Household Liquidity Buffers and Financial Stress

Lydia Wang[*]

Photo: Viaframe – Getty Images

Abstract

The ratio of household liquid assets to household income in Australia has increased substantially over recent decades, at both the aggregate and individual household levels. The increase in buffers has been most pronounced for households with mortgage debt and among indebted households – with those with the most debt typically holding the highest liquidity buffers. This is important from a financial stability perspective as liquidity buffers allow households to smooth their spending and maintain their debt payment obligations in the event of adverse shocks to their cash flows; as such, they are a key factor in reducing household financial stress. This article considers these trends and finds that, to the extent that rising liquidity buffers have increased household financial resilience, the risks associated with high and rising household indebtedness are unlikely to be as great as suggested by focusing on gross debt-to-income ratios alone.

Introduction

Over recent years, there has been a substantial increase in aggregate household liquidity buffers in Australia (Graph 1). The stock of household liquid assets relative to household income has increased by around 50 percentage points since 2010; at its current level of around 190 per cent, it is now similar to the aggregate household debt-to-income (DTI) ratio. Liquid assets include cash and other assets that can be quickly converted into cash (such as bank deposits and equities), and so provide a source of funds that households can draw upon during periods of income loss or higher expenses. This, in turn, allows households to smooth their spending and maintain their payment obligations – including their debt payments – over time.

In aggregate, the rise in household liquidity buffers has accompanied a trend decline in the share of households reporting financial stress, despite the well-documented rise in the household DTI ratio (La

Cava and Wang 2021). To the extent that rising liquidity buffers have increased household financial resilience, the risks associated with the high and rising DTI ratio may not be as great as suggested by the gross DTI ratio alone. Indeed, after taking the rapid growth in liquid assets into account, the household sector's net DTI ratio has declined substantially over the past 10 years or so, and especially during the pandemic period when household liquid assets grew rapidly. The value of household liquid assets now almost matches the value of gross household debt.

However, from a financial stability perspective, it is not just the size of the aggregate stock of buffers that matters, but their distribution across individual households. In particular, the ability of a given stock of buffers to reduce the probability of default on lenders' housing books will be greater if these buffers are held by those households with the most debt. Similarly, buffers will also provide greater protection against income shocks for households and their lenders if they are held by those borrowers who are more prone to experiencing income loss and/or by those with lower incomes who may find it more difficult to cover a given increase in expenses.

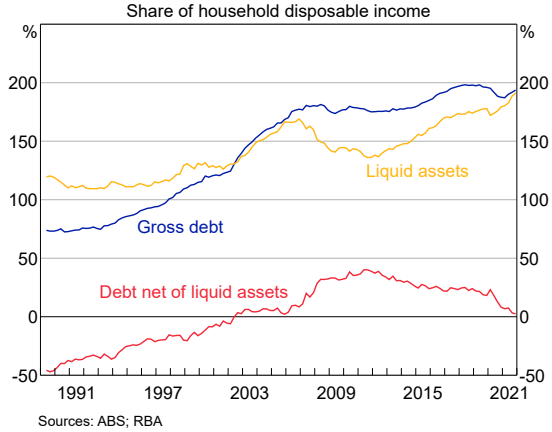
The article has two key findings:

1. The size of liquidity buffers has been a key determinant of whether a borrower reports facing difficulties paying their mortgage and subsequently entering arrears. In particular, households with low liquidity buffers have been much more likely to encounter financial difficulty than those with higher buffers.
2. The distribution of liquidity buffers is reasonably well matched to those households who are most likely to need to use them, although there are some vulnerable groups. Specifically, indebted households have accumulated substantial buffers and, within this group, those with the most debt have tended to have higher buffers than those with less debt. Similarly, borrowers who have previously experienced large income losses also generally have higher buffers than those with more stable sources of income. There are, however, some low-income borrowers with only small liquidity buffers to protect them from financial stress.

Graph 1

Australian Household Balance Sheet

Share of household disposable income



Sources: ABS; RBA

Data

In assessing the distribution of liquidity buffers and the role it plays in the resilience of indebted households, it is necessary to use household-level data to determine whether the households with debt also have liquid assets. Both the Survey of Income and Housing (SIH) and the Household, Income and Labour Dynamics in Australia (HILDA) enable us to do this, each with their own advantages.[1] The SIH survey is broadly representative of the Australian household sector, though the sample varies over time. By contrast, the HILDA survey tracks a constant group of individual households over time. Both surveys contain a range of questions covering data that is both quantitative (e.g. the level of household debt and income) and qualitative (e.g. whether a respondent has been unable to make a mortgage repayment). These features allows us to map household balance sheet characteristics to self-reported measures of financial resilience.

It should be noted that the available data have some shortcomings, including:

- When examining specific household characteristics, the number of relevant households in the sample can be small, and so the results may not be representative of the entire population.

- The latest data are from 2018, so it is possible that the characteristics of the relevant households may have changed since the most recent survey.
- Balances in redraw facilities, which should ideally be included as liquid assets, are not collected in survey data. This will understate the actual level of household liquidity buffers for indebted households and, if changes in redraw balances are not reflective of broader changes in liquid asset holdings, could also make it difficult to interpret trends.

Recent trends in household liquidity buffers

The increase in liquidity buffers has been driven by households with mortgage debt

In levels terms, household liquidity buffers are unevenly distributed across households with different types of housing tenure. Outright home owners (many of whom are retired) hold the largest liquidity buffers, though the buffers of indebted home owners are also substantial. Renters have the lowest liquidity buffers, in part because many are young households who have had less time to build them up. The remainder of this article focuses on liquidity buffers for households with mortgage debt, as they are most likely to pose direct risks for financial stability.

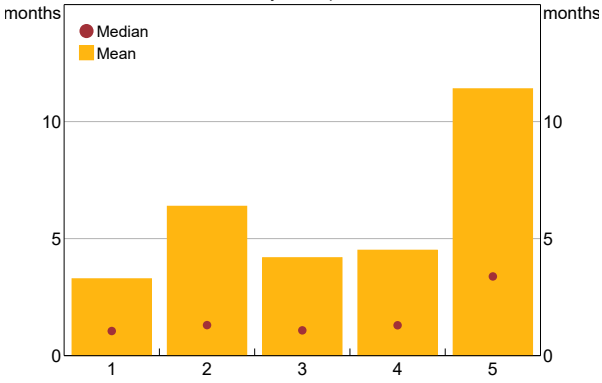
The increase in household liquidity buffers has been broad based across households with different housing tenures, but strongest among those with mortgage debt. The SIH data suggest that around 70 per cent of the increase in household liquidity buffers between 2003/04 and 2017/18 was by households with mortgage debt (around one-third of the household population). The increase in liquidity buffers was evident for indebted households across the debt distribution, but most evident for those with debt in the top quintile (20 per cent) (Graph 2). It is worth noting, however, that the level of debt net of liquid assets increased across the debt distribution, including for those with the most debt. This indicates that over the period between 2003/04 and 2017/18 the increase in liquidity buffers did not offset all the risks associated with the increased level of indebtedness.

Although the latest available survey data are now somewhat dated, other sources indicate that household liquidity buffers have continued to increase since 2017/18, including for indebted households. The aggregate household saving ratio has increased sharply since the onset of the pandemic, largely reflecting a combination of significant fiscal support payments and reduced consumption opportunities (RBA 2022a). For indebted households, prepayment balances (in offset accounts and redraw facilities) make up a large proportion of household liquid assets.[2] Data collected by the Australian Prudential Regulation Authority show that the aggregate stock of prepayment balances relative to aggregate household income has increased by around 15 per cent since 2018, while the aggregate housing DTI ratio has been little changed over the same period. These more recent increases in buffers for indebted households have continued to be broad based, with evidence from the Reserve Bank's Securitisation Dataset suggesting that around 40 per cent of owner-occupier variable-rate loans (including loans with high debt) have increased their buffers by at least 12 months since 2018.

Graph 2

Change in Household Liquidity Buffers*

From 2003/04 to 2017/18, by debt quintile, indebted households



* Ratio of liquid assets to income, expressed in months. Liquid assets include deposits, shares, bonds and trust holdings but exclude balances in redraw facilities.

Sources: ABS; RBA

Highly indebted households typically have higher stocks of liquid assets

In addition to having experienced the largest increases in buffers since the early 2000s, households with the most debt also tend to have the highest liquidity buffers relative to their income (Graph 3, top panel). The most indebted borrowers are also less likely than those with more moderate debt levels to be liquidity constrained or 'hand-to-mouth', though they are still more likely to be liquidity constrained than those with very low levels of debt (Graph 3, bottom panel). For this exercise, liquidity-constrained borrowers are defined as those whose liquid wealth is less than one week's worth of their income (Kaplan, Violante and Weidner 2014).

The most indebted households tend to have large liquidity buffers. This reflects that indebted housing investors, who typically have multiple mortgages and therefore more debt, have larger liquidity buffers on average than owner-occupiers (Graph 4). This is not surprising as housing investors tend to have higher incomes and higher total wealth. In contrast to owner-occupier loans, tax incentives discourage borrowers to prepay their investment loans. As such, investors prefer to save using other methods, such as prepaying their owner-occupier loans (if they have them, as many do) or owning shares. Consistent with this, housing investors are much less likely to be liquidity constrained than owner-occupiers.

Household liquidity buffers have been rising across all income levels

All else equal, aggregate financial stability risks are lower if adequate liquidity buffers are held by those households who are most vulnerable to income or expenses shocks. This vulnerability is likely to be higher for those with more volatile incomes and/or those with lower incomes who may find it more difficult to cover a given increase in expenses.

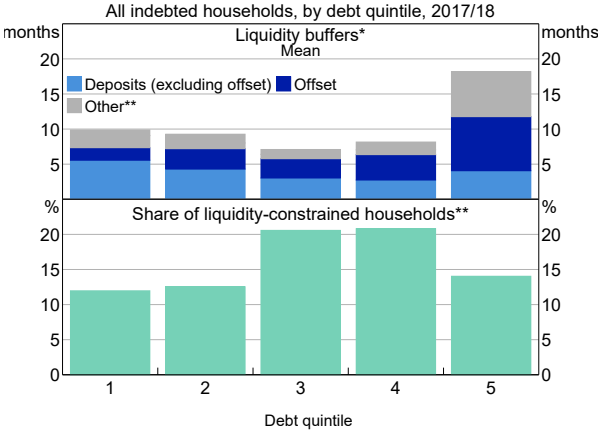
The increase in household liquidity buffers has been broad based for households across the income distribution, including for those with relatively low incomes (Graph 5).

The lowest and highest income households have larger liquid assets relative to their incomes than middle-income households (Graph 6, top-panel). There is considerable variation within the lowest income group as it comprises both retirees with sizable holdings of liquid assets and a relatively high share of (typically younger) liquidity-constrained borrowers (Graph 6, middle-panel). The high share of liquidity-constrained borrowers among low-income households suggests that some do not have sufficient liquidity buffers to protect them from financial stress. Moreover, low-income households tend to have relatively high net DTIs after taking into account their liquidity buffers, making them more vulnerable to cash flow shocks.

Graph 3

Household Liquidity and Indebtedness

All indebted households, by debt quintile, 2017/18



* Ratio of liquid assets to income, expressed in months. Liquid assets include deposits, shares, bonds and trust holdings but exclude balances in redraw facilities.

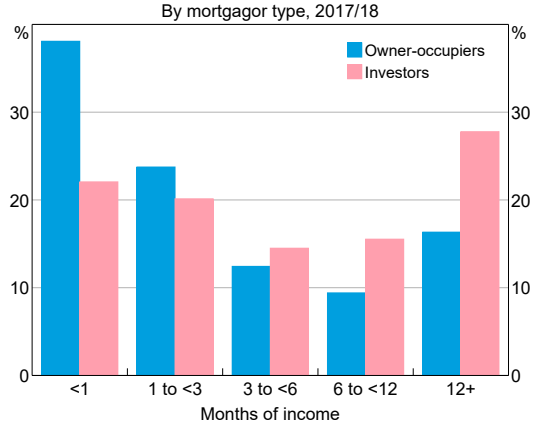
** Households whose liquid wealth is less than one week of income.

Sources: ABS; RBA

Graph 4

Household Liquidity Buffers Distribution*

By mortgagor type, 2017/18



* Ratio of liquid assets to income, expressed in months. Liquid assets include deposits, shares, bonds and trust holdings but exclude balances in redraw facilities.

Sources: ABS; RBA

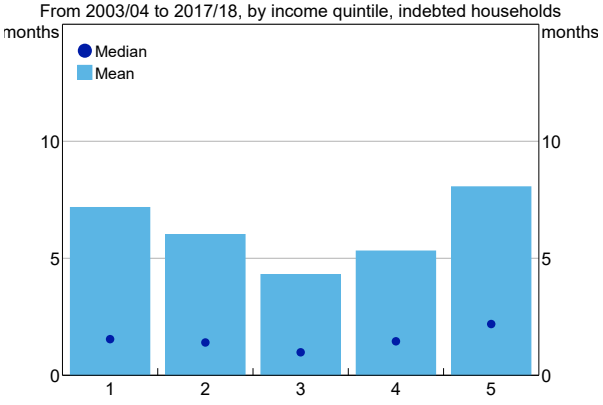
By contrast, high-income households are less risky, with household liquid assets tending to increase with household incomes. This is not surprising as higher income households are likely to have more cash left over after meeting their living expenses and are therefore more able to save. They are also likely to have more opportunities to reduce discretionary spending if required.

In addition to income levels, a household's probability of experiencing sudden income losses will also influence their vulnerability to cash flow shocks. Regression analysis confirms this, indicating that households who have previously experienced a substantial income loss (defined as annual income that is more than 10 per cent lower than their average income over the previous three years) are more likely to experience future mortgage stress (even after controlling for their income level).[3] The survey data suggest that low-income households were much more prone to income losses than other borrowers, with around 20 per cent of households in the lowest income quintile having previously experienced a substantial income loss, compared to only 4 per cent of households in the top income quintile. However, within each income quintile, the buffers held by those who had previously experienced a substantial income loss tended to be larger than those who had not, with these differences generally statistically significant (Graph 6, bottom-panel).

Graph 5

Change in Household Liquidity Buffers*

From 2003/04 to 2017/18, by income quintile, indebted households



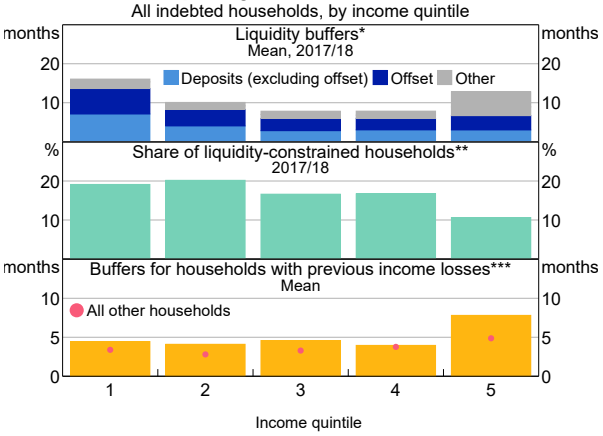
* Ratio of liquid assets to income, expressed in months. Liquid assets include deposits, shares, bonds and trust holdings but exclude balances in redraw facilities.

Sources: ABS; RBA

Graph 6

Household Liquidity and Income Characteristics

All indebted households, by income quintile



* Ratio of liquid assets to income, expressed in months. Liquid assets include deposits, shares, bonds and trust holdings but exclude balances in redraw facilities.

** Households whose liquid wealth is equivalent to less than one week of income.

*** Losses defined as annual income that is more than 10 per cent lower than their average income over the previous three years.

Sources: ABS; HILDA Survey Release 20.0; RBA

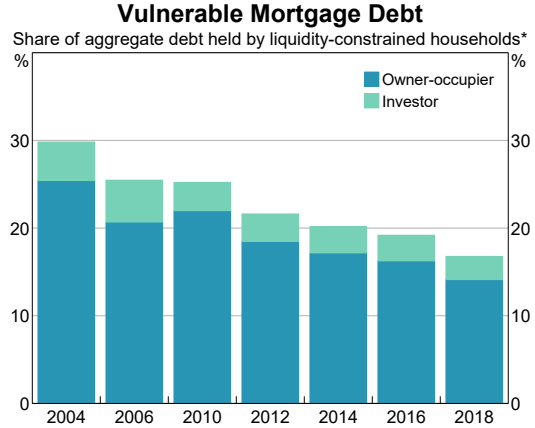
The share of liquidity-constrained households has fallen

Consistent with the broad-based increase in liquidity buffers, the share of indebted households who have low buffers and are therefore liquidity constrained has declined. As a result, the share of indebted households who are most at risk of defaulting on their loans in the event of an adverse cash flow shock has fallen over time. Moreover, based on the 'hand-to-mouth' measure of liquidity constraints, the total share of aggregate mortgage debt held by liquidity-constrained households nearly halved between the early 2000s and 2017/18 (Graph 7).

Graph 7

Vulnerable Mortgage Debt

Share of aggregate debt held by liquidity-constrained households*



* Liquidity-constrained households are 'hand-to-mouth' households whose liquid wealth is less than one week of income.

Sources: ABS; RBA

Household liquidity buffers and mortgage stress

This section examines the relationship between self-reported mortgage repayment difficulties (mortgage stress) and household liquidity buffers in more depth. Specifically, it uses a simple regression framework to identify the effect of current liquidity buffers on self-reported mortgage stress, after controlling for other borrower and loan characteristics (key regression results are reported in Appendix A).[4] The key findings are:

- Borrowers with low liquidity buffers are much more likely to report missing a mortgage payment due to financial difficulties than borrowers with higher buffers.
- For owner-occupier borrowers, the relationships between borrower indebtedness – as measured by their DTIs, loan-to-valuation ratios (LVRs) or net income surpluses (NIS) at loan origination – and mortgage stress is much weaker after taking borrowers' liquidity buffers into account.[5]

The effect of liquidity buffers on mortgage stress appears to be non-linear. Very low liquidity buffers are associated with a higher probability of mortgage stress, with this probability declining sharply as buffers rise above the bottom 20 per cent of the distribution, which roughly corresponds to around one-half of one month's income (Graph 8). However, as buffers rise beyond this level, the decline in the incidence of mortgage stress becomes much more gradual.

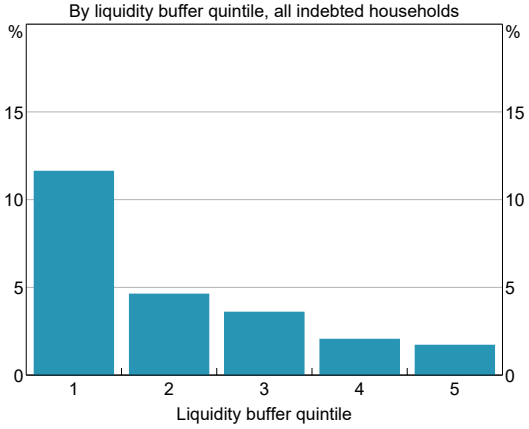
Highly indebted households – as measured by those with a high initial DTI (DTI≥6), a high initial LVR (LVR≥90) or a low initial NIS (bottom quintile of the NIS distribution) – tend to be more likely to report mortgage stress (RBA 2021). However, these differences are most pronounced for those with low liquidity buffers (Graph 9).

Regression analysis allows the relationships between indebtedness, liquidity buffers and mortgage stress to be tested more formally. Owing to data limitations, this exercise can only be conducted for owner-occupier borrowers. The analysis confirms that households with low liquidity buffers are more likely to report mortgage stress than other borrowers after controlling for a range of borrower and loan characteristics, further reinforcing that liquidity buffers are an important risk mitigant. The analysis also indicates that borrowers with a high initial DTI or a low initial NIS are in fact no more likely to report mortgage stress after controlling for their liquidity buffers, as well as their household income characteristics (both the level of income and a dummy variable indicating whether the household had previously experienced a substantial income loss, discussed further below). By contrast, borrowers with a high initial LVR remain more likely to report mortgage stress after controlling for these other factors, though the

Graph 8

Reported Mortgage Stress*

By liquidity buffer quintile, all indebted households



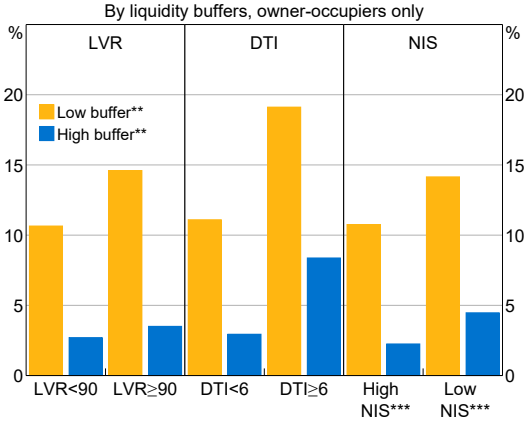
* Reflects an inability to meet a housing loan repayment due to financial difficulties. Liquidity buffers are a ratio of liquid assets to income.

Sources: HILDA Survey Release 20.0; RBA

Graph 9

Reported Mortgage Stress*

By liquidity buffers, owner-occupiers only



* Reflects an inability to meet a housing loan repayment due to financial difficulties. Indebtedness at loan origination. Liquidity buffers are a ratio of liquid assets to income.

** A low (high) buffer is in (not in) the bottom 20 per cent of the distribution.

*** A low (high) NIS is in (not in) the bottom 20 per cent of the distribution.

Sources: HILDA Survey Release 20.0; RBA

relationship between the initial LVR and mortgage stress is weaker for those households with adequate buffers. Taken together, the results imply that adequate liquidity buffers at the household level can greatly reduce the financial stability risks that might otherwise be posed by high levels of indebtedness. In addition to liquidity buffers, the regression results suggest that household income characteristics are also an important determinant of self-reported mortgage stress. Higher income households are less likely to encounter mortgage repayment issues, even after controlling for liquidity buffers and other factors including previous substantial income loss. This suggests that higher incomes reduce the incidence of mortgage stress beyond their effect on the ability of households to build liquidity buffers, and it is not just because higher income borrowers have more stable income sources. A possible explanation for the effect of income on mortgage stress is that shocks to expenses may be more easily absorbed by higher income households.

Overall, the results suggest that household indebtedness by itself has not historically had a strong relationship with self-reported mortgage stress. Instead, it is a household's capacity to meet a given level of debt obligations (as determined by their liquidity buffers and income) that has been the more important determinant of whether a household falls behind on their mortgage payments.

The relationship between liquidity buffers and loan arrears

While mortgage repayment difficulties can be an early indicator of default, it may instead simply represent a short-term liquidity problem. Loan arrears – defined as loans that are actually behind schedule, as opposed to a household simply facing difficulties meeting repayments – are a more extreme measure of mortgage stress than the self-reported mortgage stress indicator in the HILDA survey and are more directly related to financial stability risks via losses for lenders. Therefore, this study used loan-level data from the Securitisation Dataset to complement the analysis on mortgage stress from the HILDA Survey.[6]

Loan-level data from the Securitisation Dataset suggest that over 40 per cent of owner-occupier variable-rate loans currently in arrears had less than three months of prepayments one year prior to entering arrears; this compared to over one-quarter of performing loans (Graph 10). For this exercise, prepayments are defined as the sum of balances in offset accounts and redraw facilities in months of minimum repayments and so are a different measure of household liquidity buffers from the one in the survey data.[7] Consistent with this, regression analysis suggests that loans that had less than three months of prepayment buffers were around twice as likely to enter 90+ day arrears, after controlling for economic conditions and borrower and loan characteristics.[8]

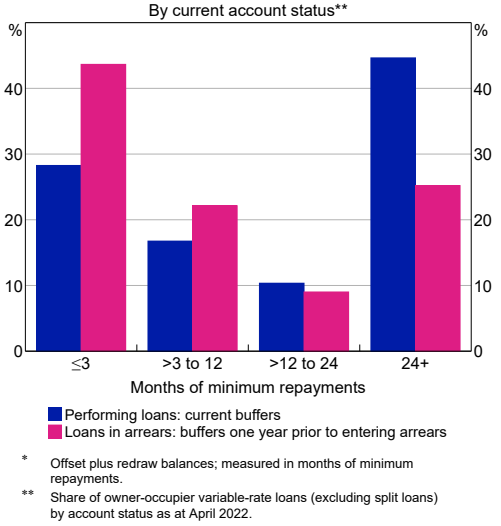
Conclusion

Household liquidity buffers have risen over time, with more than 70 per cent of the total increase in liquid assets from 2003/04 to 2017/18 belonging to the one-third of all households with debt. This is important as there is strong evidence that the size of liquidity buffers is a key determinant of whether a borrower will report facing difficulties paying their mortgage and ultimately enter arrears. In particular, households with low liquidity buffers have been much more likely to report facing mortgage repayment difficulty than those with higher buffers, after controlling for other borrower and loan

Graph 10

Excess Payment Buffers*

By current account status**



* Offset plus redraw balances; measured in months of minimum repayments.

** Share of owner-occupier variable-rate loans (excluding split loans) by account status as at April 2022.

Sources: RBA; Securitisation System

characteristics that could be associated with financial stress (such as their income levels or whether the loan has a high initial DTI or LVR ratio). This underscores the important role that the accumulation of household liquidity buffers has played in reducing the potential risks posed by highly indebted households (RBA 2022b). To the extent that liquidity buffers can protect households from financial stress, the increase in liquidity buffers suggests that the financial stability risks associated with rising household indebtedness are lower than the gross aggregate household DTI ratios appear.

Appendix A

Table A1: Reported Mortgage Stress

Logit, odds ratios, owner-occupiers only

	(1)	(2)
Liquidity buffers in 1st quintile (dummy)	1.04***	1.04***
	(0.27)	(0.27)
Log of disposable income	−0.97**	−0.81**
	(0.38)	(0.36)
Income loss (dummy)	0.86***	0.91***
	(0.32)	(0.32)
Age of borrower	0.03**	0.03**
	(0.01)	(0.01)
Household size	0.20**	0.18*
	(0.10)	(0.10)
Log of NIS at origination	−0.01	
	(0.03)	
DTI at origination	−0.04	
	(0.07)	
LVR at origination	0.01**	
	(0.01)	
NIS at origination in 1st quintile (dummy)		0.37
		(0.29)
DTI≥6 at origination (dummy)		−0.25
		(0.50)
LVR≥90 at origination (dummy)		0.73**
		(0.30)
Constant	3.46	2.23
	(4.24)	(4.24)
Observations	1,355	1,355
Pseudo R2	0.140	0.145

Note: Estimates of dummies for year of loan origination are omitted; robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Endnotes

[*] The author is from Financial Stability Department. The author would like to thank Amelia Gao for the analysis of prepayment buffers in the Reserve Bank's Securitisation System, and Jonathan Kearns and Michelle Wright for their assistance in drafting this article.

[1] The SIH consists of cross-sectional data on household loans, which is collected by the Australian Bureau of Statistics every two years. The available sample period ran between 2003/04 and 2017/18. The HILDA Survey is an annual survey that has tracked a representative group of individual households since 2001. Every four years the survey includes a wealth module, which collects detailed information on household assets and liabilities; the latest observation for household wealth (and therefore liquidity buffers) is for 2018.

[2] An offset account is an at-call deposit account that is directly linked to the mortgage loan. Funds deposited into an offset account reduce the effective outstanding loan balance and therefore the interest payable on the loan. A redraw facility enables the borrower to withdraw excess funds they have already contributed to pay off their loan. The balance of the facility consists of any extra payments the borrower has previously made towards paying their loan, above the amount required by the loan contract. See La Cava and Wang (2021).

[3] Note that 'substantial income loss' is a backward-looking measure that does not necessarily predict vulnerability to future income loss.

[4] From 2006, the HILDA Survey's wealth modules ask owner-occupiers if they had been unable to meet a mortgage payment because of financial difficulties. Missing a mortgage payment does not necessarily correspond to the borrower defaulting, but it represents an early stage of the default process. Previous research by the Bank found that households who had previously missed a mortgage payment were more likely to miss another mortgage payment (Read, Stewart and La Cava 2014).

[5] The NIS refers to the amount of income remaining each month after covering basic living expenses and mortgage payments.

[6] As loans in the Securitisation System tend to be of higher credit quality, the level of arrears rates in the Securitisation System is lower than that of the broader mortgage market; however, the trends are similar.

[7] Various data limitations mean that it is not possible to use like-for-like measures of liquidity buffers across the survey and Securitisation Dataset.

[8] Control variables include indexed scheduled LVR, original LVR, loan types, borrower type, income, self-employment status, region and local unemployment rate.

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