



Economic implications of high and rising household indebtedness

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High and rapidly rising levels of household debt can be risky. A high level of debt increases the sensitivity of households to any shock to their income or balance sheet. And during periods of financial stress, highly indebted households tend to cut their spending more than their less-indebted peers. This can amplify a downturn and helps to explain why many advanced economies since the 2008-09 crisis have had subdued recoveries. Financial institutions can suffer direct losses from lending to households, although these losses are rarely enough on their own to cause a systemic banking crisis. The sustainability of household debt can be assessed best by looking at data detailed enough to build a picture of how debt and debt servicing capacity is distributed across different types of borrowers.

1 Introduction

This article is the second in a two-part examination of household debt. The first article put the rise in the level of New Zealand household indebtedness over the last financial cycle in the context of developments in 27 other, mainly advanced, economies (Hunt, 2014). The article discussed some of the key explanations for the dramatic rise in household debt over the period before the global financial crisis (GFC), both here and abroad. In that article we were fairly agnostic on the question of whether much higher debt levels were 'sustainable'. However, discussion of household deleveraging in several countries, after the crisis, suggests that a rapidly rising debt level can, but not always, lead to financial and economic instability.

Households, either individually, or in aggregate, can 'over-borrow', and financial institutions can 'over-lend'

to them. A high level of household debt can affect both the financial system and the economy in several ways that are explained in this article.

The next section briefly recaps household debt developments in New Zealand during the past 15 years or so. Section 3 discusses the way household debt can affect the economy, focusing on the way that highly indebted households tend to pare back consumption more than their less-indebted peers during periods of stress. The impact on financial intermediaries from direct losses associated with lending to households and other channels is also examined. In section 4, the question of assessing when households have over-borrowed, or when debt dynamics are becoming unsustainable, is discussed. Good micro-level data play an important role in this regard, by revealing information about the distribution of debt, and debt servicing capacity across different types of households. The final section briefly summarises

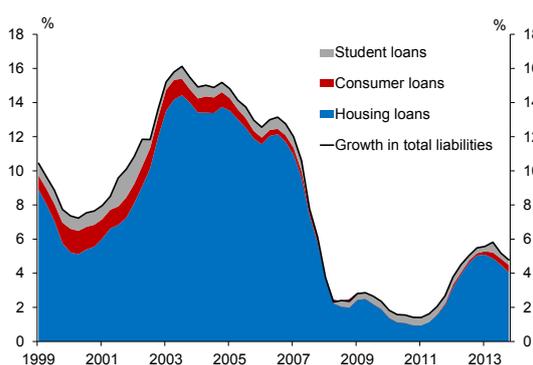
¹ The author would like to thank Michael Reddell and other colleagues at the Reserve Bank for their helpful comments.

how policymakers might respond to vulnerabilities in the financial system linked to household debt.

2 Explaining the rise in household debt in New Zealand – a recap

The level of household debt in New Zealand increased substantially from the early 2000s until about 2007. The rise in household liabilities over this period took the form of housing-related debt (figure 1), the counterpart of an equally strong rise in the value of housing assets. The growth in household debt subsequently slowed in response to a fall in house prices, a tightening in credit criteria by lenders, and more caution by households which was tied to growing uncertainty and weakening household income growth. Since late 2011, however, rising house prices, easing credit conditions (including an increase in lending at high loan-to-value ratios during 2012-13) and low interest rates have contributed to a pick-up in the growth rate of household debt (albeit to a rate much lower than the average during the last financial cycle).² The introduction of restrictions on new high loan-to-value ratio (LVR) lending since October 2013 has generally tempered the growth in household debt, and lending to borrowers with less than 20 percent equity in particular.

Figure 1
Annual growth in household debt



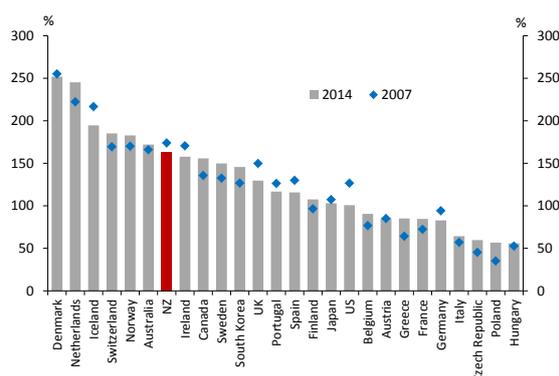
Source: RBNZ Household assets and liabilities (HHAL).

Household debt peaked at 175 percent of disposable income in 2008, and was 164 percent in

² Note, the observed low rate of household net credit growth since the GFC (relative to pre-crisis) shown in figure 1 is also influenced by existing mortgage holders taking advantage of low interest rates to make voluntary principal repayments. This behaviour masks, to some extent, what is happening in the underlying gross household credit flows.

September 2014.³ Cross-country comparisons of debt levels (figure 2) need to be treated with caution, given a variety of measurement issues and different institutional features. That said, the rise in household debt in New Zealand over the last cycle was not exceptional compared to other countries (Hunt, 2014).

Figure 2
Household debt-to-disposable income ratio – by country



Source: BIS, Central Bank of Iceland, Haver, RBNZ.

Note: Household debt-to-income series for Ireland only available since 2002. See Hunt (2014) for some of the methodological issues involved in cross-country comparisons of household debt.

The rise in household indebtedness across countries in the lead-up to the GFC can be ascribed to several factors, including financial innovation, loosening credit standards, falling borrowing costs and rising house prices (Hunt, 2014). In New Zealand, house prices were a key factor driving the increase in debt to historically unprecedented levels. Wolken and Price (2015) in a forthcoming *Analytical Note*, model the rise in the debt-to-income ratio, and confirm the importance of house prices in driving the change in the debt ratio over time.

While the run-up in debt before the crisis was associated with strong credit growth, in the wake of the crisis credit growth has been modest. However, sustained high house prices have meant that new buyers are

³ In late March 2015 the Reserve Bank will be releasing new household assets and liabilities data, which use a (narrower) Statistics New Zealand *System of National Accounts* definition of 'households'. Under that definition, debt estimated to have been taken on by households to finance unincorporated businesses (residential rental properties and other businesses) will not be included in the household liabilities aggregate. The assets of those businesses will also not be included in household assets, only the net equity that household hold in the businesses.

borrowing a lot to finance a house. High house prices – and so the need for large mortgages – are now being sustained by very low interest rates, in turn, driven by high global savings, and by two demographic factors. One is the high savings of the baby boom generation who are beginning to retire, and the other is the recent surge in immigration. All three of these factors are transitory, suggesting that current high house prices (relative to income) are unlikely to be sustained indefinitely.

3 High household debt and the economy

3.1 Debt and household balance sheet vulnerabilities

Households take on debt for several reasons – to buy a house, to support other consumption, or to finance other investment. In deciding to borrow, households make assumptions about their ability to repay the loan over its lifetime. Their ability to pay is linked to their employment and income prospects, interest rates and future house prices. In some cases, a household's assumptions might be reasonable, but circumstances might develop in such a way as to undermine their ability to meet financial obligations. In other cases, the decision to borrow might be based on unrealistic assumptions about future house prices or borrowing costs, for example.

In both of these circumstances, households can become 'over-indebted'. As D'Alessio and Iezzi (2013) argue, over-indebtedness might be due to major unexpected events (e.g. a decline in income, illness, unforeseen expenses, rising debt costs, or changes in family structure). A second factor could be financial imprudence that might be linked to inadequate financial literacy on the one hand, and the opaqueness of the terms and conditions under which households borrow on the other. Honohan (2014), reflecting on why many Irish households found themselves in distress following the sharp correction in house prices during the GFC, concludes that financial literacy might be too low 'to ensure safe financial decisions in an increasingly complex world' (p. 2). Imprudence can be reinforced by psychological biases and mental shortcuts that affect borrowing decisions. These include overconfidence and a systematic

underestimation of the probability of things going wrong.⁴ Third, poverty might lead to certain households taking on debt simply to make ends meet. Over-indebtedness itself might create a demand for further borrowing.

While it is not obvious that there is an 'optimal' level of debt for individual households, or for the sector as a whole, higher levels of debt (relative to income) imply, all else equal, that households become more exposed to developments that undermine their ability to meet debt obligations.

In addition, declining house prices can have harmful effects in an environment of high household debt, potentially constraining further a borrower's ability to 'extract' equity from their home. The mechanism here is a binding 'collateral' constraint effect – the impact on the ability to borrow related to changes in the value of the property secured against the loan. When house prices drop, so too does the level of equity. Households with high LVRs are more likely to find their equity wiped out when there is a large decline in house prices.

Household distress won't necessarily get worse when house prices decline. Financial stress is primarily a function of a household's ability to service debt (determined by interest rates and income rather than value of house *per se*). However, a significant decline in house prices is likely to be closely related to pressures on debt servicing capacity – that is, falls in house prices typically occur during recessions, when unemployment rises. The impact of declining house prices on the probability of negative equity will depend, among other things, on the LVR at origination, the age of mortgage, the speed of principal repayment and the extent of the house price decline.

In addition to being more exposed to shocks due to high debt levels, households can also be exposed for longer when there is low inflation (DeBelle, 2004). When inflation is low the real value of debt erodes slowly, and for a given household, the debt-to-income and debt servicing ratio (principal and interest payments relative to income) also decline more slowly over the life of the mortgage. Households could be surprised in later years by the share

⁴ Financial imprudence can also be mirrored in the behaviour of financial intermediaries who 'over-lend' to borrowers, for a variety of reasons including pro-cyclical risk-taking, 'moral hazard' tied to the assumption of an implicit guarantee from government (i.e. bailout), or inadequate prudential supervision.

of income still required to service debt. With debt service therefore persisting as a significant share of income for a longer time, it is more likely that the average household will experience a period of unemployment during that time, all else equal.

It is possible, for example, that some younger households buying property today believe that house prices reliably rise (even relative to incomes), based on their parents' experience as homeowners. They may also be comfortable with a large share of income being used to repay the mortgage, because their parents' generation, which faced interest rates as high as 20 percent or more, also experienced that situation. However, for that generation, high inflation during the 1980s meant that mortgage payments quickly diminished relative to nominal income. Assumptions based on a relatively short historical experience can lead to the burden associated with mortgage debt being underestimated.

The distribution of debt across different types of borrowers will influence how some of these factors play out (see section 4).

3.2 Rising debt and the business cycle

Rising household indebtedness implies that consumption is likely to be more sensitive to changes in households' expectations about income, house prices and interest rates. According to cross-country research by the OECD (2013) and Sutherland *et al* (2012), when household debt is high, consumption volatility increases. The link between indebtedness and consumption reflects the non-random distribution of debtors and creditors within any given economy. Highly indebted borrowers tend to have a higher tendency to consume out of wealth and current income than other households (and are often the most optimistic households during boom periods, as evidenced by their rising debt levels). A surprise fall in income or in the value of housing equity can prompt these households to pare back consumption to either restore wealth or maintain their debt service obligations (Sveriges Riksbank, 2014).

In the US context, Dynan (2012) describes the process of household balance sheet consolidation since the GFC, which coincided with a significant decline in consumption by many households. She

notes that homeowners in US states that had the most pronounced housing booms were more indebted, and that the households in those states had a larger decline in spending than their less leveraged counterparts.⁵ Similarly, Mian and Sufi (2014 and 2010), using US county-level data, found that highly indebted households reduced consumption more than less-indebted households, as the former households' net wealth declined more due to the correction in house prices. In related research, Mian, Rao and Sufi (2013) use micro-level data to examine differences in the marginal propensity to consume (MPC) out of wealth among highly indebted borrowers. The authors found that households with a high LVR had a marginal propensity to consume out of housing wealth three times higher than less indebted households. The distribution of wealth losses across different types of households helps explain patterns in total household consumption, which all else equal, will influence the severity of any economic downturn.

Outside the US, Danish researchers using micro-data have also looked at the relationship between indebtedness before the crisis (as proxied by LVRs) and subsequent consumption patterns during the crisis (Andersen, Duus and Jensen, 2014a&b). From a sample of 800,000 households, the authors established a negative relationship between LVRs above 40 percent and consumption. Bunn and Rostom (2014) echo these findings in the UK. Highly indebted UK households cut spending more significantly. Using survey data, Bunn and Rostom suggest that such spending cuts were in response to growing concerns about their ability to make future repayments, together with tighter credit conditions – both consistent with high debt being the proximate cause of the reduced spending.

At a macroeconomic level, the OECD has investigated the cyclical properties of 'low debt' and 'high debt' business cycles based on a cross-country dataset of business cycles since 1980.⁶ In general, high debt cycles, which may involve household, non-financial corporate and government debt, involve longer expansions, but more severe recessions. Household debt seems to play

⁵ Somewhat relatedly, Gartner (2013) finds that during the Great Depression US states with higher initial household debt-to-income ratios recovered considerably more slowly.

⁶ See also Merola (2012); Sutherland *et al* (2012); and Ziemann (2012).

a prominent role. When household debt rises above trend by 10 percent of GDP, there is a 40 percent probability of the economy entering recession in the following year, compared with a 10 percent probability when household debt is at its trend (OECD 2013, p. 5). This research points to the importance of changes in household debt, as opposed to a high level of debt *per se*, in shaping the business cycle.

Elsewhere, the IMF (2012) finds that housing busts that are preceded by large increases in household debt have been associated with significantly larger falls in economic activity, defined both in terms of consumption and output. This insight is not simply a reflection of falling house prices, but rather a combination of the pre-bust rise in debt levels and the subsequent house price correction. The insights presented in this section echo a more general finding from the crisis literature that recessions preceded by economy-wide private sector credit booms result in deeper and more protracted economic downturns.

How might a high level of debt affect long-run growth? Using a dataset for 18 OECD countries covering the period 1980-2010, Cecchetti, Mohanty and Zampolli (2011) suggest that household debt levels above 85 percent of GDP might begin to undermine average or long-run growth (although the authors readily admit this threshold is likely to be very imprecisely estimated, and as already noted cross-country comparisons are complicated by significant institutional differences). For comparison, the level of household debt-to-GDP in New Zealand is currently 95 percent, down from a peak of just over 100 percent in 2009.

3.3 Rising debt and financial system stress

Some of the explanation for the relationship between credit booms, including housing credit, and the subsequent severity of the downturn is related to distress experienced by financial intermediaries. For example, loan losses on lending to households might make banks more risk adverse and less willing and/or able to fund otherwise credit-worthy lending. Also, a high level of losses and widespread household bankruptcy can undermine a key part of banks' credit assessment process – the knowledge about a set of borrowers built up during the course of a

borrower-lender relationship. This can further impede the flow of new credit.

Problem loans resulting from housing lending increased sharply in several countries during the GFC, reflecting the general run-up in household debt and house prices during the boom, and the combination of the subsequent sharp correction in the collateral value of housing during the downturn and the marked rise in unemployment. The severity of problem loans and subsequent losses can be partly explained by the unexpectedly large shock to bank portfolios, together with the loosening in lending standards that supported the growth in household debt in the first place, and inadequate prudential regulation in some cases.

Direct loan losses on housing lending are an important potential transmission channel – although other household lending can occasionally cause stress as in the case of credit card lending in South Korea in the early 2000s. Kragh-Sorenson and Solheim (2014a) refer to losses on household lending as the 'direct channel'. On their own, however, rising household defaults don't usually appear to be large enough to threaten banking system solvency. Residential mortgage loans are collateralised (on the property itself), and in several jurisdictions large costs are associated with personal bankruptcy, which reduces the incentives for households to default on their debt obligations in times of financial hardship. At least two other potentially important channels are tied to high and rising household debt: losses from consumption-sensitive sectors of the economy (the 'demand' channel in Kragh-Sorenson and Solheim's terminology) and lending to commercial property and construction sectors (the 'property' channel). The demand channel relates to the link between household balance sheet distress and consumption discussed in the previous section. Firms that have borrowed to fund their operations may struggle to meet their debt obligations in the face of a sharp decline in consumer demand and lower profitability.⁷

The property channel highlights the close relationship between credit-fuelled housing booms, residential building construction and commercial property

⁷ The limited liability nature of most firms implies a relatively greater chance of bankruptcy relative to households defaulting on their obligations, as the owners are only liable for their own equity in the event of default.

cycles. Banks can face the prospect of direct losses on lending to construction firms that build residential houses and lending to developers in the event of a house price correction. Moreover, residential and commercial property (office, retail and industrial space) can compete for the same inputs (i.e. land and building work), so a housing market correction following a debt-fuelled boom may directly affect commercial property prices. In addition, commercial property prices will be indirectly affected through a more generalised slowdown in economic activity. Banks will therefore be exposed on loans and other exposures to commercial property developers and investors.

It is difficult to find good data that neatly separate household-related banking system losses across countries into the three channels described above. In the Norwegian context, Kragh-Sorenson and Solheim (2014a) note that the risk of large losses from the direct (demand) channel is small, while the potential for losses via the property channel has increased over time. In other work, the authors observe that, the US subprime housing crisis aside, banking crises have typically been driven by corporate loan losses, including on commercial property, rather than direct losses on household lending *per se* (Kragh-Sorenson and Solheim, 2014b). During the Nordic banking crises of the early 1990s, for example, direct loan losses on housing lending tended to be lower than those on other lending (see also Lindquist, 2012).

In the recent Spanish and Irish cases, a rapid increase in household debt coincided with an equally rapid growth in the wider property and construction market, with the latter mainly responsible for the large losses incurred by the banking system. Woods and O'Connell (2012) highlight the role of property lending in the propagation of the crisis and stress in the banking system, by comparing the recent, particularly severe, Irish experience with that of the Nordic countries in the early 1990s, and Japan during the 1990s.

Lenders' liabilities can matter too. Lending to households that is effectively financed by a reliance on wholesale market funding, for example, is subject to 'funding-liquidity' risks – the risk that such funding becomes too expensive or dries up in times of market stress. Moreover, borrowing in global markets exposes

banks to exchange rate risk, or to developments in the basis swap markets that allow banks to hedge such borrowing back into domestic currency. Investors may also directly reassess their appetite for holding bank-issued debt if they consider that developments in any sector might undermine bank solvency – for example, a rising level of household debt and/or unsustainable house price growth.⁸ The indebtedness of the household sector is often cited as a risk by international Rating Agencies in their assessment of the New Zealand economy and financial system.⁹

During 2008-09, offshore wholesale funding to the New Zealand banking system dried up due to an extreme period of stress in global markets. While unrelated to developments in the New Zealand housing market, this dislocation in global markets affected the ability of the New Zealand banking system to fund lending to the household sector during this period.

4 Assessing household vulnerability – the use of micro-level data

4.1 Assessing 'over-indebtedness' – an overview

The previous section highlighted some of the key channels through which high and rapidly rising household debt could affect the financial system and wider economy. In certain circumstances then, individual households or the sector as a whole can 'over-borrow'; apparently sustainable debt can become 'unsustainable'. These situations are most clearly revealed *ex post*, in situations of widespread household distress that occurred during the GFC in several countries. But assessing vulnerability of parts or the whole sector *ex ante*, before risks materialise, is more difficult. For example, at 164 percent of income, is the current level of household debt in New Zealand 'too high' or (un)sustainable?

One approach might be to compare household debt across countries and determine some threshold that constitutes debt being 'too high'. But cross-country

⁸ For example, Swedish policymakers have expressed concern that developments in the household sector, associated with rising debt levels, could potentially threaten Swedish bank funding via the use of covered bonds (which use residential mortgages as collateral). See Jocknick (2014).

⁹ See Fitch's recent outlook for the New Zealand banking system, for example (FitchRatings, 2015).

comparisons are fraught with various methodological issues associated with defining and measuring household debt. More importantly, the level of household debt can (quite rationally and sustainably) vary across countries for a variety of reasons including: the way housing markets are organised and operate in different jurisdictions; the level of public wealth and generosity of public welfare schemes; the level of private financial wealth, and; differences in tax regimes that can influence mortgage repayment speed, or household decisions to invest in owner-occupier housing rather than to rent.¹⁰ Households in countries with a 'high' level of debt might not necessarily be any more vulnerable than those with a lower measured level of indebtedness. US households, for example, while increasing debt rapidly throughout the last cycle, were not particularly indebted by international comparison (refer back to figure 2). Finally, household sector developments across countries can be driven by common global factors (falling global interest rates for example), further complicating any cross-country-based assessment of what a sustainable level of household debt might be.

Another approach using aggregate household data might be to determine some threshold based on a simple historical average or more sophisticated statistical techniques, and use this to determine an 'equilibrium' level of household debt. In the European (Cuerpo *et al* 2013) and US (Albuquerque, Bauman and Krustev, 2014) contexts, this approach is used to assess how much more deleveraging might be required to return household debt levels to equilibrium or more sustainable levels. But this statistical approach using aggregate data fails to give weight to country-specific factors driving any underlying sustainable debt, nor does it take into account how debt levels are distributed across different types of borrowers and how this distribution changes over time.

4.2 Assessing 'over-indebtedness' – the micro-data lens

Aggregate data conceals substantial variation in the distribution of debt across individual household types. How debt is distributed across the household sector has

implications for how sensitive the economy is to shocks in income, interest rates and house prices, through the channels described in section 3.3. Ideally we would like to be able to understand the concentration of debt across borrower types such as high income versus low income, owner-occupier versus investor and by age group. Doing so would help us do better stress tests, one of the key tools for shedding light on the vulnerability and the sustainability of debt across the household sector.

There is no single definition of 'over-indebtedness' or sustainable debt based on this micro-level approach. Nevertheless, in the literature it is intimately linked to the idea that households are having difficulty meeting their financial commitments (Central Bank of Chile, 2012). This assessment can be based on a set of objective indicators that considers debt levels and debt service metrics (for different types of households) in relation to some measure of income, where a threshold of over-indebtedness or vulnerability is defined – for example, the household is spending more than 25 percent of gross monthly income servicing consumer debt, or more than 50 percent on total debt obligations. There are also subjective indicators, where households are surveyed and asked whether meeting their debt obligations imposes a heavy burden.

Obviously subjective indicators are just that – subjective, and difficult to compare across households, let alone across countries. Objective measures come with problems too – any thresholds are potentially arbitrary. In addition, some objective measures might ignore households who still manage to meet their debt obligations, but would be very vulnerable to a shock. This is why the assessment of over-indebtedness is often tied to some form of stress testing of the sector – examining how the household sector in aggregate, or across different types of borrowers, can cope with some sort of shock or combination of shocks.

Post-GFC, micro-data sets have increased in prominence as a tool for assessing household sector and financial system vulnerability. One example is the new Eurosystem Household Finance and Consumption Network (EHFCN) which has developed a harmonised household-level survey for 15 euro-area countries. The first wave of results was released in 2013 based on a survey of 62,000 households (EHFCN, 2013). The aim

¹⁰ For discussion of the factors that might explain differences in household debt levels across countries see: Coletta, De Bonis and Piermattei (2014); Isaksen *et al* (2011); Reiakvam and Solheim (2013), and; Sveriges Riksbank (2014b).

of the survey is to understand how various households (indebted, low wealth, credit-constrained, unemployed etc.) respond to shocks and how this behaviour depends on structure of their balance sheets.¹¹

4.3 Assessing household sector vulnerabilities in New Zealand

Micro-level household data have not been extensively used to examine the New Zealand household sector's vulnerability because of data limitations. Indeed, the Savings Working Group (2011) argued that to provide a complete picture of household saving and debt in New Zealand, these issues have to be examined from the standpoint of households by age and income (p. 9).

That said, Henderson and Scobie (2009) used the results of the Survey of Family, Income and Employment (SoFIE) – a longitudinal study which ran between 2002 and 2010 and that tracked 11,500 households – to define 'at risk' households (households with debt servicing costs greater than 30 percent of gross income and negative net wealth). The authors broke the analysis down by income and age group, and also into households that included a couple ('coupled households') and those that did not ('nonpartnered households'). The proportion of 'at risk' coupled households had increased only modestly from 2003 to 2008, from 0.8 to 1.1 percent. Non-partnered household results were skewed by the role that student loans played for younger borrowers. A simple stress testing exercise was also performed associated with a 20 percent decline in house prices and an increase in interest rates. The proportion of coupled households at risk increased to 1.9 percent in this scenario.

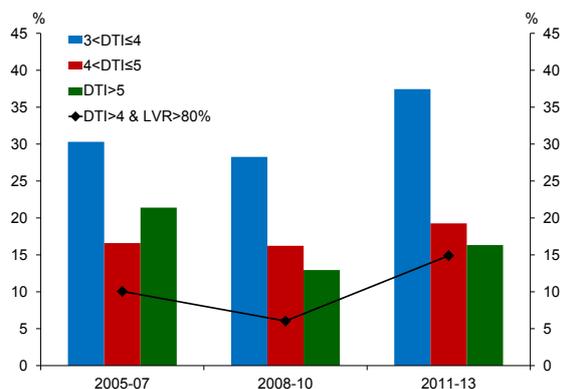
The Reserve Bank's work with micro-level data has relied on Statistics New Zealand's *Household Economic Survey* (HES) data (see box C of the November 2011 FSR; Dunstan and Skilling, 2015, and; Kida, 2009).¹²

¹¹ For other country-specific examples using micro-data, see: Denmark (Andersen and Duus, 2013); Italy (D'Alessio and Iezzi, 2013); Norway (Lindquist *et al*, 2014; Lindquist, 2012; Solheim and Vatne, 2013); Sweden (Skingsley, 2014; Sveriges Riksbank 2014b; Winstrand and Olcer, 2014); and the UK (Anderson *et al*, 2014).

¹² As a micro-data window into household vulnerability and questions of debt sustainability, HES suffers from a number of limitations. For example, the data only relates to owner-occupier housing, and there is no information on unsecured debt. Fortunately, Statistics New Zealand has recently revamped the survey. Future surveys will include a net worth module, undertaken every three years, that will have questions on investment properties and financial assets.

In the most recent update, Dunstan and Skilling (2015) assess how the vulnerability of differing cohorts of new mortgage borrowers has changed over time. The results suggest that the vulnerability attached to the latest cohort of new owner-occupier borrowers, relative to previous cohorts, increased in the period 2011-13. The volume of new lending was materially lower than for the pre-GFC period. However, of those who were borrowing, the proportion of 'vulnerable' owner-occupier borrowers – those with both a high LVR and a high debt-to-income (DTI) ratio – increased (figure 3). This result supports the view that LVR speed limits were appropriate to curtail rising risks to macroeconomic stability.

Figure 3
Debt-to-income multiples



Source: Statistics New Zealand HES, Reserve Bank. Household income is disposable income after-tax, but before interest payments.

5 Addressing household sector risks in the post-GFC environment

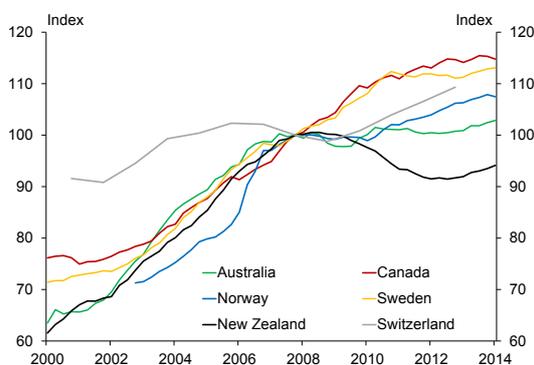
High and rapidly rising levels of household debt led to serious financial system and wider economy problems in several countries during the GFC. In many cases household balance sheet consolidation is continuing as households seek to reduce debt while growth remains weak.

Regulatory frameworks in most countries have been reformed, with the aim of boosting the resilience of the financial system in general, and addressing potential household sector related vulnerabilities in particular. This has included measures to improve the base prudential framework (increased required capital ratios, and higher risk weights on housing loans), together with the

development of a new ‘macro-prudential’ approach to addressing financial system vulnerabilities that evolve over the economic cycle. For many countries, these regulatory initiatives are about preparing the financial system for the next financial cycle and any future build-up in household-specific risks.

In quite a few countries there was no domestic financial crisis and little sustained fall in house prices. Policymakers in several of these economies, including New Zealand, have subsequently become concerned by household sector developments over the past several years – developments underpinned by low interest rates and an easing in lending standards. Household debt levels (figure 4) have started to increase from already high levels, while house prices are growing from a starting point of ‘over-valuation’ (figure 5).

Figure 4
Household debt-to-income ratios – selected countries
(rebased, Q4 2007=100)

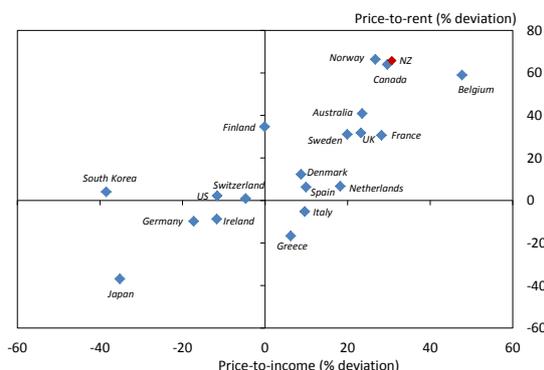


Source: BIS, RBNZ.
Note: Quarterly data except for Switzerland.

The implementation of an LVR speed limit in New Zealand reflected emerging developments in the housing market that if left unchecked, could have threatened future macroeconomic stability. Some other jurisdictions have also used new macro-prudential tools, in combination with improving the existing underlying prudential framework. In addition to LVR restrictions, other measures include: maximum debt servicing-to-income limits, maximum debt-to-income limits, higher risk weights on banks’ housing loans and prudent (or responsible) lending guidelines.¹³

¹³ For empirical work examining the effectiveness of various tools and policies aimed at slowing house price and housing credit growth see Kuttner and Shim (2013).

Figure 5
House price over and under-valuation
(deviation from long run level, 2013)



Source: BIS, Haver, RBNZ.

6 Conclusion

This article has focused on the various channels through which household debt can affect the financial system and broader economy. In this sense, households can ‘over-borrow’, although this is often not apparent in ‘real time’ and excess debt levels can lead to, or aggravate, economic downturns or periods of financial distress.

The relationship between household indebtedness and consumption volatility is important for the macroeconomy, because it means that the behaviour of highly indebted households during periods of financial duress can amplify downturns. While historical evidence suggests losses on household lending are rarely the sole factor in systemic banking crises, housing-related credit booms and busts often occur alongside booms and busts in other sectors such as the (much riskier) construction and commercial property sector. It is also worth noting that, over time, housing loan portfolios have become a larger share of bank lending in many countries, including New Zealand, increasing their potential to play a larger part in future financial crises. Thus household debt is an important area of focus from a financial stability perspective.

Good micro-level household data provide an important window into how debt and debt servicing capacity is distributed across the household sector, and are also helpful for carrying out simple stress-tests of the sector using a range of large, but plausible shocks. New Zealand’s data in this area are improving. Data from the *Household Economic Survey* show a rise in the proportion

of borrowers with a high LVR and high debt-to-income ratio, thereby supporting the view that LVR speed limits have been appropriate to curtail risks to financial stability. The Reserve Bank will continue to develop its framework for analysing household sector risk and vulnerabilities.

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