than for comparables because this was an early stage company with a lower net tangible asset position.

3.7.4 Adjustments to CAPM

The CAPM has been subjected to much rigorous testing to assess its empirical 'validity'. Many anomalies have been found yet it remains the predominant paradigm for estimating the cost of equity – no alternative model has yet displaced it. From a practical perspective it is of interest to see whether valuers adjust a 'mechanically' determined cost of equity from the CAPM for any anomaly or for any other reason.

Adjustments to beta were described above. In addition ten of the 27 of the experts cited adjustments to the CAPM output for reasons including the small firm effect and lack of liquidity / marketability. It was not possible to discern the percentage adjustment for each effect individually as generally an adjustment was made citing a number of reasons for the adjustment without dissecting the size of each adjustment. For example, one cited an adjustment of 4 – 5% for a combination of the small firm effect and for specific risk factors. Another cited a 2 – 3% adjustment for the same reasons.

Two reports made a small firm adjustment by adding 2% and 4.63% respectively to the cost of capital while another adjusted the EBIT multiple by applying a 20% discount. In three reports, specific risks adjustments of 1%, 2% and 2.5 – 3.0% were made.

3.8 Imputation Tax

The primary purpose of the introduction of the imputation tax system was to place debt and equity on a similar tax footing i.e. to remove the double taxation of dividends. Rather than treat dividends as directly tax deductible, like interest on debt, the system 'returns' the tax paid on dividends to shareholders by way of an imputation tax benefit. For Australian resident shareholders the impact is much the same as a direct corporate deduction (except for a timing difference in accessing the benefit).

Regulators of 'monopoly' infrastructure assets have, to date, placed a value of 50¢ for each dollar of imputation tax benefits generated by a regulated business. A recent decision increased the value to 65¢ for each dollar of imputation tax benefits generated.⁹ Of interest in the review was whether professional valuers recognised any value to the imputation benefits.

7 Blume, M, "Betas and Their Regression Tendencies", Journal of Finance, June 1975

8 An Australian study found a similar outcome and established a similar adjustment. Other adjustment techniques have been recommended.

9 Australian Energy Regulator, op cit.

Only one report adjusted the valuation for imputation tax. It used a value of 0.5 for gamma. Very few gave an explanation for not making an adjustment. The explanations given are listed below.

- Not adjusting for imputation is a common approach;
- Not adjusting is current market practice;
- There is no generally accepted method of allowing for dividend imputation;
- There is no unanimity of opinion as to how the method should be modified to accommodate tax changes such as dividend imputation;
- There are diverse views as to the value of imputation credits and the appropriate method that should be employed to calculate this value. Determining the value of franking credits requires an understanding of Security-holders' personal tax profiles to determine the ability of Security-holders to use franking credits to offset personal income. The observed equity market risk premium already includes the value that Security-holders ascribe to franking credits in the market as a whole. In our view, the evidence relating to the value that the market ascribes to imputation credits is inconclusive;
- Australian studies of the relative value of dividend imputation are controversial and have produced mixed results. The evidence provided by the different schools of thought as to the value that investors attributes to dividend imputation is unclear;
- The company has no history of paying dividends and no intention to declare dividends in the future.

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