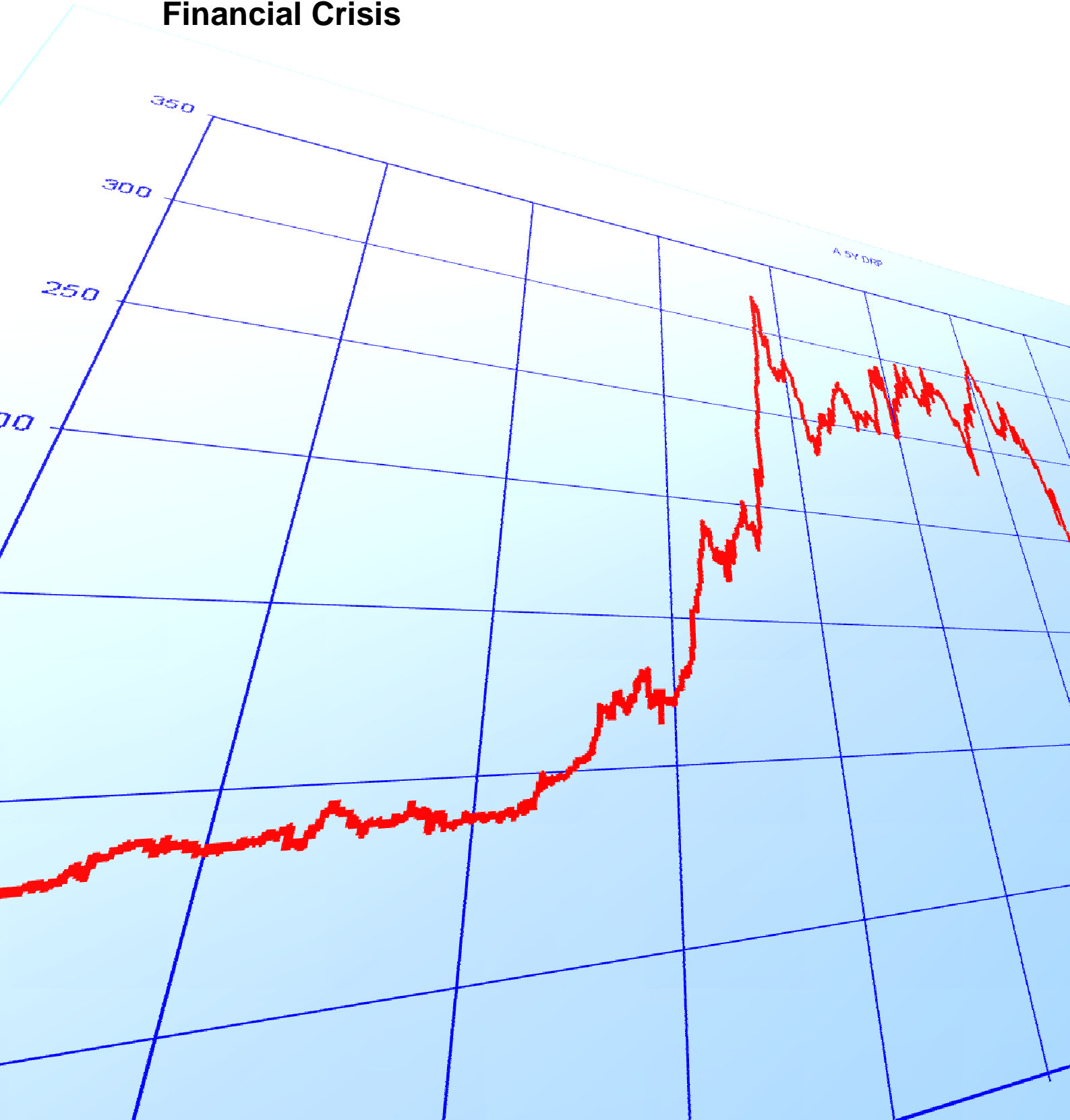


Report by ACCC staff to the ICC on the debt market, and the consequences of the Global Financial Crisis



Summary

The Global Financial Crisis of 2008 has caused a significant disruption to global debt markets, and indeed, markets in general. Investor preferences, availability and cost of funds, and consequently the nature of various firms' financing altered rapidly. While some aspects of debt financing and debt markets appear to be returning to those resembling pre-crisis debt characteristics, in a number of instances new equilibria are likely to be reached. In considering gearing levels, and sources, maturity and costs of debt, this report finds this to be the case. Further, it is noted that while markets have moved on from the height of the crisis, some time may yet need to pass before new market parameters are set.

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1 Introduction

The Global Financial Crisis (GFC) was a major disturbance in international debt markets, the effects of which continue to be felt today. Many of world's debt markets effectively shut down, leaving firms scrambling to secure alternate sources of funding. New funding was secured on terms significantly different to those prevailing prior to the GFC. Further, both borrowers and lenders struggled to reach a new market equilibrium under heightened levels of uncertainty.

Since the height of the GFC, debt markets have begun to recover and continue to do so. However, it is widely believed that the GFC has caused a significant shift in the debt market, and that a new equilibrium may be established.

To better understand the impact of the GFC, the Infrastructure Consultative Committee (ICC) undertook to examine the changes to the Australian debt market, particularly as related to financing of infrastructure companies. The examination was to be done by way of a report, with research and reporting by Australian Competition and Consumer Commission (ACCC) staff, under guidance of an ICC steering committee.

A range of very useful guidance was provided and best endeavours were made to incorporate this advice and drafting comments. However, it is noted that the ACCC staff made final decisions on drafting.

The research was split into two parts:

- data collection; and
- industry survey

To understand the impact of the GFC on the debt market, and in particular on debt financing of infrastructure firms, the following data was collected:

- firm gearing;
- maturity structure of debt;
- sources of debt; and
- cost of debt.

Initially, Bloomberg was used to gather information on all ASX200 firms. However, given significant information gaps, the data set was restricted to a sample of 20 infrastructure firms. For these firms, annual report data was added to Bloomberg data. In addition, general debt market data, including yield curves was collected from Bloomberg at specific points in time:

- Mid 2007 – immediately prior to the onset of GFC
- Mid 2008 – at the height of the GFC
- End 2009 – as market conditions were beginning to improve
- Mid 2011 – accounting for latest available information

It is noted that the latest information updating exercise was undertaken in September 2011, and this report should be seen as current as at that time.

Following data collection, an industry survey was developed to provide qualitative data in addition to quantitative information already collected. The survey was set to infrastructure firms and sought commentary on:

- Drivers of capital structure
- Major changes in debt policies (rather than policies themselves) resulting from the GFC
- Ease of debt raising pre and post GFC
- Type and sources of debt

Unfortunately, despite appealing for responses to the survey twice, only three firms responded to the survey. Given the lack of response from the industry, the research was redirected. Instead of understanding the demand side of the debt market, the research now focussed on understanding the availability of debt, and its attributes. Therefore, a second survey was constructed to solicit comments from the debt supply side, particularly from financial institutions and large debt holders.

The survey questions, found in Appendix A, were aimed at understanding what happened in the debt markets during the GFC, the type of debt available now, types of debt available in the future, and any other changes to debt market conditions. The focus on infrastructure debt was maintained.

Eight respondents, covering the majority of banks active in the Australian debt market and one fund manager, were interviewed as a part of the survey. Qualitative information obtained was added to quantitative data to obtain a more complete picture of the debt market over the past few years and into the future.

The remainder of this report is structured as a timeline. Chapter 2 of this report provides a brief history of the Australian debt market and introduces the onset of the GFC. The following chapter outlines the major changes to the debt market as a result of the GFC, both at the height of the disturbance, and towards its end, while Chapter 4 provides some comments on the possible future. Conclusions are drawn in Chapter 5 .

2 Brief history of the debt market

The Australian corporate bond market is relatively young, and to begin with was a relatively small part of the market otherwise characterised by government bonds. However, a declining demand for government funding, an increasing appetite for fixed income securities and the desire of banks to securitise their lending assets resulted in a recent increase in supply of non-government bonds.

Dominance of government bonds ended in April 2002 when the value of non-government debt on issue exceeded that of the Commonwealth and other government debt for the first time.¹ In the ten years ending in 2007, the stock of non-government bonds outstanding has increased from \$110 billion to over \$750 billion, making the corporate bond market six times larger than the government bond market.²

Historically Australia's non-government bond market has been of high quality. Prior to 2007, over 40 per cent of bonds issues in Australia were rated AAA, with another 36 per cent rated AA on the Standards & Poor's credit rating scale.³

However, the Australian bond market should not be considered in isolation as it is integrated into the global debt market. Australian firms can either issue bonds domestically or internationally. When issuing in an overseas market, Australian equivalent bonds are created by issuing debt internationally and converting the proceeds to Australian dollar funding using currency swaps. The fact that Australian banks' domestic and offshore average issuances cost have converged (at least prior to the GFC) demonstrates the interrelation between bond markets.⁴

Before the GFC, the credit market was a borrowers' market and debt was readily available. This was a prolonged period where credit risk was perceived to be low and during which financing of large asset purchases was achieved through debt issuance.⁵ Consistent with global trends, Australian bond spreads were narrow. Debt was priced favourably.

The most common maturity of Australian unsecured bonds, at issuance, was between four and six years, with an average of close to six years.⁶ The abundance of liquidity and confidence in the market before the GFC resulted in risk being priced at historically low levels, and resulted in debt costs not reflecting their inherent credit risk.⁷

Finally, credit wrapping was widely used prior to the GFC. Credit wrapping allowed lower grade entities to issue AAA debt by paying a fee to monoline insurers. These

¹ Saul Eslake, *An Introduction to the Australian Economy*, January 2007, p. 26.

² Reserve Bank of Australia, *Bulletin: The Impact of the Financial Crisis on the Bond Market*, June Quarter 2010, p. 55.

³ Reserve Bank of Australia, *Bulletin: The Impact of the Financial Crisis on the Bond Market*, June Quarter 2010, p. 60.

⁴ Reserve Bank of Australia, *Bulletin: Australian Bank's Global Bond Funding*, August 2006, p. 1.

⁵ Reserve Bank of Australia, *Financial Stability Review*, March 2008, p. 1.

⁶ Reserve Bank of Australia, *The Impact of the Financial Crisis on the Bond Market*, June 2010, p. 59.

⁷ Dr. Ken Henry AC, *The Australian financial system, emerging from the global financial crisis – Address to the Count Financial Conference*, 15 March 2010, p. 27.

were insurers that guaranteed to meet interest and principle payments in the instance the issuer defaulted.⁸ Through this credit enhancement feature, low investment grade loans were made attractive to a broad range of investors. In Australia, credit wrapping was focussed on issuance of corporate bonds.⁹

The Crisis

The GFC began in early 2007 when confidence in credit market collapsed following large defaults by borrowers in the US sub-prime mortgage market. Further, negative announcements from Federal Home Loan Mortgage Corporation (known as Freddie Mac), Bear Sterns, Northern Rock, Merrill Lynch, Royal Bank of Scotland and Lehman Brothers caused panic to spread through financial markets. The aftermath of the collapse of Lehman resulted in extreme volatility¹⁰ and unprecedented stress in global capital markets.¹¹

The crisis resulted in many monolines suffering multiple downgrades, which resulted in downgrades in credit wrapped securities to their underlying rating.¹² Although Australian banks did not have any substantial exposure to the US sub prime market, the loss in confidence in the banking sector and a slowdown in international trade had a negative impact on the Australian economy.¹³

⁸ Reserve Bank of Australia, *Bulletin: The Impact of the Financial Crisis on the Bond Market*, June Quarter 2010, p. 61.

⁹ Reserve Bank of Australia, *Financial Stability Review*, March 2008, pp. 16–17.

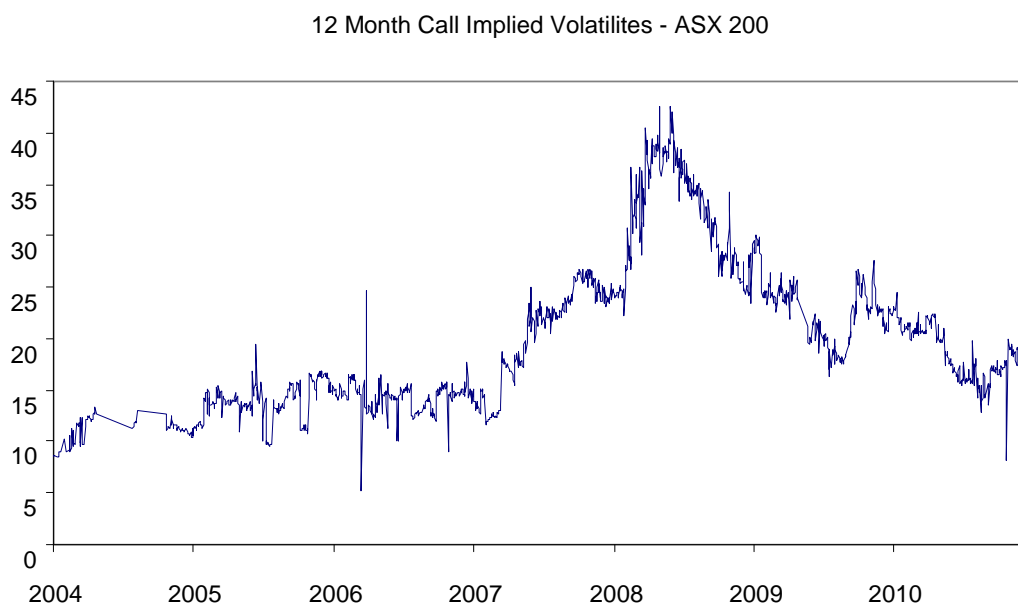
¹⁰ As is evident in the figure below, the implied volatility in Australia was at its highest during the GFC.

¹¹ Australian Securities Exchange, *Capital Raising in Australia: Experience and Lessons from the Global Financial Crisis*, 29 January 2010, p. 4.

¹² Reserve Bank of Australia, *Bulletin: The Impact of the Financial Crisis on the Bond Market*, June Quarter 2010, p. 61.

¹³ Jenny Chesters - Australian National University, *The Global Financial Crisis in Australia*, p. 1.

Figure 1 – Implied ASX 200 market volatility



Source: Bloomberg

Important impacts of the collapse of the US sub prime market were an upward reassessment of risk, a drying up of liquidity and an increase in risk aversion amongst investors. Investors began to demand stronger covenants be placed on bonds and were wary of lending money for extended periods, which resulted in a shift in the distribution of bonds to shorter maturities.

In contrast to the majority of western economies, Australia was amongst the least affected by the GFC. Australia's GDP growth during the GFC period suggests that the economy largely escaped the world-wide recession. Australia's banking sector remained strong, with no failures and continued profitability.¹⁴ Unlike many other OECD countries, Australia did not nationalise any of its banks.¹⁵ Further, there were fewer credit downgrades and bond defaults.¹⁶

On the equity side both the Australian All Ordinaries index and the US Dow Jones index reacted negatively to the GFC. However, the Australian equity market permitted capital issuance throughout the GFC due its depth and liquidity.¹⁷

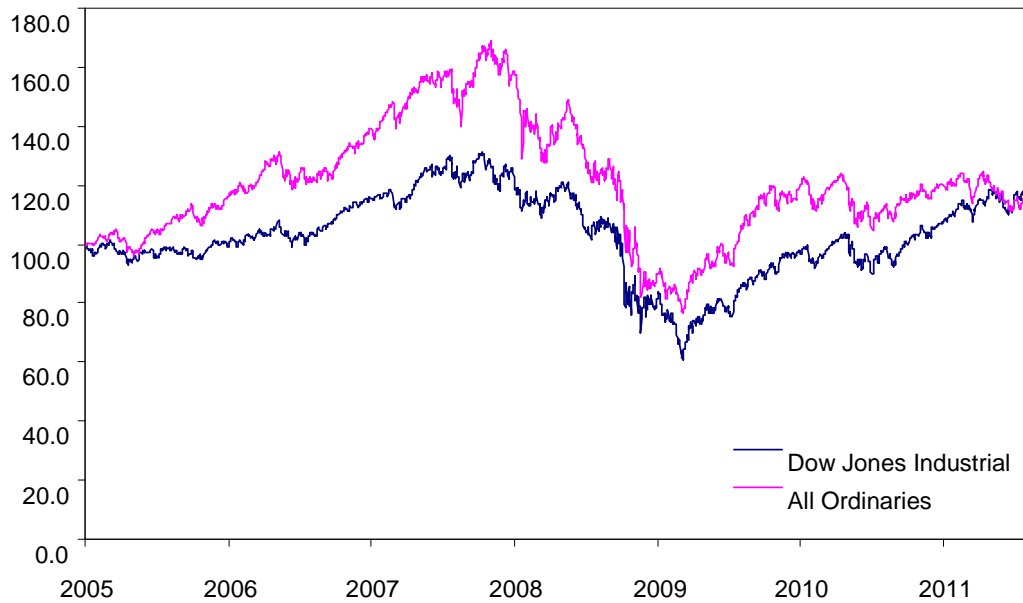
¹⁴ Christine Brown and Kevin Davis, *Australia's Experience in the Global Financial Crisis*, p. 1.

¹⁵ Christine Brown and Kevin Davis, *Australia's Experience in the Global Financial Crisis*, pp. 5-6.

¹⁶ Reserve Bank of Australia, *The impact of the Financial Crisis on the Bond Market*, June 2010, p. 62.

¹⁷ Australian Securities Exchange, *Capital Raising in Australia: Experience and Lessons from the Global Financial Crisis*, 29 January 2010, p. 35.

Figure 2 – Changes in All Ordinaries and Dow Jones Industrial



Source: Bloomberg

In response to the developing financial crisis, governments and central banks around the world intervened in the market to try to minimise its impact on their economies. In Australia while the Reserve Bank of Australia cut interest rates, the Federal Government announced guarantee arrangements for bank deposits and wholesale funding following the collapse of Lehman Brothers. Further, it introduced new regulations such as a ban on short selling to prevent further instability and reduced the official interest rate to stimulate the economy.

3 What happened to the debt market

The GFC obviously had a significant effect on all markets. However, perhaps the greatest impact was felt in debt markets. As noted above, many of these markets effectively shut down overnight, and companies needed to turn to banks for funding. Since then, debt markets have begun to recover. However, it is widely believed that the GFC has caused a fundamental shift in the debt market, and that the post-GFC recovery will lead to a new equilibrium to be established. It has been suggested that the days of cheap, flexible and plentiful debt are over for the foreseeable future.

Changes such as these in the debt market, and the response of Australian debt issuers are considered below. It should be emphasised, however, that the market remains in a state of flux. Therefore, the analysis below provides a direction rather than an end point.

Specifically, the analysis considers key attributes of debt issued by Australian infrastructure firms:

- gearing;
- maturity structure of debt;
- sources of debt; and
- cost of debt.

In short, it has been found that Australian infrastructure firms have significantly de-levered as a result of the GFC. While debt tenor fell significantly at the height of the GFC, recent issues have shown a slow lengthening of the term. Regarding the source of debt financing, direct use of debt markets through bond issuance, rather than using bank debt, fell significantly during the GFC, but this trend now seems to be reversing. Further, the GFC has provided incentives for a greater use of international markets. Finally, while the cost of debt has largely fallen since the peaks of mid-2008, information on the cost of lower rated debt, including that of most infrastructure firms, appears ambiguous.

Gearing in the Australian infrastructure sector

To examine gearing and debt maturity profiles of firms in the Australian infrastructure sector, a dataset was compiled from publicly available financial reports. The data was collected for a sample of twenty ASX 200 companies, which are either in the infrastructure sector or are closely related to the infrastructure sector. These are listed in Table 1.

Table 1 – The ‘broad sample’ of infrastructure-related companies

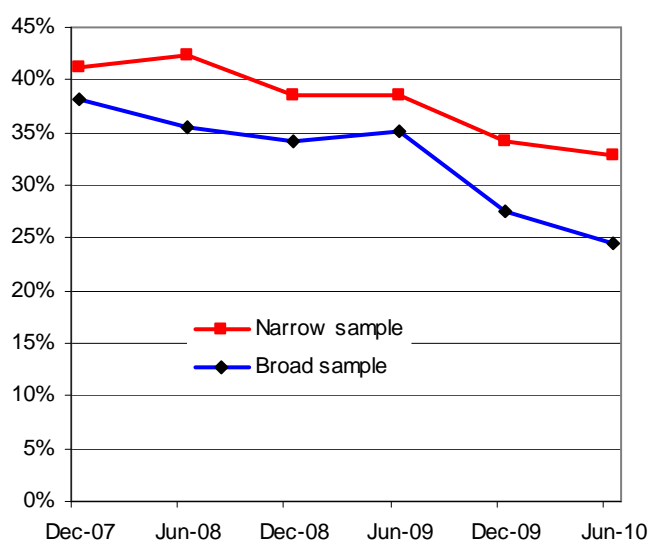
AGL Energy Ltd	Prime Infrastructure Holdings
APA Group	Qantas Airlines Ltd
Asciano Group	Rio Tinto Ltd
BHP Billiton Ltd	Singapore Telecommunications Ltd
Duet Group	Spark Infrastructure Trust
Envestra Ltd	SP AusNet
Graincorp Ltd	Telecom Corporation of NZ
Hastings Diversified Utilities Fund	Telstra
MAP Airports International Ltd	Toll Holdings Ltd
Origin Energy Ltd	WorleyParsons Ltd

These 20 companies are defined as the ‘broad sample’. The majority of businesses in the sample are infrastructure companies, however the sample also includes a number of other companies which are closely related to the infrastructure sector. In particular, BHP, Rio Tinto, Qantas, AGL and Origin are major users of infrastructure, and Worley Parsons is an engineering company which specialises in infrastructure construction.¹⁸ A ‘narrow sample’ of 17 companies is also defined, from which BHP, Rio Tinto and Qantas are excluded. These three companies are excluded from the ‘narrow sample’ for two reasons: first, they are less closely connected to the infrastructure sector than other companies in the sample; and, furthermore, their relatively large size means that, in some cases, they dominate the aggregate statistics. Financial report data reveals that the gearing of infrastructure-related companies has fallen significantly over the past few years. Figure 3 shows that the gearing of the broad sample fell more steeply, but gearing of the narrow sample also fell significantly – from 42 per cent at end-June 2008 to 33 per cent at end-June 2010. These findings are confirmed by Reserve Bank analysis, which also shows a substantial fall in the gearing of the infrastructure sector since 2009.¹⁹

¹⁸ There was some discussion about which companies should be included in the sample. As outlined, these cover infrastructure related companies. It is acknowledged that there was no clear demarcation as to which infrastructure related companies were included and excluded. However, at the same time it is important to note the need for working with a sample of reasonable, yet manageable, size.

¹⁹ Reserve Bank of Australia, *Financial Stability Review*, September 2010, p.46.

Figure 3 – Gearing* of infrastructure-related companies²⁰



Source: Annual Reports and Interim Reports

Most market participants judged that the infrastructure sector had deleveraged somewhat in response to the GFC, but this view was not uniform, with some believing there was no change. Of the firms in the infrastructure sector, fully regulated businesses tend to have greater leverage, but deleveraging was most pronounced in the non-regulated businesses. The gearing ratio is a central concern of ratings agencies, and pressure from these agencies partly accounts for the fall in leverage. Further, during the GFC, to improve their access to debt markets more businesses obtained a rating, which placed additional downward pressure on leverage.²¹

Maturity Structure of Infrastructure Companies

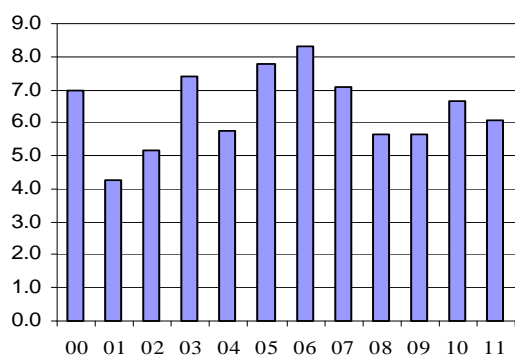
Bloomberg data was used to assess the impact of the GFC on the maturity of bonds. The dataset was bonds issued in Australia during or after 2000 and financial and government bonds were excluded. The average maturity of the bonds in the dataset is 6.5 years although maturity varied considerably depending upon the year of issuance.

Figure 4 shows that over the past decade time to maturity of debt has been pro-cyclical. Bond time to maturity was relatively high in 2005 and 2006 prior to the onset of the GFC. In the years that were most affected by the GFC, 2008 and 2009, time to maturity was relatively low, however it was at its lowest in 2001, the year of the hi-tech stock crash. The fall in time to maturity during after the GFC and the hi-tech stock crash is partly accounted for by a rise in investors' preference for liquidity. When economic uncertainty increases, investors are less inclined to lock their money away for long periods of time.

²⁰ Interest-bearing debt/Book value of assets. For simplicity, financial years which finish end-March (Singapore Tel., SP AusNet) have been treated as though they finish end-June.

²¹ This added to the pressure from investors less willing to fund highly leveraged companies.

Figure 4 – Average time to maturity of non-financial corporate bonds by year of issuance²²



Source: Bloomberg

The so-called ‘sweet spot’²³ in the domestic bond market is in the vicinity of five years, although there are indications that longer maturities are again becoming available. By way of contrast, in the Euro, Sterling, 144A and USPP markets, maturities of 10 years or more are common. In US debt markets, pension funds contribute to the demand for longer term debt. Moreover, the current steepness of the US yield curve encourages some investors to demand a longer maturity. On average, in the domestic market, the maturity of bank debt is shorter than bond debt.

A number of market participants mentioned either or both of the following two factors which influence a regulated business’ view on the ideal maturity of their debt:

- (1) there is an incentive to match maturity to the length of the regulatory cycle,
- (2) there is an incentive to reduce refinancing risk.

The following example illustrates the reasoning behind the incentives. Suppose a business has a five-year regulatory cycle, and the next cycle begins in July 2012. Suppose, moreover, in July 2012, the business is deciding whether to issue ten-year fixed-rate debt, or, instead, to issue five-year debt and refinance in July 2017.

If ten-year debt is issued, there may be an increase in risk to profits for the regulatory period from July 2017 to July 2022. In particular, the issuance of ten-year debt creates a downside risk to the business’ profits in the event that the cost of debt for the period July 2012 to July 2017 falls significantly. If the cost of debt falls (because either the risk-free rate or the debt risk premium falls), then, all else equal, the weighted average cost of capital and regulatory revenues will be lower, and the reverse situation will apply if debt margins increase in five years time..

While revenues would fall, the business’ actual debt-servicing costs would be unchanged, so that, all else equal, the business’ profits would fall. If, instead, the business had issued five-year debt, its debt-servicing costs would fall along with its revenue. If debt matches the regulatory cycle, then movements in debt-servicing costs

²² Data for 2011 is not for the full year, and only includes bonds issued before 9 June 2011.

²³ The ‘sweet spot’ can loosely be defined as the tenor at which the market is providing greatest liquidity

act as a hedge against any movements in regulatory revenue that are produced by changes in the cost of debt in respect to the debt margin.

While the incentive to match the regulatory cycle is a factor that may encourage a business to issue shorter maturity debt, the incentive to avoid refinancing risk may provide businesses with a reason to issue longer maturity debt. Continuing with the example above, if the business decides not to issue ten-year debt, but instead to issue five-year debt and refinance in July 2017, then the business takes on the risk that refinancing may be unavailable in 2017.

For instance, if a financial event akin to the Global Financial Crisis occurs in five years time, and debt markets dry up, then the business may find that it is unable to issue five-year debt in July 2017. As a consequence, the business may face liquidity problems. The business may have an incentive to issue the ten-year debt in July 2012 rather than the five-year debt, so as to avoid this refinancing risk.

A number of market participants acknowledged that a business might consider using interest rate swap transactions in an attempt to match debt-servicing costs to the regulatory cycle.

Both can be achieved if the firm issues debt with a relatively long maturity, in order to minimise its refinancing risk, but uses interest rates swaps to ensure that the risk free rate is only locked in for five years. While this strategy is employed by certain market participants, some market participants offered reasons to think that businesses would have at least some incentive not to use interest rate swaps for this purpose.

First, given the use of mark-to-market accounting, interest-rate swaps may have negative accounting implications if they don't qualify for hedge accounting treatment. Second, interest-rate swaps do not hedge against movements in the debt spread. While credit default swaps (CDSs) could conceivably be used to hedge against movements in the spread, doubt was expressed about whether CDSs are used for this purpose, because of a typical lack of liquidity in the CDS market for such names.

On the other hand, it was observed that if a business issues debt offshore, and therefore needs to use a currency swap to hedge against currency risk, then it may use interest rate swaps together with the currency swap to match the regulatory cycle.

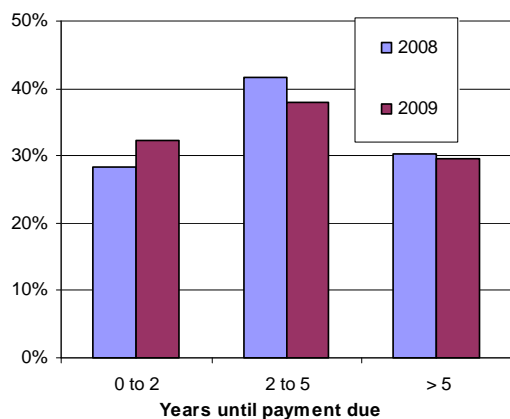
Issues Relating to any Maturity Wall

In the first-half of 2010, a number of reports from credit-rating agencies found that Australian airports, utilities and other infrastructure-related companies were approaching a 'maturity wall'. In particular, a significant amount of debt has to be refinanced before the end of 2011. Annual Report data for the narrow sample provides support for this finding.

Figure 5 portrays the maturity profile of debt as recorded in 2008 and 2009 Annual Reports. From 2008 to 2009, the fraction of debt due within two years increased from 28 to 32 percent. An additional year of data is available for those companies whose financial years end in H1, 2010: for this sub-sample, the fraction of debt due within two years increased from 30 per cent in 2008 to 33 per cent in 2009, to 44 per cent in 2010.²⁴

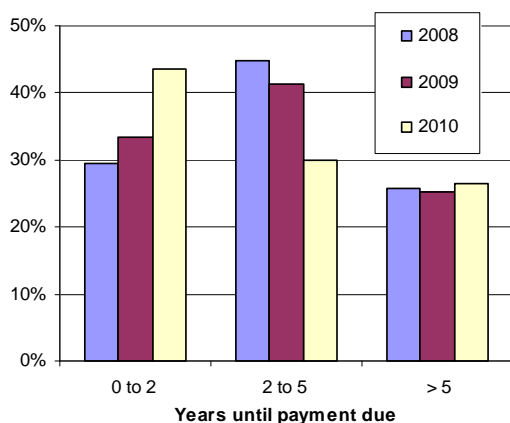
²⁴ Note, however, that the sharp rise in this fraction in 2010 was only partly due to a rise in payments due within two years; it also partly reflected a fall in payments due in more than two years.

Figure 5 – Maturity profile of debt obligations²⁵



Source: Annual Reports

Figure 6 – Maturity profile of debt obligations, including 2010²⁶



Source: Annual Reports

A number of market participants acknowledged that there had been, or indeed is still, a maturity wall. The general view, however, is that concerns about any maturity wall have reduced significantly firstly because of an improvement in liquidity and activity in debt markets and secondly because of responses by businesses. These responses of businesses include:

- deleveraging and recapitalisation in regulated businesses

²⁵ Scheduled debt repayments by year due, as a percentage of total repayments due. The sample includes only those members of the narrow sample whose annual reports provide a sufficiently fine-grained breakdown of debt: Telstra, Asciano, Origin, PIH, Duet, Singapore Tel., SP AusNet, Telecom Corp. NZ, Toll, Graincorp, Spark, MAP, Hastings.

²⁶ Scheduled debt repayments by year due, as a percentage of total repayments due. The sample includes only those members of the narrow sample whose annual reports provide a sufficiently fine-grained breakdown of debt, and whose financial years end in 2010 H1: Telstra, Asciano, Origin, PIH, Duet, Singapore Tel., SP AusNet, Telecom Corp. NZ, Toll.

- pre-planning of refinancing, and
- issuance of longer term debt to reduce refinancing requirements.

Source of Debt

Bank debt v bond debt

The survey of market participants indicated that the mix of bank-sourced debt and bond debt changed significantly at the start of the GFC. Prior to the crisis, it was widely considered that the bank-bond debt mix was approximately 30:70. However, as a result of the GFC, a number of factors combined to make bank debt more attractive.

First, at the start of the crisis, spreads on bond debt widened more than bank spreads. Second, due to the market dislocation, bond markets became unavailable, or effectively unavailable, to a number of firms, especially those seeking to secure bond debt for new construction. These firms were forced to source debt from banks. Finally, companies gained increasing awareness of the value of bank debt – particularly the value of flexibility during market dislocation, especially in the context of relationship banking.

The combination of the above factors resulted in a reversal of the source of debt during the height of the GFC, with a majority of new debt (around 70 per cent) sourced from banks. However, respondents also noted that since the height of the GFC, the focus has shifted back to bonds. The market views are supported by the reported data.

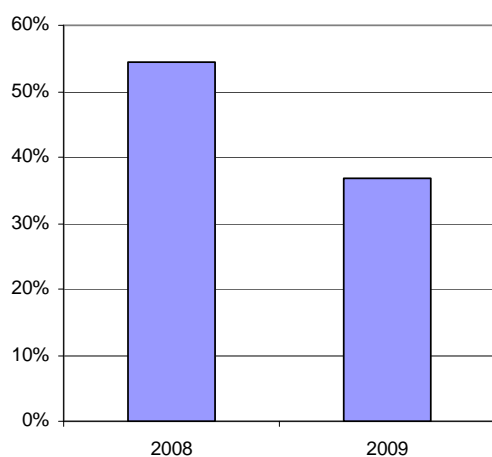
Studies by the Reserve Bank of Australia showed that in 2008 bond issuance of Australian non-financial corporates fell sharply, which was partly replaced by a growth in bank debt. In 2009, however, bond spreads fell, and issuance of corporate bonds rose significantly – a number of companies were issuing bonds to pay down bank debt.²⁷

Annual Report data confirm that a similar trend occurred in the ‘broad sample’ of infrastructure related companies. Figure 7 shows that from 2008 to 2009, the stock of bank debt, as a percentage of interest-bearing liabilities, fell from 54 per cent to 37 per cent. Figure 8 includes figures for 2010, but the sample is restricted to those companies whose financial year ends in the first half of the financial year. For this sub-sample, the fraction of bank debt fell from 43 per cent in 2008, to 39 per cent in 2009 to 35 per cent in 2010.²⁸

²⁷ ‘The Impact of the Financial Crisis on the Bond Market’, S. Black, A. Brassil and M. Hack, RBA Bulletin, June Quarter, 2010; ‘Australian Corporates’ Sources and Uses of Funds’, RBA Bulletin, October 2009.

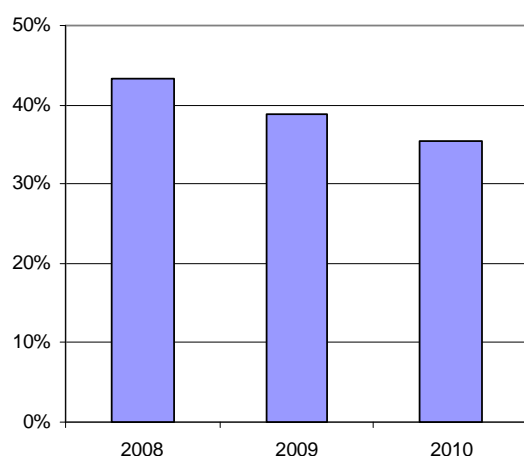
²⁸ The fall in the share of bank debt is significantly steeper in Figure 7 than in Figure 8. This difference is mainly accounted for by Rio Tinto. Rio Tinto reports in December, and so was not in the sub-sample for Figure 8. Its bank debt fell sharply from 2008 to 2009.

Figure 7 – Percentage of debt from banks²⁹



Source: Annual Reports

Figure 8 – Percentage of debt from banks (including 2010)³⁰



Source: Annual Reports

The data from annual reports supports the market view that following a sharp rise in the use of bank debt, as the GFC took hold, the bank-to-bond debt ratio is slowly returning back towards its pre-GFC levels of 30:70.

²⁹ Bank debt/Interest-bearing liabilities. Based on all companies in the broad sample except Telstra (whose Annual Report does separate bank debt.)

³⁰ Bank debt/Interest-bearing liabilities. Only includes those companies whose financial year ends in 2010 H1: BHP, Asciano, Origin, PIH, Duet, Singapore Tel., SA AusNet, Telecom Corp. NZ, Toll, Qantas, AGL, APA, Envestra, WorleyParsons.

Domestic v offshore debt

In addition to raising funds on domestic capital markets, firms often source funds from overseas markets, particularly in the US and Europe. The funds are often sourced from:

- US markets, including:
 - US Private Placement ('USPP') Market
 - US 144A Market
- Eurobond markets, including
 - Eurodollar Market
 - Eurosterling Market
 - Euro Market

A recent study by the Reserve Bank of Australia shows that the Australian non-financial corporates who use bonds to raise funds 'have historically sourced around two-thirds of these funds from foreign investors.'³¹ This was particularly true during the GFC. The RBA found that during the GFC, most of the issuance by non-financial corporates took place offshore and was sold to foreign investors.

Market participants noted that the overarching advantage of sourcing funding from foreign markets, particularly since the GFC, is the ability of the firm to diversify funding sources through maintaining a presence in many markets. Such a presence is seen to benefit the firm in the case of a complete shut-down of a particular debt market, or in case of less significant market disturbances that would adversely impact on the cost of debt. Further, as various markets can go through different phases, the appeal of offered terms can also vary between markets. The availability of debt of different tenor in various markets was also seen as an advantage.

With regard to infrastructure companies, market participants mentioned that the advantage of overseas markets is that investors are relatively more sophisticated when compared to Australian investors. Furthermore, overseas markets are populated with different investors with varying incentives and investment philosophies, resulting in a range of market outcomes. Consequently, infrastructure companies such as utilities can sometimes source debt at a lower total cost to debt issued in Australia.³²

In addition to the above, market participants noted various advantages and disadvantages of specific foreign bond markets. For example, the USPP market was viewed to provide the following benefits over the domestic market:

- debt can be delayed – unlike most other markets where funding is provided on the day of agreement, funding in the USPP market can be obtained as much as six months in advance of commencement of debt obligations

³¹ 'Ownership of Australian Equities and Corporate Bonds', S. Black and J. Kirkwood, RBA Bulletin, September Quarter 2010.

³² For example, various overseas markets can be characterised by investors who could be either defined benefit and defined contribution pension funds. These may have different investment incentives, and can require debt of different risk and tenor. In turn, this provides greater depth and liquidity at various ends of the debt spectrum, and specific firms can choose a market where investors have a greater appetite for its debt.

- access to the USPP market does not require a rating from a nationally recognized statistical rating organisation (such as S&P, Moody's etc.)³³
- greater tenor – while domestic markets prefer to provide 5-year debt, USPP market tenor is usually between 5 and 30 years, with a preference for 10-year debt
- greater capacity – USPP market allows for greater volumes of debt to be placed, even in difficult market conditions, and without creating pressure on cost of debt
- greater depth – as there are more investors than in domestic markets, the USPP market provides firms with greater negotiating power
- even after hedging, the cost of debt has been lower than domestic debt.

However, the USPP market issuances can contain more restrictive terms and conditions, and are usually held to maturity with the borrower unable to pay the debt down in advance.

Another US market open to Australian issuers is the quasi-public bond market created under Rule 144A which exempts the bond from being registered with the Securities and Exchange Commission. This market, however, has more onerous reporting requirements, and higher establishment costs. In particular, to access the 144A market, companies require ratings from two rating agencies. However, many Australian firms have done so due to the great advantages of this market including:

- extraordinary depth – the 144A market remained open even at the height of the GFC, albeit at significantly higher spreads
- greater issue size – issues exceeding 1 billion USD are not uncommon
- greater tenor – the 144A market provides 5, 7 and 10-year. In addition, longer term issues, such as 15, 20 and 30-year debt issues are standard.

In addition to US markets, Australian companies can access European bond markets, with debt denominated in either US dollars, sterling or Euros. Issuers generally require one rating from a rating agency. Advantages of European bond markets are:

- greater depth – like US markets, European bond markets have much greater capacity to provide corporate issues of up to 1 billion USD, and in case of Euro markets, issues can exceed 1 billion Euro
- greater tenor – Eurobond markets offer maturities up to 10 years, with the Eurosterling having a well developed longer maturity market (15 to 30) years, driven by demand from UK pension funds and insurance companies.

When choosing between different overseas bond markets, companies usually consider the differences in these markets with regard to (amongst other things):

- relative pricing – it was noted that A-rated companies may prefer European markets and lower rated companies prefer US markets

³³ However, ratings are issued to private placements by the National Association of Insurance Commissioners

- amount required – Euro market and 144A market offer greatest issue sizes, while other markets usually offer issue sizes that are sufficient for Australian firm's purposes
- required tenor – Eurosterling and 144A markets offer longest maturity
- terms and conditions attached to the issue.

A disadvantage of foreign issues is the additional fees incurred in issuing overseas, and an addition of currency risk. Market participants have noted that almost all, if not all, debt issued in foreign markets is hedged against fluctuations in exchange rates using cross-currency swaps. The cost and availability of these swaps may have an influence on which foreign market is accessed.

Typically, foreign issued fixed debt is swapped for domestic floating rate debt, which is in turn swapped for domestic fixed rate debt. It was noted that, depending on company's rating, the currency swaps may carry certain conditions that result in the currency risk not being fully hedged.

Further, it was noted that swaps are usually organised by financial institutions who count the swap towards the company's credit limit. This therefore reduces the firm's ability to raise bank debt.

While foreign markets have been a major source of debt in the past, commentators have begun to ask recently whether a surge may occur in the Australian market for Australian non-financial corporate bonds. There are at least two reasons for this conjecture.

First, in 2010, the government adopted measures partly designed to stimulate the domestic bond market:

- the Commonwealth budget introduced a tax discount for Australian investors in bonds; and
- ASIC regulations on domestic bond issuance were loosened.³⁴

Second, a number of significant issues in the Australian domestic bond market in 2010 by infrastructure-related companies suggest that there is Australian appetite for bonds of Australian non-financial corporates:

- in March SP AusNet issued \$300 million of 7.5-year debt;
- in July APA sold \$300 million of 10-year debt; and
- in September DBP issued \$550 million of 5-year debt.

Further, in March 2011, SP AusNet issued \$250 million of 10-year debt.

Cost of Debt

The largest, and most identifiable impact of the GFC on debt markets has been on the cost of debt. The cost of debt was primarily impacted by the GFC in two ways:

- initial changes in the debt risk premium (DRP or spread) resulting

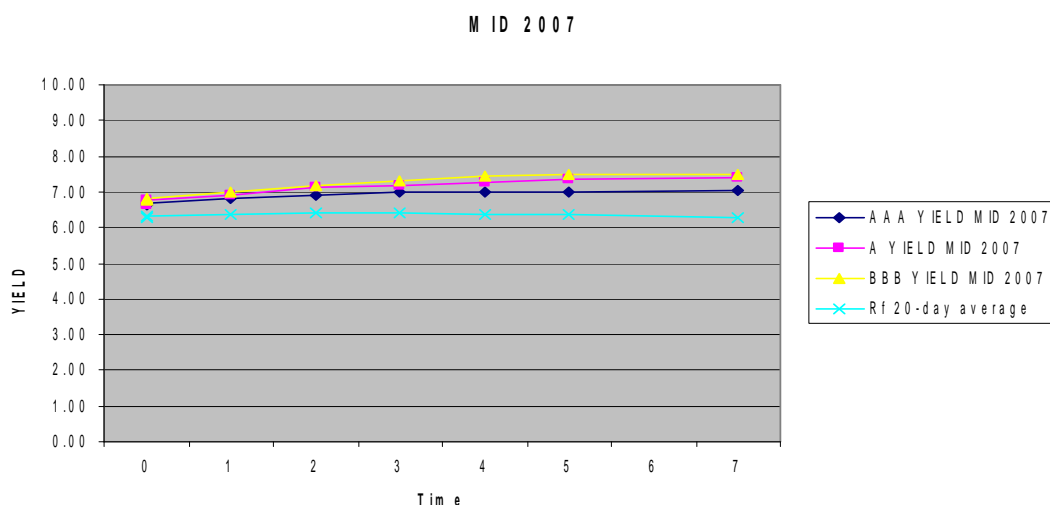
³⁴ 'ASIC Class Order [CO 10/321] – The Australian retail corporate bond market: now rising from the depths?' *Blake Dawson Debt Capital Market and Securitisation Bulletin*, May, 2010.

- subsequent government responses and changes in the risk-free rate

However, the impact of the GFC on the cost of debt was difficult to examine. Ideally, cost of debt impacts would be examined by a consideration of all bonds in the Australian bond market. However, due to data limitations, and the size of such an undertaking, this was not possible. As an alternative, Bloomberg's reported yields at different rating and tenor were used.³⁵

Mid-way through 2007, as first signs of the financial crisis were emerging in the United States, yield curves for Australian government securities and Australian corporate bonds were relatively flat.

Figure 9 – Mid-2007 yield curves

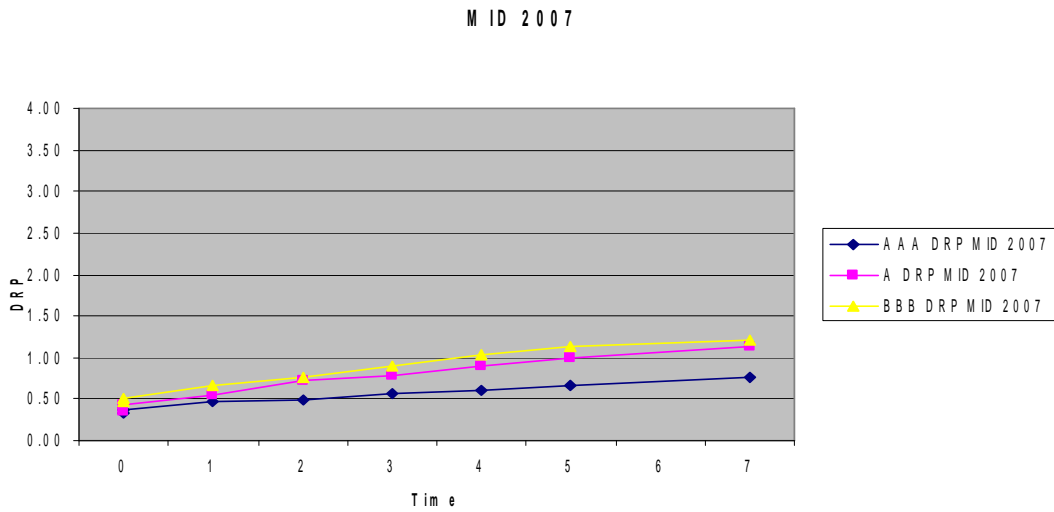


Source: Bloomberg

As evidenced by the flat risk-free yield curve, interest rates were expected to remain steady for some time to come, and the spreads were at historically low levels. In addition, the term premium on corporate debt was relatively low (between 32 and 65 basis points between 12 week and 5 year debt).

³⁵ It is noted that while direct estimation would allow for a specified methodology to be defined, use of Bloomberg curves means that the methodology is unknown.

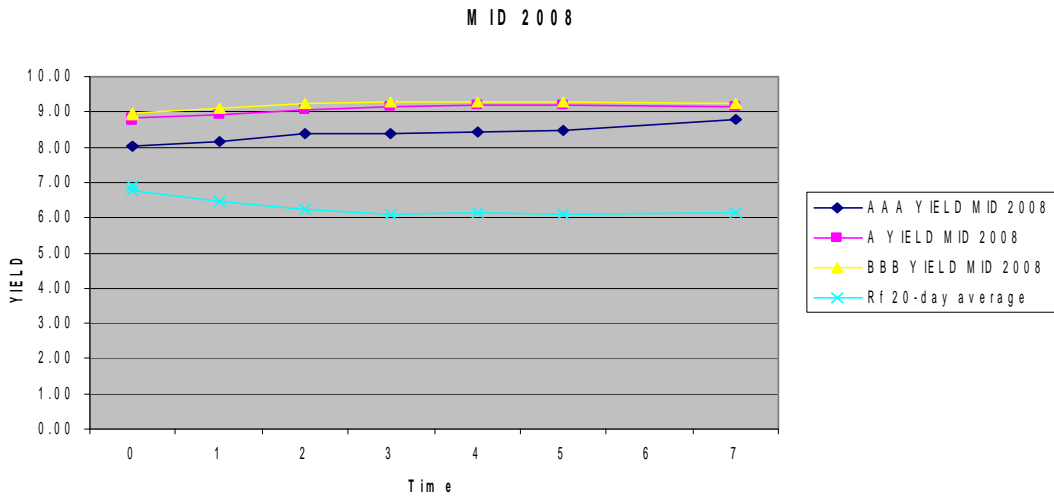
Figure 10 – Mid-2007 spreads



Source: Bloomberg

By mid-2008, the picture changed dramatically. While the short-term risk-free rate was relatively high, the market expected the Reserve Bank to loosen the monetary policy in response to the GFC-induced slow-down. This resulted in an inverted yield curve.

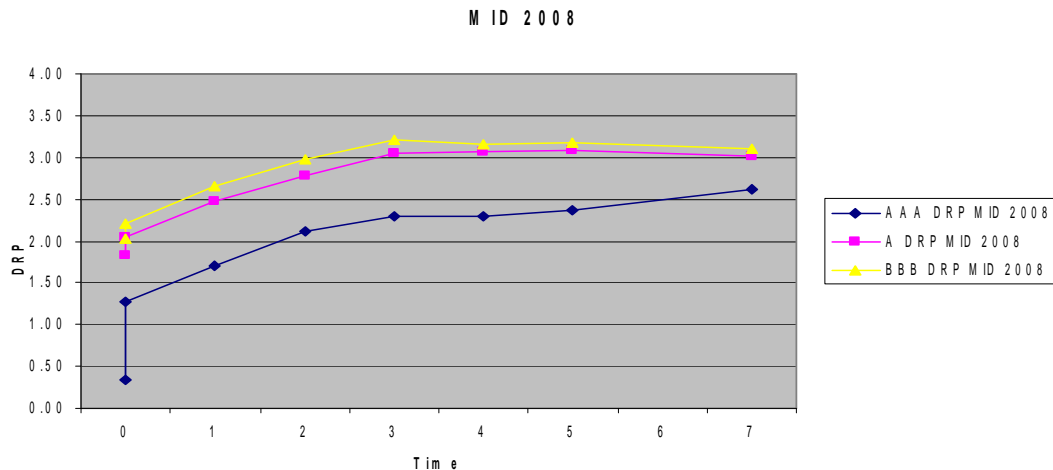
Figure 11 – Mid-2008 yield curves



Source: Bloomberg

However, spreads jumped substantially across the board, particularly for lower rated debt, with some spreads increasing by over 200 basis points. This resulted in corporate bond yields increasing by up to nearly 200 basis points.

Figure 12 – Mid-2008 spreads

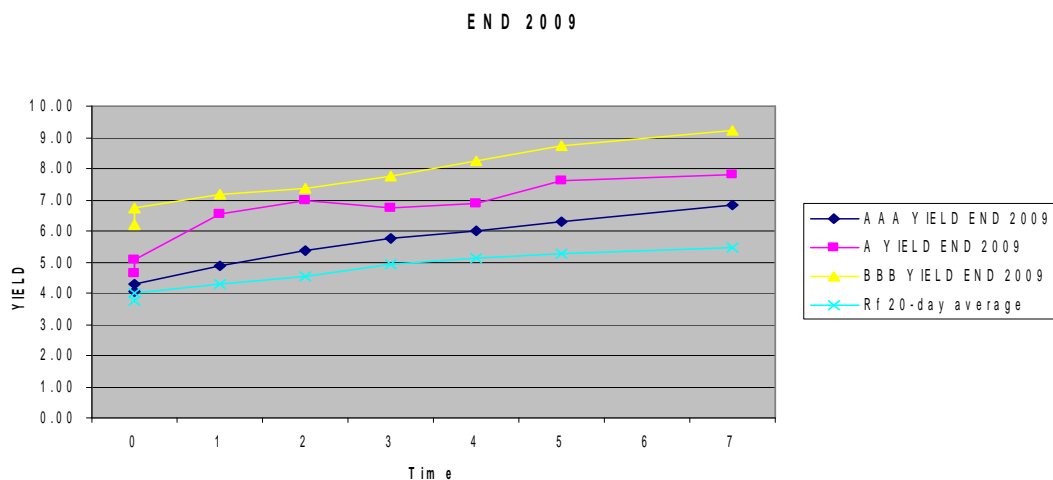


Source: Bloomberg

While spread increases occurred across the board, higher rated bonds experienced lesser jumps. Interestingly, for lower rated bonds, the spread actually decreased between three and seven years suggesting a negative term premium, while for AAA rated bonds, it continued to increase with longer tenor. However, this may be due to the general shortening of new debt tenor for lower rated firms and a continuation of availability of debt at any maturity for highly rated firms.

By the time the world looked to be emerging from the GFC, driven by both reductions in the risk-free securities yield, and in reductions in the spreads, the yields on high and mid-rated corporate bonds began to fall.

Figure 13 – End-2009 yield curves

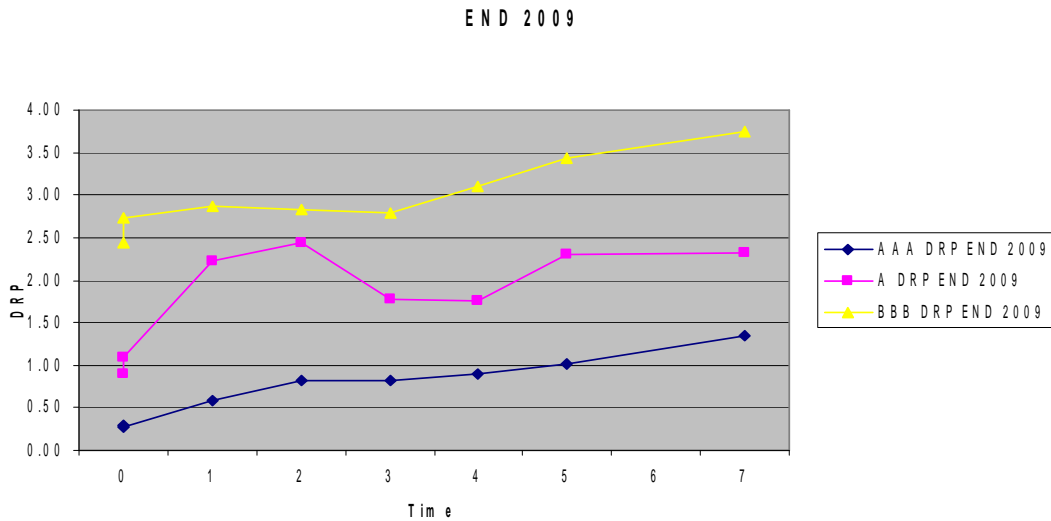


Source: Bloomberg

However, while spreads for high rated bonds fell significantly from the height of the GFC, according to Bloomberg data those for low-rated bonds curiously did not. In fact, in the BBB category, spreads for short and long-term bonds seem to have

increased from the height of the GFC, with mid-term premiums falling or remaining relatively constant. With regard to A-rated bonds, the picture is even more intriguing. While spreads generally fell, those at the one and two year maturity fell relatively less, resulting in a humped spread curve.

Figure 14 – End-2009 spreads

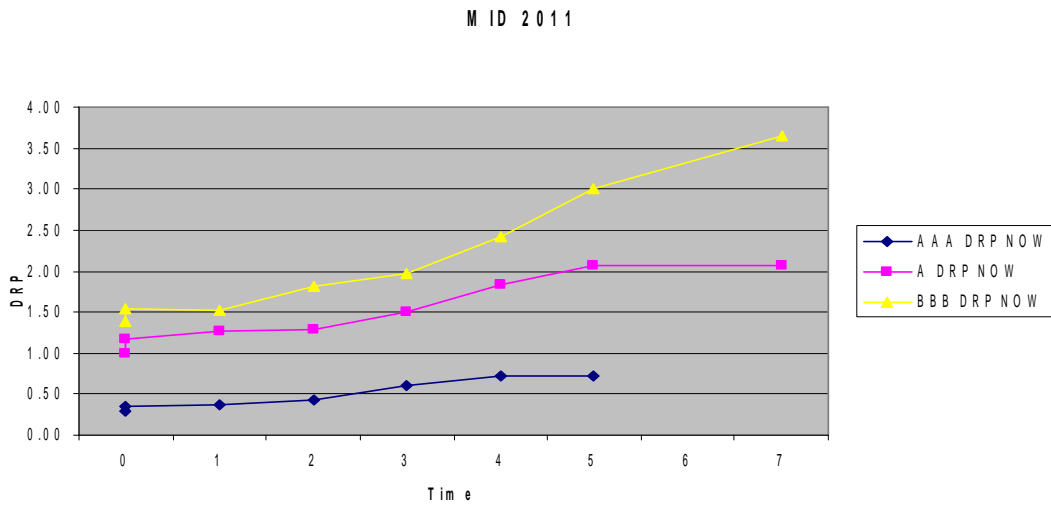


Source: Bloomberg

By Mid 2011, spreads for AAA rated securities appear to have returned to their pre-GFC levels. However, the market for longer term AAA rated bonds is currently non-existent with Bloomberg discontinuing reporting of 7-year rate, and since June 2011, the 5-year rate.

In the A and BBB space, spreads fell sharply for short-term bonds. However, yields reported by Bloomberg for longer term bonds remain high.

Figure 15 – Mid-2011 spreads

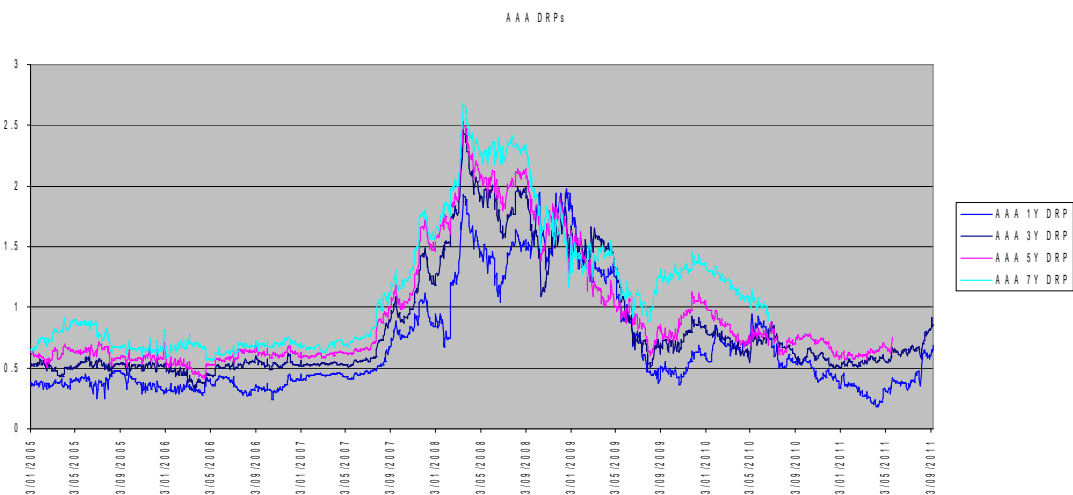


Source: Bloomberg

Survey of market practitioners revealed consensus that while spreads for infrastructure companies' debt have tightened since the GFC, they are likely to have largely levelled off. If any further tightening occurs, it is expected to be slow and small. Further, the survey found that the general view of the debt market that the times of cheap debt, such as those immediately prior to the GFC, are over.

While majority of Australian infrastructure companies are A or BBB rated, some government owned firms have access to AAA rated finance. Therefore, Figure 16 considers the changes in spreads for AAA rated bonds.

Figure 16 – AAA spreads through time



Source: Bloomberg

It is apparent that for AAA rated bonds, spreads have actually returned to approximately their pre-GFC levels. However, spreads for seven and five year debt are no longer available due to the lack of these instruments in the market. Further,

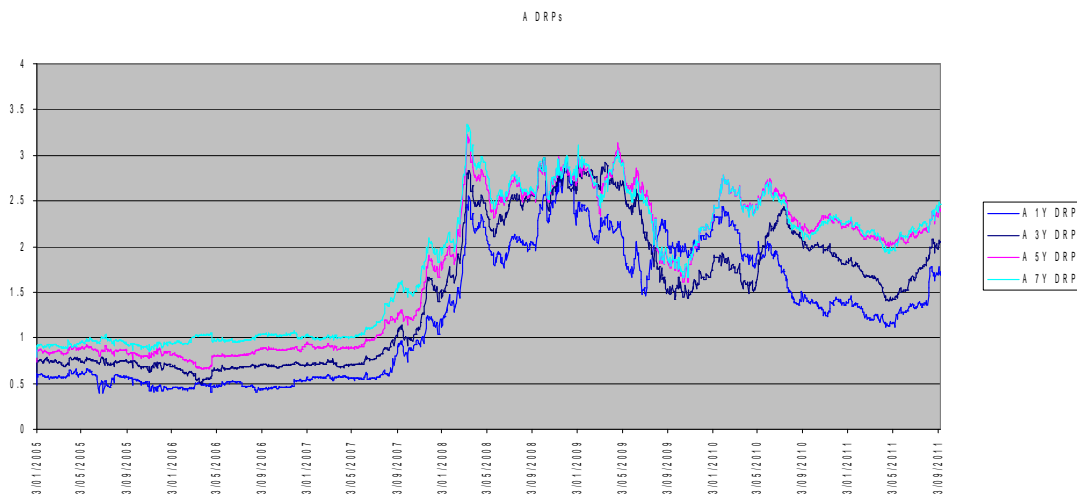
there has been a recent spike in the AAA spreads, likely due to the market response to the downgrading of US government debt, and ongoing weakness in European markets.

The picture in the A and BBB rating space, where many infrastructure firms reside, is somewhat different.

The spreads for A rated securities appear to have receded from the peaks of the GFC. However, this general tightening of spreads has been slow and less pronounced than in the AAA space. While the overall move has been generally downward, the movement in spreads is also a lot more varied with sizeable increases evident on a number of occasions, including the recent spike noted earlier.

Further, given the frequent crossing of the curves of spreads through time, it is evident that the spread-term curve has been changing, perhaps due to frequent changes in investor preferences for debt of particular tenor. For example, towards the end of 2009, spreads on 1-year debt were higher than those for 3, 5 or 7-year debt.

Figure 17 – A spreads through time

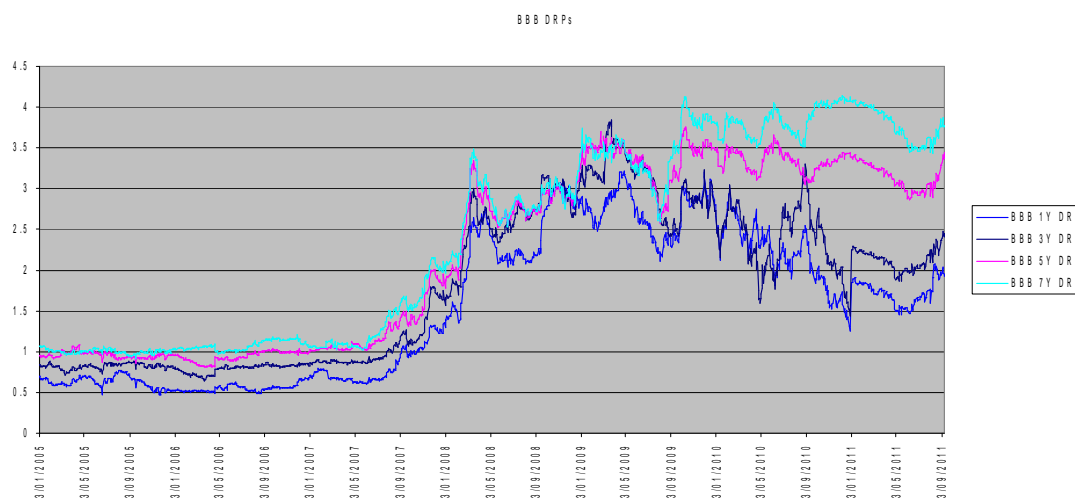


Source: Bloomberg

The Bloomberg data on debt yields (and spreads, through removal of the risk-free asset yields) suggests that market’s views on the general, but slow tightening of spreads for bonds issued by infrastructure companies are justified. This view is further supported by data on short-term debt in the BBB space.

Figure 18 indicates that short-term spreads for BBB rated bonds have tightened broadly in line with the tightening of A rated bonds. Surprisingly, however, Bloomberg data seems to indicate that spreads for 5 and 7-year debt have actually increased since the GFC.

Figure 18 – BBB spreads through time



Source: Bloomberg

As this outcome conflicts with views of market respondents, and movement with other credit spreads, the 7-year spread was tested with actual bond data.

On 9 September 2011, the 20 day average spread on 7-year BBB rated bond was 3.72%.³⁶ This was tested against the only bond Bloomberg reported at that rating and tenor – the Sydney Airport Finance bond – whose 20-day average spread on 9 September 2011 was 3.11%. As this is only a single bond, other BBB-band bonds³⁷ with tenor between 5 and 9 years were considered. 20-day average spreads for these bonds are:

- APT Pipelines Ltd bond with remaining tenor of 9.1 years and spread of 3.04%
- Brisbane Airport Corp Ltd bond with remaining tenor of 8 years and spread of 2.44%
- Deuxs Finance Pty Ltd bond with remaining tenor of 5.8 years and spread of 3.10%

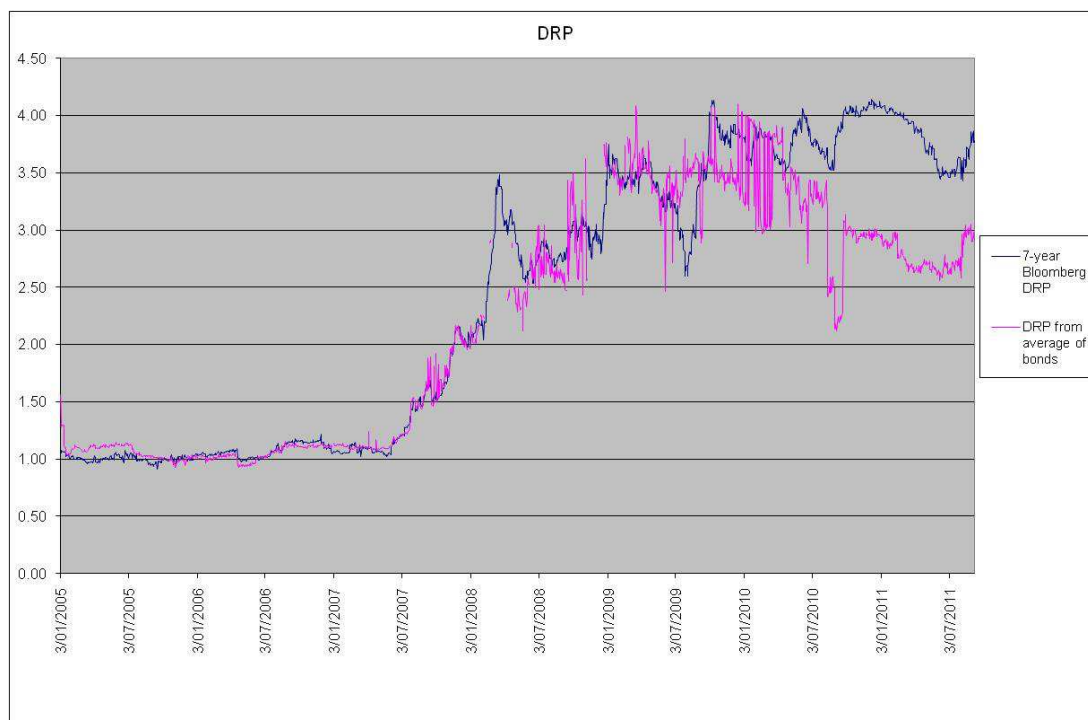
The simple average spread of these bonds is 2.92%. Bloomberg reported spreads therefore appear significantly elevated when compared with market data.

Given this outcome, Bloomberg 7-year spreads were compared to average spreads on BBB-band bonds with tenor between 5 and 9 years over a longer period.

³⁶ This is the latest data available at the time of drafting of this report.

³⁷ Including BBB-, BBB+ and BBB bonds.

Figure 19 – Bloomberg reported 7-year spreads and bond derived spreads³⁸



Source: Bloomberg

The above indicates that the Bloomberg spread and the spread implied by simple averages of yields of BBB band bonds with tenor of between 5 and 9 years are similar in the years immediately preceding the GFC. As the GFC hit its March 2008 peak, no reportable bond data is available. However, since the height of the GFC, average of available bond spreads diverges with the Bloomberg implied spreads, and recedes in line with the views of market respondents.

A final question on the cost of debt is that of monolines. As noted early in the paper, monolines allowed lower rated companies (e.g. BBB rated infrastructure firms) to, for a fee, wrap their debt and issue AAA rated bonds. Market participants noted that prior to the GFC monoline guarantees were priced at what they believed to be unrealistically low level. For example, for BBB rated firms the cost of wrapping was in some cases as low as 12 basis points.

However, the difference in the spread between AAA and BBB rated bonds was much higher. For example, Bloomberg figures indicate that in mid 2007, the difference between AAA and BBB spreads for a 5-year bond was 46 basis points.

This apparent mispricing may have had significant implications including:

- arbitrage opportunities
- downward pressure on lower rated bond yields

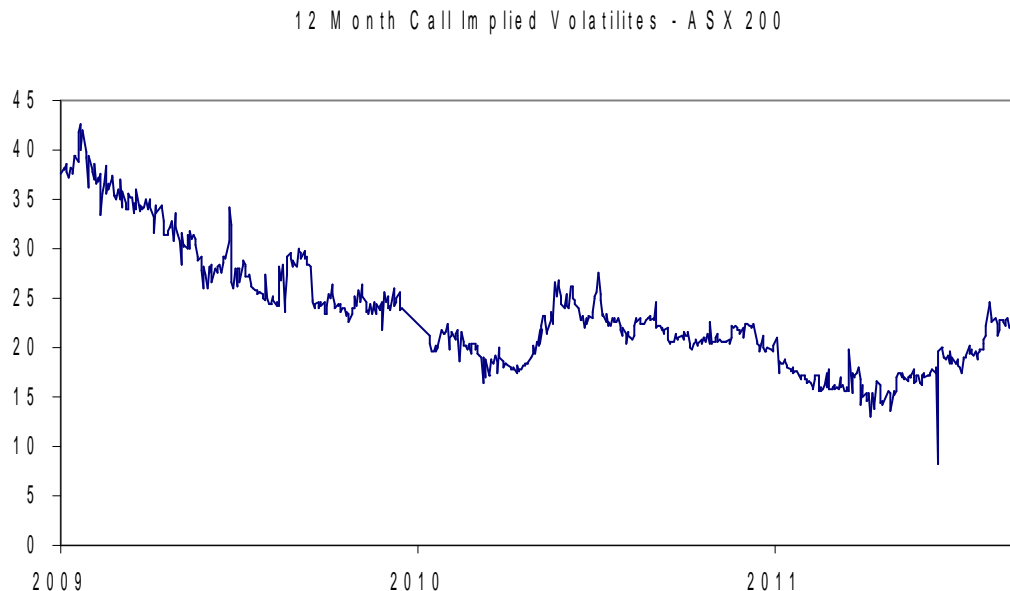
³⁸To derive the Bloomberg spread its reported 7-year yield was used. To derive actual bond spreads, all Bloomberg reported yields on bonds with tenor between 5 and 9 years were considered to derive an 7-year yield estimate. At times, when there was no reported bond data, gaps in the chart appear.

The GFC completely shut down the market for new monoline wrapped debt and this market is unlikely to re-open in the foreseeable future. As a result, some firms may be forced to refinance their debt at higher, underlying security, rates as current wrapped debt matures, while others may find access to debt markets becoming restricted.

4 Where to from here?

The market disturbance that began with the GFC, although greatly diminished still remains. This is evident in both the analysis of debt markets, above, and in current measures of stock market volatility.

Figure 20 – Implied ASX 200 market volatility since 2009



Source: Bloomberg

At the time of the market survey the uncertainty abated since the height of the GFC. However, recent events appear to have caused a fresh wave of uncertainty in the market. Consequently, it is difficult to predict where various aspects of the debt market and the use of debt financing will move to in the future. However, some factors that will affect the debt market can be identified, and are discussed below.

Gearing

While data shows substantial deleveraging has occurred since the beginning of the GFC, surveyed market participants did not uniformly see this to be the case, especially when the market's preferred measure – debt to regulatory asset base – is considered, rather than the debt to book value measure considered above. Further, market survey participants did not indicate any strong view as to whether gearing of infrastructure firms will change in the future.

Maturity

In the wake of the GFC, the average maturity of new debt issues fell sharply. Much of this fall could be attributed to investor preference for liquidity resulting from the GFC-induced uncertainty. However, it remains to be seen whether, as the markets recover, debt maturities will extend to previous pro-cyclical pattern.

The future maturity of debt is likely to be affected by:

- investors' future attitudes towards liquidity – while following previous market disturbances, debt maturity lengthened as recovery took effect, significant uncertainty remains in current debt markets. Consequently liquidity may be valued by investors for some time into the future;
- issuer's debt structuring and use of financial instruments – as noted earlier, when structuring debt, infrastructure firms balance the incentive to match the term of debt to the regulatory period with refinancing risk. This was done with the use of financial instruments such as swaps. However, given these instruments count towards firms' credit lines with their banks and therefore reduce available funds, it will be interesting to see whether its use continues or is diminished.

Source of Debt

Overseas markets have been a significant source of debt for Australian corporates. As a result of the GFC, and the subsequent temporary shut-down of a number of debt markets, the incentive to maintain a presence in a variety of markets has increased. Indeed, market participants have noted that Australian corporates are increasingly getting multiple ratings and are seeking to access a variety of overseas debt markets. Further, the growing divergence in the cost of debt in US and Australian markets makes issuing debt in the former a more appealing prospect.

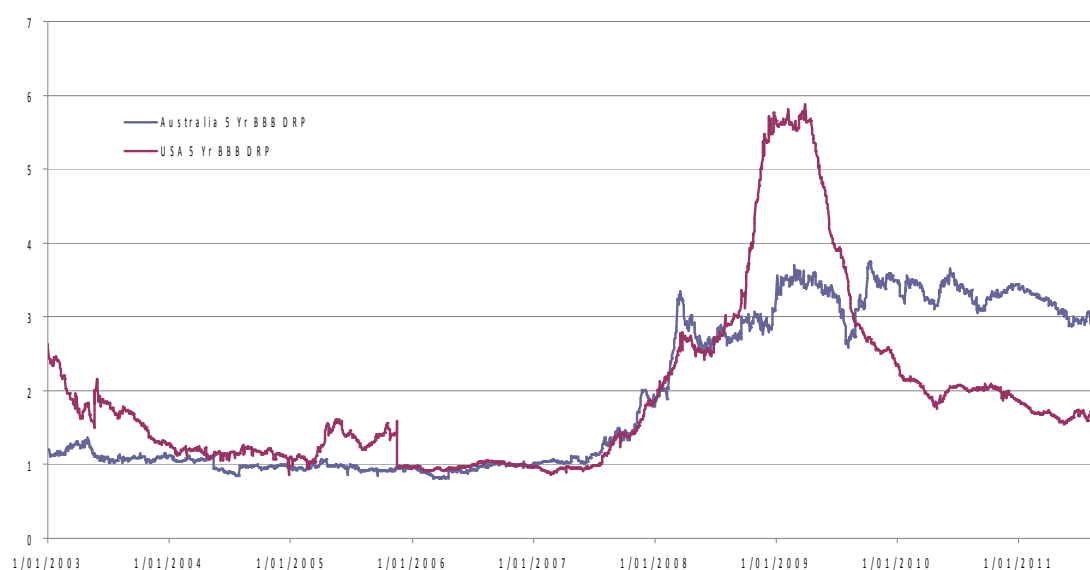
On the other hand, the Australian government has introduced measures to stimulate the domestic bond market and a number of significant issues have recently been undertaken. It remains to be seen whether:

- the stimulus will be enough to encourage increased domestic issuance;
- more debt will be sourced from a variety of overseas markets; or
- debt issued in overseas markets will be redistributed across a greater variety of markets with domestic debt levels remaining the same

Interestingly, the current environment suggests that there are cost of debt arguments for issuing bonds in US markets, at least in the BBB rating space. Spreads on US and Australian BBB rated bonds were similar prior to the GFC. Towards the end of 2008, however, US spreads became significantly higher than Australian spreads. While debt was still available in the US, it was at a much higher price.

However, spreads in the US have since dropped well below those in Australia, particularly at the 5-year term, which was considered the 'sweet spot' in the Australian debt market. Here, US spreads are over 100 basis points below Australian spreads. This suggests that even allowing for costs of swaps and accounting for any additional cost of issuing on the US market, debt is likely to be currently cheaper than in Australian markets.

Figure 21 – Australian and US 5-year BBB spreads



Source: Bloomberg

Note: A complete comparison of spreads would require these raw spreads to be converted to single currency, through swaps.

Cost of Debt

Overall, the market expects debt margins may tighten in the future, but that any such tightening will not be significant. On the one hand, as the peak of the Global Financial Crisis recedes into the past, it might be expected that spreads will continue to decline. On the other hand, concerns about the quality of sovereign debt continue to weigh on the markets, providing a source of uncertainty. As illustrated in Figure 22, concerns about foreign debt were at least partly responsible for a spike in bond yields at the beginning of 2010 and also for the tick-up in yields in August 2011.

Figure 22 – 5-year Debt risk premium for A-rated Australian corporates since 2009



Source: Bloomberg

Moreover, developments in the field of regulation may impact upon the Australian bond market. Two notable regulatory developments are the Basel III Accord and the Cooper Review. Basel III strengthens the liquidity requirements on banks, using a ‘liquidity coverage ratio’ to specify the minimum quantity of ‘high-quality liquid assets’ that must be held by banks. The Accord leaves it up to a national regulator to establish specific national standards. Earlier this year the Australian Prudential Regulation Authority (APRA) ruled that corporate bonds will not count as high-quality liquid assets. The result has been a substantial fall in the quantity of Kangaroo bond issuance. In May 2011, Bloomberg reported that the average size of bond sales in Australia by top-rated overseas borrowers had shrunk by nearly 50 per cent in the quarter, after the Basel III capital rules reduced the demand for Kangaroo bonds by authorised deposit-taking institutions (ADIs).³⁹ ADIs had previously invested in AAA rated Kangaroo bonds to strengthen their balance sheets, rather than Commonwealth Government Securities because of the relatively small amount of Australian Government debt on issue.

A reduction in the issuance of Kangaroo bonds may have an impact on offshore issuance by Australian businesses. The basis swap rate measures the cost of switching interest obligations based on the London interbank offered rate for payments linked to Australia’s bank bill swap rate. The basis swap rate falls when overseas borrowers sell debt in Australia and seek to swap the Australian dollar proceeds for foreign currency. It rises when Australian companies issue bonds overseas and seek to swap the foreign

³⁹ Bloomberg 2011, ‘Basel Ruling Slashes Size of Kangaroo Bond Sales by 50%: Australian Credit’, <http://www.bloomberg.com/news/2011-05-15/basel-ruling-slashes-size-of-kangaroo-bond-sales-by-50-australia-credit.html>

currency proceeds for Australian dollars.⁴⁰ Therefore, a fall in the supply of Kangaroo bonds (all else being equal) will lead to a rise in the basis swap rate, making it more expensive for Australian companies to issue debt overseas.

Basle III may also reduce the ability of banks to lend to corporates, as a result of the higher capital requirements.

Like Basel III, the Cooper Review may also impact upon the Australian bond market. On 29 May 2009, the Commonwealth Government announced a Super System Review to examine the governance, efficiency, structure and operation of Australia's superannuation system. Jeremy Cooper was appointed Chair of the Review Panel, which submitted its final report to the Government on 30 June 2010. On 16 December 2010, the Government released a response to the Cooper Review, supporting 69 and supporting-in-principle 70 of the Reviews 177 recommendations. In particular, the Government supported-in-principle two recommendations regarding liquidity management requirements on superannuation funds.⁴¹ As with Basel III, strengthening the liquidity requirements on funds may have an impact on the Australian bond market.

Finally, the future of monolines is uncertain. On one hand, credit wrapping can be effective – if a bond is wrapped, its riskiness can be reduced – making monolines a potentially effective way of diversifying and reducing risk. On the other hand, the events of the GFC have badly shaken the confidence in monolines to the point that a long time may have to pass before investors are willing to accept such financial instruments.

⁴⁰ Bloomberg 2011, 'Basel Ruling Slashes Size of Kangaroo Bond Sales by 50%: Australian Credit', <http://www.bloomberg.com/news/2011-05-15/basel-ruling-slashes-size-of-kangaroo-bond-sales-by-50-australia-credit.html>

⁴¹ Julius Gribble and Cary Helinius, 'Managing Liquidity in Superannuation', Institute of Actuaries of Australia, (2011), p.9 www.actuaries.asn.au/library/events

5 Conclusion

Market data and survey evidence confirm that the use of debt and the state of debt markets have altered as a result of the GFC. While some of the changes are reversing, it appears unlikely that the state of the market will return to pre-GFC levels. Rather, a new equilibrium is likely to be established.

While not uniformly held by market participants, data indicates that infrastructure companies, including regulated firms, have generally de-levered from their pre-GFC levels. Further, even for the proportion of firm's financing that is debt financing, the GFC has highlighted the need to source funds from a number of different markets, including overseas debt markets. However, while the need for a presence in these markets may have increased, it may not necessarily follow that overseas markets will be utilised any more or less than prior to the GFC. Rather, terms of debt offered in these markets, and firm and investor preferences are the more important factors in deciding where debt will be issued.

The tenor of newly issued debt fell dramatically as a result of the GFC, with investors' increased preference for liquidity. While, recent issues in the Australian debt market indicate that longer-term debt is again becoming available, it is not certain whether term of debt will return to its previous pattern. While the availability of debt at different maturities may not be a problem, especially when some foreign markets are accessed in addition to domestic debt markets, one of key factors when choosing the term of debt is likely to be the cost of debt at different maturities – more specifically, the comparative credit spreads.

If Bloomberg estimates of credit spreads at lower ratings (where many infrastructure firms can be placed) are considered on their own, long-term debt appears significantly more expensive than shorter term debt.⁴² If this is the case, incentives to issue longer term debt are likely to be diminished. Despite this, it is noted that longer term debt is being issued in the market, however, data on this actual debt indicates that credit spreads at longer maturities are a lot closer to those of shorter term debt (and are at lower levels) than indicated by Bloomberg fair value data.

With regard to mid-tier debt (around A rating), credit spreads appear to be varying around a higher average than prior to the GFC, but lower than at the height of the crisis. On the other hand, top-tier debt (AAA rated debt) credit spreads seem to have reverted back to their pre-GFC levels. This is an interesting outcome, and may help shed light on the question whether debt market investors have changed their views of riskiness of debt or their views on the required risk premium.

⁴² Some regulated firms have, however, argued that this needs to be considered /balanced in the context that short term debt has a higher refinancing risk.

Appendix A Survey Questions

Q1. Have infrastructure companies finished this process of de-leveraging, or can we expect levels of gearing to continue to decline going forward? If possible, can you comment on the reasons for the de-leveraging and what factors will determine optimal leverage in the future?

Q2. What impact will any 'maturity wall' have on Australian infrastructure companies, and how are you managing this risk?

Q3. What is an ideal maturity schedule for your infrastructure company and what are the drivers for this choice?

Q4. What has caused the appetite for bonds of Australian infrastructure companies to increase in 2009, and will this continue in 2010 and 2011?

Q5. To what extent is your infrastructure company using bond issuance to pay down bank debt? Do you have an optimal mix of bank and bond debt?

Q6. Have you observed the cost of debt (including spreads and fees) on bonds for your infrastructure firm continuing to fall from end-2009 to the present?

Q7. If so, by how much has the cost of debt narrowed, compared to end-2009?

Q8. How does the cost of debt at present compare to the cost of debt before the GFC?

Q9. For your infrastructure firm, what is the current market cost of debt (including spread, fees and, if it is necessary to go offshore, the cost of a swap)?

Q10. What were the reasons driving offshore issuance during the GFC and will Australian infrastructure companies follow the lead of SP AusNet, APA, DBP and others by issuing bonds on the Australian domestic market?

Q11. Of the offshore markets, which are the most attractive to your infrastructure company at the moment? What determines this choice of market and is there a maximum amount of foreign debt that is optimal?

Q12. Over the past few years, did your use of interest rate swaps change in response to uncertainty about future interest rates?

Q13. What are the prospects of monolines resuming business in wrapping Australian infrastructure debt and in what time-frame? If possible, give reasons for your view.

Q14. When refinancing existing monoline guaranteed debt with other debt, what will be the impact on your cost of debt, maturity of debt, and access to markets?