AUSTRALIAN RAIL TRACK CORPORATION LTD

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Independent Pricing and Regulatory Tribunal
PO Box Q290,
QVB Post Office NSW 1230

Estimating the debt margin for the weighted average cost of capital

ARTC Response to IPART Discussion Paper

ARTC welcomes the opportunity to provide a response to IPART regarding its Discussion Paper 'Estimating the debt margin for the weighted average cost of capital' published in May 2009.

ARTC has sought advice from economic consulting firm, Synergies Economic Consulting, to assist it with this response. Synergies advice is attached. In summary, it is ARTC's view that the three alternatives suggested by IPART suffer from a number of problems including:

- ignoring the BBB credit risk in favour of a group of utility securities. IPART should not ignore creditworthiness as identified by the rating
- it is not possible to observe the cost of credit enhancement for different rated securities with differing maturities
- lack of transparency or testing during a global financial crisis.

The preferred solution is to use an independent and credible provider to estimate the 10 year BBB yield to enable the debt margin to be calculated. Given that the two independent providers report differing yields, the mid point of the two rates should be used in the current financial crisis. As the crisis passes and the difference between the yields reported by the two providers reduces then one may be able to be relied upon.

If IPART cannot access CBA Spectrum, the next best option is Bloomberg. Bloomberg currently reports an 8 year BBB yield so the 10 BBB yield can be estimated using an adjustment, being the difference between the 8 year A yield and 10 year A yield. The adjustment is added to the reported 8 year BBB yield.

If you have any queries in relation to the submission please contact myself on 0882174314, sormsby@artc.com.au or Glenn Edwards 0882174292, gedwards@artc.com.au.

Yours sincerely

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Synergies
ECONOMIC CONSULTING

Estimating the Debt Margin

Response to IPART Discussion Paper

June 2009

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Disclaimer

Synergies Economic Consulting (Synergies) has prepared this advice exclusively for the use of the party or parties specified in the report (the client) and for the purposes specified in the report. The report is supplied in good faith and reflects the knowledge, expertise and experience of the consultants involved. Synergies accepts no responsibility whatsoever for any loss suffered by any person taking action or refraining from taking action as a result of reliance on the report, other than the client.

In conducting the analysis in the report Synergies has used information available at the date of publication, noting that the intention of this work is to provide material relevant to the development of policy rather than definitive guidance as to the appropriate level of pricing to be specified for particular circumstance.

Executive Summary

ARTC has requested Synergies Economic Consulting (Synergies) to respond to IPART's Discussion Paper in relation to estimating the debt margin to be used in the weighted average cost of capital calculation.

IPART's current practice is to estimate the debt margin based upon the yield on a benchmark bond that has a ten year maturity and is BBB rated. IPART has previously relied on CBA Spectrum's data service but CBA Spectrum has notified IPART that the service is no longer available to them. This has prompted IPART to move to the data service provided by Bloomberg. This move is not without its problems and IPART is considering alternate approaches to estimate the debt margin for utility type businesses.

IPART has suggested three alternatives. There are a number of problems associated with them. One is ignoring the BBB credit risk in favour of a group of utility securities. IPART should not ignore creditworthiness as identified by the rating. Additionally it is not possible to observe the cost of credit enhancement for different rated securities with differing maturities. The approaches are not transparent nor have they been tested during a global financial crisis.

The preferred solution is to use an independent and credible provider to estimate the 10 year BBB yield to enable the debt margin to be calculated. Given that the two independent providers report differing yields, the mid point of the two rates should be used in the current financial crisis. As the crisis passes and the difference between the yields reported by the two providers reduces then one may be able to be relied upon.

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Contents

1 Introduction

ARTC has requested Synergies Economic Consulting (Synergies) to respond to IPART's Discussion Paper in relation to estimating the debt margin to be used in the weighted average cost of capital calculation. The Discussion Paper[1] was released in May 2009 requiring submissions by 19 June 2009. The submissions are to address alternative approaches for estimating the debt margin.

IPART's current practice is to estimate the debt margin based upon the yield on a benchmark bond that has a ten year maturity and is BBB rated. The ten year yield is typically averaged over a 20 day period. The yield on a 10 year Commonwealth Government security averaged over the same 20 day period is then deducted from the bond yield to estimate the debt margin.

IPART has previously relied on CBA Spectrum's data service to source the BBB bond yields. CBA Spectrum has notified IPART that the service is no longer available to them and it is for the sole use of Commonwealth Bank customers. This has prompted IPART to move to the data service provided by Bloomberg. This move is not without its problems and IPART is considering alternate approaches to estimate the debt margin for utility type businesses.

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1 Independent Pricing and Regulatory Tribunal (2009), Discussion Paper: Estimating the Debt Margin for the Weighted Average Cost of Capital, May.

2 Bloomberg

Prior to the sub-prime crisis in 2007, there were a small number of debt issues in the BBB market for terms of ten years or greater. This market allowed the 10 year yield for BBB rated securities to be calculated. The two main independent financial data providers (CBA Spectrum and Bloomberg) each calculated the yield.

Since the sub-prime crisis (and the global financial crisis that followed it), it has been extremely difficult for BBB rated businesses to issue securities with a 10 year maturity. This in turn has made it difficult to estimate a yield on 10 year BBB rated securities.

The Bloomberg service is very similar to CBA Spectrum as it reports the yield for BBB rated corporate bonds. Bloomberg calculates the yield based upon observed prices for a small number of BBB rated issues. The observed prices may be either actual traded prices or indicative prices. In the case of indicative prices, actual trades have not occurred. Bloomberg exercises discretion regarding the inclusion of the bond in the yield calculation for issues with indicative prices. If Bloomberg considers the bond to be liquid, indicative prices are considered by Bloomberg to be reasonable approximations of market prices. Up to 90% of prices[2] used in the estimation of the yield are indicative prices.

The longest term for which yields are now estimated by Bloomberg is 8 years. A number of regulators have now been using these yields in the absence of published 10 year yields. This is done by adding the difference between the A rated 8 and 10 year yield to the BBB 8 year yield. This assumes that the term structure underpinning the A rated yield curve is directly applicable to the BBB yield curve.

Table 1 details the bonds included in the calculation of the 8 year BBB yield on June 10. It can be seen that there were only a small number of issues (seven) included and importantly, the longest dated bond was February 2013, four years short of the period for which the yield is being estimated – eight years.

[2] Bloomberg Fair Value Curves (2007), International Bond Market Conference, Taipei.

Table 1 Bonds included in the 8 year BBB yield calculation

Ticker	Coupon	Maturity	Price	Fair Value	Yield
FBG	6.25	3/17/2010	100.83	100.55	5.12
BQDAU	6.00	12/02/2010	99.86	99.76	6.10
DXSAU	6.75	2/08/2011	100.08	100.6	6.69
ORGAU	6.50	10/06/2011	99.38	99.03	6.79
TABAU	6.50	10/13/2011	98.59	98.99	7.16
WESAU	6.00	7/25/2012	96.48	95.69	7.28
SNOWY	6.50	2/25/2013	94.44	95.62	8.27

Source: Bloomberg

The econometric technique used by Bloomberg is different from that used by CBA Spectrum. The difference in the yields reported by CBA Spectrum and Bloomberg, have traditionally been around 20 basis points. In addition, it was generally considered that the CBA Spectrum approach for estimating yields underestimated the 10 year yield.

More recently, the difference between CBA Spectrum yields and Bloomberg yields have increased. The average difference between the two for January 2009 was 154 basis points. The difference is calculated as the difference in spreads between the Bloomberg 8 year BBB yield and the Bloomberg 10 year yield on Commonwealth Government Securities and the CBA Spectrum 10 year BBB yield and the CBA Spectrum 10 year yield on Commonwealth Government Securities.

This widening margin has only occurred with the global financial crisis. It is expected that this current problem is transitory. When the global financial crisis passes and long term BBB bonds are again able to be issued into the market, data providers will again be able to supply estimates of yields for BBB rated securities. It is noted however, that the relatively small size of the Australian market means that liquidity issues are always likely to exist for 10 year BBB debt.

As the problem is transitory and yield calculations are difficult given the small partially reflective sample of corporate bonds, it is important to continue to use an independent, transparent and reputable data provider so that all users have confidence in the estimates.

IPART is considering three alternative approaches to the problem that would see a move away from the current methodology.

3 IPART's Alternatives

IPART is suggesting three options and these are:

- calculating yields for a particular credit rating by using a portfolio of securities that are BBB rated in conjunction with the 8 year BBB yield as reported by Bloomberg;
- calculating yields for utilities only by using eight securities issued by utilities which all have a maturity of less than 10 years and have a variety of ratings from BBB to AAA; and
- calculating yields by using a combination of utility securities and the Bloomberg 8 year yield.

For regulated businesses rated BBB, Synergies believes that none of the options are suitable alternatives to using the BBB yield curve published by an independent, transparent and reputable data provider. The following considers each of the IPART alternatives and the problems associated with them.

3.1 Calculating yields for a particular credit rating

This approach uses 5 securities maturing in 2009 through to 2015 together with the Bloomberg 8 year yield. The 10 year rate is estimated using a methodology proposed by IPART's consultant Erik Schloegl.

3.1.1 Advantages

The main advantage of this approach is that the BBB credit rating is maintained. Credit rating reflects the probability of default as seen in Table 2. Table 2 is the average default rate for rated securities over a period from 1981 to 2008 as reported by Standard and Poor's. The data indicates that as the rating deteriorates, the probability of default increases. Importantly as the rating deteriorates, the debt margin too will increase. The debt margin is reflective of credit risk – the risk that the issuer of the security will fail to satisfy its obligations with respect to the timely payment of both interest and principal.

Table 2 S&P Average default rates 1981 - 2008

Rating	Default Rate	Rating	Default Rate
AAA	–	BBB+	0.16
AA+	–	BBB	0.28
AA	0.02	BBB-	0.28
AA-	0.03	BB+	0.68
A+	0.05	BB	0.89
A	0.06	BB-	1.53
A-	0.08	B+	2.44
		B	7.28
		B-	9.97
		CCC to C	22.67

Source: Standard and Poor's (2009), Understanding Rating Definitions, 3 June.

The rating is a single measure of many factors reflecting creditworthiness. For example:

> Standard & Poor's credit ratings express forward-looking opinions about the creditworthiness of issuers and obligations. More specifically, Standard & Poor's credit ratings express a relative ranking of creditworthiness. Issuers and obligations with higher ratings are judged by us to be more creditworthy than issuers and obligations with lower credit ratings. Creditworthiness is a multi-faceted phenomenon. Although there is no "formula" for combining the various facets, our credit ratings attempt to condense their combined effects into rating symbols along a simple, one-dimensional scale.[3]

It is imperative to maintain a sample consisting of BBB rated securities to obtain a debt margin that is reflective of a BBB business's cost of debt.

3.1.2 Disadvantages

IPART argues that the disadvantage of this approach is that it may not lead to commercial debt margins for utilities. This claim is discussed and dispelled in the next section.

The disadvantage is that at the current time, there are limited BBB bonds and they are only for shorter term maturities. As stated earlier, the small sample size and short duration results in Bloomberg and CBA Spectrum estimates being vastly different. To attempt to overcome this problem, IPART's approach is to use a small sample of short dated securities adjusted by Erik Schloegl's proposed methodology.

3 Standard & Poor's (2009), Understanding Rating Definition, 3 June, p.3.

Synergies has concerns with using an approach which is not transparent to all, is unable to be readily replicated and has as its justification anecdotal evidence.

> One can attempt to achieve this by jointly modelling the credit spread curves in Australia, the US and the EU using the Kirshnan/Ritchken/Thomson approach, with aim to establish whether credit spreads in the latter two currencies have any explanatory power for Australian credit spreads. Anecdotally, there is some reason to expect that this will be the case: As the Head of Debt Research of commonwealth Bank noted in a recent presentation, "... the performance of Australia's banks and credit markets has been remarkably similar to the United States and other markets."

IPART's approach will rely upon Krishnan[1] (2008) where credit spreads were estimated over a period from 1970 to 2005. It is important to realise that during this time both Bloomberg and CBA Spectrum did report BBB spreads and that the two reporting services provided estimates that were close to one another. The estimates were close as the corporate debt market was more liquid. It is not apparent if the Krishnan (2008) approach will provide robust estimates in the current market where data observations are extremely limited.

Synergies is of the view that it is preferable to use an independent, transparent and reputable data source than to adopt the first option suggested by IPART. Apart from the issues associated with being able to easily replicate and independently validate the calculations, it is questionable if the approach suggested by IPART's consultant will produce robust results in the current economic climate.

As noted above, the approach relies on assumption that US and Euro credit spreads have some explanatory power in relation to Australian credit spreads. As Figure 1 illustrates there does exist a relationship between Australian spreads and US spreads for A rated 10 year yields. The relationship does not appear to be a strong relationship nor does it appear to be consistent over time. Synergies does not believe that IPART should rely on spreads from other countries.

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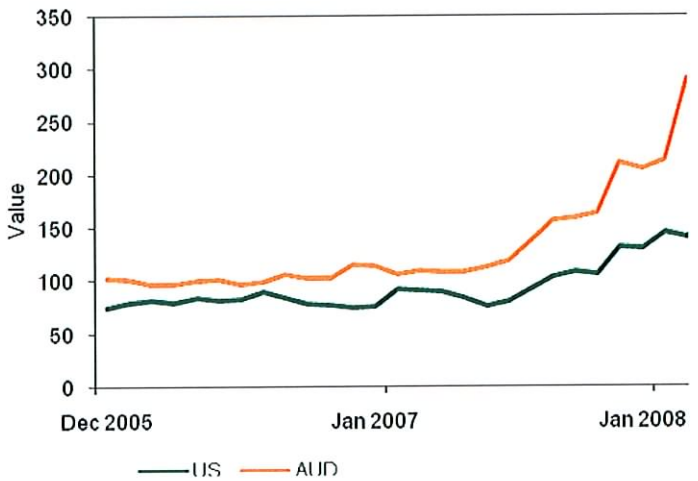
1 Krishnan, C.N. Ritchken, P.H. and Thomson, J.B. (2008), Predicting Credit Spreads, Department of Finance, Weatherhead School of Management, Case Western Reserve University, working paper.

Figure 1 10 Year A Spreads



Data source: Bloomberg

3.2 Calculating yields for utilities

Another option proposed by IPART is to use a portfolio of utility securities that are of differing credit ratings. IPART infers that the nature of the industry is of greater importance in determining yields than credit risk as reflected by the rating. It is not apparent upon what basis IPART make this claim.

The credit rating issued by Standard and Poor's does capture the nature of the industry. The analysis undertaken by all rating agencies includes consideration of qualitative and quantitative factors covering business, corporate governance and financial risks. All rating agencies to some extent consider these factors as well as country risk, industry characteristics, company position, product/portfolio mix, and peer group comparisons[5]. The nature of the industry is reflected in the rating.

In the US market, there are yield curves for both Industrial companies and Utilities. Table 3 provides a summary of the 10 year BBB spread for both groups. It can be seen that there is little difference between the average Industrial spread and the average Utility spread over a 10 year period ending June 2009. The spread has increased since the sub-prime collapse and the global financial crisis. For the period January 2008 to June 2009, the average spread is almost twice the longer term average. While the spread has increased, the increase is similar for both groups. There appears little advantage in attempting to further adjust for industry risk. Ignoring credit risk and

[5] Standard & Poor's (2005), Corporate Rating Criteria.

simply considering industry risk would provide a yield that would have little resemblance of the benchmark cost of debt.

Table 3 10 Year BBB US Spreads

Time period	Industrial	Utility
Dec 1999 - June 2009	172	170
Jan 2008 - June 2009	313	307

Source: Bloomberg

Theoretically, a BBB margin for utilities would represent a commercial margin for utilities. Having such a small debt market (in terms of corporate bond issues) in Australia, this is not possible. Looking at the US evidence it appears that the effort is not warranted as the spread or margin for industrials is similar to that for utilities.

Considering utilities only and ignoring ratings will in fact understate the cost of debt. Five of the businesses proposed by IPART are AAA rated. They cannot be AAA rated on a stand-alone basis and therefore some form of credit enhancement must exist. The costs of credit enhancement must be considered and these costs must be the cost for the bond issues of an entity that would otherwise be rated BBB to be rated AAA.

What is proposed is a 10 year debt margin based upon a yield curve estimated using Erik Schloegl's proposed methodology using a group of short dated securities of various credit ratings with various credit enhancements for varying periods of time. The resulting estimate will not be transparent or easily replicated by users. Additionally the costs of credit enhancement are not public information. They cannot be observed like yield curves. As these costs are non observable, this alternative suggested by IPART is not a viable alternative.

3.3 Reference rates for utilities and BBB yields

This third approach contains the disadvantages of both the first and second options.

3.4 Preferred method

Synergies believes that the preferred option is to use the mid point between the yields reported by both CBA Spectrum and Bloomberg. If CBA Spectrum is not available then rely upon Bloomberg. When Bloomberg reports yields of less than 10 years, it is necessary to add an adjustment to the reported yield. The suggested adjustment is the AER approach. For example, if Bloomberg reports the 8 year yield for BBB rated securities, the difference between the 10 year and 8 year yield for A rated securities is added to the 8 year yield for BBB rated securities.

3.5 Other Issues

In the discussion paper, IPART raised other general issues. Two of these are addressed here.

Firstly, the 10 year yield as opposed to a 5 year yield should be used to estimate the debt margin as it is consistent with the cost of equity calculation and the other elements of the cost of debt calculation. As the risk free rate is the 10 year yield for Commonwealth Government Securities, the debt margin must also be based upon the same maturity.

As the 10 year rate is not currently reported by Bloomberg it is necessary to apply an adjustment to the longest dated yield available. Bloomberg currently reports an 8 year BBB yield. An appropriate adjustment for a 10 year estimate is that adopted by the AER. This adjustment adds to the 8 year yield the difference between the A rated 10 year yield and the 8 year yield. This adjustment has been found to be a reasonable approximation of the 10 year BBB rate in the past.

Secondly, it is normal to average the yield over a 20 day period consistent with the period over which the risk free rate estimate is averaged. The rationale for this is to remove spikes in market rates. Talking a longer averaging period is often unnecessary and additionally there may be a change in the basket of securities used to estimate the 8 year BBB yield. Synergies believes that 20 days is normally an appropriate period over which to average yields.

4 Conclusion

Prior to the global financial crisis both Bloomberg and CBA Spectrum provided estimates of yields for 10 year BBB securities. While there is no one 'true' way to estimate a yield, both providers provided similar estimates.

The crisis saw the number of long dated BBB rated securities reduce so that there are only a few securities and none with a 10 year maturity. The two data providers now produce estimates that are vastly different. It is expected that after the crisis, the estimates will again be similar to the extent that more longer dated securities are on issue.

IPART has suggested three alternatives. There are a number of problems associated with them. One is ignoring the BBB credit risk in favour of a group of utility securities. IPART should not ignore creditworthiness as identified by the rating. The approaches are not transparent nor have they been tested during a global financial crisis.

Additionally it is not possible to capture the cost of credit enhancement for different rated securities with differing maturities.

The preferred solution is to use an independent and credible provider to estimate the 10 year BBB yield to enable the debt margin to be calculated. Given that the two independent providers report differing yields, the mid point of the two rates should be used in the current financial crisis. As the crisis passes and the difference between the yields reported by the two providers reduces then one may be able to be relied upon.

If IPART cannot access CBA Spectrum, the next best option is Bloomberg. As Bloomberg does not report a 10 BBB yield, the 10 yield can be estimated using an adjustment, being the difference between the 8 year A yield and 10 year A yield.