How the RBA Uses the Securitisation Dataset to Assess Financial Stability Risks from Mortgage Lending

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Abstract

The RBA's Securitisation Dataset provides timely and detailed data on the individual mortgages underlying Australian residential mortgage-backed securities. This dataset complements other data sources the RBA uses to form its assessment of financial stability risks arising from mortgage lending. Understanding the representativeness of the dataset in relation to the broader mortgage market for key risk indicators helps to ensure that assessments are formed on a reliable basis. This article discusses the usefulness of the dataset for complementing the RBA's broader monitoring and assessment of risks from housing lending. However, caution is needed when using the dataset to assess risks from new lending, and when monitoring arrears. Information from the dataset is one of a number of sources the RBA uses in monitoring financial stability risks and is combined with other sources of complementary data, including that provided by lenders to the Australian Prudential Regulation Authority.

Introduction

Understanding risks from mortgage lending is important to assess risks to financial stability. Residential mortgages represent around two-thirds of Australian banks' domestic lending, and mortgage debt is typically the largest liability on the balance sheet of an Australian household. Therefore, stress in the household sector can have a material impact on financial stability in Australia: if a sufficiently large number of mortgagors were in negative equity and defaulted on their loans, lenders could face widespread losses. This could lead to lenders sharply restricting the supply of credit to even very sound borrowers, disrupting economic activity, and resulting in rising unemployment. This feedback between financial stress of indebted households, lending, and economic activity could be costly for all households; and these costs could be even higher if a lack of confidence in the safety of deposits led to broader instability in the financial system. However, financial stress among households does not automatically lead to financial instability. Currently, it is unlikely that financial pressures being experienced by Australian borrowers will translate into financial stability issues, as detailed in the March Financial Stability Review (RBA 2024a).

The RBA monitors a suite of indicators of the financial health of Australian mortgagors using a wide range of data sources (Brischetto 2023). These sources include:

- Survey data from third-party surveys, such as the Australian Bureau of Statistics' Survey of Income and Housing (SIH) or the Melbourne Institute's Household, Income and Labour Dynamics in Australia (HILDA) Survey. These surveys generally offer disaggregated and representative data on household financial positions but are infrequent and highly lagged.
- Data collected by the Australian Prudential Regulation Authority (APRA). Authorised deposit-taking institutions (ADIs) must report data on their mortgage lending to APRA for the purposes of prudential regulation. These data are frequent and timely, and are collected on a consistent basis according to legal reporting

requirements but are only available at a highly aggregated level. While the data fully cover ADI lending, they only partly cover lending by nonbank financial institutions (NBFIs).

• Securitisation data collected by the RBA, forming the Securitisation Dataset, on residential mortgage-backed securities (RMBS) as a condition for eligibility as collateral in repurchase agreements with the RBA. These loan-level data are provided monthly, and are both timely and granular. The data provide detailed information about each loan that can be used to help form a view of financial health among mortgagors. As lenders can face incentives to select certain types of loans for securitisation or ensure the performance of loans after issuance, the data may not be fully representative of all mortgages in the Australian market.

The RBA's Securitisation Dataset

Previous work found that the Securitisation Dataset is representative of the Australian mortgage market along many important dimensions such as the composition of lending and the average variable interest rate paid by mortgagors (Fernandes and Jones 2018). This makes it a useful tool for many purposes, including evaluating and monitoring the transmission of monetary policy through its effects on the mortgage market. But the work also highlighted that the dataset is less representative along some other dimensions; most notably new loans are underrepresented, and the share of nonperforming loans was found to be below the rate of the broader mortgage market.

This article discusses the usefulness of the Securitisation Dataset *as a source of information for monitoring and assessing risks to financial stability arising from mortgage lending*. It shows how the richness of the dataset can complement more highly aggregated information from other sources, such as the data from APRA. The dataset is also found to be representative of the Australian mortgage market when split by key indicators of financial stability risks, including across borrower or loan types. It provides valuable insights into the budget pressures faced by borrowers and their savings buffers held in offset accounts or redraw facilities. In addition, the dataset offers a more comprehensive view of mortgage lending by NBFIs than other data sources.

However, information from other data sources is more suitable than information from the Securitisation Dataset when monitoring some other indicators of risk. The arrears rate derived from the dataset is typically below that of the broader mortgage market, although *trends* in arrears usually track the broader market. However, caution is needed when looking at trends in arrears of selfsecuritised loans; at times, compositional changes to the pools of self-securitised loans can lead to significant divergences between arrears rates observed in the dataset and the broader mortgage market. Finally, lags in the securitisation process mean that new loans, and in particular highly leveraged new loans, are heavily underrepresented in the Securitisation Dataset, which could lead to biased assessments of financial stability risks from new lending if not complemented with other data.

About the Securitisation Dataset

The RBA accepts RMBS as collateral for domestic markets operations providing funding and liquidity to the Australian financial system.^[1] For an assetbacked security to be accepted as collateral, extensive information on the loans underlying it must be provided to the RBA. For RMBS, this information covers the terms of the loan, characteristics of the mortgage borrower, and details of the collateral secured by the mortgage.^[2]

The Securitisation Dataset contains a sizeable share of all mortgages in Australia, with the majority of loans from self-securitisations. As at May 2024, the dataset contained around 1.7 million individual mortgages with a scheduled balance of almost \$700 billion. By value, this represents roughly onethird of total outstanding housing credit in Australia. The majority of loans – around 92 per cent of balances – in the dataset are from ADIs, with around 85 per cent from major banks' 'self-securitisations' (Graph 1). Self-securitisations are not sold to investors but are instead held entirely by the originating ADIs for use as collateral in the RBA's market operations, including the Term Funding Facility (TFF).^[3] The remaining 15 per cent of balances are marketed securities, equally split between ADIs and NBFIs. For the most part, these shares have been relatively stable, but structural changes, such as changes to the market operations for which securitisations can be used as collateral, can change the composition of the dataset. For example, this occurred when the TFF was introduced in 2020, which led to a notable increase in self-securitised deals in the dataset.^[4]



The Securitisation Dataset is also a particularly useful source of information about credit risk arising from NBFI lending. This is because NBFIs heavily rely on securitisation for funding and so while NBFIs only account for 4 per cent of outstanding mortgage housing lending, the dataset captures almost two-thirds of this type of lending. Lenders' incentives and structural features of the securitisation process can affect the representativeness of the dataset.

Purpose and structural features of the Securitisation Dataset

The primary purpose of the Securitisation Dataset is to assess the financial risk of RMBS and their suitability as collateral for the RBA's domestic market operations (Cole and de Roure 2020). That said, the timeliness, granularity and detail of the dataset means that it also lends itself to a secondary application in assessing the risks in the residential mortgage market.^[5] However, some incentives and constraints faced by lenders mean that the pool of securitised mortgages can differ from the broader Australian mortgage market. For example:

- Issuers of RMBS face incentives when selecting assets to place into securitisation pools. Before being sold (or accepted as collateral by the RBA), RMBS must be rated by a credit rating agency. A higher credit rating leads to lower risk premia for the issuer, and so issuers may decide to exclude loans penalised by rating agencies. The RBA's margin requirements can vary depending on the type of loans included in the securitisation, and the requirement to provide data on underlying assets excludes poorly documented loans (which tend to be older) on lenders' balance sheets from being eligible.^[6]
- Loans face lags when entering the dataset. Administrative processes, including obtaining credit ratings, take time and so there are lags between when loans are written and when they are securitised. Warehousing facilities, where financial institutions pool and temporarily hold loans before securitisation, can also contribute to these lags. In addition, each deal must be assessed against the RBA's repo-eligibility framework before being accepted and so leads to lags between securitisation and submission to the dataset.
- Self-securitised deals have revolving pools. ADIs using self-securitisation adds or removes loans as needed to the underlying asset pool, to calibrate the value of collateral potentially required and replace loans as they amortise or are discharged. There are strict rules limiting the active management of such loan pools.^[7]

These incentives and structural features of the securitisation market and the Securitisation Dataset mean that the dataset could be materially different from the broader mortgage market. As a result, relying solely on the dataset could provide a biased assessment of financial stability risks from mortgage lending. The subsequent sections of this article explore the representativeness of the dataset along key risk indicators that the RBA monitors or constructs from the dataset to assess financial stability risks.

Where loans are well represented in the Securitisation Dataset

Financial stability risks can emerge from changes in risk-taking by lenders. For example, strong growth in lending to investors could amplify swings in the housing market, and increased issuance of interestonly loans increases the share of borrowers with high leverage (an important indicator of default risk of a loan) as these loans do not amortise.^[8] Changes in the share of fixed- versus variable-rate lending can also influence the risk assessment, with variable-rate borrowers more exposed to sharply rising interest rates for example.^[9]

Overall, the Securitisation Dataset accurately captures trends in the broader mortgage market. While principal-and-interest loans to owneroccupiers in the dataset are somewhat overrepresented (at the expense of interest-only loans to investors) when compared with APRA data, this difference is small and has remained broadly stable since 2019 (Graph 2). Similarly, the share of fixed-rate lending in the dataset broadly mirrors the broader mortgage market over the past years, even as fixed-rate lending increased sharply following the introduction of the TFF (Graph 3).^[10]



Graph 2

Graph 3



Where the Securitisation Dataset underrepresents loans

While the Securitisation Dataset appears to track high-level trends in the mortgage market well, substantial lags between loan origination and their appearance in the dataset need to be considered when using the data. On average, it currently takes about one-and-a-half years for a loan to be securitised and thus enter the dataset after origination. This lag has increased substantially between 2016 and 2018 (Graph 4).



These lags can particularly limit the usefulness of the Securitisation Dataset to monitor new lending to highly leveraged loans that are particularly risky (Morgan and Ryan 2024). Indeed, these loans enter the dataset with particularly long lags. It can take up to around 20 months for loans with high leverage (loan-to-value ratio (LVR) greater than 80 per cent; an important indicator of default risk of a loan) to enter the dataset (Graph 5, top panel). Therefore, these loans are significantly underrepresented in the dataset relative to their cohort in the broader mortgage market (as captured in the APRA data), often for up to two years. This is consistent with rating agency policies discouraging high-LVR loans. By contrast, however, loans with high leverage relative to income (loan-to-income ratio (LTI) greater than six) are generally overrepresented in the dataset by around 10 per cent. This overrepresentation becomes stronger with the age of such loans as they progressively get securitised and enter the dataset (Graph 5, bottom panel) (see Appendix A for examples of the differences between RBA and APRA data).

Graph 5

Deviation of Shares of New High Leverage Lending Mean deviation from APRA data, lag since origination*



The underrepresentation of loans *originated* with high LVRs in the Securitisation Dataset also leads to an underrepresentation of loans with high *outstanding* (or '*dynamic*') LVR when compared with the loan book of the four major banks as reported in profit reports (Graph 6).^[11] Specifically, low LVR loans (loans with an LVR less than 60 per cent) are overrepresented in the dataset relative to bank balance sheets, consistent with lower LVRs at origination and a decrease in LVRs due to strong housing price growth over recent years. By contrast, loans with high outstanding LVR (LVR greater than 80 per cent) are underrepresented in the dataset, and this underrepresentation extends to the share of loans in negative equity. While this suggests that risks in the dataset from high leverage are understated, the bias for the riskiest loans in negative equity is relatively small, with recent estimates suggesting that around 0.1 per cent of loans in the dataset are in negative equity, compared with around 1 per cent cited in major banks' profit reports.



Estimating borrower cash flows and savings using the Securitisation Dataset

Given the Securitisation Dataset includes detailed information on borrower incomes and required mortgage payments, it can be used to estimate borrowers' spare cash flows.^[12] However, borrowers' incomes are only recorded at loan origination and must be grown forward, and their essential expenses must be approximated, for example, by using the Household Expenditure Measure (HEM) from the Melbourne Institute.

Comparing the estimates from the Securitisation Dataset with those from the HILDA Survey suggests that the dataset provides conservative estimates of the share of borrowers with cash flow shortfall.^[13] Around 3 per cent of mortgagors were estimated to be in cash flow shortfall in the dataset in December 2022 (to align with the survey period of HILDA) compared with 2½ per cent in the HILDA Survey (Graph 7). The dataset is particularly conservative for borrowers in higher mortgagor income quartiles, with around 5 per cent of borrowers in the second mortgagor income quartile estimated to find their income insufficient to cover their mortgage and essential expenses compared with less than 1 per cent using HILDA data. This likely reflects that incomes in the dataset are underestimated, either because mortgagors experience stronger income growth than assumed in these estimates or because some borrowers underreport their incomes when applying for a loan, or both.^[14]



With the Securitisation Dataset also providing detailed and timely data on prepayments into offset and redraw facilities attached to each loan, the data can be used to monitor the distribution of borrowers' savings in these accounts in near-real time. As a share of outstanding mortgage credit, excess payment buffers – an important indicator of the resilience of households to weather shocks to their income or expenses – in the dataset are broadly similar to the broader mortgage market as captured in APRA data (Graph 8). Flows into and out

Graph 7

of offset and redraw accounts can also be compared with aggregate values from APRA statistics, which show that the savings behaviour of borrowers in the dataset closely matches that of the broader mortgage market.



Loan arrears using the Securitisation Dataset

The Securitisation Dataset can be used to monitor trends in loan arrears in a timely way and the detailed loan-level data allows for further disaggregation than is possible using arrears data reported to APRA. However, a divergence between aggregate arrears rates in the dataset and those observed in the APRA data suggests that greater caution is needed when interpreting the trends of more disaggregated samples.

The Securitisation Dataset can usually be used to monitor trends in aggregate arrears rates well, despite the level of arrears tracking below that of the broader mortgage market (Graph 9). In normal times, this difference is of the order of 10 basis points. This difference is consistent with the higher average quality (those with lower LVR) of loans observed in the dataset.

However, policy responses to significant changes to the economy can trigger a change in the composition of the securitised loan pool, requiring caution in interpreting trends in the data. The recent COVID-19 pandemic illustrates this point, when arrears rates for *self-securitised* loans decreased while rates in the broader market increased.^[15] This can partially be explained by the increase in self-securitised loans entering the Securitisation Dataset in early 2020, with newer loans typically having lower arrears rates because the probability of borrowers encountering adverse circumstances cumulates over time (Morgan and Ryan 2024). However, the aggregate arrears rate still fell in the dataset even when excluding the newly added self-securitised loans.

The potential for arrears rates to diverge substantially means that it is important to consider where changes in the composition of the Securitisation Dataset are driving developments in arrears for different types of loans and borrowers in the dataset. In turn, arrears rates on marketed deals in the dataset could provide a more accurate read of financial stress experienced by different types of loans and borrowers in those instances.

Graph 9



Conclusion

The Securitisation Dataset is a granular and timely source of information on mortgage lending in Australia. It provides loan- and borrower-level information that is not easily available from other sources, and complements alternative datasets for monitoring the financial stability risks associated with mortgage lending in Australia. Overall, the Securitisation Dataset accurately reflects the distribution of housing lending across important dimensions such as lending to different borrowers, or by different loan types. It is also a powerful tool to obtain timely - albeit conservative - estimates of budget pressures faced by borrowers. However, major changes in the economy can trigger changes to the dataset's composition, and lags in the securitisation process cause new loans to be substantially underrepresented. This can affect the visibility of newer lending, especially new lending to borrowers with higher risk characteristics. Moreover, when the dataset is used to monitor arrears rates for different loan and borrower types, caution is needed to ensure that developments in arrears rates are not driven by compositional or behavioural factors. As a result, when using the dataset to assess financial stability risks in the mortgage market, it is important to be mindful of these limitations and complement the data with other sources of information.

Overall, the Securitisation Dataset is an important tool in the RBA's toolkit to assess financial stability risks from mortgage lending, particularly because it complements other less timely or less granular data sources. One of the dataset's comparative advantages is the information it provides on borrower incomes and savings buffers. For example, the dataset contains loan-level information on mortgage prepayments, including for fixed-rate lending (Lovicu et al 2023), which is not available in a timely way from other data sources. This also allows scenario analysis such as that exploring the resilience of mortgagors to higher interest rates and inflation (RBA 2024b). The detail included in the dataset also provides the ability to explore the impact of risk factors on borrower outcomes (e.g. the drivers of arrears (Morgan and Ryan 2024) and defaults (Bergmann 2020)).

Appendix A: Differences in shares of highly leveraged loans

Graphs A1 and A2 provide examples of the differences in the shares of newly issued highly leveraged loans (by LVR and LTI) between the Securitisation Dataset and the APRA data as at May 2024.





Graph A2



Endnotes

- [*] The author is from Financial Stability Department. The author would like to thank Benjamin Beckers for his contribution to this article.
- [1] For more information on acceptable collateral, see RBA (2024c).
- [2] The Securitisation Dataset tracks *loans*, rather than borrowers or collateral through time. This means that previous loans cannot be identified if a refinancing event occurs, and it is not possible to identify borrowers who move house or take out a second mortgage.
- [3] For more information on the TFF, see RBA (undated).
- [4] In 2019, the RBA also implemented system validation rules to improve the quality of the data provided. This reduced the number of data fields left blank or containing extreme values and enforced greater consistency between related data fields. For more information on validation rules, see RBA Securitisations Industry Forum (undated). Despite these significant data quality improvements, some important data fields contain missing or implausible data. For example, around 15 per cent of loans are reported with missing or clearly misreported income figures. To address these issues, missing values are imputed where appropriate.
- [5] The RBA uses the Securitisation Dataset for other secondary monitoring, such as the cash flow channel of monetary policy (Lovicu *et al* 2023). This article focuses only on using the dataset for monitoring financial stability.
- [6] See n 3.
- [7] For a self-securitisation to be eligible, the securitising ADI must attest that it complies with APS 120 (APRA 2024).
- [8] Strong investor housing credit growth and in interest-only lending motivated APRA to introduce credit growth limits in 2014 and 2017 (RBA 2018; Garvin, Kearney and Rose 2021).
- [9] Fixed-rate borrowers can also face sharp increases in their mortgage repayments at the end of their loan term if interest rates increase. However, fixed-rate borrowers are better insulated from rising rates over their fixed-rate period, giving them time to make adjustments to prepare for higher payments at the expiry of their fixed-rate period. Consistent with this, fixed-rate borrowers appear no more risky than their variable-rate counterparts over the recent tightening cycle and have generally managed the transition to higher rates well (Lovicu *et al* 2023; RBA 2023b). However, fixed-rate borrowers could be more likely to fall behind on their loan repayments than

variable-rate borrowers when interest rates fall, as they would not benefit from lower interest costs.

- [10] The Securitisation Dataset is also representative of the geographic distribution of mortgagors when compared with data from the Census. The dataset can therefore be used to explore financial stability risks arising from regional shocks such as natural disasters or impacts of climate change (McCarthy and Reid 2024).
- [11] Current property values are estimated using property value reported at origination (or at revaluation, if present), grown forward by local (SA3) House Price Indices from CoreLogic. The approach to estimating current property valuations for the four major banks varies by lender: ANZ grows valuations forwards 'where available'; the Commonwealth Bank (CBA) uses 'internal and external valuation data' to estimate current house prices on a monthly basis; the National Australia Bank (NAB) does not specify a methodology; and Westpac (WBC) uses CoreLogic House Price Indices.
- [12] For an example and more detail of how the borrowers' spare cash flows can be estimated in the Securitisation Dataset, see RBA (2023a).
- [13] The HILDA Survey provides current and more detailed information on borrowers' incomes, but requires an estimation of their minimum scheduled mortgage payments. Similar to the Securitisation Dataset, essential expenses are proxied using the HEM for this exercise. In line with the obligations under the Securitisation User Agreement, analysis on the HILDA Survey and the Securitisation Dataset were conducted independently by different Reserve Bank staff, and only combined at the aggregated level for graphing purposes.
- [14] Income reported in the Securitisation Dataset is grown forward from loan origination by growth in the Wage Price Index. This tends to be a conservative measure of income growth as it does not capture income growth due to career progression (such as promotions), changes in working hours, or bonus payments. Borrowers' incomes are likely to be underreported in the dataset on average, as many borrowers (in particular higher income borrowers) only report the income necessary to secure the desired loan.
- [15] Because of the high share of loans held in self-securitised deals in the data, trends in the aggregate arrears rate mainly reflect trends in arrears of self-securitised loans.

References

APRA (Australian Prudential Regulation Authority) (2024), 'Prudential Standard APS 120 Securitisation'.

Bergmann M (2020), 'The Determinants of Mortgage Defaults in Australia – Evidence for the Double-trigger Hypothesis', RBA Research Discussion Paper No 2020-03.

Brischetto A (2023), 'Financial Stability and the Financial Health of Australian Mortgagors', Speech at the Sydney Banking and Financial Stability Conference, University of Sydney, Sydney, 8 December.

Cole D and C de Roure (2020), 'Managing the Risks of Holding Self-securitisations as Collateral', RBA *Bulletin*, September.

Fernandes K and D Jones (2018), 'The Reserve Bank's Securitisation Dataset', RBA Bulletin, December.

Garvin N, A Kearney and C Rosé (2021), 'Macroprudential Limits on Mortgage Products: The Australian Experience', RBA Research Discussion Paper No 2021-07.

Lovicu G-P, J Lim, A Faferko, A Gao, A Suthakar and D Twohig (2023), 'Fixed-rate Housing Loans: Monetary Policy Transmission and Financial Stability Risks', RBA *Bulletin*, March.

McCarthy R and G Reid (2024), 'Assessing Physical Climate Risk in Repo-eligible Residential Mortgage-backed Securities', RBA *Bulletin*, April.

Morgan R and E Ryan (2024), 'Recent Drivers of Housing Loan Arrears', RBA Bulletin, July.

RBA (Reserve Bank of Australia) (2018), 'Chapter 5: Assessing the Effects of Housing Lending Policy Measures', *Financial Stability Review*, October.

RBA (2023a), 'Box B: Scenario Analysis on Indebted Households' Spare Cash Flows and Prepayment Buffers', *Financial Stability Review*, April.

RBA (2023b), '5.2 Focus Topic: An Update on Fixed-rate Borrowers', *Financial Stability Review*, October.

RBA (2024a), 'Chapter 2: Resilience of Australian Households and Businesses', Financial Stability Review, March.

RBA (2024b), '4.1 Focus Topic: Scenario Analysis of the Resilience of Mortgagors and Businesses to Higher Inflation and Interest Rates', *Financial Stability Review*, March.

RBA (2024c), 'Eligible Securities', 28 March.

RBA (undated), 'Term Funding Facility to Support the Australian Economy'.

RBA Securitisations Industry Forum (undated), 'Validation Rules'.

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