

Financial Stability Review

APRIL 2019



RESERVE BANK OF AUSTRALIA

Financial Stability Review

APRIL 2019

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Overview

Global economic growth has slowed and asset prices remain elevated

Growth in the major advanced economies, and the global economy more broadly, moderated in the second half of 2018 and into 2019.

Growth forecasts have also been revised down and there are risks of a sharper downturn. This follows a period of above-trend growth that had supported financial stability as borrowers were well placed to meet their debt obligations and banks' profits helped them increase their capital levels. Some asset prices declined sharply late last year but have since recovered. Asset prices generally remain at high levels, underpinned by low long-term interest rates. Long-term rates, after earlier rising with the stronger growth, have declined as expectations for the US Federal Reserve's path for monetary policy have been pared back given the weaker growth outlook. Lower interest rates contributed to an easing of pressures in emerging market economies. Despite the weaker outlook, compensation for taking risk remains low in many financial markets.

Domestic economic growth has also eased and the housing market remains weak

Domestic economic conditions remain broadly supportive of financial stability. The unemployment rate has remained around 5 per cent since the previous *Review* and corporate profit growth has also been strong. However, GDP growth in Australia also slowed in the second half

of 2018. In particular, consumption growth eased and the outlook for consumption is uncertain.

Conditions in the housing market remain weak. Nationally, housing prices are 7 per cent below their late 2017 peak, although they are still almost 30 per cent higher since the start of 2013. Growth in housing credit was slightly lower over the six months to February than the preceding half year, with investor credit hardly growing at all. Nationally, falling housing prices have been driven by weaker demand and increased housing supply. The tightening in the supply of housing credit from improved lending standards has played a smaller part. Importantly, these more rigorous lending standards have seen the quality of new loans improve in recent years.

Measures of financial stress among households are generally low and households remain well placed to service their debt given low unemployment, low interest rates and improvements to lending standards. However, there has been an increase in housing loan arrears rates. The increase in arrears has been largest in Western Australia, where the decline in mining-related activity has seen housing prices fall for nearly five years and unemployment increase.

Corporate debt remains moderate compared with businesses' income and assets, and businesses are well placed to meet their debt obligations given the strong profit growth. However, commercial property valuations have continued to rise, reflecting ongoing strong investor demand and low interest rates, and rental yields are low, despite low vacancy rates in some locations.

There are risks for Australian financial stability

External

Australia's integration with global trade and financial markets means that external dislocations can be quickly transmitted to domestic economic and financial conditions. Vulnerabilities in key trading partners and global financial markets remain elevated and the likelihood of an event adversely impacting those vulnerabilities has seemingly increased. The weaker global growth outlook includes greater downside risks. Trade tensions could escalate and, in China, the delicate balance being struck between stimulating a slowing economy and addressing financial stability risks could falter. Given global asset prices remain high, there would likely be widespread price falls if either heightened risk aversion or expectations of higher inflation were to see interest rates rise sharply. In some European and emerging market economies, various underlying banking, sovereign debt and structural vulnerabilities remain. These will be exacerbated by slower growth although the easing in global financing conditions and authorities' actions have abated some risks.

High household debt

While housing credit growth in Australia has slowed, household debt is still at a high level. Most households appear to be in a good position to service their debt. Many households have accumulated prepayment buffers, which can compensate for temporary loss of income, although the rate of ongoing excess mortgage payments has slowed. Most households have enough equity in their property such that even much larger price falls than seen to date would still leave the value of their homes greater than their debt. However, high household debt does increase the vulnerability of households and

the financial sector to a sharp deterioration in economic conditions. Indebted households could curtail consumption in response to income shocks or uncertainty, which would compound economic weakness and so indirectly affect the financial system.

The slowing housing market

Housing prices have fallen further since the previous *Review*. The falls follow years of strong price growth that had taken prices to high levels. The ongoing large increase in the supply of apartments, particularly in Sydney, will put further downward pressure on prices (see 'Box C: Risks in High-density Apartment Markets'). It is unusual, in Australia and internationally, for property prices to be falling while interest rates and unemployment are low. The prevalence of negative housing equity is low, but substantially larger price falls would see a large share of households' housing equity eroded or even turn negative (see 'Box B: Housing Price Falls and Negative Equity'). This would increase the risk of costly defaults for lenders if unemployment were to rise. Further price falls could also increase lenders' perceptions of the riskiness of housing lending, compounding the somewhat tighter availability of credit seen to date. Greatly reduced credit supply would be detrimental to the economy and so financial stability.

Bank culture and operational risk

The Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry highlighted deficiencies around culture and governance in the financial system. The final report laid out a path for fairer financial intermediation, which will contribute to a more resilient financial system. But the large degree of change required by some institutions raises the significant challenge of managing the implementation in an effective and timely

manner. Further, it raises the risk that the process of addressing these challenges distracts banks from managing other risks.

Australian financial entities face key risks from their large, complex and interconnected information technology systems. These are subject to disruption for a range of reasons, not least of which is cyber attacks. Such attacks are a constant threat to the financial sector and, while a systemic event is unlikely, it could have severe consequences for the financial system.

But the financial system has become more resilient

There have been significant improvements in banks' housing lending standards in recent years. As older loans are repaid and a larger share of banks' loan portfolios has been written under the new tighter lending standards, the average quality of the banks' housing loans will continue to improve. More generally, in the decade since the onset of the financial crisis, significant changes in regulations and in financial institutions' own policies and practices have made them more resilient. Banks now have much higher levels of capital, more liquid assets and more stable funding structures. Stress tests of the banks indicate that they have sufficient capital to withstand double-digit unemployment rates and housing price falls exceeding 30 per cent. These tests are simulated exercises, but the banks have also experienced an actual, although smaller, stress event in Western Australia, where housing prices have fallen almost 20 per cent and the unemployment rate has risen 3 percentage points. Housing loan arrears rates in Western Australia have been increasing but are currently still less than 2 per cent. Overall, the financial system appears much better placed to respond to a range of challenges than it was a decade ago. ✎

1. The Global Financial Environment

International financial developments can affect Australia through financial and economic links. Consequently, this *Review* pays particular attention to potential risks emanating from economies that have significant trade or financial links with Australia, both direct and indirect. These include the United States, Europe, China, Japan and New Zealand.

The global risk outlook has been influenced by factors pulling in different directions since the previous *Review*. Vulnerabilities in international financial systems remain elevated although some have eased slightly. However, global economic growth has slowed and downside risks to activity seem to have risen. This increases the likelihood of a sharp decline in growth which could be detrimental to financial stability. Banking systems overall have become more resilient since the financial crisis and better able to weather a major downturn. Nonetheless, European banking systems remain vulnerable to slower growth because of legacy and structural factors that continue to weigh on profitability. Other parts of the global financial system may also still be sensitive to a slowdown, particularly as the level of debt globally is high.

In line with the weaker growth outlook, some risky asset prices fell sharply late last year. However, asset prices have since recovered and generally remain at high levels, supported by very low risk-free interest rates and low compensation for risk. So the risk of a broad-based fall in asset prices remains elevated. Such a fall could lead to financial stress given greater

investor risk-taking in the extended low interest rate, low volatility environment.

Low interest rates, as well as governments' responses to the financial crisis, have underpinned a large rise in global debt over the past decade. High global debt levels leave households, corporates and sovereigns in a range of economies vulnerable to adverse shocks. Sovereign debt levels remain especially high in Europe. While sovereign debt sustainability concerns have eased recently, they could quickly re-escalate. This could undermine financial and economic stability, including by exacerbating banking sector vulnerabilities. Sovereign debt is also increasing in the United States given large budget deficits, despite strong economic conditions. Lending standards in the United States have generally eased and leverage in the corporate sector has also risen to historically high levels. However, the ratio of corporate debt to GDP remains lower in the United States than in many other economies.

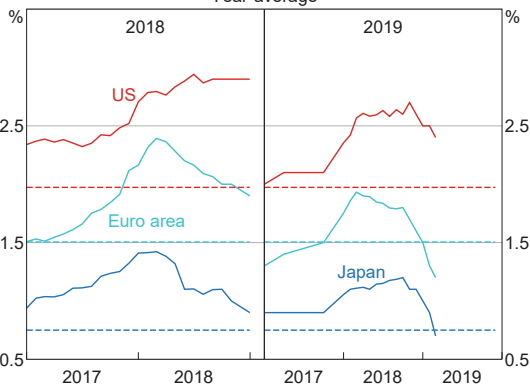
Corporate, and increasingly household, debt in China is high relative to income. A large share has also been financed through opaque non-bank channels. Efforts to reduce financial stability risks continue to gain traction. But the regulatory tightening has restricted the supply of funding and is one factor contributing to the slowdown in growth. So while longer-term vulnerabilities in China are gradually easing, the likelihood of a near-term trigger has seemingly risen. As a result, near-term risks to financial stability appear to have increased.

Vulnerabilities associated with external borrowing and macroeconomic imbalances also persist in some emerging market economies (EMEs). However, sentiment towards EMEs has stabilised over recent months, reducing near-term risks. Some Asian EMEs are exposed to slower growth in China and any further increase in trade tensions.

Global growth has slowed and downside risks have increased ...

Growth remains around trend in many economies, which continues to support global financial stability. However, growth has moderated from its previous strong pace in 2017 and early 2018. Near-term growth forecasts have also been revised down to varying degrees, though to a lesser extent in Australia's main trading partners (Graph 1.1). Downside risks to growth have also increased. These include the delicate balance between sustaining economic and financial stability in China, ongoing trade tensions, and political uncertainties in Europe. The realisation of downside risks to growth could undermine global financial stability, including by reducing the capacity of highly leveraged borrowers to service their debts.

Graph 1.1
Evolution of GDP Forecasts*
Year-average

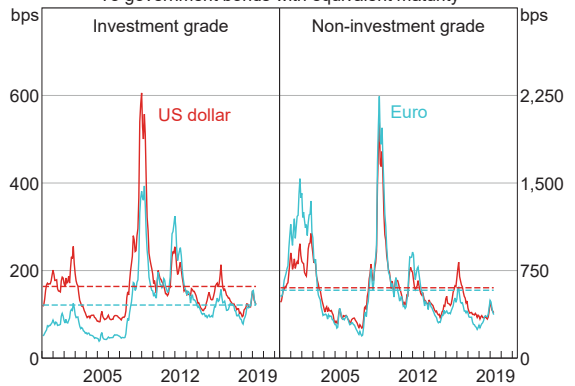


* Dashed lines represent the average estimates of potential growth for 2018–19
Sources: Consensus Economics; national sources

... yet compensation for risk remains low

In line with these developments, the compensation that investors require for bearing risk rose late last year. However, risk premiums have declined in recent months alongside central bank signals that monetary policy will be more accommodative than earlier anticipated. Credit spreads generally remain below their historical averages, especially for non-investment grade debt (Graph 1.2).

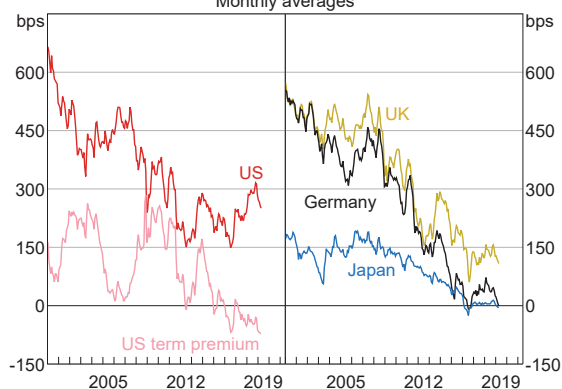
Graph 1.2
Corporate Bond Spreads*
To government bonds with equivalent maturity



* Dashed lines represent averages
Sources: ICE Data is used with permission; RBA

Government bond yields in major advanced economies also remain low, and have declined over the past six months (Graph 1.3). Recent falls are consistent with the downward revisions to forecasts for global growth, inflation and policy interest rates. Term premiums remain historically low, suggesting that investors are still willing to accept minimal compensation for bearing the risk of changes to the expected path of policy rates, inflation and economic growth. Low government bond yields continue to underpin high prices for many assets, because these risk-free rates are central to the valuation of assets.

Graph 1.3
10-year Government Bond Yields
 Monthly averages



Sources: Bloomberg; RBA

The prices of some assets – particularly bonds – are vulnerable to a destabilising correction if risk-free rates and risk premiums rise from historically low levels. Possible triggers include higher expected inflation, which would push up risk-free rates, or a spike in risk premiums because of a negative growth shock or geopolitical event.

Investors have generally been taking on more risk in the low interest rate environment, leaving them more exposed to asset repricing. In particular, some investors have moved into lower-rated, illiquid or longer duration assets. A notable example of this has been investors' increased willingness to hold BBB-rated bonds earning low interest rates. At the same time, the covenants attached to speculative-grade corporate loans in North America, Europe and Asia have been loosening. The average duration of outstanding bonds has also risen in many markets since the early 2000s, which reduces refinancing risk for borrowers but increases interest rate risk for investors.¹

Asset price falls could be exacerbated by procyclical investor behaviour and changed market characteristics. Bond market liquidity has declined in the post-crisis period. This is partly

because of new regulations that have increased the capital required for providing market-making services (Basel III) and restrictions on proprietary trading by US firms (*Dodd-Frank Act*). Lower liquidity could amplify the price response from any sell-off. Many open-ended bond funds have a liquidity mismatch which could exacerbate price falls if managers need to sell bonds in an illiquid market to meet redemptions. Leverage has also increased for many non-bank entities since the financial crisis. In the United States, hedge fund borrowing rose by 50 per cent between 2015 and mid 2018, and is concentrated in a small number of large funds. Large price falls could force highly leveraged investors to unwind positions with implications for asset markets.

The increased use of algorithmic, or automatic, trading strategies may also amplify price movements. While these strategies can be highly diverse, some have shown a tendency to quickly withdraw liquidity and sell assets into falling markets (but also to quickly inject liquidity as markets recover). Such strategies may have contributed to the growing, though still small and infrequent, number of 'flash events' that have occurred in various financial markets (such as the recent Japanese yen flash event).² To date, flash events have been short-lived and have not threatened financial stability. However, these events are generally not well understood.

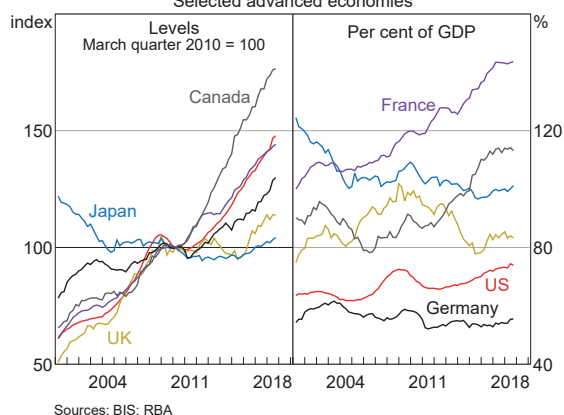
Non-financial corporate debt has been rising strongly in North America

Non-financial corporate debt has grown strongly in a range of advanced economies, particularly in the United States, Canada and France (Graph 1.4). Firms with high debt levels are

¹ For more details on the increase in investor risk taking, see RBA (2018), 'Box A: Low Interest Rates and Asset Price Risk', *Financial Stability Review*, April, pp 15–18.

² For further details on the recent Japanese Yen flash event, see RBA (2019), 'Box B: The Recent Japanese Yen Flash Event', *Statement on Monetary Policy*, February, pp 24–27. Other prominent flash events include the May 2010 equity flash event and the October 2014 US Treasury flash event.

Graph 1.4
Non-financial Corporate Debt
Selected advanced economies



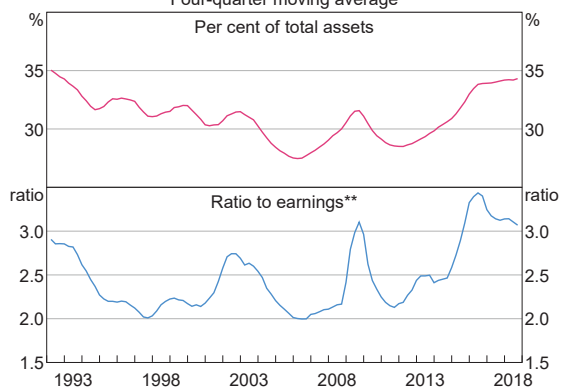
Sources: BIS; RBA

generally less resilient to adverse income, interest rate and funding shocks, and are more likely to respond to these shocks by sharply reducing investment and other spending.

In the United States, corporate debt has risen to be at the high end of its historical range relative to firms' assets and earnings (although corporate debt is still lower than in many other economies relative to GDP; Graph 1.5). Leverage has risen most for riskier borrowers, such as non-investment grade rated firms. Lending standards have eased and lending spreads have generally narrowed. This suggests credit quality has declined at the same time there has been a rise in debt. In line with this, the share of lower-rated debt has risen in the investment grade bond market (Graph 1.6). This increases the risk that ratings downgrades could trigger a burst of selling by investors with constrained mandates.

There are also indications of declining credit quality in the leveraged loan market. Leveraged loans are loans to non-investment grade or already highly levered firms, which are often onsold to institutional investors. Loan covenants – which limit risk-taking by borrowers and provide other protections to investors – have weakened considerably (Graph 1.7). This has

Graph 1.5
US Non-financial Corporates' Gross Debt*
Four-quarter moving average

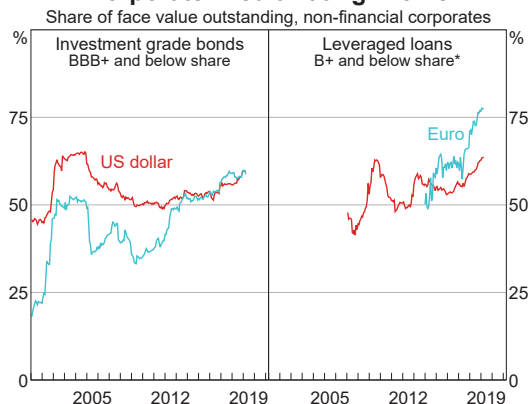


* Based on a sample of publicly listed non-financial corporates in the Russell 3000 index

** Earnings is before interest, tax, depreciation and amortisation

Sources: Bloomberg; RBA

Graph 1.6
Corporate Credit Rating Profile
Share of face value outstanding, non-financial corporates

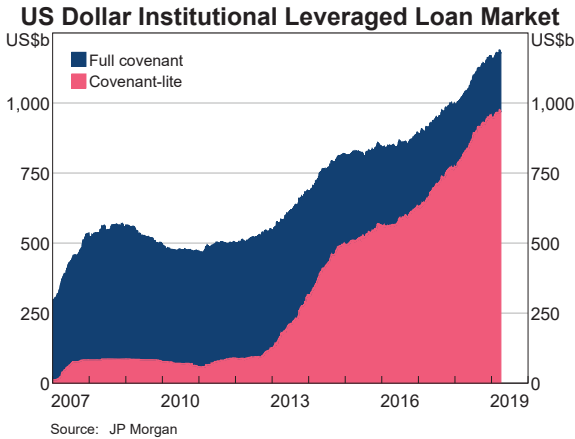


* Excludes non-rated firms

Sources: ICE Data is used with permission; JP Morgan

occurred alongside robust investor demand for higher-yielding and floating-rate assets, which has resulted in record issuance over recent years. There is also some evidence that the share of debt held by firms with very high leverage has increased, and that buffers within borrowers' capital structures have declined. But leveraged loans remain less risky for investors as they are secured variable-rate obligations and senior to unsecured bonds.

Graph 1.7



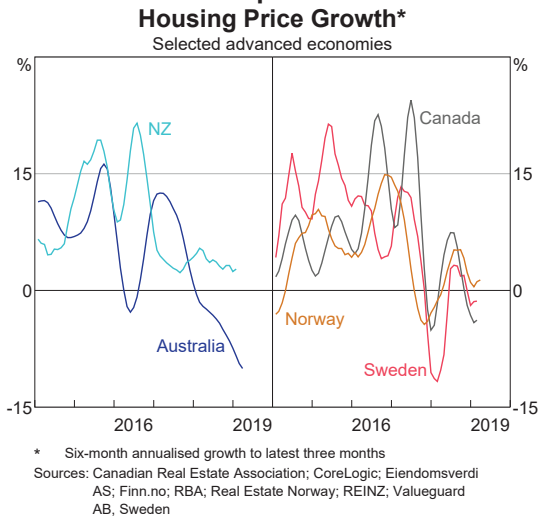
More broadly, assessing the balance of risks from the growth of leveraged loans is difficult. A significant proportion is onsold in collateralised loan obligations (CLOs). Banks often retain some CLOs, but typically only the safest senior CLO tranches, and have relatively limited indirect exposure to CLOs. This contrasts with their much larger exposures to risky securitised products in the lead-up to the financial crisis. Further, the strong presence of non-bank investors, which typically have much lower leverage and more stable funding bases than banks, also reduces the concentration of exposures in the banking system. And, while growth in leveraged loans has been rapid, this has partly reflected investors shifting away from the somewhat riskier high-yield bond market.

However, banks may have larger exposures than can be determined from their disclosures, including through undrawn credit lines and loans to non-bank investors. Banks may also have reduced incentives to maintain strong lending standards for leveraged loans because most are sold to other investors. Funding provided by some non-bank lenders, such as hedge funds, may also prove to be unreliable in the event of a downturn. This is one reason why banks are typically only keeping a small stock of these loans on their balance sheet before selling them.

Growth in household debt and housing prices continues to slow

In a number of smaller advanced economies, growth in household debt has slowed and housing prices have stabilised or fallen following an earlier rapid rise (Graph 1.8). There have been some common elements to the change in momentum, including: weaker foreign investor demand; tighter macroprudential policies to restrain higher-risk lending; reduced expectations about future housing price growth; new housing supply; and, for some, rising interest rates.

Graph 1.8



Highly indebted households are more vulnerable to financial stress, and so can pose a risk to financial stability. Accordingly, slower growth of housing debt and prices, together with higher lending standards, has helped to lessen the build-up of vulnerabilities for borrowers and lenders. In response, macroprudential policies have been eased in some economies, such as New Zealand. However, housing price falls may have resulted in some recent purchasers having negative equity in their homes, increasing both the likelihood that borrowers in arrears will default and the size of ensuing losses. If large falls

in housing prices were to weigh on economic growth, this could impact employment and wages growth, making it harder for some households and businesses to service their debt.

Commercial real estate prices continue to rise

Commercial real estate prices remain high in a number of advanced economies after rising over recent years, including in the United States, Sweden and some euro area countries. Price increases have generally outpaced rents in an environment of very low long-term interest rates. If interest rates were to rise and investors downgrade valuations in light of returns on alternative assets, prices could fall sharply. Banks in some jurisdictions have large exposures to the commercial property sector, which in the past have been a significant source of losses. However, stress test results suggest that higher capital buffers have given banks significant scope to absorb losses on their commercial property and other credit exposures without breaching minimum capital requirements. Tighter lending standards for commercial real estate loans, and weaker loan demand, have also reduced vulnerabilities in the United States recently.

Information technology-related operational risks are significant

Financial institutions and financial market infrastructures (FMIs) are particularly vulnerable to operational risks related to their information technology systems, including cyber attacks. Financial institutions are increasingly reliant on information technologies, interconnected networks and common third-party service providers. Many have legacy systems that may be prone to outages. The sophistication and frequency of cyber attacks is also growing.³

³ For more detail see RBA (2018), 'Box D: Cyber Risk', *Financial Stability Review*, October, pp 55–58.

Cyber attacks could undermine financial stability by causing financial losses, reputational damage and service disruptions – all of which can threaten the operations and viability of individual institutions, their counterparties and FMIs. Attacks that compromise data integrity, availability and/or confidentiality could have particularly large adverse effects. For example, compromised data could impair the ability of counterparties and FMIs to execute or process transactions, which could rapidly raise liquidity and default risks. Financial institutions and regulatory bodies are increasing their focus on monitoring and enhancing cybersecurity. It is particularly difficult to evaluate the scale of this risk as limited information is publicly available on the frequency, severity and nature of attacks.

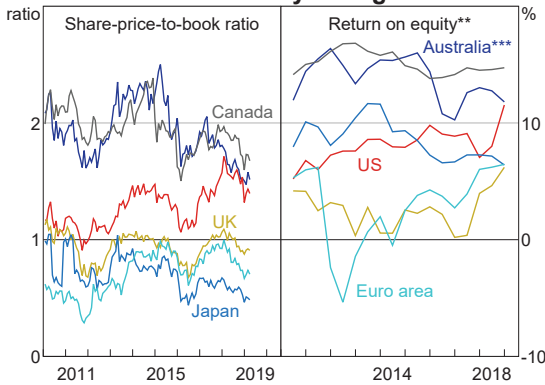
Advanced economy banks have strengthened further, but vulnerabilities remain

The resilience of banking systems in the advanced economies has continued to build. Most banking systems have now implemented the core elements of the Basel III capital and liquidity reforms. Implementation of other post-crisis reforms has also continued to advance. This includes the 'too-big-to-fail' and over-the-counter derivative reforms, as well as the final revisions to the Basel III standards. Profitability and asset quality has been maintained or improved against a backdrop of generally favourable growth.

Banks' funding costs generally remain low, consistent with the low level of risk-free interest rates. However, spreads on bank debt widened significantly late last year (though most of the widening has since reversed). The widening in spreads partly reflected increased concerns about downside risks to economic growth and low liquidity in money markets. Bank share prices globally also fell sharply in late 2018, reflecting

flatter yield curves and the rise in risk premiums more generally, as well as country-specific factors. The falls in share prices were largest in Europe and Japan, where valuations were already very low because of structural challenges to bank profitability (Graph 1.9). In contrast, the share prices of US and Canadian banks fell by less in 2018 and have rebounded more strongly this year. Compared to their European and Japanese peers, large North American banks have relatively high profitability and net interest margins.

Graph 1.9
Advanced Economy – Large Banks*

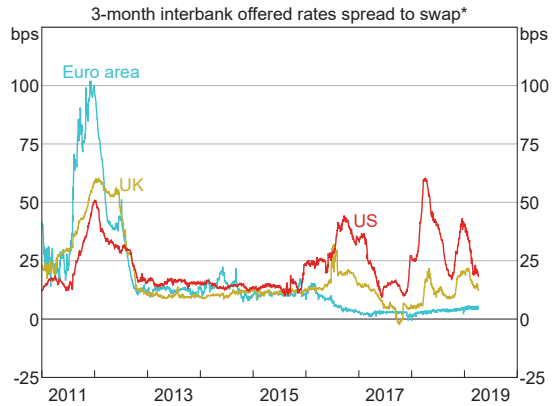


* Number of banks: Australia (4), Canada (6), Euro area (36), Japan (4), United Kingdom (4) and United States (18); reporting periods vary across jurisdictions
 ** Ratio of earnings after tax to shareholders' equity excluding minority interests
 *** Australia's ROE figure for December 2018 is semi-annualised September quarter data
 Sources: APRA; RBA; S&P Global Market Intelligence

Money market spreads have been more volatile than in recent history, especially in the United States (Graph 1.10). This partly reflects both a greater focus on risk management by market participants and enhanced financial regulation. For example, regulations in some jurisdictions can create an incentive for large banks to reduce their balance sheets at year end. This appears to have been contributing to higher spreads through these periods as banks withdraw from the market.

Some non-US banks are especially vulnerable to lower liquidity in US money markets. A sharp

Graph 1.10
Interbank Markets



* LIBOR for the US and UK; EURIBOR for the euro area
 Source: Bloomberg

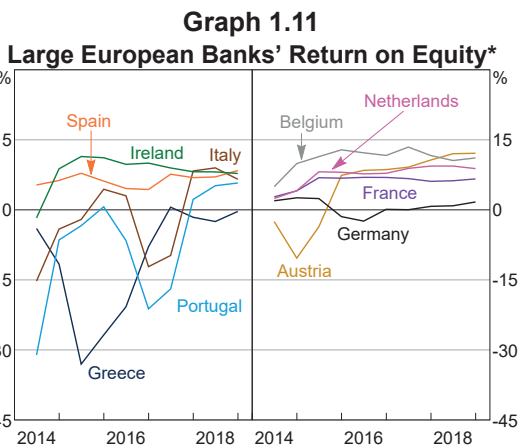
tightening in money market conditions could make it difficult for these banks to obtain short-term funding, exposing US dollar liquidity mismatches. This could force these banks to curtail lending or sell assets to repay maturing funding, potentially transmitting market stress. While these banks sometimes turn to foreign exchange swaps to meet short-term currency needs when money markets tighten, the swap market may not be a reliable alternative in times of stress.

Japanese bank profitability continues to be weighed down by very low interest rates and a fall in loan demand reflecting demographic factors. Large Japanese banks have been able to partially offset low domestic banking profits by increasing their offshore activities, including investing in CLOs. This lending continues to be partly funded from short-term wholesale markets, resulting in foreign currency liquidity risks. By contrast, smaller regional banks have responded to pressure on their profitability by increasing their lending to riskier domestic firms.

Generally better economic conditions in Europe in recent years have helped to boost bank profitability and loss-absorbing capital ratios. Stocks of non-performing loans (NPLs) have declined further in the euro area, mainly through

asset sales, to around €600 billion (down from a peak of around €1 trillion). These developments have led to some improvement in European banks' resilience.

However, European banks still face challenges that raise their vulnerabilities. In particular, profitability remains low in some jurisdictions because of still high levels of NPLs (Graph 1.11). Related to this, there is ongoing uncertainty about the size of eventual credit losses and their impact on banks' capital buffers. Many banks also face structural challenges associated with high cost bases, subdued revenue generation and overcapacity. Some banks might also face higher funding costs over the next few years from issuing more expensive 'bail-inable' liabilities. These challenges are reflected in very low share price valuations, especially in Italy and Germany.

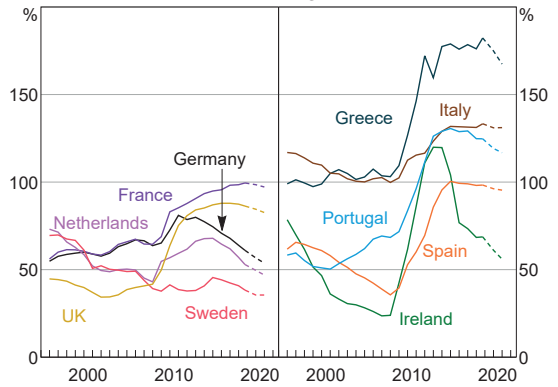


* Ratio of earnings after tax to shareholders' equity excluding minority interests
Source: S&P Global Market Intelligence

Sovereign debt remains a vulnerability in Europe

Some European countries have high sovereign debt levels (Graph 1.12). This raises the risk that debt sustainability concerns will re-emerge. This would increase funding costs and could cause difficulties in rolling over or raising new debt. Sustainability concerns could rise in response to

Graph 1.12
Sovereign Debt*
Per cent to GDP

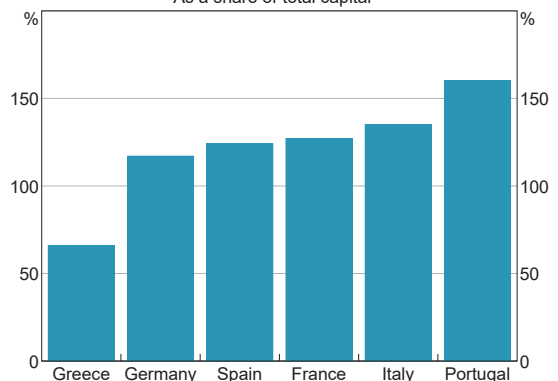


* 2018 data as of 30 September; 2019 and 2020 data are European Commission forecasts
Source: European Commission

a further slowing in global growth or increased political uncertainty. Euro area banks continue to hold large amounts of sovereign debt (Graph 1.13). This could give rise to concerns about bank losses or failure in any sovereign stress, with this feeding back onto the sovereign.

This risk was highlighted in Italy last year. Italian sovereign spreads widened by as much as 200 basis points because of concerns about the fiscal policies and Eurosceptic views of the new government (Graph 1.14). The sustained increase

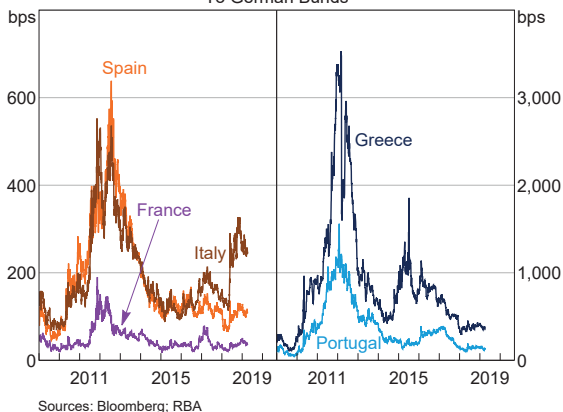
Graph 1.13
Large Banks' Domestic Sovereign Exposures*
As a share of total capital**



* Includes debt securities, loans and advances and derivatives; data as at 30 June 2018

** Includes Tier 1 and Tier 2 capital
Sources: EBA; RBA

Graph 1.14
Euro Area 10-year Government Bond Spreads
 To German Bunds



Sources: Bloomberg; RBA

in Italian sovereign risk has affected the Italian banking sector, including by reducing the value of banks' sovereign debt holdings and increasing the cost of banks' wholesale funding. But to date there has been no contagion to other parts of the euro area.

The United Kingdom's exit from the European Union (Brexit) continues to pose some tail risks to financial stability in Europe. The exit date has been pushed back to allow more time to reach agreement on the withdrawal terms. But there remains the risk that no deal is reached, resulting in a disorderly Brexit. This could have a large negative effect on financial stability and output growth in Europe, particularly in the United Kingdom. The authorities have put in place extensive contingency plans to mitigate the immediate risks to financial stability, and the delayed exit date provides more time to prepare. However, the extent of businesses' preparation is uncertain, and risk of unforeseen challenges remains significant.

The risk to Australia from Brexit seems limited. While Australian investors could suffer some losses on UK and other EU assets, Australian banks have little direct exposure and Australia's trade exposures are small. The main channel to Australia

would be through a generalised tightening in global financial conditions, which is more likely to occur if no deal is reached. While funding costs would rise, Australian banks' access to funding should prove resilient to any disruption to UK and EU funding and derivative markets, provided the disruption does not spread more widely.

Risks in New Zealand have eased

Financial stability risks in New Zealand are of key interest given Australian banks own New Zealand's four major banks. In its latest *Financial Stability Report*, the Reserve Bank of New Zealand (RBNZ) noted that risks had eased but that high household and dairy sector debt continue to be large domestic vulnerabilities.

Growth in housing credit and prices have slowed in New Zealand over the past couple of years and banks have tightened mortgage lending standards. This easing in the build-up of household sector vulnerabilities has allowed the RBNZ to gradually ease restrictions on high loan-to-value ratio lending. Nonetheless, indebted households remain vulnerable to adverse shocks given the prior sharp run-up in housing debt and prices. This is especially so in Auckland, where borrowers are most levered and housing prices have recently fallen after strong growth.

Dairy farm revenues have improved in recent years because of higher dairy prices, allowing indebted farmers to pay down debt. But indebtedness in the dairy sector remains high and concentrated, leaving some farms vulnerable to a downturn in dairy prices or lower production.

The RBNZ, along with the Financial Markets Authority (FMA), have concluded reviews into banking and life insurance culture and conduct. The reviews did not find widespread conduct issues in banks or life insurers, but did identify weaknesses in the governance and management of conduct risks.

The RBNZ is consulting on proposals to increase capital requirements for New Zealand banks as part of a broader review of bank capital. The main proposal would increase the required Tier 1 capital ratio to 16 per cent of risk weighted assets for systemically important domestic banks (up from 8½ per cent).

Vulnerabilities are being addressed in China, but tighter financial conditions and slowing growth are challenging

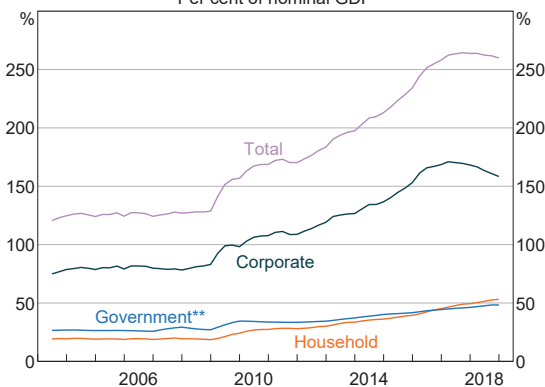
Authorities continue to make progress in addressing the considerable financial vulnerabilities in China. Following reforms and policy actions in recent years, total debt has stabilised relative to GDP (Graph 1.15). The activities of non-bank financial institutions (NBFIs) have also been curtailed. However, slowing economic growth and reduced credit supply from NBFIs will make it harder for firms to service their debt and remain liquid, potentially triggering some instability. This highlights the difficult trade-off between supporting near-term growth and financial stability, and addressing longer-term vulnerabilities. To date, policy

measures to support the economy have been targeted, and the authorities remain committed to containing financial stability risks.

A key vulnerability in China is the high level of non-financial corporate debt (public and private enterprises), which exceeds that in EMEs and most advanced economies relative to GDP. However, various policy initiatives have facilitated the restructuring of corporate debt, especially of state-owned enterprises, which tend to have higher leverage than private firms. For example, the central authorities remain focused on winding down unprofitable companies that rely on loan forbearance to survive (typically in parts of the industrial sector with excess capacity). Other initiatives include a debt-equity swap program and capital injections via mixed ownership reforms, with the authorities recently announcing plans to further encourage participation from private investors.

Local government debt also presents a risk to financial stability in China, with local governments and their corporate financing vehicles having borrowed heavily in the past decade, particularly to fund spending on infrastructure. Over this period, generous access to finance and political incentives to support short-term growth have likely led to some poor investment decisions. Some projects, notably at the city and county level, have been backed by entities with limited revenue streams. A recent debt restructuring program to reduce servicing costs and increase the transparency of local government debt is now largely complete. It appears to have reduced some of the vulnerabilities associated with local government debt. However, local governments' off-balance sheet debt remains large and continues to grow, and fiscal deficits at local governments and related entities are yet to be fully addressed. Further, due to the central government's targeted effort to support the economy, local government

Graph 1.15
China – Non-financial Sector Debt*
Per cent of nominal GDP



* Includes RBA estimates of shadow financing that is not included in total social financing

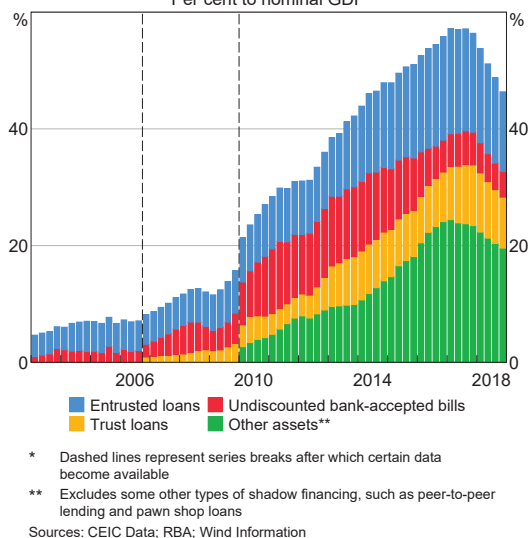
** Includes some borrowing by local government financing vehicles
Sources: BIS; CEIC Data; RBA

bond issuance is expected to increase substantially this year through special bonds to fund specific projects.

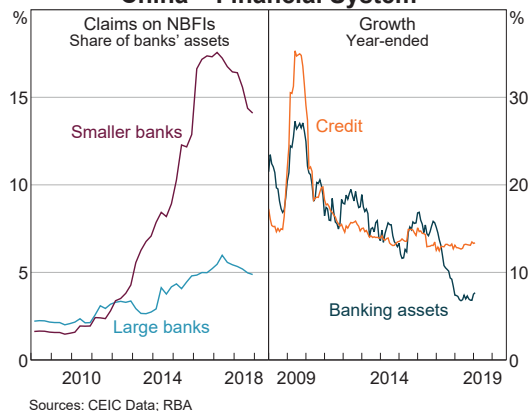
A large part of the increase in corporate debt has been sourced through lightly regulated and opaque NBFIs, which raises further vulnerabilities. This has largely been funded or otherwise facilitated by the banking system, often through short-term investment products issued by NBFIs and purchased or distributed by banks. While NBFIs lending has some benefits, banks have used NBFIs as a vehicle to circumvent restrictions on lending to riskier sectors and to arbitrage some regulatory requirements. Obscure and complex interconnections within and across the NBFIs and banking sectors have emerged. Together, these developments have increased the risk of defaults, liquidity shortages and contagion across the financial sector in the event of a negative shock; risks that could be aggravated if perceptions of implicit guarantees on NBFIs products were to suddenly weaken.

The Chinese authorities have sought to reduce the vulnerabilities associated with NBFIs activities through a wide range of reforms and policy actions over recent years.⁴ In particular: regulatory oversight has been consolidated; the PBC's role in safeguarding financial stability has been expanded; existing regulations have been enhanced and more strictly enforced; and asset management reforms have been finalised. These measures continue to gain traction. Financing provided through NBFIs channels has slowed significantly, and the degree of interconnection between banks and NBFIs is moderating (Graph 1.16). In particular, banks' claims on NBFIs have declined, which has led to slower growth in banking assets. NBFIs claims as a share of smaller banks' assets continued to fall markedly in 2018 (Graph 1.17).

Graph 1.16
China – Selected Shadow Financing*
Per cent to nominal GDP



Graph 1.17
China – Financial System



Reduced lending by NBFIs, as well as greater risk aversion among banks, has tightened the availability of finance in China. This has been especially notable for the private sector, including small businesses and some property developers. Tighter financial conditions have contributed to a slowdown in economic activity and pockets of financial distress. Corporate bond defaults have risen noticeably in the past year, although the increase may reflect

⁴ For more details, see RBA (2018), 'Box A: Ongoing Financial Regulatory Reform in China', *Financial Stability Review*, October, pp 19–22.

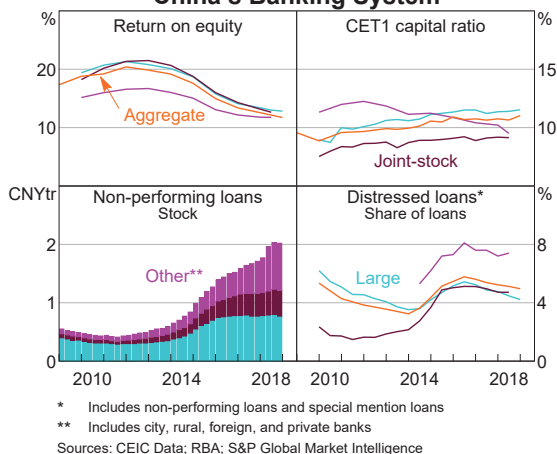
less intervention by the authorities in order to reduce perceptions of implicit guarantees. The default rate also remains low compared with other countries, consistent with the authorities continuing to carefully manage instances of corporate distress.

To support growth in economic activity, Chinese authorities have responded with some targeted easing of fiscal and monetary policy. There has been increased spending on infrastructure, tax cuts, a reduction in Reserve Requirement Ratios, and liquidity injections. Some measures have been specifically aimed at improving financing conditions for the private sector and, in particular, small businesses. Despite these short-term stimulus measures, the authorities' commitment to addressing longer-term financial stability risks appears to remain strong at present.

Vulnerabilities in the Chinese household sector continue to rise. Household debt has grown rapidly over recent years. This is mostly accounted for by housing loans (with short-term consumer loans also rising quickly more recently). As a result, household debt relative to disposable income has increased from 40 per cent in 2008 to 110 per cent in 2017. This is lower than in most advanced economies, but higher than in most other EMEs. Accordingly, Chinese households have become more vulnerable to falls in income or housing prices. Any weakening in housing market conditions would also increase financial pressure on property developers, particularly those that are highly leveraged or already facing funding strains because of the contraction in NBF1 lending. Local governments are similarly vulnerable to weaker housing activity because property-related taxes and land sales are important sources of revenue. However, the authorities have shown they are willing to manage the housing cycle actively by adjusting purchase restrictions and loan-to-value ratio limits, which could mitigate the risk of a sharp housing correction.

Despite slowing economic activity, China's banks remain profitable. However, loan write-offs and the stock of NPLs have increased further, partly reflecting new stricter NPL recognition standards (Graph 1.18). The rise in recognised NPLs at the small rural banks has been particularly large, with their provision coverage ratio coming down considerably. In the period ahead, capital ratios are expected to come under increasing pressure. Financial regulatory reforms have encouraged banks to bring exposures back onto their balance sheets and increase the capital allocated to certain exposures. Small and medium-sized banks, some of which have relatively thin capital buffers, are likely to be most affected given their greater involvement in channelling lending through NBFIs and their greater exposure to private (rather than implicitly guaranteed state-owned) enterprises. To help banks bolster their capital positions, the authorities have recently introduced measures to support perpetual bond issuance by banks.⁵

Graph 1.18
China's Banking System



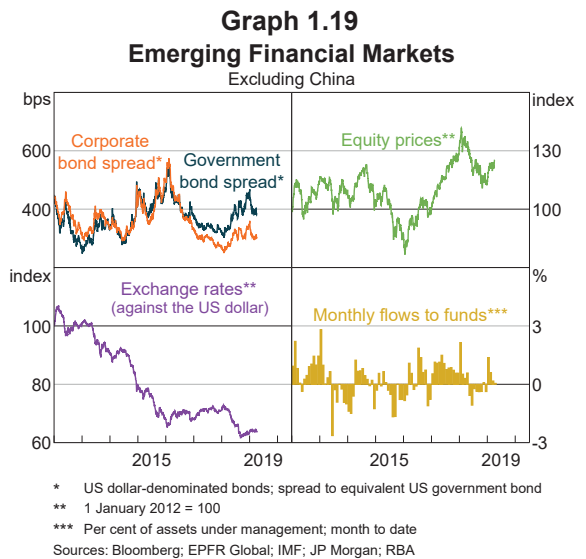
⁵ Perpetual bonds issued by Chinese banks are a type of Alternative Tier 1 capital instrument. They are debt securities with no maturity date that are able to absorb bank losses through principal write-down. Chinese banks previously were not permitted to issue these bonds.

Chinese authorities retain a wide range of economic and financial policy tools to both prevent and address any financial disruption. The state has a large role in both the corporate sector and the financial system, which enables coordinated policy actions that are more complex or not possible in other economies. Nonetheless, if systemic financial disruption were to occur in China, the negative effect on China's economy could be substantial given the widespread vulnerabilities. Financial linkages between China and the rest of the world are generally still small, limiting direct financial spillovers. Rather, a financial disruption would likely be transmitted through China's strong trade links – including with Australia – with second-round effects through slower global growth and a tightening in global financial conditions.

Investor sentiment towards other emerging market economies has stabilised

Following a period of heightened volatility in the middle of last year, investor sentiment towards other EMEs has stabilised. Over recent months, most emerging market currencies have appreciated somewhat, equity prices have risen, bond yields have fallen and capital inflows have picked up (Graph 1.19). This has mainly been driven by changes in the outlook for global financial conditions, particularly as market expectations of a further tightening in US monetary policy have been pared back. Policies have also been implemented in some EMEs to address vulnerabilities, and risks to fiscal positions have eased in others. The economic prospects of oil-importing EMEs have also improved with the decline in oil prices late last year.

In Turkey and Argentina, which were most affected by the deterioration in investor sentiment last year, monetary policy has been



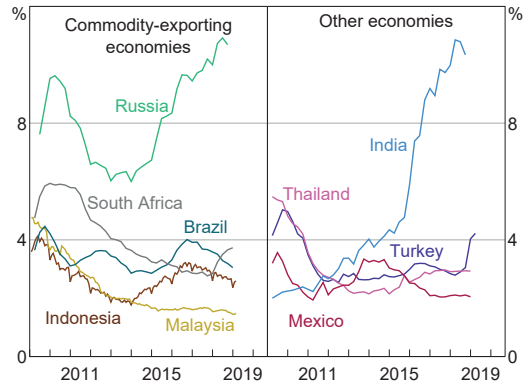
tightened significantly. Authorities in Argentina have also implemented measures to improve that country's fiscal position as part of an IMF assistance package. As a result, economic activity has slowed, with both economies now in recession. Current account deficits have narrowed, partly reflecting weaker domestic demand and exchange rate depreciation. While external pressure has diminished somewhat, these countries remain at risk of financial instability because of tight financial conditions, significant macroeconomic headwinds and sizeable stocks of external debt.

EMEs in Asia were relatively less affected by the volatility last year. In the two decades since the Asian financial crisis, policymakers have made substantial efforts to build more resilient institutions, economies and financial systems. In particular, EMEs in the region generally have much larger foreign currency reserves, stronger current account positions, and lower external debt than other EMEs. However, some Asian EMEs' exposures to global trade and linkages to China make them vulnerable to any further escalation in trade tensions and slowing growth in China.

Despite the recent improvement in investor sentiment, a broad-based retreat from EME assets remains a risk. This could be triggered, for example, by an increase in investors' risk aversion due to weaker global economic growth. The associated tightening in financial conditions in EMEs could exacerbate any perceived vulnerabilities, further undermining investor sentiment. Financial stress could increase in the corporate sector in particular, given the pronounced rise in corporate debt in many emerging markets over the past decade. Firms with unhedged foreign currency debt could be particularly vulnerable.

EME banking systems have been fairly resilient, despite the tightening in financial conditions last year. However, banks in Turkey have increased their provisioning recently amid increasing signs of corporate stress and rising NPLs. The Turkish Government also recently announced plans to support the banking sector, which included public capital injections into state-owned banks and the creation of two funds to purchase bank NPLs. Large stocks of NPLs also continue to weigh on banks in Russia and India (Graph 1.20). But in an encouraging sign, the Reserve Bank of India has announced that six banks with improved asset quality and capital ratios will no longer be subject to the lending restrictions that apply to weak banks. In contrast, concerns about the systemic risks posed by non-bank lenders in India rose following a default by a prominent NBFIL (for more detail see 'Box A: Risks in Non-bank Lending in India'). Despite large loan write-offs during the recent severe economic recession, the performance of the Brazilian banking sector has remained robust. Banks' profitability has been supported by prudent lending standards, as well as high interest margins and fee income.

Graph 1.20
Banking Sector NPLs*
Share of loans



* Definitions of non-performing loans can differ across jurisdictions
Sources: Banking Regulation and Supervision Agency; CEIC Data;

The potential for EME financial stress to spill over to advanced economies has risen over time, due to EMEs' increased size and integration into the global economy. Along with stronger trade links, advanced economies' financial links to EMEs – while relatively small – have grown. Investments in EME corporate debt and equity (especially via mutual funds) have risen. Distress in EMEs could be transmitted through these links and by weighing on financial market sentiment more generally. ✖

Box A

Risks in Non-bank Lending in India

In India risks related to non-bank lenders have increased over a number of years with some risks crystallising in 2018. Rapid lending growth by non-bank lenders had coincided with reduced credit supply from public sector banks that had significant increases in non-performing loans (NPLs). Non-bank lenders provide a source of competition in the financial sector, and diversify risks away from banks. However, non-bank lenders are subject to less stringent regulation and supervision. This can result in weaker lending standards, higher borrower leverage and the build-up of credit and liquidity risks within the financial system.

The default of a large, high-profile non-bank lender in the second half of 2018 highlighted these risks. This resulted in a significant tightening in financial conditions for the non-bank sector. Prompt action by the Indian authorities mitigated contagion risks and helped to restore market confidence. Other initiatives by policymakers, non-bank lenders and banks to improve the resilience of the Indian financial system continue to be implemented.

Banks dominate the Indian financial sector ...

Banks dominate lending in India, but non-bank lenders are also key suppliers of credit and other financing. Banks account for almost two-thirds of total financial system assets, with public sector banks (PSBs) owning around 60 per cent of banking system assets.

Non-bank lenders have assets equivalent to around 20 per cent of the financial system. Within this, non-bank financial companies (NBFCs) account for almost 70 per cent of non-bank lending, with the remainder accounted for by housing finance companies, primary dealers and mutual funds. The market share of NBFCs has been growing in recent years and there are now around 10,000 NBFCs. But most of the NBFC sector's assets are owned by nearly 300 'systemically important' non-deposit-taking NBFCs (those with assets larger than ₹5 billion, or roughly A\$100 million).¹ As with the banking sector, the Indian Government has ownership stakes in several NBFCs, which together account for 30 per cent of the sector's assets. NBFCs focus mainly on lending for infrastructure, commercial real estate and equipment (including cars). NBFCs are interconnected with the banking system as much of their funding comes from bank loans, supplemented with wholesale funding. The Reserve Bank of India (RBI) regulates both NBFCs and banks, although different regulatory regimes apply.²

... but bank lending has been constrained in recent years

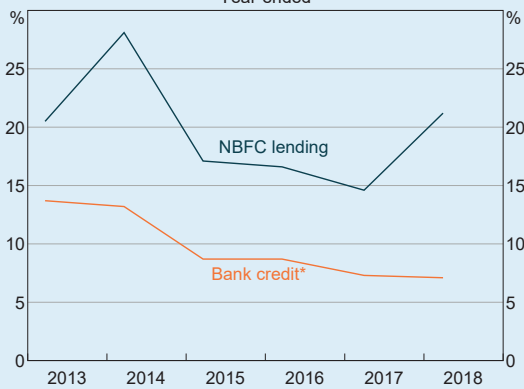
Lending by NBFCs has grown rapidly. Over the past five years, lending growth by NBFCs has averaged 20 per cent, double that of bank

1 For more details, see Reserve Bank of India (2018), 'Chapter VI: Non-banking Financial Institutions', *Report on Trend and Progress of Banking in India 2017–18*, pp 117–119.

2 The RBI also regulates primary dealers, while housing finance companies are regulated by the National Housing Bank, a subsidiary of the RBI. Mutual funds are regulated by the Securities and Exchange Board of India.

lending (Graph A1). With this, the share of total credit provided by NBFCs has risen to more than 15 per cent in 2017, up from around 10 per cent in 2007. NBFCs have been able to grow their lending rapidly as lending by PSBs has been constrained. A significant rise in bad debts at PSBs over much of past decade led the RBI to require PSBs to clean up their balance sheets, which weighed on their capacity to lend.

Graph A1
India – Loan Growth
Year-ended



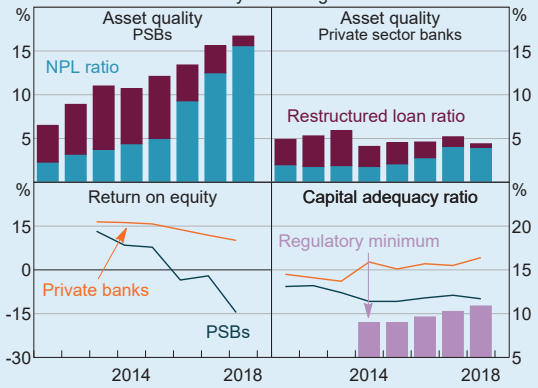
* Excludes bank loans to NBFCs
Source: RBI

The PSBs' financial stress emerged out of a decade-long boom in private infrastructure investment in India, beginning in the mid 2000s.³ PSBs were very active in funding this spending, as well as expansions in the mining and steel sectors. However, they weakened lending standards, which, combined with cost over-runs on many projects, led to a significant deterioration in the asset performance of PSBs.⁴ NPLs and restructured loans rose sharply at the PSBs, in contrast to private banks (Graph A2). In turn, this put considerable pressure on PSBs' profitability and capital positions.

3 For more details on this boom, see Chong S and E Poole (2013), 'Financing Infrastructure: A Spectrum of Country Approaches', *RBA Bulletin*, September, pp 65–76.

4 See Mundra S (2015), 'Indian Banking Sector: Emerging Challenges and Way Forward', Lecture organised by State Bank of Mysore, Bangalore, 29 April.

Graph A2
India – Banking System
Financial year ending March



Sources: IMF; RBI

Growing financial stress at PSBs resulted in numerous policy measures over several years. The RBI tightened prudential rules on asset classification and provisioning;⁵ imposed sanctions, including lending restrictions, on weak banks (mainly PSBs);⁶ and conducted an asset quality review of major banks (including all PSBs). The Indian Government injected capital into the PSBs and implemented measures to improve PSB governance.⁷ A new insolvency and bankruptcy regime was introduced, together with new powers for the RBI to force large NPLs to be resolved through insolvency.⁸

These measures increased NPL transparency, strengthened the regulatory framework more

5 For more details, see IMF (2017), 'Financial System Stability Assessment for India'.

6 Under the Prompt Corrective Action (PCA) framework. For more details, see Archarya V (2018), 'Prompt Corrective Action: An Essential Element of Financial Stability Framework', Speech at the Indian Institute of Technology, Mumbai, 12 October.

7 The first plan announced in mid 2015 envisaged a capital injection of IR1.8 trillion, with the government providing one-third of the funds (and the rest sourced from private investors and asset sales). A second recapitalisation plan was announced in late 2017, worth around IR2.1 trillion, with two-thirds coming from the government. More recently, the government obtained parliamentary approval to inject a further IR400 billion into PSBs.

8 To speed up default resolution, in February 2018, the RBI also instructed banks to begin insolvency proceedings for large corporate clients within 180 days of the first missed payment, unless an agreed resolution plan was in place. Recently, the Indian Supreme Court ruled that the RBI did not have the power to issue these industry-wide instructions (but could compel banks to take such action on a case-by-case basis).

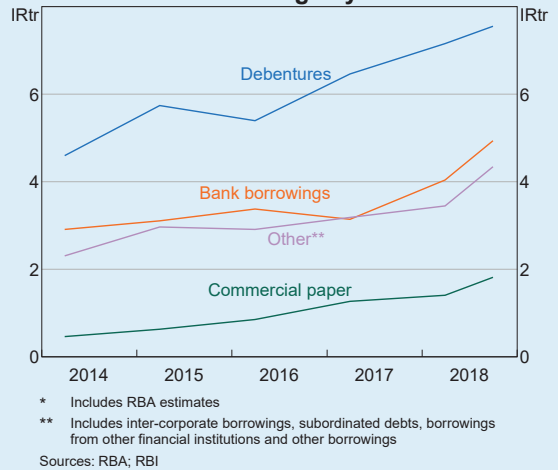
generally, and facilitated the clean-up of banks' balance sheets, especially at the PSBs. However, the improved recognition of banks' large stock of bad debts weighed heavily on their profits and capital. Together with the lending restrictions on the weakest banks, this resulted in a pronounced slowdown in bank lending.

Partly as a result, non-bank lending grew rapidly

NBFCs were well positioned to capitalise on PSBs' reduced lending as it coincided with increased availability of cheap funding. In 2016, the government of India withdrew the legal tender status of the country's two highest denomination banknotes to address counterfeiting and promote the formal financial system over the use of cash. This led to a sharp increase in the assets under management of mutual funds (Graph A3). This in turn led to increased investment by mutual funds in debentures and commercial paper (including that issued by NBFCs). Short-term interest rates fell.⁹ Accordingly, NBFCs were able to materially increase their short-term

wholesale borrowing, at relatively low interest rates, to increase their lending (Graph A4).¹⁰

Graph A4
India – Borrowings by NBFCs*

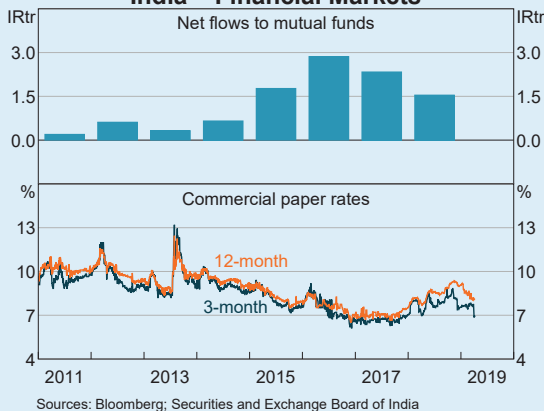


But vulnerabilities also rose ...

However, the boom in lending resulted in a build-up of vulnerabilities in the NBFCs, including:

- increased credit risks from lending mainly to real estate and infrastructure companies for long and complex projects, which had earlier weighed on PSBs. Some credit assessment and monitoring was undermined by firms' complicated corporate structures and perceptions of implicit guarantees, such as for firms backed by government-related entities.
- higher liquidity and interest rate risks, from greater use of short-term wholesale debt to fund longer-term loans.
- higher contagion risks in the financial system, because wholesale funding is mainly provided by other financial institutions.

Graph A3
India – Financial Markets



9 For more details, see RBI (2017), 'Impact of Demonetisation on the Financial Sector', *RBI Bulletin*, November, pp 7–20.

10 For more details, see RBI (2018), 'Box VI.1: What Explains the Robust Credit Growth of NBFCs?', *Report on Trend and Progress of Banking in India 2017–18*, pp 121–122.

... and some of them crystallised last year, causing liquidity conditions to tighten

Some of these risks materialised last year. In June, a high-profile infrastructure-focused NBFC and some of its subsidiaries began defaulting on bank loans and short-term debt obligations. The defaults by Infrastructure Leasing & Financial Services (IL&FS) followed poor returns on major projects, in an environment of rising interest rates. The IL&FS group had total debt of ₹910 billion (almost A\$20 billion) at the time of the defaults.

The defaults came as a surprise to many investors, partly because the firm had high credit ratings from local ratings agencies and prominent shareholders (including several large Indian banks and well-known foreign institutional and corporate investors). With the company having a significant quantity of bonds outstanding – reportedly 3 per cent of the Indian corporate bond market – the defaults quickly led to a deterioration in investor sentiment. In particular, concerns mounted about the creditworthiness of other NBFCs. Share prices for listed NBFCs fell by over 20 per cent in the following months. There were significant outflows from fixed income mutual funds that lend to NBFCs. Commercial paper rates increased and issuance volumes declined.

Active policy responses helped to quickly stabilise conditions

IL&FS's financial distress, and potential failure, threatened to trigger a broader liquidity crunch for NBFCs. This could have led to further NBFC failures, asset fire sales and potentially distress across the financial system, interrupting the flow of credit to the real economy. In recognition of these risks, Indian policymakers took a range of actions to stabilise funding conditions.

The RBI injected a large quantity of liquidity into the financial system. It also took steps to

encourage banks' support for NBFCs, including by allowing banks to provide partial guarantees for bonds issued by NBFCs. The government replaced the entire board of IL&FS. The new board started selling assets and formulating plans for other recovery measures to repay the company's debt – such as capital injections by existing or new shareholders and the sale of subsidiaries. The government obtained a court order granting a temporary stay on legal proceedings by creditors against the company, giving it time to restructure.

Other NBFCs have sought to strengthen their balance sheets by selling assets via securitisation. To support this, the RBI has temporarily relaxed the minimum holding period requirement for certain NBFC loans before they can be securitised. The RBI has also tried to encourage overseas borrowing by infrastructure firms. Rules on external borrowing were eased, in terms of both tenor and hedging requirements.

Actions by policymakers and NBFCs have reduced the acute uncertainty that arose during late 2018. Money market interest rates have declined, inflows to mutual funds have resumed, investor sentiment has recovered and commercial paper issuance has picked up. Some NBFCs have started to lengthen the term of their liabilities to reduce their asset-liability maturity mismatch. Nonetheless, funding conditions for NBFCs remain tighter than before the defaults.

The RBI has strengthened its earlier efforts to bring regulatory rules on NBFCs broadly into line with those for banks. In particular, the RBI has signalled its intention to address asset-liability maturity mismatches at NBFCs. This is expected to slow the growth of credit facilitated by NBFCs. However, this could be offset by increased lending from PSBs as the RBI has started lifting lending restrictions on some PSBs, while the government is continuing to inject new capital. ✖

2. Household and Business Finances

Risks to the household sector have increased over the past six months given weak housing market conditions. Housing prices have fallen significantly in Sydney and Melbourne after the earlier large run-up in prices, while in Perth and other mining-exposed regions, prices have been declining for several years. However, nationally, only a small share of borrowers have seen the value of their property fall below the value of their loan (see 'Box B: Housing Price Falls and Negative Equity'). Improved lending standards over recent years have supported this outcome. If there were further large housing price falls, the share of borrowers in negative equity would increase significantly. Even then, negative equity need not be problematic for financial stability as long as the unemployment rate remains low and households continue to be able to repay their debt.

Households are currently well placed to meet their debt obligations given low unemployment. Indeed, households have continued to make substantial voluntary repayments on their loans, albeit at a slower rate. Indicators of financial stress remain low outside the mining-exposed regions. However, the value of housing loans in arrears has drifted up from very low levels.

The risks associated with housing would increase with a rise in the unemployment rate or further substantial price declines. With weak housing market conditions, borrowers experiencing difficulties making loan repayments find it harder to resolve their situation by selling their properties. Housing constitutes a large share of households' wealth and further large declines in housing prices could cause households to

pull back on consumption, particularly for those who are highly leveraged. This, in conjunction with falling dwelling investment, could add to rising unemployment. Such a scenario would have adverse consequences for financial stability to the extent that it increases both households' likelihood of default and the losses banks would experience in the event of default.

Housing price declines also increase settlement risk for apartments sold off the plan. If valuations at settlement are below the contracted sale price, some buyers may find it harder to obtain finance and some purchases could fall through. However, as discussed in 'Box C: Risks in High-density Apartment Markets', settlement failures remain low to date. Further, some larger and diversified developers have low gearing and can afford to hold some unsold stock.

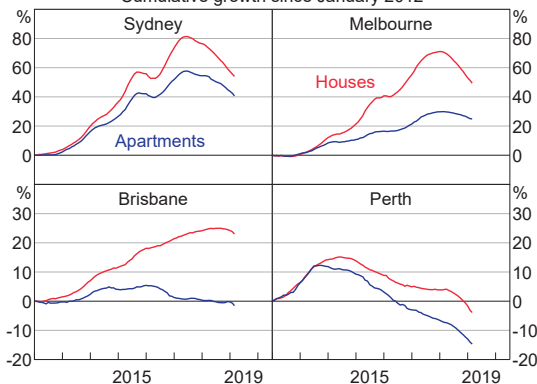
Commercial property valuations continue to rise much faster than rents. As discussed in Chapter 1, low long-term interest rates have underpinned high asset valuations globally, which could reverse suddenly with increased risk aversion or a jump in expected inflation. Highly leveraged owners of commercial property experiencing falls in valuations could breach loan covenants, which could result in sales and further price falls. In Sydney and Melbourne office markets, vacancy rates are low and rents are rising, minimising these risks for now. In contrast, risks related to retail property markets have risen somewhat given weaker trading conditions over recent quarters and the subdued outlook for household consumption.

Business sector conditions generally remain good, with profits steady and gearing low. However, some businesses, such as those in the retail and farm sectors, continue to face challenges. In addition, credit conditions for small businesses have tightened, creating a risk of flow-on effects to employment in the broader macroeconomy.

Housing price declines in Sydney and Melbourne have been large ...

Nationally, housing prices have fallen by 7 per cent over the year to March. Sydney and Melbourne account for almost 40 per cent of the Australian housing stock and have recorded large price falls since late 2017 (Graph 2.1). These price falls have become more broad based across regions within both cities. Weak conditions in Sydney and Melbourne have also been evident in non-price indicators such as low auction clearance rates and increases in the time taken to sell a property, although clearance rates have improved a little of late. Housing prices have declined further in Perth and Darwin to be 18 and 27 per cent lower than their respective peaks in 2014. In contrast, housing prices have been fairly stable in Brisbane and Adelaide over the year to March and have increased in Hobart.

Graph 2.1
Housing Prices by Dwelling Type
Cumulative growth since January 2012



Sources: CoreLogic; RBA

... but follow several years of very strong growth

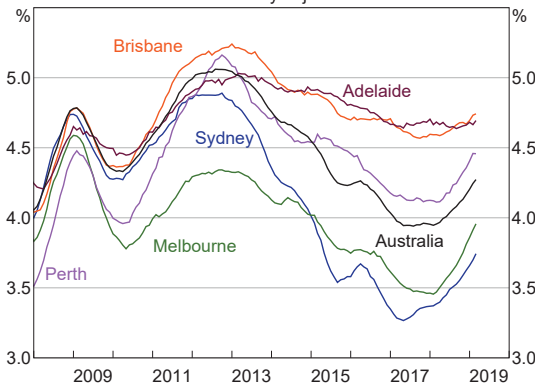
Large housing price declines can pose risks to financial stability as they erode the equity of indebted households. However, the risks continue to be manageable given the benign economic environment. In Sydney and Melbourne, price declines follow several years of sizeable gains. Overall, Sydney and Melbourne housing prices remain 40–50 per cent higher than in 2012.

Declines in housing prices in Sydney and Melbourne reflect a number of demand and supply factors. Earlier valuations seemed stretched relative to some measures of prices suggested by fundamentals, particularly if very low interest rates were not expected to persist for the life of the loans used to purchase these properties. Measures of affordability were low and rental yields had also reached historic lows in Sydney and Melbourne (Graph 2.2). The eventual declines in prices occurred alongside a large increase in the supply of new dwellings and a reduction in foreign demand. Further, for some higher-risk lending, the cost of finance increased and non-price terms of lending were tightened in response to the housing policy measures introduced between 2014 and 2017.¹ More recently, price falls themselves appear to have weighed on sentiment towards housing and increased investors' expectations of capital losses, although at some point the adjustment in prices should be sufficient to stimulate additional demand.

There continue to be large volumes of new dwellings under construction, particularly in Sydney and Melbourne, which is likely to weigh on prices for some time. In Sydney, a small but increasing share of the apartment construction is in the outer suburbs, which have traditionally been dominated by detached houses and where

¹ For further details, see RBA (2018), 'Assessing the Effects of Housing Lending Policy Measures', *Financial Stability Review*, October, pp 75–88.

Graph 2.2
Rental Yields
Seasonally adjusted

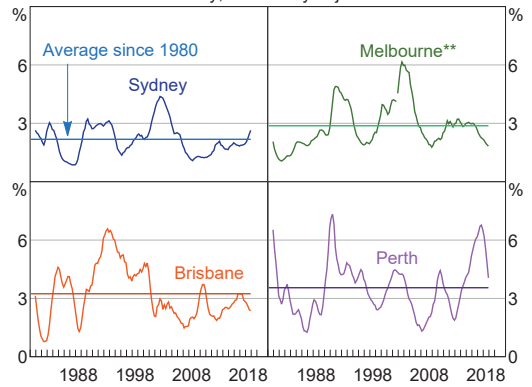


Sources: CoreLogic; RBA

demand for high-density dwellings is therefore less well established (see 'Box C: Risks in High-density Apartment Markets'). In contrast, earlier concerns about the large volume of new apartments in Brisbane have not been realised. Apartment prices there have been relatively stable over the past six months, suggesting there has been sufficient demand for these new dwellings to absorb supply. Growth in housing supply is expected to run ahead of population growth in Sydney and possibly Melbourne for the next couple of years as the large volume of construction currently underway is completed. With continued strong population growth and fewer projects now being planned, this new supply is expected to be absorbed over time. Nevertheless, there is a near-term risk that the delivery of a large volume of new apartments into a weak market could amplify price declines.

In Sydney, rental vacancies are rising and advertised rents have fallen (Graph 2.3). Some investors may experience declining net rental income with such losses compounded by falling capital values. In contrast, in other capital cities rental vacancy rates have fallen, suggesting that increases in supply have been met with ongoing strong demand. Despite this, large price declines increase settlement risk for off-the-plan apartment sales and could lead to an increase

Graph 2.3
Rental Vacancy Rates
Quarterly, seasonally adjusted*



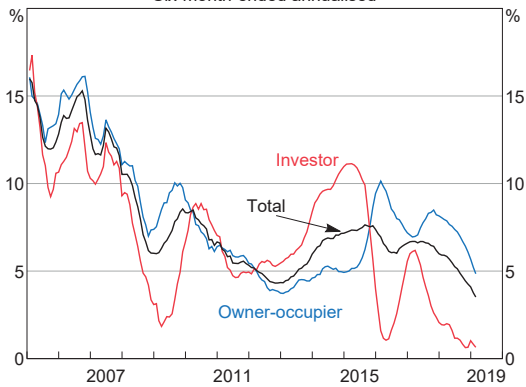
* 12-month moving average
** Series break December quarter 2002
Sources: RBA; REIA; REIVA

in financial stress for some, particularly smaller, developers.

Soft housing market conditions have contributed to lower housing credit growth

Housing credit growth has moderated since mid 2017, consistent with reduced demand for housing finance (Graph 2.4). The slowdown has been most pronounced for investor credit growth, which has slowed to a historical low of just under 1 per cent in year-ended terms. However, owner-occupier credit growth has also eased. The decline in housing credit growth over the past six months reflects a slowdown in lending by authorised deposit-taking institutions (ADIs), particularly the major banks. In liaison, banks reported that they had received significantly fewer loan applications over the past year. This has been partly offset by ongoing strong growth in non-ADI housing credit, with estimates suggesting it is at least twice as fast as for ADIs. Liaison with non-ADIs and brokers indicates that growth in non-ADI lending has been supported by a tightening in ADIs' lending practices. Despite this, non-ADIs continue to account for only a small share of housing credit.

Graph 2.4
Housing Credit Growth
 Six-month-ended annualised



Sources: APRA; RBA

Housing credit conditions remain tighter than they have been for some time. Although the largest changes to lending standards occurred between 2015 and 2017, lenders have continued to improve their processes for implementing the existing standards. The recent focus has been on improving how borrowers' living expenses are assessed in loan applications, including reducing lenders' reliance on living expense benchmarks. More recently, the introduction of comprehensive credit reporting from September 2018 for credit cards is enabling banks to see more complete information on borrowers' credit and store card debts and limits. In liaison, banks reported there were discrepancies in some applications between what borrowers disclosed and the information in the credit database. It is still too early to assess the impact on the availability of credit. Since credit assessments are based on credit card limits rather than balances, most prospective borrowers can respond by cancelling credit cards or reducing their limits. As a result, few households are reportedly being declined credit based on their comprehensive credit report. Nevertheless, it is foreseeable that the expansion of comprehensive credit reporting could lead to further tightening. Over 2019, additional information on personal credit and mortgages

will be made available to lenders, which could be expected to reduce maximum loan sizes for some prospective borrowers. Overall, liaison with banks suggests that most people who apply for a loan can still obtain one, though they have to provide more documents and it is generally taking a few days longer to be approved.

Recent regulatory developments are a recognition that the current framework of lending standards provides adequate safeguards against excessively risky mortgage lending. The final report of the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry did not recommend any changes to responsible lending legislation under the *National Consumer Credit Protection Act*. It acknowledged the improvements that had already been made by lenders to meet the existing standards. By resolving some of the uncertainty around whether further tightening in standards would be required, the publication of the report could support credit provision. The Australian Securities and Investment Commission has recently commenced a public consultation to update its guidance on responsible lending. The objective is to provide greater clarity around existing requirements, rather than to change the obligations of lenders.

In December 2018, the Australian Prudential Regulation Authority (APRA) announced the removal of the interest-only (IO) lending benchmark. ADIs will not be subject to the IO lending benchmark if they have qualified to have the investor lending benchmark removed (the latter change was announced in April 2018). To be released from the investor lending benchmark, ADIs are required to provide APRA with assurances on their lending policies and practices. APRA expects that banks will continue to maintain prudent internal risk limits (not prohibitions) on IO lending, such as IO loans at high loan-to-valuation ratios (LVRs), with long IO periods and to owner-occupiers. APRA's decision to remove both benchmarks reflects an assessment that, with lending

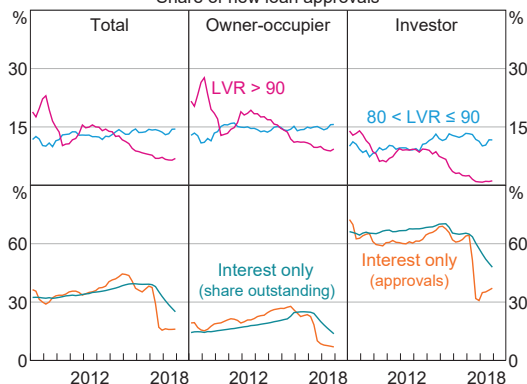
standards now sufficiently improved, these temporary measures are no longer required to curtail higher-risk lending.

The quality of banks' new mortgage lending has continued to improve

Improvements in the quality of banks' mortgage lending have mitigated the risks that weaker housing market conditions might otherwise pose to household and bank balance sheets. This is especially true for new borrowers, who have had less time to accumulate equity through earlier housing price rises and principal repayments. Changes in lending practices over the past few years mean that new borrowers will, on average, have less risky loans and be in a better financial position than previous cohorts.

The cumulative effect of the housing policy measures over recent years has been to reduce the maximum loan sizes available to most borrowers and to reduce higher-risk lending, including that at high LVRs and on IO terms (Graph 2.5). Loans with an LVR over 90 per cent remain less than 7 per cent of housing loan approvals, while new IO lending has fallen to around 16 per cent of total loan approvals and 7 per cent of owner-occupier loan approvals.

Graph 2.5
ADIs' Housing Loan Characteristics*
Share of new loan approvals



* Series are break-adjusted for reporting changes; interest-only series are seasonally adjusted

Sources: APRA; RBA

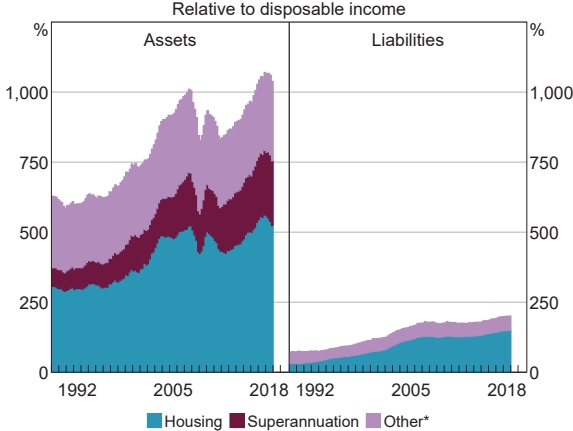
Household debt remains high but most indebted households can afford their debt repayments

Although lending standards have improved and housing credit growth has slowed, the ongoing high level of aggregate household indebtedness remains a key vulnerability. Highly indebted households are a key risk to financial stability since they are more susceptible to falling behind on their repayments in the event of an adverse shock to their ability to service their loans (for example, rising interest rates or unemployment). Highly indebted households may also be more likely to reduce their spending if macroeconomic conditions deteriorate. This could amplify the impact of any downturn. Most households are well placed to service their debt. However, the distributions of debt and prepayment buffers are uneven across households and, accordingly, a small share of borrowers remain relatively vulnerable.

Despite housing price falls, household gearing levels are low in aggregate. Total assets are five times larger than the stock of liabilities (Graph 2.6). Around one-third of households own their own home outright, which contributes to the low aggregate gearing ratio. Estimates suggest that fewer than 5 per cent of households have gearing ratios greater than 80 per cent. This small share of households are most exposed to the recent decline in housing prices because they require smaller price falls to tip them into negative equity than less leveraged borrowers. However, estimates and liaison with banks suggest that the share of households currently in negative equity is low (see 'Box B: Housing Price Falls and Negative Equity').

Households' total repayments on housing debt have been broadly stable as a share of household income over recent years. However, a greater share of these repayments are required rather than voluntary. Interest payments as a share of income have picked up a little given recent

Graph 2.6
Household Balance Sheet
Relative to disposable income



* Other assets includes financial assets held outside of superannuation, consumer durables and all other non-housing non-financial assets; other liabilities includes personal credit, student loans and other household liabilities

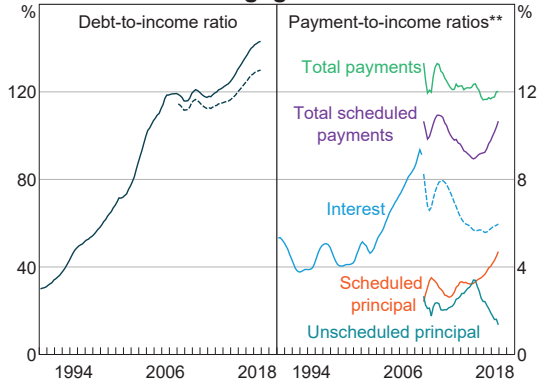
Sources: ABS; RBA

modest increases in mortgage interest rates. More notable, though, is that payments of scheduled principal are accounting for an increasing share of household income (Graph 2.7). The increase in scheduled principal repayments reflects a combination of factors including rising debt, an increase in the share of loans repaying principal (as the stock of IO loans has declined) and a modest ageing of the loan pool (older loans pay proportionally more principal). Rising scheduled principal payments have recently occurred at the same time that unscheduled principal, or 'voluntary' prepayments, have declined. Households are still making additional principal payments of around 1¼ per cent of income, although this is down from 3½ per cent in 2015.

The aggregate stock of mortgage prepayments remains large. The stock of prepayments (the sum of balances in offset accounts and redraw facilities) accounts for 16½ per cent of the gross stock of housing credit or a bit over 2½ years of repayments at current interest rates (Graph 2.8).²

2 The gross stock of housing credit is the value of housing credit outstanding before taking into account balances in offset accounts and redraw facilities. Published housing credit data nets off balances in redraw facilities but not offset accounts.

Graph 2.7
Household Mortgage Debt Indicators*

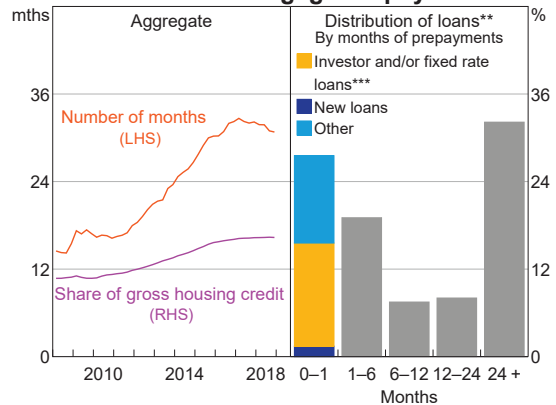


* Excludes non-housing debt; debt-to-income line nets out amounts in redraw facilities; dotted lines are calculations based on debt balances which also exclude offset accounts; income is household disposable income before housing interest costs

** Rolling four-quarter average; unscheduled principal is the change in aggregate mortgage prepayments

Sources: ABS; APRA; RBA

Graph 2.8
Household Mortgage Prepayments*



* Available redraw plus offset account balances

** As a share of the total number of loans as at February 2019

*** These loans have features that discourage prepayments

Sources: APRA; RBA; Securitisation System

But nearly 30 per cent of loans have no or little buffer, and so appear more vulnerable. Many of these have disincentives to prepay (fixed rate and investor loans) and so borrowers may be accumulating savings outside of their mortgage products. Another, smaller, share of loans with no buffers are new loans that have had little time to accumulate prepayments. Most of this latter group of loans may be expected to build prepayments over time, though they remain

relatively vulnerable in the near term. With slower credit growth, the share of new loans with no buffer is likely to decline further.

Survey measures suggest household financial stress remains low ...

Some households are experiencing financial stress, but this is not widespread. Broad, albeit lagging, measures tend to show flat or declining rates of financial stress. Data from the 2017 Household Income and Labour Dynamics in Australia (HILDA) survey show that the ratio of mortgage servicing costs to income has been flat or declining for owner-occupier borrowers, based on measures of both required and actual repayments (Graph 2.9). The prevalence of households reporting that they had experienced financial stress had also been steady. The rate of household bankruptcies continued to drift down in 2018 in most states and remains near its lowest level in nearly two decades. The main exception continues to be Western Australia, where the rate of bankruptcies remains high though it has declined a little of late.

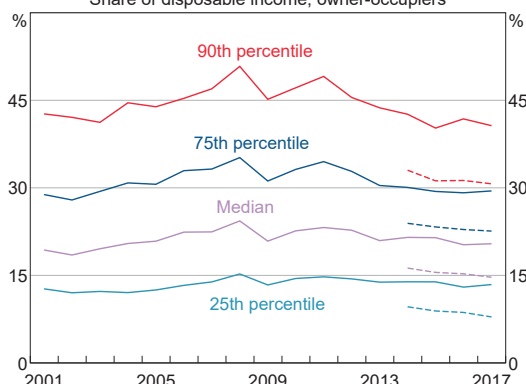
The ongoing process of loans switching from IO to principal and interest (P&I) payments remains

a potential source of financial stress. These borrowers face a substantial increase in required repayments, often up to 40 per cent. Estimates suggest that around \$120 billion of IO loans (7 per cent of the outstanding stock of credit) are scheduled to convert to P&I repayments in 2019. Most of these were originated before 2015 when lending standards were weaker, suggesting that some borrowers might face difficulties in meeting the step-up in repayments. Many borrowers with IO loans who could afford to switch to P&I loans before their IO periods expired to obtain a lower interest rate have already done so. So there may be a larger share of lower credit quality IO borrowers among those who have not yet switched. However, instances of repayment difficulties are likely to be fairly isolated, because interest rates have fallen since 2014 and most borrowers did not borrow the maximum amount that was available to them. RBA estimates suggest that the volume of 'forced' switches from IO to P&I in 2019 will not be significantly larger than in 2018. If the experience from 2018 continues, most IO borrowers should cope with the required switch to P&I in 2019. While there is some evidence of a small increase in the arrears rate for the cohort of loans that contractually converted from IO to P&I repayments in 2018, most borrowers appear to have managed the transition to higher repayments without falling behind on their repayments.

... and housing loan arrears rates, while low, are edging higher

Indicators of aggregate household financial stress currently remain low overall but there are regional differences. In Western Australia, the share of housing loans in arrears has increased, reflecting weak economic conditions (Graph 2.10). In New South Wales, the share of housing loans in arrears has also drifted up a little in recent years, but from a very low level.

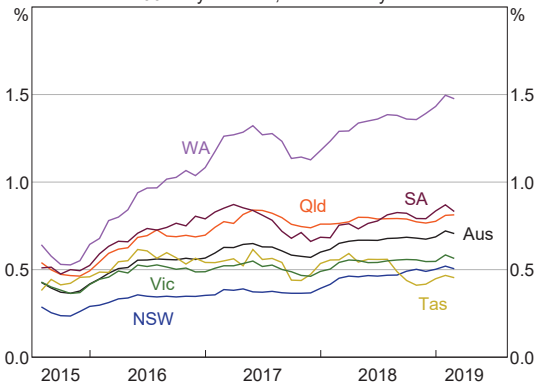
Graph 2.9
Distribution of Household Mortgage Payments*
Share of disposable income, owner-occupiers



* Solid lines are based on 'usual' repayments; dashed lines are estimates of minimum required repayments

Sources: HILDA Release 17.0; RBA

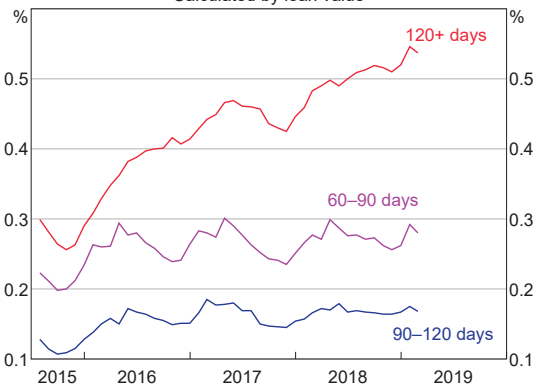
Graph 2.10
Securitised Mortgage Arrears Rates*
 Loans in 90+ days arrears, calculated by loan value



* Representative selection of loans from the Securitisation System
 Sources: RBA; Securitisation System

Arrears rates have risen to a large extent because housing loans are, on average, staying in arrears for longer (120 days or more; Graph 2.11). Meanwhile, the share of loans that have been in arrears for shorter periods is little changed. Borrowers are finding it more difficult to resolve repayment difficulties, by either catching up on overdue payments or, in some cases, voluntarily selling their property. This latter option may be taking longer in a softer housing market. Changes in lenders' forbearance and foreclosure policies could also be contributing to higher longer-term arrears rates. Liaison with banks indicates

Graph 2.11
Securitised Mortgage Arrears Rates*
 Calculated by loan value



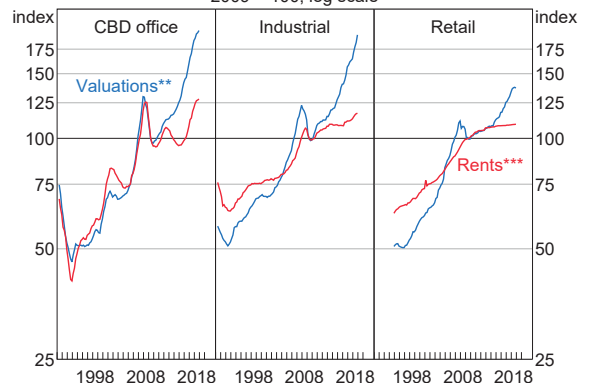
* Representative selection of loans from the Securitisation System
 Sources: RBA; Securitisation System

that this has occurred to an extent. However, banks also report that they are now tightening their management of non-performing loans in recognition that longer processes could ultimately make the borrower and the lender worse off, especially when housing prices are declining.

Commercial property valuations continue to rise faster than rents

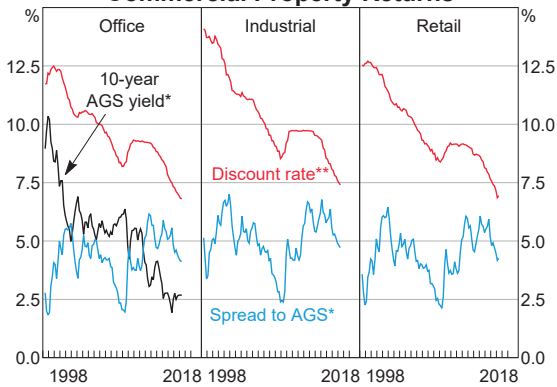
Commercial property valuations increased further over 2018. Valuations have increased by significantly more than rents, pushing rental yields lower (Graph 2.12). The strong growth in valuations globally has been underpinned by low interest rates in combination with a fall in the compensation for risk demanded by investors (Graph 2.13). Valuations are, therefore, susceptible to a pick-up in risk-free yields or a decline in risk appetite, both of which could trigger a portfolio allocation away from commercial property. Highly leveraged investors could then be vulnerable to breaching their LVR covenants on bank debt. This could trigger property fire sales and further price falls.

Graph 2.12
Commercial Property*
 2009 = 100, log scale



* CBD office and industrial are prime property; retail is regional (non-CBD) centres
 ** JLL Capital Value Indicator
 *** CBD office is effective rents; industrial and retail are face rents
 Sources: ABS; JLL Research; RBA

Graph 2.13
Commercial Property Returns



* Australian Government Securities; spread to AGS in percentage points
 ** The rate applied to properties' projected cash flows to estimate their present value

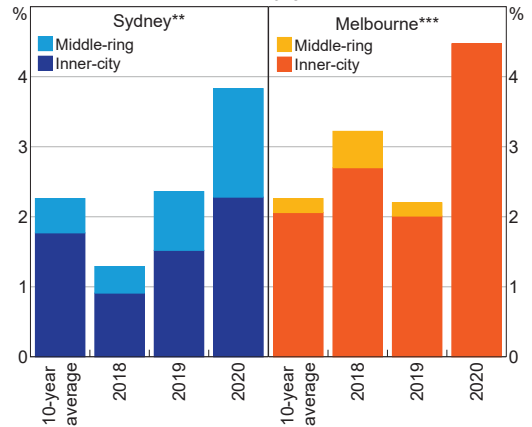
Sources: IPD; RBA

Conditions in office property markets continue to vary across cities. In Sydney and Melbourne, ongoing strength in local economic conditions and tenant demand has seen vacancy rates fall further. A number of withdrawals from the office stock in the Sydney CBD have also contributed to low office vacancy rates. However, tight market conditions for offices in Sydney and Melbourne have elicited a supply response after several years of limited additions, with most new supply to be completed around 2020 (Graph 2.14). While economic conditions remain supportive in Sydney and Melbourne, a deterioration in macroeconomic conditions could result in higher vacancy rates and lower-than-expected rents. This in turn would put downward pressure on valuations.

In contrast to Sydney and Melbourne, office vacancy rates remain elevated in Brisbane and Perth (Graph 2.15). Vacancy rates in these cities declined over 2018, but the improvement was not broad based. Second-grade and non-CBD office properties have higher vacancy rates because tenants have continued to relocate into better quality space in these cities' CBDs.

For retail commercial property, growing competition from online retailers and changing

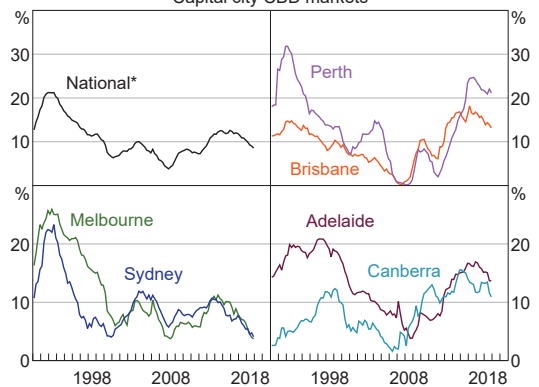
Graph 2.14
Future Office Supply*
Share of 2018 stock



* Completed projects and projects under construction
 ** Inner-city is Sydney CBD and North Sydney; Middle-ring is Bondi Junction, Chatswood, Macquarie Park, Parramatta and St Leonards
 *** Inner-city is Docklands and Melbourne CBD; Middle-ring is East Melbourne, Southbank and St Kilda Road

Sources: Property Council of Australia; RBA

Graph 2.15
Office Vacancy Rates
Capital city CBD markets



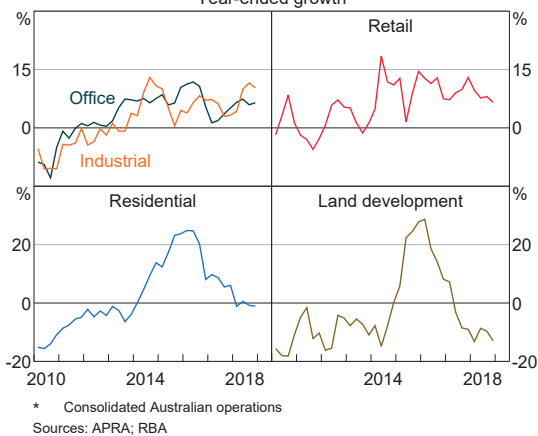
* Excluding Darwin and Hobart
 Source: JLL Research

consumer preferences are making trading conditions more challenging for bricks-and-mortar retailers of discretionary goods and, in turn, their landlords. Retail rents have been flat overall, although the outlook varies by the type of retail property. The most challenging adjustment is for retail properties in shopping centres with large discount department stores

as the anchor tenants and for local high street shopping strips.

Growth in banks' lending to different segments of the commercial property sector diverged over 2018 (Graph 2.16). Growth in lending for office and industrial properties has been fairly steady over the past six months, driven by foreign-owned banks and the major Australian banks. This comes after a period of slower growth following APRA's 2016 review of commercial property lending. By contrast, lending growth for retail property slowed over 2018. Liaison with banks indicates lending conditions have tightened in response to the challenging environment for retailers and their landlords. Given the downturn in the

Graph 2.16
Banks' Commercial Property Exposures*
Year-ended growth



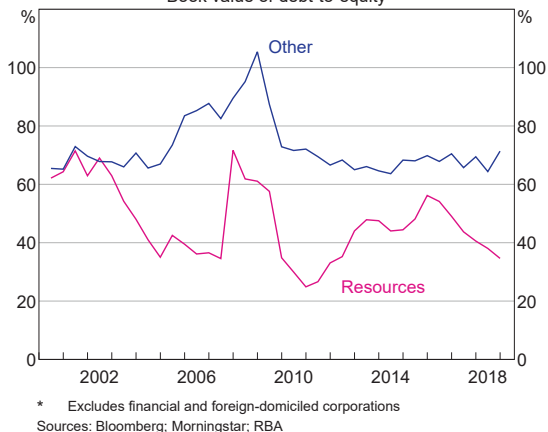
housing market, banks have not grown their lending for residential development, and are contracting their lending for land development.

The financial health of businesses remains generally sound ...

Overall, businesses' finances remain in good shape, supported by positive economic conditions and low interest rates. Aggregate earnings of listed companies are mostly high and

gearing ratios remain low (Graph 2.17). Further, the business sector is well placed to service its debt with businesses' debt-servicing ratios remaining broadly unchanged over 2018.

Graph 2.17
Listed Corporations' Gearing Ratios*
Book value of debt-to-equity

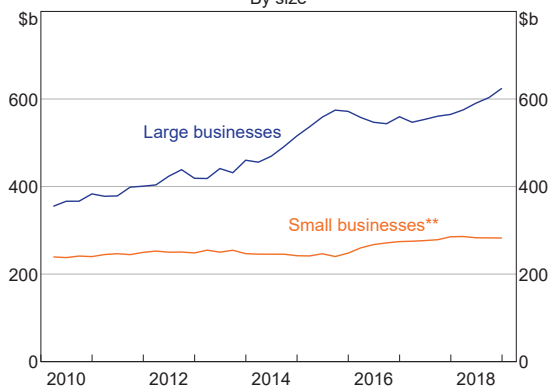


Nevertheless, some businesses are experiencing challenging conditions. Liaison with banks suggests that the financial position of businesses in regions affected by drought or by the north Queensland floods has worsened as farmers have reduced their spending. Meanwhile, the retail sector continues to face challenges associated with weak sales growth and ongoing competitive pressures. However, there is no evidence of a significant pick-up in failure rates among retailers. Looking ahead, businesses in the residential construction sector are likely to face more difficult conditions as completed projects are not replaced with new ones.

... but small businesses are facing tighter credit conditions

Credit conditions for small businesses have tightened over the past year. Credit extended to businesses with turnover less than \$50 million is growing more slowly than credit for large businesses (Graph 2.18). The tighter availability of

Graph 2.18
Banks' Lending to Businesses*
 By size



* Break adjusted; banks allowed to use an internal ratings-based approach for credit risk management; includes both on and off balance sheet exposures

** Includes businesses with annual turnover of less than \$50 million

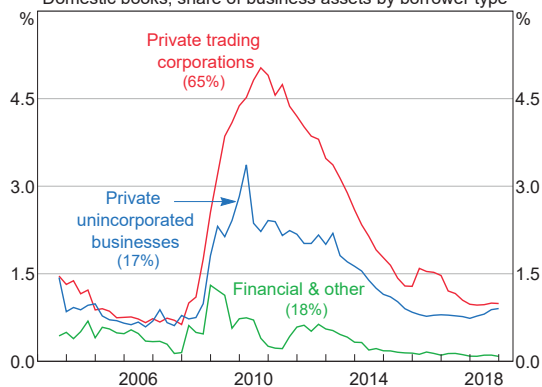
Sources: APRA; RBA

credit for small businesses reflects a number of factors. One is that banks appear to be applying responsible lending rules for consumer credit to some small business lending given the blurred distinction between the personal and business finances for some entrepreneurs. Responsible lending obligations for consumer credit are stricter than requirements for lending to small businesses. Another is that the recent decline in housing prices may have reduced the supply of credit to some small businesses, given that small business lending is often secured by housing. A source of uncertainty in the period ahead stems from the Royal Commission, which recommended expanding the definition of a small business under the Australian Bankers' Association Banking Code of Practice from a business with total debt of up to \$3 million to a business making a loan application of up to \$5 million. Liaison with banks has noted the proposed definition would mean that a larger number of businesses would be covered by the protections for small business under the Banking Code of Practice, although it is not clear how many.

This tightening in credit conditions could be a challenge for businesses needing to refinance existing debt. It could also have flow-on effects to the broader macroeconomy; small businesses account for nearly half of employment in the non-financial business sector. If this led to an increase in the unemployment rate, this would affect the financial health of households.

There are early signs that small businesses' loan performance worsened over 2018. This is evident in a pick-up in the non-performing loans rate for unincorporated businesses, although it remains at low levels and some of this is related to drought conditions in many regional areas (Graph 2.19). ↗

Graph 2.19
Banks' Non-performing Business Assets*
 Domestic books, share of business assets by borrower type



* Each category's share of total domestic business lending at December 2018 is shown in parentheses

Sources: APRA; RBA

Box B

Housing Price Falls and Negative Equity

Large housing price falls in parts of Australia mean some borrowers are facing negative equity – where the outstanding balance on the loan exceeds the value of the property it is secured against. Negative equity creates vulnerabilities both for borrowers and lenders. A borrower having difficulty making loan repayments who has negative equity cannot fully repay their debt by selling the property. Negative equity also implies that banks are likely to bear losses in the event that a borrower defaults. Evidence from Australia and abroad suggests that borrowers who experience an unexpected fall in income are more likely to default if their loan is in negative equity.

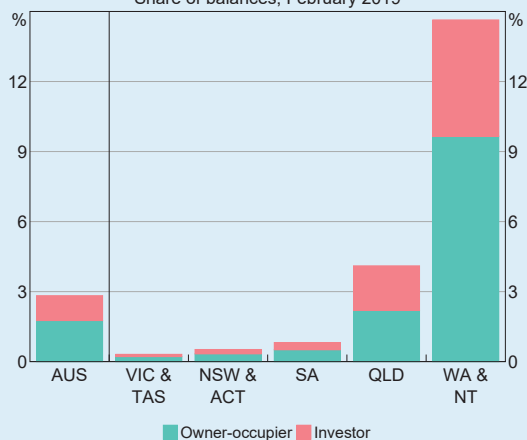
At present, the incidence of negative equity remains low. Given the large increases in housing prices that preceded recent falls and the decline in the share of mortgages issued with high loan-to-valuation ratios (LVRs), housing prices would need to fall significantly further for negative equity to become widespread. However, even if this did occur, increased defaults would be unlikely if the unemployment rate remains low, particularly given the improvements in loan serviceability standards over recent years.

Few loans are currently in negative equity despite sizeable housing price declines

Estimating the share of borrowers with negative equity requires data on current loan balances and property values. The RBA's Securitisation Dataset contains the most extensive and timely data

on loan balances and purchase prices.¹ These data can be combined with regional data on housing price movements to estimate the share of loans that are currently in negative equity. This suggests that nationally, around 2¾ per cent of securitised loans by value are in negative equity (just over 2 per cent of borrowers).² The highest rates of negative equity are in Western Australia, the Northern Territory and Queensland, where there have been large price falls in areas with high exposure to mining activity. Almost 60 per cent of loans in negative equity are in Western Australia or the Northern Territory. Rates of negative equity in other states remain very low (Graph B1).

Graph B1
Loans in Negative Equity
Share of balances, February 2019



Sources: ABS; CoreLogic; RBA; Securitisation System

¹ The Securitisation Dataset includes about one-quarter of the value of all residential mortgages, or around 1.7 million mortgages.

² Unless otherwise noted, all figures for the proportion of loans in negative equity are weighted by value of outstanding debt net of balances in offset accounts and redraw facilities.

Estimates of negative equity from the Securitisation Dataset may, however, be under- or overstated. They could be understated because securitised loans are skewed towards those with lower LVRs at origination. In contrast, the higher prevalence of newer loans in the dataset compared to the broader population of loans, and not being able to take into account capital improvements on values, will work in the other direction.³ Some private surveys estimate closer to 10 per cent of mortgage holders are in negative equity. However, these surveys are likely to be an overestimate for a number of reasons; for instance, by not accounting for offset account balances. Information from bank liaison and estimates based on 2017 data from the Household Incomes and Labour Dynamics of Australia (HILDA) survey suggest rates of negative equity are broadly in line with those from the Securitisation Dataset.

Past housing price increases and loans with lower starting LVRs limit negative equity

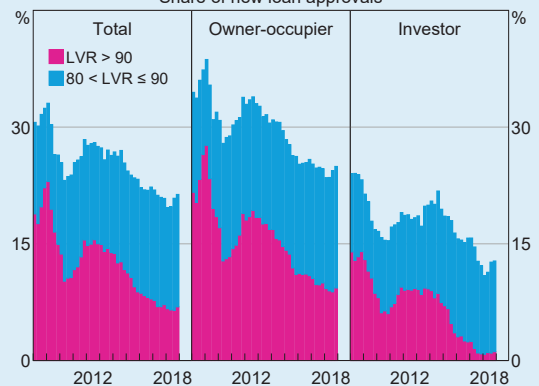
The continuing low rates of negative equity outside the mining exposed regions reflect three main factors: the previous substantial increases in housing prices; the low share of housing loans written at high LVRs; and the fact that many households are ahead on their loans, having accumulated extra principal payments.

- Housing prices in some areas of Sydney and Melbourne have fallen by upwards of 20 per cent from their peak in mid to late 2017. But only a small share of owners purchased at peak prices, and many others experienced

price rises before property prices began to fall. Properties purchased in Sydney and Melbourne since prices peaked account for around 2 per cent of the national dwelling stock. Looking further back, properties purchased in these two cities since prices were last at current levels still only account for around 4½ per cent of the dwelling stock.

- Few recent borrowers had high starting LVRs. Over the past five years, the share of loans issued by ADIs with LVRs above 90 has roughly halved. Since 2017, it has averaged less than 7 per cent (Graph B2). Around 80 per cent of ADI loans are issued with an LVR of 80 or less. Around 15 per cent of owner-occupier borrowers and 20 per cent of investors take out a loan with a starting LVR of exactly 80.

Graph B2
ADIs' High LVR Loans
Share of new loan approvals



Sources: APRA; RBA

- Given most borrowers do not have high starting LVRs, housing price falls need to be large for widespread negative equity. Only 15 per cent of regions have experienced price declines of 20 per cent or more from their peaks.⁴ Around 90 per cent of these regions are in Western Australia, Queensland and the Northern Territory.

³ Within the Securitisation Dataset, around 11 per cent of Authorised Deposit-taking Institutions' (ADIs') loans originated in mid 2018 had a starting LVR above 80, whereas under 20 per cent of new ADI loans reported to APRA had a starting LVR above 80. For more information on the representativeness of the Dataset see Fernandes K and D Jones (2018), 'The Reserve Bank's Securitisation Dataset' RBA Bulletin, December.

⁴ Regions referred to here are Statistical Area 3 regions (SA3) from the Australian Statistical Geographic Standard.

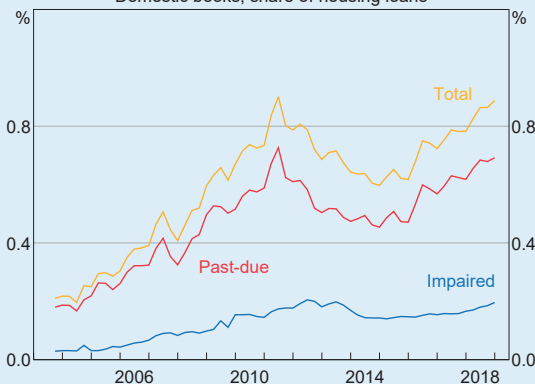
- If a borrower has paid off some of their debt, then price declines will need to be larger still for them to be in negative equity. Most borrowers have principal and interest loans that require them to pay down their debt and many borrowers are ahead of their repayment schedule. Around 70 per cent of loans are estimated to be at least one month ahead of their repayment schedule, with around 30 per cent ahead by two years or more.
- When a borrower is behind on repayments *and* their loan is in negative equity, banks classify the loan as 'impaired'.⁵ Banks are required to raise provisions against potential losses from impaired loans through 'bad and doubtful debt' charges. Currently the proportion of impaired housing loans is very low, at 0.2 per cent of all residential mortgages, despite having increased of late (Graph B3).

Negative equity is concentrated in Western Australia, Queensland and the Northern Territory

Queensland, Western Australia and the Northern Territory together account for around 90 per cent of all mortgage debt in negative equity. These states have regions that experienced large and persistent housing price falls over several years. This has often been coupled with low income growth and increases in unemployment, which have reduced the ability of borrowers to pay down their loans.⁶

Loans currently in negative equity were, on average, taken out around five years ago and had higher average LVRs at origination, of around 85 per cent.⁷ This made them particularly susceptible to subsequent falls in property values. Investment loans are also disproportionately represented, despite typically having lower starting LVRs than owner-occupier loans. Investors are more likely to take out interest-only loans in order to keep their loan balance high for tax purposes. Around 10 per cent of loans in negative equity have interest-only terms expiring in 2019, which is double the share for loans in positive equity. For these borrowers, the increase in repayments from moving to principal and interest may be difficult to manage, especially as loans in negative equity are already more likely to be in arrears. Having more borrowers in this scenario is distressing for the borrowers themselves and for the communities they live in. However, it is unlikely to represent a risk to broader financial stability given it remains largely restricted to mining-exposed regions, which represent a very small share of total mortgage debt.

Graph B3
Banks' Non-performing Housing Loans*
Domestic books, share of housing loans



* Past-due loans are 90+ days in arrears and well secured; impaired loans are in arrears or otherwise doubtful and not well secured
Sources: APRA; RBA

5 Some positive equity loans are deemed 'impaired' if repayment becomes doubtful (for example a borrower loses their job).

6 For instance, housing prices around Gladstone have halved since 2012, while prices in the Pilbara fell by upwards of 70 per cent in some areas (though prices have started to grow again more recently).

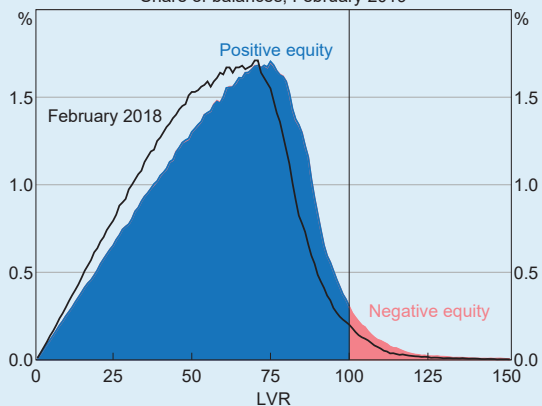
7 This compares to an average LVR at origination of under 70 per cent for loans in positive equity.

Further significant housing price falls in Sydney and Melbourne would see negative equity increase, but widespread defaults are unlikely

Continued housing price falls would be expected to increase the incidence of negative equity, particularly if they affect borrowers with already high LVRs. Around 1¼ per cent of loans by number (and 1¾ per cent of loans by value) have a current LVR between 95 and 100, making them likely to move into negative equity if there are further housing price falls (Graph B4). However, compared to the international experience with negative equity during large property downturns, the incidence of negative equity in Australia is likely to remain low. Negative equity peaked in the United States at over 25 per cent of mortgaged properties in 2012 and in Ireland it exceeded 35 per cent, as peak to trough price falls exceeded 30 and 50 per cent respectively.⁸ However, high origination LVRs were far more common in these countries than they have been in Australia.⁹

Even if negative equity was to become more common in the larger housing markets of Sydney and Melbourne, impairment rates for banks are unlikely to increase significantly while unemployment and interest rates remain low. ❖

Graph B4
Current LVR Distribution*
 Share of balances, February 2019



* Loan balances adjusted for redraw and offset account balances; property prices estimated using SA3 price indices
 Sources: ABS; CoreLogic; RBA; Securitisation System

8 In the United States, negative equity was more of a risk for financial stability than it is in Australia, as many loans there are issued on a non-recourse basis, which creates an incentive for distressed borrowers to default and walk away.

9 In Ireland, 20–30 per cent of new mortgages in 2006–08 had an origination LVR above 90.

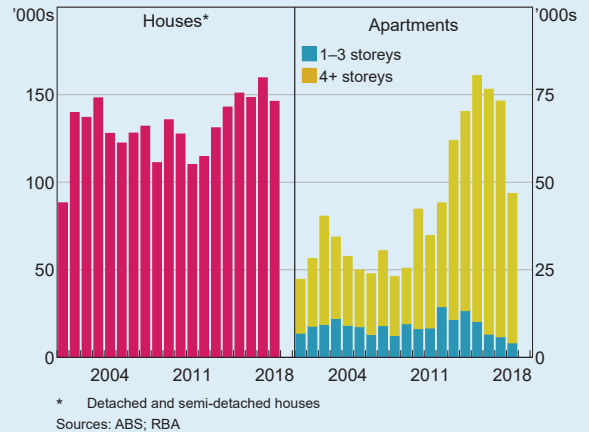
Box C

Risks in High-density Apartment Markets

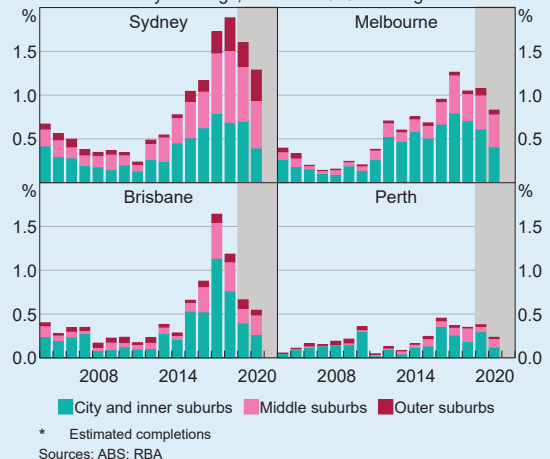
The mix of new housing being built in Australia has changed substantially over the past five years. Between 2014 and 2018, apartments accounted for roughly one-third of all new dwellings approved for construction in Australia, up from 15 per cent in the previous decade (Graph C1). Most of this increase in new apartment construction has been of high-density apartment developments, with four or more storeys. Much of this has been concentrated in inner-city and middle-ring suburbs and, in Sydney, it has also spread to suburbs in the outer ring (Graph C2).

The shift towards apartment construction nationally has been driven by a number of factors. One is that population growth, and so underlying demand for housing, has been strongest in Sydney and Melbourne. As these cities are larger, and more geographically constrained, there is a greater tendency towards more concentrated dwelling construction. The strength of investor and foreign demand in these cities has also been a factor. According to the 2016 census, roughly two-thirds of occupied apartments in Sydney and Melbourne were rented. In comparison, a little under half of semi-detached dwellings and one-fifth of detached houses were rented. Liaison with developers indicates that foreign buyers were also a significant source of demand for apartments, especially in Sydney and Melbourne.¹

Graph C1
Residential Building Approvals
Six-month annualised



Graph C2
High Density Apartment Completions*
4+ storey buildings, share of 2016 dwelling stock



¹ Rosewall T and M Shoory (2017), 'Houses and Apartments in Australia' RBA Bulletin, June, pp 1–11.

The large influx of supply has the potential to exacerbate housing price declines

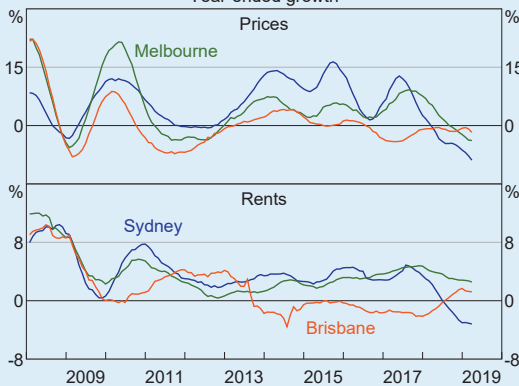
High-density apartment developments can exacerbate price cycles because they have long planning and development processes. When prices are rising rapidly, developers are willing to pay high prices for land on which to build apartments. Households, including investors, are willing to purchase apartments off the plan, confident that the apartment will be worth more than they paid for it when it is finally completed. And developers find it easier to get financing to undertake their projects. This continues as long as prices are rising. The large increase in supply, however, ultimately sows the seeds of a decline in prices which, if large enough, results in development becoming unattractive, new supply falling and the cycle starting again. There can be situations where developers, lenders and prospective buyers are focusing on the feasibility of individual projects but have limited information about similar, nearby projects also in the planning stage, which collectively would weigh on local apartment market conditions. The recent decline in apartment prices in Sydney and Melbourne partly reflects the expansion in supply, as well as a number of demand factors (Graph C3; also see discussion in Chapter 2).

Lower apartment prices increase the likelihood of settlement failures, but these remain low to date

The majority of high-density apartments are sold off the plan (pre-sales). These ‘pre-sales’ usually require a deposit from buyers at the time of purchase, with the settlement balance payable at the completion. The time between apartments being pre-sold and completed can be long, often a couple of years. When circumstances change between the date of pre-sale and completion, there is a risk that some buyers will not go ahead with purchasing the apartment (settlement failure). Historically, a small share of new apartments fail to settle, even when apartment market conditions are supportive (for example, due to a change in the buyer’s personal situation, such as ill health or divorce).

Most buyers of off-the-plan apartments need a mortgage to pay the balance when the apartment is completed. The amount they can borrow is constrained by the bank’s valuation of the property at the time of completion. If lenders’ valuations are lower than purchase prices, and banks reduce the amount they are willing to lend, buyers may need to use additional savings or loans from other sources to complete the purchase. Reported falls in banks’ valuations for apartments completed over the past year have not been large in aggregate. There has, however, been some variation depending on the location and quality of buildings, with valuations for high-quality buildings in sought-after areas generally remaining at or above the purchase price. In addition, banks have tightened lending standards for housing since 2015. This has typically reduced the maximum amount banks are willing to lend to buyers. Most borrowers do not borrow the maximum loan amount available, and so most borrowers would not be constrained by a change in lending criteria.²

Graph C3
Conditions in Apartment Markets
Year-ended growth



Sources: CoreLogic; RBA

² See RBA (2018), ‘Box B: The Impact of Lending Standards on Loan Sizes’, *Financial Stability Review*, October, pp 32–36.

However, for a minority of buyers of apartments, the tightening in lending standards has made it more difficult to complete their purchase.

Developers are taking steps to manage the risk of settlement failure

If settlement failures were to increase, then developers would be left holding completed but unsold apartments. This would affect cash flows and raises the risk that some developers might be unable to repay their loans. It would also hinder their ability to begin new projects.

Developers have responded to concerns about settlement failures in a number of ways. These measures include: prompting buyers to secure finance well ahead of the settlement date; connecting buyers with alternative lenders if required (including non-banks); lengthening settlement times; and, less frequently, providing financing directly to buyers. As a result, domestic buyers have largely been able to secure finance to complete their purchases. Foreign buyers have generally had more difficulty accessing finance and have reportedly needed to rely more on non-bank sources of finance (from offshore as well as Australian lenders).

Banks have tightened their lending standards for property development

Banks are exposed to both developers and buyers of apartments but loss rates are likely to be greater from developer lending because of the higher probability of default and loss given default. The largest losses have historically occurred for incomplete buildings.

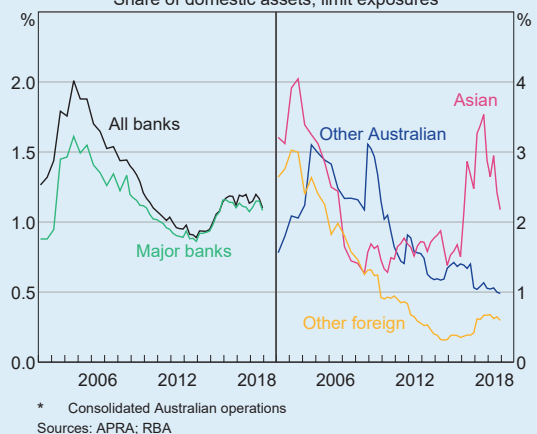
To manage the risks associated with larger projects, banks require that developers sell a share of apartments off the plan before finance is provided and construction can commence.

Banks' pre-sale requirements have tightened over the past couple of years.³ Banks have increasingly required that the value of pre-sales meet or exceed the total value of the loan and they have also reduced the share of pre-sales that can be to foreign purchasers.

With the banks tightening their lending standards to developers, some developers have turned to non-bank lenders. Some non-banks are active in financing residential apartment developments. Given they generally have easier lending standards, there is a risk that this leads to banks eroding their own lending standards. To date, this has not occurred (see 'Box D: Non-bank Lending for Property').

Banks' exposures to residential property developers are a small share of their lending, at 1 per cent of total assets. In aggregate, the size of their exposures has been steady for the past few years although at some banks it is declining (Graph C4). Banks' impaired loans for residential development have been little changed, remaining at low levels recently.

Graph C4
Residential Commercial Property Exposures*
Share of domestic assets, limit exposures



³ See RBA (2016), 'Box B: Banks' Exposures to Inner-city Apartment Markets', *Financial Stability Review*, October, pp 25–28.

Geared investors could have difficulty making loan repayments if their rental income declines

The capacity of geared investors to maintain their loan repayments can partly depend on attracting tenants and earning rental income. Weaker apartment market conditions may encourage selling by investors struggling to meet their mortgage payments or those who want to limit potential capital losses in an environment of falling prices. These dynamics would generate further price declines. Investors in other existing residential property are also affected by declining rents and increased vacancies associated with the large increase in supply of new apartments, particularly in Sydney.

Developments to date do not appear to be resulting in widespread financial stress for geared investors. The share of non-performing housing loans held by investors has remained at a low level, below that for owner-occupiers, despite having drifted a little higher in recent years. Households have also continued to build prepayments.

While risks associated with apartment markets have increased, they appear manageable

Increased risks associated with apartment markets reflect a combination of the recent easing in market conditions and further increase in supply in the next couple of years. Risks appear highest in the Sydney market, where a considerable volume of new supply is due to be completed over the next couple of years, and the recent decline in apartment prices partly reflects demand-side factors. To date, households and developers appear to be coping well with weaker apartment market conditions. Improvements to lending standards over the past few years have been supportive in managing this adjustment.

Banks have also taken a range of measures to boost their resilience over recent years and are soundly capitalised. Furthermore, the challenges in apartment markets are occurring in a generally positive macroeconomic environment, with strong population growth, favourable labour market conditions and low interest rates likely to support housing demand going forward. ✖

3. The Australian Financial System

The Australian financial system remains resilient and its ability to withstand shocks continues to strengthen. Banks' capital ratios are much higher than they were a decade ago and high compared with international peers. They are also now sufficient to withstand a shock of equivalent magnitude to the majority of historical bank crises. Capital ratios have been supported by high profit levels, although profits have not grown much in recent years as banks divested non-interest income-generating businesses. However, divestments of these capital-intensive subsidiaries support capital ratios. Asset quality remains strong – supported by stronger lending standards over recent years – though the share of non-performing housing loans is edging higher, particularly in mining-exposed areas. Banks' management of their funding and liquidity needs has settled in a new dynamic following an extended transition to more stable forms of funding and increased holding of liquid assets. A key focus in recent years has been increasing defences against rising threats from cyber attacks.

Addressing deficiencies around culture and governance revealed by the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry poses a challenge for the financial system. While positive steps have already been taken by institutions and regulators, more needs to be done to ensure services meet public expectations and risks of future misconduct are reduced. Managing the large number of changes stemming from the Royal Commission is a substantial task for some

financial institutions. Because of the scale of this task, there is a risk that implementation is delayed or piecemeal, issues around misconduct are not adequately addressed, or that it distracts banks from appropriately managing other risks. The costs of implementing these changes and reimbursing mistreated customers will impact the profits of financial institutions, though this impact appears manageable and, in effect, corrects for past profits being inflated by poor practices. The life insurance industry faces substantial challenges. Regulatory reform to address issues revealed by the Royal Commission and other inquiries, as well as structural issues around underpricing and loose product definitions, could have a sizeable impact on profitability.

A tightening in the lending standards of authorised deposit-taking institutions (ADIs) over recent years has contributed to an increase in lending for property by non-ADIs. While non-ADIs are not subject to prudential regulation, the risks they pose to financial stability remain limited as they account for a small share of overall housing loans. Systemic risks in other parts of the financial sector remain generally low. General insurers' profitability remains steady and they continue to use reinsurance to manage higher natural disaster claims. The superannuation industry will likely face some challenges following the Royal Commission and the Productivity Commission's review of superannuation. Low debt within prudentially regulated funds means that risks to members' funds are minimal.

Culture and governance within financial institutions need improving ...

Deficiencies of culture and governance within financial institutions have been highlighted over the past year, as the Royal Commission disclosed numerous instances of misconduct.¹ The most egregious examples examined by the Royal Commission included charging financial advice fees without providing a service, not acting in the best interests of superannuation fund members and unscrupulous selling of insurance and handling of insurance claims. The commissioner attributed these failures to four underlying causes: incentives that rewarded sales and near-term profit but did not always encourage compliance with the law and proper standards; an imbalance of power and knowledge between providers of financial products and services and their customers; conflicts of duty and interest between intermediaries (like mortgage brokers and financial planners) and their customers; and, too often, financial services entities that broke the law were not properly held to account by regulators.

The findings from the Royal Commission supported the conclusions of the Australian Prudential Regulation Authority's (APRA's) earlier Prudential Inquiry into the Commonwealth Bank of Australia (CBA). That inquiry highlighted that CBA's continued financial success had allowed it to develop a culture of complacency towards managing operational, compliance and conduct risks. This included paying insufficient account to poor operational risk and customer outcomes, despite effectively managing financial risks.

The absence of a good culture in the financial sector has clear social costs. It can also have financial stability implications. International experience has shown that pervasive misconduct

may be indicative of poor control of risks and can significantly impair bank profitability and capital.

Positive steps are being taken, but change can be challenging

Financial institutions and regulators have already taken important steps to improve culture and governance in the financial system. Financial advisors are, in some cases, removing grandfathered conflicted remuneration arrangements and increasing standards of education in response to the government's reforms to raise professionalism in the industry. Some conflicts of interest faced by mortgage brokers have been reduced by ending volume-based commissions and paying upfront commissions on funds drawn, rather than total loan amounts. Banks have been revising variable pay structures to improve incentives to manage non-financial risks. Banks have also developed maps of accountable senior executives and directors in response to the introduction of the Bank Executive Accountability Regime (BEAR). Regulators have also been more active in enforcing the law.

The recommendations made in the Final Report of the Royal Commission will require further changes to legislative frameworks and to how regulators and financial institutions operate. These recommendations include: addressing conflicts of interests in mortgage broking and financial advice; simplifying laws by removing numerous exceptions to ensure that the intended behaviour is clear to all; placing the onus on financial institutions to strengthen culture and governance practices, including by designing and regularly reviewing remuneration arrangements to ensure they provide the right incentives; and strengthening how regulators respond to misconduct and are held accountable for their performance.

Changes are clearly needed to improve the financial system. Changes should reduce the risk of future misconduct, ensure the quality of financial

¹ See the Final Report, available at <<https://financialservices.royalcommission.gov.au/Pages/reports.aspx>>.

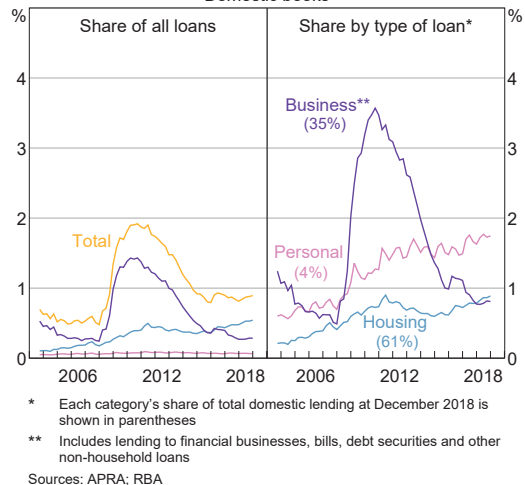
services provided in Australia meets community expectations, and protect the reputation of Australian banks among international creditors. However, there are risks associated with the design and implementation of reforms. One risk is that the implemented reforms do not fully address the issues identified by the Royal Commission, are not timely or distract banks from managing other risks. Another is if the reforms excessively tighten the supply of credit (see 'Chapter 2: Household and Business Finances'), which, by its nature, requires taking risks.

Responding to the Royal Commission's recommendations will also increase financial institutions' costs, but will increase system resilience in the long term. In a sense, this corrects past underspending on systems or unfair revenue collection. In the near future, firms will incur further remediation costs relating to the charging of 'fees for no service' in the wealth management industry; these already exceed \$1 billion. Revenue in the life insurance industry could also be significantly impacted (see below). Costs will also rise as firms correct for underspending on information technology (IT) systems in the past, compliance requirements increase and legal fees rise as regulators take more legal enforcement. There could also be payments resulting from lawsuits. The Australian financial system is well placed to manage these challenges, given it is well capitalised and generally starting from a position of strong profits.

Banks' resilience is underpinned by strong overall asset performance ...

Australian banks' domestic asset performance remains strong and broadly in line with that seen over the past few years. This is despite a slight deterioration over 2018 that was predominantly due to the performance of housing loans (Graph 3.1). The recent small decline in housing

Graph 3.1
Banks' Non-performing Assets
Domestic books



loan performance has occurred alongside very low levels of business loan non-performance. More generally, loan impairments have remained at historically low levels largely because of the strong collateral position underlying housing loans despite large price declines in some locations. However, there is a risk that some housing loans that are already past due will become impaired if the value of the dwelling securing the loan were to fall substantially further.²

Another risk to banks' asset performance is the potential for rapidly rising lending by foreign banks to amplify the credit cycle, particularly for business credit. Foreign-owned banks operating in Australia have accounted for more than half the total growth in business credit over the past two years, despite accounting for less than 20 per cent of existing loans. Much of the growth in business lending has been by Asian banks, but lending by European banks is now also growing strongly. Recent growth in foreign bank lending has primarily reflected their involvement in funding

² Impaired loans are those that are not well secured and for which there are doubts as to whether the full amounts due will be obtained in a timely manner. Past-due loans are at least 90 days in arrears, but well secured.

large infrastructure projects. Historically, rapid expansion by foreign banks has amplified the credit supply cycle and prompted domestic banks to loosen lending criteria to retain market share. In the current upswing, however, these risks have so far been contained by both increased regulatory scrutiny and a cautious approach by banks.

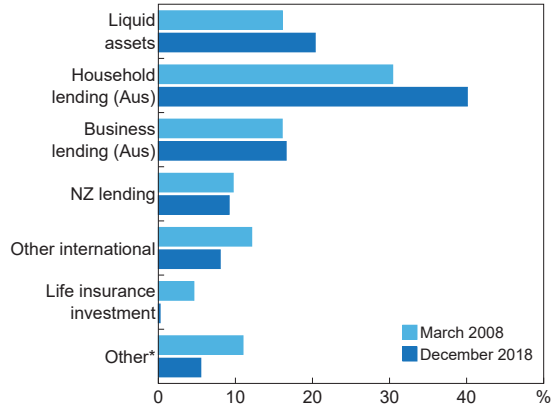
... while their assets have become more concentrated but simpler

Banks' business models are becoming simpler, but less diversified, as they shed their wealth management and life insurance businesses. The profitability of these businesses had historically been uncorrelated with core banking income and more stable during downturns. Banks have also reduced their level of diversification by retreating from international lending (Graph 3.2). Over recent years, Australian-owned banks have sold foreign subsidiaries and scaled back their overseas lending across a range of countries, with the notable exception being New Zealand. Abstracting from New Zealand and their holdings of sovereign bonds or foreign central bank deposits (to satisfy regulatory requirements), the international exposures of Australian-owned banks now only accounts for 8 per cent of banks' assets.

The pull-back from wealth management and international lending has allowed banks to focus on domestic lending, particularly for housing, which has historically been more profitable. It also reduced operational risks by minimising the complexity associated with operating in multiple jurisdictions. However, the greater concentration of home lending in Australia and New Zealand, whose economies have historically been highly correlated, has also reduced diversification. High levels of concentration in particular asset classes can create vulnerabilities for financial institutions.

Even though Australian banks are now more domestically focused, the performance of their

Graph 3.2
Australian-owned Banks' Assets
Share of consolidated assets



* Mainly comprising derivatives
Sources: APRA; RBA

remaining international assets is still sensitive to global shocks, such as a disruptive Brexit. The risk of impairments on loans to the UK non-bank private sector are small given Australian banks' low exposures (only 1–2 per cent of total assets). However, a disruptive Brexit could pose more risk to global funding and hedging markets used by Australian banks.

Cyber attacks or failures of information technologies could cause material losses

Risks related to IT have increased over time. IT systems have become more complex and digital platforms have become more widely used by banks and their customers. Some financial institutions also have legacy systems that are more vulnerable to failure and the resources to restore them may not be readily available. Against this background, the threats from cyber attacks that result in theft, disruption or damage have increased. This is a constantly evolving threat that requires firms to regularly upgrade their defences to mitigate new vulnerabilities. While cyber attacks and malfunctions are most likely to involve manageable financial losses for

specific institutions, they could have systemic implications in some circumstances. An example of this is an attack or malfunction that erodes data integrity, thereby creating uncertainty about banks' asset or liability positions. An extended disruption to the Australian wholesale payment network would also be challenging, as discussed below. The impact of cyber attacks or a significant malfunction could also be amplified by a loss of creditor confidence, potentially leading to a withdrawal of funding.

Banks and regulators are working to increase the security and resilience of the Australian banking system's IT assets. APRA recently introduced prudential standards for information security. These will shore up Australian banks' resilience against information security incidents (including cyber attacks) and their ability to respond effectively in the event of a breach.

Liquidity risks are being well managed ...

One measure of how banks are managing liquidity risk is their Liquidity Coverage Ratio (LCR), which measures their buffer of liquid assets against short periods of liquidity stress. The system-wide LCR has remained stable at around 125–135 per cent over recent years, above the 100 per cent minimum requirement. Another measure of liquidity risk management is the Net Stable Funding Ratio (NSFR), which captures the extent to which more stable liabilities are used to fund less liquid assets. NSFRs have risen to be around banks' target levels and above regulatory requirements.

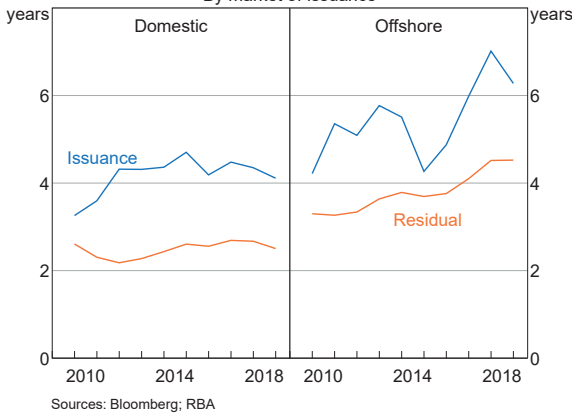
One vulnerability banks face is their use of offshore funding. Offshore investors are more prone to repatriate their investments during periods of financial stress, as investor home bias increases. Because of this, the International Monetary Fund (IMF) raised concerns about the extent to which Australian banks source

wholesale funding from offshore markets during its Financial Sector Assessment Program (FSAP) of Australia last year (see 'Box E: The 2018 Financial Sector Assessment Program (FSAP) Review of Australia'). A few factors reduce the risks to Australian banks that arise from offshore funding. Australian banks fully hedge the foreign currency (and interest rate) risk arising from their use of foreign-currency debt. In addition, Australian banks use most of their offshore funding to finance Australian assets, rather than foreign currency-denominated assets. This means that Australian banks could substitute domestic funding for foreign funding in response to a disruption in global markets. Their ability to do this may well be constrained by the capacity of domestic markets, although ultimately the Reserve Bank can provide liquidity as required. In a period of financial stress, the Australian dollar may well depreciate, as it has in the past. This would reduce the quantity of foreign funding that banks would need to roll over and support their liquidity as derivative counterparties would need to post additional margin.

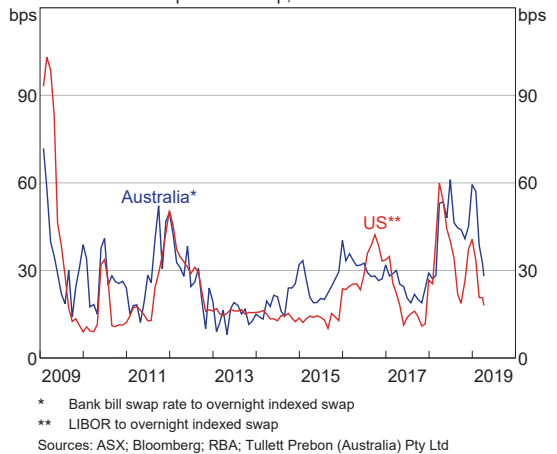
Accessing offshore markets has allowed Australian banks to issue debt at longer tenors than they can issue domestically. Longer tenors have been important in reducing banks' future refinancing risks and vulnerability to market disruption. Since late 2014, banks have increased the residual maturity of their offshore wholesale funding from 3½ to 4½ years (Graph 3.3). This extension of maturity has had only a little impact on the cost of funding due to very low term premia in bond yields during this time.

Spreads on Australian banks' long-term wholesale funding have increased since the start of 2018 (Graph 3.4). This rise in spreads on Australian bank bonds has been consistent with a move higher in spreads on international banks' and non-financial corporation bonds, implying that the

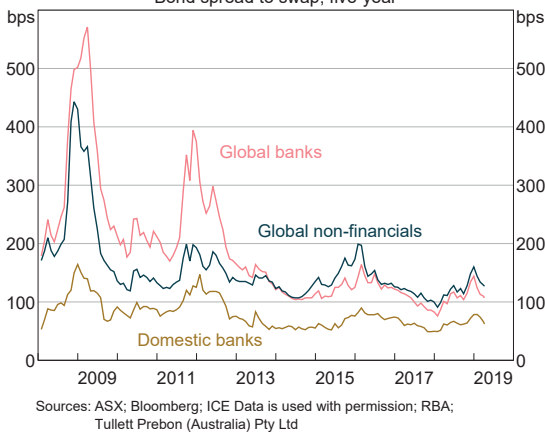
Graph 3.3
Weighted Average Bank Bond Tenor
 By market of issuance



Graph 3.5
Banks' Short-term Debt Pricing
 Spread to swap, three-month



Graph 3.4
Long-term Debt Pricing
 Bond spread to swap, five-year



move reflects greater risk aversion rather than a reassessment of the riskiness of Australian banks. Bank bond spreads and, in particular, credit default swap (CDS) premia, still remain low by historical standards and banks continue to be able to issue comfortably in long-term funding markets.

Over the past year, spreads on short-term debt issued by Australian banks have been around their highest levels since the global financial crisis (Graph 3.5). Spreads also increased in US money markets. These increases have been especially pronounced near the end of each quarter. In

the past, wider spreads have typically been an indicator of higher perceived near-term credit risk of banks. However, as discussed above, other measures of banks' long-term credit risk, such as bond spreads and CDS premiums, remain low, indicating that credit risk is not driving the increase in spreads.

While there is some uncertainty around the underlying cause of the rise in the level and volatility of short-term funding spreads, it appears to be largely related to structural developments in money markets. As discussed in recent *Statements of Monetary Policy*, changes in asset allocations by investment funds and increased demand for Australian-dollar funding by banks operating in Australia have contributed to lifting the average level of the bank bill swap rate (BBSW). Another factor that has increased volatility is reduced depth in some short-term money markets, particularly around end-of-quarter periods. Reduced depth is, in part, a consequence of banks being less willing to supply liquidity due to changes in banking regulation – including the *Dodd-Frank Act*, introduction of leverage ratios and a change in banks' risk appetite and greater focus on conduct in money markets. A persistent

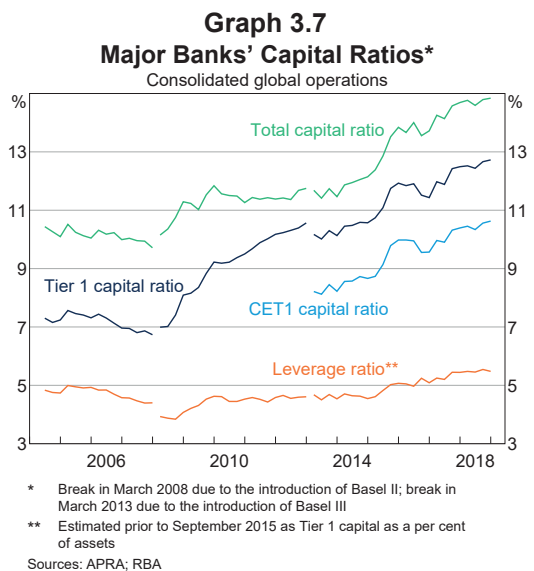
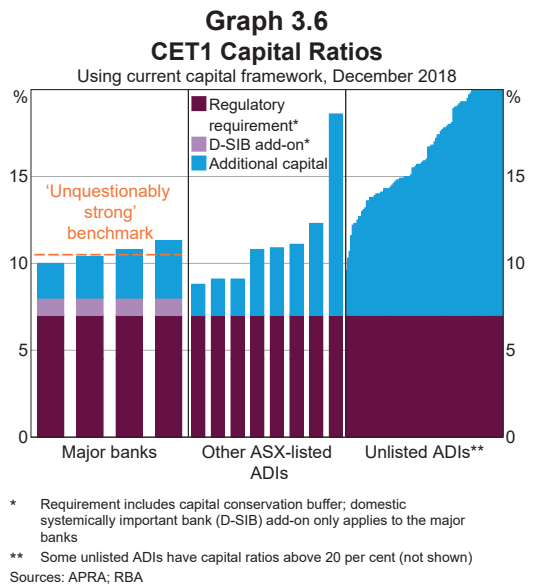
rise in the average level of BBSW imposes additional costs on banks that may be passed on to retail interest rates, but this alone does not imply financial stability risks. In contrast, the recent volatility of BBSW indicates that money markets have less capacity to accommodate changes in supply and demand and so are more prone to tightening than in the past.

... and banks' capital positions are strong

Australian ADIs mostly already meet APRA's higher 'unquestionably strong' capital benchmarks that will apply from next year. Major banks' Common Equity Tier 1 (CET1) ratios are all at, or close to, APRA's benchmark of 10½ per cent (Graph 3.6). The completion of already announced divestments of wealth management and life insurance businesses over the coming years are expected to further boost these ratios as not all of the capital released is expected to be returned to shareholders. Other ADIs also have sufficient capital to meet the expected increase in their minimum capital requirements.

The increase in capital has made ADIs more resilient to solvency shocks. Major banks' Tier 1 capital ratios are now more than one and a half times what they were before the financial crisis, and are within the top quartile of large banks internationally when measured on a comparable basis (Graph 3.7). Major banks' Tier 1 capital ratios (12¾ per cent) are also well within the range that would have been sufficient to withstand the majority of historical bank crises.³ The major banks' leverage ratios (the ratio of Tier 1 capital to non-risk-weighted exposures) have also increased, rising by more than one-third over the

3 An IMF study found a Tier 1 capital ratio of 15 to 23 per cent is appropriate for many advanced economies (see Dagher *et al* (2016), 'Benefits and Costs of Bank Capital', IMF Staff Discussion Note No 16/04). The major banks' Tier 1 capital ratio is equivalent to 17½ per cent on an internationally comparable basis accounting for APRA's stricter application of global bank standards.



past decade to be well above APRA's proposed minimum requirements of 3.5 per cent.

The capital available to protect the financial system and the economy from a disorderly bank failure will increase further with APRA's recently proposed framework for loss-absorbing capacity to support orderly resolution. The proposed framework would apply to the major banks (and possibly some other ADIs with complex

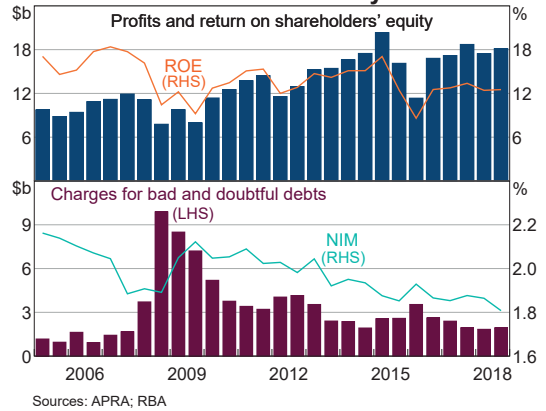
business models) and will increase the total capital requirements of these ADIs by 4–5 percentage points from 2023. This would align major banks’ loss-absorbing capacity with global peers, accounting for differences in capital frameworks. Banks are expected to meet this additional capital by issuing Tier 2 capital instruments. APRA is consulting with industry on the proposal and is expected to finalise the framework later this year.

In December, the Reserve Bank of New Zealand proposed to increase minimum CET1 capital ratios for systematically important banks to 16 per cent, while also raising average risk weights (see ‘Chapter 1: The Global Financial Environment’). Australian banks may have to increase their group capital ratios to meet both these higher requirements for their New Zealand subsidiaries and APRA’s requirements for their Australian operations. The increase in required capital for a New Zealand subsidiary could come from retaining most of their profits in New Zealand (which would directly increase group capital) or via an equity injection from the parent bank (which would require the parent bank to increase its own capital as equity in a subsidiary is counted as a risk-weighted asset). Australian banks could be constrained from increasing their equity exposures to their New Zealand subsidiaries due to maximum exposure limits imposed by APRA, though these standards are currently being reviewed.

Bank profits remain healthy, but are under pressure

Banks’ resilience and capital generation has been underpinned by high profits over many years. However, profits have remained broadly steady since 2014 (Graph 3.8). The absence of growth mainly reflects a fall in non-interest income as banks have sold or scaled back a number of their fee-generating activities, while the contribution from falling bad and doubtful debt charges is less than in the past. More recently, a narrower net interest margin (NIM) due to pricing competition

Graph 3.8
Banks’ Profitability

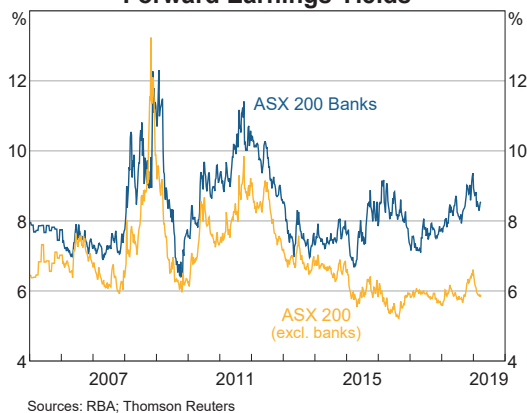


and higher funding costs has reduced interest income growth. In addition, operating expenses have increased due to higher compliance, IT and customer remediation costs. As profits and capital have both steadied, so too has banks’ return on equity (ROE). ROE is now a few percentage points lower than its historical average but remains high compared with international peers.

Analysts expect minimal growth in bank profits over the year ahead. Net interest income growth is expected to be below average as credit growth slows further and NIMs remain under pressure. Bad and doubtful debt charges are also expected to pick up a little from their current very low level. The final cost of remediation for misconduct identified over recent years is uncertain, and could exceed existing provisions, while spending on compliance and IT may remain elevated in order to address some of the recommendations of the Royal Commission. Overall, there appears to be greater-than-usual uncertainty about the future profit outlook for banks because of the increased scrutiny on banks and the weaker outlook for property prices and housing credit growth.

Heightened uncertainty about future profitability has raised Australian banks’ implied cost of capital, as measured by the forward earnings yield on their stocks (Graph 3.9). Earnings yields

Graph 3.9
Forward Earnings Yields



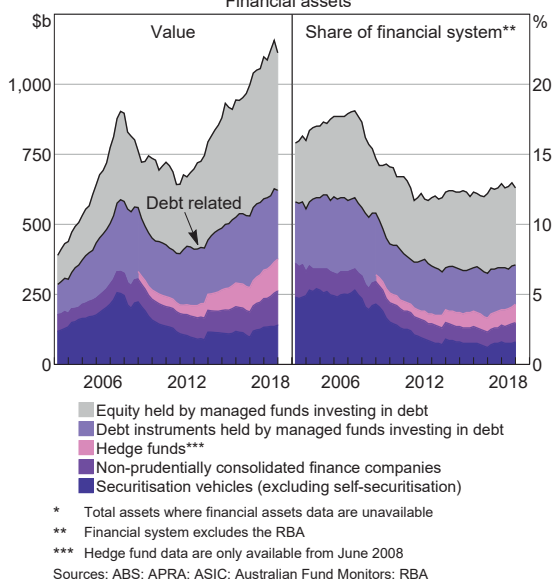
have moved higher for bank stocks globally, suggesting that a reduction in global risk appetite for banking stocks has also been a factor. The rise in banks' forward earnings yields has been about a half percentage point more over the past year than forward earnings yields for other Australian stocks. This widening gap continues a pattern of the past four years. Banks' current forward earnings yields are now above their pre-crisis average, despite a large decline in risk-free rates.

Non-ADI lending is growing in some areas, but still accounts for a small share of overall lending

Tighter prudential regulation of ADIs over recent years has contributed to some lending activity migrating to less regulated non-ADI lenders. Property lending is one area which warrants particular attention given the significant tightening of lending standards between 2014 and 2017. While non-ADI lenders have increased their share of property lending over this period, financial stability risks from this shift remain limited for now (see 'Box D: Non-bank Lending for Property'). Outside of property, there is little evidence of strongly increasing lending from non-ADIs. Overall debt financing from the non-ADI sector has remained steady at around

7 per cent of the financial system, well below the share in 2007 (Graph 3.10). The risk of contagion from non-ADI lenders to banks is also limited given the low level of banks' exposures to the sector (only a few per cent of their financial assets). Data on non-ADI lending activity are currently limited, which makes it difficult to properly assess these risks. Legislation passed in March 2018 that provides APRA with greater data collection powers should help improve coverage of non-ADI lenders. It also provides APRA with 'reserve' powers to impose rules on non-ADI lenders if their activities are judged to pose a material risk to financial stability.

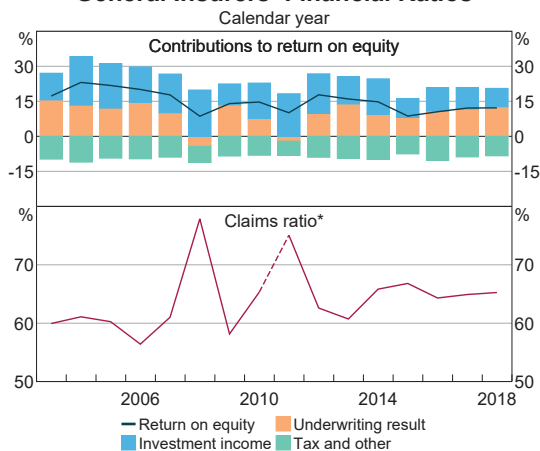
Graph 3.10
Non-ADI Financing Activity
Financial assets*



The general insurance industry is in good health ...

General insurers' profits remained at a healthy level in 2018 after improving over the previous few years (Graph 3.11). The improvement in profits was due to stronger underwriting results that partly offset a decline in investment returns. General insurers continued to benefit from increases

Graph 3.11
General Insurers' Financial Ratios



* Ratio of net incurred claims to net premium; change in reporting basis after June 2010

Source: APRA; RBA

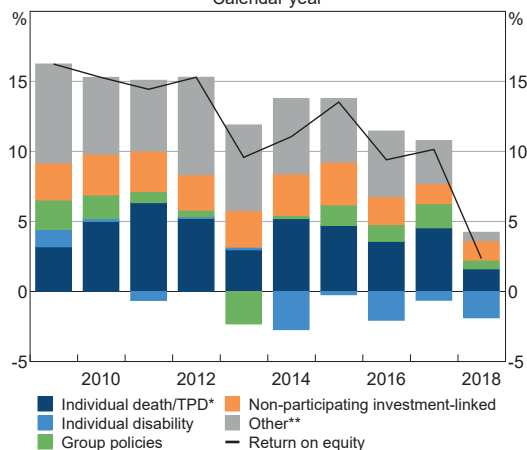
in insurance premiums in some consumer and commercial business lines, a reversal from earlier downward pressure on underwriting margins. The growth in premiums and lower-than-expected inflation allowed insurers to release more reserves than usual, which has helped steady insurers' claims ratios (net incurred claims relative to net premiums) over recent years. Natural disaster costs increased in the second half of 2018, but reinsurance arrangements have reduced the impact on direct insurers' profits. Insurers also remain well capitalised, with capital equivalent to 1.7 times APRA's prescribed amount.

Lenders mortgage insurers (LMI) are also well capitalised, but their profits remain under pressure. Revenues have declined due to the low volume of new high LVR mortgage lending, which is generally insured (see 'Chapter 2: Household and Business Finances'). Claims have also increased due to the small rise in impairments, particularly in Western Australia. As discussed in the October 2018 *Financial Stability Review*, the Productivity Commission's recommendations to improve choice for LMI customers, if adopted, could add additional pressure to profits.

... but there are sizeable challenges in life insurance

Life insurers' profits continue to decline and the industry reported a loss in the second half of 2018, driven by weak investment returns and a write-off of goodwill (Graph 3.12). Forthcoming changes in the industry will add further pressure on profitability. These changes include regulatory reform to address the issues raised at the Royal Commission and the Parliamentary Inquiry into the life insurance industry. A recommended ban on unsolicited selling of life insurance and the review of life insurance commissions will impact insurers' revenues. Legislation to require insurance within superannuation funds to be offered on an opt-in basis for inactive accounts will also affect revenues from group life insurance policies unless premiums are increased for other members. These recommendations compound persistent structural issues affecting profitability, including historical under-pricing of policies, loose product definitions, overly generous benefits and rising claims, particularly for mental health. The latter has particularly weighed on

Graph 3.12
Contributions to Life Insurers' Profitability



* TPD = total and permanent disability

** Includes profit from other non-risk business

Sources: APRA; RBA

individual disability income insurance, which accounts for much of the recent decline in profit. This has been an area of heightened focus for APRA and is the subject of a thematic review. These issues will take a long time to resolve given the long-term nature of insurance contracts and the pressure to retain market share in a competitive market.

The change in ownership of life insurers over recent years may help them to manage this transition. Almost all Australian banks have sold, or announced the sale of, their life insurance businesses to large global insurance specialists. These new owners have underwriting expertise, scale and strong financial resources which should have them well placed to undertake the necessary change. The sector remains well capitalised, with capital equivalent to 1.8 times the prescribed amount.

The superannuation sector also faces challenges, but these don't risk member funds

Significant changes to the superannuation sector are likely following the Royal Commission, the Productivity Commission's superannuation review and the sale by most major banks of their wealth management businesses.⁴ In particular, proposals to 'staple' a single default account to each worker or to introduce a shortlist of top superannuation funds would reduce inflows for some funds. A focus on addressing underperforming funds could lead to closures. While this transition will involve challenges and give rise to operational risk, the lack of debt within APRA-regulated funds – which are not generally permitted to borrow – makes these risks more manageable without risk to members' funds.

4 See the Productivity Commission's report <<https://www.pc.gov.au/inquiries/completed/superannuation/assessment/report>>.

In contrast, self-managed superannuation funds (SMSFs) are permitted to borrow under certain arrangements. The use of such debt has increased in recent years, mainly to purchase property. The use of debt within SMSFs raises policy concerns and has been associated with inappropriate or conflicted financial advice, creating a risk to some individuals' retirement savings.⁵ However, leverage in SMSFs as a whole is just a few per cent of assets and poses little risk to broader financial stability at this stage. The take-up of SMSF borrowing arrangements has slowed recently and most banks have ceased lending to the sector in light of the financial and reputational risks associated with it.

Further strengthening of financial market infrastructures remains a priority

Financial market infrastructures (FMIs), such as central counterparties (CCPs), securities settlement systems and payment systems can strengthen the markets they serve and play a critical role in fostering financial stability. CCPs have the potential to significantly reduce risks to participants through the multilateral netting of trades and by imposing more-effective risk controls on all participants. However, if a CCP's risk controls fail to work as designed, a CCP can transmit risk to its participants.

The potential risks were demonstrated in September 2018, when an individual who participated directly in Nasdaq Clearing AB (a Swedish CCP that is a subsidiary of the Nasdaq Group) defaulted. The individual defaulted because he could not meet a margin call to cover losses on a concentrated position on the spread between German and Nordic power futures

5 See report by the Council of Financial Regulators <<https://www.cfr.gov.au/publications/policy-statements-and-other-reports/2019/leverage-and-risk-in-the-superannuation-system/>>.

prices. To cover the defaulter's position, Nasdaq Clearing AB used all of the defaulter's collateral that it held plus €7 million of its own capital and €107 million of default fund contributions from other participants. The call on the default fund drained about half its resources.⁶ While CCPs are designed to mutualise large losses in this way, it was not expected that the default of a private individual would cause mutualised losses on this scale.

Following the default, Nasdaq Clearing AB has announced plans to enhance its risk management framework.⁷ In broad terms, these plans include: increasing initial margin requirements; improving the auction process used to manage defaults; enhancing participant eligibility requirements; and increasing the amount of its own capital at risk in a default.

Australian regulators have also reviewed the risk management of Australian-licensed CCPs following the Nasdaq incident. These reviews have covered both arrangements for electricity derivatives (which both ASX Clear (Futures) and CME are licensed to clear) and those for derivative trading more broadly. This has assured regulators that, to the extent that the issues faced by Nasdaq are relevant, Australian-licensed CCPs had already identified these issues and have plans to address them.

- *Initial margin framework:* The frameworks used by the Australian-licensed CCPs already incorporate most of the enhancements Nasdaq Clearing AB is planning to implement. For electricity derivatives, ASX increased the margin it collects in January 2018, based on analysis that it would take

longer than previously anticipated to liquidate these contracts. Following the default at Nasdaq Clearing AB, ASX made one further adjustment to electricity derivative margins. This was to reduce the number of margin offsets it offers, effectively increasing margin requirements (since margin offsets reduce margin, typically based on the historical correlation between products whose value is linked through an economic or financial relationship). Margin requirements for Australian electricity derivatives were also considered as part of CME's application for a licence variation to clear for the market operated by FEX Global Pty Ltd, which was granted on 26 February 2019.

- *Default management framework:* CCPs operating in Australia run regular default management drills for all of their products. The RBA will be engaging with ASX and CME on their arrangements for exchange-traded commodities.
- *Default fund structure:* The way in which Australian-licensed CCPs mutualise losses is already consistent with the direction Nasdaq Clearing AB is heading (that is, not mutualising them across clearing services). In addition, Australian-licensed CCPs have arrangements to consider ad hoc increases in their default resources if there are any significant breaches of their Cover 2 requirement.⁸

While managing financial risks is key to CCPs, FMIs must also manage operational risk. This was underlined during an incident on 30 August 2018 that resulted in power loss to most IT systems at the RBA's head office. This affected the Reserve Bank Information and Transfer System (RITS) and

⁶ Nasdaq Clearing AB held €237 million in mutualised resources to cover a loss related to the commodities products it clears; €64 million of this is available to cover a default in any of the clearing services Nasdaq Clearing AB operates (not just commodities products).

⁷ See Nasdaq Commodities: Strategic Initiatives for 2019, available at <<https://business.nasdaq.com/trade/commodities/who-we-are/strategy-2019.html>>.

⁸ Under the Cover 2 requirement, a CCP's available prefunded resources must be sufficient to cover the largest potential loss in the event of the joint default of two participants and their affiliates under a range of extreme but plausible scenarios.

the Fast Settlement Service (FSS), which are used by banks and other approved institutions to settle payment obligations on a real-time basis. The bulk of the remediation actions arising from this outage have now been completed. Ongoing work through 2019 will focus on member contingency testing to ensure that the industry maintains a high level of readiness to deal with scenarios such as an extended outage of RITS. The RBA will also be working with members on enhancing security for their connections to wholesale payments systems, in line with a strategy developed by an international group of payment system overseers.⁹ This work complements ongoing efforts to ensure RITS remains resilient to cyber attacks, and is part of the RBA's ongoing program of work to maintain the security and resiliency of RITS.

More than one year since its launch, activity in the New Payments Platform (NPP) – a fast payment system that settles via the FSS – continues to increase. Daily average settlements in FSS reached around 360,000 transactions worth over \$300 million in March. This increase in activity is expected to continue as certain major banks are still to complete the full roll-out of NPP functionality to their customers, with some account types and channels not yet enabled for NPP. The NPP and the FSS add to the resilience of the Australian payments system as they can be used as an alternative way to settle payments in real time and reduce the build-up of credit risk between participating financial institutions. Some participants have had minor operational incidents affecting their NPP infrastructure, in some cases coinciding with operational incidents affecting service availability in their other systems. The relatively new and complex nature

of the system means that operational risks are probably higher in the short term as customer roll-out proceeds and participants continue to adapt to 24/7 operations. Both NPP Australia Limited (the operator of the NPP) and the RBA continue to closely monitor the resilience of the NPP infrastructure. ✎

⁹ The Committee on Payments and Market Infrastructures (CPMI) has developed a strategy to reduce the risk of wholesale payments fraud related to endpoint security <<https://www.bis.org/cpmi/publ/d178.htm>>.

Box D

Non-bank Lending for Property

Over the past three years, there has been a shift in lending for property towards non-ADI lenders (referred to as non-bank lenders in this box). Residential mortgage lending by non-banks is estimated to have been growing much faster than the rate of banks' mortgage lending. Non-bank lending to property developers has also grown at a fast pace. Non-bank lenders perform similar functions to banks and lend to a wide range of borrowers. They finance their lending by securitising loans or with funding from private investors, such as high net worth individuals and institutional investors. Non-bank lenders are prohibited from accepting deposits, and are therefore not prudentially regulated.

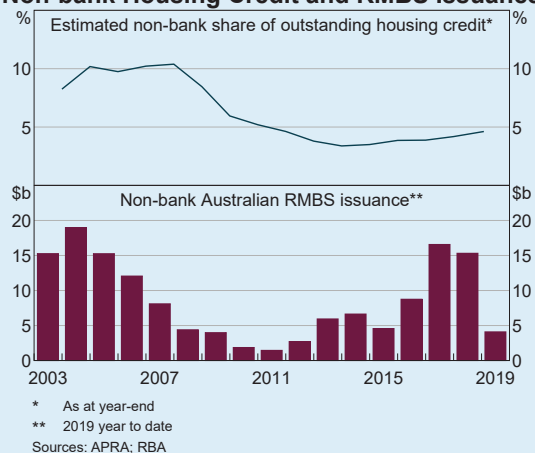
Non-bank lending supports economic growth by providing an alternative form of funding and increasing competition for lending. But the activities of non-bank lenders can pose risks to financial stability, as they have in some countries internationally. These risks arise when non-banks exacerbate credit and asset price cycles, prompt banks to weaken their lending standards or have financial links with the banking sector that see credit losses at non-banks transmitted to banks. This box assesses these risks today, in light of the recent pick-up in growth of non-bank property lending.

Non-bank mortgage lending has grown rapidly ...

Non-bank residential mortgage lending is estimated to have grown by roughly 15 per cent per annum over recent years, well above growth in lending by banks. This has seen their market

share of outstanding lending continue to trend up (Graph D1). While these estimates are based on incomplete data that may be revised over the coming year, they are broadly consistent with the information available on non-banks' liabilities. Almost all non-bank mortgage lending is funded by issuing residential mortgage-backed securities (RMBS) and non-bank issuance of these securities has trebled over the past three years. The flow of non-bank RMBS issuance in 2018 was close to the pre-crisis peak.

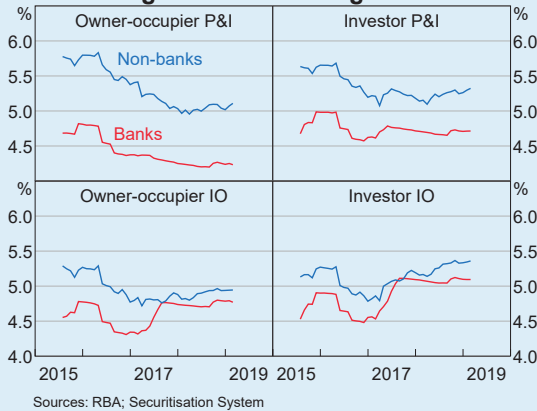
Graph D1
Non-bank Housing Credit and RMBS Issuance



A factor that had supported non-banks' increased market share has been banks' repricing of certain types of housing loans. Specifically, banks have increased the interest rates they charge on investor and interest-only (IO) loans, which are now on average around 50 basis points higher than interest rates on owner-occupier principal and interest loans. Banks increased interest rates on these products as

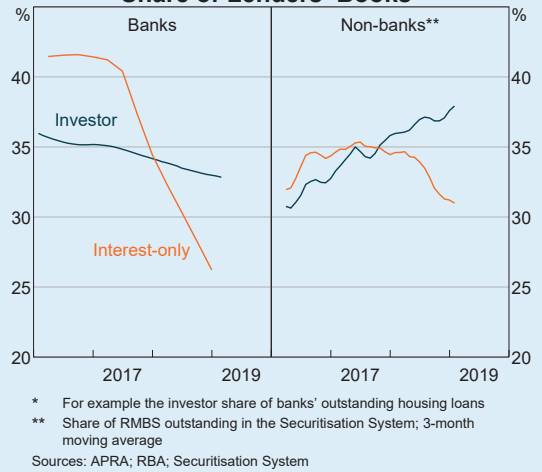
a way of meeting the investor and IO lending benchmarks introduced by the Australian Prudential Regulation Authority (APRA) in 2014 and 2017. Non-bank lenders, which were not required to meet APRA's benchmarks, often do not apply this differential to investor and interest-only loans. These benchmarks have both been removed for most lenders. But other prudential standards are changing, as have perceptions of risk, so, to date, banks' interest rate differentials based on type of loan remain. Data from the RBA's Securitisation Dataset show that non-banks generally charge higher interest rates than banks for owner-occupier principal and interest loans; however, the interest rates they charge on other loans are typically much closer to those charged by banks (Graph D2).¹ As a result, investor loans have made up a growing proportion of non-bank lending, while their proportion of IO loans has fallen by much less than banks (Graph D3). In contrast, banks have retreated from both these market segments.

Graph D2
Outstanding Variable Housing Interest Rates



1 Non-banks offer very competitive interest rates for a small proportion of owner-occupiers with lower credit risk, such as those with stable incomes and low LVRs. The margins on loans priced at these rates tend to be small, but the presence of higher-quality loans makes it easier to sell RMBS. Non-bank lenders also offer loans with interest rates of 6 per cent or more, which tend to be to non-conforming borrowers that are of higher credit risk and find it more difficult to obtain bank credit.

Graph D3
Share of Lenders' Books*



In addition, a perception that finance is more difficult to obtain from the major banks has seen even some higher quality borrowers shifting to non-bank lenders. The RBA's liaison with non-bank lenders indicates that borrowers have been attracted by their faster approval times and the greater likelihood of approval compared with the major banks.

... but remains small and financial stability risks are limited at this point

Non-bank mortgage lenders account for less than 5 per cent of outstanding housing credit and so are not a substantial financial stability risk (Graph D1). In particular, their small share reduces the risk that non-bank lenders will exacerbate the credit cycle. More generally, growth in non-bank lending has accelerated as housing markets and credit growth have both been *weakening* overall.

There is also no evidence of banks loosening lending standards to compete. Banks have instead tightened lending standards since 2015, although there continues to be strong competition for the highest quality borrowers. Non-bank lenders have also tightened their lending standards over

recent years, even while writing a larger share of higher risk investor loans than previously. This is because they are still subject to responsible lending laws, for which compliance expectations have increased over recent years, and because long-term investors often expect non-bank RMBS to broadly conform with APRA standards. Consistent with this, arrears rates for non-bank lenders are slightly lower than for banks and have not increased materially to date. Whether this would remain true if the unemployment rate was to rise remains to be seen.

The potential for contagion from non-banks to banks also remains small because interconnections between them are limited. Banks have some exposure to non-bank mortgage lending through short-term 'warehouse' funding facilities, but these are small compared with banks' own mortgage lending and their capital. Banks' willingness to increase these exposures significantly is limited by APRA monitoring the growth of these facilities, a liquidity requirement to match the undrawn exposures with high-quality liquid assets, and the capital required to be held against such exposures.

The main constraints to a more rapid expansion of non-bank mortgage lending stem from their funding. RMBS pricing is well above the cost of bank funding (deposits or senior unsecured bank debt) and remains significantly higher than pre-crisis levels. The cost of funding from RMBS markets has also risen significantly since early 2018, reflecting both a rise in spreads on RMBS and the increase in the bank bill swap rate, which forms the base for RMBS pricing. This means that non-bank lenders will struggle to compete with banks for the highest quality owner-occupier principal and interest mortgages, unless they are able to secure alternative long-term funding. In addition, it does not currently appear feasible to significantly increase the capacity of RMBS

markets. This is because the investor base for such instruments is relatively narrow and securing new investors has been a prolonged and challenging task.

Non-bank lending to property developers is also growing fast, and poses more risk

The pick-up in non-bank lending to property developers has occurred as banks pulled back from this market due to concerns about increased risks. Non-bank lending for property development has come from a range of sources, but the most prominent providers have been managed funds that specialise in financing property development. This lending is mostly funded by equity investments from wealthy individuals and institutional investors, including foreign funds. This is an area where data are very limited; however, liaison contacts report that non-bank financing of property development is widely available and still growing strongly, especially in Melbourne. Non-bank lenders generally require lower levels of pre-sales than banks and allow greater leverage for borrowers, but also charge much higher interest rates. Pre-sales became harder to achieve as the property market cooled, and this contributed to the demand for non-bank financing from developers.

If more marginal developments proceed, because developers are able to obtain funding from non-bank lenders, the boost to supply would place further downward pressure on property prices. This could have flow-on implications for banks' property portfolios (see 'Box C: Risks in High-density Apartment Markets'). In particular, the performance of banks' exposures to property developers would deteriorate if apartment sales and prices experience further significant declines and settlement failures rise. However, much of the

lending by non-banks is expensive mezzanine debt (debt which is ranked below senior debt in the capital structure). This debt is relatively expensive and so reduces the likelihood that low-return projects will proceed, minimising the financial stability risk. Further, this mezzanine lending is subject to some external oversight because when a bank provides the senior debt it has visibility of the mezzanine debt and the risks this may pose to the developer. This oversight may diminish as non-bank involvement in senior debt is becoming more common.

More comprehensive data on non-bank lending will help to monitor the risks

The financial stability risks from non-bank property lending are judged to be limited at this point, although risks associated with property development bear watching. Incomplete data on non-bank lending activity currently make it challenging to assess these risks. However, legislation passed in March 2018 expanded APRA's data collection powers to encompass a wider range of non-bank entities. Since then, a working group, consisting of APRA, the Australian Bureau of Statistics and the RBA, has been working to improve the coverage of non-bank data. This should help APRA and the RBA in their ongoing monitoring of financial stability risks arising from non-bank lending. ✎

4. Regulatory Developments

Financial regulators in Australia have continued to monitor financing conditions and the housing sector, as well as assessing the implications of the findings of several major reviews of the financial sector. Internationally, the focus has continued to shift away from reform towards monitoring its implementation and evaluating its effects.

The Council of Financial Regulators (CFR) has closely monitored the impact of measures taken over the past few years to improve lending standards and asset quality.¹ While these measures have reduced the accumulation of risk in the financial system, the tighter financing conditions appear to have played some role in the recent decline in housing credit and price growth. While the price falls to date have not been considered a material risk to financial stability, the CFR has stressed the importance of lenders continuing to supply credit to the economy while they adjust lending practices.

The CFR has also discussed the findings of several major reviews of Australia's financial sector. The Final Report of the Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry (the Royal Commission) identified serious cases of misconduct by financial institutions and other participants in the financial services industry, and made a range of recommendations. These have broad political support. The International Monetary Fund's (IMF's) Financial Sector

Assessment Program (FSAP) review of Australia was generally positive about the resilience of domestic financial institutions, and the quality of Australia's regulatory and supervisory oversight framework. Nonetheless, the IMF made several high-level recommendations to improve current arrangements. The CFR agencies are carefully considering the recommendations in both reviews. The Final Report of the Productivity Commission's Inquiry into Competition in the Australian Financial System was delivered in mid 2018; the CFR has examined options for implementing some recommendations.

International bodies have been monitoring the implementation of key post-crisis G20 reforms globally, and evaluating their effects. These evaluations are important to assess whether major reforms are meeting their intended objectives. A current assessment is looking at the effects of reforms on financing for small and medium-sized enterprises. In addition to the ongoing focus on the banking sector, international bodies have recently considered the risks posed by insurers, central counterparties (CCPs) and crypto-assets.

The CFR has focused on financing conditions and the housing sector, along with major reviews of the financial sector

A major focus of the CFR since the last *Review* has been credit conditions – both for households and small business – and related developments in the housing market. Credit conditions for both

¹ The CFR is the coordinating body of Australia's main financial regulatory agencies. For further details on the CFR, see RBA (2018), 'Box E: The Council of Financial Regulators', *Financial Stability Review*, October, pp 69–73, and the CFR's website <www.cfr.gov.au>.

sectors tightened through 2018 due to a range of factors. The tightening of lending standards over recent years has been warranted and has resulted in a clear reduction in higher-risk housing lending and improvements in balance sheet resilience among authorised deposit-taking institutions (ADIs). But the CFR has also noted that an overly cautious approach by some lenders may be affecting lending decisions and in recent statements has stressed the importance of lenders continuing to supply credit to the economy.

One potential offset to any tightening in credit supply by banks has been the growth in housing lending by non-ADIs (see 'Box D: Non-bank Lending for Property'). Developments in this sector are also monitored by the CFR. Non-ADIs' share of total lending remains small but it is important that data covering lending by non-ADIs be expanded. The Australian Prudential Regulation Authority's (APRA's) new data collection powers in this area will help to provide a better picture of lending outside the banking system.

Housing credit growth and prices have been a focus of CFR discussions. Reduced demand has significantly slowed housing credit growth with demand from investors in particular slowing noticeably, reflecting lower expected price growth. The CFR has been closely monitoring housing market developments, including the falls in housing prices, particularly in Sydney and Melbourne. These declines have followed much larger increases in the preceding years, as noted in the 'Household and Business Finances' chapter. The CFR agencies have noted that the adjustment in housing prices and activity has been orderly to date and does not raise material financial stability concerns.

Related to this, the CFR has been monitoring the effects of the prudential measures related to housing lending. While these measures fall

within APRA's remit, they can be relevant to the soundness of the financial system more broadly and are therefore often discussed by the CFR. One measure discussed has been the 30 per cent benchmark on the share of new loans that could be interest only, which was introduced in March 2017. In December 2018, APRA announced that it would remove this benchmark for ADIs that were no longer subject to the separate investor lending benchmark (the majority of ADIs).

Over the past year, there have been a number of inquiries into, and assessments of, the Australian financial system. These have included the Royal Commission, the Productivity Commission's competition inquiry and the IMF's FSAP assessment of Australia. The CFR has discussed the implications of each of these inquiries and assessments as they have progressed, and is undertaking further work in several areas.

- The Royal Commission's final report identified significant misconduct and failings by financial institutions. It underscored the need for the financial services industry to re-establish trust with its customers and the wider public. Its recommendations will also significantly affect the activities of some CFR agencies. The CFR has been asked by the government to consider the implications of changes to the commission structure for mortgage brokers. The CFR has also discussed possible further changes to the definition of small business in the Banking Code of Practice recommended by the Royal Commission. Because significant changes to the code are already due to commence on 1 July 2019, and in light of a tightening in credit conditions for small businesses, CFR members supported maintaining the current \$3 million total credit exposure threshold for the time being. As required by the Australian Securities and Investments Commission (ASIC), an independent review

of the definition will be undertaken within 18 months of the commencement of the revised code.

- The CFR is undertaking work in response to the Final Report of the Productivity Commission's Inquiry into Competition in the Australian Financial System. The CFR strongly supports the Productivity Commission's recommendation for improved transparency of mortgage interest rates. A working group is examining options for the provision of an online tool that will allow consumers to better understand the interest rates being paid by different types of borrowers. Following an earlier recommendation of the Financial System Inquiry (FSI), the Productivity Commission also proposed a review of the regulation of payment providers that hold stored value, or purchased payment facilities. This review is now underway. The aim of this work is to provide a clearer and more graduated regulatory framework. The CFR released an issues paper on stored value facilities in September 2018 and held an industry roundtable in November. The CFR will consider recommendations from the review in mid 2019.
- The CFR has discussed the IMF's main recommendations from its FSAP assessment (see also 'Box E: The 2018 Financial Sector Assessment Program (FSAP) Review of Australia'). One recommendation was that the CFR should increase the transparency of its discussions. This aligned with a recommendation of the Productivity Commission and with work already underway within the CFR to improve transparency. Since December 2018, the CFR has released a statement after each quarterly meeting, outlining the main issues discussed. It has also launched an improved website containing new explanatory content along

with the quarterly CFR statements. These arrangements complement those of the individual member agencies, which have ultimate responsibility for financial system regulation.

The CFR responds to occasional requests from the government for advice on a policy issue or to review the effects of a past decision. It recently provided a report to the government on leverage and risk in the superannuation system, as requested in the government's response to the FSI. The report noted that leverage in superannuation funds has the potential to increase vulnerabilities in the financial system. But it found that the level of limited recourse borrowing by self-managed superannuation funds, while growing, remains relatively small.

Some of APRA's policy workstreams are of broader relevance to the stability of the financial system. Issues such as a bank loss-absorbing capacity framework and the countercyclical capital buffer (CCyB) have therefore been discussed by the CFR over the past year. APRA announced in January 2019 that it would maintain a CCyB setting of zero per cent. CFR agencies saw this as appropriate given moderate overall credit growth, ongoing improvement in the risk profile of new housing lending, and continued strengthening in ADIs' capital positions. Separately, APRA is considering implementing a non-zero CCyB default setting as part of its ongoing review of the ADI capital framework.

The CFR is supported by a number of working groups and committees, which pursue a variety of workstreams relevant to its remit. Of recent note:

- The CFR Financial Market Infrastructure (FMI) Steering Committee helps to coordinate monitoring and policy formulation in relation to FMIs and over-the-counter (OTC) derivatives markets regulation. Its recent work has included further consideration of

the design of the proposed FMI resolution regime for Australia, including preparation for a further round of public consultation in the second half of 2019. The FMI Steering Committee has also been developing a proposal for legislative changes to support the CFR's policy framework for competition in the clearing and settlement of Australian cash equities, and the application of the CFR's *Regulatory Expectations for Conduct in Operating Cash Equity Clearing and Settlement Services in Australia* to ASX's CHES replacement project.

- The CFR approved new terms of reference and a work plan for the Cyber Security Working Group. The working group helps to coordinate cyber related work programs among CFR agencies. CFR member agencies have been considering ways to increase the resilience of the financial sector to a material cyber incident through a range of initiatives, such as issuing new standards and guidance.

Members of other government agencies attend CFR meetings when discussions are relevant to their responsibilities. Representatives of the Australian Competition and Consumer Commission (ACCC) and the Australian Taxation Office attended the December 2018 meeting. CFR agencies also continued to work with their New Zealand counterparts via the Trans-Tasman Council on Banking Supervision to further strengthen the cross-border crisis management framework.

A range of other domestic developments are being pursued

In addition to the regulatory measures related to ADIs outlined in 'The Australian Financial System' chapter, in December 2018, APRA released new and enhanced prudential superannuation requirements. These reforms are substantial and are designed to strengthen the focus

of registrable superannuation entity (RSE) licensees on the delivery of quality outcomes for their members. A central component of APRA's new framework relates to strategic and business planning requirements. An outcomes assessment will also be included as a key part of the process, as will requirements for the management and oversight of fund expenditure and reserves. The outcomes assessment will require RSE licensees to annually benchmark and evaluate their performance in delivering sound, value-for-money outcomes to all members. The new and enhanced requirements will cover both *MySuper* and choice products. The changes will be supported by continued work from APRA to identify and address underperformance within the industry. The aim is to lift standards across the industry for the long-term benefit of superannuation members. The changes also seek to ensure that RSE licensees meet their obligations to put their members' interests first. The new measures are due to take effect from 1 January 2020.

A bill recently passed by parliament strengthens APRA's powers in relation to superannuation in several ways. It enhances APRA's directions powers in respect of RSE licensees (including aligning its directions powers in relation to the superannuation industry with those in the banking and insurance industries). It also strengthens *MySuper* authorisation and cancellation provisions, and requires APRA approval for changes of ownership of RSE licensees.

In March 2019, APRA released a discussion paper proposing updates to its prudential standard on credit risk management requirements for ADIs. Credit risk is the risk of borrower default and is usually the single largest risk facing an ADI. APRA's changes seek to modernise the standard given the significant evolution in credit risk

practices since it was last substantially revised in 2006. The proposals to an extent formalise changes APRA has made over recent years to enhance sound lending standards and credit risk management more broadly, rather than being a further tightening of lending standards.

Authorities have made progress in implementing an open banking regime, which will give consumers the right to share their banking data. Financial institutions and financial technology ('fintech') companies are exploring various uses of these data. Open banking has the potential to enhance competition in the banking sector by making it easier for consumers to switch banks, demonstrate their financial standing when seeking a loan, and find tailored financial products and services. Open banking in Australia will be the first application of the Consumer Data Right (CDR). This will allow consumers to direct businesses to transfer their data to an accredited third party. The government has introduced the *Treasury Laws Amendment (Consumer Data Right) Bill 2019* into parliament. In March, the ACCC issued draft rules for the CDR for public feedback. The draft rules should allow banking sector companies to begin planning for the start of the CDR in banking. A pilot of open banking is due to be launched in July 2019, with sharing of consumer data on credit and debit cards and deposit and transaction accounts, expected by February 2020.

Authorities are also reviewing arrangements that allow consumers to pay for a purchase over time but obtain goods and services immediately, known as 'buy now pay later' (BNPL) services. Of note, in November 2018, ASIC published a detailed report into BNPL arrangements, which found that the growth in these services has been rapid; the number of consumers using BNPL services increased five-fold in the two years to 2017/18 (to 2 million consumers). ASIC reports that there were 1.9 million BNPL transactions in

the month of June 2018 (up from over 50,000 in April 2016) and that outstanding BNPL balances were \$903 million as at the end of June 2018. The Senate also issued a report into the operation of BNPL services in February 2019.

Additionally, a number of legislative and regulatory changes are likely to follow on from the recommendations of the Royal Commission. This includes, for instance, the recommendation to extend the Banking Executive Accountability Regime from ADIs to all APRA-regulated entities such as insurers and RSE licensees.

Internationally, the focus remains on monitoring the implementation of reforms ...

The Financial Stability Board (FSB) released several reports in late 2018 that together detail the progress made by jurisdictions in implementing several key post-crisis G20 reforms.² In summary:

- Efforts continue to enhance the ability to resolve systemically important financial institutions. This will help mitigate the 'too big to fail' problem. This refers to situations where the disorderly failure of a large, complex or interconnected financial institution would cause significant difficulties for the wider financial system and broader economy. In the past it had been assumed that governments would intervene to prevent a disorderly failure of these institutions. The FSB reported that implementation of the 'too big to fail' reforms is most advanced in the banking sector, where most home and key host jurisdictions of global systemically important banks (G-SIBs) have introduced resolution regimes

² See FSB (2018), 'FSB 2018 Resolution Report: Keeping the pressure up', Seventh Report on the Implementation of Resolution Reforms, 15 November; FSB (2018), 'Reforming major interest rate benchmarks', Progress report, 14 November; FSB (2018), 'OTC Derivatives Market Reforms', Thirteenth Progress Report on Implementation, 19 November.

that are broadly aligned with the FSB's *Key Attributes of Effective Resolution Regimes for Financial Institutions (Key Attributes)*. Progress in implementing the *Key Attributes* for insurers and for CCPs is less advanced.

- Progress continues in implementing reforms to major interest rate benchmarks. As discussed in the previous *Review*, existing benchmarks may not be sustainable over the medium term given insufficient market transactions upon which to base their calculation. The FSB reported that steps have been taken to strengthen key interbank offered rates and work is underway to support an orderly transition to new reference rates. It noted the significant progress in strengthening the Australian bank-bill swap rate, which is the key benchmark for Australian dollar financial products.
- In relation to OTC derivatives markets reforms, the FSB stated that good progress has been made in implementing comprehensive trade reporting requirements and comprehensive standards to determine when standardised OTC derivatives should be centrally cleared. While progress has also been made in implementing other related requirements, the FSB highlighted a need for additional efforts from regulators in some jurisdictions. This mainly related to implementing margin and higher capital requirements for non-centrally cleared derivatives, and the standardised approach to counterparty credit risk.

... and evaluating their effects

Many key reforms have already been implemented, such as key aspects of the Basel III and G-SIB reforms. As such, international bodies have been switching from working on policy design to focusing on evaluating the effects of the reforms. The aim is to assess whether the

reforms are achieving their objectives and if they have had material unintended consequences that may need to be addressed. The FSB is the main body conducting and coordinating these assessments, using an evaluation framework it released in July 2017.

Over 2018, the FSB and relevant standard-setting bodies (SSBs) completed two evaluations of the effects of the G20 financial regulatory reforms – on central clearing and infrastructure finance. Preliminary findings from these evaluations were discussed in the previous *Review*. Further work continues in related areas.

- The first evaluation, on the incentives to centrally clear OTC derivatives, found that increased central clearing had mitigated systemic risk. But it also highlighted that the treatment of initial client margin in the Basel III leverage ratio calculation may be reducing the incentive to offer client clearing services (as discussed below).
- The second evaluation, on the provision of infrastructure finance, was the first part of a wider consideration of the effects of reforms on financial intermediation. Assessing trends in financial intermediation helps inform the analysis of the financing of real economic activity and hence the contribution of reforms to the broader G20 objective of strong, sustainable and balanced economic growth. The second part of this evaluation is currently assessing the effects of the reforms on the provision of financing for small and medium-sized enterprises. It is expected to be completed later this year.

The FSB recently launched an evaluation of the effects of the 'too big to fail' reforms in the banking sector. The evaluation is due to be completed in 2020. It will assess how effective these reforms have been in addressing the systemic and moral hazard risks posed by

systemically important banks. It will also analyse broader effects on the financial system, such as with respect to overall resilience, the orderly functioning of markets, global financial integration, and the cost and availability of financing.

The Basel Committee on Banking Supervision (BCBS) is reviewing the leverage ratio

As noted above, the evaluation of central clearing by the FSB and relevant SSBs concluded that the treatment of initial client margin in the BCBS's leverage ratio calculation may result in concentration in, or even withdrawal of, client clearing services. The BCBS has since consulted on a targeted and limited revision to the leverage ratio exposure measure to address this issue. If there is sufficiently strong empirical evidence that the current treatment has reduced the availability of client clearing services, the BCBS is willing to consider whether the treatment of such derivatives in the leverage ratio calculation should be revised. One possibility would be to allow the initial margin received from the client to offset the potential future exposure of derivatives centrally cleared on the client's behalf for the purposes of calculating the leverage ratio. The BCBS will publish its conclusions after assessing feedback received.

The BCBS has also proposed revisions to leverage ratio disclosure requirements aimed at reducing 'window-dressing' behaviour. This refers to the tendency of some banks to reduce transaction volumes in key financial markets around regulatory reporting dates in order to temporarily reduce their leverage (and so report higher ratios) at those dates. The BCBS has previously made clear that window-dressing by banks is 'unacceptable'. It undermines the intended policy objectives of the leverage ratio requirement and potentially disrupts the operations of financial

markets. To address this issue, the BCBS proposes to require banks to report quarter-average measures for some types of leverage ratio exposures, in addition to the existing quarter-end reporting.

Other reform measures are also being reviewed and/or revised

In addition to monitoring the implementation of reforms and evaluating their effects, SSBs continue to review existing policies and propose improvements where relevant. In January 2019, the BCBS announced revised minimum capital requirements for market risk following a quantitative analysis and consultation. The revised framework adds a simplified standardised approach for use by banks with small trading portfolios that are not complex. The existing standardised approach was also refined. For example, revisions were made to the standardised risk weights applicable to general interest rate risk, and certain exposures subject to credit spread risk. Revisions were also made to the assessment process for determining whether a bank's internal risk management models appropriately reflect the risks of individual trading desks. The revised standards will take effect on 1 January 2022.

In October 2018, the BCBS issued revised stress testing principles. The nine new principles replace the *2009 Principles for Sound Stress Testing Practices and Supervision*, and reflect the growth and evolution in stress testing practices over the past decade. Stress testing is now a core tool of risk management for both banks and banking supervisors. The revised principles provide high-level guidelines on the core elements of stress testing frameworks such as objectives, governance, methodology, resources and documentation.

In November, the International Organization of Securities Commissions (IOSCO) proposed a framework to help regulators measure the use of leverage by investment funds. This work is in response to recommendations made by the FSB in 2017 to address structural vulnerabilities arising from asset management activities (such as leverage and redemption run risk). The proposed framework would indicate how regulators could identify and analyse those investment funds that may pose stability risks for the financial system.

Work addressing risks outside the banking sector is ongoing

In November, the International Association of Insurance Supervisors (IAIS) proposed a new 'holistic' framework for the assessment and mitigation of systemic risk in the insurance sector. The proposed framework includes:

- addressing systemic risk based on the activities entities undertake;
- a global annual monitoring exercise;
- enhanced pre-emptive supervisory policy measures; and
- powers of intervention for supervisors where a potential systemic risk is detected.

This framework is based on the view that systemic risk may arise from the collective activities of the insurance sector as well as from the distress of individual insurers. It proposes a proportionate application of enhanced policy measures to the sector as a whole rather than just a small group of global systemically important insurers (G-SIIs). The proposed framework is expected to be finalised this year, for implementation in 2020.

Related to this:

- The FSB, in coordination with the IAIS, decided not to issue a new list of G-SIIs in 2018. As in 2017, this reflects the holistic

framework approach instead of a focus on the risks posed by individual insurers. Nonetheless, the nine G-SIIs identified by the FSB in 2016 remain subject to higher loss-absorbency requirements, enhanced group-wide supervision and regular resolvability assessments.

- The FSB has several initiatives to assist the development of effective resolution regimes for insurers, including a 'resolvability monitoring' exercise. Also, the FSB will finalise the *Key Attributes* Assessment Methodology for the insurance sector by the end of 2019.

CCPs are an important component of the global financial architecture, particularly in light of the post-crisis reform commitment to increase the use of central clearing for standardised OTC derivatives. Reflecting this, the Committee on Payments and Market Infrastructures (CPMI) has been working on strengthening and harmonising the supervision and regulation of CCPs. In addition, in November 2018, the FSB, in consultation with IOSCO and the CPMI, outlined a process for evaluating whether existing financial resources and tools are adequate for resolving CCPs. The process involves authorities identifying loss scenarios that may lead to the resolution of a CCP in order to better evaluate likely resolution costs and available resources. Following feedback, further guidance on these issues will be developed by the end of 2020.

International bodies continue to assess and respond to the risks posed by crypto-assets. In November 2018, G20 countries signed a joint declaration committing to regulate crypto-assets for anti-money laundering and counter-terrorism financing purposes, in line with Financial Action Task Force standards. The BCBS is currently undertaking a quantitative impact study of banks' direct and indirect exposures to crypto-assets. Also, in March, the

BCBS published its expectations in relation to banks' exposures to crypto-assets and will, in due course, clarify the prudential treatment of such exposures to appropriately reflect the high degree of risk of crypto-assets. IOSCO has developed a Support Framework to assist with addressing domestic and cross-border issues arising from initial coin offerings (ICOs) that may affect investor protection, and a framework for identifying risks associated with the secondary trading of crypto-assets.³ This is in addition to the Consultation Network established by IOSCO to share international experiences with ICOs, which was discussed in the previous *Review*.

In Australia, the Treasury released a paper in January seeking views on the potential benefits and risks of ICOs and the application of the domestic regulatory framework to ICOs. Relatedly, ASIC has continued its work to mitigate potential harm from crypto-assets to consumers and investors. In particular, ASIC intends to monitor ICOs closely to ensure compliant behaviour, and to introduce market infrastructure regulation for crypto-currency exchanges. ❖

3 An ICO is a form of fundraising, used by a business or individual, to raise capital online. ICOs generally operate by allowing investors to use crypto-assets to purchase 'coins' that may offer some entitlement to future services. The ICOs are often global offerings that can be created anonymously and/or accepted anonymously.

Box E

The 2018 Financial Sector Assessment Program (FSAP) Review of Australia

In 2018 the International Monetary Fund (IMF) conducted its third FSAP review of Australia to assess the stability of the financial sector and the quality of domestic regulatory oversight arrangements. The main report from that review, *Australia's Financial System Stability Assessment (FSSA)*, was released by the IMF in February 2019.¹ The report covered regulatory and supervisory oversight of banking and insurance, crisis management and financial safety net arrangements, financial market infrastructures (FMIs), the resilience of the banking sector and the management of various risks. The IMF's overall assessment was positive, indicating that the Australian financial system is fundamentally sound and has been further strengthened since the IMF's previous assessment in 2012. The IMF did, however, make several recommendations to improve current arrangements.

Council of Financial Regulators (CFR)² agencies worked closely with the IMF during the FSAP. The CFR agencies see this as an opportunity to enhance the efficiency and stability of the financial system and are now considering how best to address the IMF's recommendations.

This box outlines the FSAP process and the main findings and recommendations, highlighting several areas that are relevant to the RBA's responsibilities.

An FSAP review is a comprehensive assessment of the financial sector

An FSAP review is an in-depth assessment by the IMF of a country's financial sector and regulatory oversight arrangements. To undertake this assessment, the IMF reviews information provided by domestic agencies (for example, self-assessments and questionnaires) and meets with regulators, other public sector agencies, financial institutions, credit rating agencies and academics during a series of visits to the country.

During an FSAP review, the IMF analyses current risks, the resilience of the financial sector, the quality of the regulatory and supervisory framework, compliance with international standards, and the authorities' capacity to manage and resolve financial crises. A key benefit is that the IMF brings a global perspective to assessing domestic vulnerabilities and regulatory arrangements. By using a common approach (such as applying its own stress testing model), the IMF can compare local frameworks to global best practices. At the conclusion of the assessment, the IMF provides a series of recommendations to the local authorities on how current arrangements could be improved.

The FSAP is a key part of the IMF's member surveillance. As one of the 29 jurisdictions with financial sectors deemed by the IMF to be systemically important, an Australian FSAP is undertaken every five years or so (Australia's previous FSAPs were in 2005/06 and 2012).

¹ The FSSA and other supporting FSAP reports for Australia can be found at <<https://www.imf.org/external/np/fsap/fsap.aspx>>.

² The CFR is the primary mechanism for coordination between Australia's financial regulatory agencies. For more background on the CFR's membership, objectives and operations, see RBA (2018), 'Box E: The Council of Financial Regulators', *Financial Stability Review*, October, pp 69–73.

Overall, the IMF found a robust regulatory framework and enhanced systemic risk oversight

The FSAP assessment found that Australia has a robust regulatory framework, and that systemic risk oversight had been enhanced since the previous FSAP. It found that regulatory frameworks and practices were comparable with international best practices. Accordingly, the IMF did not recommend significant changes to Australia's regulatory institutional structure. The IMF noted several specific areas for improvement, to close apparent gaps and further strengthen oversight arrangements.

The IMF concluded that the Australian agencies had taken steps since the previous FSAP to further strengthen the financial system and enhance crisis management arrangements. Most notably, bank capital had been raised to levels that were more conservative than the international capital rules set by the Basel Committee on Banking Supervision (BCBS), with plans to raise them further. Banks' funding risks had been reduced and policy actions had successfully addressed rapid growth in riskier segments of the mortgage market. The IMF's stress testing indicated that the banking sector was relatively resilient and likely to withstand severe macroeconomic shocks. The IMF's stress test results were broadly similar to those obtained by the Australian Prudential Regulation Authority (APRA) in its 'bottom up' stress test conducted in 2017.

Nonetheless, the IMF observed that Australia faced several challenges, mainly related to the household sector. With its assessment largely finalised before the most recent housing price declines, the IMF argued that 'stretched' real estate valuations and high household leverage posed significant risks to the financial system and the economy. Other areas of focus for the IMF included Australia's concentrated banking

system, banks' use of offshore wholesale funding, and progress on developing a resolution framework for FMIIs.

The IMF highlighted positive aspects of current regulatory arrangements ...

The IMF assessed the effectiveness of current regulatory arrangements in several areas.

- For the banking sector, the IMF conducted a full assessment against the *Core Principles for Effective Banking Supervision* issued by the BCBS. Australia achieved a high degree of compliance with international principles; at times going beyond agreed global minimum standards to provide additional resilience in the context of Australia's financial system.
- The IMF also conducted a limited assessment against the *Insurance Core Principles* issued by the International Association of Insurance Supervisors. The analysis concluded that APRA had undertaken a comprehensive reform of prudential regulation for insurance companies while improving the consistency of the framework between life and general insurers since the IMF's previous assessment.
- The IMF found that regulatory arrangements for the oversight of systemic risk had historically worked well. These arrangements are centred on the CFR and its members, with the CFR being relatively informal compared with similar bodies in some other jurisdictions. Member agencies had a strong track record of addressing financial stability issues in a productive and collaborative manner.
- The IMF noted the progress made on Australia's resolution framework and recovery planning since the 2012 FSAP. Recent legislation had expanded APRA's powers to resolve authorised deposit-taking institutions

(ADIs) and insurance companies in distress. It had also enhanced APRA's powers relating to conglomerate groups, foreign branches, transfers of business and resolution planning.

- FMI in Australia were found to generally operate reliably, and the competitive landscape had seen new entrants and competitors emerge. The IMF noted that supervision and oversight of FMIs were well established, with supervisory expectations strengthened over the past few years.

A key element of an FSAP review is a stress test of the domestic banking system, using the IMF's 'top down' model.³ The IMF recognised that the Australian banks were well capitalised, liquid, and had a long history of delivering high profits. Its stress test was nonetheless useful in identifying vulnerabilities in the banking system. The stress test assessed the resilience of Australian banks' capital and liquidity buffers to credit, liquidity, and contagion risks. The exercise covered the 10 largest banks, accounting for nearly 90 per cent of total banking system assets.⁴ The IMF tested bank resilience over three years (2018–20) under both a 'Baseline' scenario and an 'Adverse' scenario. The latter combined three concurrent shocks: (i) a sharp decline in housing prices; (ii) slower global economic growth, particularly in China; and (iii) a sharper-than-expected tightening of global financial conditions.

The solvency (capital) component of the stress test found that the Common Equity Tier 1 (CET1) capital of the five largest banks would decline in the Adverse scenario, from 10.6 per cent to 7.2 per cent. This was still well above the minimum CET1 capital requirement of 4.5 per cent

and above even the 7 per cent capital hurdle that also includes the capital conservation buffer of 2.5 per cent. The five mid-sized banks would see smaller falls in capital, with their average capital ratio falling from 9.7 per cent to 7.0 per cent. The falls in capital were broadly similar to those obtained by APRA in its 'bottom up' stress test conducted in 2017.

The liquidity component of the stress test led the IMF to raise some concern about the 'continued reliance' of Australia's banks on wholesale funding. This was in the context of the IMF's cash flow stress test, which used assumptions that were generally more severe than those underpinning the Basel III Liquidity Coverage Ratio (LCR) to model banks' cash flows 12 months into the future. The IMF found that a severe and sustained funding shock that persisted beyond the 30-day period covered by the LCR would see three banks experience cash shortfalls. This would be the case even after banks drew on their Committed Liquidity Facility (CLF) at the RBA.

... but nonetheless the IMF found scope for improvements

While the IMF noted the positive aspects of Australia's current regulatory and supervisory arrangements as discussed above, it also made several key recommendations for improvement (Table E1).

Regarding the banking sector, the IMF recommendations for improvement included: a more comprehensive assessment of banks' risk management and governance frameworks on a periodic basis; use of formal corrective actions where necessary; and for APRA to continuously develop its resources and skills to match the evolution in banking services and risks – particularly in specialised areas such as information technology (IT), cyber risk and 'fintech'. In terms of insurance, the

3 'Top down' stress testing involves one entity (e.g. the IMF) conducting its own analysis of how multiple institutions would fare in the event of stress. In contrast, 'bottom up' tests involve *each* entity assessing how a common stress would impact them, with a central agency then aggregating these results.

4 For more information on stress testing, see RBA (2017), 'Box D: Stress Testing at the Reserve Bank', *Financial Stability Review*, October, pp 46–49.

Table E1: Selected Key IMF Recommendations from the 2018 Australian FSAP

Banking and Insurance Supervision	Time^(a)
Strengthen the independence of the Australian Prudential Regulation Authority (APRA) and the Australian Securities and Investments Commission (ASIC), by removing constraints on policymaking powers and providing greater budgetary and funding autonomy; strengthen ASIC's enforcement powers and expand their use to mitigate misconduct.	1–2 years
Enhance APRA's supervisory approach by carrying out periodic in-depth reviews of governance and risk management.	1–2 years
Strengthen the integration of systemic risk analysis and stress testing into supervisory processes.	1 year
Financial Stability Analysis (including stress testing)	
Commission and implement results of a comprehensive forward-looking review of potential data needs. Improve the quantity, quality, granularity and consistency of data available to the Council of Financial Regulators (CFR) agencies to support financial supervision, systemic risk oversight and policy formulation.	3–5 years
Enhance the agencies' monitoring, modelling and stress testing framework for assessing solvency, liquidity and contagion risk. Draw on the results to inform policy formulation and evaluation.	1–2 years
Encourage further maturity extension and lower use of overseas wholesale funding.	1 year
Systemic Risk Oversight and Macroprudential Policy	
Raise formalisation and transparency of the CFR and accountability of its member agencies through publishing meeting records as well as the publication and presentation of an Annual Report to parliament by CFR agency heads.	1 year
Undertake a CFR review of the readiness to apply an expanded set of policies to address systemic risks, including data and legal/regulatory requirements; and address impediments to their deployment.	1 year
Commission analysis by the CFR member agencies on relevant financial stability policy issues, including: policies affecting household leverage; as well as factors affecting international investment flows and their implications for real estate markets.	3–5 years
Financial Crisis Management and Safety Nets	
Complete the resolution policy framework and expedite development of resolution plans for large and mid-sized banks and financial conglomerates, and subject them to annual supervisory review.	1–2 years
Extend resolution funding options by expanding loss-absorption capacity for large and mid-sized banks and introduce statutory powers.	1–2 years
The Reserve Bank of Australia (RBA) to formalise its emergency liquidity assistance (ELA) framework with clearly defined preconditions for ELA and drawn-up terms and conditions.	1–2 years
Financial Market Infrastructures (FMIs)	
Strengthen the independence of the RBA and ASIC for supervisory oversight, enhance enforcement powers and promote compliance with regulatory requirements.	1 year
Finalise the resolution regime for FMIs in line with the Financial Stability Board's <i>Key Attributes of Effective Resolution Regimes for Financial Institutions</i> .	1–2 years

(a) IMF's stated implementation timetable
Source: IMF

IMF recommended further improvements to supervisory data systems to facilitate supervisory risk analysis of larger insurers, and further enhancing coordination between APRA and the Australian Securities and Investments Commission (ASIC) in assessing insurance companies.

A further important area of focus was systemic risk oversight and vulnerabilities. The IMF observed that Australia faced several challenges in these areas, mainly related to the household sector. It noted that recent policy measures had lowered risks from this sector and, accordingly, did not recommend further macroprudential policy measures at this time. Nonetheless, it suggested CFR agencies consider several steps to respond to remaining 'significant structural vulnerabilities'. These vulnerabilities included high household leverage and banks' concentrated exposures to the housing sector. It argued that 'stretched' housing valuations and high household leverage posed significant risks to the financial system and the economy. These informed its recommendations in this area, to improve systemic risk oversight, with a particular focus on the housing sector.

In particular, the IMF recommended that CFR agencies:

- expand their set of policy tools to enhance their flexibility to address systemic risk and vulnerabilities. It suggested that a 'readiness assessment' of potential policy options would help agencies identify associated data requirements, and address any legal/regulatory obstacles to their use. The IMF's proposed priorities for review included borrowers' debt-to-income and loan-to-valuation limits.
- invest further in data and analytical tools to strengthen financial supervision and systemic risk oversight. Relative to international experience, the IMF pointed to shortfalls in the granularity and consistency of data

available for these purposes. It argued that the CFR agencies should therefore conduct a review of potential data needs and implement improvements.

The IMF further recommended that APRA draw up advance plans for the use of its new powers regarding lenders that are not ADIs. The IMF noted that the market share of non-ADI lenders was increasing. However, it acknowledged that their overall market share remains modest, and because this is a relatively untested area of regulation, careful consideration of costs and benefits would be required before any action. APRA's powers to collect data from non-ADI lenders have been strengthened in recent years, with steps currently underway for APRA to begin collecting these data soon from selected non-ADI lenders.

The IMF argued that there was limited transparency of the CFR's activities. It suggested that greater formalisation and transparency could further strengthen collaboration, boost confidence in the collective work of the regulatory agencies, and guard against possible delay in addressing emerging systemic risks. In light of this, the IMF recommended the CFR: present an annual report to parliament on critical financial stability issues; regularly publish a record of its meetings; and enhance the monitoring framework for systemic risk.

The CFR has taken steps to increase its transparency in recent years. The IMF acknowledged this, although some initiatives were implemented after the FSAP meetings took place. An expanded discussion of CFR activities has been published in the RBA's *Financial Stability Review* since late 2017. In December 2018, the CFR also started publishing a statement following each quarterly meeting, outlining the main issues discussed by the agencies. Further information

on the CFR's activities is also available on the CFR's website <www.cfr.gov.au>, which was re-launched in late 2018 to make it more informative and accessible.

In relation to crisis management arrangements, the IMF noted that the Australian banking sector continued to be dominated by four large banks. Their size implied that a failure would have a 'potentially enormous' impact on the financial system and the economy. Accordingly, the IMF recommended that the resolution policy framework for the largest banks be completed (for example, by expanding their loss absorbing capacity) and that resolution planning be further enhanced. These and similar recommendations fall mainly within APRA's remit and it is currently considering how best to address these issues.

The IMF recommended that the RBA formalise the framework for providing liquidity support to a distressed institution ('emergency liquidity assistance'). As was demonstrated during the global financial crisis, the RBA already has extensive procedures and mechanisms in place to provide liquidity support during stressed market conditions. These can be flexibly applied and adjusted according to the circumstances. The CLF, which was introduced by the RBA in 2015, had already formalised many elements of the arrangements for the RBA to provide liquidity to banks in a stressed situation. Nevertheless, the IMF argued that, as crises tend to escalate rapidly, the RBA would benefit from a more predefined liquidity assistance framework.

The results of its liquidity stress test of the banking system prompted the IMF to recommend that the agencies consider encouraging Australian banks to further reduce their use of overseas wholesale funding. The IMF also recommended that banks be encouraged to extend the duration of their liabilities to help lower structural funding risks.

For FMIs, the IMF recommended that enforcement powers for the supervision of central counterparties and securities settlement systems should be strengthened and independence from the relevant government minister should be increased. In particular, the IMF recommended that the RBA should have its own enforcement powers. While the IMF noted that Australian authorities had made progress in formulating a special resolution regime for FMIs, it recommended that this be finalised promptly. The IMF encouraged the CFR agencies to review lessons from the formulation and codification of the resolution regime for ADIs and insurers. The IMF also noted that the design of the FMI resolution regime would need to address issues specific to Australia's financial market structure – such as clearing and settlement facilities that are part of a vertically integrated exchange group, and the dominance of a few domestic financial institutions.

CFR agencies are considering the recommendations as part of the next steps

CFR agencies are currently considering, both individually and jointly, how best to address the IMF's recommendations. The adoption of some recommendations may require legislative change, while others require inter-agency collaboration and coordination. The CFR agencies value the recommendations and remain committed to the ongoing FSAP process as an opportunity for continuous improvement of domestic regulatory and supervisory arrangements. ✎

