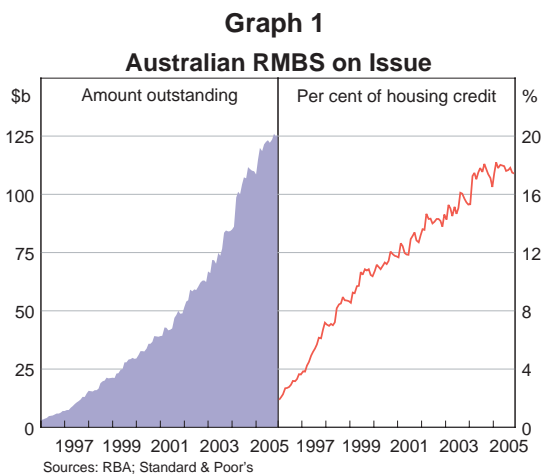


The Performance of Australian Residential Mortgage-backed Securities¹

Introduction

The Australian residential mortgage-backed securities (RMBS) market has grown rapidly over the past decade, with the amount outstanding reaching \$126 billion in December 2005, up from just \$3 billion in 1996 (Graph 1). The share of housing loans that are securitised through the issuance of RMBS has increased to 17 per cent.² Investor demand for these securities is strong, with just over half of Australian RMBS purchased by non-residents, and the remainder owned by domestic institutional investors.



The credit ratings of Australian RMBS are very high. By value, around 95 per cent of RMBS issued since 2000 were issued with a rating of AAA, and most of the remainder have been rated AA. Furthermore, the post-issuance credit rating performance of Australian RMBS has been strong. Of RMBS that are currently outstanding, a little over a quarter of the subordinated tranches have been upgraded and very few have been downgraded (Table 1). No senior tranches have been downgraded. Underpinning these outcomes has been the very low default rate on Australian residential mortgages as well as a number of layers of credit protection.

Credit Risk Protection for RMBS Investors

RMBS are typically divided into two broad categories, based on the risk characteristics of the loans in their collateral pools. Prime RMBS are backed by loans made to borrowers that satisfy financial institutions' standard lending criteria. Nearly all loans made by banks, building societies and credit unions, as well as the majority of those made by traditional mortgage originators, fall into this category. Sub-prime RMBS are backed by loans to borrowers who have impaired credit histories or other high-risk characteristics – these loans are typically originated by specialist 'non

¹ This article was prepared by the Securities Markets Section of Domestic Markets Department.

² Securitisation involves the loan originator selling a pool of residential mortgages to a special purpose vehicle which funds this purchase by issuing RMBS to investors. The cash flow from the underlying loans is used to meet the interest and principal repayments on these securities. For further discussion, see Bailey, K, M Davies and L Dixon Smith (2004), 'Asset Securitisation in Australia', Financial Stability Review, September.

Table 1: Ratings Changes of Australian RMBS^(a)

Number of individual tranches outstanding as at February 2006

	Total	Number that have been:	
		Upgraded	Downgraded
Prime RMBS			
Senior tranches	356	0	0
Subordinated tranches	217	74	9
Sub-prime RMBS			
Senior tranches	40	0	0
Subordinated tranches	63	3	0
All RMBS			
Senior tranches	396	0	0
Subordinated tranches	280	77	9

(a) Senior tranches refer to all tranches that were rated AAA at issuance. All other rated tranches have been classified as subordinated tranches.

Sources: RBA; Standard & Poor's

conforming' lenders. As at December 2005, there were \$121 billion of prime and \$5 billion of sub-prime Australian RMBS outstanding.

Other factors that affect a loan pool's credit risk include the proportion of low-doc loans, the loan seasoning (that is, the time elapsed since the loan was originated), and the loan-to-valuation ratios (LVR) of the pooled mortgages. Industry research suggests that the LVR at the time the loan was extended is an important determinant of the probability of borrower default, but has surprisingly little influence on the severity of the loss if the loan defaults. Most loans are secured against a property of greater value – for prime loans, the maximum LVR is typically set at around 80-90 per cent. This provides some protection against the risk that, in the event the borrower defaults, the funds raised from the sale of property prove insufficient to discharge the loan in full. Moreover, the LVR, and hence the credit risk, will typically decline over time (unless property prices fall) as the principal is repaid.

As further possible protection against losses in instances where a property sale raises insufficient funds, loans can also be protected by lenders' mortgage insurance (LMI), whereby the LMI provider reimburses the lender for any post-sale loss incurred. Loans backing prime RMBS are almost always covered by LMI, either at the individual loan level, or through a pool policy taken out by the originator when the loans are securitised.³ However, LMI does not completely guarantee that investors will bear no losses. Firstly, the protection afforded by LMI hinges on the ability of the LMI provider to pay out on policies, and so investors have a significant exposure to the underlying credit quality of these firms. Secondly, on some occasions an LMI provider will not pay out following the property sale if it determines that the quality of the insured loan did not meet the agreed insurance criteria. LMI providers do not insure sub-prime loans.

Beyond this, RMBS investors have a further layer of protection, since losses can be offset by deducting funds from the excess interest spread. This spread is the difference between the

³ Loans originated by authorised deposit-taking institutions that have LVRs greater than 80 per cent are typically insured at approval so that they qualify for a 50 per cent risk weighting for capital adequacy purposes.

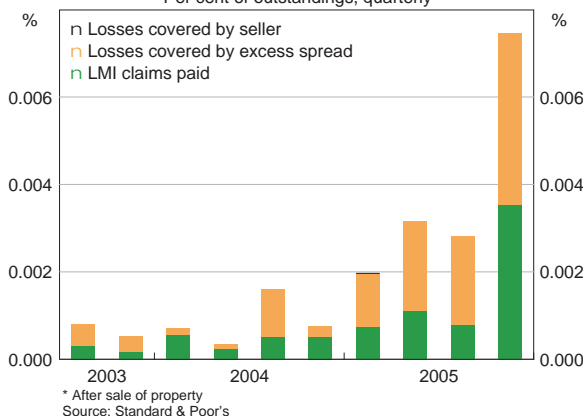
interest rate charged on the mortgages and that paid as periodic coupons to RMBS investors. In the case of prime RMBS, the excess spread is first used to cover current and prior loan losses (that have not been covered by LMI), with any surplus returned to the owners of the special purpose vehicle that issued the RMBS. It is also possible that the RMBS issuer might cover losses directly, rather than out of the excess spread – this is likely done to protect the reputation of the issuer’s securitisation programme. For sub-prime RMBS, all of which do not have LMI, some of the excess spread may also be accumulated in an ‘excess reserve account’ to protect investors against future losses on the underlying loans.

Finally, since RMBS are almost always issued in tranches of varying degrees of subordination, investors in senior tranches have additional insulation from losses. For example, sub-prime RMBS often have an unrated tranche which is typically retained by the loan originator or sold to specialist investors. This unrated tranche is often known as the ‘first loss’ tranche, and absorbs all losses after property sale on the underlying loans until it is exhausted, thereby providing protection to the rated tranches. Within the rated tranches of prime and sub-prime RMBS, there is at least one senior tranche and one or more subordinated tranches, with the subordinated tranches absorbing any losses on the underlying loan pool before the senior tranches are affected.

Losses on Securitised Loans

Losses from default – after sale of property but before other layers of protection – on loans backing Australian RMBS have been extremely low in recent years. During the second half of 2003 and into 2004, the quarterly average amount of losses on loans in RMBS pools was only around 0.0008 per cent – that is, \$8 per \$1 million of loans outstanding (Graph 2). Losses increased over the course of 2005 to around 0.007 per cent (\$70 per \$1 million of loans) in the December quarter. Although this was a relatively large increase, it still left losses after sale of property at very low levels in absolute terms. All of these losses have been covered by the layers of protection discussed previously, with the result that investors in the rated tranches of both prime and sub-prime RMBS have not borne any losses.

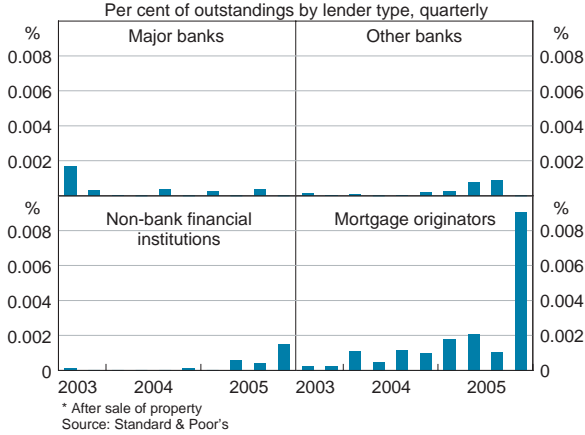
Graph 2
Losses on Loans in RMBS Collateral Pools*
 Per cent of outstandings, quarterly



There are differences in loss rates across types of lenders. For prime loans, loss rates have been lowest on those made by banks, and highest on those made by mortgage originators (Graph 3). This is likely because mortgage originators’ loan pools have relatively higher credit risk, since they contain a larger proportion of low-doc loans, have less seasoning, and often have slightly higher LVRs. Losses on sub-prime loans have been considerably higher than those

Graph 3

Losses on Loans in Prime RMBS Collateral Pools*



on prime loans, consistent with their greater credit risk. Losses on both prime and sub-prime loans have shown an upward trend over 2005.

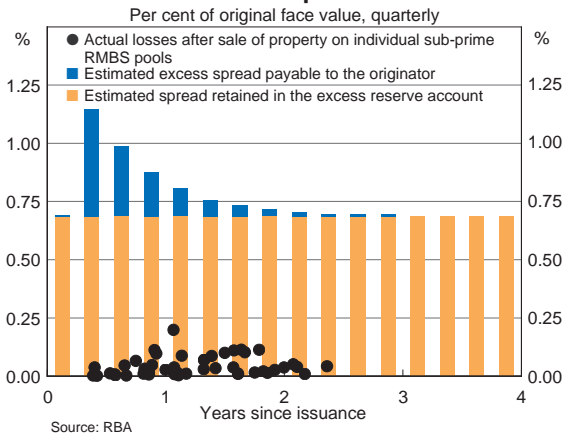
Investors in prime RMBS have relied on LMI to cover losses, with around 97 per cent of losses being met by this layer of protection. Since LMI is not available for sub-prime loans, investors in sub-prime RMBS rely on the excess interest spread as their primary source of protection against losses; this is also an important secondary layer of protection (after LMI) for prime

RMBS. Reserve Bank estimates suggest that when RMBS are first issued, the excess interest spreads on prime and sub-prime RMBS are roughly 1 and 3 percentage points per annum respectively. The size of these excess interest spreads is quite large relative to actual losses that RMBS collateral pools have incurred. But the excess interest spread on a given securitisation transaction declines over time due to two factors: principal repayments by borrowers are allocated first to senior RMBS tranches (which pay the lowest interest rate), causing the weighted-average interest rate paid to investors to increase; and running costs have a large fixed component and therefore increase in percentage terms as the outstanding loan balance declines.

Over recent years, actual post-property-sale losses on loans underlying individual prime RMBS have only occasionally exceeded estimates of the securitisation's available excess spread. Given that almost all of these losses have in fact already been met by payments from LMI providers, the excess spread has been more than sufficient to meet the additional claims.

Graph 4

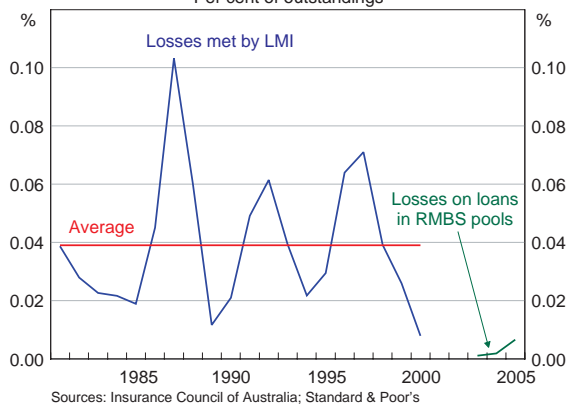
Sub-prime RMBS Loan Losses and Excess Spread



For sub-prime RMBS, a specified amount of spread is retained in an excess reserve account as a buffer against future losses, with any remainder paid to the RMBS issuer. The funds in excess reserve accounts on existing Australian sub-prime RMBS have averaged around 0.7 per cent of the initial face value of the securities. This buffer, together with the remaining excess spread, has been sufficient to cover all losses after sale of property that have been experienced on sub-prime RMBS in recent years (Graph 4).

For the loans in RMBS collateral pools, loss rates in recent years have been more subdued than at other times in the past. Data from a major LMI provider showing the amount of money paid out on insured loans over the past 20 years suggest that annual loss rates on prime housing loans have, on average, been in the order of 0.04 per cent – substantially higher than the losses sustained by the loan portfolios underlying prime RMBS in 2005 (Graph 5). In the past, losses have been quite volatile: for instance, from 1985 to 1987 there was a five-fold increase in LMI claims. Should future post-property-sale loss rates increase to levels seen in the past, it is possible that some RMBS investors will suffer losses. The subordinated tranches of sub-prime RMBS would likely be the most affected, as their underlying loans are most exposed to any deterioration in credit conditions and are not protected by LMI.

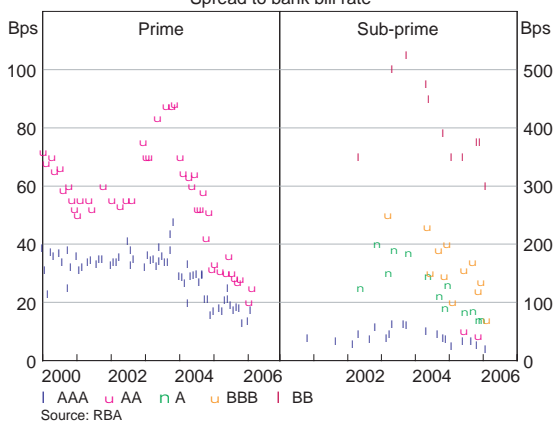
Graph 5
Annual Losses on Prime Housing Loans
Per cent of outstandings



Investor Demand for Australian RMBS

Demand for RMBS by domestic and non-resident investors remains very strong. This can clearly be seen in the pricing of these securities in the primary market (Graph 6). The spread to bank bill rates on RMBS at issuance – that is, the additional amount of interest that investors receive on top of the prevailing bank bill rate – has steadily decreased over recent years, although there have been periods where spreads have widened somewhat. In particular, in 2003 RMBS investors were concerned about a possible overheating of the residential property market, and temporarily bid up spreads on lower-rated RMBS tranches, but the overall downward trend is clear.

Graph 6
RMBS Pricing at Issuance
Spread to bank bill rate



Spreads on the most senior (AAA-rated) tranches of prime and sub-prime RMBS have declined from around 40 basis points a few years ago to less than 20 basis points recently. Lower-rated tranches have shown an even more marked downward trend in spreads. Spreads on BB-rated (that is, sub-investment grade) tranches of sub-prime RMBS have contracted by 200 basis points.

Conclusion

The growth of the Australian RMBS market has meant that credit risk on housing loans has been spread across a broad range of Australian and non-resident investors, rather than concentrated on the balance sheets of domestic financial institutions. To date, the market has performed strongly, with no losses being recorded on Australian RMBS. How the securities will perform in the future will be influenced by developments in household sector balance sheets and the economy more generally. ↗