

Box B

The Impact of Lending Standards on Loan Sizes

To determine the maximum amount they are willing to lend to a prospective borrower, lenders consider the borrower's cash flows. Historically, a commonly used metric for this purpose was the debt servicing ratio (DSR), under which lenders would generally set maximum loan sizes such that the required repayments did not exceed 30 per cent of pre-tax household income. While simple to calculate and explain, such an approach did not factor in many of the specific circumstances of borrowers.

Since around the mid 2000s, lenders have refined their assessments of borrowers' cash flow that is available to make their debt repayments. This better accounts for variations in household income and family circumstances (recognising, for instance, that some borrowers can comfortably accommodate DSRs greater than 30 per cent). The methodology and definitions used in undertaking these calculations had varied substantially across lenders. However, in 2015 the Australian Prudential Regulation Authority (APRA) standardised many of the elements of these mortgage loan assessments, bringing tighter standards and greater consistency to the industry. This has tended to reduce the maximum amount that a lender will extend to a new borrower. However, most households choose to borrow much less than the maximum amount offered by lenders. Hence, for the majority of borrowers, this tightening in lending standards will not have had a material effect on their actual access to finance.

This box outlines how lenders' cash-flow-based calculations interact with the DSR and

other simple serviceability metrics. It also uses household survey data to calculate hypothetical maximum loan sizes of past borrowers and compares these estimates to the amount that they actually borrowed. This enables an assessment of how binding the progressive tightening of the procedures used by lenders has been in practice.

Serviceability tests are now more tailored than in the past

Lenders calculate a 'net income surplus' (NIS) to help determine the maximum mortgage that could be offered to a potential borrower. Under this approach, a borrower's estimated living expenses and other existing financial commitments (excluding rental payments) are subtracted from their disposable (i.e. after-tax) income. This determines their 'net income', which is the amount available to make debt repayments. The largest possible loan that could be made would leave the borrower with no spare cash after taking account of living expenses and the required annual loan repayments. This maximum loan amount would leave the borrower with a NIS equal to zero. In practice though, lenders incorporate a number of buffers and detail about the borrowers' circumstances into this calculation, so that a NIS of zero would not mean the borrower had no spare cash flow after repayments (as outlined below).

Unlike the simple DSR, the NIS is tailored for the specific characteristics of each borrower. For example, it allows for the fact that high-income households are usually better able

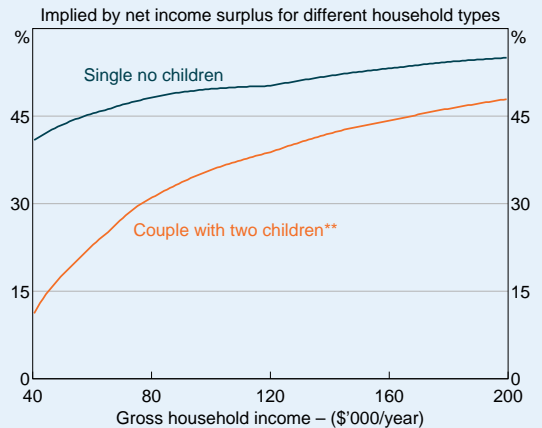
to service higher DSR loans because their basic living expenses are typically a smaller proportion of their income. The NIS can also use estimates of living expenses that vary with the household type (e.g. single vs couple, the number of children and post-tax income). Many households find it difficult to estimate their expenditure so lenders compare their stated expenditure with minimum expense benchmarks. The NIS also factors in the broader financial situation of the borrower, including tax liabilities and required repayments on credit cards or other loans. Overall, the NIS methodology tends to result in higher income households being eligible for higher 'debt-to-income' (DTI) loans and so a higher DSR.

The interaction between the NIS and a DSR limit can be shown using an example. It is possible to calculate the maximum loan size for a range of incomes using the NIS and to then calculate the corresponding initial DSRs (i.e. where repayments are based on the initial interest rate). This example uses a measure of basic living expenses, the income-adjusted Household Expenditure Measure (HEM), with household expenditure increasing with income. This exercise shows that the maximum loan size based on a zero NIS implies a higher potential maximum DSR as incomes increase (Graph B1).¹ For example, the maximum loan for a couple with two children with a gross income of around \$80,000 a year would imply an initial DSR of around 30 per cent while for such a household on \$200,000 a year, the maximum loan would imply an initial DSR over 45 per cent. This is because, while minimum living expenses increase with disposable income, they do not increase one for one with income. This also demonstrates that, for a given income,

1 The DSR is defined as actual repayments divided by *disposable* income.

Graph B1

Maximum Initial DSR*



* 30-year loan assessed at an interest rate floor of 7.3 per cent and based on the income-adjusted Household Expenditure Measure; DSR is calculated as initial repayments at starting interest rate of 4.1 per cent divided by after-tax income; tax liability based on 2017/18 income tax rates

** After-tax income calculated based on each adult earning an equal share of household income

Sources: Melbourne Institute; RBA

smaller households (which have lower expenses) can borrow at higher DSRs.²

The main advantages of the NIS are its granularity and its ability to take into account differing household characteristics. But this also makes it more complex to calculate. Other measures, such as DSRs and DTI ratios, are therefore often used by commentators and regulators to assess the ability of households to meet repayments. These simple measures are often used as an approximate rule of thumb to identify stretched households and can supplement the NIS (see 'Box C: Vulnerable Households and Financial Stress'). In addition, they can be easily estimated for a whole economy, such as a national household DTI. This enables comparisons of aggregate household indebtedness across countries and through time. For the reasons discussed above, however, they need to be used with caution.

2 The NIS also implies the same observations for DTI ratios. That is, higher income households and smaller households can borrow at higher DTIs than lower income or larger households.

The NIS incorporates many buffers ...

Over recent years, APRA has required that banks improve the calculation of the NIS in order to ensure households have an adequate buffer in the event of a shock. In practice, this means that even borrowers who take out the largest loan available and so have a 'zero NIS' would initially have spare income after basic living expenses and loan repayments. The effect of these changes, introduced since 2015, has been to reduce the maximum loan size available to borrowers. The buffers include:

- Large interest rate buffers to ensure borrowers can afford to make their repayments if interest rates rise.³ These buffers substantially reduce maximum loan sizes (relative to having no interest rate buffer) and provide a significant amount of spare cash flow. Currently, most loans are assessed at an interest rate of around 7.3 per cent. For a new loan of \$500,000 at the current average interest rate of 4.1 per cent repayments would be \$950 per month lower than they would be at the buffer interest rate used to calculate the maximum loan size. This amount represents initial cash flow the household could use to make excess repayments or for discretionary consumption, but would be reduced by any future interest rate increases. The maximum loan size available to households is around 30 per cent lower than if there were no buffer.
- Applying a 'haircut' or discount to income from certain less reliable sources. For example, income earned from overtime or bonuses is typically discounted by 20 per cent. If this income falls, borrowers are then less likely to be caught short. Rental income attracts a similar discount to account for possible tenant vacancies and variability of property management costs and maintenance.
- Minimum expense benchmarks are used as a backstop, such as in situations where borrower-reported expenses are implausibly low.⁴ Since early 2016, most banks have introduced an upward adjustment to these benchmarks for higher-income borrowers.
- In the case of interest-only loans, the NIS is calculated based on the principal and interest payments that will apply when the interest-only period ends. This buffer alone results in the maximum loan being around 6 per cent lower for a five-year interest-only period within a 30-year loan.
- The NIS test also factors in potential repayment obligations from the full credit limits of existing credit cards (rather than just outstanding balances). More generally, the introduction of the comprehensive credit reporting regime over 2018 and 2019 will give lenders greater visibility of borrowers' other credit facilities, including credit cards.

³ Interest rate buffers were used by lenders before 2015, however there was a wide range used. The APRA measures standardised industry practices by setting the *minimum* interest rate buffer at 2 percentage points with a further requirement to use an interest rate floor of at least 7 per cent should interest rates be below 5 per cent (as they currently are). Lenders have opted to use buffers a little above the minimum required. Interest rate buffers are also required to be applied to any other existing debts, which had the largest impact on maximum loan sizes for investors with multiple properties.

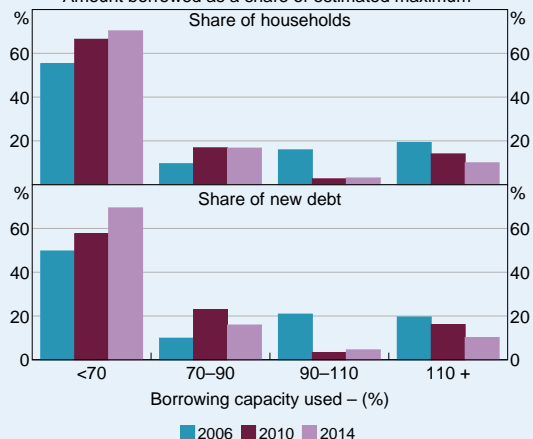
⁴ APRA has outlined instances where lending practices have fallen short of these standards, including an over-reliance on expense benchmarks (which historically have reflected a very basic standard of living) in loan applications. APRA is working with lenders to make improvements, in particular by making more detailed inquiries about borrower expenses and reducing the number of applications based on benchmark expenses.

... and most loans are smaller than borrowers' maximum capacity

Households who borrow close to the maximum loan size available are likely to be more vulnerable if there is a change in their circumstance or a rise in interest rates. However, not many households borrow the maximum loan offered by lenders. For this reason, a reduction in maximum loan sizes need not reduce the size of the actual loans taken out by many households.

It is possible to assess how any tightening in lending standards affects loan sizes and housing credit growth. This can be done by comparing the actual amount borrowed by individual households with the hypothetical maximum calculated using the NIS. Specifically, using the Household Income and Labour Dynamics Australia (HILDA) survey and applying the NIS to owner-occupier borrowers shows that most borrowed substantially less than their inferred maximum loan. The typical (median) owner-occupier borrower only borrowed about half of the maximum loan they could obtain. This share was broadly steady over 2001 to 2014 (the years HILDA data are available). In the most recent survey year (2014), more than two-thirds of households borrowed less than 70 per cent of their maximum loan size (Graph B2). Only around 13 per cent of newly indebted owner-occupier households borrowed close to the largest loan permitted (90 per cent or more of the maximum). This is broadly consistent with APRA data that show only around 14 per cent of new debt in 2014 was close to the largest loan size allowed (90 per cent or more of the maximum). In the June quarter 2018 this share was higher at about 18 per cent, in part reflecting that the tightening

Graph B2
Distribution of Borrowing Capacity Used
Amount borrowed as a share of estimated maximum*



* Estimated maximum based on current lending standards and the income-adjusted Household Expenditure Measure; borrowers taking out loans larger than this indicates either looser lending standards relative to now or that the serviceability test was overridden due to other factors; measure is as at time of loan origination and only includes owner-occupiers

Sources: ABS; HILDA Release 15.0; Melbourne Institute; RBA

in lending standards had reduced the maximum loan size for many borrowers.⁵

Households may borrow less than their maximum for a range of reasons:

- Some borrowers, particularly first home buyers, can be *constrained* by loan-to-valuation (LVR) limits given their deposit and purchase price, rather than a NIS limit. For example, a borrower with a \$100,000 deposit facing a maximum LVR of 80 per cent could only borrow \$400,000 even if their maximum loan based on the NIS was higher.

⁵ Specifically, the APRA data show the share of new lending that had a NIS less than \$200 per month. This is equivalent to borrowing at least 90 per cent of the maximum for borrowers with gross income above \$70,000. See Byres W (2017), 'Housing – The Importance of Solid Foundations', speech at the Australian Securitisation Forum, Sydney, 21 November. However, this figure for the share of new lending with a NIS under \$200 per month probably overstates the extent to which borrowers take out the largest loan allowed. Some borrowers only declare income sufficient to get the desired loan size rather than also declaring more complex sources of income such as investment income.

- Some households may not need the maximum loan to purchase the dwelling they want.
- Other households, especially ‘trade-up’ buyers, may take a smaller loan to avoid being overleveraged. For example, they may want to be able to make prepayments on their mortgage or have a larger buffer than the minimum required to cover adverse events. Alternatively, they may anticipate future drops in income (for example, time out from the workforce to have children).

So tighter lending standards do not constrain most borrowers, but do affect some

Most households in the HILDA sample borrowed well under the maximum implied by the NIS. This behaviour has been reasonably stable over the 14 years of the HILDA surveys, and if households have continued to borrow conservatively, then most households would not have been constrained by the tightening in lending standards over recent years. If households continued to borrow well under their maximum, this implies that even fairly large reductions in maximum loan sizes would have only a modest effect on the supply of new lending. This is consistent with loan approvals data showing that the average owner-occupier loan size has increased from around \$350,000 in the first half of 2015 to \$410,000 in June 2018, even though lending standards have tightened. Indeed, current lending standards suggest that the maximum loan size that would be offered to the median borrower is between \$530,000 and \$630,000, well above the typical actual loan taken.

Lower income households would have been more affected than others because more of them borrow close to their maximum. The

HILDA data indicate that households who borrowed close to the largest amount they could were almost entirely at the lower end of the income distribution of mortgagor households. There were very few borrowers in the top two income quintiles who borrowed close to their maximum. This could be because lower and middle income households had to borrow the most they could in order to enter the housing market, whereas higher income households were less compelled to do so.

However, this analysis overlooks the impact on demand of tighter lending standards, which is hard to quantify. For example, in response to being offered a smaller loan, prospective borrowers may purchase a cheaper dwelling, or save for longer and delay their purchase, or even exit the market entirely. Further, tighter lending standards and greater public scrutiny of lending practices could also weigh on sentiment and reduce demand.

Hence, the calibrated adjustments to lending standards introduced to improve the resilience of households appear to have had the most impact on households choosing to borrow close to their limit. Reducing the risk these borrowers and their lenders were taking on has been desirable from a financial stability perspective. In contrast, the majority of borrowers have not been constrained by the tightening in lending standards. This is consistent with the fact that, to date, owner-occupier credit growth has only slowed modestly. ✖