Box B

The Impact of Rising Interest Rates and Inflation on Indebted Households' Cash Flows

The balance sheets of Australian households are – in aggregate – in strong shape. However, rising interest rates and inflation have increased indebted households' loan payments and living expenses, with further increases in prospect. In recent months, most indebted households have experienced a decline in 'spare cash flows', which is the income they have available to spend or save after meeting their loan payments and essential living expenses. There is uncertainty about how indebted households will respond to this pressure on their budgets. This is partly because there are a number of adjustments households could make – some might reduce their non-essential spending and/or how much they save, while others may need to utilise at least a portion of their previously accumulated savings (which in aggregate are very large).

Although most households are likely to be able to weather increased pressure on their finances for some time, many will need to curtail their consumption and some could ultimately see their savings buffers exhausted. If these households have limited ability to make other adjustments to their financial situation (e.g. by increasing their hours worked) and pressure on their finances continues, they could fall into arrears on their loan obligations; some may eventually need to sell their homes or may even enter into foreclosure. Based on the Reserve Bank's central scenario for employment and income growth, the share of households at high risk of falling into arrears is expected to remain low over the coming years, limiting direct risks to the stability of the financial system as a whole. However, with risks increasing for some vulnerable indebted households, the Bank will continue to closely monitor timely leading indicators of financial stress.

Given market expectations for future interest rate increases and the outlook for inflation and income growth, illustrative scenarios and sensitivity analysis can be used to gauge the potential impact of rising interest rates and inflation on households' spare cash flows. This Box focuses on households with owner-occupier variable-rate loans. These borrowers collectively account for around two-fifths of outstanding housing credit; much of their saving (in flow and stock terms) takes the form of mortgage prepayments and is therefore visible in the available data (in contrast to fixed-rate borrowers and investors). While the analysis that follows is subject to considerable uncertainty (related to both the economic outlook and borrowers' responses to it), it suggests that just over half of these borrowers would see their spare cash flows decline by more than 20 per cent over the next couple of years, including around 15 per cent whose spare cash flows would turn negative. While a relatively small share of the sample of households appears to be at high risk of falling behind on their loan payments, most borrowers will likely be able to manage for at least two years by reducing their non-

essential spending, reducing their saving flows and/or drawing down on their accumulated prepayment buffers. Should labour and housing market conditions deteriorate further than assumed in the Bank's central scenario, however, a larger share of households would be expected to fall into arrears on their mortgages.

Higher interest rates and inflation have reduced indebted households' spare cash flows …

The effect of rising loan payments and living expenses on spare cash flows will vary across households, with the most important determinant being the amount of debt a household owes relative to their income. Household income levels are a second source of variation as lower income households tend to spend a larger proportion of their incomes on (unavoidable) essential living expenses.[1]

Graph B.1 shows what the change in spare cash flows could be for eight hypothetical households with varying combinations of debt and income. The analysis is calibrated using recent outcomes for interest rates, inflation and wages growth, as well as short-range projections for inflation and wages growth. Specifically, it assumes the following:

- Interest rate increases of 2½ percentage points (the cumulative increase between May and October) are passed through fully and immediately to lending rates and loan payments (though in practice this can take up to a few months).
- Essential living expenses are based on the Household Expenditure Measure (HEM) benchmark and assumed to rise in line with actual and forecast headline consumer price inflation (CPI) over the six months to September.[2] Note the HEM benchmark, which is used by lenders in assessing whether a potential borrower can service a loan, incorporates spending on non-discretionary goods and services (such as groceries and fuel) as well as a small amount of discretionary expenditure (such as entertainment and meals out). Additional adjustments are made to factor in some other expenses that are excluded from the HEM (most notably private health insurance and school fees) resulting in a relatively broad measure of essential consumption.[3]
- Indebted household incomes increase in line with the actual and forecast Wage Price Index (WPI) over the six months to September. The choice to use WPI to forecast income growth rather than a broader measure of household income reflects a judgement that non-wage sources of income such as social assistance benefits or investment income (including from superannuation) that are included in broader measures of income are less likely to be the main sources of income for indebted households than renters and outright owners. It is also a conservative choice in that growth in the WPI typically lags that of broader measures of labour compensation when labour markets are tight.

For a highly indebted household earning $150,000 of gross income (around the median income for a couple family with dependent children) with $800,000 in debt, the net effect would be a reduction in monthly spare cash flow (relative to April 2022 levels) of around $1,300 – or 13 per cent of household disposable income. Around 80 per cent of the overall reduction in spare cash flows for this hypothetical household would be due to the impact of rising interest

rates on their mortgage payments, with inflation playing a much smaller role. For a household with the same income but with $600,000 in debt (around the average loan size for owner-occupiers), the net decline in spare cash flow would be 10 per cent of disposable income. Households that have borrowed more recently tend to have larger debts than earlier cohorts and so are likely to be more affected than other borrowers. For a given amount of debt, households with lower incomes than these hypothetical borrowers would also likely be more affected.

… and scenario analysis suggests that further declines in spare cash flow are likely

Financial market pricing and surveys of economists indicate that further increases in the cash rate are expected over the next two years, alongside inflation outpacing growth in base wages. To estimate the combined impact of these forces, scenario analysis can be used to gauge the effect on individual borrowers over the next couple of years, drawing on the Bank's Securitisation Dataset. The scenario assumes that interest rates rise by a further 1 percentage point from October 2022 levels by the end of 2023 (broadly in line with market pricing) and are fully passed through to variable-rate loan payments. Indebted households' living expenses and incomes are assumed to increase in line with the August 2022 *Statement on Monetary Policy* forecasts for CPI and WPI growth, respectively. Essential living expenses for each household are again calibrated using adjusted HEM benchmark estimates and information on borrowers' incomes and so include a small amount of discretionary consumption.

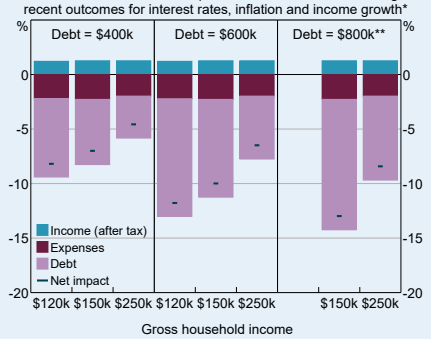
Under this scenario:

- Just over half of variable-rate owner-occupier borrowers would see their spare cash flows decline by more than 20 per cent over the next couple of years, including around 15 per cent of households whose spare cash flows would become negative as the combined burden of higher interest payments and the higher cost of essential goods and services exceeds their initial spare cash flows (Graph B.2). This latter group of (typically low-income, highly indebted) households would likely be forced to draw down on their stocks of saving in order to continue to meet their loan payments and essential living expenses. Some may have a limited ability to do this, given that low-income and highly indebted households typically have lower savings buffers.
- Another 40 per cent of variable-rate owner-occupier borrowers would face a more moderate decrease in their monthly spare cash flows of less than 20 per cent from their mid-2022 levels, but would be

Graph B.1

Illustrative Effect of Interest Rates and Inflation on Hypothetical Borrowers' Spare Cash Flows

As a share of household disposable income, calibrated using recent outcomes for interest rates, inflation and income growth*



* Assumes full pass-through of 250bps of interest rate increases to loan repayments, essential (HEM-based) living expenses and income rise in line with expected growth in headline consumer price inflation and wage price inflation over the six months to September 2022. Hypothetical households' income and expenses reflect estimates for a couple family with two dependent children.

** $120k income borrower would not be approved for $800k debt.

Sources: ABS; Melbourne Institute; RBA

able to accommodate this through reduced non-essential consumption and/or saving flows.

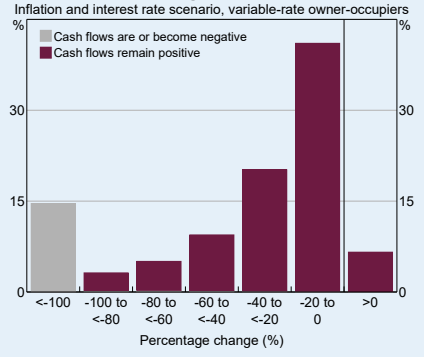
- The remainder of variable-rate owner-occupier borrowers (around 5 per cent) would experience an increase in their cash flows. This group are typically high-income borrowers who spend a low share of their income on essential living expenses and have very low levels of debt, such that the dollar value of their expected income growth would exceed that of their (loan and living) expenses.

It is important to note that these estimates are only indicative and are not firm predictions. They do not allow for variation in inflation or wages growth across individual households, nor do they make provisions for households to respond to declining spare cash flows (e.g. by working more hours). Some lower risk borrowers (e.g. those with a low outstanding loan-to-valuation ratio) may be able to respond by refinancing their debt at lower interest rates; other borrowers may have additional scope to reduce their consumption (the measure of 'essential' living expenses assumes borrowers will maintain at least some discretionary spending).[4] It is also possible that some borrowers hold their savings in other less-visible forms than mortgage offset or redraw accounts and so have additional liquid buffers to draw on. Working in the opposite direction, the results abstract from a possible rise in unemployment over this horizon, which would reduce the cash flows of affected households significantly.[5]

Graph B.2

Distribution of Changes in Spare Cash Flows*

Inflation and interest rate scenario, variable-rate owner-occupiers



* Cash flow is estimated as income net of mortgage payments and essential living expenses; assumes interest rates rise by 350 basis points relative to April 2022 levels; wages and inflation evolve in line with August 2022 SMP forecasts.

Sources: ABS; Melbourne Institute; RBA; Securitisation System

Overall, most borrowers are likely to be well placed to adjust their finances, with only a small share appearing vulnerable to falling into arrears

The declines in spare cash flow implied by this exercise would place some pressure on household budgets. However, there is uncertainty around how households would respond. In particular, it is not clear to what extent households would choose to prioritise maintaining their current non-essential consumption over adjusting their saving behaviour. Changes in household wealth are likely to have a bearing on this decision.

At one extreme, if the cumulative reductions to cash flows implied by the scenario were realised and households choose not to reduce their real non-essential spending and instead draw down on existing prepayment buffers, just over half of variable-rate owner-occupiers are estimated to have prepayment buffers large enough to allow them to meet their loan payments and essential living expenses for at least two years (Graph B.3). If households were instead to choose to reduce their real non-essential spending by 20 per cent, the share of borrowers with more than two years' worth of prepayment buffers would increase to around 70 per cent.

For simplicity, the scenario uses borrowers' prepayment buffers as at June 2022 rather than a projection of what these buffers could be at the end of 2023. As a result, it likely understates the available buffers of borrowers with large spare cash flows and overstates the available buffers of households with low spare cash flows (some of which may have already started to draw down their buffers).

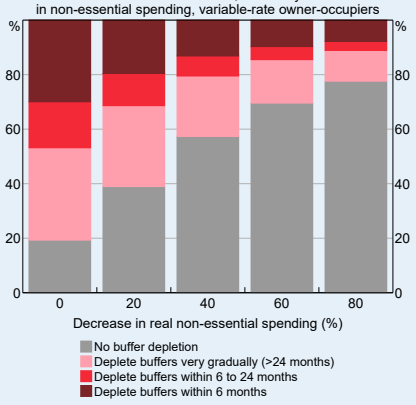
At the other extreme, some households may choose to cut their non-essential spending quite sharply – either to retain their savings buffers or because they need to in order to meet loan payments. In this scenario, the vast majority of variable-rate owner-occupier borrowers would not need to deplete their buffers much at all. However, there remains around 8 per cent of variable-rate owner-occupier borrowers who would fully exhaust their prepayment buffers within six months, even if they were to cut their real non-essential spending by a relatively extreme 80 per cent; around 40 per cent of these borrowers are in the lowest quartile of the income distribution and so are already more vulnerable to falling behind on their loan payments. In practice, many borrowers in this position may attempt to make other adjustments, such as supplementing their income or adjusting their current spending patterns in anticipation of future increases in their expenses.

Overall, most owner-occupiers with variable-rate loans appear well placed to adjust to rising expenses over the next couple of years through a combination of reducing non-essential spending, lowering saving rates (i.e. reducing excess mortgage payments) or by gradually drawing down on (in some cases very large) prepayment buffers. It is also possible that some households have other liquid financial assets on which they could draw to support their consumption and loan payment obligations (though this possibility is precluded from the analysis due to data limitations). Higher interest rates and inflation will slow aggregate household consumption and the pace of economic growth more broadly, but the direct financial stability risks posed by vulnerable borrowers appears modest. A large increase in unemployment combined with a historically large decline in housing prices would pose a more material risk to loan arrears and defaults, and therefore financial stability.

Graph B.3

Distribution of Time until Buffers are Depleted*

Inflation and interest rate scenario, sensitivity to reductions in non-essential spending, variable-rate owner-occupiers



* Assumes interest rates rise by 350 basis points relative to April 2022 levels; wages and inflation evolve in line with August 2022 SMP forecasts.

Sources: ABS; Melbourne Institute; RBA; Securitisation System

Endnotes

[1] Lower income households may also be subject to a higher effective rate of inflation if they are less able to substitute away from purchases of goods and services with more rapidly rising prices, but this is not explicitly accounted for in this analysis.

[2] CPI has been used as forecasts are readily available. Some components of the CPI basket, such as new dwellings and rents, are unlikely to be applicable to indebted home owners.

[3] For simplicity, households with one loan applicant are assumed to have no dependants whereas households with two loan applicants are assumed to have two dependants.

[4] Specifically, the HEM benchmark incorporates the 25th percentile of household expenditure on discretionary basics in the ABS Household Expenditure Survey based on the household's income level and number of dependants (along with the median expenditure on non-discretionary basics).

[5] Kearns J, M Major and D Norman (2020), 'How Risky is Australian Household Debt?', RBA Research Discussion Paper No 2021-05.