

# Will the real AAA please stand up?

While recent market upheaval has affected Australia's government bond markets, moves to increase the issuance of CGS and abolish the interest withholding tax on all semi-government bonds should continue to support an efficient and aliquid bond market and make a greater contribution to financial stability.



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**THIS PAPER REVIEWS** the growth and development of the Australian government and semi-government bond market, particularly in the context of the long, slow and at times painful adjustment process to recent financial market turmoil. The paper also reviews impacts on the pricing of AAA-rated bonds both before and after the meltdown in the US mortgage market and the ensuing global credit crisis.

## Structure of Australian bond market

The stock of CGS (Australian government bonds) and semi-government bonds outstanding in Australia has been relatively stable since 2003 when the Federal Government, despite running budget surpluses, elected to maintain a stock of around \$50 billion of CGS on issue to support the Australian financial market. State governments have also

elected to maintain stock on issue despite running budget surpluses to retain the ability to increase issuance to raise funds for various infrastructure projects (see Table 1).

The Federal Budget 2008–09 outlined that the supply of fixed coupon bonds in the financial year 2009 will be \$5.3 billion, including a new June 2014 bond, leaving 'hot stock' of \$49.6 billion on issue at 30 June 2009.<sup>1</sup> While the stock of public debt has been fairly static to date, particularly at the federal level, the stock of bonds issued by non-government entities in Australia has grown rapidly since 1998.<sup>2</sup> This growth has been relatively broad across the four non-government segments of the market but has been particularly noticeable in the kangaroo bond (foreign A\$-denominated bonds) category, which rose from 1.6% of the total market 10 years ago to just under 23% in 2008 (see Figure 1).

TABLE 1: Domestic bonds outstanding

	Outstanding (\$ billion)		Share (per cent)		Average annual growth
	1998	2008	1998	2008	1998–2008
CGS*	86.6	54.3	52.6	11.3	-4.6
Semi-Government	44.9	66.0	27.2	13.8	3.9
Financials	7.2	89.3	4.4	18.6	28.7
Corporate	7.2	44.8	4.4	9.3	20.0
ABS	16.2	116.0	9.9	24.2	21.7
Kangaroos	2.6	108.7	1.6	22.7	45.3
<b>Total</b>	<b>164.7</b>	<b>479.2</b>	<b>100.0</b>	<b>100.0</b>	<b>11.3</b>

Sources: RBA & AOFM. Outstandings as at end Jan/Feb 2008. \*Includes Commonwealth fixed coupon and indexed bonds but excludes Commonwealth holdings of CGS.

## CGS and semi-government bond supply

The volume of semi-government bonds on issue has moved sharply above that of CGS during the past few years. Research by Citigroup showed that in January 2008, there was a total of just less than \$60 billion in CGS on issue (including Commonwealth holdings of Treasury bonds) but around \$97 billion in semi-government bonds.

TABLE 2: Semi-government bonds on issue in January 2008

State entity	Domestic Stock (\$ billion)	Global Exchangeable Stock (\$ billion)
New South Wales Treasury Corporation	13.2	15.9
Treasury Corporation of Victoria	10.8	–
Queensland Treasury Corporation	22.4	14.4
Western Australia Treasury Corporation	9.8	–
South Australia Treasury Corporation	3.4	–
Tasmanian Treasury Corporation	2.4	–
Off-the-run*	5.0	–
<b>Total</b>	<b>67.0</b>	<b>30.3</b>

\*Note: Off-the-run stock is estimated by TCV given total outstandings less domestic 'hot stock' lines.

Source: Citigroup.

Semi-government bonds were split between \$67 billion in domestic issuance and around \$30 billion in New South Wales Treasury Corporation (NSWTC) and Queensland Treasury Corporation (QTC) 'global' bonds<sup>3</sup> (see Table 2). The offshore semi-government bond market has experienced substantial growth in recent years; the stock outstanding has increased at almost twice the rate of the domestic market in dollar terms since 2004.<sup>4</sup> These global exchangeable bonds are Australian dollar securities that have the same coupon and maturity as their domestic bond equivalents but are exempt from interest withholding tax (IWT). The key drivers of increased issuance into global markets have been an

expansion in the borrowing programs of NSWTC and QTC, and a very strong level of offshore demand for Australian dollar denominated bonds from global investors. Much of this global demand has come from retail investors in Japan and from central banks across the Asian region.

The domestic semi-government bond market is very liquid and operates largely for the benefit of Australian investors. Further, the amount of semi-government bonds on issue in Australia has gradually increased in recent years. The Australian Financial Markets Association (AFMA) notes that while 'state government budget projections imply solid annual growth in the stock outstanding ... the actual amount issued domestically will depend upon the amount raised on the offshore market, amongst other things'.<sup>5</sup>

AFMA survey data indicates that since the year 2000, turnover on the market for semi-government bonds has fallen slightly, and the market has experienced some volatility. In comparison, 'the value of Commonwealth Government bonds traded has declined markedly in recent years; the liquidity ratio has fallen to its lowest level in modern times and the amount on issue has declined in real terms'.<sup>6</sup>

A key feature of the 2007–08 state budgets was a significant increase in state infrastructure spending. Based on the various budgets and indications from different State Treasury corporations, the size of the semi-government bond market is expected to climb to around \$100 billion by June 2011.<sup>7</sup> Including global issuance, total semi-government bonds could rise to nearly \$137 billion by June 2011. It should be noted that this analysis precedes the Federal Treasurer's announcement on 20 May 2008 of an increase in CGS issuance of \$5 billion in 2008–09 and up to an extra \$25 billion over the coming years, depending on market conditions.<sup>8</sup> This raises the prospect that this market will develop into the main liquid government bond market in Australia.<sup>9</sup>

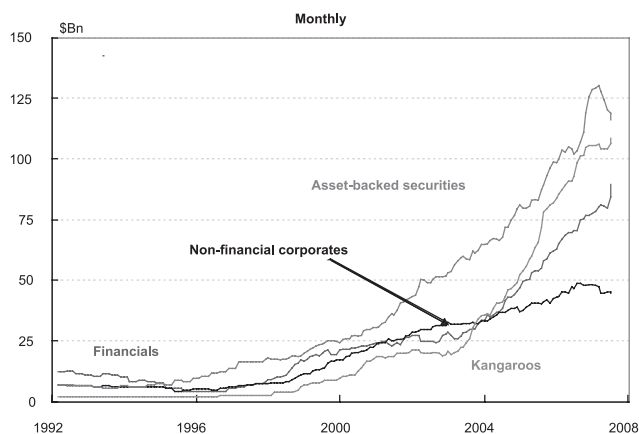
The above estimates, made earlier this year, are subject to revision, depending on any announcements made as part of the 2008–09 state budget reporting season but also as a result of the Federal Budget, which introduced three new investment funds: the Building Australia Fund, the Education Investment Fund and the Health and Hospitals Fund. Each of these will be funded out of current and future budget surpluses.<sup>10</sup> The funds potentially provide the states with access to \$40 billion of Commonwealth money to invest in infrastructure and nationally significant reforms. Depending on how the funds are allocated, this may result in a slight reduction in the expected build-up of state net debt and state bond issuance.

## Impact of the sub-prime crisis

The CGS and semi-government bond markets have obviously been affected by the significant reappraisal of risk that has occurred across global financial markets since the middle of 2007.

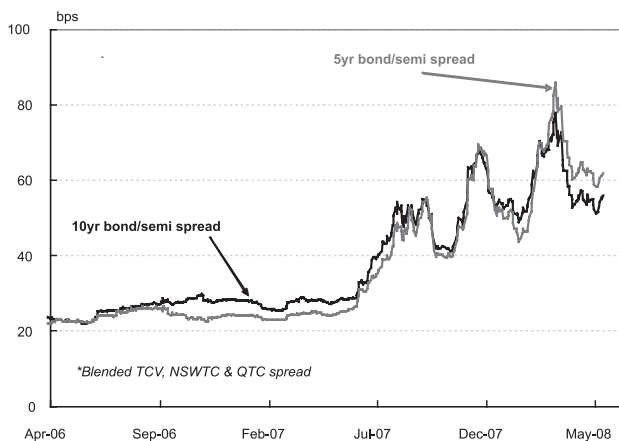
The subsequent flow of negative information from the US sub-prime mortgage market and the flow-on effects to credit markets generally resulted in credit spreads continuing to widen from July 2007 onwards. Investors reassessed credit risk in all asset classes relative to the risk-free asset class. As

FIGURE 1: Non-government bonds on issue in Australia



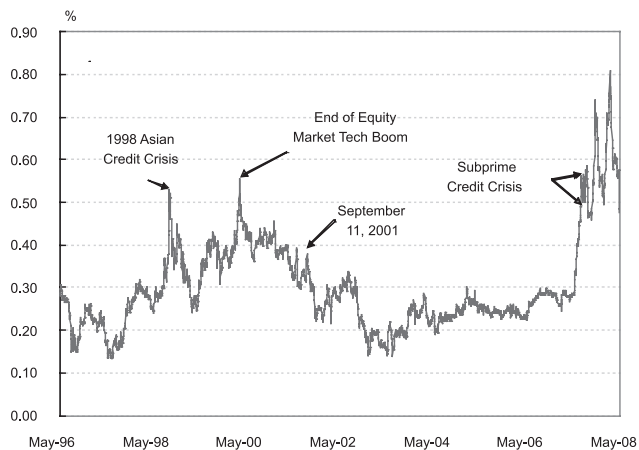
Source: RBA.

FIGURE 2: Semi-government spread to CGS (bond)



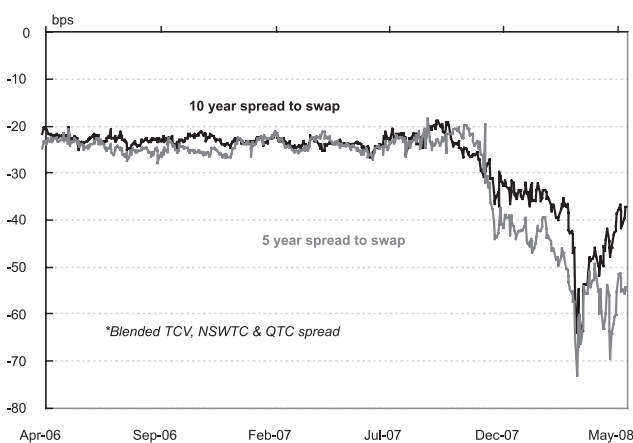
Source: CBA Spectrum; Commonwealth Bank of Australia.

FIGURE 3: 10-year TCV spread to CGS (bond)



Source: TCV.

FIGURE 4: Semi-government spread to swap



Source: CBA Spectrum; Commonwealth Bank of Australia.

a result, the semi-government market spread to CGS widened to levels not experienced in more than 13 years.

The magnitude of the widening spread is clearly evident in Figure 2, which shows a blended five and 10-year semi-government spread to CGS. From July 2007, the semi/CGS spread widened from pre-crisis levels of around 25–30 basis points (bps) to in excess of 80 bps in early March 2008. On average, the semi/bond spread has probably doubled. Although earlier highs have retracted somewhat, semi/CGS spreads remain elevated, likely reflecting lingering risk aversion in financial markets.

Figure 3 shows the 10-year Treasury Corporation of Victoria (TCV) spread to CGS since March 1996. As shown, the 10-year TCV/CGS spread has only traded at recent elevated levels during the Asian credit crisis in late 1998, and in early 2000, when global equity markets peaked at the end of the technology boom causing a short-term flight to quality bonds such as CGS (i.e. the flows pushed yields on CGS lower relative to yields on semi-government debt thereby increasing the difference – or spread – between the debt classes).

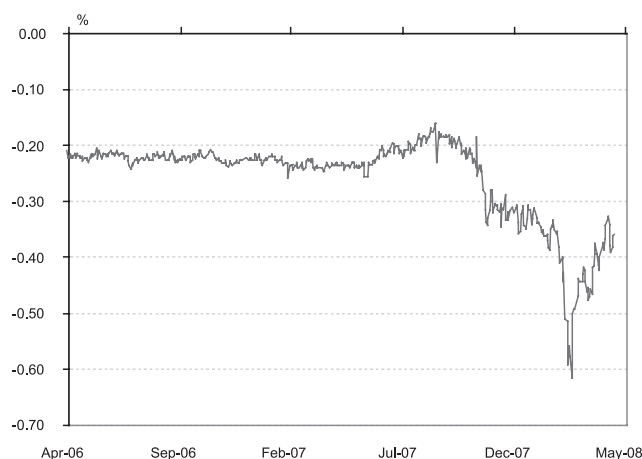
In a recent episode of market upheaval, yields on semi-government debt tended to move with the swap rate rather than CGS yields.

In July 2007 the spread between yields on 10-year swaps and CGS widened significantly to around 70 bps after having been steady at around 50 bps over the previous few years. A widening in this spread is generally associated with phases of heightened financial uncertainty, when investor risk aversion rises and demand for risk-free assets increases.<sup>11</sup>

Unlike previous periods, when CGS/swap spreads have moved to historical lows (i.e. they become more negative), the TCV/swap spread did not improve. (Usually the TCV/swap spread benefits from flight-to-quality flows in a stressed market environment.) With most states' credit ratings at AAA (including Victoria's), credit risk considerations did not appear to be a factor behind the widening of the semi spread to CGS.<sup>12</sup>

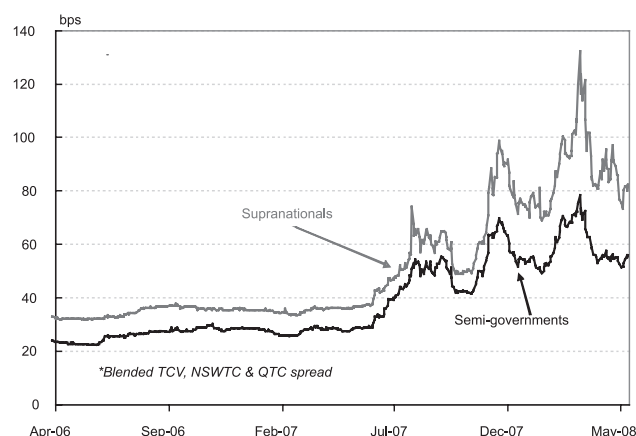
Since those initial months of the credit crisis in 2007, semi/swap spreads have widened (see Figure 4) as markets have periodically reassessed the embedded risk in semi-government debt relative to swap (i.e. ongoing risk aversion has benefited semi-government debt as investors have sought quality flows). As financial markets began to exhibit greater stability, the spread contracted somewhat but remains about double the level it was before the market turmoil.

FIGURE 5: 10-year TCV spread to swap



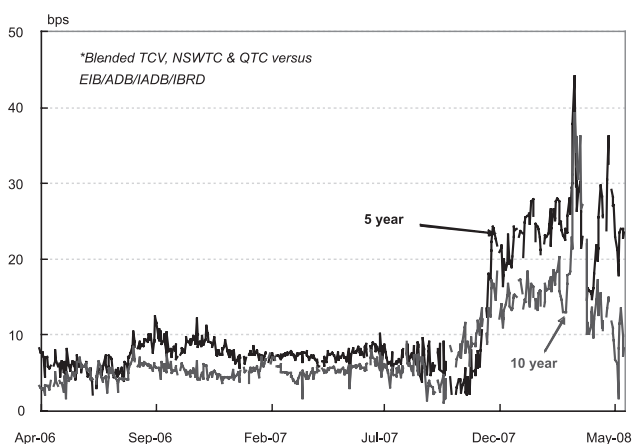
Source: TCV.

FIGURE 6: Spread of semi-government debt and supranational debt to CGS (bond)



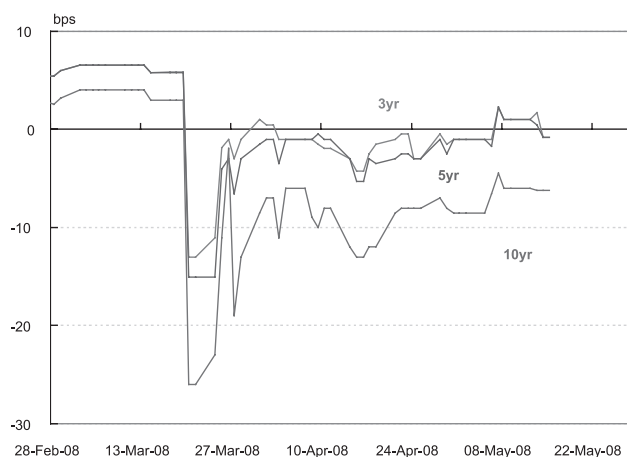
Source: CBA Spectrum; Commonwealth Bank of Australia.

FIGURE 7: Semi/supranational spread



Source: CBA Spectrum; Commonwealth Bank of Australia.

FIGURE 8: AUD basis swap



Source: Bloomberg.

Semi-government spreads to supranationals (supras) are also worthy of examination. Supras are generally multilateral lending institutions, typically set up and owned by sovereign states. Issuers in the Australian market include the European Investment Bank, Asian Development Bank and Inter-American Development Bank. These institutions have contributed to the growth of the kangaroo market.

Supras include some of the largest borrowers in international capital markets and, as a borrower class, have an unsurpassed credit rating.<sup>13</sup> Their AAA rating reflects strong financials, especially capitalisation, strong shareholder support, and the fact that they ordinarily do not pay taxes or dividends.<sup>14</sup>

Despite their AAA status, under 'normal' conditions, supras might be expected to trade at a spread marginally above semi-government debt because they are not officially part of government (although they are very close because they are almost always guaranteed by the governments that have established them).

In practice, the spread may not always conform to normal expectations for a range of reasons. One key reason is that issuance trends are influenced by changes in the basis swap. Typically, a narrowing of basis swap spreads

means that offshore issuance becomes more attractive for Australian banks, while it becomes less attractive for supras. Figure 6 shows the spread of semi-government debt and supranational debt to CGS. As can be seen, this spread widened significantly from July 2007 as volatility and risk aversion increased in global financial markets.

Figure 7 shows the path of the semi/supra spread over the same period. It can be seen that up until the latter part of 2007 the semi/supra spread at both five-year and 10-year maturities oscillated, on average, between zero and 10 bps. In the aftermath of the US sub-prime meltdown and ensuing financial market volatility, the semi/supra spread for the five-year maturity expanded to around 44 bps, while the spread at the 10-year maturity widened to around 39 bps.

As at mid-May 2008, the spread was down dramatically from the levels seen just a few months previous and was as tight as at any stage over the past few years. This seems due to the reduction in supra issuance following a contraction in the basis swap (see Figure 8).

The contraction in the basis swap has been attributed to increased kangaroo bond issuance in early 2008 (which itself was in response to increased demand driven by flight to quality) and to a fall in the AUD/JPY exchange rate.<sup>15</sup>

Overall, the preceding discussion suggests that the flight-to-quality dynamic will generally drive CGS yields lower. Semi-government yields do not always follow, as might be expected given their semi-sovereign status, and sometimes they even follow movements in swap yields. This perhaps suggests that during times of market stress, investors will turn, at least initially, to what is perceived to be the 'best of the best' quality – 'pure' sovereign rated debt. Relative to supras, semi-government debt generally trades at a small premium, however, recent market volatility and movements in the basis swap can significantly influence issuance trends for supras and thereby spreads between these two AAA-rated asset classes. The relative movement in spreads between different asset classes is summarised numerically in Table 3.

## Other issues

As mentioned previously, issuance patterns in 2007–08 state budgets suggest that the semi-government bond market could develop into the most significant liquid government bond market in Australia. The anticipated abolition of IWT on all semi-government bonds would assist such a development.

A clear advantage of abolishing IWT would be to instantly create one large pool of semi-government bonds, rather than leaving the market fragmented into segments, with only some subject to IWT. Figure 9 shows that the spread between domestic issued and global exchangeable NSWTC and QTC bonds narrowed in the lead up to the May Federal Budget amid speculation that the new Government would abolish IWT. The spread between bonds reverted back when no news was forthcoming.

TABLE 3: Movement in spreads between different asset classes

10yr maturity	Pre-July 2007* spread to bond (average)	Post-July 2007** spread to bond (average)	Pre-July 2007 spread to swap (average)	Post-July 2007 spread to swap (average)
Semi <sup>^</sup>	27	54	-23	-33
Range	(22 to 39)	(39 to 78)	(-27 to -20)	(-64 to -19)
Supra	35	74	-15	-13
Range	(31 to 47)	(46 to 132)	(-18 to -11)	(-23 to -4)

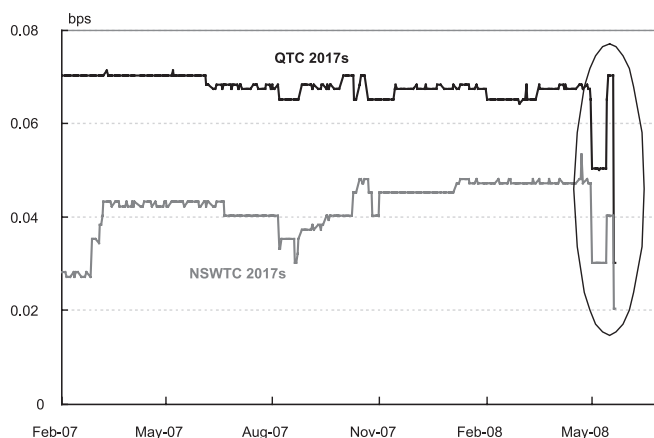
\*7 March 2006 to 30 June 2007 and \*\* 1 July 2007 to 14 May 2008.

<sup>^</sup>Semi represents a blend of TCV, NSWTC and QTC

10yr maturity	Pre-July 2007* spread to supra (average)	Post-July 2007** spread to supra (average)
Semi <sup>^</sup>	5	12
Range	(2 to 8)	(1 to 39)

Source: CBA Spectrum.

FIGURE 9: Domestic semi-government bonds and global exchangeable bonds



Sources: CBA Spectrum, Commonwealth Bank of Australia; TCV.



## Postscript

A week after the Budget was released, on 20 May 2008, the Federal Treasurer announced the abolition of IWT 'to improve depth and liquidity in state government bond markets and improve price discovery'.<sup>16</sup>

TCV and Western Australian Treasury Corporation domestic debt should benefit as investors seek to diversify their holdings from NSWTC and QTC. In addition, the abolition of the tax will likely assist in narrowing the semi/CGS spread and encourage greater offshore participation in the semi market.<sup>17</sup> Immediately following the announcement, the three-year semi/CGS spread narrowed by around 8 bps, while the 10-year spread narrowed by around 3 bps.

On the same day as the Treasurer's announcement, NSWTC announced that once the law was enacted, it would offer 'existing exchangeable bond investors a 1 bps incentive to switch their holdings for the domestic benchmark bond of the same maturity'.<sup>18</sup>

This announcement was an important step in the deepening of the domestic semi-government bond market.

## Conclusion

The market for AAA-rated debt securities is segmented into various groups. This segmentation is partly determined by the market as investors prefer sovereign rated debt during periods of market stress, as evidenced by the widening of the semi/CGS spread since the credit crisis erupted in 2007.

The differences in relative pricing perhaps also reflects minor credit risk considerations between 'pure' sovereign debt, for example CGS compared to other top-tier AAA-rated debt. However, some of the difference in relative pricing can also be attributed to the impact of institutional arrangements, such as IWT, that bias one form of debt over another, such as domestically issued semi-government debt versus debt issued offshore. ☺

## Notes

- 1 Budget Paper no.1, Statement 7: Asset and Liability Management, *Commonwealth Budget papers 2008–09*. The Federal Treasurer announced on 20 May 2008 an additional \$5 billion in issuance in 2008–09, (leaving stock on issue at about \$55 billion) with bond issuance potentially being increased by up to \$25 billion over the next four years.
- 2 Debelle, op. cit.
- 3 Citigroup 2008, *State of the states update – Changing C'wealth-State financial relations*, 2 April.
- 4 Australian Financial Markets Association, 2008 Pre-Budget submission, 18 January.
- 5 Australian Financial Markets Association 2008, op. cit., 18 January.
- 6 Australian Financial Markets Association 2008, op. cit., 18 January.
- 7 Citigroup 2008, *State of the states update – Change is here!*, 21 May.
- 8 Treasurer of the Commonwealth of Australia 2008, 'Increasing Commonwealth Government securities to bolster Australia's financial markets', media release, no. 58, 20 May.
- 9 Citigroup 2008, op. cit., 2 April.
- 10 ANZ Banking Group 2008, ANZ Federal Budget Report, 13 May.
- 11 Reserve Bank of Australia 2007, *Statement on monetary policy*, August, p. 48.
- 12 Reserve Bank of Australia 2007, op-cit, August, p. 48.
- 13 *Insto 2002*, 'Submission to the review of the Commonwealth Government securities market', December, citation from Standard & Poor's, *Supranationals special edition*.
- 14 *Insto 2002*, op. cit.
- 15 The reasons behind the contraction are expanded on in ANZ *Interest Rate Strategy Weekly* 2008, 27 March.
- 16 Treasurer of the Commonwealth of Australia 2008, 'Increasing Commonwealth Government securities to bolster Australia's financial markets', media release, no. 58, 20 May.
- 17 Commonwealth Bank of Australia 2008, *\$-bloc strategy*, 12 May.
- 18 New South Wales Treasury Corporation 2008, 'Notice to investors in the exchangeable bond programmes', media release, 20 May.

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