WACOSS Submission to

ERA on the Estimation of Debt Risk Premium

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Abbreviations

AA	Access Arrangement
AER	Australian Energy Regulator
CAPM	Capital Asset Pricing Model
ERA	Economic Regulation Authority
FY	financial year
GFC	global financial crisis
IPART	Independent Pricing and Regulatory Tribunal
WACC	weighted average cost of capital

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Executive summary

The Economic Regulation Authority (ERA) is considering a new way of selecting the debt risk premium and has released a paper for comment. The ERA has traditionally estimated the debt risk premium using Bloomberg and CBASpectrum fair yield curve data for BBB+ 10 year corporate bonds.[1] However, the lack of deals following the global financial crisis (GFC) has led CBASpectrum to cease publishing its yield curves and Bloomberg to reduce the term of its BBB+ yield curve from 10 to 7 years.

The ERA's approach to the debt risk premium is important in determining the prices paid by consumers for infrastructure services such as electricity, gas, and water. As these infrastructure services are highly capital-intensive, the rate of return on debt strongly influences the prices of these services.

Regulators carry a key responsibility in approving the debt risk premium and the capital expenditure budget because these factors have a major influence on the affordability of infrastructure services and are not directly influenced by the consumers that use these services. WACOSS has a particular interest in the debt risk premium estimation to the extent that it influences the affordability of essential services. WA households have faced significant price increases in recent years and over 70,000 customers have found it difficult to pay bills.

WACOSS considers that:

- Regulators should rely where possible on transparent, independently verifiable market data to estimate the debt risk premium;
- Regulators should apply an 'A' credit rating (using Standard and Poor's credit rating system) as a basis for estimating the debt risk premium for infrastructure debt financing; and
- Regulators should examine the efficient costs of strategies available to corporate entities to reduce the debt risk premium, such as credit enhancement or borrowing against shorter terms;
- The debt risk premium should be based on a wide range of corporate bond maturities including bonds with 2 to 5 years to maturity;
- In order to align with current commercial practice regulators should estimate the debt risk premium based on a 5 year tenor; and
- Regulators should consider adopting the 5 year Commonwealth Government bond rate as the proxy for the risk-free rate.

[1] Corporate bonds represent borrowings by large corporate entities directly from capital markets rather than from banks: RBA Bulletin 2001, p. 5.

1 Background to the ERA's considerations

The ERA is proposing to use a new method to estimate the debt risk premium to be used in future regulatory decisions, including the decision on the pricing for WA gas distribution networks and the Dampier to Bunbury Pipeline.

The debt risk premium is an element of the capital asset pricing model (CAPM) formula used to determine the appropriate rate of return on the regulated asset base. The size of the debt risk premium is a key driver of the rate of return, which in turn is an important driver of the overall price of regulated services.

The CAPM uses the concept of the debt risk premium (or debt margin) to price the cost of debt as a portion of the regulated capital base. The debt risk premium can be estimated by a variety of methods. Traditionally regulators such as the ERA and the AER have estimated the debt risk premium using the 10 year fair yield curves published by Bloomberg and CBASpectrum and on observed bond transactions in the utilities sector. Yields have generally been selected on BBB+ credit ratings.[2]

The problem with this approach is the paucity of comparable deals since the GFC. The only similar corporate bond issue in recent times has been an APA 10 year bond issue at BBB in July 2010. Due to the reduction in the issue of longer-dated corporate bonds, Bloomberg has withdrawn from publishing a fair yield curve for BBB credit ratings past 7 years, while CBASpectrum has ceased to publish a fair yield curve for all durations and across all credit ratings.

The ERA is proposing to manage this issue by discontinuing its focus on published fair yield curves and relaxing the limits on the set of comparable bonds. For example, the ERA has proposed to include BBB and BBB- transactions. However, the ERA will only have regard to Australian-originated bonds. The advantage of expanding the set of comparable bonds is that it will provide a greater depth of data to estimate the debt risk premium. The risk of this approach is that it will include non-comparable bond transactions and information.

By contrast with this proposed approach, the Issues Paper notes that the AER has recently dealt with the same challenge by basing its debt risk premium on a weighted average of the APA bond and an extrapolation to 10 years of the 7 year Bloomberg BBB fair yield curve.[3]

The Issues Paper notes that IPART is considering its approach to estimating the debt risk premium, but is contemplating the use of corporate bonds of maturities equivalent to the regulatory period (3 to 5 years), and including Kangaroo bonds[4] and US corporate bond markets for data.

[2] For example, the AER in the ActewAGL decision and the ERA's Draft Decision in relation to WAGN support a BBB+ credit rating: AER ActewAGL Final Decision 2010, p. 56 and ERA WAGN Draft Decision, p. 199, paragraph 661.

[3] For example, AER Victorian Electricity Distributors Final Decision 2010, at pp. 511 and 514.

[4] Kangaroo bonds are bonds issued by Australian corporate entities to overseas investors.

The ERA's Issues Paper notes that the Australian Competition Tribunal in the ActewAGL matter suggested that using the 10 year bond rate may be inappropriate because the original reasons for selecting it have disappeared and because it does not reflect general corporate practice.[5]

[5] ERA Issues Paper 2010, p. 5, paragraph 20.

2 Introduction

The ERA has called for submissions on the method for estimating the debt risk premium.

The debt risk premium is the premium or margin over a risk-free rate on the debt portion of the capital base used to provide regulated services. Expressed another way, the debt risk premium is the additional return expected by debt investors to invest in corporate debt instead of in (risk-free) government debt.

The level of the debt risk premium is important because it is a key determinant of the weighted average cost of capital (WACC) used to determine the appropriate rate of return on the regulated asset base used to provide regulated services. Typically, regulators assume that debt represent around 60 per cent of the total capital base.

The specific issue raised in the ERA issues paper is that it is difficult to continue the traditional method of relying on Bloomberg and CBA Spectrum data on BBB+ 10 year yields and debt risk premiums to estimate the debt risk premium because of the paucity of longer term deals since the GFC.

3 Issues raised and financial concepts

The debt risk premium measures the required premium over a risk-free rate that lenders would need in order to extend funds to a borrower of a specific creditworthiness. The Commonwealth 10 year bond rate has been traditionally used as a proxy for the risk-free rate as there is considered to be little chance of the Commonwealth defaulting on bonds that it has issued.

For the purposes of estimating the debt risk premium, creditworthiness is measured by a number of credit rating agencies including Standard & Poor's, Moody's, and Fitch. The AER and ERA have relied to date on Standard & Poor's credit ratings of Australian corporate bonds.

Standard and Poor's credit rating system rates borrowings from AAA to D, with the ratings from AAA to BBB being of investment grade. Ratings below BBB are considered of junk bond status. Moody's operate a similar credit rating system. Standard and Poor's and Moody's ratings are summarised in Appendix 1.

In arriving at a debt risk premium, Australian regulators have traditionally applied two financial market assumptions:

- Debt with a higher credit rating has a lower risk than lower rated debt and can therefore be obtained at a lower debt risk premium to the risk-free rate. Thus AAA rated debt is at a lower debt risk premium than BBB rated debt.
- For any given credit rating, longer term debt is generally at a higher debt risk premium than shorter term debt. The reasons for this are not established but longer term debt is generally considered to be riskier than shorter term debt.

These two financial market concepts can be combined to produce yield curves (or fair value curves). The yield curves show for a given credit rating the cost of debt. The yield curves for individual credit ratings typically increase approximately logarithmically in value as maturities increase (see figure 1 below).

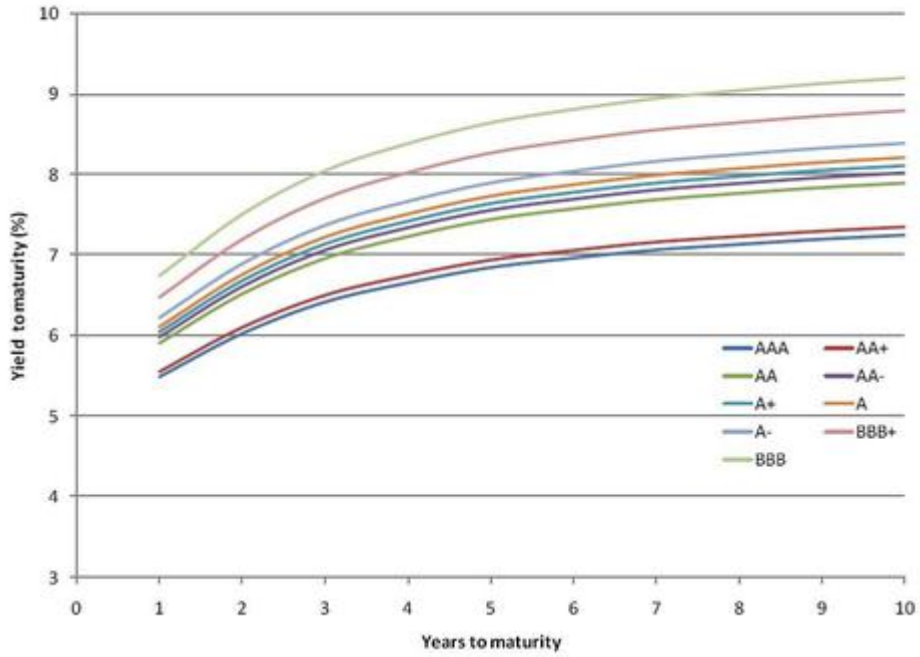
Until the GFC, yield curves for Australian corporate bonds were published by two sources, Bloomberg and CBA Spectrum. Other data providers, including UBS and AFMA, publish observed corporate bond yield data for various credit ratings (including secondary market data), but do not publish yield curves. With the advent of the GFC, and the reduction in longer-term corporate bond issuances, CBASpectrum ceased publishing yield curves across all credit ratings while Bloomberg ceased publishing 10 and 8 year BBB yield curves. The longest BBB yield curve that Bloomberg now publishes is 7 years.

Bloomberg's and CBASpectrum's historical yield curves are illustrated in figure 1 below.[6]

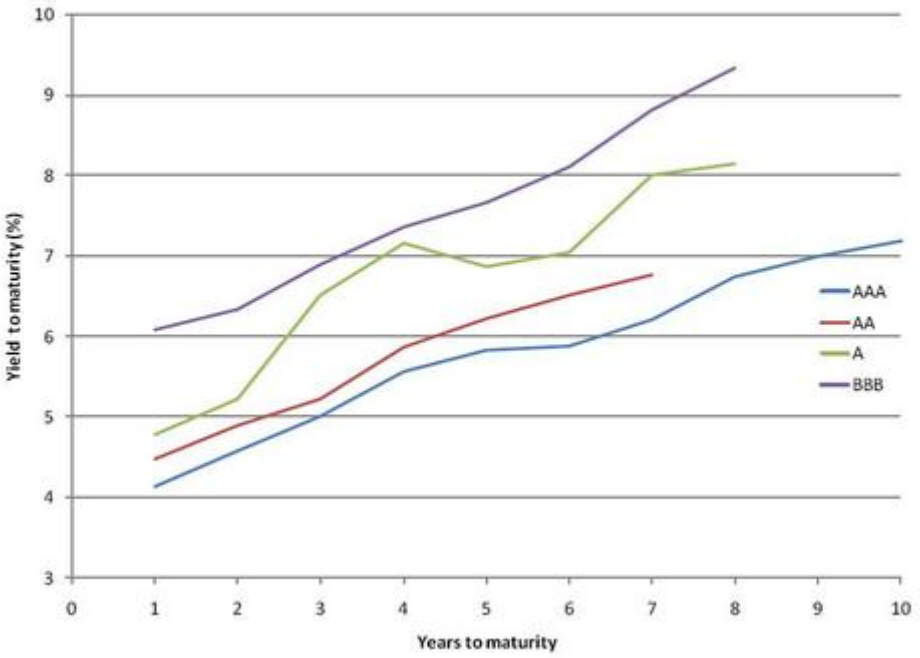
[6] ACT ActewAGL decision 2010, paragraph 23.

Figure 1: CBASpectrum and Bloomberg yield curves.

CBASpectrum fair value curves[37]



Bloomberg's fair value curves[38]



Comparing the A and BBB+ yield curves and shorter-term versus longer-term maturities illustrates the increasing premium payable by borrowers for longer term borrowings and for higher risk borrowings. Interestingly, the Bloomberg data shows a BBB 3 year corporate bond can be obtained for around the same debt risk premium as a 9 year AAA corporate bond (approximately 7%).

It is important to note that the explanation of why yield curves increase over time is not without challenge or criticism by financial market commentators. Further, yield curves are not stable over time. These criticisms suggest that if yield curves are relied upon to estimate the debt risk premium they should be used with care and after appropriate judgement about whether the assumptions of increasing yields over time are applicable at the time of estimation.

There are a number of reasons for exercising this level of care.

First, as a matter of observation it is not unknown for yield curves to invert[7] as a result of volatility, uncertainty, monetary policy, or liquidity management issues. An inverted yield curve has higher short term yields than long term yields.

Second, yield curves are actually only known with certainty for a few specific maturity dates, while the other maturities are calculated by interpolation or extrapolation.

Third, as CEG points out in a submission for Country Energy, the Bloomberg and CBA Spectrum yield curves:

- "Rely on proprietary methods and information; and
- Engage in non-transparent exercises of discretion and judgement when developing their fair value curves."[8]

Specifically, Bloomberg adjusts the yield curve for the line of best fit, excludes outliers and illiquid bonds at its judgment, and extends the yield curve maturities beyond the point of the longest data-point.[9] CBASpectrum impose a functional form on the raw data and solves for particular yield curves by applying the shape of other yield curves where data for a particular yield curve is limited.[10]

This stylisation of yield curves from limited datasets abstracts from the observed data. Both the Bloomberg and CBASpectrum approaches assume normal yield curves and extrapolate on a logarithmic basis. Visually, it appears from figure 1 above that CBASpectrum imposes a stricter yield curve functional assumption than Bloomberg.

Interestingly, although they are based largely on the same data set, CEG points out that Bloomberg and CBASpectrum produce quite different fair yield curves. These differences even extend to the same corporate bonds.[11] This may be due to how secondary market data on market maker offers are treated.[12] CEG compares the estimated debt risk premium from both Bloomberg's and

[7] Inversion occurs where short term corporate bond rates are above long term corporate bond rates.

[8] CEG, p. 42, paragraph 110

[9] CEG 2009, paragraphs 46, 50, 57, 68, and 72, pp. 15, 16, 19, 23, and 25.

[10] CEG 2009, paragraphs 92 and 137, pp. 36 and 50.

[11] CEG 2009, p. 9, paragraph 21, table 1.

[12] CEG 2009, p. 9, paragraph 22. Market makers such as banks offer to buy bonds in secondary markets. Bloomberg and CBASpectrum may include different portions of this market maker data, including offered prices which do not result in transactions.

CBASpectrum's yield curves to a Tabcorp 5 year 2009 corporate bond to assess which is more accurate. The finding is that both yield curves were equidistant from the actual observed value of the Tabcorp bond, with the CBASpectrum estimate being higher than the observed value of the Tabcorp bond and the Bloomberg estimate being lower.[13]

Fourth, there are four theories to explain the function of yield curves and in particular why and whether longer term borrowings could be expected to be at higher yields than shorter term borrowings. Some of these theories do not accept that longer term borrowing should necessarily be assumed to be higher than shorter term borrowings. If true, such theories would make it dangerous to extrapolate from shorter term data to estimate 10 year bond yields.

The market expectations (or pure expectations) theory states that short and long term bonds are perfect substitutes as investments but that investors require a premium for longer term investments because of uncertainty around future inflation and interest rates. Under this theory, as uncertainty increases into the future, so under normal interest rate conditions an investor placing funds for a longer term bond needs to be rewarded with a higher yield.[14]

The liquidity preference theory considers that short and long term bonds are relatively or perfectly substitutable but that investors have a preference for maintaining more liquid (i.e. short term) investments and thus require a higher premium to invest in longer term bonds.[15]

The market segmentation theory states that short and long term bonds are not substitutable investments and therefore the pricing of each is largely independent of the other. At a given time, shorter term bonds may be in greater demand by investors because investors tend to prefer more liquid investments and this increased demand drives down yields for shorter term bonds. This theory is an alternative to the liquid preference theory as a way of explaining how the preference of investors for more liquid investments generates lower yields for shorter term investments.

The preferred habitat theory considers that bonds of varying lengths are not substitutable as investors have a varying range of investment horizons. Particular investors will select bonds to match their investment horizons, and investors with longer term investment horizons (e.g. superannuation funds) will prefer longer term bonds with fixed rates even if they are at lower premiums.[16]

These theories do not present a unified way of predicting the function of a yield curve. This makes it problematic to use yield curves populated by sparse data or shorter term data to confidently predict longer term debt risk premiums.

[13] CEG 2009, p. 51, paragraph 137, table 4. The Bloomberg yield curve estimate is 1.12 to 1.13 per cent below the observed Tabcorp cost of debt while the CBASpectrum yield curve estimate is 1.06 to 1.33 per cent above.

[14] See, e.g. Cuthbertson 1996.

[15] Compare, e.g., Modigliani 1944.

[16] Compare Cox Ingersoll, and Ross 1985.

In any case, yield curves sometimes adopt a humped, flat, or inverted shape. This would again tend to suggest that applying normal yield curve assumptions may be dangerous. For example, the yield curve of Commonwealth Government bonds over the period 1995 to 2010 shows that the yield curve inverted between bonds of 5 year and 10 years maturity during June 1995, August-September 2000, February to June 2005, and from December 2005 to July 2007.[17] At these times, extrapolating a yield curve from 7 years to 10 years would have significantly over-estimated the 10 year debt risk premium.

In summary, yield curves are necessarily based on assumptions and limited data. The assumptions used in development of the Bloomberg yield curve are not available to the market. In addition, it is not established in theory how long term yields are related to short term yields, making it difficult to extrapolate from shorter term maturities to estimate a long-term debt risk premium. Accordingly, WACOSS recommends that the ERA not rely on the Bloomberg yield curve in order to estimate the debt risk premium.

[17] CGS- Capital Market Yields – Government Bonds – Daily and Monthly [F2].

4 Regulatory practice

Historical regulatory practice in Australia has been for regulators to estimate the debt risk premium using yield curves and comparable corporate deals.[18]

Typically, data for comparable deals has been on the basis of:

- Corporate bonds;
- BBB+ creditworthiness;
- 10 year tenor;
- Sourced within Australia in Australian currency;
- Ideally sourced from within the infrastructure industry.

In the ActewAGL decision, the AER rejected the inclusion of floating rate bonds (even with adjustments to convert the floating rate to an equivalent fixed rate). This decision was criticised on review by the Australian Competition Tribunal (ACT).[19]

Regulators have applied these assumptions rather than examining the actual practice of a particular regulated entity, including regulated entities' actual borrowing costs. Regulators have adopted this approach to avoid giving regulated entities an incentive to distort financing arrangements or take risks to generate higher debt risk premiums (or affect other elements of the WACC).[20]

Overseas practice for determining the debt risk premium is similar to Australian practice in that most regulators use the CAPM to determine a WACC, and estimate debt costs from observed corporate bond transactions and published yield curves.[21]

[18] For example, AER ActewAGL decision 2010, pp. 40-57.

[19] Compare AER ActewAGL decision 2010, pp. 46-47 and ACT ActewAGL decision 2010, paragraph 58.

[20] For example, see ERA WAGN Draft Decision 2010, paragraph 526, pp. 94-95.

[21] For example, see Ofgem Electricity Distributor Price Control Five 2009.

5 The Appropriate Benchmark Credit Rating for Infrastructure Corporate entities

WACOSS considers there are grounds for rerating infrastructure entities to an A rating, and for considering the impact of cost-effective credit wrapping and other strategies that would reduce the debt risk premium.

On the continuum of Standard and Poor's credit ratings from AAA to D, firms with an A credit rating are described as having: "Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances". Firms with a BBB credit rating (the next step down) are described as having "Adequate capacity to meet financial commitments, but more subject to adverse economic conditions".

Moody's credit rating system provides that firms with an A credit rating "are considered upper-medium grade and are subject to low credit risk". Firms with a Baa credit rating (the next step down) are described as "subject to moderate credit risk" and "are considered medium grade and as such may possess certain speculative characteristics".

Reviewing the description of firms operating in the infrastructure market, they align more with the Standard and Poor's or Moody's A rating than the BBB+ or Baa rating. Standard and Poor's BBB+ or Moody's Baa credit rating is too low for infrastructure corporate bonds because:

- infrastructure cash flows are strongly predictable thus reducing risk; and
- infrastructure services are defensive thus reducing risk.

Moreover, when setting the debt risk premium, regulators should consider the cost-effective strategies open to efficient benchmark firms to reduce the most appropriate credit rating for borrowing.[22]

Efficient firms have a number of strategies aimed at reducing the debt risk premium, including:

- credit enhancement through techniques such as credit wrapping;
- shorter term borrowing at a lower debt risk premium, potentially coupled with risk management strategies such as the use of interest rate swaps, options, or other derivatives or asset diversification within the firm; or
- management of debt maturity risk[23] by borrowing at a range of maturities and by accepting the costs of refinancing risk.

These strategies are can reduce the net cost of debt after taking into account their costs of implementation. These strategies are observed in commercial practice in Australia, indicating that

[22] Regulators estimate the debt risk premium based on the actions of benchmark efficient utility firms rather than the actions of the specific firm in question. For example, see ERA WAGN Draft Decision 2010, p. 94, paragraph 526.

[23] Debt maturity risk is the risk created from exposure to refinancing or mismatching of cash flows to debt repayments.

they are part of the armoury of efficient benchmark firms. For example, the RBA has reported that credit enhancement through credit wrapping is occurring among infrastructure entities:

> *In Australia, credit wrapping is primarily used by lower-rated (generally BBB) investment-grade corporates – typically airports, utilities and infrastructure related issuers – to obtain a higher rating on their bonds. This is because the rating of a credit-wrapped bond is generally set at the higher of the insurer or issuer's rating. It also enables issuers to issue at longer maturities and lower spreads than otherwise*[24]

The RBA notes that credit-wrapping was affected during the GFC, primarily through credit downgrades on the credit-wrapping agencies, but has been resilient.[25]

WACOSS argues that regulators could adjust the debt risk premium by adding the costs of credit wrapping (or other strategies) but selecting the debt risk premium for the higher credit rating.

[24] RBA 2008

[25] RBA 2010.

6 Selection of the appropriate data set

WACOSS makes a number of observations on selection of the appropriate data set for inclusion in estimating the debt risk premium:

1. To improve confidence in the estimation of the debt risk premium, it is important to expand the data set. It would also be worthwhile to move away from placing too much reliance on yield information such as Bloomberg and CBASpectrum yield curves as they are non-transparent, significantly modified, and discretionary. The approach should therefore be to select an estimate that can be supported by a richer, deeper data set. As a result, it is sensible to seek to estimate and apply the 5 year A or BBB+ corporate bond rate than a 10 year bond rate.

2. The 7-year BBB yield curve quoted by Bloomberg differs substantially from corporate bond rates observed in the market, as noted earlier and in the ERA Issues Paper (figure 2). Also as discussed above, the AER noted in the Victorian Electricity Distributors Price Control decision that recent bond issues in the Australian utilities sector have been significantly below the yield estimates made by the AER at the draft decision stage.

3. The yield curve becomes progressively less reliable for longer tenors due to possible extrapolation errors and reduced data.

4. To avoid errors it is better to have a large data set rather than a small data set of 'pure' data, i.e. pure in the sense of being the most comparable data. For example, while the recent APA bond issue is relatively more comparable in terms of its metrics, it is not perfectly comparable to the BBB+ bond rate because it is at the lower BBB rating and because APA has significant asset exposure (particularly through its EII assets) to more risky assets than typical energy distribution or transmission infrastructure assets. While it could be argued that data has to be drawn from representative sets, no corporate bond data is exactly comparable because of the multiplicity of terms and conditions, including changing perceptions of creditworthiness or the callable aspects of certain bonds.[26] Small data sets also make it very difficult to identify or exclude outliers.[27]

5. It is a well-accepted principle of economics and statistics that a large, heterogeneous source of data that is less 'pure' is likely to provide a more pure estimate of the debt risk premium than a small source of data. Statistics uses sample size to determine the confidence levels of an estimate.

6. The best way to expand the data set is to draw data from shorter term maturities and from bond issuances in Australia but from outside the infrastructure industry. These two sources of data are reasonably deep, and reasonably comparable to the 5 year A or BBB+ corporate bond rate.

7. If the ERA decides to use the BBB+ credit rating rather than the A credit rating then one method to expand the data set would be to select ratings one step up and down from the BBB+ rating. This would suggest that the data set could be expanded to include ratings on both sides of the BBB+ rating, viz. A- ratings to BBB ratings. This would be preferable to the approach of selecting

[26] Compare AER Victorian Electricity Distributors Final Decision 2010, pp. 505-506.

[27] Compare ACT ActewAGL decision 2010, paragraphs 68-70.

ratings in the range BBB+ to BBB- as this data set is lopsided to lower credit ratings than the average BBB+ rating, and thus will tend structurally to over-estimate the yield curve. Moreover, the A- rating has the advantage of being well supported by data.

8. As noted earlier, the function of the yield curves is contested.[28] Moreover, as CEG pointed out, the Bloomberg and CBASpectrum yield curves are both highly massaged and at odds with each other even in respect of the same bonds. It would be better to rely more on actual observed data such as UBS and AFMA data on observed corporate bonds.

9. It may be problematic to expand the data set to include overseas issued bonds (with the possible exception of Kangaroo bonds) in estimating the debt risk premium since the varying depth of liquidity in capital markets across countries will influence debt risk premiums at given credit rating. Additionally, the market expectations hypothesis would suggest that longer term yield curve rates largely reflect future inflation and interest rate expectations. As inflation and interest rate expectations differ significantly among countries over time, yields and debt risk premiums on long dated corporate bonds will vary among countries. IPART notes that it "engaged Erik Schloegl to consider a methodology to extend the maturity of Australian corporate bonds by using suitable overseas bonds and the Bloomberg fair value curve" but that "Erik Schloegl concluded that such an adjustment is not recommended as there is no other reliable data that could be used".[29] Subsequently, IPART has stated that it may be able to use data from the Kangaroo bond market[30] and the US bond market.[31]

[28] For example, Cuthbertson 1996.

[29] IPART 2010, p. 10.

[30] The RBA notes that as at September 2010, around 60 per cent of Australian bonds are issued offshore: RBA 2010a. Also see RBA 2010, graph 1.

[31] IPART 2010a, pp. 1-2.

7 Comments on the AER approach and the IPART approach

The AER's approach in the recent Victorian Electricity Distributor Price Control review was to base the estimate of the debt risk premium on:

- an extrapolation of the Bloomberg BBB+ yield curve from 7 to 10 years (with a 75% weighting); and
- the recent APA bond issue (with a 25% weighting).

The AER approach to extrapolate the BBB curve from the AAA yield curves over the 7-10 year period may be unreliable as the slope of the BBB+ curve may not be equivalent over the period from 7-10 year to the AAA curve. The yield curve for BBB+ may be steeper or shallower over time than the AAA curve and may change in relation to the AAA curve as yields transition from humped to normal to flat to inverted. As risk perceptions and relative liquidity change, so the relative slopes of the AAA and BBB+ curves can be expected to change in relation to each other.

A second concern is that the AER is trying to synthetically create a corporate bond yield (10 year BBB+ bonds) that hardly exists in the corporate world. CEG notes that:

> *... the accuracy of the AER methodology depends entirely on:*
> - *The accuracy of the Bloomberg 8 year BBB fair value estimate as a proxy for the 8 year BBB+ benchmark rate;*
> - *The accuracy of the Bloomberg A fair value curve between 8 and 10 years as a proxy for the shape of the benchmark BBB+ yield curve*[32]

IPART is considering its approach to estimating the debt risk premium, but is considering the use of corporate bonds of maturities equivalent to the regulatory period (3 to 5 years), and looking at Kangaroo bonds and US corporate bond markets for data to include in the dataset. IPART is considering whether to adopt a 5 year term to maturity for the estimate of the debt risk premium.[33] IPART has not yet made any firm decisions on its approach. WACOSS supported the IPART's approach of expanding the data set as far as possible and consideration of setting the point of estimation of the debt risk premium to a shorter period such as 5 years.

[32] CEG 2009, p. 30, paragraph 78.

[33] IPART 2010a, pp. 3-4.

8 Appropriate bond maturity period

IPART's recent discussion paper on the debt risk premium examined the case to shorten the period of the estimate to 5 years and stated that:

> *We note that a 10-year term assumption may on average overstate the cost of capital for the benchmark firm. On the other hand, there is also evidence to suggest that utilities aim to issue longer term debt.*[34]

IPART's discussion paper notes that the ACT affirmed a 10 year period in the GasNet case but in the recent ActewAGL case, the ACT opined that "there seems to be little point in attempting to estimate the yield on a bond which is not commonly issued".[35] In actual fact, the ACT GasNet decision only determined that the AER (the ACCC at the time) should have used the 10 year Commonwealth Government bond rate as a proxy for the risk-free rate rather than any specific observation about the period of maturity for estimating the debt risk premium.[36]

IPART noted in its Discussion Paper that "that the NZ Commerce Commission and the QCA have previously adopted terms to maturity to match the regulatory period".[37]

WACOSS considers that it is appropriate to estimate the debt risk premium over a 2 to 5 year period rather than a 10 year period. This is because:

- It is better to select a tenor supported by more extensive market data. Even prior to the GFC, shorter tenors were much more common than longer tenors.
- Ten year corporate bond issuance is rare and has always been rare in Australia, perhaps due to the shallow nature of Australian capital markets. APA noted it was the first ever Australian 10 year BBB medium term note issuance in Australia.
- No strong reason to ever have advanced to use the 10 year corporate bond rate except that it aligns with the use of the Commonwealth 10 year bond rate for the risk-free rate. This is not a strong argument for using a 10 year corporate bond rate, particularly when there is little or no data to allow it to be estimated.
- It is true that, ideally, the term of the corporate bond would be selected to match the period over the underlying assets generate sufficient cash flows to pay off the debts used to finance those assets. However, as infrastructure assets typically last 40-80 years and may take 25 year to pay off, it would never be possible to borrow for the entire 25 year repayment period. As a result, infrastructure providers will always face refinancing risk a number of times, whether a 5 or 10 year tenor is selected. In any case, as noted above, refinancing risk can be managed by having a portfolio of debt maturities, or through swaps, options, or derivatives.

[34] IPART 2010a, p. 58.

[35] IPART 2010a, p. 58.

[36] Compare ACT GasNet decision, paragraph 35.

[37] IPART 2010a, p. 58.

- It may well be cheaper for an efficient benchmark firm to manage refinancing and debt maturity risk through these means than by paying a significant premium to borrow for 10 years.
- A 5 year corporate bond tenor aligns with typical Access Arrangement periods and is favoured by IPART as a method for dealing with the lack of 10 year corporate bond data.
- A 10 year bond period does not align with current commercial practice. This is observable from the simple fact that 10 year corporate bond issuances are rare.

9 Selecting the Appropriate Period for the Risk-Free Rate

WACOSS considers that there is a case for adopting the five year Commonwealth Government bond rate as the proxy for the risk-free rate.

As discussed above, concerns have been expressed that selecting a five year yield estimate for the debt risk premium will result in a misalignment of the parameters for the debt risk premium and the risk-free rate, which is typically based on a 10 year Commonwealth bond rate.

As noted, in the GasNet decision in 2003, the ACT rejected the ACCC choice of a five year CGS period on the basis that a ten year period was more consistent with the financing arrangements that apply to long-lived assets. However, the reasons for the ACT to reject the use of a five year risk-free rate may have receded since 2003 given developments in financial markets.

It is noted that the five year Commonwealth bond rate is typically lower than the ten year Commonwealth bond rate though this relationship inverted on a number of relatively brief occasions during 1995, 2000, 2005, and for a more extended period from June 2006 to July 2007.[38]

There is not necessarily any particular inconsistency between basing the debt maturity risk on a 5 year rate and the risk-free rate on a 10 year rate.

If it is considered that the two rates should align in their period, then it could be argued that it would be more sensible to select a five year Commonwealth bond rate for the risk-free rate. A five year rate for the risk-free rates matches the regulatory period, and, in particular, the risk profile of regulated infrastructure assets over that period. The key reason to reject a five year risk-free rate appears to be that it does not align the risk-free rate with the profile of cash flows generated by the assets financed from debt.[39] Lally argued in a paper to the ACCC that as the WACC parameters are reset with each regulatory reset (say every 5 years), regulated firms are insulated from risks beyond that time, and thus higher long-term risk-free rates (say 10 years) would over-compensate them for the risks they face. The over-compensation occurs because the 10 year risk-free rate includes compensation to bond holders for the reduced liquidity of a 10 year bond. [40]

Moreover, in recent years, capital markets have developed a broader array of generally available financial instruments to manage refinancing risk, and efficient benchmark firms may choose to borrow at shorter periods than a 10 year period for the reduction in the debt risk premium. These factors may impel firms, acting efficiently, to borrow for shorter periods than 10 years.

[38] CGS- Capital Market Yields – Government Bonds – Daily and Monthly [F2].

[39] Compare ACT GasNet decision 2003.

[40] Lally 2002, p. 7.

10 Managing the Datasets to Produce an Estimate of the Debt Risk Premium

The ERA is considering taking a conservative approach in estimating the debt risk premium by selecting the value at the top of the range generated its proposed approach.

For example, in the application of its intended method, the ERA generates four different possible values for the debt risk premium, as set out in table 4.[41] The ERA says it could adopt the highest of the above four estimates as a "conservative position".[42]

WACOSS is concerned that adopting the highest of four estimates rather than the mean would tend to create an upward structural bias in the estimation of the debt risk premium. Users would bear the costs of such a conservative approach. Additionally, adopting the highest value may over-weight possible outliers at the top end of the range.

[41] ERA Issues Paper 2010, p. 14.

[42] ERA Issues Paper 2010, p. 15.

11 Summary of Views and Recommendation

WACOSS welcomes the ERA's thoughtful consideration of how to calculate the debt risk premium in essential services markets. We are particularly interested in the debt risk premium to the extent that it affects affordability of essential services for WA consumers.

WACOSS considers that:

- Regulators should rely where possible on transparent, independently verifiable market data to estimate the debt risk premium;
- Regulators should apply an 'A' credit rating (using Standard and Poor's credit rating system) as a basis for estimating the debt risk premium for infrastructure debt financing; and
- Regulators should examine the efficient costs of strategies available to corporate entities to reduce the debt risk premium, such as credit enhancement or borrowing against shorter terms;
- The debt risk premium should be based on a wide range of corporate bond maturities including bonds with 2 to 5 years to maturity;
- In order to align with current commercial practice regulators should estimate the debt risk premium based on a 5 year tenor; and
- Regulators should consider adopting the 5 year Commonwealth Government bond rate as the proxy for the risk-free rate.

Appendix 1: Credit ratings

Standard and Poor's credit ratings

The general meaning of our credit rating opinions is summarized below.
'AAA'—Extremely strong capacity to meet financial commitments. Highest Rating.
'AA'—Very strong capacity to meet financial commitments.
'A'—Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances.
'BBB'—Adequate capacity to meet financial commitments, but more subject to adverse economic conditions.
'BBB-'—Considered lowest investment grade by market participants.
'BB+'—Considered highest speculative grade by market participants.
'BB'—Less vulnerable in the near-term but faces major ongoing uncertainties to adverse business, financial and economic conditions.
'B'—More vulnerable to adverse business, financial and economic conditions but currently has the capacity to meet financial commitments.
'CCC'—Currently vulnerable and dependent on favourable business, financial and economic conditions to meet financial commitments.
'CC'—Currently highly vulnerable.
'C'—Currently highly vulnerable obligations and other defined circumstances.
'D'—Payment default on financial commitments.

Note: Ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

Source: Standard & Poor's website.

Moody's credit ratings

Aaa - Obligations rated Aaa are judged to be of the highest quality, with minimal credit risk.
Aa - Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.
A - Obligations rated A are considered upper-medium grade and are subject to low credit risk.
Baa - Obligations rated Baa are subject to moderate credit risk. They are considered medium grade and as such may possess certain speculative characteristics.
Ba - Obligations rated Ba are judged to have speculative elements and are subject to substantial credit risk.
B - Obligations rated B are considered speculative and are subject to high credit risk.
Caa - Obligations rated Caa are judged to be of poor standing and are subject to very high credit risk.
Ca - Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
C - Obligations rated C are the lowest rated class and are typically in default, with little prospect for recovery of principal or interest.

Source: Moody's 2010.

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