Jemena Gas Networks (NSW) – Access Arrangement Information - Appendix 9.2

Debt risk premium for use in the initial AMI WACC period – Paper produced jointly by the Victorian Electricity Distribution Businesses

26 August 2009

DEBT RISK PREMIUM
FOR USE IN THE
INITIAL AMI WACC PERIOD

Paper produced jointly by the
Victorian Electricity Distribution Businesses

1 June 2009

Debt risk premium for use in the initial AMI WACC period

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EXECUTIVE SUMMARY

The Victorian electricity Distribution Businesses (DBs) must make submissions to the Australian Energy Regulator regarding their proposed charges for AMI services. The submissions, and the AER's assessment of them, must be in accordance with provisions set out in the *Advanced Metering Infrastructure Order in Council 2008.*

One of the underlying drivers of the cost of providing AMI services is the cost of capital (WACC), and an important element of the WACC calculation is the debt risk premium.

This paper sets out the debt risk premium that the Victorian DBs propose to adopt for the "initial AMI WACC period".

In preparing this paper, the Victorian DBs have examined:

- the regulatory provisions governing the determination of the debt risk premium for the initial AMI WACC period;
- the characteristics of the credit market during the period over which the debt risk premium must be observed for the purpose of determining the WACC for the initial AMI WACC period;
- the AER's approach to determining the debt risk premium in other recent decisions; and
- a range of market data relating to the debt risk premium.

The Victorian DBs have concluded that:

- In the absence of a directly observable benchmark, the derivation of a benchmark for Australian 10 year BBB+ corporate bond rates is an exercise that unavoidably entails some subjectivity and the reasonable exercise of discretion.
- Under the credit market conditions prevailing at the time of the measurement period prescribed for the purpose of determining the debt risk premium, the data relied on by the AER in its recent decisions (namely, Bloomberg fair yield curves) are not fit for the purpose of the AER's determination of the debt risk premium for the initial AMI WACC period.
- It would therefore be contrary to the requirements of the AMI Order in Council (AMI OIC) for the Bloomberg fair yield curves to be relied upon in the determination of the debt risk premium in this particular case.
- In these circumstances, the benchmark debt risk premium should reflect, and be consistent with:
    - any directly observable yields on long-dated Australian corporate bonds (and in particular, any new issues) during and around the time of the measurement period prescribed in the AMI OIC;
    - reasonable views based on market evidence regarding the term structure of Australian corporate bond yields at the benchmark credit rating of BBB+; and
    - reasonable views based on market evidence regarding debt risk premia of non-bank Australian corporate bonds of the same maturity.

Accordingly, the Victorian DBs have derived a debt risk premium based on the Tabcorp 5 year BBB-rated bond issue of April 2009, which is the only long-dated domestic bond issued by an Australian non-bank since October 2007. The proposed benchmark has been corroborated with reference to a variety of other objective market data.

The Victorian DBs propose that the debt risk premium for the period defined in the AMI OIC as the initial AMI WACC period is 484 basis points.

The Victorian DBs' proposal provides a robust Australian benchmark corporate bond rate for corporate bonds with a 10 year maturity and BBB+ credit rating over the prescribed measurement period, in accordance with the requirements of the AMI OIC.

1 Purpose and structure of this paper

In accordance with provisions set out in the *Advanced Metering Infrastructure Order in Council 2008* (AMI OIC), the Victorian electricity Distribution Businesses (the Victorian DBs)[1] are required to make submissions to the Australian Energy Regulator regarding their proposed charges for AMI services.

A key driver of the costs of providing AMI services is the cost of capital (WACC), and an important element of the WACC calculation is the debt risk premium.

The purpose of this paper is:

- to set out the basis of the debt risk premium that the Victorian DBs propose to apply for the period defined in the AMI OIC as the "initial AMI WACC period"; and
- to demonstrate that the proposed debt risk premium meets all the requirements of the AMI OIC.

The remainder of this paper is structured as follows:

- Section 2 sets out the relevant provisions of the AMI OIC.
- Section 3 provides an overview of the prevailing credit market conditions, and discusses issues relating to the observation of an Australian benchmark corporate bond rate.
- Section 4 considers the question of whether, in the market that existed at the time of the measurement period prescribed by the AMI OIC, Bloomberg fair yield estimates are fit for the purpose of estimating the debt risk premium.
- Section 5 examines the AER's present approach to estimating the debt risk premium.
- Section 6 sets out the debt risk premium proposed by the Victorian DBs.
- Section 7 sets out conclusions.
- The Attachments contain detailed supporting information.

[1] The Victorian DBs are: Jemena Electricity Networks (Vic) Ltd, CitiPower Pty, Powercor Australia Ltd, United Energy Distribution Pty Ltd, and SPI Electricity Pty Ltd.

2 Relevant provisions of AMI Order in Council

2.1 Overview and summary of provisions

The AMI OIC contains provisions that govern the determination of the debt risk premium for the initial AMI WACC period.

In summary, these provisions require the debt risk premium to be determined as the difference, measured over the period from 17 November 2008 to 5 December 2008 inclusive, between:

- the observed yield on Commonwealth Government bonds with a maturity of 10 years; and
- the observed annualised Australian benchmark corporate bond rate for corporate bonds which have:
    - a maturity of 10 years; and
    - a credit rating of BBB+.

Sections 2.2 to 2.5 below provide further details of the basis of these statutory requirements.

2.2 Measurement period for observing the debt risk premium

The AMI OIC defines the debt risk premium as a WACC input parameter which is "market observable". It also defines the nominal risk free rate in the same way.

In relation to these parameters, clause 4.1(i)(i) of the AMI OIC states:

> "The input parameters used to calculate the WACC for the initial AMI WACC period must be calculated with measurement of the market observables to occur on:
>
> (A) the last 10 business days of November 2008; and
>
> (B) the first 5 business days of December 2008,
>
> with the market observables to be determined on the basis of that measurement and otherwise in accordance with the Statement of Regulatory Intent issued by the AER pursuant to clause 6.5.4 of the National Electricity Rules."

Accordingly, for the purpose of determining the debt risk premium, the period over which the market observations are to be made is 17 November to 5 December 2008 inclusive. This period is referred to throughout this paper as the "prescribed measurement period".

2.3 Method for estimating the debt risk premium

Clause 4.1(d) of the AMI OIC requires the return on capital to be calculated using the WACC.

The AMI OIC defines the term "WACC" as follows:

> "WACC means benchmark weighted average cost of capital calculated in accordance with the formula set out in clause 6.5.2(b) of the National Electricity Rules."

The WACC formula set out in clause 6.5.2(b) of the NER contains the term "DRP", which is the debt risk premium for the regulatory control period determined in accordance with clause

6.5.2(e). The meaning of "debt risk premium" is set out in clause 6.5.2(e) of the NER as follows:

> "The debt risk premium for a regulatory control period is the premium determined for that regulatory control period by the AER as the margin between the annualised nominal risk free rate and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a maturity equal to that used to derive the nominal risk free rate and a credit rating from a recognised credit rating agency."

Clause 6.5.4 of the NER provides for the AER to conduct a periodic review of certain matters set out in clause 6.5.2 which relate to the calculation of the WACC. Following that review the AER must issue a statement of regulatory intent adopting values, methods and credit rating levels for the purpose of determining the WACC of Distribution Network Service Providers. The AER's first review of WACC parameters was completed on 1 May 2009, when the AER issued a *Statement of Regulatory Intent on the Revised WACC Parameters.* In accordance with clause 4.1(i)(i) of the AMI OIC, the AER's May 2009 *Statement of Regulatory Intent on the Revised WACC Parameters* applies to the determination of the debt risk premium for the initial AMI WACC period.

It is noted, however, that the method for estimating the debt risk premium is not subject to review[2], so that matter is not dealt with in the *Statement of Regulatory Intent on the Revised WACC Parameters*. Therefore, in accordance with the definition of the term "WACC" contained in the AMI OIC, the definition of "debt risk premium" set out in clause 6.5.2(e) of the NER applies to the determination of the debt risk premium for the initial AMI WACC period.

2.4 Maturity of the benchmark corporate bond

Clause 6.5.4(d)(6) of the NER states that "the nominal risk free rate referred to in clause 6.5.2(c)" may form the subject of the AER's periodic WACC review. The AER's recent review examined the risk free rate.

Clause 3.2(a) of the AER's May 2009 *Statement of Regulatory Intent on the Revised WACC Parameters - Distribution* states:

> "In relation to the method to calculate the nominal risk free rate (r_f), it is to be on a moving average basis from the annualised yield on Commonwealth Government bonds with a maturity of 10 years."

In accordance with clause 4.1(i)(i) of the AMI OIC and clause 6.5.2(e) of the NER, the observed annualised Australian benchmark corporate bond rate is to relate to corporate bonds with a term to maturity of 10 years.

Since the debt risk premium is to be measured by reference to Commonwealth Government bonds, and the Commonwealth Government only issues fixed coupon bonds, the observed annualised Australian benchmark corporate bond rate should be for a fixed coupon bond.

2.5 Benchmark credit rating

Clause 6.5.4(d)(6) of the NER states that "credit rating levels referred to in clause 6.5.2(e)" may form the subject of the AER's periodic WACC review. The AER's recent review examined credit rating levels.

[2] The matters that are subject to the AER's periodic review of WACC parameters are listed in clause 6.5.4(d) of the NER.

Clause 3.1 of the AER's May 2009 *Statement of Regulatory Intent on the Revised WACC Parameters - Distribution* states:

> "The credit rating level is BBB+".

In accordance with clause 4.1(i)(i) of the AMI OIC and clause 6.5.2(e) of the NER, the "debt risk premium" is to be estimated with reference to a BBB+ credit rating.

3 Issues relating to the observation of an Australian benchmark corporate bond rate

3.1 Overview of recent credit market conditions

Recent international economic developments have precipitated a global credit crunch[3], described by former US Federal Reserve Chairman Alan Greenspan as a "once in a lifetime tsunami"[4]. The cost and availability of debt have been severely affected.

The credit market conditions prevailing around the time of the prescribed measurement period (from 17 November to 5 December 2008 inclusive) are described in the Reserve Bank's Statements on Monetary Policy of 10 November 2008 and 6 February 2009. In particular, the RBA's November statement noted:

> "World financial markets have come under severe stress in the period since the last Statement [in August 2008]. Strains in credit markets escalated in early September, and the period since then has been marked by further large declines in equity prices and exceptional volatility across a range of markets…
>
> The renewed turmoil was sparked by the failure or near-failure of a number of financial institutions in the United States and Europe…
>
> These events saw an intensification of the credit tightening that was already beginning to take hold in a number of countries. While this had previously been mainly apparent in increased funding costs, which were typically passed on to borrowers in the form of higher lending rates, the renewed turmoil saw this develop into a serious tightening in credit availability. As confidence in the financial sector deteriorated, banks became more uncertain about their ability to sustain their funding, and this in turn made it more difficult for them to lend to sound borrowers in the non-financial sector.[5]
>
> The deterioration of credit market conditions and the failure of several large financial institutions saw corporate debt yields increase significantly through September and October as default risk concerns escalated. Spreads on corporate debt surpassed their mid-March highs and 2000 peaks…[6]

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3 A 1998 World Bank Policy Research Working Paper (by Wei Ding and tilted *Is There a Credit Crunch in East Asia?*) explained that during a "credit crunch" there is a reduction in the available supply of credit. Typically, lenders become reluctant to lend either because of funding problems, or because regulators have urged credit restraint. The reluctance to lend may also stem from lenders' own balance sheet weaknesses (capital constraints) and their reassessment of borrowers' average credit quality. A credit crunch implies changes in the relationship between credit availability and interest rates. During a credit crunch, lenders may not only restrain credit generally but also adopt more stringent lending policies - a phenomenon termed "flight to quality".

4 NERA Economic Consulting, *The Credit Crisis-Our Latest Thinking*, http://www.nera.com./creditcrisis.asp

5 RBA, *Statement on Monetary Policy*, 10 November 2008, page 1.

6 Ibid, Page 13.

> Corporate bond issuance in the United States was very weak in the September quarter and well below the already subdued level of issuance seen earlier in 2008; issuance was around three times less than in the June quarter for both financials and non-financials, reflecting the current very difficult conditions for longer term funding.[7]

The RBA's February 2009 statement noted:

> While the global financial system remains under considerable strain, there have been some signs of an improvement in financial conditions recently. The extreme volatility that affected all markets in October and November following the Lehman's collapse has abated in the past two months. There have also been some signs of improvement in the functioning of credit markets in response to the substantial assistance measures taken by authorities in a number of the major economies. These measures have included injections of capital into financial institutions, the provision of government guarantees and various actions taken by central banks to improve market liquidity. While spreads in money markets remain high, yields have fallen to historically low levels in many countries. Debt issuance at longer terms has picked up, dominated by bonds issued by banks using government guarantees…[8] However, global issuance of unguaranteed debt remains weak."[9]

In a speech on 31 March 2009[10], the RBA Assistant Governor (Financial Markets) commented on the effects of the global financial crisis on Australian financial markets as follows:

> "Funding markets shut completely following the collapse of Lehman Brothers [in September 2008]. All global financial markets were dislocated by this event, but not surprisingly term debt markets were about the most affected…
>
> In the wake of the dislocation induced by Lehman's, many countries, including Australia, moved to guarantee bank debt issuance. Soon after the introduction of the guarantee, Australian banks were able to once again access term debt markets… There has, however, been little investor appetite for unguaranteed debt, despite other indications of an improvement in credit market conditions."

It is particularly noteworthy that the prescribed measurement period for market observables falls in late November / early December 2008. This period immediately followed the collapse of Lehman Brothers, and as noted by the RBA, this period was characterised by extreme volatility in financial markets, and the temporary closure of some credit markets.

3.2 Implications for determining the AMI debt risk premium

Care must be exercised in interpreting the outputs (namely predicted market yields) of all credit models, even under conditions of credit market stability. In this context, it is noteworthy that the AER itself has recognised that the fair yield models - including the Bloomberg model - used in recent regulatory decisions have some weaknesses:[11]

> "The AER notes that the methodologies adopted by Bloomberg and CBASpectrum to estimate fair yields are significantly different… The AER considers that the two methodologies have different strengths and weaknesses."

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7 Ibid, page 14.

8 RBA, *Statement on Monetary Policy,* 6 February 2009, page 1.

9 Ibid, page 22.

10 Speech titled *Some Effects of the Global Financial Crisis on Australian Financial Markets,* delivered by Guy Debelle, RBA Assistant Governor (Financial Markets) to Finance Professionals Forum, Sydney, 31 March 2009

11 AER, *Final decision: New South Wales distribution determination, 2009–10 to 2013–14*, 28 April 2009, page 230.

Present credit market conditions have led to considerable difficulties in the interpretation of the market yields predicted by all credit cost models, including in particular the Bloomberg fair market curve (FMC) model which has been used by the AER in its most recent decisions. This consideration is particularly relevant to the estimation of a debt risk premium in accordance with the requirements of the AMI OIC.

In addition, the estimation of a debt risk premium for the initial AMI WACC period is further complicated for the following reasons:

- There have been no ten-year non-bank corporate bond issues in Australia since October 2007. In fact, the 5 year Tabcorp bond issue that was priced on 1 April 2009 represents the first domestic non-bank corporate bond issue since October 2007.

- There are no observable BBB+ non-bank Australian corporate bonds outstanding in the Australian market that have 10 years left to maturity – longer dated bonds still outstanding were originally issued by entities that do not fit the AER's debt risk margin criteria. These entities include high-rated non-Australian supra-nationals, companies that have credit backing for their bonds via monoline insurance or a credit-wrap, Australian and non-Australian banks, Australian semi-governments, the Australian Government, and very highly rated offshore corporate entities.

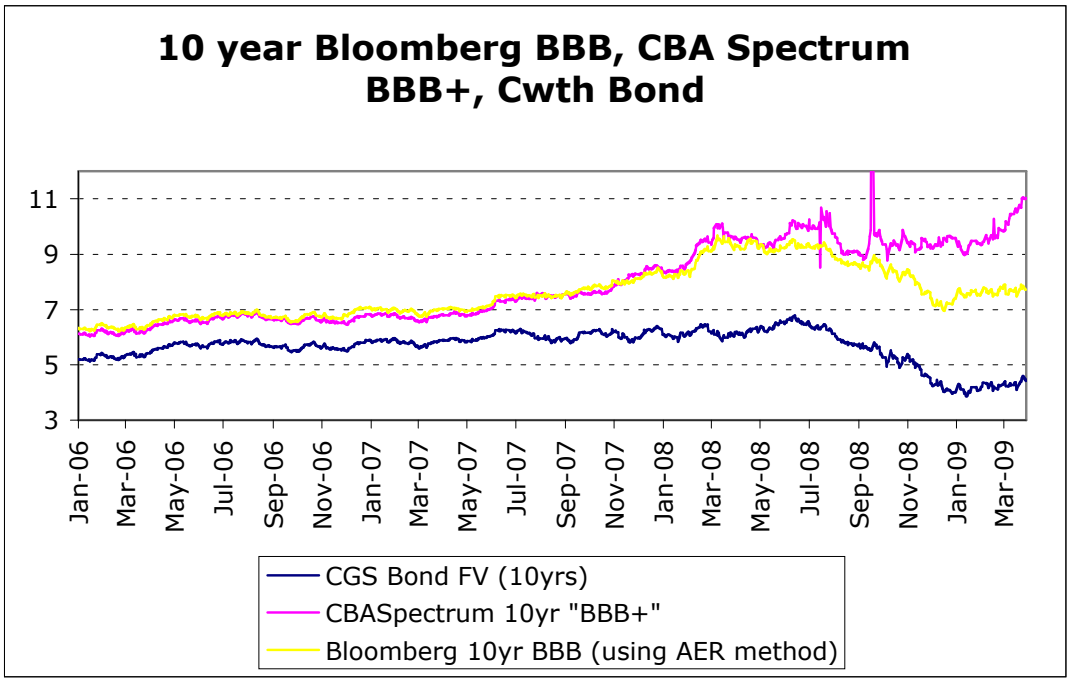
- As noted in section 3.1 above, at the time of the prescribed measurement period for the debt risk premium (17 November to 5 December 2008 inclusive) the domestic corporate bond market was effectively closed to BBB+ non-bank corporate issuers.

- There was significant illiquidity in secondary market bond trading activity in the lead-up to, during and after the prescribed measurement period. This illiquidity was also evident in many other markets including interbank lending and equity markets, as noted in the Reserve Bank publications and speeches cited in section 3.1 above.

- Within this highly abnormal environment:

    - There was a lack of legitimate reference prices to derive a robust estimate of the fair market yield.

    - Conditions of severe illiquidity made it difficult to provide reference points for the pricing of corporate bonds, and thus, fair yield curves might not provide a fair estimate of the prevailing yield on corporate bonds. In the absence of the necessary reference data, the Bloomberg model tended to follow the movements in the Commonwealth bond yield (even though the RBA in its Statement of Monetary Policy of November 2008 specifically noted "the intensification of credit tightening" in the post-Lehman Brother collapse period) while CBASpectrum did not, as shown in the chart below. Section 4 provides evidence that these unusual circumstances thereby led to substantial under-pricing of fair yields and debt risk premia by the Bloomberg model.



For these reasons, it is not possible to directly observe market yields on 10 year BBB+ Australian corporate bonds over the prescribed measurement period. The challenges arising for the regulator in establishing a robust benchmark for 10 year BBB+ corporate bond rates under these circumstances have been recognised by the AER, as follows:[12]

> "…[In] the current economic climate the trading of a significant number of bonds is either thin or non-existent. Because bonds are typically traded 'over the counter' rather than on a centralised exchange it can be difficult to observe the market price."

In its January 2008 final decision on SP AusNet's revenue cap[13], the AER noted that under these circumstances:

> "…the AER must determine its own benchmark for a 10 year BBB+ Australian corporate bond."

In the absence of a directly observable benchmark, the derivation of a benchmark for Australian 10 year BBB+ corporate bond rates is an exercise that unavoidably entails some subjectivity. Indeed, this fact is noted in an independent expert report prepared for Energy Australia in February of this year by noted finance academic R.R. Officer[14]:

> "There is no doubt that it will be difficult to establish an exact rate for the company's BBB+ debt in this period…
>
> If markets are 'thinly traded' I believe there is little option but to accept some estimate, that may involve a considerable degree of subjectivity of an appropriate rate for company debt…"

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12 AER, *Final decision: New South Wales distribution determination, 2009–10 to 2013–14*, 28 April 2009, page 231.

13 AER, Final decision, SP AusNet transmission determination - 2008-09 to 2013-14, January 2008, pages 95-96.

14 R.R. Officer, *Expert report prepared for Energy Australia in respect of certain matters arising from the AER's New South Wales Draft Distribution Determination 2009-10 to 2013-14*, 16 February 2009, paragraphs 57 and 60.

In these circumstances, the determination of the debt risk premium in accordance with the specific requirements of the AMI OIC and clause 6.5.2(e) of the NER should be guided by the exercise of reasonable discretion. On this basis, the Victorian DBs consider that the benchmark should reflect, and be consistent with:

- any directly observable yields on long-dated Australian corporate bonds during and around the time of the prescribed measurement period, and in particular any bonds issued at around that time;
- reasonable views based on market evidence regarding the term structure of Australian corporate bond yields at the benchmark credit rating of BBB+; and
- reasonable views based on market evidence regarding credit spreads (that is, the sensitivity of yields to variations in credit ratings) of non-bank Australian corporate bonds of the same maturity.

On the basis that domestic credit markets were effectively closed to non-bank Australian corporate issuers during and around the prescribed measurement period, it would also be instructive to examine the yields on long-dated BBB+ corporate bonds issued in more liquid overseas markets. The yields on corporate bonds observed in offshore markets (swapped into Australian dollars) provide a reasonable indication of the yields that would be expected to prevail in Australian domestic markets.

In light of the issues noted above regarding the limitations of fair yield curves in market conditions prevailing around the time of the prescribed measurement period, and given the AER's reliance on Bloomberg fair yield curves in its recent decisions, section 4 below examines in detail the question of whether Bloomberg fair yield curves are fit for the purpose of deriving an Australian benchmark BBB+, 10 year corporate bond rate in accordance with the AMI OIC.

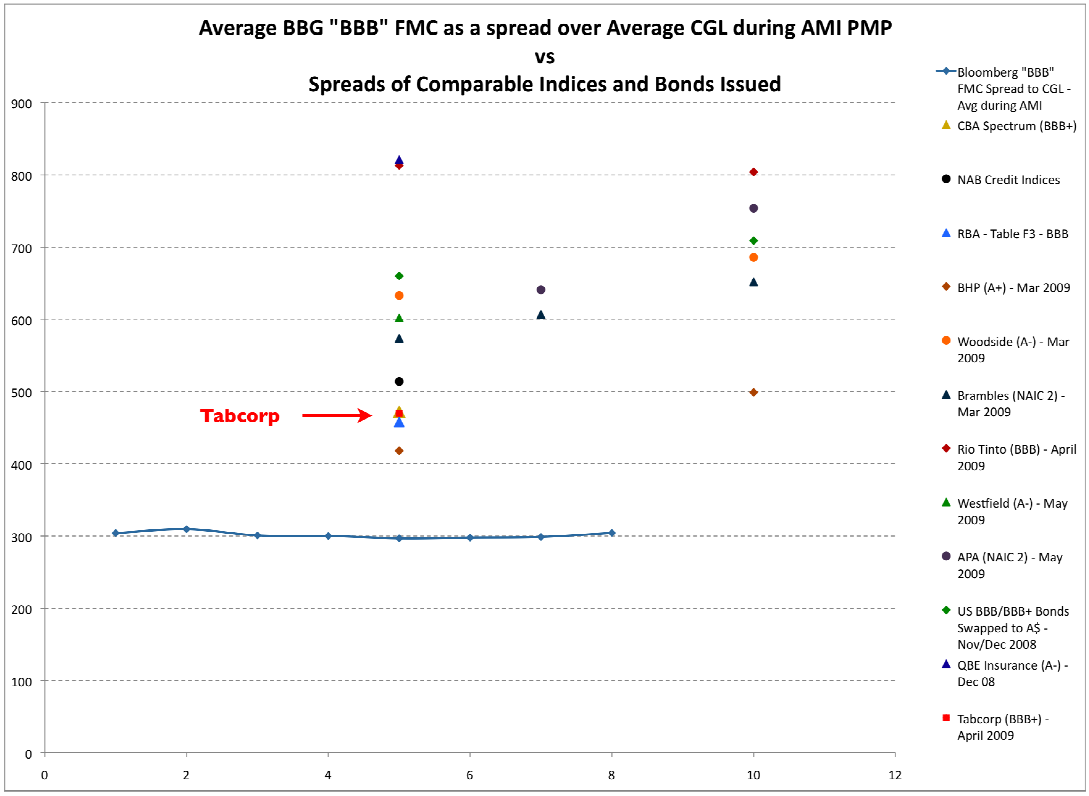
4 Is Bloomberg fair yield fit for purpose under the AMI OIC?

4.1 Introduction

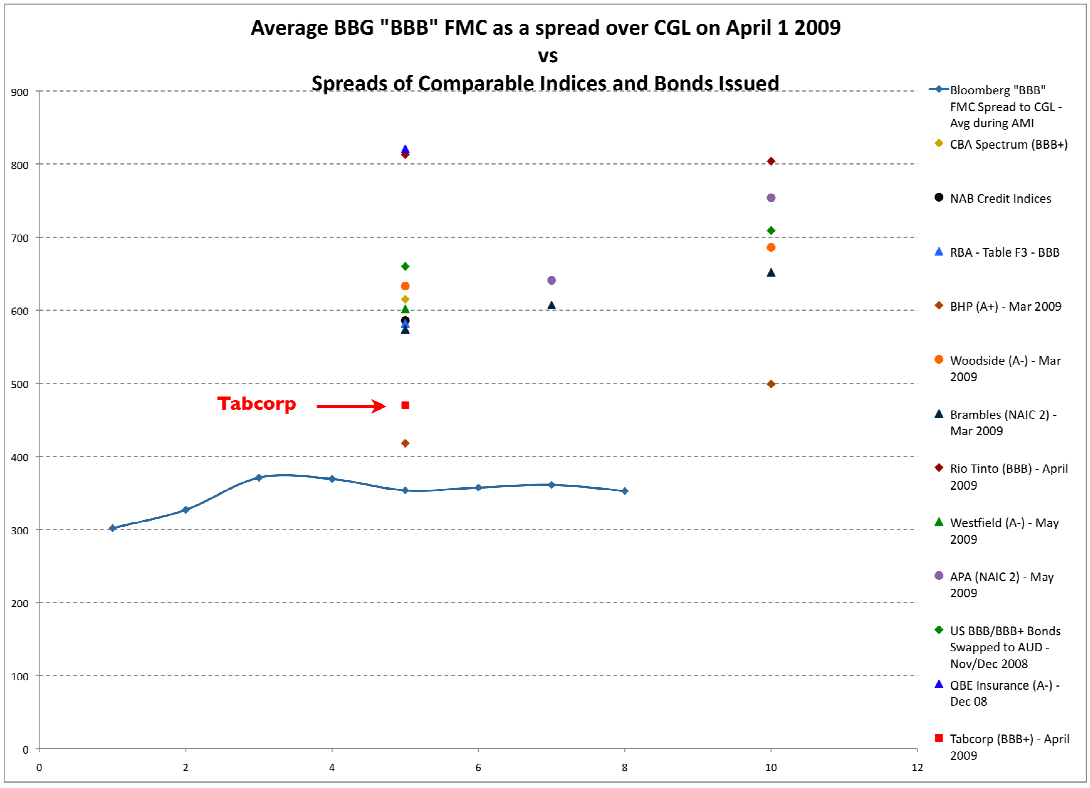
The recent volatility in credit markets and the absence of an active primary and secondary market in corporate bonds have put severe strains on the credibility of Bloomberg's fair market curves as a reliable indicator of the cost of corporate debt. The Bloomberg curves appear to be underpricing credit spreads not only in Australia but in other countries including the US. The problem in the Australian market is exacerbated by the fact that the universe of bonds is small and only one fresh bond issue has been undertaken since October 2007. Our analysis has focused on the suitability of the Bloomberg fair market curve as a reliable indicator of corporate bond yields during the prescribed measurement period. A broader consideration of the merits of Bloomberg's calculations is beyond the scope of this paper and we have restricted our analysis to peculiarities of the curve that cause it to produce unreliable estimates of corporate bond yields under extreme market conditions, such as those that prevailed during the prescribed measurement period.

4.2 Comparison of Bloomberg fair yield predictions and other market data

The chart below shows credit pricing levels (as margins over the Commonwealth bond rate) for 5 year and 10 year Australian corporates using a variety of objective market-based information sources, including actual market observations over the prescribed measurement period ("PMP"). Further detailed information on the data presented below is set out in Attachment 1 and Attachment 3.



The chart below shows the same data as at 1 April 2009, the day on which the Tabcorp bond was priced via a book build process.



The following observations are noted:

- The Bloomberg fair market curve during the prescribed measurement period appears to underestimate the prices (yields) at which corporates could raise 5 and 10 year debt in the domestic market as well as the international market.

- During the prescribed measurement period, Bloomberg's fair market curve predicts a yield on 5-year BBB rated corporate bonds that is 157 basis points (annualised) lower than the yield on BBB rated corporate bonds with one to five years to maturity, as published by the Reserve Bank of Australia in the Statistical Tables of the RBA Bulletin (Table F03: Capital Market Yields and Spreads – Non-government Instruments). Section 6.3 and Attachment 4 provide further details.

- The pricing of the Tabcorp bond was at the lower end of the range and in a tight grouping with a series of other market indices.

- On 1 April 2009 (the day on which the Tabcorp retail bond was priced via a book build process) Bloomberg's fair yield curve underestimated the market pricing, but to a lesser degree than that exhibited during the prescribed measurement period.

In addition to the points set out above, it should be noted that BHP Billiton (A1/A+) and Woodside both issued 5 year and 10 year bonds in the US market at around the time of the Tabcorp bond issue this year. The calculated equivalent spreads to the Commonwealth government bond yield at which these bonds were issued are shown in the table below. These issues are major bonds issued by Standard & Poor's "A" rated Australian corporates.

	Spread over US Treasury at Issue (Basis points)	**Effective Spread over Aust CGL- see note (Basis points, annualised)**	**Launch/ Announce-ment Date**	**Issue/ Interest Accrual Date**	**Issue Type**	**Issue Amount**	**Rating**
5 year							
BHP Billiton	400	418	18-Mar-09	25-Mar-09	US Public - SEC registered	US $1.55 billion	A1/A+
Woodside	625	633	24-Feb-09	03-Mar-09	144a reg S	US $400 million	Baa1/ A-
10 year							
BHP Billiton	400	499	18-Mar-09	25-Mar-09	US Public - SEC registered	US $1.75 billion	A1/A+
Woodside	612.5	686	24-Feb-09	03-Mar-09	144a reg S	US $600 million	A-

NOTE: The Effective CGL spread is calculated on the basis of where the bonds would quantitatively be swapped to Australian Dollars using all relevant Australian and US market rates (source Bloomberg) at the Launch/Announcement Date.

It is noted that although the bonds listed above were issued offshore, they exhibit yields that are consistent with the Tabcorp bond issuance spread levels.

We have also analysed secondary trading levels of US bonds issued by various Australian investment grade companies. For each of these bonds we have calculated the effective debt margins (annualised) over the Commonwealth bond rate for the prescribed measurement period. The effective spreads are shown in the table below. It can be seen that the effective spreads over the Commonwealth bond rate confirm that the Bloomberg fair curves materially underestimate the true debt risk margin that applied to investment grade companies during the prescribed measurement period.

Company	Maturity	Effective Spread over Aust CGL- see note (Basis points, annualised)	Launch/ Announcement Date	Issue Type	Issue Amount	Rating
Westfield	10/4/13	533	03-Apr-08	Reg S	US$650mn	Baa1/BBB+
Qantas	20/6/13	609	17-Jun-03	Reg S	US$450mn	Baa2/BBB
Fosters	1/10/14	390	28-Sep-04	Reg S	US$300mn	Baa1/BBB+
BHP	15/12/15	620	05-Dec-05	SEC reg'd	US$700mn	A1/A+
Qantas	15/4/16	421	28-Mar-06	Reg S	US$514mn	Baa2/BBB
Westfield	15/4/18	396	09-Apr-08	Reg S	US$1.1bn	A2/A-

NOTE: The Effective CGL spread is calculated on the basis of where the bonds would quantitatively be swapped to Australian Dollars using all relevant Australian and US market rates (source Bloomberg) at the Launch/Announcement Date.

Attachment 3 also shows that Bloomberg's US fair yield curve appears to have systematically under-estimated the pricing of new issues in the United States in recent times. In the current unprecedented credit market conditions, the Bloomberg fair yield curves are consistently lower than virtually all other market measures of corporate credit risk.

On the basis of the observations set out above, it appears that in the credit market conditions existing during the prescribed measurement period and subsequently, Bloomberg's fair yield curves do not provide a reliable guide to the debt risk premium for the AER's purposes.

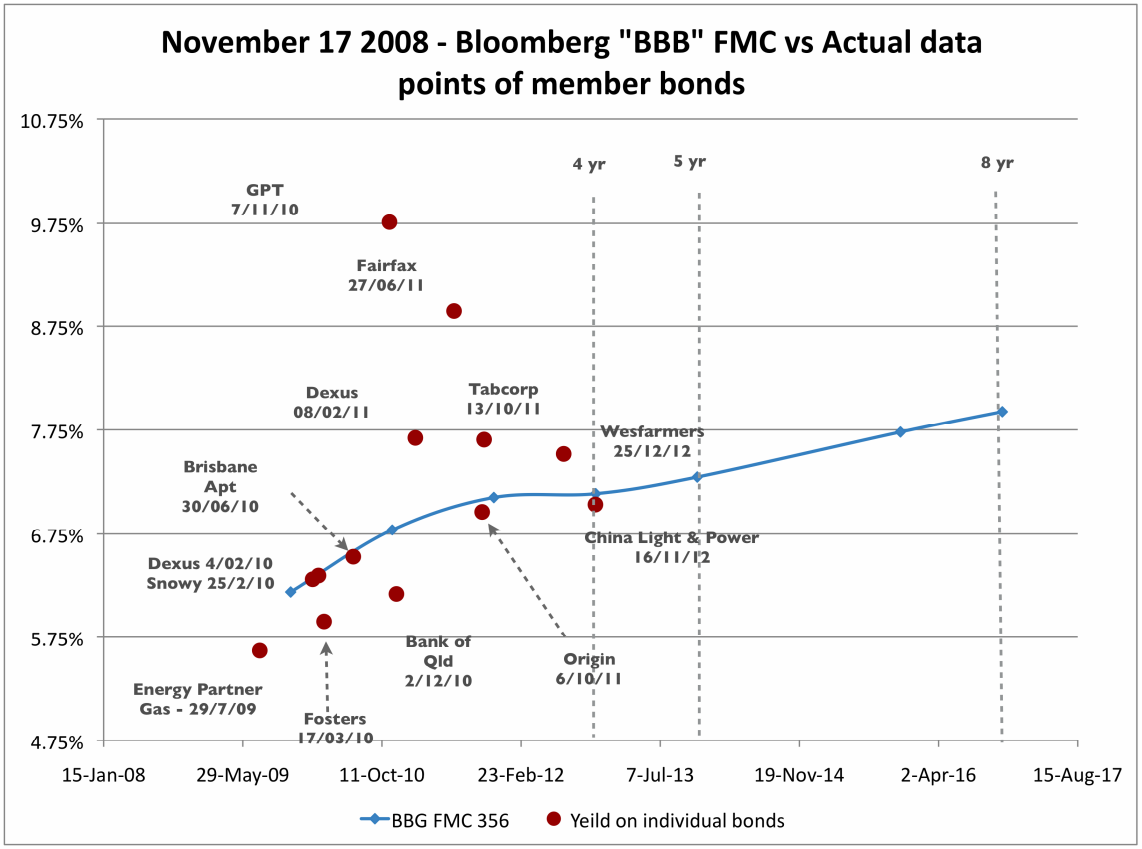
4.3 Examination of Bloomberg fair yield curves

The Victorian DBs have investigated the possible reasons for the apparent under-estimation by Bloomberg of the yield on long-dated BBB Australian corporate bonds. We have analysed each maturity section of the credit curve out to 10 years for the prescribed measurement period. The analysis indicates that:

- The Bloomberg fair yield curve appears to fairly represent corporate bond rates out to around 2010/11.
- In the 2 to 3 year maturity region, Bloomberg fair yield curves appear to become selective in the actual bonds they use, and they appear to exclude certain bonds from what is already a small universe.
- Bloomberg's extrapolation of the rates out from the 3 year point is highly contentious.

Based on the analysis summarised below, it appears that in the prescribed measurement period the Bloomberg BBB fair market curve beyond the 2 year point (2010/11), does not provide a fair representation of the yield on both A and BBB rated corporate bonds.

The charts below compare the Bloomberg "BBB" and "A" fair market curves to the yields on underlying bonds priced by Bloomberg on 17 November 2008 - the first day of the prescribed measurement period. (In terms of the Bloomberg fair yield curves and the pricing for the individual bonds used in the construction of the curves, this day is reasonably representative of the prescribed measurement period.)

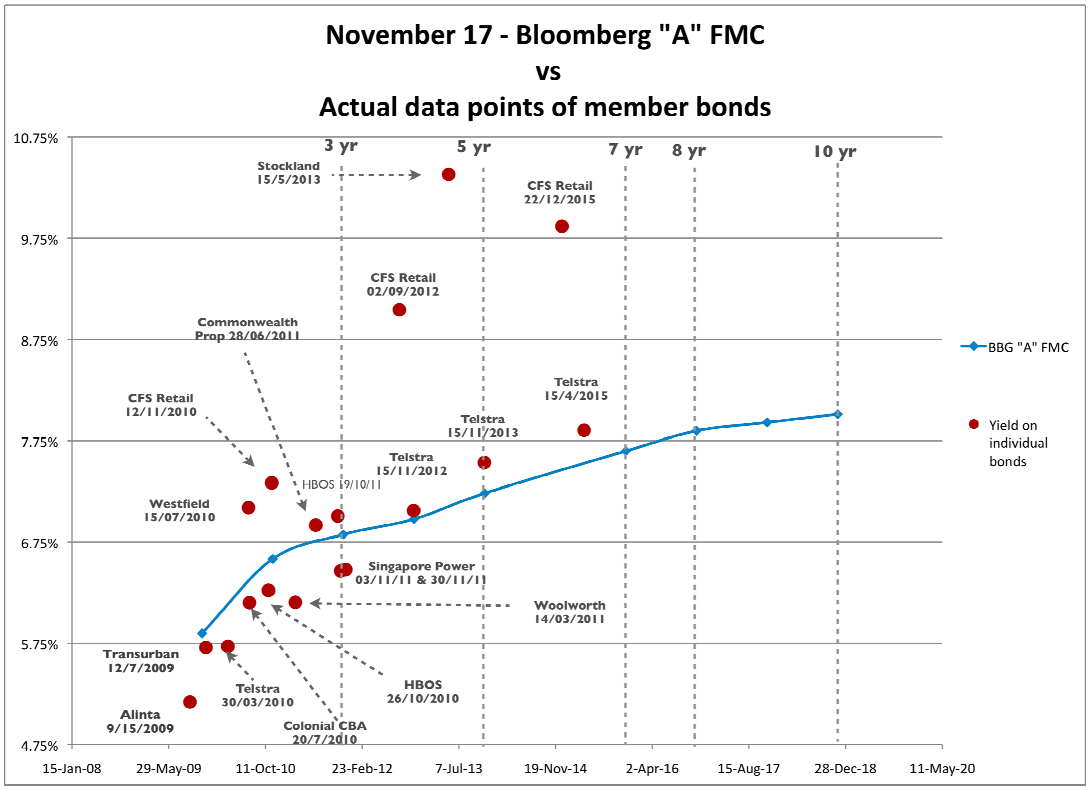


The following points are noted in relation to the chart above:

- Bloomberg generates a BBB fair market curve out to 8 years using price information contained in a universe of bonds that have a maturity out to September 2015 or roughly 7 years from the prescribed measurement period. However, analysis of the data of historical prices published by Bloomberg reveals that during the prescribed measurement period, there was no data for the three longest dated bonds, namely: SNOWY - 25 Feb 2013, GPTAU – 22 Aug 2013 and SANTOS – 23 Sept 2015. Hence, the BBB fair yield curve was generated using data for CHINLP – 16 Nov 2012 and WESAU – 25 Nov 2012, both of which had a tenor of around just 4 years at the time. This raises some serious concerns about the reliability of the BBB curve out to 8 years and beyond.

- It is difficult to explain the construction of the curve from a visual examination of the curve and data points represented by individual bonds. It is known that some of the bonds (namely Dexus, GPT, and Fairfax) used in the BBB fair yield curve were exhibiting credit spread blowouts during the prescribed measurement period. However, even discarding such securities on the basis that they are deemed to be outliers, it is very difficult to understand the rationale for the shape of the BBB curve given the observed yields on the individual bonds used to construct the curve.

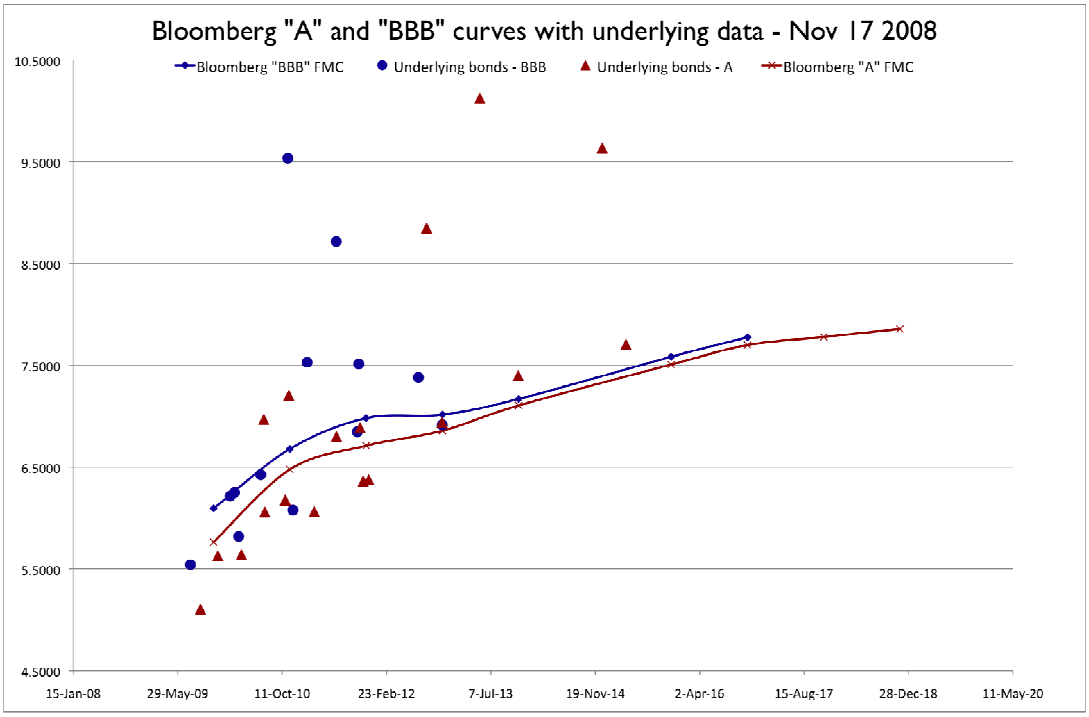
As noted below, we observe similar peculiarities in the "A" curve, where the curve passes under the fair value determined by the Telstra 2013 and 2015 bonds. The graph below shows the Bloomberg A-rated fair yield curve[15] and the pricing for the individual bonds (curve members) for the first day of the prescribed measurement period (17 November 2008).



It is difficult to see how Bloomberg creates its A-rated fair yield curve out to 3 years and then beyond, based on the yields of the individual bonds used in the construction of the curve. In particular, past the November 2012 maturity, all of the 6 bonds in the universe defined by Bloomberg have yields that lie *above* the fair yield curve for A rated bonds. This seems highly counter-intuitive.

The chart below shows the A and BBB Bloomberg fair yield curves for 17 November 2008. The observations made above (in relation to the curve for A-rated bonds) also apply to the BBB curve. In particular, it is noted that from November 2012 (that is, a maturity of just over 3 years), the fair yield curve for BBB bonds is *below* the yields of all of the A-rated bonds with maturities greater than 3 years in the Bloomberg universe. Once again, this seems highly counter-intuitive.

[15] The terms "fair yield curve" and "fair market curve" (or FMC) are used interchangeably throughout this paper and its attachments.



The bonds used in the Bloomberg BBB curve over the prescribed measurement period have been examined by the Victorian DBs. That examination indicates that not all bond yield data available to Bloomberg has been used; some has been discarded, while other data appear to have been used only infrequently. Further details are provided in Attachment 2.

It is also worth noting that the universe of bonds used by Bloomberg in generating the curve for BBB and A-rated bonds includes only Australian corporates that have issued Australian fixed rate bonds in the domestic market. As noted in section 3.2 above, it would be instructive to examine the yields on long-dated BBB+ corporate bonds issued in more liquid overseas markets. This is because the yields on Australian corporate bonds observed in offshore markets (swapped into Australian dollars) provide a good predictor of the yields that would be expected to prevail in Australian domestic markets.

Bloomberg's fair yield curves are based on undisclosed algorithms that use 'generic' bond prices from the secondary market for a normal market lot ($500,000 to $1 million). In response to a query regarding the process that Bloomberg applies when it uses a bond price in the calculation of the curves, Bloomberg has advised that[16]:

> "In general a bond taken into consideration in the construction of a given curve will have a Bloomberg 'generic price'. This generic price is only created when there are 5 pricing sources. These sources do not need to be executable to count in the 'generic price' creation process, although they may be. An executable price is generally quoted in an amount that would be a small percentage of the original issuing size. In short there is no absolute way to ascertain whether a price has been traded."

The Victorian DBs have also asked a representative of Bloomberg to comment on whether the "BBB" fair yield curve provides a reasonable proxy for a new Australian BBB+ corporate bond issue. In particular, the Victorian DBs asked whether a new domestic corporate BBB+

16 Email from Robin Pickover, Bloomberg Sydney Office to Julie Williams, Chief Financial Officer, CitiPower-Powercor, 17 May 2009.

bond might be issued at a margin over the "BBB" fair market yield. In response, Bloomberg advised that[17]:

> "I am afraid that this is a question better asked of a Debt Capital Markets Desk. Bearing in mind that the curves are representative of secondary market prices and trading sizes, new issues have nearly always been issued at a premium to this curve. In settled market conditions, the premium required to 'get away' a new issue might have been quite small. My experience has been that the premium has increased during this period of market turbulence as buyers have demanded a greater risk premium."

4.4 Conclusions

For maturities longer than two to three years, the Bloomberg fair yield curves do not appear to provide a fair representation of the yield on corporate bonds during the prescribed measurement period. In particular, it is apparent that from November 2012 (that is, a maturity of just over 3 years), the fair yield curve for BBB bonds is *below* the yields of all of the A-rated and BBB-rated reference bonds with maturities greater than 3 years in the Bloomberg universe. In addition, the narrowing spread between A and BBB rating notches predicted by the Bloomberg fair yield curves is not consistent with expectations, particularly in the present credit market conditions.

It has not been possible to independently verify the method used by Bloomberg to construct their fair yield curves. However, a representative of Bloomberg has confirmed that:

- Bloomberg 'generic prices' for bonds are created when there are 5 pricing sources, however, these sources do not need to be executable and there is no absolute way to ascertain whether a price has in fact been traded. (Regardless, in the prescribed measurement period it would be fair to assume that there was no secondary market activity given the market disruption.)

- Bloomberg "generic prices" are based on prices that would relate to a small percentage of the original issuing size.

- Recent bond issues have nearly always been priced at a premium to Bloomberg's fair yield curve.

Our analysis of the prescribed measurement period has indentified issues associated with the way in which the Bloomberg fair yield curves are constructed in terms of: the bonds used; the generic prices used; and the method for extrapolating the curve to longer maturities. It has also been acknowledged that the Bloomberg curves under-estimate the yield on new bond issues. Most importantly, during the prescribed measurement period the Bloomberg fair yield curves predict yields for long-dated BBB bonds that are systematically lower than those directly observed or predicted by a number of other credible market-based data sources.

On the basis of these observations, the Victorian DBs consider that under the credit market conditions that existed during the prescribed measurement period, the Bloomberg fair yield curves are not fit for the purpose of the AER's determination of the debt risk premium. It would therefore be contrary to the requirements of the AMI OIC for the Bloomberg fair yield curves to be relied upon in the determination of the debt risk premium for the prescribed measurement period.

[17] Ibid.

5 The AER's present approach to estimating the debt risk premium

5.1 April 2008 final decision for NSW distributors

The most recent AER decision addressing the debt risk premium was published on 28 April 2009, when the AER issued its final decision on price caps for NSW electricity distributors[18] for the regulatory period from 2009/10 to 2013/14. As already noted, that final decision adopted Bloomberg fair yields for the purposes of determining the benchmark debt risk premium.

Page 225 of the AER's final decision for NSW distributors explained that:

> "EnergyAustralia did not agree with the AER's methodology and cited CEG's analysis that the current lack of liquidity in the market for existing BBB+ corporate means that neither Bloomberg nor CBASpectrum data are likely to provide a reliable estimate of bond yields. The CEG report suggested that rather than relying solely on Bloomberg or CBASpectrum estimates, the AER could take a simple average of estimates from Bloomberg and CBASpectrum data to provide a more reliable estimate."

The final decision concluded the AER's consideration of this matter (on page 232) as follows:

> "The AER is of the view that Bloomberg fair yields are a better predictor of observed yields than an average of Bloomberg and CBASpectrum fair yields or CBASpectrum fair yields alone. Consequently, the AER does not consider it reasonable to use an average of the Bloomberg fair yield and the CBASpectrum fair yield to derive the Australian benchmark rate for corporate bonds with a maturity of 10–years and a credit rating of BBB+. The AER therefore maintains its draft decision to use Bloomberg fair yields for the purposes of determining the benchmark debt risk premium for the NSW DNSPs."

The Victorian DBs have undertaken a detailed examination of the suitability of Bloomberg fair yields for the purpose of determining the benchmark debt risk premium for the initial AMI period. As noted in section 4 above, we have concluded that under the prevailing credit market conditions, the Bloomberg fair market curves appear to substantially under-estimate corporate bond yields. On this basis, we have concluded that under the credit market conditions prevailing at the time of the prescribed measurement period, Bloomberg fair yield estimates are not fit for the purpose of deriving a benchmark debt risk premium in accordance with the requirements of the AMI OIC.

Before setting out our proposed debt risk premium (in section 6), it is necessary to examine two other matters arising in the AER's final decision for NSW distributors, and in its May 2009 final decision on WACC parameters. These matters are examined in sections 5.2 and 5.3 below.

5.2 Recent Tabcorp 5 year bond issue as a benchmark

On 30 April 2009 (the settlement date of the issue), Tabcorp raised $284 million through a 5 year, BBB+ domestic bond issue. The bond's 4.25% margin to 3-month BBSW was established through a book build process on 1 April 2009. While the issue date falls outside the prescribed measurement period, this particular bond is the only non-bank corporate bond issued in Australia since October 2007.

Page 231 of the AER's final decision for NSW distributors examines the Tabcorp bond and states:

[18] Hereafter referred to as the "AER's final decision for NSW distributors".

> "The AER notes that on 24 March 2009 Tabcorp announced a five year bond issue to be rated BBB+. The prospectus for the proposed Tabcorp bond issue outlines the interest payable will be a variable interest rate. The variable interest rate will be set for each interest period equal to the 3–month bank bill rate plus a 'margin' of 4.25 per cent. As at 23 March 2009, the initial interest rate would be 7.28 per cent. The AER notes that on 23 March 2009 the Bloomberg five year BBB fair yield was 7.41 per cent and the CBASpectrum five year BBB+ fair yield was 9.67 per cent. Further, the AER notes that the fair yields represent estimates for fixed interest bonds, not variable interest bonds. While there are ways of converting the yield of a variable rate bond to the yield of an equivalent fixed rate bond, the AER does not consider it appropriate to compare the yields on variable rate bonds with those of fixed rate bonds for the purpose of assessing the fair yield estimates from Bloomberg and CBASpectrum."

The Victorian DBs consider that the AER's analysis (set out in the passage cited above) is incomplete and unhelpful to the extent that it invites the formation of incorrect inferences or conclusions. In particular:

- We strongly concur with the AER that it is inappropriate to *directly* compare the yields on variable rate bonds with those of fixed rate bonds. It is therefore inappropriate to compare the 7.28% (variable) yield on the Tabcorp bond with the 5-year fixed yields of 7.41% estimated by Bloomberg, and the 9.67% estimated by CBA Spectrum.

- However, it is appropriate and straightforward to link the variable rate debt market with the fixed rate bond market through the interest rate swap market, and for pricing to be compared between the two via the swap rate. The fixed income world undertakes this analysis routinely and fund managers frequently enter into swaps to convert variable or floating rates into fixed rates through the use of an interest rate swap with a bank. Similarly, issuers frequently use interest rate swaps to convert variable rate payments to a stream of fixed rate payments providing them with an equivalent payment stream to that which would exist if they issued a fixed rate bond.

- As shown in detail below, the equivalent 5-year fixed yield on Tabcorp bonds is 8.68% (annualised). This is 120 basis points higher than the annualised equivalent of the variable rate cited by the AER. It is also 106 basis points higher than the annualised equivalent of Bloomberg's fair yield estimate.

The sum of the BBSW margin and the 3 month BBSW (the initial interest rate of 7.28% cited by the AER) simply gives Tabcorp's cost of debt for the next 3 months at that time. To derive an estimate of Tabcorp's 5 year (fixed) cost of debt, it is necessary to add the 4.25% BBSW margin to the 5 year swap rate. Quantitatively this rate represents the fixed yield at which Tabcorp could have issued a fixed rate corporate bond at that time. The correct estimate of Tabcorp's 5 year cost of debt (using annualised rates) at the pricing date for the bond (1 April 2009) is set out below.

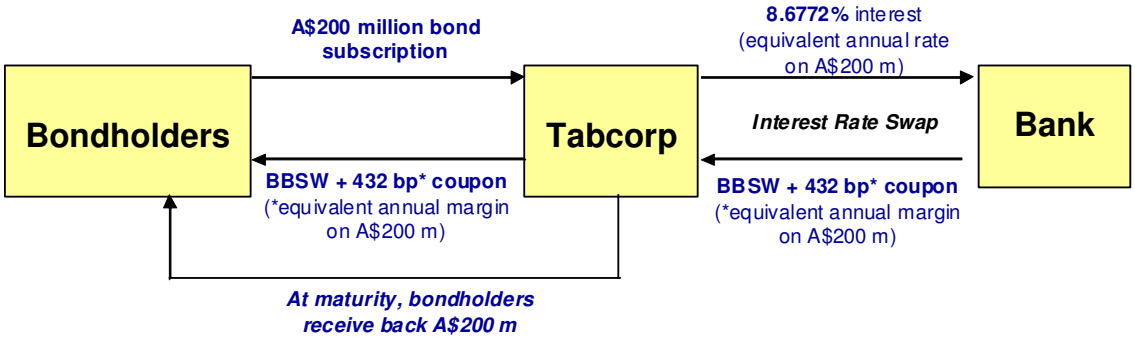
	At 1 April 2009 (annualised rates)
Margin to BBSW	4.3182%
plus 5 year swap rate	4.3590%
equals 5 year cost of debt	**8.6772%**
less 5 year CGL	3.9757 %
equals **Premium to CGL**	**4.7015%**

It is noted that the above calculations do not include the 0.25% bonus margin to be paid to subscribers to the bond who hold the bond for the first year (subject to a cap of $50,000 per holding) Nor have we included the large selling commissions (1% flat) paid to co-managers to market the bond to subscribers.

The correct calculations show that:

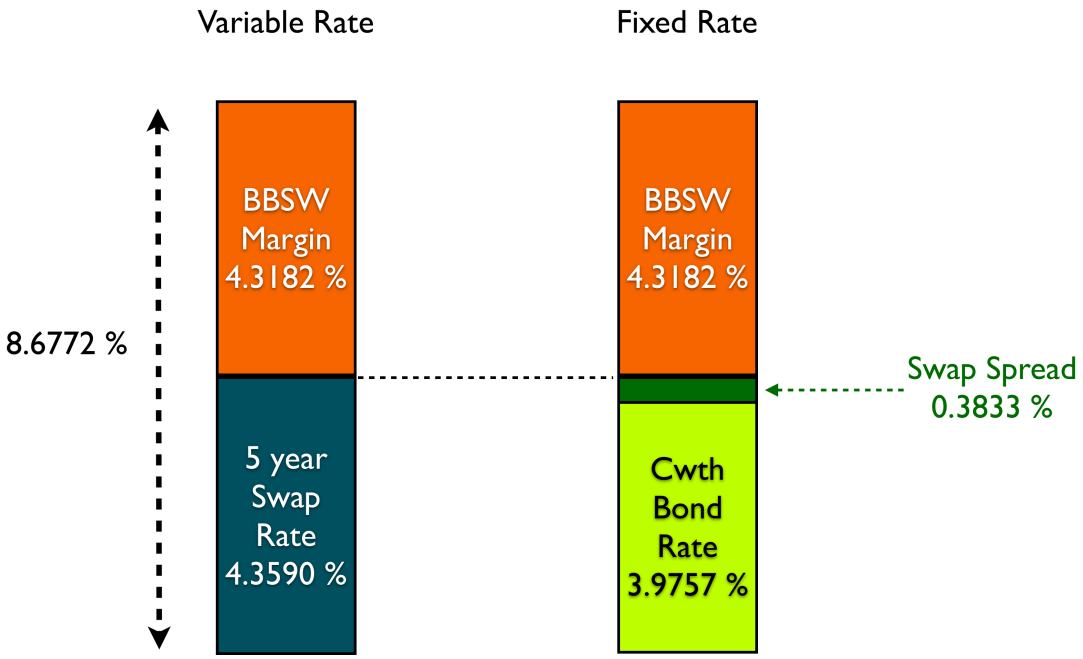
- The margin to the 5-year Commonwealth Government bond at which the Tabcorp bond was priced is approximately 470 basis points.
- Tabcorp's 5 year cost of debt at 1 April 2009 (8.68%) is 120 basis points higher than 7.48% (being the annualised equivalent of the quarterly rate of 7.28% cited by the AER).
- Tabcorp's 5 year cost of debt (8.68%) is also 106 basis points higher than the Bloomberg 5 year BBB fair value yield of 7.62% (annualised).

The diagram below shows how Tabcorp might have swapped its variable rate bond to a quantitatively equivalent fixed rate on the issue date.



This diagram shows the pricing equivalencies had Tabcorp issued a fixed rate bond on 1 April 2009 on the basis that it is not possible to arbitrage the swap market against the bond market. In particular, Tabcorp would have issued a 5 year fixed rate bond at a coupon rate of 8.68% (rounded). As already noted, the 5 year fixed rate of 8.68% is 432 basis points (annualised) over the 5 year swap rate, which is the equivalent of approximately 470 basis points over the 5 year Commonwealth bond rate.

Another way to represent the composition of the fixed rate is shown below. This diagram shows that a variable rate bond (the yield on which is defined by a spread to the 5-year interest rate swap rate) has a direct, calculable and tradeable equivalency with a fixed rate bond (spread to the 5-year Commonwealth Bond Rate). All rates used are as of the pricing date of the Tabcorp bond (1 April 2009) so the integrity of the equivalency is maintained.



The analysis set out above shows that although the Tabcorp 5 year BBB+ bond was issued as a variable rate bond, it can be converted to a fixed rate equivalent, and in this way it provides a valid observation in the determination of a 10 year BBB+ benchmark corporate bond rate. As already noted, it is the only non-bank corporate bond to be issued in Australia since October 2007. Moreover, as demonstrated in the analysis contained in section 4.2, the 5-year equivalent fixed rate pricing of the Tabcorp bond is consistent with other domestic and overseas market observations from around the date of issuance.

These considerations suggest it should be accorded substantial weight in the determination of the benchmark bond yield for the initial AMI WACC period.

5.3 AER's final decision on WACC parameters

As noted in section 2.3 above, the definition of the debt risk premium set out in clause 6.5.2(e) of the NER, and the method for estimating the debt risk premium are not within the scope of the AER's periodic review of WACC parameters. Nonetheless, the AER's May 2009 final decision in its review of WACC parameters stated:[19]

> "The AER also considers that regulated NSPs maintain some ability to raise debt through the issuance of corporate bonds, albeit on a limited and expensive basis. The AER cites the recent issuance by Woodside Finance of both 5 and 10 year BBB+ rated debt instruments as an example, though acknowledges the high yields (495 and 555 bps above BBSW

[19] AER, *Final decision: Electricity Transmission and Distribution Network Service Providers - Review of the Weighted Average Cost of Capital (WACC) Parameters*, May 2009, page 27

> respectively) at which this debt was issued. [Source: Bloomberg professional service, New York, 2009] On this evidence, the AER considers that corporate bond issuances are unlikely to represent the cheapest source of debt financing in the current market."

There are two distinct points that must be noted in relation to the AER's comments.

Firstly, the AER has demonstrated its recognition that the cost to an Australian corporate issuer of raising 10 year BBB+ rated debt in the current credit market (555 basis points above BBSW) is very significantly higher than the 10-year BBB+ fair yield predicted by the Bloomberg model. The AER's own observation corroborates our view that under the credit market conditions prevailing in the prescribed measurement period, Bloomberg fair yield estimates are not fit for the purpose of deriving a benchmark debt risk premium in accordance with the requirements of the AMI OIC. Moreover, regardless of whether or not the present cost of raising debt through corporate bonds might be described subjectively as "expensive" or otherwise, the observed cost is in fact the actual price being paid by investment grade corporates to secure longer term debt at a time of strained credit markets and limited availability of funding. It is the observed cost of raising 10 year BBB+ rated corporate bonds that is relevant to the AER's determination of the debt risk premium in accordance with the requirements of the AMI OIC. A qualitative assessment of such costs - as being "expensive" or otherwise - is irrelevant to the AER's decision-making.

Secondly, the AER has made some observations regarding the relative costs of debt funding raised through corporate bond issues and other sources. We do not intend to comment on the AER's assertions in relation to this matter at this time, other than to note that:

- Under the AMI OIC, the AER is required to determine the debt risk premium as the difference between the observed yield on Commonwealth Government bonds with a maturity of 10 years, and the observed annualised Australian benchmark corporate bond rate for corporate bonds which have a maturity of 10 years and a credit rating of BBB+.

- As noted in section 3.2, the derivation of a benchmark for Australian 10 year BBB+ corporate bond rates in the absence of a directly observable benchmark unavoidably entails some subjectivity and the exercise of reasonable discretion.

The analysis set out in this paper demonstrates that a reasonable exercise of discretion leads to the selection of the debt risk premium proposed by the Victorian DBs. Section 6 below provides a detailed description of the Victorian DBs' approach to establishing the debt risk premium.

6 Proposed debt risk premium

6.1 Introduction

The analysis set out in sections 3, 4 and 5 above demonstrates that:

- In the absence of a directly observable benchmark, the derivation of a benchmark for Australian 10 year BBB+ corporate bond rates is an exercise that unavoidably entails some subjectivity.

- Under the credit market conditions prevailing during the prescribed measurement period, the Bloomberg fair yield curves are not fit for the purpose of the AER's determination of the benchmark debt risk premium for the initial AMI WACC period.

- In these circumstances, the determination of the benchmark in accordance with the specific requirements of the AMI OIC and clause 6.5.2(e) of the NER should be guided by the exercise of reasonable discretion.

- In particular, the benchmark should reflect, and be consistent with:

    - any directly observable yields on long-dated Australian corporate bonds (in particular, any new issues) during and around the time of the prescribed measurement period;

    - reasonable views based on market evidence regarding the term structure of Australian corporate bond yields at the benchmark credit rating of BBB+; and

    - reasonable views based on market evidence regarding credit spreads (that is, the sensitivity of yields to variations in credit ratings) of non-bank Australian corporate bonds of the same maturity.

As noted in section 5.2, the Tabcorp 5 year BBB+ bond issued earlier this year provides a valid observation in the determination of a BBB+ benchmark corporate bond rate. In considering the question of the weight that should be placed on the Tabcorp bond in the derivation of a 10 year, BBB+ benchmark corporate bond rate, the following points are relevant:

- The Tabcorp bond is the only non-bank corporate bond to be issued in Australia since October 2007, and its yield is consistent with other domestic and overseas market observations.

- The bond issue size is $200 million and hence it is of sufficient volume to provide a suitable benchmark.

- The Tabcorp bond has a 5 year maturity, hence it is a valid reference for longer term corporate bond pricing in the Australian bond market.

- Pricing of the Tabcorp bond was established by an institutional book build process, and this pricing was subsequently validated by the market given that the traded secondary prices for the bond have not varied significantly from the issue price.

- Tabcorp has been rated BBB+ stable by Standard & Poor's in the period leading up to the prescribed measurement period, through to the present time. The Tabcorp bond was assigned a BBB+ rating by Standard & Poor's at the time of its issue. Tabcorp is therefore a solid and stable BBB+ credit risk, and the bond has the same rating.

These considerations suggest that the Tabcorp bond is a suitable benchmark issue for the purpose of determining the debt risk premium for the initial AMI WACC period. Given the dearth of other Australian bond issues, the Tabcorp bond must be accorded substantial weight in the determination of the debt risk premium.

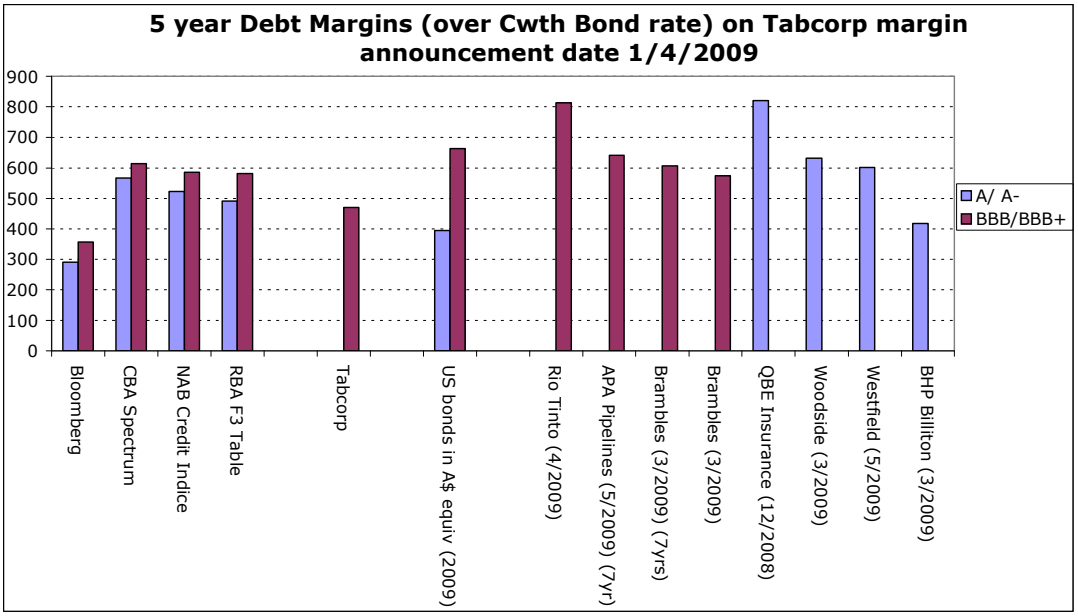
Having regard to these considerations, section 6.2 below sets out the Victorian DBs' proposed Australian benchmark corporate bond rate for 10 year BBB+ rated corporate bonds in accordance with the requirements of clause 4.1(i)(i) of the AMI OIC and clause 6.5.2(e) of the NER. Section 6.3 then corroborates the benchmark with reference to other objective market-based information sources, including actual market observations.

6.2 Derivation of debt risk premium

This section provides details of the derivation of the debt risk premium by:

- building on the analysis set out in Section 5.2 above, which quantitatively assessed the Tabcorp bond as a 5-year fixed rate bond;
- showing that, in conjunction with other market references, the Tabcorp 5 year bond can be used to legitimately determine a 5 year corporate bond debt margin for the prescribed measurement period; and then
- determining a 10 year debt risk premium for the prescribed measurement period, based on the equivalent 5 year fixed yield on Tabcorp bonds and the term structure of corporate bond yields.

Section 5.2 above calculated the equivalent 5-year fixed pricing of the Tabcorp bond on 1 April 2009.[20] The calculated 5-year fixed yield on the Tabcorp bond was 4.70% (annual) higher than the 5 year Commonwealth bond yield at the time. As shown in the chart below, this debt margin is in line with, and compares conservatively with other contemporaneous corporate bond reference rates and indices.



We have examined a variety of market references to determine the adjustment (if any) required to transform the 5-year debt risk margin for the Tabcorp bond to an equivalent debt risk margin at the time of the prescribed measurement period. Our approach in undertaking this examination is detailed below.

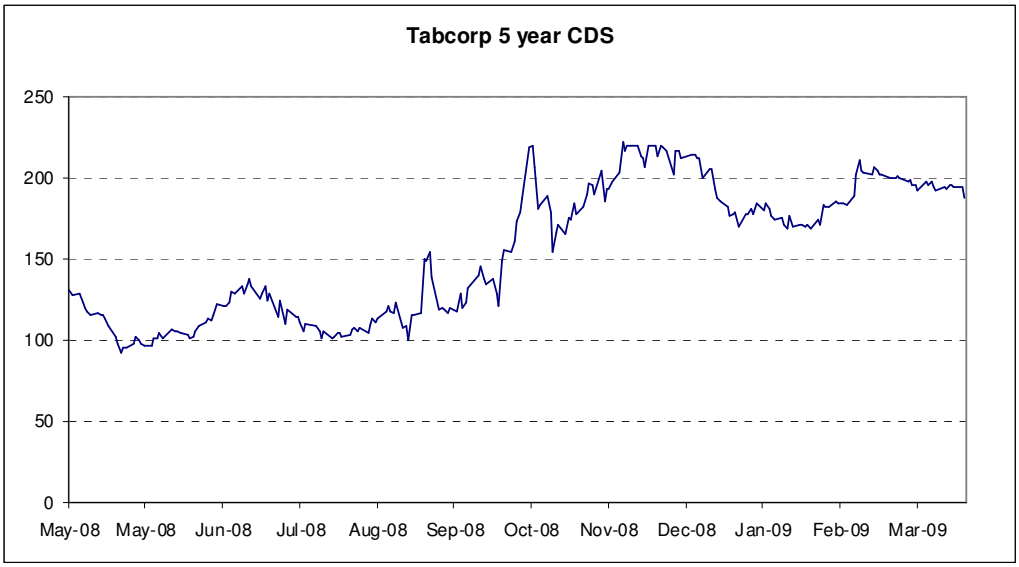
We consider that the Credit Default Swap (CDS) is a credible market reference to observe the movement of debt risk margins and credit spreads through time. The CDS market is a large over-the-counter market that has been operating for several years and is supported by price-makers with standardised terms and documentation, and a common 'generic' 5-year reference maturity. Current and historical CDS prices are available on various pricing systems including Bloomberg. The CDS market continued to operate throughout the period

[20] This is the date that Tabcorp announced the margin of 4.25% (to BBSW) after an institutional book-build.

under review through to the Tabcorp bond issue. The CDS is a market-based measurement of the credit spread of a large variety of investment grade companies. CDS pricing is therefore not distorted by underlying curve movements that are difficult to reconcile with other market observations over the course of the prescribed measurement period (as discussed in sections 3 and 4).

In addition to examining CDS data, we have also examined Australian non-bank corporate bonds to further corroborate the movement in the debt risk margin from the date of pricing of the Tabcorp bond (1 April 2009) to the prescribed measurement period.

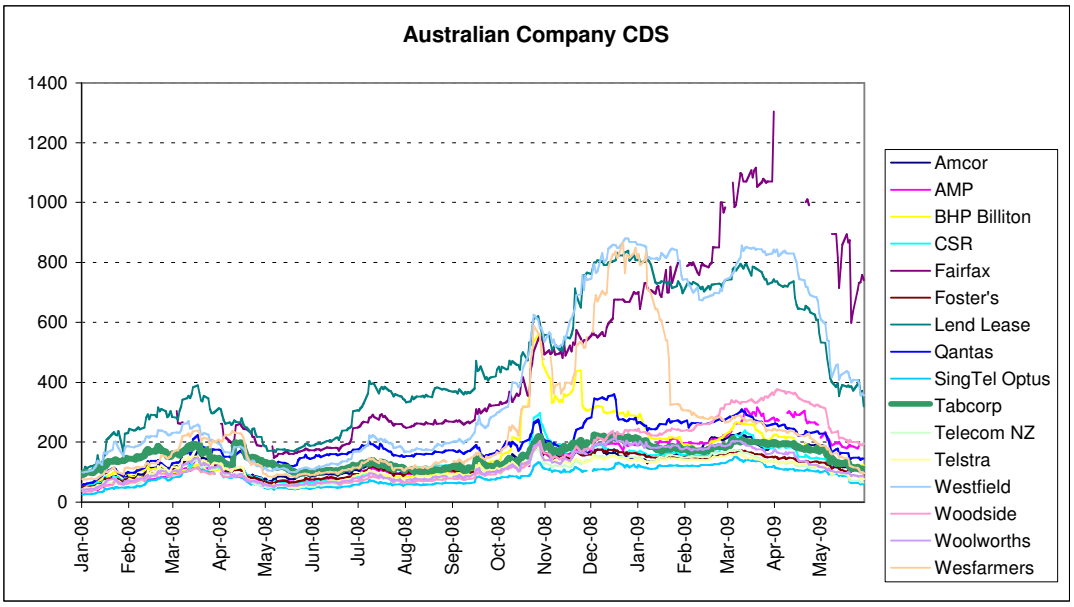
Having established the 5-year fixed yield on the Tabcorp bond at 1 April 2009, we have used the Tabcorp CDS corroborated by the Australian non-bank corporate bonds referred to in the table on the following page, in order to properly calibrate the corporate debt risk margin in the prescribed measurement period. The graph below shows the CDS price movement of the 5 year Tabcorp CDS between 1 April 2009 and the prescribed measurement period (sourced from Bloomberg).



The Tabcorp 5 year CDS was 3 basis points per annum higher in the prescribed measurement period than on 1 April 2009.

The chart below shows that Tabcorp CDS has traded conservatively against the other Australian investment grade companies' CDS[21]. Tabcorp did not trade as an 'outlier' in the period under review.

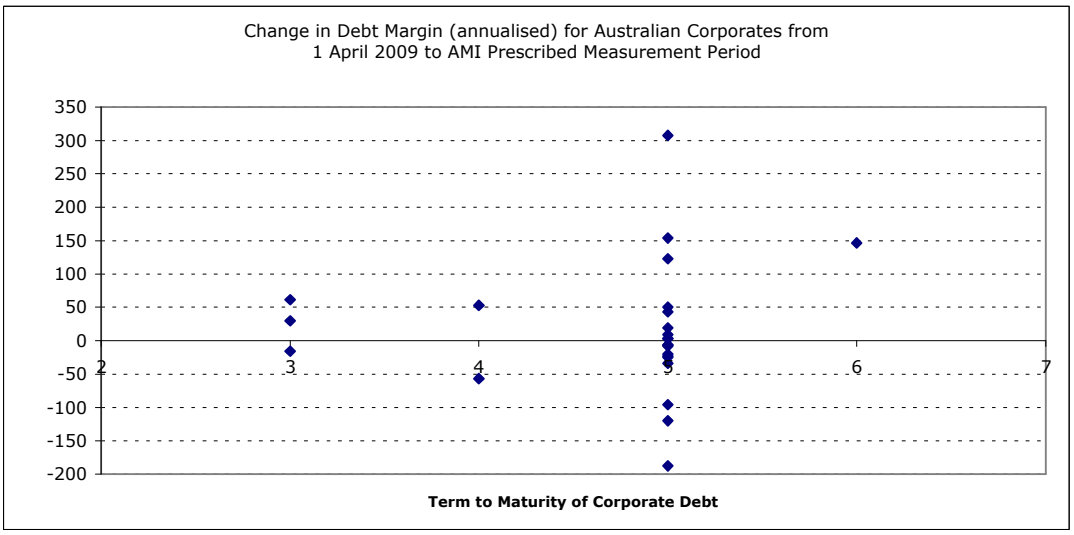
[21] The sample was selected on the basis of the 5 year CDS levels for a number of major Australian non-bank companies for which there is an active market in CDS. The data was sourced from Bloomberg.



The table below compares the movement in Tabcorp 5 year CDS from 1 April 2009 to the prescribed measurement period against the spread movement of a large sample of other investment grade Australian companies over the same period.

Instrument	Change from 1 April 2009 to prescribed measurement period
Tabcorp 6.5 10/11 bond	61
Telstra 7.25 11/12 bond	53
Telstra 6.25 11/13 bond	43
Telstra 6.125 08/14 bond	147
Origin 6.5 10/11 bond	-16
Singapore Power 6.5 11/11 bond	30
China Light & Power 6.25 11/12 bond	-57
Australia Post 6.25 03/12 bond	19
Amcor CDS	-34
AGL CDS	50
AMP CDS	-96
ANZ CDS	-20
BHP CDS	123
Crown CDS	154
CSR CDS	-6
Fosters CDS	9
Lend Lease CDS	-23
Qantas CDS	-25
SingTel CDS	-8
Tabcorp CDS	**3**
Telstra CDS	4
Wesfarmers CDS	308
Westfield CDS	-120
Woodside CDS	-187
Woolworths CDS	-6

The changes in the debt spread between 1 April 2009 and the prescribed measurement period (shown in the table above) are shown as data points in the graph below.

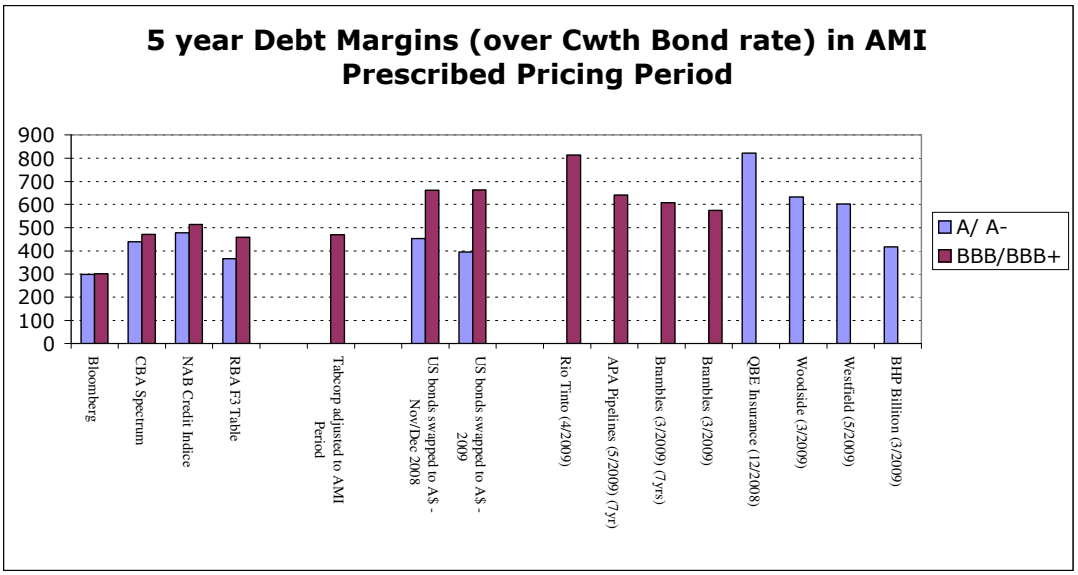


The graph above shows that there is a clustering of points above the zero-line across the maturity spectrum, and a clustering around the zero-line for the 5 year term, which includes the change of 3 basis points in the Tabcorp CDS spread.

In light of these observations, and applying a reasonable approach, it is considered that the 4.70% margin between the 5 year Commonwealth bond rate and the equivalent 5 year fixed rate yield on Tabcorp bonds as at 1 April should not be adjusted to determine its equivalent in the prescribed measurement period. This reflects:

- the observation that the mean spread movement across the 26 samples shown in the above graph and table is zero to slightly positive; and
- it is not possible to definitely determine the spread movement to within 10 basis points.

On this basis, the 5 year Tabcorp equivalent fixed funding rate in the prescribed measurement period is determined to be the Commonwealth bond rate plus 4.70%. This debt margin is in line with, and compares conservatively with other corporate bond reference rates and indices for the prescribed measurement period as the chart below shows.

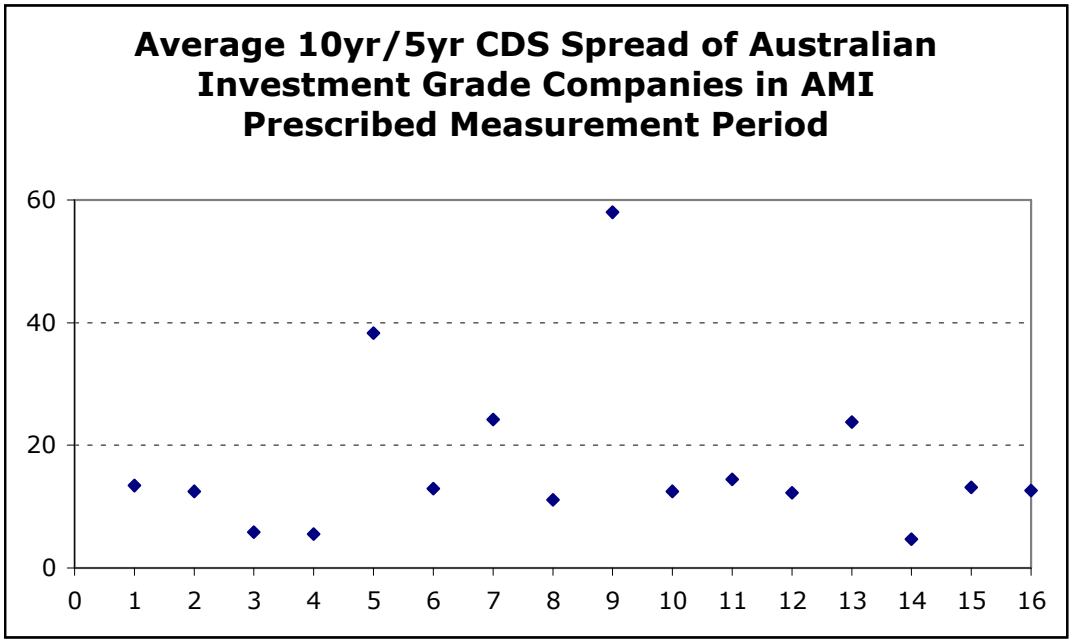


Having determined a robust margin over Commonwealth bonds for 5 year BBB+ corporate bonds for the prescribed measurement period, it is possible to derive an equivalent 10-year debt risk premium, given information on the term structure of corporate bond yields. For this purpose, we have examined a variety of market data and references to adjust the 470 basis point margin from a 5-year to a 10-year maturity in the prescribed measurement period.

The table below shows the 5-year and 10-year CDS pricing of various investment grade corporates, including Tabcorp, in the prescribed measurement period, and the spread between the 5 year and 10 year CDS prices.

	Average 10 year CDS in prescribed measurement period	Average 5 year CDS in prescribed measurement period	Average 10-year / 5-year CDS spread in period
1. Amcor	179	166	13
2. AMP	188	176	13
3. ANZ	222	216	6
4. BHP	354	348	6
5. Crown	560	522	38
6. CSR	194	181	13
7. Fosters	185	161	24
8. Lend Lease	724	713	11
9. Qantas	280	222	58
10. SingTel	119	107	13
11. Tabcorp	**215**	**201**	**14**
12. Telstra	152	139	12
13. Wesfarmers	575	551	24
14. Westfield	719	714	5
15. Woodside	193	180	13
16. Woolworths	182	169	13

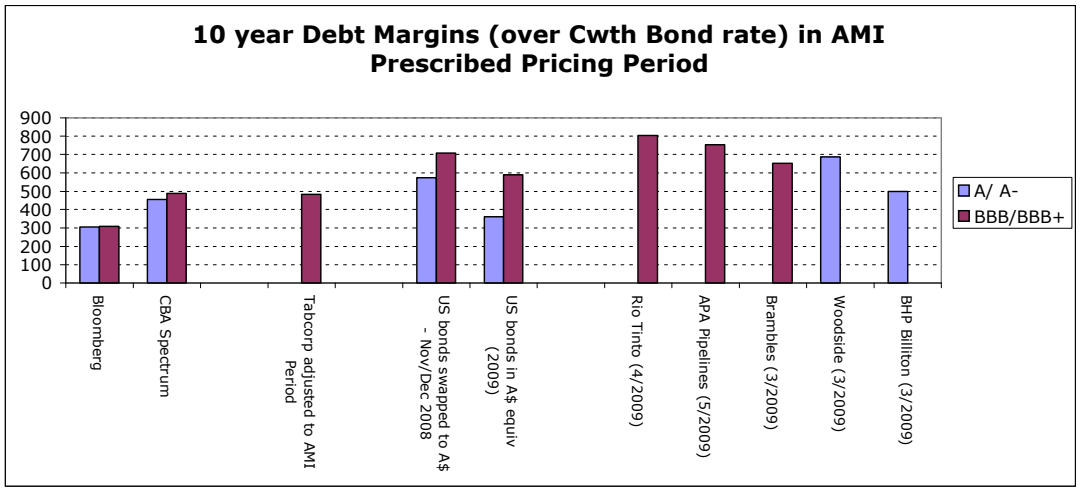
The spread movements for the 16 samples shown in the table above are depicted as single data points below in the graph below.



The data set out in the table above shows that the Tabcorp 10 year CDS was priced 14 basis points per annum higher in the prescribed measurement period than the 5 year CDS. This spread is in line with other investment grade corporates. It is also consistent with the mean 10-year / 5-year CDS spread (17 basis points) over the prescribed measurement period for all sixteen issuers in the sample.

On this basis, the 10 year Tabcorp equivalent fixed funding rate in the prescribed measurement period is the Commonwealth bond rate plus 4.8415%. This is equivalent to the 5 year margin of 4.70% (calculated in section 5.2) plus the 14 basis point 5/10-year spread observed on Tabcorp CDS over the prescribed measurement period.

As shown in the chart below, this debt margin is in line with, and compares conservatively with other corporate bond reference rates and indices over the course of the prescribed measurement period.



On the basis of the above analysis, the Victorian DBs have determined the debt risk premium for the initial AMI WACC period to be 4.84% (annual). This is significantly higher than the margin derived from the Bloomberg fair market curves of 3.09% (annual).

6.3 Corroboration of debt risk premium

It is recognised that the proposed benchmark relies heavily on a single Australian BBB+ corporate bond issue made earlier this year (albeit at a time that is close to the prescribed measurement period). As noted in section 6.1 however, there are very sound reasons for this particular observation to be accorded significant weight in the benchmark. That said, it is also important to ensure that the benchmark is corroborated by other objective market data.

Our proposed debt risk premium is at the low end of the reasonable range, constructed from the following broadly- based corroborating evidence:

- All known other Australian company 10-year BBB / BBB+ / A- / A new bond issues occurring near the time of the prescribed measurement period;
- RBA published spreads for one to five year BBB bonds over the prescribed measurement period; and
- US 10-year BBB bonds issued over November and December 2008. In particular, this data - which is set out in detail in Attachment 3 - corroborates the debt risk premia for the other pricing references that existed during the prescribed measurement period. The US bond issues swapped to a margin over the Commonwealth bond rate indicate that the Victorian DBs' proposed debt risk premium is credible and conservative

In this context, it is also particularly noteworthy that the AER's final decision on WACC parameters provides strong corroboration of the proposed benchmark, in the following statement:[22]

> "The AER considers that regulated NSPs maintain some ability to raise debt through the issuance of corporate bonds, albeit on a limited and expensive basis. The AER cites the recent issuance by Woodside Finance of both 5 and 10 year BBB+ rated debt instruments as an example, though acknowledges the high yields (495 and 555 bps above BBSW respectively) at which this debt was issued. [Source: Bloomberg professional service, Bloomberg, New York, 2009]"

Further corroboration of the proposed benchmark is provided by the AER's final decision on WACC parameters with the following statement:

> "Highlighting the increased costs of debt, the RBA provides that in January 2009, the spread over BBSW for BBB rated corporate bonds with one to five years to maturity was 389 bps. [Source: RBA, Bulletin Statistical Tables, March 2009, Capital Market Yields and Spreads – Non-government Instruments (Table F03)]"

The Victorian DBs have examined the RBA data cited by the AER[23]. In addition to noting that the spread over BBSW for BBB rated corporate bonds with one to five years to maturity was 389 basis points, the RBA data also shows that:

- In November 2008, the yield on BBB corporate bonds with 1 to 5 years maturity was 446 basis points over the Commonwealth bond yield.

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22 AER, Final decision: Electricity Transmission and Distribution Network Service Providers - Review of the Weighted Average Cost of Capital (WACC) Parameters, May 2009, page 27.

23 Attachment 4 contains a full excerpt from the Statistical Tables of the April 2009 RBA Bulletin.

- In December 2008, the yield on BBB corporate bonds with 1 to 5 years maturity was 449 basis points over the Commonwealth bond yield.

The analysis set out in section 6.2 above demonstrates that the benchmark proposed by the Victorian DBs is in line with, and compares conservatively with other corporate bond reference rates and indices. This fact, coupled with the AER's own observations (cited above), clearly corroborates the validity of the Victorian DBs' proposed benchmark.

7 Conclusion

The Victorian DBs have examined Bloomberg fair yield estimates and have concluded that in the credit market conditions prevailing over the measurement period prescribed in clause 4.1(i)(i) of the AMI OIC, these estimates are not fit for the purpose of determining the debt risk premium.

The Victorian DBs have therefore derived a debt risk premium based on the Tabcorp 5 year BBB-rated bond issue of April 2009, which is the only long-dated BBB-rated domestic issue by an Australian non-bank since October 2007. The proposed benchmark has been corroborated with reference to a variety of other objective market data.

The debt risk premium for the period defined in the AMI OIC as the "initial AMI WACC period" is 484 basis points.

The Victorian DBs' proposal provides a robust Australian benchmark corporate bond rate for corporate bonds with a 10 year maturity and BBB+ credit rating over the prescribed measurement period, in accordance with the specific requirements of clause 4.1(i)(i) of the AMI OIC and clause 6.5.2(e) of the NER.

ATTACHMENT 1: Recent US bond issues by non-bank corporates

The tables below show 5, 7 and 10-year US dollar bond issues by Australian non-bank companies in the US, with the effective swap back to A$ as a spread to the Commonwealth bond rate, had the issuers entered into a cross-currency swap to fixed rate A$ at the time of the issue.

5-year Maturity (spreads stated in basis points)

Company	Spread at Issue	Effective Spread over Aust CGL (annualised)	Launch/ Announcement Date	Issue Type	Issue Amount	Rating
QBE Insurance	770	821	30-Dec-08	144a reg S	US$210mn	A3/A-
Woodside	625	633	24-Feb-09	144a reg S	US$400mn	Baa1/A-
Brambles	550	574	15-Mar-09	144a reg S		NAIC-2
BHP Billiton	400	418	18-Mar-09	US Public - SEC registered	US$1.55bn	A1/A+
Rio Tinto	752	813	14-Apr-09	US Public - SEC registered	US$2bn	Baa1/BBB
Woodside	602	633	25-May-09	144a reg S	US$400mn	Baa1/A-
Westfield	549	602	27-May-09	144a reg S	US$700mn	A-/A2/A-

7-year Maturity (spreads stated in basis points)

Company	Spread at Issue	Effective Spread over Aust CGL (annualised)	Launch/ Announcement Date	Issue Type	Issue Amount	Rating
Brambles	550	607	15-Mar-09	USPP		NAIC-2
APA Pipelines	575	641	14-May-09	USPP	US$65m	BBB

10-year Maturity (spreads stated in basis points)

Company	Spread at Issue	Effective Spread over Aust CGL (annualised)	Launch/ Announcement Date	Issue Type	Issue Amount	Rating
BHP Billiton	400	499	18-Mar-09	US Public - SEC registered	US$1.75bn	A1/A+
Woodside	613	686	24-Feb-09	144a reg S	US$600mn	A-
Brambles	550	652	15-Mar-09	144a reg S		NAIC-2
Rio Tinto	658	804	14-Apr-09	US Public - SEC registered	US$1.5bn	Baa1/BBB
APA Pipelines	575	754	14-May-09	144a reg S	US$75m	BBB
Woodside	551	686	25-May-09	144a reg S	US$600mn	Baa1/A-

The tables above show 5, 7 and 10-year US dollar bond issues by Australian non-bank companies in the US, with the effective swap back to A$ based on standard swap methodology; that is, as if the issuer had entered in to an AUD/USD cross currency swap on the date of launch. More specifically, the debt margin over the Commonwealth bond yield is derived from a process of:

- using the issue terms as appearing on Bloomberg or other credible sources;
- calculating the spread to US Libor using the US swap rate for the relevant term;
- calculating the basis point conversion factor to convert the margin over Libor to Australian Dollar basis points – this is calculated by using the Australian and US swap rates for the relevant term. This provides the equivalent margin over BBSW in Australian dollar terms;
- to this is added the AUD/USD cross-currency basis swap spread;
- the net spread over BBSW is then added to the Australian swap rate of the relevant term to give an equivalent AUD fixed rate;
- the CGL of the equivalent term is then deducted to give the debt margin or spread; and
- rates are annualised throughout the process.

ATTACHMENT 2: Bonds used in construction of Bloomberg fair yield curve

The following tables show the bonds used in the Bloomberg BBB curve over the prescribed measurement period. The first table shows the bonds used out to 29 months. The second table shows the actual bonds used thereafter. It can seen that some bonds have been excluded altogether, while others have been used only infrequently.

The universe of bonds used by Bloomberg in generating the fair yield curves for "BBB" and A credit ratings includes only Australian corporates that have issued Australian fixed rate bonds in the domestic market. It excludes bonds issued by Australian companies offshore and it also excludes floating rate bonds. Currently, in the overall universe of bonds from which the "BBB" curve is constructed, the longest-dated bond is Santos, with a maturity of 23 September 2015.

Analysis of the data of historical prices published by Bloomberg reveals that during the prescribed measurement period, there was no data for the three longest dated bonds, namely:

- SNOWY - 25 Feb 2013;
- GPTAU – 22 Aug 2013; and
- SANTOS – 23 Sept 2015.

Hence, the fair yield curve for "BBB" was generated using credible data for CHINLP – 16 Nov 2012 and WESAU – 25 Nov 2012, both of which would have had a tenor of around just 4 years at the time.

Coupon	6.5	6.75	5.75	6.25	7.3	6.25	6	6.75	6.28
Maturity	29-Jul-09	4-Feb-10	25-Feb-10	17-Mar-10	30-Jun-10	7-Nov-10	2-Dec-10	8-Feb-11	6-May-11
Member	ENPAU	DXSAU	SNOWY	FBG	BACAU	GPTAU	BQDAU	DXSAU	CWNAU
11/17/08	5.542	6.215	6.25	5.82	6.426	9.535	6.078	7.53	
11/18/08	5.751	6.245	6.281	5.699	6.441	10.281	6.232	7.538	
11/19/08	5.69	6.157	6.191	5.786	6.336	9.513	6.163		
11/20/08	5.608	6.09	6.123	5.712	6.247		6.073		
11/21/08	5.402	5.903	5.936	5.577	6.284		5.952		
11/24/08		5.89	5.922	5.476			5.862		
11/25/08		5.952	5.984	5.478			5.954	6.608	
11/26/08		5.936	5.967	5.395			5.922	6.58	
11/27/08		5.982	6.013	5.548			6.02	6.643	
11/28/08		6.026	6.056	5.598			5.959		
12/1/08	5.429	6.001	6.03	5.59			6.028		
12/2/08	5.473	5.951	5.979	5.55			6.233		
12/3/08	5.506	5.926	5.954	5.707			6.044		
12/4/08	5.515	5.901	5.928	5.825			6.056		
12/5/08		5.719	5.737	5.766			5.962		

Coupon	6.865	6.5	6.5	6.5	6	6.25	6.5	6.5	6.25
Maturity	27-Jun-11	6-Oct-11	13-Oct-11	21-Nov-11	25-Jul-12	16-Nov-12	25-Feb-13	22-Aug-13	23-Sep-15
Member	FXJAU	ORGAU	TABAU	SYDAAU	WESAU	CHINLP	SNOWY	GPTAU	SANTOS
11/17/08	8.716	6.847	7.514		7.382	6.916			
11/18/08	9.675	6.857	7.114		7.645	6.877			
11/19/08	9.551	6.732	7.316		7.566	6.751			
11/20/08	9.47	6.641	7.941		8.094	6.476	6.82		
11/21/08	9.254	6.686	7.686		8.001	6.497			
11/24/08	9.188	6.717	7.171		7.866				
11/25/08	9.258	6.774	7.154		7.786				
11/26/08	9.244	6.769	7.106		7.804	6.731			
11/27/08	9.294	6.794	7.092		7.792	6.733			
11/28/08	9.213	6.71	7.058		7.665				
12/1/08	9.28	6.541	7.029		7.994	6.57			
12/2/08	9.237	6.511	7.023		8.056	6.475			
12/3/08	9.438	6.77	7.004		8.157	6.596			
12/4/08	9.383	6.701	7.303		8.106	6.497			
12/5/08	9.567		7.881		8.172	6.497			

ATTACHMENT 3: Examination of recent US BBB and BBB+ bond issues

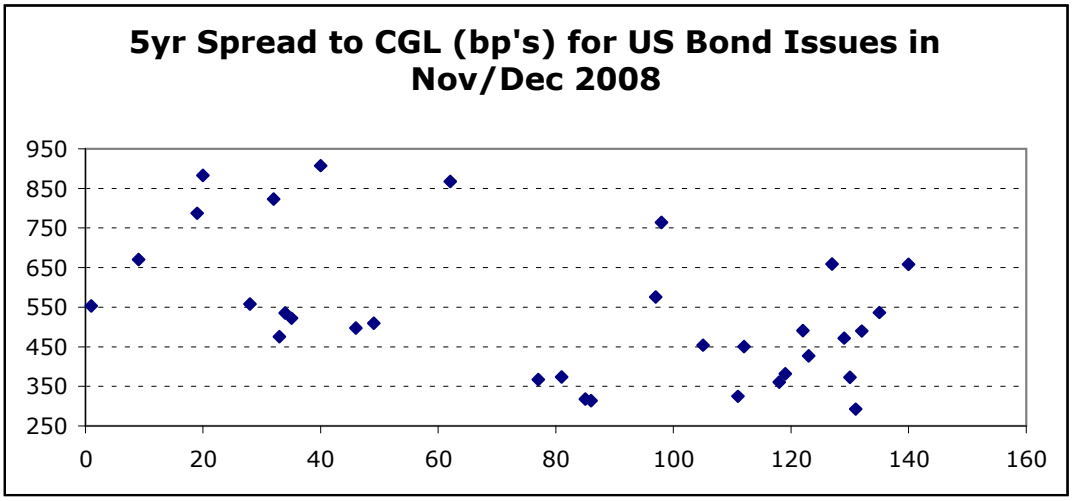
The data referred to in this Attachment were sourced from a major Australian bank. The data include all investment grade bond issues in the US in 2008 and 2009. We extracted from the data set all the Standard & Poor's rated BBB bonds where there was available data. Australian fixed rate equivalent yields are calculated using standard swap methods based on spreads and rates sourced from Bloomberg on or as close to the announcement date of the bond as possible.

A3.1 Bond issues in November and December 2008

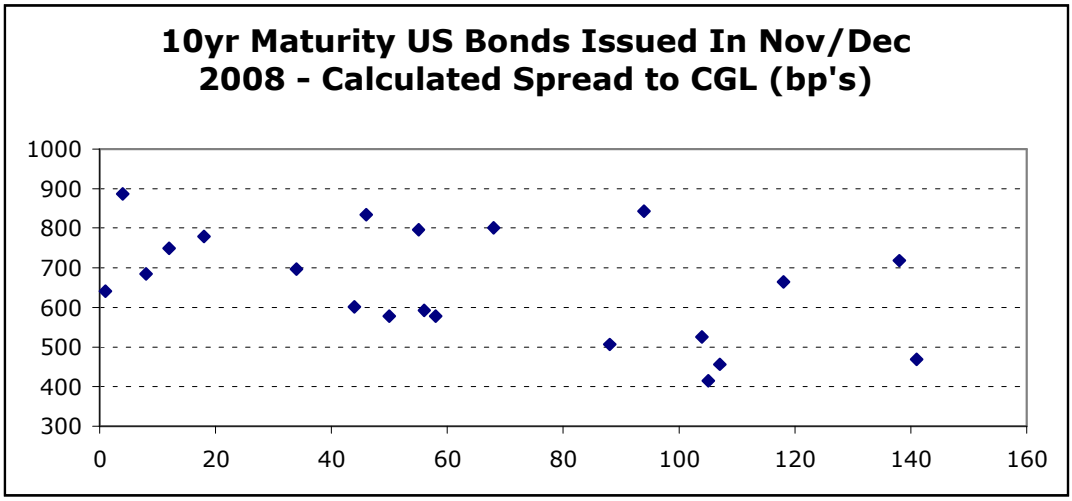
In the November / December 2008 period, the calculated average spread to Australian Commonwealth Government bonds of 5-year maturity US bonds issued by all A, A-, BBB, and BBB+ rated industrial companies was 535 basis points. The corresponding 10-year average spread to Commonwealth Government bonds for all issuers in these credit rating categories was 657 basis points.

We have extracted from this data set all BBB / BBB+ bond issues by industrial companies in that period. The average spread to Australian Commonwealth Government bonds for a maturity of 5 years was 661 basis points, and the corresponding 10-year average spread to Commonwealth Government bonds for all BBB / BBB+ issuers was 709 basis points.

The data for all 5-year US bond issues by A, A-, BBB, and BBB+ rated industrial companies in the November / December 2008 period is shown in the chart below.



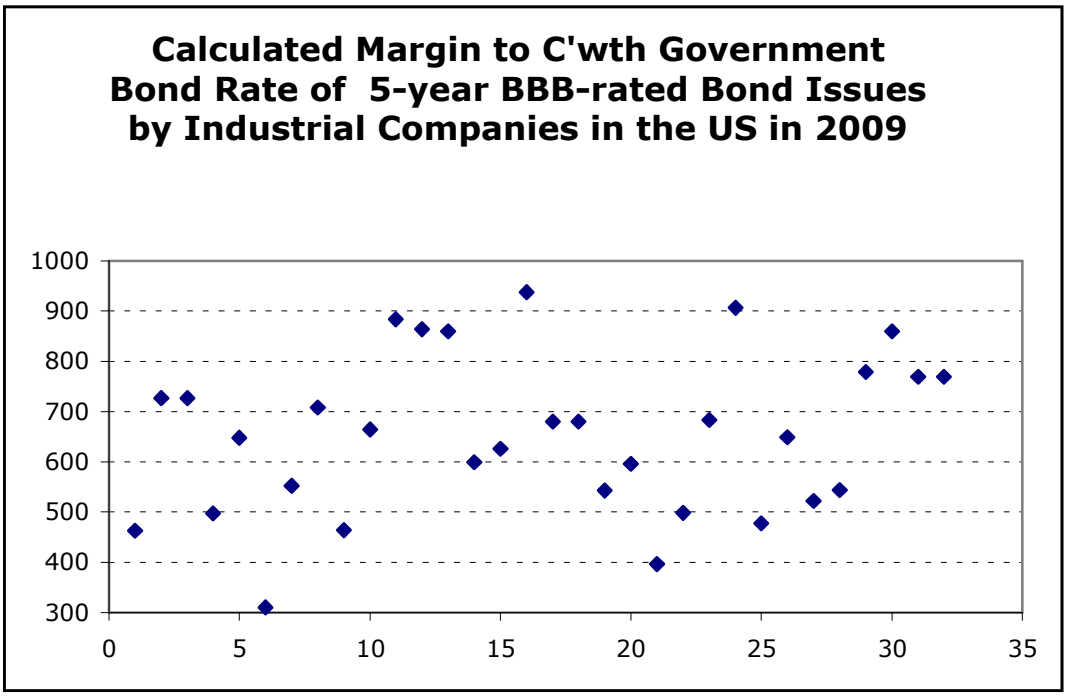
The data for 10-year US bond issues by A, A-, BBB, and BBB+ rated industrial companies in the November / December 2008 period is shown in the chart below.



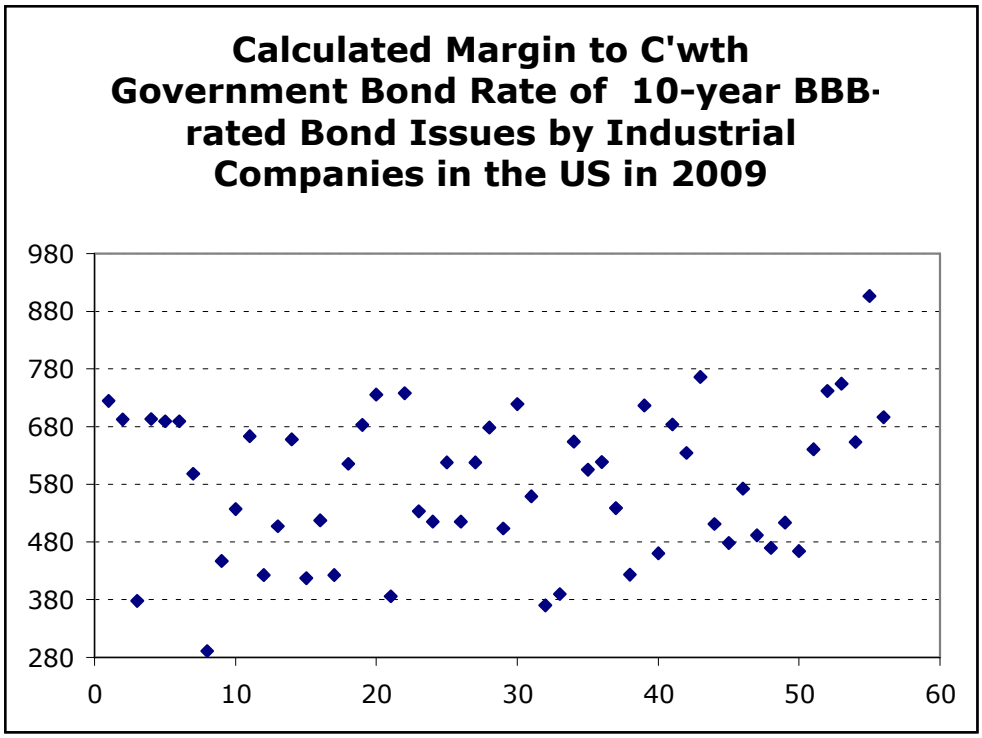
A3.2 Bond issues in 2008 and 2009

The graphs below show yields (swapped to A$ at the time of issuance) on BBB and BBB+ rated bonds issued in the US by industrial companies this year, as a spread to Commonwealth bonds. There have been many issues in the US so far this year so it is a reasonably deep and liquid market in which to observe new issue spreads.

The graph below shows the calculated margin to the Commonwealth Government bond rate of 5-year BBB/BBB+ rated bond issues by industrial companies in the US in 2009. The average 5-year BBB/BBB+ rated debt margin (over the Commonwealth bond rate) is 663 basis points.

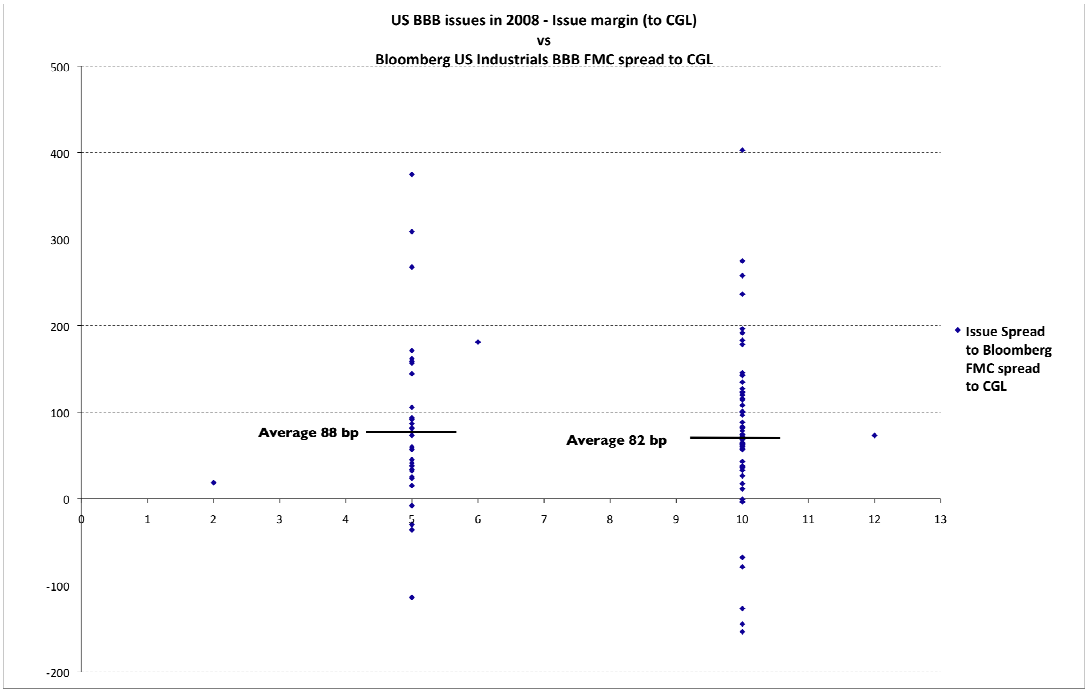


The graph below shows the calculated margin to the Commonwealth Government bond rate of 10-year BBB/ BBB+ rated bond issues by industrial companies in the US in 2009. The average 10-year BBB/BBB+ rated debt margin (over the Commonwealth bond rate) is 581 basis points.



The chart below shows approximately 100 US bond Issues in 2008 as a spread to the Bloomberg US fair yield curve. As is the case in Australia, the US fair yield curves imply spreads to the risk-free that are materially lower that the new issue spreads observed for corporate bonds.

The chart below shows approximately 100 US bond issues in 2008 as a spread to the Bloomberg US fair yield curve. As is the case in Australia, the US fair yield curves imply spreads to the risk-free that are materially lower that the new issue spreads observed for corporate bonds.


US BBB issues in 2008 - Issue margin (to CGL)
vs
Bloomberg US Industrials BBB FMC spread to CGL
500
400
300
200
100
0
-100
-200
0
1
2
3
4
5
6
7
8
9
10
11
12
13
Average 88 bp
Average 82 bp
Issue Spread to Bloomberg FMC spread to CGL

ATTACHMENT 4: RBA corporate bond yield data

The table below is an excerpt from the Statistical Tables of the April 2009 *RBA Bulletin*.

This data is available from the RBA's web site at: http://www.rba.gov.au/Statistics/Bulletin/F03.pdf

F.3 Capital Market Yields and Spreads — Non-government Instruments

	Corporate bonds with 1 to 5 years maturity											
	Yields per cent per annum			Spreads over bonds issued by the Australian Government basis points			Spreads over swap rates basis points			5-year credit default swap spreads basis points		
	AA	A	BBB	AA	A	BBB	AA	A	BBB	AA	A	BBB
2005 Jun	5.67	5.81	5.96	56	69	84	13	27	42	12	31	49
2006 Jun	6.32	6.44	6.55	53	66	75	14	25	38	9	24	44
2007 Jun	7.01	7.08	7.32	58	66	88	15	25	45	5	19	50
2007/08												
Mar	8.43	8.78	8.87	223	259	267	109	144	152	98	145	184
Apr	8.62	8.94	8.95	218	251	250	100	133	132	66	98	141
May	8.69	9.05	9.15	192	230	236	95	132	139	59	81	120
Jun	8.90	9.38	9.45	216	265	267	106	155	159	84	100	142
2008/09												
Jul	8.35	8.89	9.05	211	266	277	108	162	175	80	107	161
Aug	7.77	8.39	8.81	207	270	311	104	166	208	98	124	188
Sep	7.61	8.38	8.77	249	326	365	135	212	251	103	159	220
Oct	6.67	7.88	8.73	221	342	429	134	254	343	117	212	350
Nov	5.88	7.14	7.90	240	362	446	166	286	371	138	260	418
Dec	5.87	7.24	7.53	279	415	449	211	347	383	161	312	535
Jan	5.40	6.83	7.13	270	409	443	211	352	389	138	280	414
Feb	5.52	7.12	8.09	248	406	503	207	365	463	189	303	398
Mar	6.21	8.07	8.93	301	485	574	261	443	534	159	342	475
Daily												
2 Mar	5.60	7.21	8.10	257	417	507	213	373	464	..	..	..
3 Mar	5.67	7.32	8.36	259	422	527	213	377	484	..	..	..
4 Mar	5.54	7.19	8.36	252	415	534	211	374	494	..	..	..
5 Mar	5.52	7.29	8.19	250	425	517	212	387	479	196	339	478
6 Mar	5.43	7.24	8.25	252	430	534	212	391	495	..	..	..
9 Mar	5.34	7.18	8.16	253	434	535	212	393	495	..	..	..
10 Mar	5.43	7.28	8.25	255	438	536	213	396	495	..	..	..
11 Mar	5.46	7.29	8.26	254	436	534	215	397	496	..	..	..
12 Mar	5.41	7.23	8.20	256	437	535	214	395	494	213	366	500
13 Mar	5.91	7.32	8.24	298	439	533	254	396	491	..	..	..
16 Mar	5.96	7.38	8.34	299	440	537	256	398	496	..	..	..
17 Mar	6.01	7.40	8.39	297	436	535	256	396	496	..	..	..
18 Mar	6.00	7.39	8.55	297	436	550	257	397	509	..	..	..
19 Mar	5.92	7.29	8.42	304	442	554	258	397	507	174	361	474
20 Mar	6.03	7.48	8.54	308	454	559	262	409	513	..	..	..
23 Mar	6.16	7.63	8.68	307	456	560	262	412	515	..	..	..
24 Mar	6.23	7.70	8.87	307	456	572	264	414	529	..	..	..
25 Mar	6.28	7.75	8.92	305	454	570	264	414	529	..	..	..
26 Mar	6.37	7.86	9.04	303	455	571	262	414	530	159	342	475
27 Mar	6.33	7.85	9.06	298	453	573	258	414	532	..	..	..
30 Mar	6.25	7.76	8.97	298	452	572	259	414	532	..	..	..
31 Mar	6.21	8.07	8.93	301	485	574	261	443	534	..	..	..

Sources: AFMA; Bloomberg; RBA; UBS AG, Australia Branch