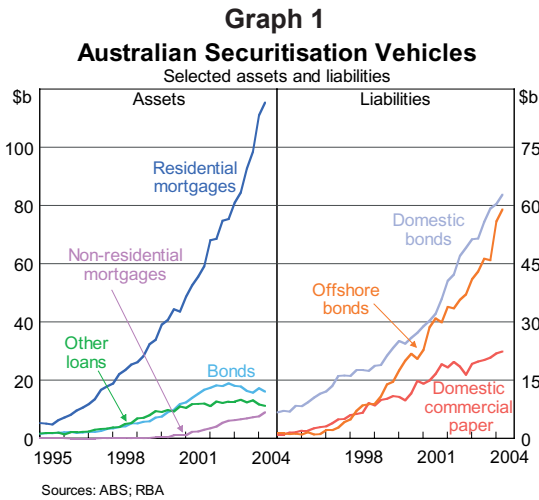


Asset Securitisation in Australia¹



Introduction

Asset securitisation – the process of converting a pool of illiquid assets, such as residential mortgages, into tradeable securities – has evolved rapidly in Australia over the past 10 years.² During this period, the outstanding assets and liabilities of Australian securitisation vehicles have increased from around \$10 billion in March 1995 to \$160 billion in June 2004 (Graph 1). In addition, the range of assets that has been securitised has broadened.

Australian entities have issued asset-backed securities into both the domestic and offshore markets: current outstandings comprise \$63 billion of domestic bonds and \$59 billion of offshore bonds. In addition, there is \$22 billion of asset-backed commercial paper outstanding.³ Since 2000, more than half of the bonds issued domestically by Australian entities have been asset-backed bonds, while over a quarter of offshore issuance has been of asset-backed bonds.

The rapid growth in the asset-backed securities market in the past decade has been driven by securitisations of residential mortgages. Securitised residential mortgages have increased from \$5 billion to \$116 billion and currently account for 70 per cent of the assets of Australian securitisation vehicles.

While issues of securities backed by other types of assets, such as commercial mortgages, trade receivables, other loans and asset-backed bonds, have also increased in recent years, they have done so at a slower pace and from a much lower level. Accordingly, this article focuses on residential mortgage-backed securities (RMBS).

¹ This article was written by Kirk Bailey, Michael Davies and Liz Dixon Smith of Domestic Markets Department.

² The basic structure of a residential mortgage securitisation is outlined in Box 1.

³ Securities with an original maturity of less than 12 months.

Issuers of RMBS

The rapid growth in housing finance in Australia in recent years cannot fully explain the growth in residential mortgage securitisations. Over the past decade, the stock of securitised mortgages has grown much more quickly than overall housing finance. As a result, securitised mortgages now account for one fifth of outstanding housing finance, compared with less than 5 per cent in 1995.

The growth partly reflects the changing composition of the mortgage market: specialist mortgage originators – who securitise all of their loans – have more than doubled their share of housing lending since 1995. Since 2000, mortgage originators have issued \$85 billion of RMBS and account for half of RMBS outstanding (Graph 2).

Securitisations have also become a more attractive financing option for traditional mortgage lenders as the deal costs associated with securitisations have fallen.

Since the start of 2000, regional banks, and credit unions and building societies (CUBS) have securitised about one quarter of their gross housing lending, issuing a total of \$47 billion of RMBS. The four major banks have funded a smaller proportion (less than 10 per cent) of their new housing loans through RMBS as they have cheaper ways of funding loans on their balance sheets. Despite having a share of more than half of the mortgage market, the major banks have accounted for only around 15 per cent (\$23 billion) of RMBS issuance since 2000.

Banks and other deposit-taking financial institutions use securitisations for various reasons. The process of selling the loans to a third party, rather than retaining them on their balance sheets, enables them to: manage their credit risk while continuing to maintain a relationship with the borrower; free up regulatory capital so that it can be used more productively; and diversify their funding sources, enabling them to raise funds to finance new lending.

There are some differences in the composition of RMBS issuers between the domestic and offshore markets. The major banks are far more active offshore than they are domestically, whereas the opposite is true for credit unions and building societies (Table 1). Mortgage originators and regional banks are active both in Australia and offshore. Neither market appears to have a systematic cost advantage. Spreads above bank bill rates on RMBS issued offshore have tended to be slightly lower than those on domestic RMBS, but the cost of hedging the bonds into Australian dollars has offset most of this advantage. For large issues, however, offshore issuance may enjoy a cost advantage. It certainly appears to be possible to issue in much larger volumes offshore than in the domestic market. This may help explain the major banks' preference for offshore issuance. On the other hand, the domestic market appears to enjoy an advantage when

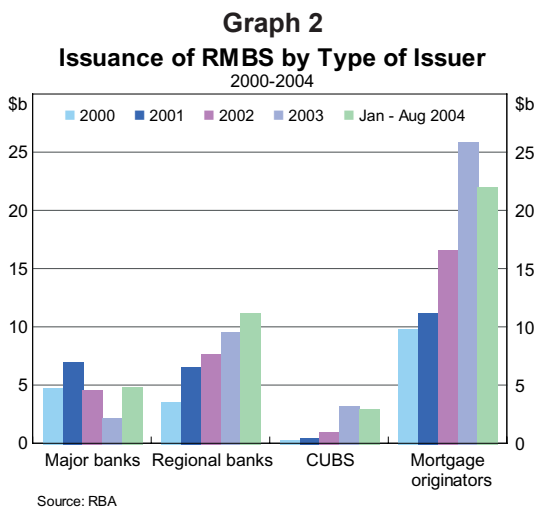


Table 1: Australian Entities' RMBS Issuance
2000-August 2004, A\$ billion

	Domestic	Offshore	Total
Major banks	4	20	23
Regional banks	19	20	39
Credit unions and building societies	7	1	8
Mortgage originators	36	49	85
Total	66	90	155
Average issue size	0.4	1.4	0.7
Average spread (basis points) ^(a)	33	28	30

(a) Spreads are weighted averages of spreads above bank bill rates for the senior tranches of prime RMBS. Offshore spreads include the cost of hedging into Australian dollars.

Source: RBA

it comes to issuing subordinated tranches; currently, most subordinated tranches, even of RMBS where the senior tranches are issued offshore, are sold domestically.

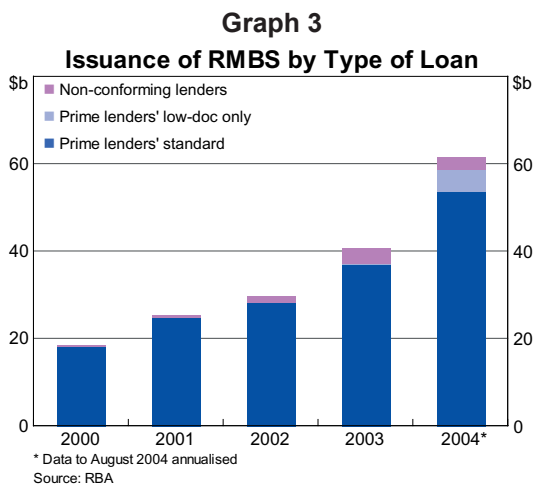
Credit Quality of RMBS and Underlying Mortgages

There are two main types of RMBS issued by Australian entities: prime RMBS and non-conforming RMBS. Prime mortgage loans are those made by mainstream mortgage lenders (banks and other deposit-taking institutions and mortgage originators). Non-conforming mortgage loans are those made to borrowers who do not meet the normal eligibility requirements of the mainstream lenders.

Prime RMBS account for most of the RMBS issuance by Australian entities, with \$145 billion having been issued since 2000. A typical prime residential mortgage would be one with a loan-to-valuation ratio of less than 80 per cent, to a borrower with a sound credit history and a full set of documentation. However, within the pool of loans backing a prime RMBS there can be substantial variation between individual loans in regard to: loan size; the amount of time that has elapsed since the loan was originated (older loans tend to have lower probabilities of default than more recently originated loans); loan-to-valuation ratio; the amount of documentation provided; and borrower demographics.

Prime RMBS mortgage pools will often contain some low-documentation ('low-doc') loans. Low-doc loans are loans where the borrower is not required to provide documentary proof of their income or saving history; they are particularly popular with self-employed people. They are perceived to be more risky than 'full-doc' loans and so are generally required to have a lower loan-to-valuation ratio. Partial data since 2003 suggest that, on average, about 10 per cent of the loans in a standard prime RMBS mortgage pool are low-doc loans. However, in recent months, there has been a trend towards issuing prime RMBS backed by mortgage pools comprising solely low-doc loans. Anecdotal evidence suggests that this reflects investors' demand for the higher yield of low-doc portfolios. It may also reflect a desire to identify and manage more proactively the credit risk associated with low-doc loans.

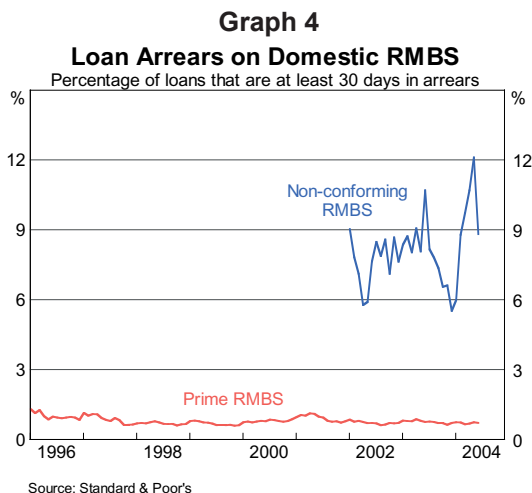
Non-conforming RMBS are backed by a pool of higher risk loans, for example those to borrowers with a poor credit history or those with a high loan-to-valuation ratio (typically over 90 per cent). They tend also to contain a high proportion of low-doc loans. Non-conforming RMBS account for a relatively small proportion of Australian RMBS issuance. However, their share of issuance is growing, with \$5 billion of issuance occurring in the past two years (Graph 3).



The mortgage pools backing both prime and non-conforming RMBS will usually contain a balance of investor and owner-occupier mortgages. There is generally no restriction on the proportion of investor loans that can be included in a prime RMBS and, on average, around one third of loans are to investors. To date, holders of RMBS have appeared not to distinguish between investor and owner-occupied mortgages.

Both prime and non-conforming RMBS may also contain loans whose primary purpose is not the purchase or refinancing of a loan on a residential property. For example, some refinanced loans include a component that may be used for home renovation, consumption or debt consolidation. Some of the loans in non-conforming RMBS are loans to small businesses that are secured against residential properties.

Prime RMBS usually – although not always – benefit from lenders’ mortgage insurance, either on the individual loans or on the whole pool of loans up to a certain maximum loss.⁴ Taken together, the lenders’ mortgage insurance, the large number of loans within the portfolios, the property collateral backing the loans, and the low historical arrears on Australian prime residential mortgages mean that prime RMBS are perceived to have a very low probability of default (Graph 4).



⁴ One recent innovation was a prime RMBS issue that contained no mortgage insurance but a higher degree of subordination (about 11 per cent) than is usually required for prime RMBS.

As a result, prime RMBS have very high average credit ratings. The senior tranche of a standard prime RMBS issue, which generally comprises 97 per cent of the total issue size, is invariably AAA-rated, while the subordinated tranche (the remaining 3 per cent) generally carries an AA-rating.

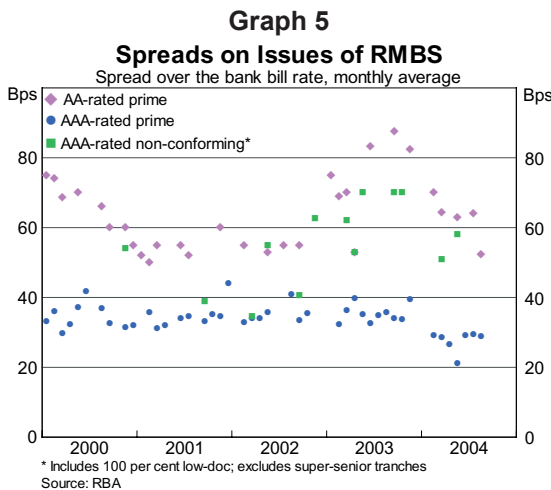
Non-conforming RMBS often do not have lenders' mortgage insurance, either on the individual loans or on the pool of loans. Because of both this and the lower quality of the underlying loans, non-conforming RMBS have much higher levels of subordination than do prime RMBS. Non-conforming RMBS are typically structured so that about 90 per cent is rated AAA; and within the AAA-rated tranche there is often further subordination, with some bonds having 'super-senior' status. The remaining 10 per cent is distributed across lower-rated tranches (A to unrated). A small unrated equity tranche, typically about 1 per cent of the face value of the RMBS, may be funded upfront and held by the issuer.

The proportion of non-conforming loans that are 30 days or more in arrears has been noticeably higher and more volatile than that of prime RMBS, ranging between 6 and 12 per cent compared with less than 1 per cent for prime RMBS.

Cumulative loan losses on mortgages backing prime and non-conforming RMBS have, to date, been small. There have been less than \$10 million of losses on currently outstanding RMBS, \$7½ million of which have been on prime loans. Most of the losses on prime loans have been borne by lenders' mortgage insurers, while all other losses have been covered by the originator or the excess between the interest rate paid on the mortgages and that payable on the securities. As a result, RMBS investors have not suffered any losses. Strong economic and employment growth, low interest rates, and rising house prices are all likely to have contributed to this outcome.

Pricing of RMBS

Since 2000, AAA-rated tranches of prime RMBS have been generally issued into the domestic market at spreads of between 25 and 45 basis points above the bank bill rate, with an average spread of around 35 basis points (Graph 5). This spread has, over recent years, been fairly



stable but has contracted during 2004 despite the large increase in supply. The super-senior AAA-rated tranches of non-conforming RMBS tend to have similar spreads to prime RMBS, but the issuance spreads on other AAA-rated tranches have been wider: generally between 50 and 70 basis points over bank bill rates.

Spreads on subordinated tranches appear to be more variable. Over the past four years, AA-rated subordinated tranches of prime

RMBS have been issued at an average spread of around 65 basis points. Issuance spreads on AA-rated tranches were markedly wider during 2003 than in the previous two years, but they appear to have narrowed somewhat during 2004. Data on spreads on subordinated tranches of non-conforming RMBS are scarce, in part because many of these bonds are placed privately. However, partial data suggest that there is considerable variation in the issuance spreads of these bonds. A-rated tranches have been issued at spreads of between 100 and 200 basis points over bank bill rates, while lower-rated tranches have been issued at substantially wider spreads.

It is interesting to note that spreads on RMBS seem to be higher than spreads on non-asset-backed bonds of a similar credit quality. For example, the spread of 35 basis points above the bank bill rate for senior (AAA-rated) tranches compares with spreads of less than 20 basis points for bonds issued by the major Australian banks (who are rated AA-). The spreads on subordinated RMBS tranches are also much higher than those on similarly rated non-asset-backed debt.

The wider spreads probably reflect a combination of uncertain duration and low liquidity. Changes in mortgage refinancing and excess repayment rates – which are likely to be correlated with interest rates – will affect the horizon over which the mortgage repayments are made and mean that it is not possible to predict exactly what the cash flows from the bonds will be. Investors require compensation for this uncertainty.

Anecdotal evidence and turnover data suggest that the secondary market for domestic RMBS is much less liquid than the markets in Commonwealth or State government bonds and even corporate bonds. The lack of liquidity means that it might be difficult for an investor to sell a portfolio of RMBS without moving the price against itself. Although RMBS tend to be purchased mainly by buy-and-hold investors (such as superannuation funds), who are unlikely to trade on a regular basis, they might nevertheless require a premium to compensate for the liquidity risk.

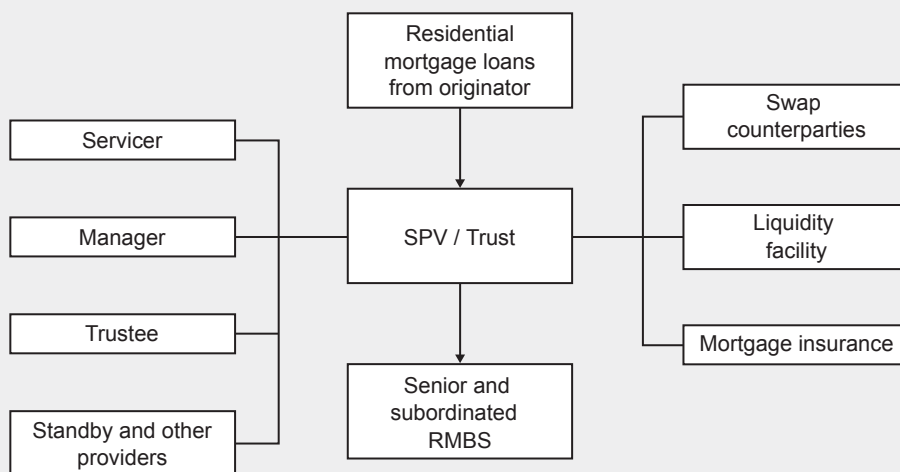
The particularly high spreads on subordinated tranches – of both prime and non-conforming RMBS – also reflect higher expected losses in the event of a default than senior or non-asset-backed bonds. Once losses on the underlying portfolio are sufficient to exhaust the first loss provisions (such as the equity tranche or lenders' mortgage insurance), the subordinated tranches bear *all* subsequent losses in the portfolio until they too are exhausted.

The widening in the spreads on subordinated tranches of prime RMBS during 2003 may have been due to increased concern about issuers' reliance on lenders' mortgage insurance. The subordinated tranches are particularly vulnerable to changes in investor sentiment about the credit quality of the mortgage insurers because they are the next line of defence once the mortgage insurance is exhausted. The widening in spreads coincided with the withdrawal of one of the three main mortgage insurers in the Australian market, which increased concentration in an already concentrated market. It may also have reflected more general concerns about possible overheating in the residential property market. The decline in spreads during 2004 suggests that these concerns have abated somewhat.

Box 1: Structure of a Residential Mortgage Securitisation

The basic process for securitising a pool of assets is as follows (Figure 1). The loan originator sells a portfolio of loans to a special purpose vehicle (SPV). The SPV raises the funds to purchase these loans by issuing debt securities (bonds or commercial paper) to investors. The cash flow from the loans is used to meet the principal and interest repayments on the securities.

Figure 1: Residential Mortgage Securitisation Structure



The loans can be financed initially on or off the originator's balance sheet. Banks and other deposit-taking institutions generally opt for the former and periodically sell a pool of loans to an SPV to be securitised. Mortgage originators tend to do the latter, finding interim funding for the loans from financial institutions or from commercial paper issued by an SPV.

In most cases, borrowers will not be aware that their loans have been securitised because the originator will continue to service the loans following their securitisation (collecting loan repayments, providing customer service and enforcing delinquent loans). The cash flow from the loan repayments is passed from the originator to the SPV and is used to meet the debt-servicing obligations (both interest and principal) on the bonds and any other on-going costs such as trustee and management fees.

Two main types of SPV are used in the Australian market: individual trusts, which are established to securitise a specific pool of loans and wound up once the loans are fully repaid; and conduits, which are used to securitise a revolving pool of loans. The vast majority of individual trusts' assets are residential mortgages, and they fund themselves by issuing bonds secured against those loans either in Australia or offshore. Conduits are generally sponsored by banks and are used to securitise assets from either a bank's own balance sheet or from those of

its corporate clients. They hold a much broader range of assets (including individual loans and both asset-backed and non-asset-backed bonds) than individual trusts and fund themselves by issuing asset-backed commercial paper.

Various liquidity and hedging facilities are put in place to ensure that the SPV can fulfil its debt-servicing obligations. These services may be provided by the loan originator or another bank. Currency and interest-rate swaps will be used to match the timing, interest rate and currency of the cash flows from the underlying assets with those of the bonds. And a liquidity facility ensures that the SPV will be able to make timely repayments on its obligations if there is a temporary shortfall in the cash flow on the underlying assets.⁵

A number of features set RMBS apart from their non-asset-backed counterparts. First, their credit quality is not directly related to that of the originator. The sale of the assets from the originator to the SPV is structured so that, in the event of a default by the originator, the assets should be protected from any claims from creditors of the originator. Likewise, if the SPV defaults on its obligations, the RMBS investor would not have recourse to the originator.

Second, almost all RMBS benefit from some form of credit enhancement, which is used to raise the credit rating of some or all of the securities above that of the underlying loans. The most common form of enhancement comes from splitting the asset-backed security into senior and subordinated tranches. The subordinated securities provide protection for the senior tranche by absorbing the first round of defaults in the pool of assets. So long as the value of losses does not exceed the combined amount of the subordinated tranche and any external credit enhancement, the senior securities will be repaid in full. Although tranching generally allows the senior securities to be assigned an AAA-rating, the subordinated tranches will have lower credit ratings than they otherwise would.⁶ Another common tool is lenders' mortgage insurance, while a recent innovation has been the provision by the monoline insurers of additional protection for the senior tranches over and above that provided by mortgage insurance. These external guarantees usually lift the rating on the securities to at least that of the insurer.

Third, the principal of the RMBS is amortised over the life of the security rather than being repaid as a bullet payment when the security matures, reflecting the payment profile of the underlying loans. If early repayments of principal are received, these are generally paid through to investors rather than being held with the SPV. The amortising principal and ability to repay the loan early means that the average life of an RMBS is substantially shorter than its final legal maturity, which is usually set to occur after the longest dated loan in the underlying portfolio is due to be repaid in full, and is typically around 30 years.

⁵ SPVs generally have to pass on to investors any excess repayments as soon as they are received, which means they cannot build a sizeable buffer against the possibility that occasionally fewer repayments will be received than were expected. Such a situation could occur if, for example, borrowers make net underpayments in one month after a period of overpayments.

⁶ For further discussion see Davies, M and L Dixon Smith (2004), 'Credit Quality in the Australian Non-government Bond Market', Reserve Bank of Australia Financial Stability Review, March 2004, pp 46-51. Other internal credit enhancement techniques include: over-collateralisation, where the face value of the loans is higher than the value of the securities they back; reserve funds created by or equity tranches held by the issuer; and the excess spread (yield differential) between the interest rate received from the underlying loans and that paid on the securities.

To ensure that the RMBS can be redeemed before it becomes uneconomic for the SPV to service the loans and to protect investors from being left with a small, illiquid rump of stock once the bulk of loans have been repaid, most RMBS include an option for the originator to buy back the loans and redeem the RMBS after a certain date or when the aggregate principal outstanding on the mortgage pool falls below a stated threshold (say 10 per cent) of its original face value. The option also facilitates the return of any profits from the SPV to the mortgage originator. If the option is not called, a higher interest rate may become payable on the securities. The expected life at issue of most RMBS is typically two to five years.