

Financial Stability Review

APRIL 2017



RESERVE BANK
OF AUSTRALIA

Financial Stability Review

APRIL 2017

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Overview

The outlook for the global economy has improved over the past six months, though some longstanding vulnerabilities remain and some new risks have emerged as others have receded. Longer-term interest rates and equity markets have moved higher as optimism about growth and corporate earnings has risen, particularly in the United States. Nevertheless, after the extended period of low global interest rates, there is a risk that future portfolio adjustments could prove disruptive. In particular, the prices of riskier assets could fall sharply if the 'search for yield' behaviour seen since the global financial crisis reverses quickly.

Risks related to some international political developments have increased, though markets have generally reacted to events in an orderly manner so far. While still under discussion, some of the new US administration's policies, particularly in relation to trade and financial regulation, could adversely affect global economic growth and financial stability. In addition, a number of elections are due to be held in Europe during 2017 that could increase the influence of eurosceptic parties, potentially undermining the resilience of European banks and sovereign debt markets.

Financial stability risks in China remain elevated. The level of debt in China has risen significantly over the past decade to reach very high levels, with particularly strong growth in lending from the less regulated and more opaque parts of China's financial system. Income growth in the more indebted sectors of the Chinese economy has slowed in recent years, making this debt

more difficult to service. In other emerging economies, risks associated with the run-up in corporate debt have receded somewhat, reflecting the rise in commodity prices and the improved outlook for global growth.

In Australia, vulnerabilities related to household debt and the housing market more generally have increased, though the nature of the risks differs across the country. Household indebtedness has continued to rise and some riskier types of borrowing, such as interest-only lending, remain prevalent. Investor activity and housing price growth have picked up strongly in Sydney and Melbourne. A large pipeline of new supply is weighing on apartment prices and rents in Brisbane, while housing market conditions remain weak in Perth. Nonetheless, indicators of household financial stress currently remain contained and low interest rates are supporting households' ability to service their debt and build repayment buffers.

The Council of Financial Regulators (CFR) has been monitoring and evaluating the risks to household balance sheets, focusing in particular on interest-only and high loan-to-valuation lending, investor credit growth and lending standards. In an environment of heightened risks, the Australian Prudential Regulation Authority (APRA) has recently taken additional supervisory measures to reinforce sound residential mortgage lending practices. The Australian Securities and Investments Commission has also announced further steps to ensure that interest-only loans are appropriate for borrowers' circumstances and that remediation can be

provided to borrowers who suffer financial distress as a consequence of past poor lending practices. The CFR will continue to monitor developments carefully and consider further measures if necessary.

Conditions in non-residential commercial property markets have continued to strengthen in Melbourne and Sydney, while in Brisbane and Perth high vacancy rates and declining rents remain a challenge. Vulnerabilities in other non-financial businesses generally appear low. Listed corporations' profits are in line with their average of recent years and indicators of stress among businesses are well contained, with the exception of regions with large exposures to the mining sector. For many mining businesses conditions have improved as higher commodity prices have contributed to increased earnings, though the outlook for commodity prices remains uncertain.

Australian banks remain well placed to manage these various challenges. Profitability has moderated in recent years but remains high by international standards and asset performance is strong. Australian banks have continued to reduce exposures to low-return assets and are building more resilient liquidity structures, partly in response to regulatory requirements. Capital

ratios have risen substantially in recent years and are expected to increase further once APRA finalises its framework to ensure that banks are 'unquestionably strong.'

Risks within the non-bank financial sector are manageable. At this stage, the shadow banking sector poses only limited risk to financial stability due to its small share of the financial system and minimal linkages with the regulated sector, though the regulators are monitoring this sector carefully. Similarly, financial stability risks stemming from the superannuation sector remain low. While the insurance sector continues to face a range of challenges, profitability has increased of late and the sector remains well capitalised.

International regulatory efforts have continued to focus on core post-crisis reforms, such as addressing 'too big to fail', as well as new areas, such as the asset management industry and financial technology. While the goal of completing the Basel III reforms by end 2016 was not met, discussions are ongoing to try to finalise an agreement soon. Domestically, APRA is continuing its focus on the risk culture in prudentially regulated institutions and will review compensation policies and practices to ensure these are prudent. ✎

1. The Global Financial Environment

Global economic conditions have generally improved since the previous *Financial Stability Review* and the tail risks to financial stability have changed. However, some long-standing vulnerabilities persist. In line with the improvement in economic prospects and rise in inflation in major advanced economies, policy rates have started to increase in the United States and long-term rates have risen from their mid-2016 trough, although they remain low in a historical context. These increases have caused little disruption to financial markets to date, and should help to relieve some of the pressure on banks' profitability that has arisen in the very low interest rate environment. Nonetheless, there is a risk that, should policy and long-term rates rise more sharply than expected, there could be a disruptive fall in asset prices due to the unwinding of the 'search for yield' behaviour seen since the global financial crisis. Political and policy risks have also increased in the United States of late, and they remain heightened in Europe.

Risks in China continue to build. Growth in the large stock of corporate debt remains rapid, and firms' debt-servicing capacity could come under pressure given the trend slowing in economic growth, the gradual shift in the composition of demand and the authorities' recent steps to tighten monetary policy. Rapid lending growth in the less regulated 'shadow' sector is also weighing on the resilience of China's financial system. In other emerging economies, risks associated with the run-up in corporate debt have receded in line with the rise in commodity prices and the improved outlook for global

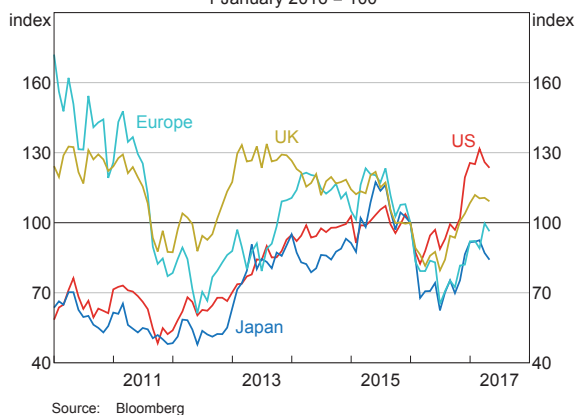
growth. However, a faster-than-expected rise in global interest rates or adverse geopolitical shocks could also expose underlying vulnerabilities in these markets.

Major Advanced Economies

Since the previous *Review*, an improved outlook for growth and easing concerns about disinflationary pressures have boosted risk appetite, as evident in narrower corporate bond spreads and higher equity valuations in advanced economies. Long-term government bond yields have also risen. Taken together, these factors are likely to ease some of the profitability pressures on banks and other financial institutions, and have contributed to a sharp rise in bank share prices over recent months (Graph 1.1).

However, uncertainty around political and policy developments in the United States has increased since the previous *Review*. While still under consideration, the new US administration's trade

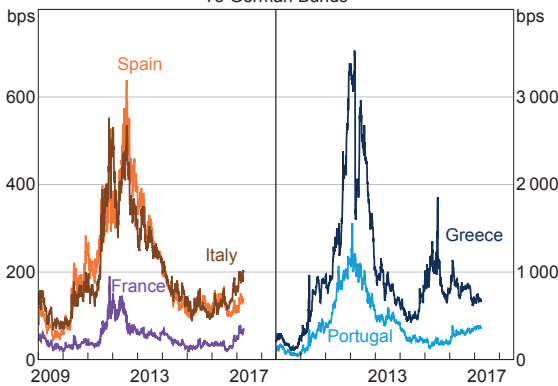
Graph 1.1
International Banks' Share Prices
1 January 2016 = 100



policies could adversely affect global growth, and the outlook and effects on growth from its tax and other fiscal policies are at this stage unclear. The possible roll-back of financial regulation in the United States could also have global implications, particularly if it were to weaken international cooperation between regulators. Despite these risks, measures of actual and expected volatility in financial markets remain very low, suggesting some complacency among investors.

In Europe, several national elections during 2017 – notably in France, Germany and possibly Italy – have some potential to increase the influence of eurosceptic political parties and add to the uncertain policy environment. While under active discussion by some political parties, few observers currently expect any country to exit the euro area. Nonetheless, French spreads to German Bunds have widened in recent months and further speculation of such a disruptive event could add to volatility in financial markets (Graph 1.2).

Graph 1.2
Euro Area 10-year Government Bond Spreads
 To German Bunds



Sources: Bloomberg; RBA

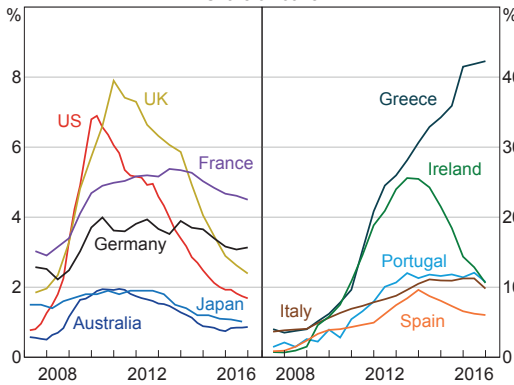
A related concern is the sustainability of sovereign debt levels in some euro area countries. Perceived risks have risen somewhat, with spreads on Italian and Portuguese government bonds widening in recent months. A further large increase in yields on these and some

other European government bonds could affect economic growth and financial system health, especially since banks in Europe own large amounts of sovereign debt. Concerns have also increased of late again in Greece, where ongoing disagreement between the International Monetary Fund and the European public sector creditors is hampering a more comprehensive approach to debt restructuring.

In this environment, a range of challenges affecting the profitability and capital positions of some European banks remains a key risk to financial stability. Notwithstanding the recent rise in European banks' share prices, bank profitability in several countries is low, weighed down by relatively high cost bases, large stocks of non-performing loans (NPLs) and legacy legal and investment exposures. Low bank profitability makes it harder to build buffers to absorb unexpected losses. This is mainly because it reduces banks' ability to improve their capital positions and meet rising capital requirements through internal sources (especially as some banks are reluctant to lower, or temporarily cease, cash distributions to shareholders).

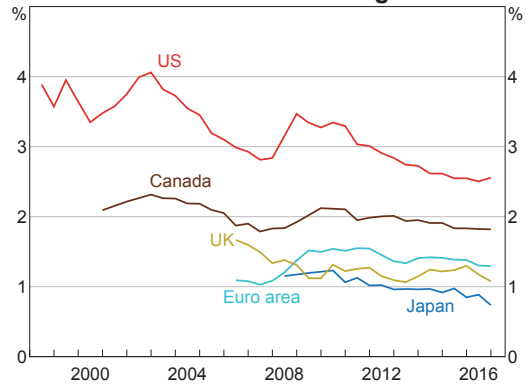
Investors' confidence in some southern European banking systems is being especially affected by uncertainty about the valuation of NPL portfolios (Graph 1.3). This poses particular challenges in Italy, where the combination of weak bank profitability and write-downs of NPLs has required a number of banks to raise equity (see 'Box A: Bank Restructuring Challenges: A Case Study of Italy'). Three Italian banks, including the fourth-largest bank in Italy – Banca Monte dei Paschi di Siena (MPS) – were unable to raise sufficient equity in private markets and have recently commenced procedures to receive capital injections from the Italian Government. Banks in Greece, while much smaller in size and less interconnected with the broader euro area banking system, are also exposed to a high (and rising) stock of NPLs, as

Graph 1.3
Large Banks' NPLs
Share of loans



Sources: APRA; Banks' annual and interim reports; Bloomberg; FSA; RBA; S&P Global Market Intelligence

Graph 1.4
Banks' Net Interest Margins*



* Weighted average across selected large banks headquartered in each jurisdiction
Sources: RBA; S&P Global Market Intelligence

insolvency procedures remain long and costly and the Greek economy remains very weak.

In other parts of the European banking system, however, prospects are more positive than they have been for some time. The euro area economy overall has been growing at close to its long-run trend pace and credit growth continues to recover. Banks' regulatory capital ratios have continued to rise and asset quality has improved. In the period ahead, banks' earnings are expected to benefit from the recent increase in medium and long-term interest rates (through wider net interest margins), though interest rates are still low. Legacy legal and investment exposures nevertheless remain at some large banks (including Deutsche Bank, Barclays and UBS), which may continue to weigh on profitability. More generally, a significant consolidation within the banking sector, especially among small banks, may be required before euro-system profit levels meet banks' average cost of equity.

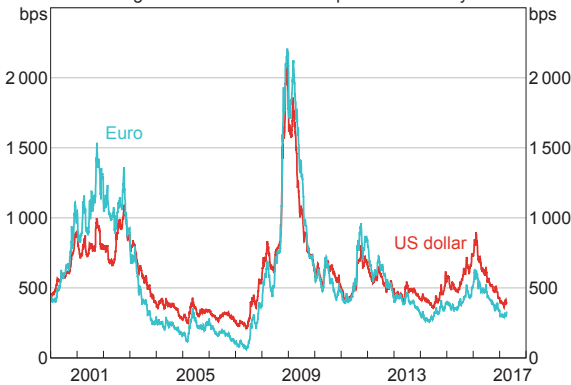
In Japan, the very low interest rate environment has continued to put downward pressure on banks' net interest margins (Graph 1.4). Asset and earnings growth has also been more difficult to maintain amid low nominal GDP growth. Large and some medium-sized Japanese banks have

responded by expanding their credit exposures in offshore markets, where yields are higher. These foreign currency assets have been partly funded or hedged using short-term wholesale markets, raising banks' liquidity risks.

Other large global banks, including many of those headquartered in the United States, Canada and the Scandinavian countries, are performing well. To varying degrees, these banks have benefited from more favourable domestic economic conditions, policies that addressed bad debts and capital shortfalls relatively quickly after the financial crisis, and a tendency to be more proactive in adapting their businesses to the post-crisis environment.

Recent trends in a number of financial markets indicate that the 'search for yield' behaviour seen since the global financial crisis remains significant. For example, investor appetite for high-risk assets such as non-investment grade corporate bonds and leveraged loans has been robust, as evidenced by strong issuance volumes, longer average bond tenors and relatively weak covenants. Credit risk spreads also remain comparatively low (Graph 1.5). As a result, valuations in bond markets are elevated, while equity valuations in the United States –

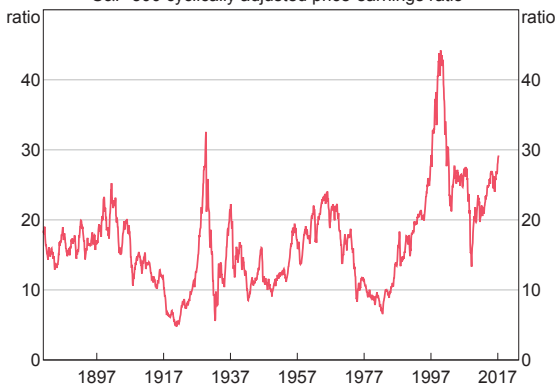
Graph 1.5
Non-investment Grade Corporate Bond Spreads
 To government bonds with equivalent maturity



Sources: Bank of America Merrill Lynch; Bloomberg; RBA

measured by the forward price-to-earnings ratio or the cyclically adjusted price-to-earnings ratio – are also at high levels (Graph 1.6). These developments could increase the risk of subsequent sharp and disruptive price falls in the event of an adverse shock. Potential triggers include a sudden large increase in long-term interest rates – for instance due to higher-than-expected inflation in the United States – or a sudden reassessment of global growth prospects and credit risks, perhaps due to an adverse geopolitical or policy development.

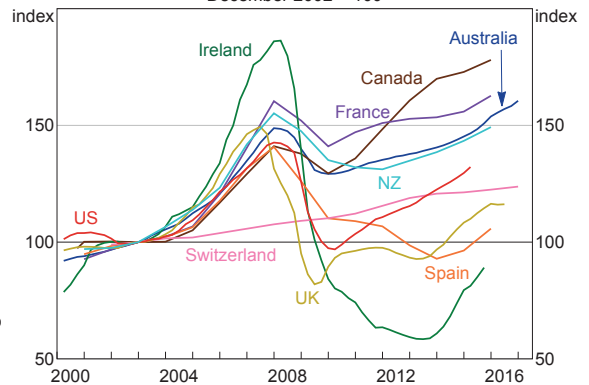
Graph 1.6
US Equities Valuation
 S&P 500 cyclically adjusted price-earnings ratio*



* Ratio of the inflation-adjusted level of the S&P 500 share price index to the ten-year moving average of real earnings of S&P 500 companies
 Sources: <http://www.econ.yale.edu/~shiller/data.htm>; S&P

Real estate markets in many advanced economies have also been buoyed by the prolonged period of low global interest rates. As for other assets, real estate prices could adjust sharply if there were to be a sudden increase in interest rates or shift in investor sentiment. Commercial property prices have risen strongly in many countries over recent years, including in the United States, Canada, New Zealand and parts of Europe, driven by robust domestic and foreign investor demand (Graph 1.7). Rental yields have fallen to low levels in several markets, as rents have risen more slowly than prices. These developments have prompted greater regulatory attention on banks' commercial property lending, especially given the contribution that commercial property markets have made to past episodes of financial instability.

Graph 1.7
Commercial Property Values*
 December 2002 = 100



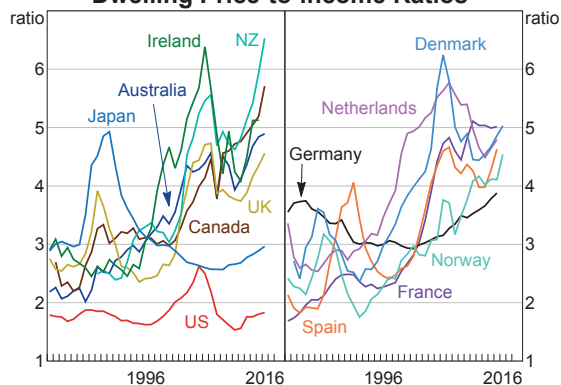
* Series are capital returns indices, which measure changes in an asset's value net of any capital expenditure incurred in purchasing, developing or improving the property; based on an equal weighting of office and retail commercial property

Sources: Bloomberg; MSCI; RBA

Housing prices have also grown strongly in a range of advanced economies over recent years (Graph 1.8). Regulators in some economies where household leverage is high and rising – such as in Canada, Sweden, Norway, New Zealand and Hong Kong – have deployed a range of macroprudential policies to try to restrain the

Graph 1.8

Dwelling Price-to-income Ratios*



* Average dwelling prices to average household disposable income
Sources: BIS; Bloomberg; Canadian Real Estate Association; CoreLogic; Halifax; national sources; OECD; Quotable Value; Realkreditraadet; Thomson Reuters; United Nations

associated build-up of financial vulnerabilities. For example, some economies have imposed higher countercyclical capital buffers, increasing the regulatory capital that banks must hold against their assets. Others – such as Hong Kong and the Canadian province of British Columbia – have further increased the tax rate on foreign purchases of property.

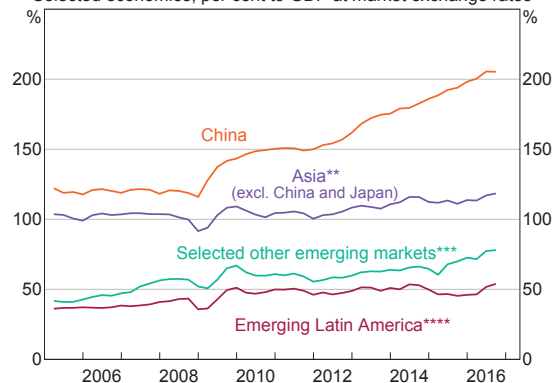
China

Financial stability risks are elevated in China, as they have been for several years. A rapid expansion of credit has supported economic growth, but has added to the level of debt, which is already high by the standards of other emerging economies (Graph 1.9). This leaves the financial system vulnerable to the trend slowing in economic growth. High debt levels are also concerning in light of several characteristics of the Chinese financial sector: some debt is concentrated in industries with significant excess capacity; lending from outside the regulated banking system is growing rapidly as the financial system generally becomes increasingly large, interconnected and opaque; and the system remains vulnerable to a range of implicit

Graph 1.9

Total Debt of the Private Non-financial Sector*

Selected economies, per cent to GDP at market exchange rates



* Loans and other debt funding provided by domestic and non-resident sources; includes publicly owned non-financial firms
** Hong Kong, India, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand
*** Czech Republic, Hungary, Poland, Russia, Saudi Arabia, South Africa and Turkey
**** Argentina, Brazil and Mexico
Sources: BIS; CEIC Data; RBA; Thomson Reuters

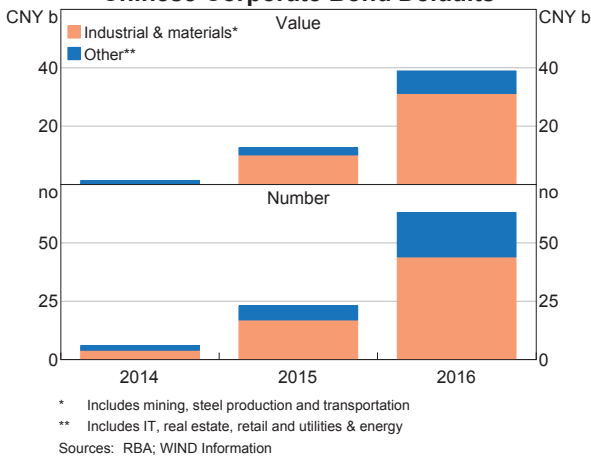
guarantees and other incentive problems that can undermine lending standards. Together these factors raise concerns about asset quality and liquidity positions, and increase the potential for shocks to be amplified and spread across the financial system.

China's debt has risen rapidly as a share of GDP in recent years, with much of the run-up concentrated in the corporate sector. The rapid growth in debt, and the fact that much of it has been extended through less regulated channels, raises the risk that some lending has been of low quality and to more marginal borrowers. Of particular concern is lending to highly leveraged firms in industries that already have excess capacity, such as mining and other parts of the industrial sector, as well as parts of the real estate sector. Returns on capital at many of these firms are low and declining.

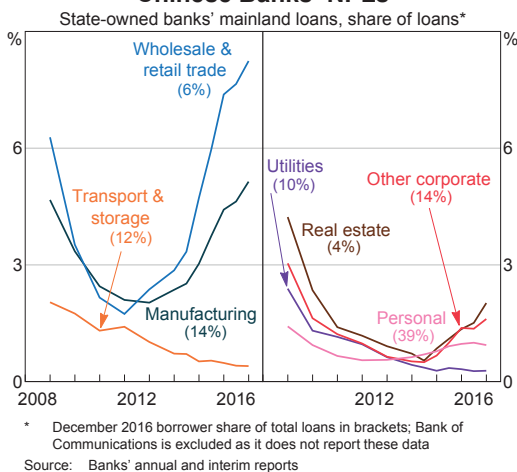
While measured financial stress in the corporate sector remains low overall, it has been rising. The number and value of corporate bond defaults has more than doubled over the past year –

albeit off a low base – which has contributed to a sizeable widening of corporate bond spreads over recent months (Graph 1.10). Banks' NPL ratios for some sectors have also risen significantly (Graph 1.11).

Graph 1.10
Chinese Corporate Bond Defaults



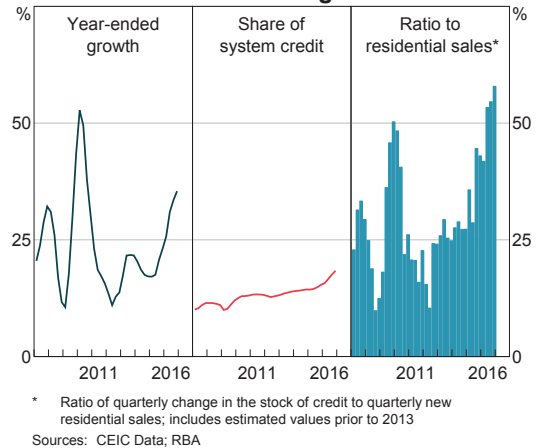
Graph 1.11
Chinese Banks' NPLs



Vulnerabilities from the household sector are also rising, but overall remain low. As in a number of other countries, mortgage lending has been growing quickly in China and has been associated with a rapid rise in housing

prices (Graph 1.12).¹ However, in contrast to the corporate sector, overall household indebtedness is low by international standards, borrower leverage appears to be low, and mortgages account for less than one-fifth of overall bank lending (although there is considerable variation across banks).

Graph 1.12
Chinese Housing Credit

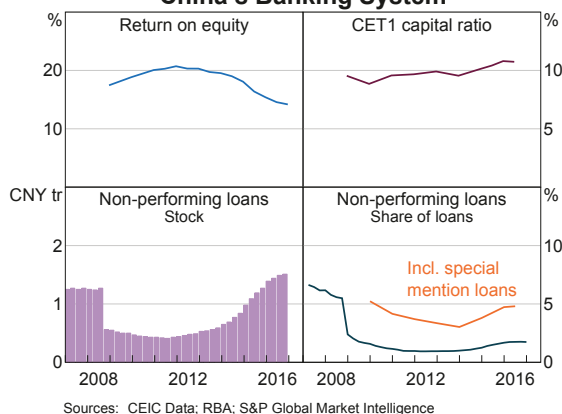


As a consequence, a sharp property market correction would be more likely to cause financial stress among property developers than households, particularly those developers that are highly leveraged, reliant on shadow financing sources and have large stocks of unsold properties. It would also affect the construction industry and the economy more broadly. However, the risk in this regard is mitigated by the Chinese authorities' ongoing use of policy tools to actively manage trends in the housing market.

While overall China's banks remain profitable and report adequate levels of capital, their return on equity has declined noticeably over recent years and headwinds to profitability are likely to persist (Graph 1.13). In particular, it is likely that Chinese banks' NPLs would be much higher than

¹ See RBA (Reserve Bank of Australia) (2016), 'Box A: The Pick-up in the Chinese Housing Market', *Statement on Monetary Policy*, August, pp 15–18.

Graph 1.13
China's Banking System



currently reported if they were calculated on an internationally comparable basis, and an increase in 'special mention loans' (which are not classified as NPLs, but are considered to be at risk) points to further rises in NPLs.

Other vulnerabilities continue to build at smaller banks in China.² These banks' holdings of opaque investment securities (such as credit products packaged as securities by trust and securities companies) have been growing rapidly. They have also been increasingly reliant on short-term interbank funding. As a result, small banks are at increased risk of insolvency and distress arising from the combination of riskier, potentially illiquid assets and the short-term maturity structure of their liabilities. This combination could lend itself to contagion to other institutions. A number of smaller banks also have thin capital buffers.

Beyond the regulated banking sector, shadow banking activities in China continue to pose significant risks. Shadow lending has been a key driver of the run-up in debt since 2009, and is estimated to account for around one-quarter of total debt. This lending takes various forms, including inter-company loans

and loans made by separately regulated firms, such as trusts and asset managers. This form of intermediation is likely to be comparatively risky. First, lighter regulation means that lending standards are likely to be more relaxed and lending is subject to less stringent capital and other safeguards than traditional bank lending. Second, funding for shadow lending is often short term, raising the possibility of liquidity problems for shadow lenders that lack formal access to central bank liquidity and are not backed by deposit insurance. Finally, the growth of opaque investment products has increased the links between banks and non-bank financial institutions, making exposures less transparent and raising the risk of contagion. Recognising these risks, the Chinese authorities have flagged new restrictions on shadow lending over the past year. However, it is unclear how effective these actions could be, partly because in the past shadow lenders have been adept at circumventing new regulations.

Capital outflows have the potential to exacerbate financial vulnerabilities in China. To date, the authorities have restrained capital outflows and downward pressure on the renminbi by tightening existing capital controls and selling foreign currency reserves.

If widespread financial distress were to emerge in China, Australia and other economies would likely be affected mostly through the impact on the Chinese economy and the resultant lower trade volumes and commodity prices, as well as through weaker confidence and higher volatility in financial markets. Direct financial linkages between China and other economies are generally small, but have grown in recent years. The Chinese authorities are aware of the risks that are building within the financial sector and can draw on a broad range of policy tools to address them. But the policy trade-offs they face are difficult. And the longer that debt-driven growth

2 See RBA (2016), 'Box A: Recent Growth of Small and Medium-sized Chinese Banks', *Financial Stability Review*, October, pp 14–16.

and distortionary incentives in the financial sector persist, the more likely it is that China's economic transition will include a financial disruption of some form.

Other Emerging Economies

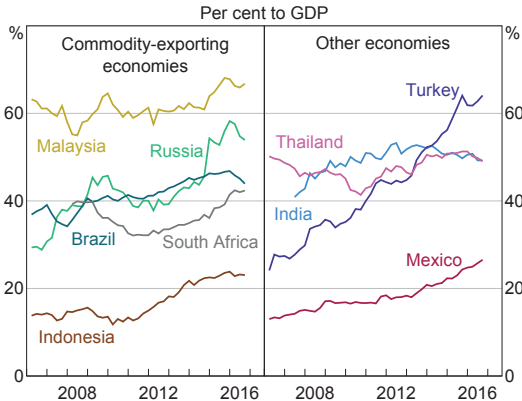
Economic growth is generally expected to pick up in other emerging market economies this year. A period of asset price falls and capital outflows following the US election was mostly short-lived, as the stronger global growth outlook and higher commodity prices outweighed concerns about higher interest rates and possible protectionist policies. Nonetheless, as with China, private sector debt has increased sharply over recent years, especially in commodity-exporting economies such as Brazil, Russia, South Africa and Indonesia. This has been driven by rising corporate indebtedness, which remains high relative to history despite flattening out or even declining in some economies recently (Graph 1.14). This could give rise to debt-servicing problems if global interest rates were to continue to rise, though these concerns could be mitigated if higher rates were associated with stronger global growth and higher commodity prices. In contrast, a scenario

where interest rates rose, but commodity prices remained low, would be particularly challenging for many emerging market economies, though associated exchange rate depreciations would likely provide some offsetting support to these economies' net exports. This might be the case if there were a sudden repricing of risk, for instance in response to domestic or international political developments.

A significant increase in global interest rates would lead to higher borrowing costs for firms rolling over debt in the corporate bond market. A relatively large volume of US dollar-denominated debt is due to mature in the next few years in some emerging market economies (Graph 1.15). While the adjustment of global interest rates is expected to be fairly gradual, a significant repricing of emerging market risk would see these pressures develop more quickly and in a more disruptive way.

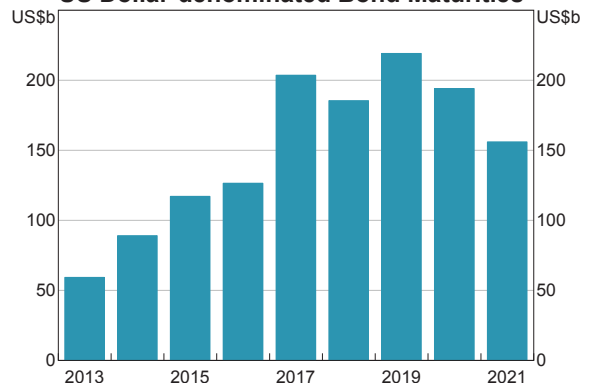
Emerging market banks, which are typically the main financiers of domestic corporate debt, seem well placed to weather moderately higher corporate defaults. Banking system profitability generally remains at or above estimates of the cost of equity, and banks' reported capital

Graph 1.14
Total Credit to Private Non-financial Corporations
Per cent to GDP



Sources: BIS; CEIC; RBA; Thomson Reuters

Graph 1.15
Emerging Market Corporations' US Dollar-denominated Bond Maturities*

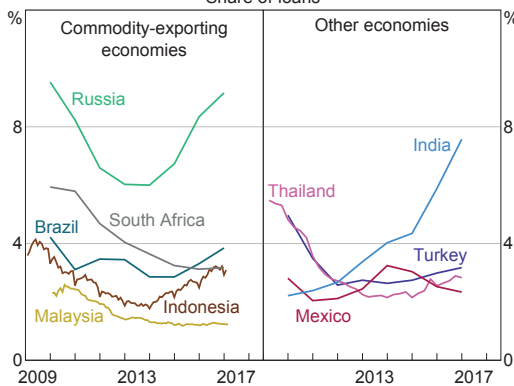


* Includes some jurisdictions that are excluded from narrower definitions of emerging markets; for example, these data include China, Hong Kong, Singapore and South Korea

Source: Dealogic

ratios are typically high by global standards. Nonetheless, NPLs have continued to pick up in commodity-exporting economies (Graph 1.16). While the recent recovery in commodity prices may take some pressure off these banking systems, the effect of earlier weak growth and low commodity prices may take time to fully work through.

Graph 1.16
Selected Banking Sector NPLs*
 Share of loans



* Definitions of non-performing loans can differ across jurisdictions
 Sources: CEIC Data; RBA; World Bank

A few emerging market banking systems, however, face more immediate challenges. The Turkish economy has weakened, in part due to ongoing political turmoil, and the lira has fallen sharply. Corporate debt in Turkey, which has increased sharply over recent years and is often denominated in foreign currency, is likely becoming more difficult to service. Broad corporate sector distress could weigh heavily on bank profitability in Turkey. In India, banks' NPL ratios are high and have continued to rise, particularly at public sector banks. The recent rise in NPLs largely reflects efforts by the regulator to improve NPL recognition. The Indian Government is continuing with banking sector reforms and the recapitalisation of troubled banks.

Overall, the potential for emerging market financial distress to spill over to other economies is rising over time due to their increasing global economic and financial integration. As with China, at this stage distress would be most likely transmitted through trade links, as direct financial linkages remain fairly small overall. It could, however, weigh on financial market sentiment, particularly in economies that are perceived to have similar vulnerabilities.

New Zealand

The four major Australian banks all have large operations in New Zealand, with business models that are similar to those in Australia (see 'The Australian Financial System' chapter for more details). Economic and asset price cycles in the two countries are also strongly correlated, and hence any widespread losses in New Zealand would likely affect the Australian banks at a time when they were already under stress from their domestic operations.

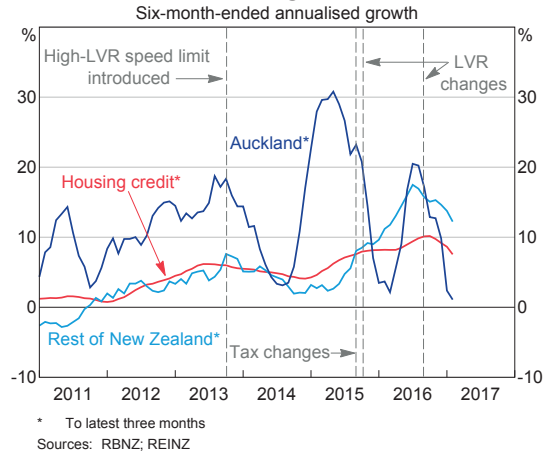
Housing prices and aggregate household debt have risen strongly over recent years, although price growth has slowed somewhat over the past six months. New Zealand housing prices now average about 6½ times annual average household disposable income, which is very high by international standards (Australia's internationally comparable ratio is currently around five, though making international comparisons can be difficult; Graph 1.8). While housing price increases are partly being driven by fundamental factors (including a high rate of migration to capital cities), there is a risk that these factors could slow or reverse. The share of new loans with high debt-to-disposable income (DTI) ratios (greater than six) has also increased, to be around one-third, and investors account for nearly half of such loans. More broadly, the investor share of all new loans has been high

(peaking at just under 40 per cent in mid 2016). This presents additional risks, because high DTI borrowers are less resilient to income or interest rate shocks, and investors may be more likely to sell in a downturn, which could exacerbate price falls.

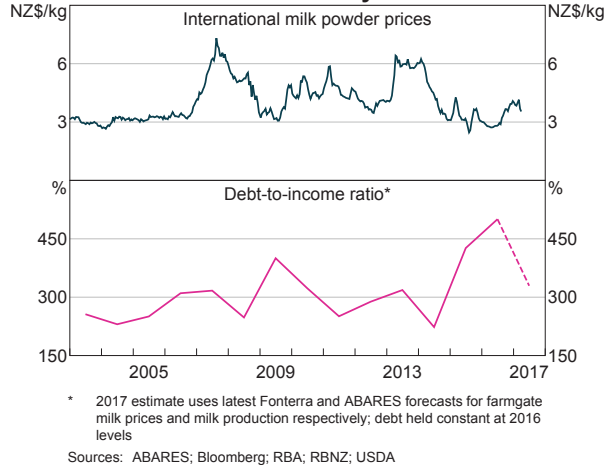
In response, the Reserve Bank of New Zealand (RBNZ) has introduced three rounds of macroprudential policies since 2013, mainly targeting high loan-to-valuation (LVR) loans and investor borrowing. These policies have helped to reduce the share of riskier housing loans on banks' balance sheets and appear to have, at least temporarily, slowed the growth of housing prices (Graph 1.17). The RBNZ has requested that restrictions on high DTI lending be added to the set of agreed macroprudential tools outlined in the Memorandum of Understanding on macroprudential policy with New Zealand's Minister of Finance, which could be used to contain a further build-up in housing risks.

In contrast, the immediate risks in the dairy sector in New Zealand have subsided due to a rise in global dairy prices, though some underlying vulnerabilities remain (Graph 1.18). Dairy sector debt has continued to increase, and the more highly leveraged, higher-cost farmers remain somewhat vulnerable to any future weakness in dairy prices or a rise in interest rates. ❖

Graph 1.17
New Zealand Housing Credit and Prices



Graph 1.18
New Zealand Dairy Sector

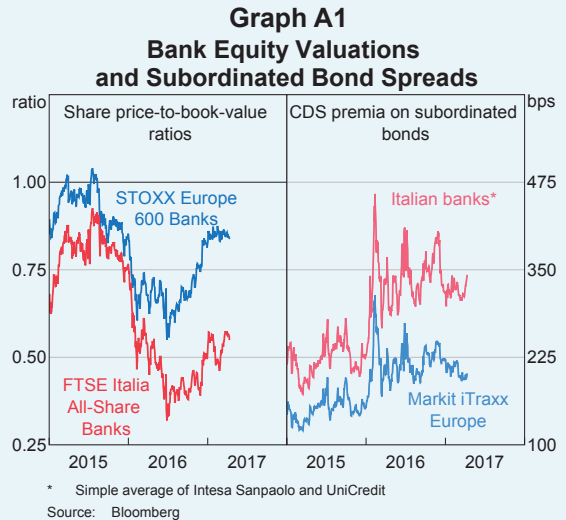


Box A

Bank Restructuring Challenges: A Case Study of Italy

As outlined in ‘The Global Financial Environment’ chapter, many European banks have faced significant challenges in the years since the financial crisis, including low revenue growth, loss-making legacy assets and a high cost base. The consequent prolonged period of low profitability, along with post-crisis regulatory reforms, has provided a strong impetus for banks to restructure their operations, including by shedding non-core assets, boosting equity funding and improving operating efficiencies. While these restructuring efforts are ongoing, their benefits are yet to fully accrue, in part reflecting the slow economic recovery in the euro area. As such, some European banks and banking systems remain vulnerable to adverse shocks and sudden shifts in market sentiment.

Italian banks are widely thought to be among the most vulnerable of the European banks. They account for about 30 per cent of all banks’ non-performing loans (NPLs) in the European Union, and their profitability remains especially low, even relative to other European banks. Italian banks’ equity prices have traded at low price-to-book valuations, with uncertainty about the resolution of NPLs contributing to ongoing price volatility and increases in measures of credit risk (Graph A1). This box outlines the challenges the Italian banking sector faces as well as the restructuring measures that have been taken by regulators and the banks to address them. These developments in Italy provide a useful case study, highlighting in particular the challenges that can arise when problem bank balance sheets are addressed only slowly, and



how corporate governance and inefficient insolvency arrangements can affect ongoing bank performance and resilience.

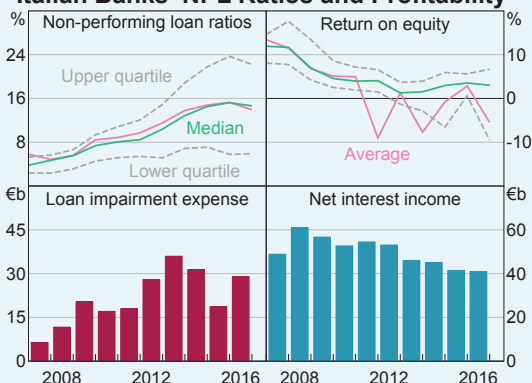
Challenges

Italian banks’ profitability has been weighed down by poor loan performance for some time. Gross NPLs have risen steadily over the past decade to very high levels, reaching around €360 billion in 2016 or around 15 per cent of Italian bank loans. The loan-loss expenses resulting from these NPLs, combined with declining net interest income, have weighed on profitability, with returns on equity commonly in the low single digits or even negative in recent years (Graph A2).

Italian banks’ poor loan performance has occurred amid a protracted economic downturn. Both consumption and investment have been depressed, which has particularly affected firms

Graph A2

Italian Banks' NPL Ratios and Profitability*



* Data are for a sample of 52 Italian banks; NPL ratios include both domestic and cross-border loans

Sources: RBA; S&P Global Market Intelligence

in the construction, manufacturing, real estate and wholesale & retail trade sectors, where NPLs have tended to be concentrated. Corporate governance arrangements have also played a role, partly reflecting the influence of banking foundations on bank boards and ownership restrictions at cooperative banks.¹ In addition, tax rules have discouraged prompt loss recognition. For example, until late 2015 loan-loss provisions were required to be deducted over five years, reducing the immediate tax benefit for Italian banks from making provisions.

Insolvency and enforcement procedures in Italy have also made the process of resolving NPLs difficult and lengthy, in turn reducing the net present value of the collateral to the banks (by increasing costs and the time to recover them from defaulting debtors). In addition, excess capacity and fragmentation in the banking

sector have placed upward pressure on banks' cost bases, as evidenced by a high number of bank branches per capita.²

The prolonged low profitability and uncertainty about the resolution of the large stocks of NPLs in Italian banks have reduced their ability to enhance resilience, with several implications for financial stability in Italy and Europe more broadly.

- Large stocks of NPLs increase uncertainty about banks' capital positions because they are hard to value and can take a long time to resolve. This uncertainty means that capital ratios might not be a good indicator of a bank's resilience and makes it harder for banks to raise new equity funding from private investors (which can hamper recapitalisation efforts). NPL portfolios are also difficult to sell in the private market without large discounts, as buyers want to be compensated for the uncertainty around the value of their investment.
- Low profitability reduces capital accumulation from retained earnings. In turn, this slows the growth of capital buffers that can help to absorb financial shocks, makes it harder to meet rising capital requirements and, therefore, can restrict banks' ability to finance the real economy. Low profitability also encourages loan forbearance, as banks find it more difficult to absorb additional loss provisions.
- Further, low profitability can make it more challenging to restructure business models, given that costs are generally incurred up-front while the benefits only materialise over time. This contributes to a degree of inertia at a time when the regulatory and market environment typically requires restructuring.

1 Banking foundations are non-profit organisations with independent boards that aim to use their financial resources for public benefit. They can be subject to political influence and can influence bank boards through disproportionate voting power for board members and committees. Cooperative bank ownership and control structures, such as one vote per member and membership limitations, have made it difficult to raise capital from outside sources and weakened market discipline. For details on corporate governance at Italian banks, see IMF (International Monetary Fund) (2014) 'Reforming the Corporate Governance of Italian Banks', Working Paper 181.

2 ECB (European Central Bank) (2016) 'Report on Financial Structures', Final Report, October.

Public and Private Sector Responses

The Italian authorities have implemented a number of reforms to address the difficulties in the banking sector. Their efforts to date have focused on strengthening bank governance, boosting tax incentives for loss recognition and making substantial changes to business insolvency laws to simplify and speed up corporate restructurings and loan foreclosures. These longer-run policy initiatives have been complemented by efforts to stimulate demand in the secondary NPL market, by making available government guarantees on senior tranches of NPL securitisations and by creating two industry-funded vehicles (Atlante and Atlante II) to purchase subordinated tranches of NPL securitisations.³

Against this background, some Italian banks have raised new equity from investors, at times at the direction of regulators. Some banks have also made substantial efforts to reform their balance sheets and business models, including through selling NPLs and non-core assets, closing branches and reducing headcounts. For example, UniCredit was recently able to raise €13 billion in new equity from investors (the largest non-acquisition-related rights offering in Europe to date) as part of a strategic overhaul and to help cover €11 billion of NPL-related losses recognised in late 2016.

However, other banks have lagged in their efforts to restructure their operations and recent attempts by banks with weak asset quality to raise new equity from private investors have been unsuccessful. In particular, Banca Popolare di Vicenza and Veneto Banca received equity injections in mid 2016 from Atlante after there was very little investor demand for their initial equity offerings. Atlante – which assumed close

to 100 per cent ownership in each of the banks following the initial capital injections – injected more capital into these banks in late 2016 as an advance payment for future capital increases. When additional losses were recognised in early 2017, these banks announced a plan to merge and (individually) applied for a precautionary recapitalisation. If approved, this will involve the conversion of subordinated bonds to common equity and a public injection of capital from the Italian Government's recently established €20 billion recapitalisation fund. Banca Monte dei Paschi di Siena (MPS), Italy's fourth-largest bank, similarly applied for a public recapitalisation in late 2016 after it was unable to raise new equity funding from private investors to close a regulatory capital shortfall.⁴ All three banks have issued government guaranteed bonds to support their funding liquidity. EU rules requiring creditors to take some losses as a precondition for public capital injections have added to the challenges in addressing these banks' issues, because Italian households own a substantial volume of bank bonds.⁵

Despite this progress, the policy measures announced to date have not yet led to significant improvements in the overall health of the Italian banking sector. This is partly because some are still to be completely implemented and the benefits from others are yet to be fully realised. Even so, further work – from both the public and private sectors – may still be required to escape the unfavourable dynamics associated with a large stock of NPLs, weak profitability and low price-to-book valuations. ❖

3 Atlante can also purchase common equity in banks with low capital ratios.

4 The recapitalisation will mark the fifth time that MPS has raised new ordinary equity since the start of 2008.

5 A provision in the legislation establishing the €20 billion recapitalisation fund seeks to reduce this risk by allowing compensation for retail investors who purchased securities prior to 1 January 2016, when the EU's 'bail-in tool' became active in Italy. The rationale for the compensation was that retail investors were provided with insufficient information about the risks of the bank bonds they purchased.

2. Household and Business Finances

In Australia, vulnerabilities related to household debt and the housing market more generally have increased, though the nature of the risks differs across the states. Household indebtedness has continued to rise and in Sydney and Melbourne, investor activity and housing price growth have picked up strongly. In inner areas of Brisbane and some other locations, there are ongoing concerns about a future oversupply of apartments given the large volume of apartments still to be completed. In Western Australia and other regions exposed to the mining sector, economic conditions remain challenging and both detached house and apartment prices have fallen as income and population growth have slowed.

There has been some tightening of lending standards since 2014, which is evident in the ongoing decline in the share of loans with high loan-to-valuation ratios (LVRs). However, some types of higher-risk housing lending such as interest-only (IO) loans, particularly to investors, have increased of late. Though household indebtedness has continued to rise, low interest rates and improved lending standards in recent years are helping to keep the household debt-servicing burden contained. In this environment, the risks are primarily macroeconomic in nature rather than direct risks to the stability of financial institutions.

The Council of Financial Regulators (CFR) has been monitoring and evaluating the risks to household balance sheets. In an environment of heightened risks, the Australian Prudential Regulation Authority (APRA) announced further measures in

March 2017 to reinforce sound housing lending practices. Authorised deposit-taking institutions (ADIs) will be expected to limit new IO lending to 30 per cent of total new residential mortgage lending, and within that to tightly manage new IO loans extended at high LVRs. APRA also reinforced the importance of: banks managing their lending so as to comfortably meet the existing investor credit growth benchmark of 10 per cent; loan serviceability assessments being appropriate to the current environment of heightened risks, including the size of net income buffers; and banks continuing to exercise restraint on lending growth in higher risk segments such as high loan-to-income loans, high LVR loans and loans for very long terms. In addition, APRA highlighted the need to contain growth in warehousing facilities to non-ADI housing lenders, and to ensure appropriate lending standards are maintained.¹

In addition, the Australian Securities and Investments Commission (ASIC) has stressed the importance of lenders and brokers ensuring that consumers are not provided with unsuitable IO loans, and announced a targeted industry surveillance to examine the practices of lenders and mortgage brokers in this respect. ASIC also announced that eight major lenders can provide remediation to consumers who suffer financial difficulty as a result of shortcomings in past lending practices.²

1 APRA (2017), 'APRA Announces Further Measures to Reinforce Sound Residential Mortgage Lending Practices', Media Release No 17.11, 31 March.

2 ASIC (2017), 'ASIC Announces Further Measures to Promote Responsible Lending in the Home Loan Sector', Media Release, No 17-095MR, 3 April.

Conditions in the non-residential commercial property sector also vary across the country. Conditions are strongest in Sydney and Melbourne, consistent with their stronger economies, while in Perth and Brisbane elevated vacancy rates and falling rents remain a challenge. Overall, yields on Australian commercial property assets are at historically low levels but remain higher than in many overseas markets and for other asset classes. As such, Australian commercial property continues to attract foreign investors. If these investors were to reassess their desired yield, it could put downward pressure on commercial property prices. This could occur if global interest rates rose more quickly than investors currently expect, for example in response to higher than anticipated global inflation.

Businesses generally remain in good financial health, with listed corporations' profits in line with their average over the past few years. Low interest rates are providing ongoing support to businesses and indicators of stress among businesses are generally low, with the exception of businesses exposed to resources or operating in mining regions. Even for these latter companies, higher commodity prices over the past six months have contributed to higher profits at resource-related companies, though the outlook for commodity prices remains uncertain.

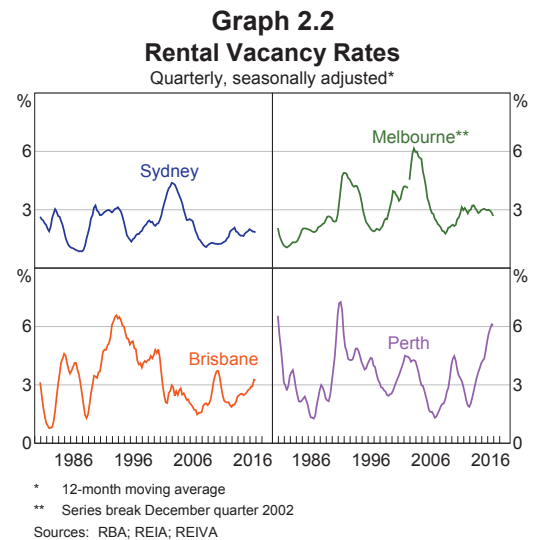
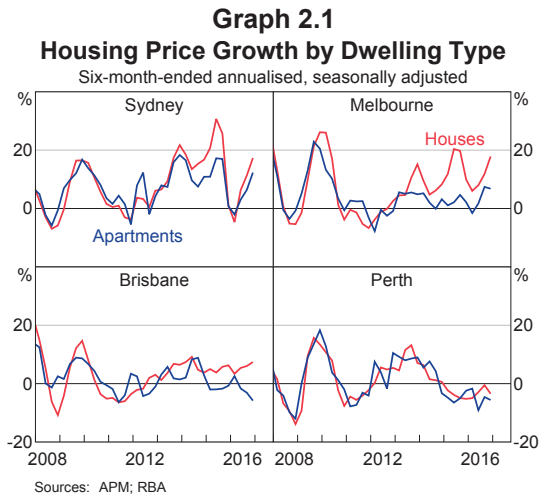
Household Sector

Housing and mortgage markets

Risks to household balance sheets and housing markets more generally have increased. In Sydney and Melbourne, housing prices are rising at a rapid pace and auction clearance rates are at high levels (Graph 2.1). At the same time, there continue to be concerns about an oversupply of apartments in pockets of Melbourne and in

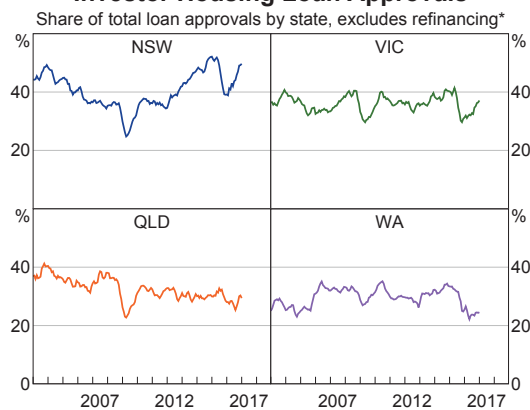
parts of Brisbane, where apartment prices have declined in recent months, rental growth has been soft and the vacancy rate has trended higher (Graph 2.2). In Western Australia and other regions with large exposures to the mining sector, overall housing market conditions remain weak.

Investor credit has also risen noticeably over the past six months, with investor demand particularly strong in Sydney and Melbourne (Graph 2.3). Overall household indebtedness has increased while income growth has remained weak. Some types of higher-risk



Graph 2.3

Investor Housing Loan Approvals



* Seasonally adjusted three-month moving average; investor refinancing based on RBA estimates
Sources: ABS; APRA; RBA

mortgage lending, such as IO loans, also remain prevalent and have increased of late (see 'Box B: Interest-only Mortgage Lending'). As noted above, APRA has recently taken measures to contain new IO lending.

The risks associated with strong investor credit growth and increased household indebtedness are primarily macroeconomic in nature rather than direct risks to the stability of financial institutions. Indeed, some evidence suggests that investor housing debt has historically performed better than owner-occupier housing debt in Australia, though this has not been tested in a severe downturn. Rather, the concern is that investors are likely to contribute to the amplification of the cycles in borrowing and housing prices, generating additional risks to the future health of the economy. Periods of rapidly rising prices can create the expectation of further price rises, drawing more households into the market, increasing the willingness to pay more for a given property, and leading to an overall increase in household indebtedness. While it is not possible to know what level of overall household indebtedness is sustainable, a highly indebted household sector is likely to be more

sensitive to declines in income and wealth and may respond by reducing consumption sharply.

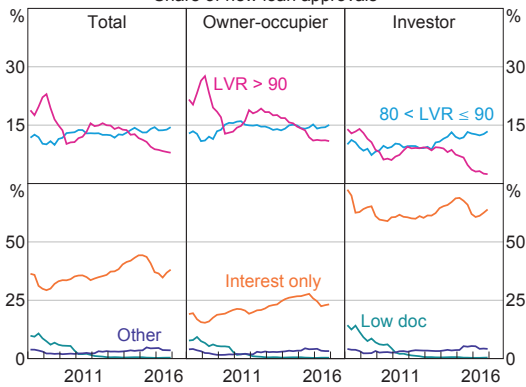
A further risk during periods of strong price growth is that it may be accompanied by an increase in construction that could result in a future overhang of supply for some types of properties or in some locations. In this environment, as well as amplifying the upswing for such properties, any subsequent downswing is likely to be larger and more likely to see prices and rents fall if the vacancy rate rises. This poses risks to the whole housing market and household sector, not just to the recent investors.

Prudent mortgage lending standards help to offset these risks. Over the past six months, lenders have further tightened lending terms, in part to keep investor credit growth within the 10 per cent benchmark set by APRA at the end of 2014.³ Recent non-price measures introduced by banks include tighter serviceability and maximum LVR restrictions on new residential projects or postcodes considered to be riskier. Overall, the share of new lending with LVRs greater than 90 per cent has fallen (Graph 2.4). In addition, the price of mortgage finance has increased of late, and loan pricing is becoming more granular. For example, the major banks' advertised margin between investor and owner-occupier lending rates has risen to around 50–60 basis points after narrowing during 2016. Furthermore, all of the major banks will have introduced higher IO pricing by April, resulting in an average IO premium of 18 basis points for owner-occupier loans and 15 basis points for investor loans.

Regulators continue to scrutinise lender compliance with broader regulatory expectations. ASIC's 2015 review of IO home loans uncovered a range of weak practices

3 APRA (2014), 'Reinforcing Sound Residential Mortgage Lending Practices', Letter to all ADIs, 9 December.

Graph 2.4
ADIs' Housing Loan Characteristics*
 Share of new loan approvals



* Series are break-adjusted for reporting changes; 'Other' includes loans approved outside normal debt-serviceability policies and other non-standard loans; interest-only data are seasonally adjusted
 Sources: APRA; RBA

that led to a subsequent tightening of industry standards.⁴ In this regard, ASIC recently lodged a case with the Federal Court alleging contraventions of the *National Consumer Credit Protection Act 2009* by one lender over a three-year period to early 2015.⁵ In March 2017, ASIC completed a review of the mortgage broker market, which outlined conflicts of interest and other unsound practices such as lax assessment of consumer expenses and a propensity to direct consumers towards some higher-risk types of loans. ASIC's review recommended improvements to commission payment models, greater disclosure requirements for brokers, and improved governance and oversight of brokers by lenders and aggregators.⁶ As noted earlier, APRA and ASIC have also recently announced a range of measures that are designed to strengthen mortgage lending practices.

4 See ASIC (2015), 'Review of Interest-only Home Loans', Final Report, August.
 5 See ASIC (2017), 'ASIC Commences Civil Penalty Proceedings against Westpac for Breaching Home-loan Responsible Lending Laws', Media Release No 7-048MR, 1 March.
 6 See ASIC (2017), 'Review of Mortgage Broker Remuneration', Final Report, March.

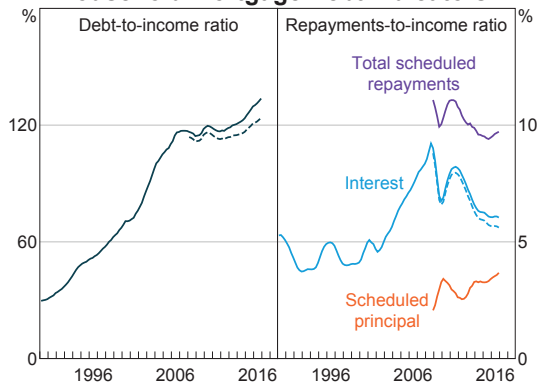
Financial position and indicators of stress

While the financial position of households has been fairly resilient, vulnerabilities persist for some highly indebted households, especially those located in the resource-rich states. Household indebtedness (as measured by the ratio of debt to disposable income) has increased further, primarily due to rising levels of housing debt, although weak income growth is also contributing. Rising indebtedness can make households more vulnerable to potential income declines and higher interest rates. This is of most concern for households that have very high levels of debt (see 'Box C: Characteristics of Highly Indebted Households').

Low interest rates are helping to offset the cost of servicing larger amounts of debt and hence total mortgage servicing costs remain around their recent lows (Graph 2.5). In this regard, lenders have tightened mortgage serviceability assessments in recent years to include larger interest rate buffers, which should provide some protection against the potential effects of higher interest rates.

Prepayments on mortgages increase the resilience of household balance sheets. Aggregate mortgage buffers – balances in

Graph 2.5
Household Mortgage Debt Indicators*



* Excludes non-housing debt; dotted lines are calculations based on debt balances net of offset accounts; income is household disposable income before housing interest costs

Sources: ABS; APRA; RBA

offset accounts and redraw facilities – are high, at around 17 per cent of outstanding loan balances or around 2½ years of scheduled repayments at current interest rates. However, these aggregate figures mask significant variation across borrowers, with available data suggesting that around one-third of borrowers have either no accrued buffer or a buffer of less than one month's repayments. Those with minimal buffers tend to have newer mortgages, or to be lower-income or lower-wealth households.

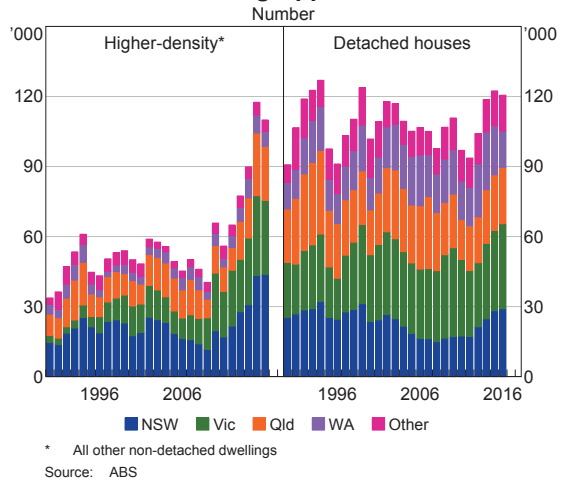
Weak economic conditions, and declining housing prices, continue to present challenges to the financial health of households in regions with large exposures to the mining sector. For example, the rate of personal administrations in Western Australia increased further over the second half of 2016. While commodity prices have increased, this seems unlikely to translate into significantly improved labour market outcomes in these regions in the near term. If housing prices continue to decline in these locations, then banks may face additional losses on their mortgage portfolios.

Commercial Property

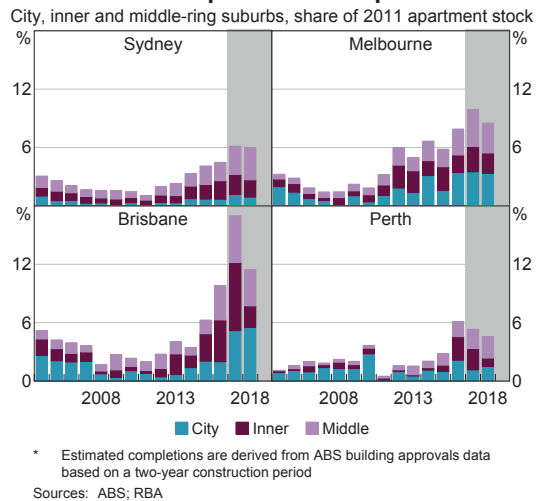
Residential development

The construction of new apartments and other higher-density housing has increased substantially over recent years, reaching historically high levels. In 2016, higher-density dwellings accounted for around half of all residential building approvals (Graph 2.6). As would be expected, much of this activity has occurred in the most populous cities of Sydney, Melbourne and Brisbane. In Sydney, construction activity has been spread across the inner and middle suburbs, and the increase in new supply relative to the existing stock of apartments is relatively modest (Graph 2.7). However, in Melbourne and Brisbane, where apartments have historically accounted for a much smaller share of

Graph 2.6
Dwelling Approvals



Graph 2.7
Estimated Apartment Completions*



the dwelling stock, activity has been concentrated within the central business districts and in a few surrounding inner suburbs. Moreover, in Brisbane the overall increase in the supply of apartments in inner to middle-ring suburbs is much larger than that of Sydney and Melbourne as a share of the current stock, and population growth in Queensland has slowed in recent years.⁷ This large number of new apartments recently completed

⁷ Shoory M (2016), 'The Growth of Apartment Construction in Australia', *RBA Bulletin*, June, pp 19–26.

and currently under construction raises the risk of localised pockets of oversupply. As discussed earlier, apartment prices have fallen in Brisbane. In Perth, reduced growth in demand for new dwellings has created challenging conditions for builders and developers.

In these circumstances, developers may have trouble finding buyers for their new apartments in some areas. While liaison with industry suggests that settlement failure rates remain low, developers are continuing to report delays in settlement for some purchasers. One reported contributor to settlement delays is tighter access to finance, particularly for buyers relying on foreign income. Liaison also indicates that valuations at settlement are sometimes coming in below what buyers had anticipated and, in some cases, below contracted purchase prices, reducing the amount banks will lend. For investors buying these new apartments, declines in apartment prices raise the likelihood that they fall into negative equity at settlement. The potential for rents to fall and vacancy rates to rise also raises the risk that investors may find it more difficult to subsequently service their mortgages.

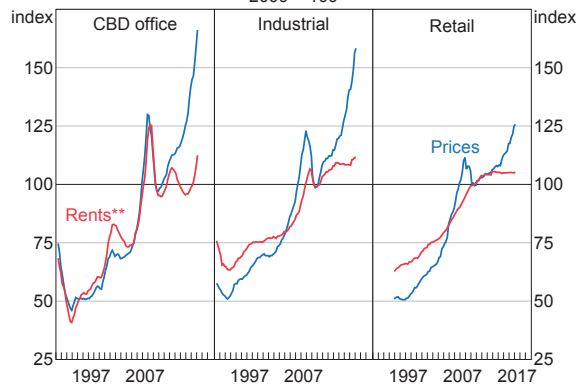
In view of these concerns, developers' access to bank finance has tightened further, particularly in geographic regions at risk of oversupply. Banks tightened finance for residential developers over the course of 2016, with measures such as stricter pre-sales requirements, lower maximum LVRs and stricter geographic concentration limits. Liaison with industry suggests that the use of non-bank lenders, such as mezzanine financiers and private equity, has consequently increased, and that the pricing of finance from these sources is generally higher. Liaison also reports that the use of intermediaries who connect borrowers with non-bank lenders has increased. Overall, however, it is difficult to fully gauge the scale of this type of lending.

Other commercial property

Commercial property prices have continued to rise by more than rents, and yields have now reached historically low levels (Graph 2.8). Nonetheless, yields on Australian commercial property remain higher than in many overseas property markets and other asset classes, which has attracted investors, including foreign buyers. The current heightened commercial property valuations may leave some leveraged investors vulnerable to subsequent price declines. In particular, if global interest rates were to increase more quickly than investors currently anticipate or demand from foreign or domestic investors were to decline, a consequent price decline may lead leveraged property investors to breach loan-to-valuation covenants on bank debt. They would then be required to inject additional equity to support their loan facilities, which may prompt further sales and price declines if they were unable to do so.

Like residential property markets, conditions in commercial property markets vary significantly by state and type of asset. Investor demand is strongest in Sydney and Melbourne, and

Graph 2.8
Commercial Property*
2009 = 100



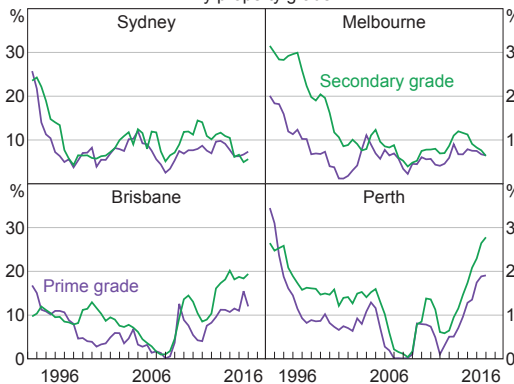
* CBD office and industrial are prime property, retail is regional (non-CBD) centres

** CBD office is effective rents, industrial and retail are face rents

Sources: ABS; JLL Research; RBA

for office and industrial properties. In Sydney and Melbourne, prices for office property are rising, and growth in rents has increased in recent months due to strong tenant demand. In Brisbane, office prices are rising at a much slower rate, while prices in Perth are flat. Office vacancy rates are elevated in Brisbane and Perth (Graph 2.9).

Graph 2.9
CBD Office Vacancy Rates
By property grade*



* Prime grade includes premium and A grade stock weighted by floor space; secondary grade includes B grade, C grade and D grade stock weighted by floor space

Sources: Property Council of Australia; RBA

There is some evidence that conditions in the prime-grade Brisbane and Perth office markets may be stabilising, though this appears to have come at the expense of secondary-grade markets where the outlook remains weak. Falling rents and increasing vacancy rates have motivated tenants to relocate into better quality office spaces. Accordingly, prime-grade tenant demand picked up in Brisbane over the past six months, while in Perth analysts generally expect the vacancy rate in prime-grade office property to stabilise, with little new supply forecast to come on line over the next couple of years.

Conditions in industrial and retail commercial property markets also vary by city. Stronger local economic conditions and infrastructure investment have supported tenant demand in

the Sydney and Melbourne industrial markets, and rent growth has picked up noticeably in Sydney. Conditions in Brisbane may be stabilising, while rents in Perth continue to fall. In retail property markets, tenant demand has been soft nationally.

In 2016, APRA reviewed banks' commercial property lending practices, including lending for residential development.⁸ The review examined banks' underwriting standards and portfolio controls. Among other things, the review found evidence at some ADIs of weak underwriting standards and that the ability of lenders' boards to monitor the risk profile of lending was hampered by inadequate information systems. Over the past six months, banks have tightened their commercial property lending standards and growth in banks' commercial property exposures has slowed, due primarily to slower growth in lending for residential and land development (Graph 2.10). A decline in Australian banks' commercial property exposures has been offset by an increase in Asian banks' commercial property exposures (Graph 2.11).

Graph 2.10
Commercial Property Exposures Growth*
Exposure limits, consolidated Australian operations



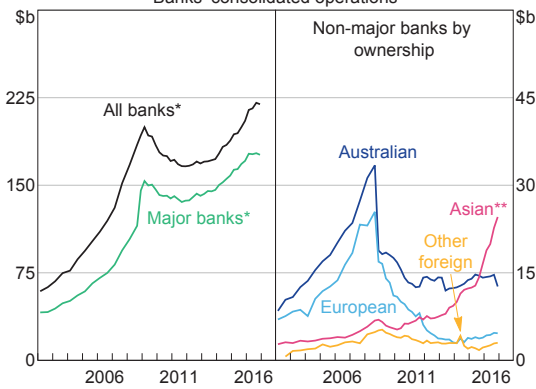
* Year-ended growth

** Includes industrial, office, retail, tourism & leisure and other

Sources: APRA; RBA

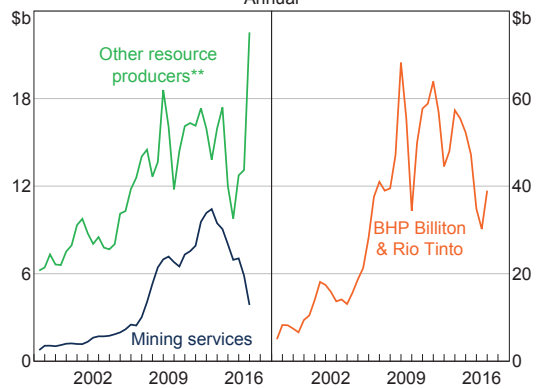
⁸ APRA (2017), 'Commercial Property Lending – Thematic Review Observations', Letter to all ADIs, 7 March.

Graph 2.11
Commercial Property Exposures
Banks' consolidated operations



* Excludes overseas exposures
** Includes HSBC
Sources: APRA; RBA

Graph 2.12
Listed Resource-related Corporations' Earnings*
Annual



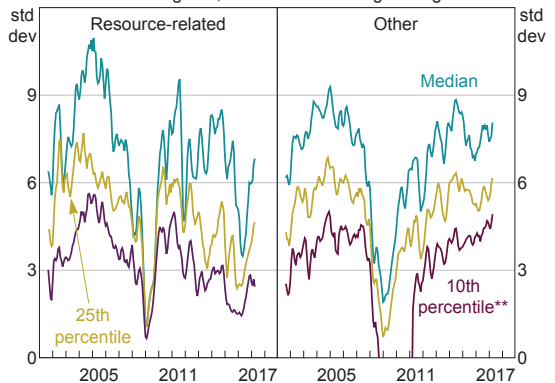
* Listed corporations' EBITDA; excludes foreign-domiciled corporations
** Includes listed junior explorers
Sources: Bloomberg; Morningstar; RBA

Business Sector

Conditions have generally improved over the past six months for businesses in the resource-related sector. The rise in commodity prices since the beginning of 2016, particularly for iron ore, and the ongoing efforts of these businesses to cut costs and reduce debt, have led to a substantial increase in the aggregate earnings of listed resource-related corporations (Graph 2.12). Many listed resource-related corporations have used some of their increased profits to pay down debts, resulting in a decline in the sector's gearing and debt servicing ratios. In line with these positive developments, resource-related corporations' distance-to-default measures have increased over the past year (Graph 2.13).⁹ Nevertheless, earnings have continued to weaken for mining services corporations as resource producers have focused on cost reduction.

As noted in previous *Reviews*, banks' direct exposures to the mining sector have declined in recent years and now constitute only a

Graph 2.13
Listed Corporations' Distance-to-default*
Debt-weighted, three-month moving average



* Calculated up to 31 March 2017 using a sample of the largest 300 corporations listed on the ASX by debt, excludes financial and foreign-domiciled corporations
** Between 2008 and 2011, distance-to-default measures turned negative for around 100 non-resource-related companies, implying a high probability of default; of these, around one-third went on to default
Sources: Bloomberg; Morningstar; RBA

little over 1 per cent of their total lending, though this figure excludes banks' exposures to non-resource-related businesses operating in mining regions (Graph 2.14). Conditions remain challenging for these businesses, given mining firms' continued focus on cost containment, and some indicators of financial distress have picked up. For instance, unincorporated business failure rates are elevated in Queensland and Western

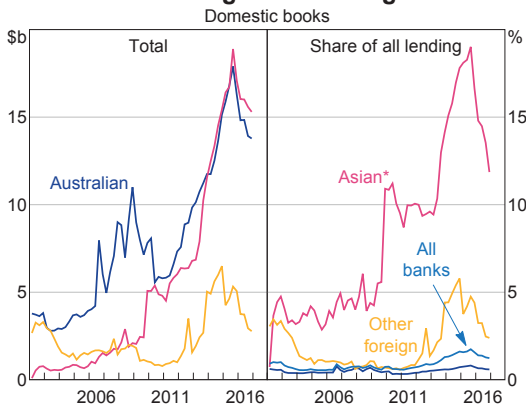
⁹ Distance-to-default is a forward-looking, market-based measure of default risk using equity prices and book-value liabilities. See Robson M (2015), 'Default Risk Among Australian Listed Corporations', *RBA Bulletin*, September, pp 47–54.

Australia (Graph 2.15). If higher commodity prices were to fall or not translate into improved economic conditions in mining-exposed regions, business failure rates may pick up further.

Outside the mining-exposed states, businesses' finances generally appear sound and indicators of stress are low. Survey measures of business conditions are well above their historical averages; listed corporations' distance-to-default measures have continued their trend improvement and earnings have been in line

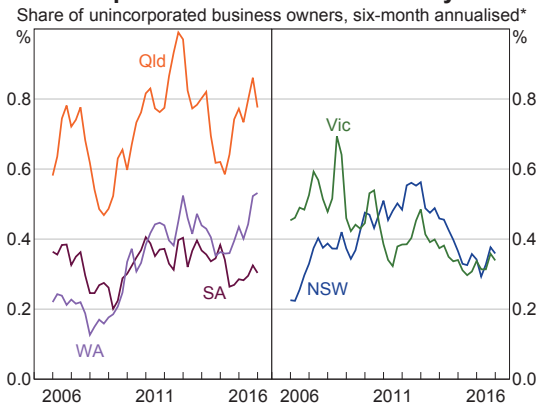
with previous years; failure rates are low; gearing remains around its historical average; and many businesses continue to benefit from the depreciation of the Australian dollar since 2013 (Graph 2.16). The low interest rate environment has also made it easier for companies to meet their debt obligations by reducing debt-servicing costs (Graph 2.17). ↘

Graph 2.14
Banks' Lending to the Mining Sector



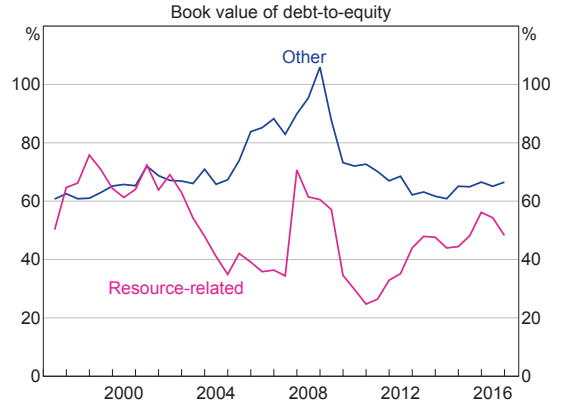
* Includes HSBC
Sources: APRA; RBA

Graph 2.15
Unincorporated Business Failures by State



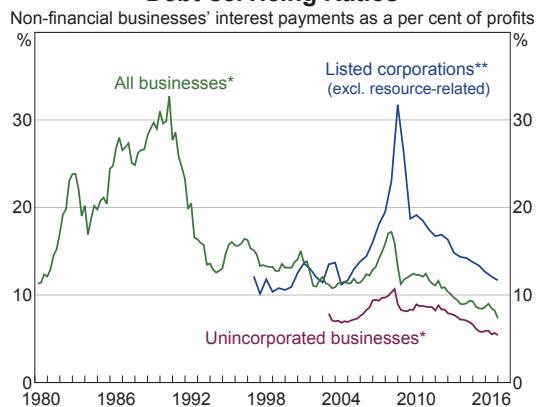
* Number of unincorporated business owners by state estimated from September quarter 2015
Sources: ABS; AFSA; RBA

Graph 2.16
Listed Corporations' Gearing Ratios*



* Excludes financial and foreign-domiciled corporations
Sources: Bloomberg; Morningstar; RBA

Graph 2.17
Debt-servicing Ratios



* Gross interest paid on intermediated debt from Australian-located financial institutions

** Net interest paid on all debt as a per cent to EBITDA; excludes foreign-domiciled corporations

Sources: ABS; APRA; Bloomberg; Morningstar; RBA

Box B

Interest-only Mortgage Lending

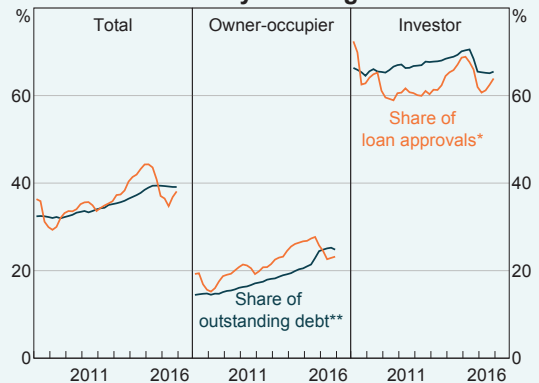
Interest-only (IO) loans account for a sizeable and growing share of total housing credit in Australia, now representing around 23 per cent of owner-occupier lending and 64 per cent of investor lending (Graph B1). IO lending has the potential to increase households' vulnerability in part due to the higher average level of indebtedness over the life of an IO loan compared with a regular principal-and-interest (P&I) loan.

Measures to address some risks associated with IO lending practices were among those taken in late 2014 by the Australian Prudential Regulation Authority (APRA) and the Australian Securities and Investments Commission (ASIC), in conjunction with the Council of Financial Regulators, to reinforce sound housing lending practices.¹ While the share of IO loans in total lending approvals subsequently declined, IO loans have since started to rise again, especially for investors, which has again attracted regulator attention. In March 2017, APRA announced new measures requiring authorised deposit-taking institutions (ADIs) to limit new IO lending to 30 per cent of total new residential mortgage lending and, within that, to tightly manage new IO loans extended at high loan-to-valuation ratios (LVRs).² This box outlines in more detail recent trends in IO lending and the nature of the potential risks that can arise from this type of lending.

1 The Council of Financial Regulators agencies are APRA, ASIC, the Reserve Bank of Australia (RBA) and The Treasury. For further details of the measures announced in 2014, see RBA (2015) 'Box B: Responses to Risks in the Housing and Mortgage Markets', *Financial Stability Review*, March, pp 45–47.

2 APRA (2017), 'APRA Announces Further Measures to Reinforce Sound Residential Mortgage Lending Practices', Media Release No 17.11, 31 March.

Graph B1
Interest-only Housing Loans



* Interest-only housing loan approvals as a share of total housing loan approvals

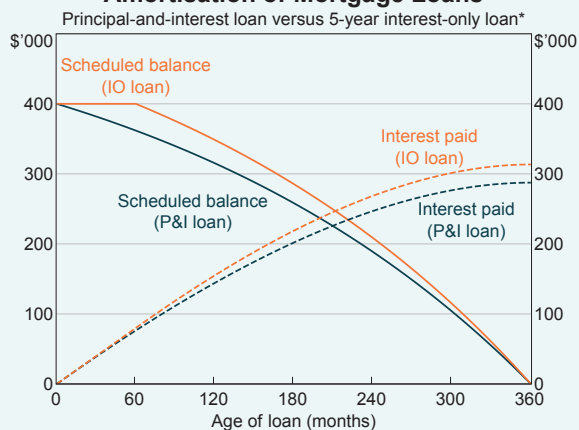
** Outstanding balance of interest-only housing loans as a share of total outstanding housing loans

Sources: APRA; RBA

Characteristics of and Demand for Interest-only Loans

For P&I loans, the balance of the loan must be paid down over the entire term of the loan. In contrast, for IO loans repayments of principal are not required during the IO period, which is typically the first five to ten years of the loan. Instead, scheduled principal repayments start at the end of the IO period, with the balance of the loan then paid off over the residual loan term. As a consequence, for a typical 30-year P&I loan of \$400 000 with an interest rate of 4 per cent, borrowers would be ahead on principal repayments by around \$38 000, or about 10 per cent of the initial balance, after five years compared with an IO loan (Graph B2). Further, because the scheduled balance on an IO loan is always higher than on a comparable P&I loan, IO loans incur a greater interest cost over

Graph B2
Amortisation of Mortgage Loans



* Calculated for 30-year, \$400 000 loan at 4 per cent interest rate
Source: RBA

the term of the loan (around 9 per cent extra in the previous example). An IO loan can potentially also be refinanced at the end of the IO period into another IO loan, prolonging the period before scheduled principal repayments start.

Both investors and owner-occupier borrowers make extensive use of IO lending for a range of reasons. Housing investors make the most use of IO loans. Since interest payments on investment loans are tax deductible, the incentive to pay down a loan's principal is reduced. IO loans also enable investors to maintain a higher level of leverage and so magnify potential gains or losses if housing prices rise or fall. As noted earlier, the share of owner-occupier lending that is IO has also risen noticeably over time.³ This has been due to increasing numbers of owner-occupiers using IO loans and the increasing average sizes of IO loans (relative to P&I loans).

3 APRA started the regular collection of data on IO loan approvals in 2008, though other data indicate that the IO share of housing credit had been rising for several years prior. In 2003, it was estimated that IO lending accounted for almost 50 per cent of new investor housing loans and a little over 10 per cent of new owner-occupier loans. See RBA (2006), 'Box B: Interest-only Housing Loans', *Financial Stability Review*, September, pp 42–43.

Another reason borrowers may prefer IO loans to P&I loans is because they can offer greater repayment flexibility. Borrowers with lumpy income or those wanting to build buffers or save for planned expenditures, such as renovations, can use IO loans with an offset or redraw facility to minimise the effective interest costs over the period of the loan while still ensuring funds are readily available for other uses. In particular, offset accounts and redraw facilities allow borrowers to effectively amortise loan balances during the IO period and so reduce (or eliminate) the extra interest cost associated with the higher principal balance on IO loans compared with P&I loans. However, borrowers need to be disciplined in their repayment behaviour to receive these benefits; otherwise they may incur greater interest costs, and remain more indebted for longer. IO loans are also routinely used for bridging finance and construction loans to minimise repayments for the short duration of these loans.

Risks

For some time regulators have highlighted the potential risks associated with IO compared with P&I loans. Because IO loans allow borrowers to remain more indebted for longer, there may be greater credit risks associated with such loans. When loan balances stay high, there is an increased risk of borrowers falling into negative equity should housing prices decline.

Another risk is that borrowers may find it difficult to service higher required payments at the end of the IO period, which increases the chance of default. For example, repayments on a \$400 000 loan with a 4 per cent interest rate and a five-year IO period would typically increase by around 60 per cent at the end of the IO period. While some borrowers may have planned to refinance into another IO loan at the end of the IO period,

this may be difficult if circumstances have changed.

Borrowers who anticipate future price rises can use IO loans to maintain a higher level of leverage for a given servicing payment, thereby magnifying their returns from rising housing prices but also magnifying any losses. More generally, at an aggregate level this behaviour could induce a more pronounced cycle in housing prices than would otherwise occur, amplifying the size of any subsequent downswing in housing prices.

In recognition of the higher risks associated with IO loans, some lenders have introduced premiums on advertised interest rates for IO loans. For example, the four major banks have announced, on average, an 18 basis point premium for IO owner-occupier loans and a 15 basis point premium for IO investor loans (in addition to premiums for investor loans relative to owner-occupier loans).

Lenders' practices in assessing the ability of borrowers to repay their loans are important to manage the systemic risks posed by IO lending. These practices determine the maximum loan size that a borrower could sustainably repay out of their income. In particular, APRA serviceability guidance for ADIs sets out prudent practices for IO loans, with the capacity to repay assessed at

the higher repayment amount required when the IO period ends (known as the residual-term method). Under this residual-term method, borrowers seeking IO loans receive a lower maximum loan size than would be available for an equivalent P&I loan.

Nonetheless, prior to the 2014 measures, some lenders assessed serviceability based on lower *hypothetical* P&I repayments calculated from the entire term of IO loans (including the IO period; known as the full-term method).⁴ This approach risks borrowers being unable to meet their repayment obligations when the IO period ends and higher repayments commence. This is potentially in breach of the *National Consumer Credit Protection Act 2009*, which requires that lenders make loans that consumers will be able to repay without undue hardship. ASIC has found that around 40 per cent of loans reviewed in 2014 used the full-term approach; lenders have since undertaken to change their practices in order to meet their responsible lending obligations and APRA's guidance. There have also been some recent reports of borrowers applying for P&I loans to maximise their borrowing capacity, and then switching soon after approval to an IO loan. APRA has recently issued guidance to address this behaviour.⁵ ↗

4 For example, for a 30-year loan with a five-year IO period, a residual-term serviceability assessment would use repayments based on a 25-year payback period, whereas the full-term method would use the (lower) repayments from a 30-year payback period. An IO loan assessed using the full-term method would result in the same maximum loan size available for an equivalent P&I loan.

5 APRA (2017), 'APG 223 Residential Mortgage Lending', Prudential Practice Guide, February.

Box C

Characteristics of Highly Indebted Households

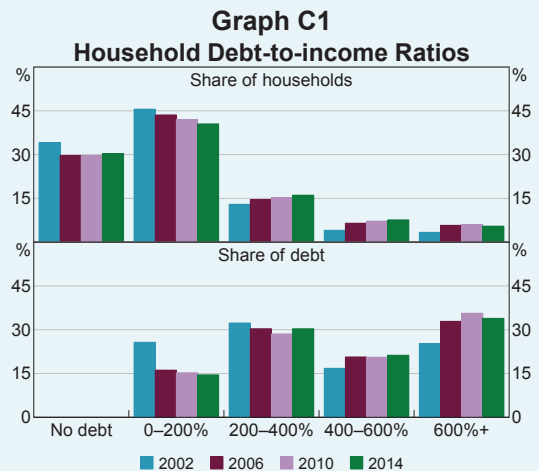
The aggregate household debt-to-income ratio has increased further in recent years, rising from already high levels. This has raised concerns about the household sector's resilience to unexpected declines in income or asset prices. Debt-to-income ratios vary substantially across households; roughly 30 per cent of households owe no debt, while some other households have debt-to-income ratios that are well above the average.

One important issue for financial stability is the number and characteristics of highly indebted households. These households are most likely to have difficulty repaying debt and sustaining consumption if their circumstances change. If the number of highly indebted households is large, their response to adverse income shocks could amplify and propagate an economic downturn, declines in housing prices and losses at financial institutions. This box outlines some of the characteristics of highly indebted households.

Debt Characteristics

Household-level information on the distribution of debt, income and wealth is available in the Household, Income and Labour Dynamics in Australia (HILDA) Survey, which collects data on owner-occupier mortgage debt every year and provides a detailed breakdown of total household debt every four years (most recently in 2014). These data indicate that the share of households with very high debt-to-income ratios was little changed between 2006 and

2014 (Graph C1).¹ In contrast, the proportion of households with more moderate debt-to-income ratios increased steadily, while the share of less indebted households declined. However, because the latest HILDA data on total debt are for 2014, it is not possible to discern whether these trends have continued more recently. The aggregate ratio of debt to income was overall little changed between 2006 and 2014, but has since risen (Graph 2.5).



There are several ways to classify household indebtedness. The approach used here is to classify 'highly indebted' households as those with debt-to-income ratios in the top 10 per cent

¹ This classification is not intended to suggest that a debt-to-income ratio below or above a certain level is sustainable for a given household. A number of factors influence the ability of a household to service their debt at a given debt-to-income ratio. For instance, higher-income households may be able to afford to devote a larger proportion of their income to debt repayments after meeting basic needs, while lower-income households could find it difficult to service debt at relatively low debt-to-income ratios.

of indebted households in a given survey year. Over the 10 years to 2014, most households in this group had a debt-to-income ratio above 550 per cent and as a group these households accounted for around 35–40 per cent of total household debt.

While the median debt-to-income ratio of the top 10 per cent of indebted households increased sharply from around 600 per cent to over 750 per cent between 2002 and 2006, it was little changed between 2006 and 2014. Highly indebted households steadily became more leveraged between 2002 and 2014, with the median debt-to-asset ratio of these households rising from around 50 per cent to just under 60 per cent.

The type of debt owed by highly indebted households was different to that for less indebted households. Less indebted households mostly had owner-occupier housing debt, while highly indebted households owed a rising share of 'other' property debt, most of which was investor housing debt (Graph C2).² Between 2002 and 2014, the average share of highly indebted households' total debt comprised of 'other' property debt increased from around 20 per cent to nearly 30 per cent.

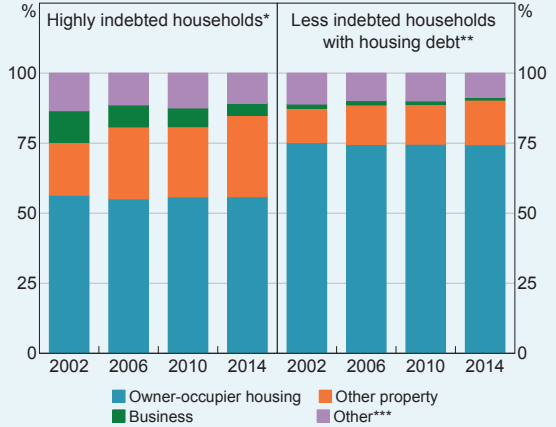
The HILDA Survey also includes information on the repayment behaviour of households. As might be expected, highly indebted households were less likely to be ahead of schedule on both owner-occupier debt and 'other' housing debt than less indebted households (Graph C3). Part of the reason is that they tended to have newer mortgage debt that had less time to amortise. Nonetheless, the share of highly indebted households ahead of schedule on their owner-occupier debt rose between 2006 and 2014, which suggests that, like other

² 'Other' property debt also includes debt owed on owner-occupier holiday and second homes.

Graph C2

Debt Composition

Average share of total household debt

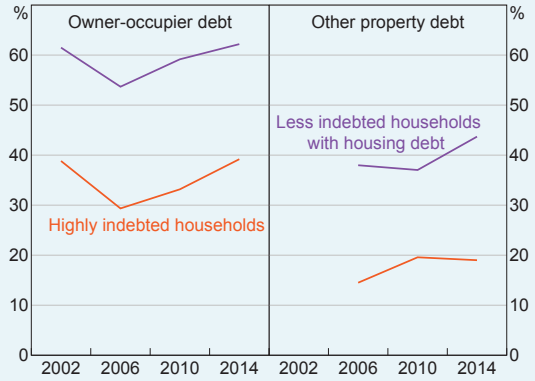


* Households with debt-to-income ratios above the 90th percentile of indebted households
 ** Households with debt-to-income ratios below the 90th percentile of indebted households that have housing debt
 *** Other debt includes credit card, HECS and personal
 Sources: HILDA Release 15.0; RBA

Graph C3

Mortgage Repayment Status

Share of households ahead of schedule



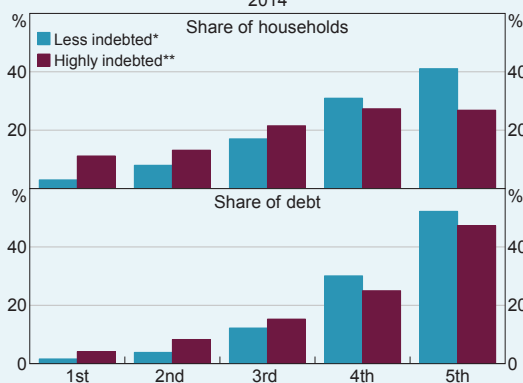
Sources: HILDA Release 15.0; RBA

borrowers, these households took advantage of low interest rates to pay down debt at a faster rate. The share of highly indebted households ahead of schedule on 'other' property debt was lower, and increased only a little between 2006 and 2010. This is unsurprising given the greater tax incentives to retain debt on rental properties than on owner-occupier properties.

Other Household Characteristics

Around one-quarter of highly indebted households were in the bottom two quintiles for income and wealth, which is a higher share than for less indebted households (Graph C4). Lower-income households tend to devote a higher share of their income to essential living expenses (leaving less income for debt servicing), while households with lower wealth may be less able to sell assets to resolve any difficulties in servicing their debt. Nonetheless, a relatively small share of the total stock of debt owed by highly indebted households was owed by lower income or lower wealth households. In 2014, for instance, households in the bottom two income quintiles accounted for only 12 per cent of total debt owed by highly indebted households.

Graph C4
Household Debt by Income Quintile
2014



* Households with debt-to-income ratios below the 90th percentile of indebted households that have housing debt

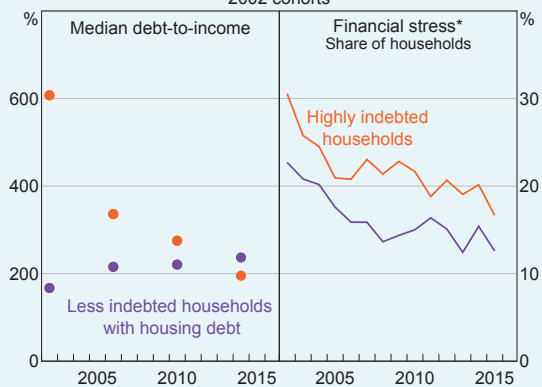
** Households with debt-to-income ratios above the 90th percentile of indebted households

Sources: HILDA Release 15.0; RBA

Using HILDA, it is possible to track highly indebted households over time. Households that were highly indebted in a particular year tended to reduce their debt-to-income ratios substantially in subsequent years. For instance, in 2002 households that were highly indebted had a median debt-to-income ratio of 600 per cent,

yet by 2006 the median debt-to-income ratio of these particular households had fallen to below 350 per cent and their debt-to-income ratio had fallen further by 2010 (Graph C5, left panel).³

Graph C5
Financial Indicators
2002 cohorts



* Experienced at least one episode of financial stress over the previous year

Sources: HILDA Release 15.0; RBA

The HILDA Survey also includes questions on financial stress experienced by households over the previous year.⁴ There was a broad-based decline in the share of households experiencing episodes of financial stress between 2001 and 2015 (the time span available in the HILDA Survey). Nonetheless, households that were highly indebted in a particular year had a greater propensity to experience financial stress. For instance, households that were highly indebted in 2002 were more likely to experience at least one incidence of financial stress in all other years compared with households that were less indebted in 2002 (Graph C5, right panel). The result also holds true for other cohorts. This suggests that a greater share of highly indebted households face financial difficulties and are

³ Graph C5 displays data for the 2002 cohorts of highly and less indebted households; however, these results also generalise to the 2006 and 2010 cohorts.

⁴ Instances of financial stress that are reported in HILDA include: being unable to pay a bill, mortgage repayment or rent on time; being unable to heat the home; and asking for financial help from friends, family, or community organisations.

more likely to be vulnerable to events that affect their ability to repay their debt, such as income declines or increases in interest rates.

Overall, these data highlight that highly indebted households can be more vulnerable to negative economic shocks and pose risks to financial stability. In particular, highly indebted households are less likely to be ahead of schedule on their mortgage repayments and they are more likely to experience financial stress, hence could be more vulnerable to adverse macroeconomic shocks. The consequent effects of this stress on the broader economy may be exacerbated by

the disproportionately large share of investor housing debt owed by highly indebted households. As discussed in the 'Household and Business Finances' chapter, heightened investor demand can contribute to the amplification of the cycles in borrowing and housing prices, particularly when this investment is highly leveraged. Nonetheless, HILDA data also show that much of the debt held by highly indebted households is owed by households with high income and wealth, who are typically better placed to service larger amounts of debt. ✖

3. The Australian Financial System

The Australian financial system remains in good condition, with banks' resilience to adverse shocks having increased over recent years. Banks' capital ratios are above regulatory minimums and those of most international peers (when measured on a comparable basis). Capital generation is being supported by high levels of aggregate profit, though there has been little growth in profit over the past couple of years. Banks' assets also continue to perform strongly; the charge for bad and doubtful debts remains low and non-performing assets have stabilised over the past six months, after increasing a little in the first half of 2016.

Overall credit growth has been broadly stable over the past six months, but the composition of this growth has changed, with investor housing credit growth increasing. Foreign bank lending – which tends to be more cyclical than lending by local banks – has continued to grow at a rapid pace, with growth concentrated in infrastructure and commercial property loans. This has partly offset a further reduction in lending by Australian banks for higher-density residential development and to the resource-related sector.

The Australian Prudential Regulation Authority (APRA) will provide more guidance over coming months about what capital standards it considers are necessary to ensure that Australian banks are 'unquestionably strong'. Banks have also been working to strengthen their resilience to liquidity shocks.

The increase in banks' capital over recent years has lowered their return on equity (ROE). This is

expected to persist as banks raise more capital to comply with revised regulatory standards. The downward pressure on ROE may create an incentive for banks to take on additional risk to protect returns. A key element of preventing this is to ensure that banks retain sound risk culture and governance frameworks. The industry has announced a number of initiatives to improve its risk culture and regulators have increased their focus on bank culture and risk governance.

Risks within the non-bank financial sector also appear manageable. General insurers' profits increased in the second half of 2016, underpinned by an improvement in underwriting results as commercial premium rates increased following an extended period of underpricing and net claim costs declined. (The cost of Cyclone Debbie is yet to be fully determined.) In contrast, life insurers' profits fell because of rising claims that compounded long-standing deficiencies in pricing, provisioning and claims processes for individual disability income insurance. Lenders mortgage insurers also face ongoing challenges due to declining demand as banks tighten mortgage lending standards. Nonetheless, insurers in all three segments maintain capital ratios that are well in excess of their regulatory minimums and so appear well placed to manage these challenges. The shadow banking sector continues to pose only limited risk to financial stability due to its small share of financial system assets to date and minimal linkages to the regulated sector. Similarly, risks stemming from the superannuation sector remain low due to the limited use of leverage.

Banks' Domestic Asset Performance

Australian banks' domestic asset performance was little changed over the second half of 2016 (Graph 3.1). This followed a slight deterioration in asset performance earlier in 2016, especially in Western Australia where economic conditions have been generally weak and housing prices and rents have declined.

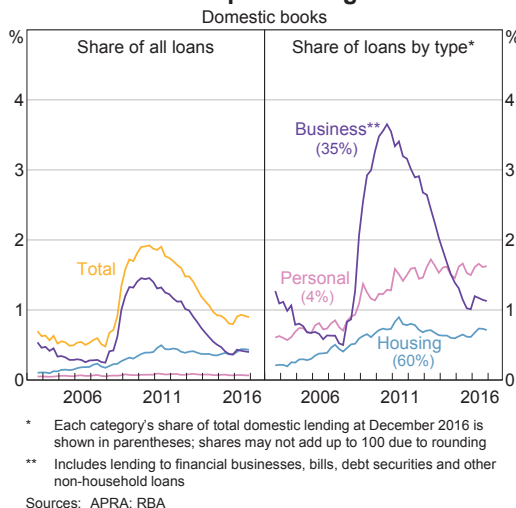
Indicators of banks' asset performance have continued to diverge across the country. Liaison with banks suggests that the performance of housing loans in mining-exposed regions may have stabilised towards the end of 2016. However, data on securitised housing loans suggest that delinquencies edged up further in Western Australia in early 2017 and remained higher in states with larger exposures to the mining sector, where economic conditions have been relatively weak (Graph 3.2). The majority of banks' non-performing housing loans remain well secured, with the impaired share very low.¹ In addition, stress testing conducted by APRA in 2014 indicated that housing prices would have to fall significantly before banks incurred sizeable losses.² In liaison, banks report that business loan arrears had continued to drift up in the states with large mining sectors, but that the low interest rate environment is supporting asset performance.

Future asset performance will continue to be influenced by conditions in real estate markets and the resources sector, as well as macroeconomic conditions more generally. The strengthening of housing lending standards over the past couple of years is also expected to support future loan performance on an ongoing

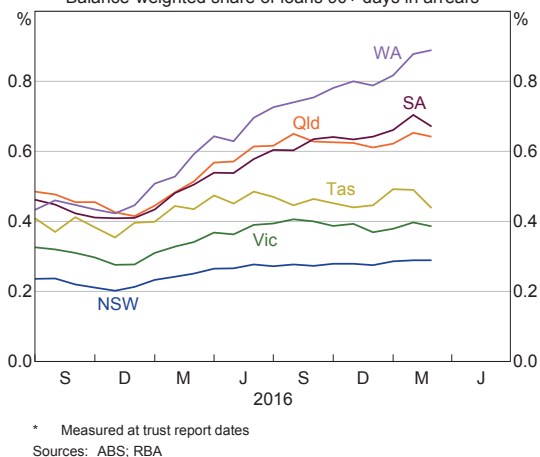
1 Impaired loans are those that are not well secured and there are doubts as to whether the full amounts due will be obtained in a timely manner. Past-due loans are at least 90 days in arrears, but well secured.

2 For further details, see Byres W (2014), 'Seeking Strength in Adversity: Lessons from APRA's 2014 Stress Test on Australia's Largest Banks', Speech at the AB+F Randstad Leaders Lecture Series, Sydney, 7 November.

Graph 3.1
Banks' Non-performing Assets



Graph 3.2
Securitised Mortgage Arrears Rates*
Balance-weighted share of loans 90+ days in arrears

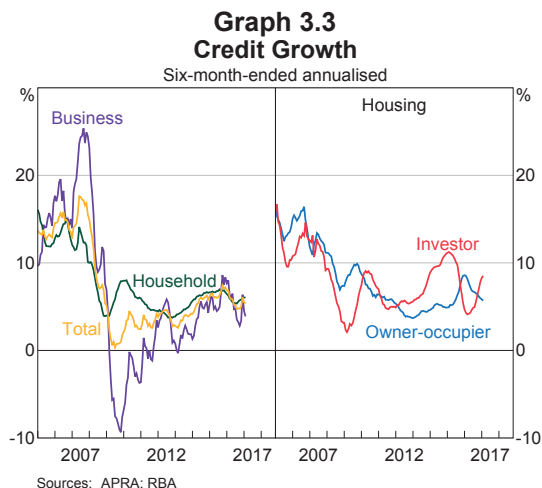


basis. Nonetheless, if apartment markets in some cities were to turn down and settlement difficulties became widespread, banks could incur some losses, particularly on their property development lending.³

3 Previous work has shown that, if apartment conditions were to deteriorate in inner-city areas, banks would be more likely to experience material losses on their development lending than on their mortgages. For further details, see RBA (Reserve Bank of Australia) (2016), 'Box B: Banks' Exposures to Inner-city Apartment Markets', *Financial Stability Review*, October, pp 25–28.

Credit Conditions

Overall domestic credit growth has moderated over the past two months after increasing in late 2016, mainly reflecting developments in business credit (Graph 3.3).



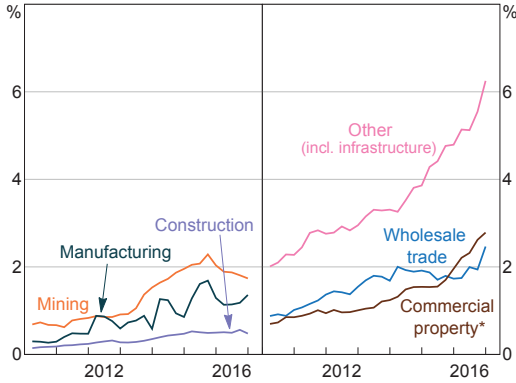
After falling back following the measures announced by APRA at end 2014, investor housing credit growth has increased noticeably since the previous *Review*, and is now above the rate for owner-occupier housing credit in six-month-ended annualised terms. In liaison, banks attributed the pick-up in investor credit growth both to strong underlying demand and to investors and brokers developing a better understanding over time of how to comply with the changes to lending standards introduced from late 2014. Of late, the monthly growth rate of investor housing credit has slowed a little, in line with a slight decline in investor loan approvals over the past few months. As noted in the previous chapter, a number of banks have raised interest rates on investor and interest-only (IO) loans over recent months – in part to stay within the 10 per cent investor growth threshold set by APRA – and some banks have further tightened housing lending standards. A few

banks have also stopped accepting refinancing applications from new customers on some investment property loans and have moved to limit negative gearing benefits when assessing serviceability. The most recent round of banks' interest rate rises for investor loans may dampen investor demand in coming months.

Credit conditions in the business sector have been broadly stable over the past six months, although a few lenders have reported further tightening in financing conditions for residential development, particularly for projects in geographic areas considered at risk of deteriorating housing market conditions and localised oversupply. Business credit growth has moderated, following strong growth in late 2016 driven by a few large infrastructure privatisation deals. Outside of these deals, the underlying pace of business credit growth slowed over most of 2016, although business credit to small and medium enterprises is growing at its fastest pace since 2009. Banks have further reduced their direct exposures to the resources sector.

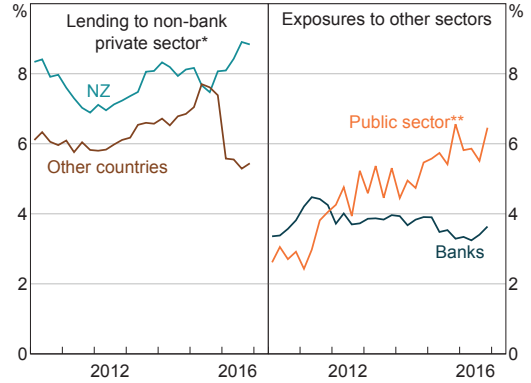
Lending by foreign-owned banks operating in Australia has continued to increase, with lending by banks headquartered in Asia accounting for almost all of this growth. Asian banks now supply around 11 per cent of the stock of business credit in Australia, up from around 6 per cent in 2012. Their increased lending has been spread across industries, most notably infrastructure and commercial property (Graph 3.4). While foreign banks have long been active in providing such specialised lending, their activity in Australia has historically been highly pro-cyclical and has tended to exacerbate asset price and economic cycles.

Graph 3.4
Asian Banks' Business Lending
Share of total business credit



* Commercial property exposures overlap with industry categories
Sources: APRA; RBA

Graph 3.5
Australian-owned Banks' International Exposures
Share of assets, ultimate risk basis



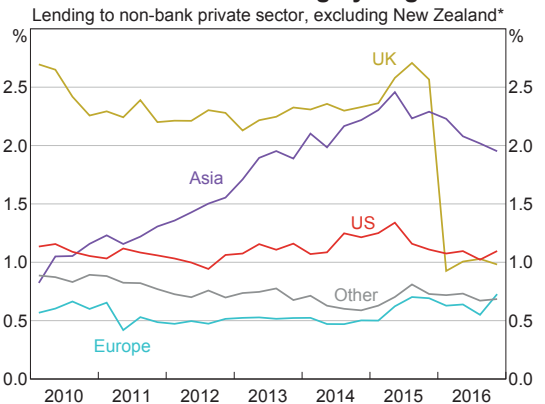
* Includes all exposures to non-bank private sector, comprised predominantly of lending
** Predominantly sovereign bonds held outright or on repo and central bank deposits
Sources: APRA; RBA

International Exposures

Australian-owned banks have reduced their international exposures over the past year. Reduced lending in the United Kingdom and Asia more than offset rising exposures to New Zealand and a trend increase in Australian-owned banks' holdings of liquid foreign assets, such as sovereign bonds and central bank deposits (Graph 3.5; Graph 3.6). Most prominently, NAB sold its UK subsidiary in early 2016 and ANZ continued to reduce its exposures to institutional lending and trade finance activities in Asia. Exposures to Asia are expected to decline further over the coming year as ANZ completes the sale of several of its retail banking and wealth management businesses in the region.

In contrast, Australian-owned banks' lending in New Zealand has continued to grow quickly. Given low unemployment, the performance of the major banks' New Zealand housing portfolios has remained strong to date; mortgage arrears are around their lowest levels in at least a decade. However, as discussed in 'The Global Financial Environment' chapter, the combination of rapid housing price growth and high levels

Graph 3.6
International Lending by Region
Lending to non-bank private sector, excluding New Zealand*



* Australian-owned banks; share of assets, ultimate risk basis; exposures to non-bank private sector, comprised predominantly of lending
Sources: APRA; RBA

of household debt increases the risks to these exposures and has prompted a further tightening of New Zealand's macroprudential requirements. While Australian banks' exposures to the New Zealand dairy sector remain under watch, the immediate risks have receded over the past six months given higher milk prices and ongoing reductions in producers' operating costs. Provisions held against dairy loans have not increased further.

Liquidity and Funding

Australian banks have continued to build resilience to liquidity and funding shocks. Banks' aggregate holdings of high-quality liquid assets, which provide a buffer against short periods of liquidity stress, were around 130 per cent of their projected net cash outflows as at December 2016, well above the 100 per cent minimum Liquidity Coverage Ratio (LCR) requirement. Most banks that will be subject to the Net Stable Funding Ratio (NSFR) requirement have a ratio that is currently above 100 per cent, following the finalisation of standards by APRA in December. The NSFR is intended to complement the LCR by encouraging banks to fund less liquid assets with more stable liabilities, such as long-term debt and retail deposits, and is due to come into effect from the start of 2018.

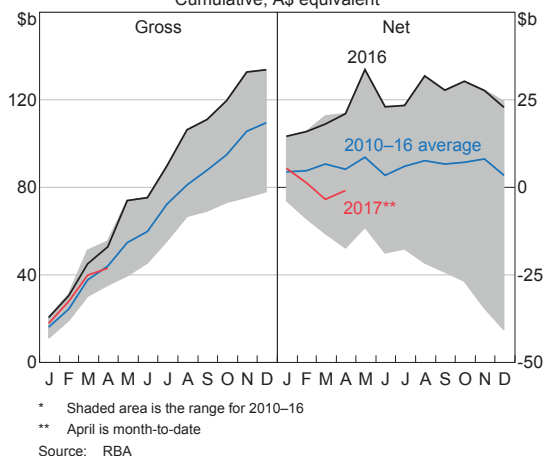
Looking ahead, banks are likely to further increase their NSFRs to provide a suitable buffer above the regulatory minimum. This will most likely be achieved by raising additional long-term wholesale funding, though 2017 issuance may not surpass last year's strong outcome (Graph 3.7). Retail term deposits are also a stable source of funding that support banks' NSFRs. Competition for these deposits remains high, but has eased recently as banks' NSFRs have risen and because extending the term of these deposits does only a little to increase the NSFR. In comparison, extending the term of wholesale deposits, such as those for superannuation funds and businesses, has a greater positive effect on banks' NSFRs. This has prompted some banks to introduce wholesale deposit products that offer more stability to their funding mix.

Wholesale funding market conditions have remained very favourable over the past year. Spreads on banks' short-term and long-term wholesale funding have declined despite a range of risk events in 2016 and the rise in global bond

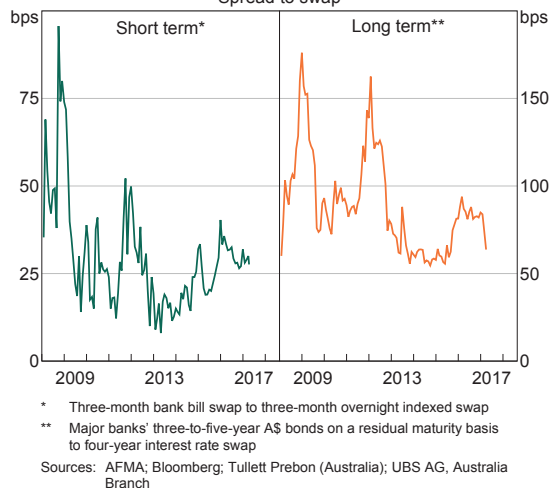
yields (Graph 3.8). Nonetheless, most Australian banks are on outlook for downgrade by the major credit rating agencies, which cite rising levels of household debt and risks to the housing market as key factors behind their assessments.

Conditions in securitisation markets improved over the past year. Issuance in the December 2016 and March 2017 quarters was high compared with recent years and spreads at issuance have narrowed significantly (Graph 3.9). Despite the

Graph 3.7
Banks' Bond Issuance*
Cumulative, A\$ equivalent

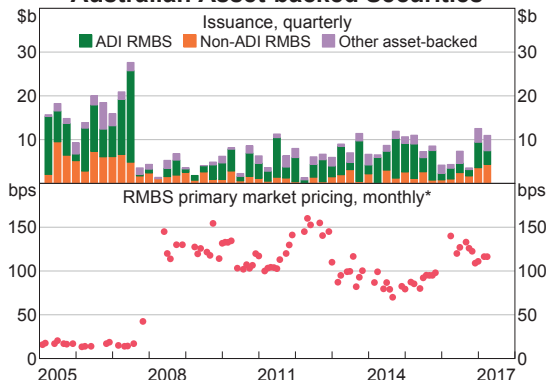


Graph 3.8
Banks' Debt Pricing
Spread to swap



Graph 3.9

Australian Asset-backed Securities



* Bank conforming deals; face value weighted monthly average of the primary market spread to bank bill swap rate for AAA-rated notes

Source: RBA

recent improvement, activity in securitisation markets remains well below pre-crisis levels and this source of funding accounts for less than 2 per cent of banks' total funding.

In November 2016, APRA finalised its revised securitisation framework, with the new rules to apply from January 2018.⁴ The revised framework aims to make securitisation a more viable funding source by offering issuers more flexibility and clarity around transaction structures. This includes a greater ability to issue bullet maturity securities (which appeal to a wider range of investors) and clarity around classifying transactions as either for funding-only or capital relief purposes (with issuers having the ability to switch qualifying transactions to capital relief after issuance). The revised framework also implements Basel III reforms, which generally require banks to hold more capital against asset-backed securities.

Capital and Profitability

Australian banks' resilience is supported by capital levels that are significantly above

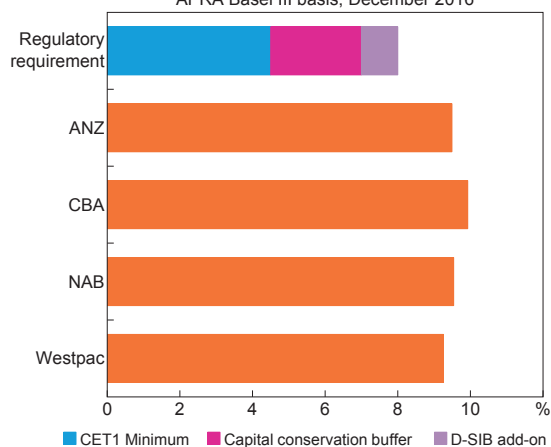
4 APRA Prudential Standard, APS 120 Securitisation. Available at <<http://apra.gov.au/adi/PrudentialFramework/Documents/APS%20120%20Securitisation.pdf>>. For a discussion of the aims of these reforms, see Brennan P (2016), 'Securitisation in Australia – a Milestone Reached – a New Beginning?', Speech at the Australian Securitisation Forum Conference, Sydney, 21 November.

minimum requirements. The major banks retain a buffer of around 1½ percentage points above the 8 per cent Common Equity Tier 1 (CET1) threshold, which includes the 4½ per cent minimum in the prudential standard and a 3½ per cent capital conservation buffer (of which 1 percentage point is the add-on for domestic systemically important banks; Graph 3.10). The countercyclical capital buffer, which can be used to raise capital requirements in periods of rising systemic risk, remains at zero per cent.

Graph 3.10

Major Banks' CET1 Capital Ratios

APRA Basel III basis, December 2016

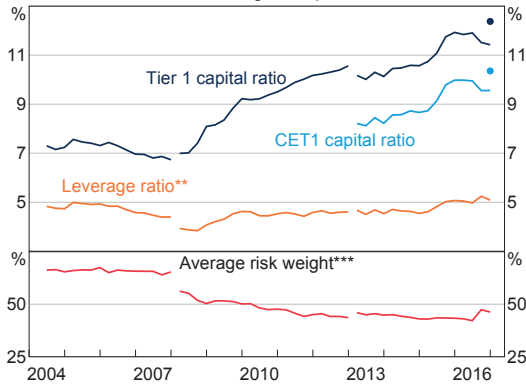


Sources: APRA; Banks' financial disclosures; RBA

As was expected, the implementation in July 2016 of APRA's decision to increase risk weights on mortgages for banks that use internal models to assess credit risk lowered the major banks' CET1 capital ratios by just under 80 basis points (Graph 3.11). This offset part of the capital that the banks had raised earlier in anticipation of this and other changes. In the absence of this change, the major banks' CET1 ratios would have increased a little over the past six months, with capital accumulation outpacing growth in risk-weighted assets.

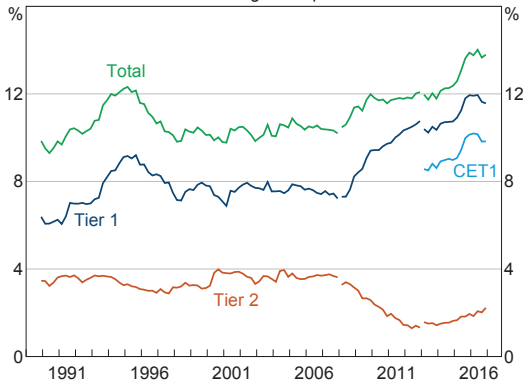
The total capital ratio of the banking system also declined slightly over the second half of 2016, to be just under 14 per cent (Graph 3.12). The

Graph 3.11
Major Banks' Capital Ratios*
 Consolidated global operations



* Dots are estimates of capital ratios in the absence of higher mortgage risk weights; break in March 2008 due to the introduction of Basel II; break in March 2013 due to the introduction of Basel III
 ** Estimated prior to September 2015 as Tier 1 capital as a per cent of assets
 *** Risk-weighted assets as a per cent of assets
 Sources: APRA; RBA

Graph 3.12
Banks' Capital Ratios*
 Consolidated global operations



* Per cent of risk-weighted assets; break in March 2008 due to the introduction of Basel II; break in March 2013 due to the introduction of Basel III
 Source: APRA

negative effect of higher mortgage risk weights was partly offset by an increase in non-common equity capital. Unlike in the first half of 2016, this issuance did not coincide with large maturities or regulatory deductions, and so resulted in a net increase in non-common equity capital.

The major banks' aggregate leverage ratio increased a little over the second half of 2016 to 5.1 per cent and remains well above the planned

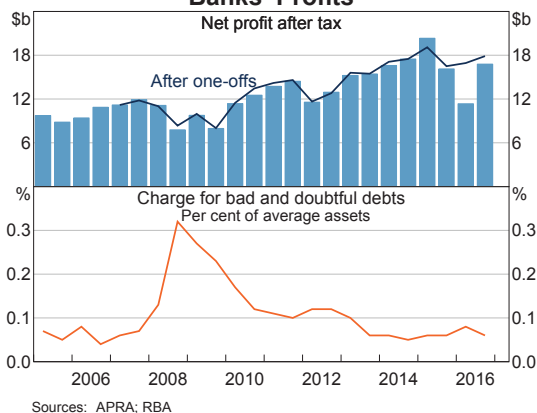
3 per cent minimum due to be introduced in 2018. The leverage ratio is a non-risk-based measure of a bank's Tier 1 capital relative to its total exposures, and is intended to be a backstop to the risk-based capital requirements.

APRA will provide further guidance in coming months on what capital standards it believes are necessary to make banks 'unquestionably strong'. It has reiterated that revisions to the capital framework will be guided by a range of factors, including the recommendation in the Financial System Inquiry that CET1 capital ratios should be in the top quartile of international peers, stress test results, rating agency measures and allowing for flexibility throughout the economic cycle. It will also consider banks' broader risk profiles, including funding and liquidity, earnings and governance. As part of this process, APRA will review whether and how to adjust risk weights on mortgages.

It is likely that Australian banks will need to increase their capital ratios over coming years to comply with APRA's framework for 'unquestionably strong' standards. APRA expects that banks will be able to manage any increase in capital requirements with appropriate capital planning. Banks' high levels of profits continue to support retained earnings. In addition, risk-weighted asset growth (which subtracts from banks' capital ratios) has been subdued over the past year as banks have pulled back from less profitable institutional exposures with higher risk weights, but there are limits to banks' ability to continue improving capital ratios by shedding riskier assets.

Australian banks continue to generate significant levels of profit, but aggregate profit in the most recent half year was only slightly higher than a couple of years ago (Graph 3.13). The lack of profit growth is partly explained by lower non-interest income as wealth management and life insurance income has declined and banks have booked unrealised losses on some assets. Net interest income has also grown only

Graph 3.13
Banks' Profits

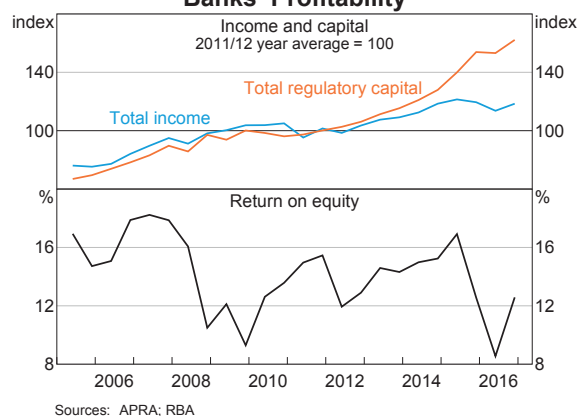


modestly as asset growth has slowed and the net interest margin has narrowed. The charge for bad and doubtful debts remains around historically low levels but stopped falling – and supporting profit growth – in 2014. Analysts expect bank profit growth to pick up a little over coming years, supported by forecast stronger asset growth and a recovery in non-interest income. Analysts also expect the charge for bad and doubtful debts to remain low as a share of assets after deteriorating in the first half of 2016.

The rise in bank capital over the past two years, combined with minimal profit growth, has reduced banks' ROE below its historical average of 15 per cent (Graph 3.14). Lower ROE seems likely to persist as banks accumulate more capital to meet an 'unquestionably strong' standard. So far banks have mainly responded to lower ROE by repricing their loans and selling lower-return wealth management and international assets. Westpac also recently lowered its ROE target. However, it is possible that Australian banks may attempt to restore their ROE to historical levels by taking on additional risk in ways that are not fully captured by regulatory risk weights.

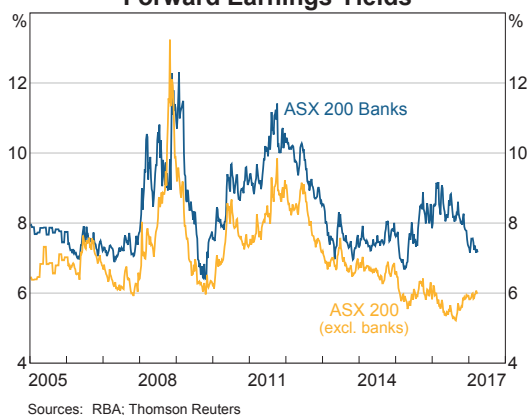
Bank share prices have risen strongly over the past six months, in line with global trends. Increases to analysts' earnings forecasts

Graph 3.14
Banks' Profitability



have been much more moderate, resulting in banks' forward earnings yields declining (particularly compared with the broader market; Graph 3.15).⁵ However, banks' earnings yields are still similar to the levels prevailing pre-crisis, despite a large decline in risk-free rates.

Graph 3.15
Forward Earnings Yields



Bank Culture

A key to preventing excessive risk-taking by banks is to ensure that they maintain sound

⁵ The forward earnings yield is a measure of banks' cost of equity – the return that is required to entice investors to purchase and hold bank shares. See Norman D (2017), 'Returns on Equity, Cost of Equity and the Implications for Banks', *RBA Bulletin*, March, pp 51–58 for more detail.

risk culture and governance frameworks. International experience has shown that banks that allow or encourage a culture of excessive risk-taking can pose significant harm to financial stability if poor culture becomes pervasive. This can result in credit being extended to customers that cannot service it or misconduct charges against banks that erode their capital.

In Australia, there have been some recent examples of poor conduct within the banking industry. The most prominent of these have arisen in banks' life insurance and wealth management subsidiaries. More generally, APRA's observation is that in some cases banks allowed a culture to develop within their core banking divisions over recent years that prioritised protecting market share in mortgage origination over sound lending practices.⁶

The banking industry has announced initiatives to improve culture in the financial services sector. These include steps to improve consumer protection, address inappropriate remuneration incentives and strengthen risk management frameworks. APRA has also increased its focus on the risk culture of the institutions it regulates to ensure that banks' efforts in this area are lasting, while the Australian Securities and Investments Commission has been vigilant in identifying poor practices. APRA's efforts focus on two areas: requiring the boards of each bank to form a view on the risk culture within their institution and the extent to which that culture encourages it to operate within its risk appetite; and requiring the boards of each bank to identify desirable changes to risk culture and ensure steps are taken to address these.⁷

6 APRA (2016), 'Risk Culture', Information Paper, October.

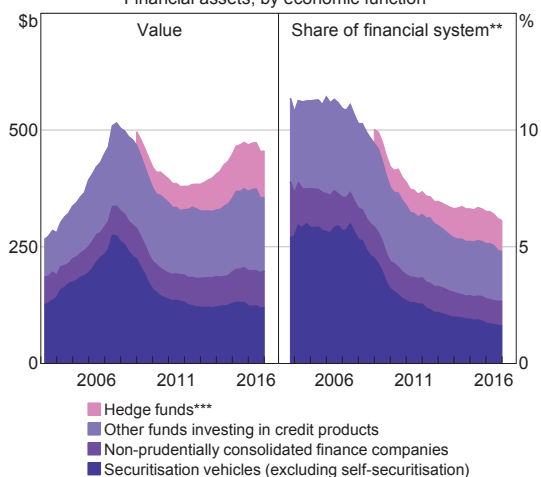
7 APRA, Prudential Standard CPS 220 Risk Management. Available at <<http://www.apra.gov.au/CrossIndustry/Documents/Prudential-Standard-CPS-220-Risk-Management-January-2015.pdf>>.

Shadow Banking

The tighter post-crisis prudential framework for the regular banking system creates a risk that credit provision will migrate to the less regulated shadow banking sector. However, there is estimated to have been little growth in shadow banking activity over the past two years (Graph 3.16). The size of the shadow banking system is still small, at around 6 per cent of financial system assets compared with over 10 per cent in 2007, and is considerably smaller than in a number of large economies. Systemic risks to the financial system are also limited by the small linkages shadow banks have with the prudentially regulated financial sector, with banks' exposures to the sector only around 4 per cent of total financial assets.

Securitisation is one area of the domestic shadow banking sector that continues to warrant particular attention, given that prudentially regulated entities have tightened their lending standards in recent years and mortgage

Graph 3.16
Shadow Banking in Australia
Financial assets, by economic function*



* Total assets for some entity types where financial assets data are unavailable

** Financial system excludes the RBA

*** Hedge fund data are only available from June 2008

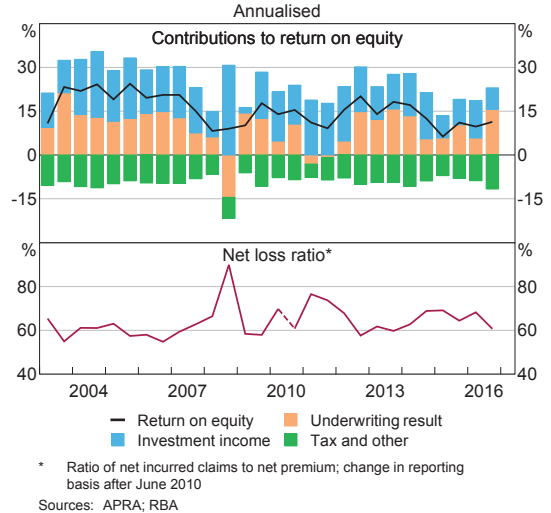
Sources: ABS; APRA; ASIC; Australian Fund Monitors; RBA

originators tend to have somewhat riskier loan pools than banks. For example, mortgage originators' residential mortgage-backed securities (RMBS) are backed by higher shares of loans with low documentation and high loan-to-valuation ratios. Mortgage originators' issuance of RMBS picked up in late 2016 as market conditions improved, but non-bank securitised mortgages are still only around 1 per cent of Australian mortgages. Mortgage originators are in part constrained from adding much to overall credit growth because they have limited access to warehouse funding from banks (that is, short-term finance to the originator prior to the mortgages being securitised) and because they lack capacity to process large loan volumes. APRA recently emphasised that it would be concerned if banks allowed their warehouse facilities to grow materially faster than their own housing loan portfolios.

Insurance

General insurers' profits increased in the second half of 2016 after several periods of soft underwriting results, although ROE for the sector remains below its historical average because of ongoing subdued investment returns (Graph 3.17). The recent rise in profits was underpinned by stronger underwriting results, because of higher domestic commercial premium rates (as insurers sought to correct a long period of underpricing) and an increase in compulsory third-party insurance premiums. Net claims also fell because of a decline in payouts for natural disasters and higher reserves releases, reducing the net loss ratio (the ratio of net incurred claims to net premium) to its lowest level in several years. This follows a decade in which natural disaster claims consistently exceeded provisions. Payouts for natural disasters may rise again in 2017 because of Cyclone Debbie, but existing provisions and reinsurance

Graph 3.17
General Insurers' Financial Ratios

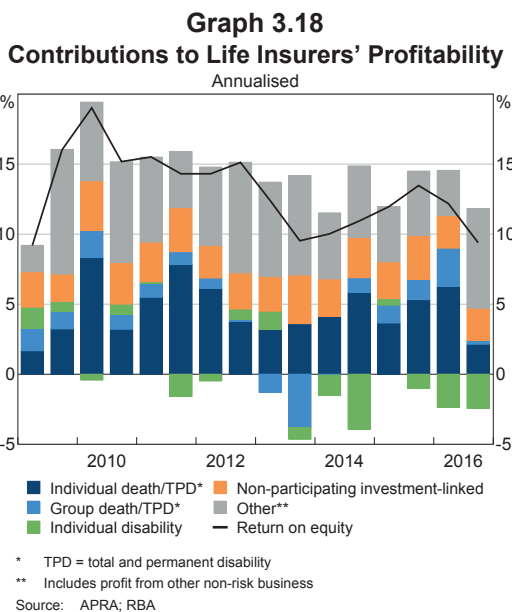


cover should limit the impact on profits. The general insurance industry has remained well capitalised, with capital equivalent to 1.8 times APRA's prescribed amount.

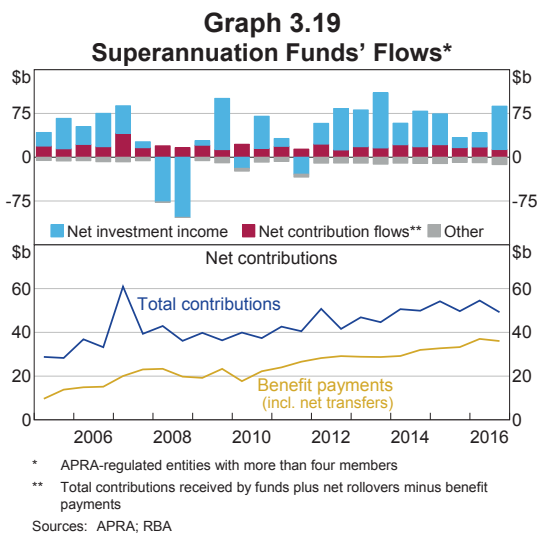
Lenders mortgage insurers (LMIs) – which support banks' resilience by offering protection against losses on defaulted mortgages – continue to face challenges. LMI profits declined sharply over the past couple of years due to a decrease in high LVR lending, as banks tightened mortgage lending standards, and increased claims in Western Australia and Queensland. These headwinds seem likely to persist, given APRA's recent directive to limit the flow of new high-LVR IO loans. An additional challenge for the LMI industry is to renew existing contracts as the major banks consider whether to follow Westpac's decision in 2015 to self-insure its mortgages. Despite these issues, the LMI sector remains well capitalised at 1.5 times APRA's prescribed amount.

Challenges in the life insurance industry have increased further, though the sector also remains well capitalised, with capital equivalent to 1.8 times APRA's prescribed amount. Life insurers'

profits fell markedly in 2016 and overall ROE dropped to its lowest level since the financial crisis (Graph 3.18). The recent weakness in life insurers' profits was driven largely by a fall in individual total and permanent disability profits and ongoing losses on individual disability income insurance (commonly known as 'income protection insurance'). Underlying this deterioration has been an increase in claims that insurers now assess to be permanent, compounded by long-standing deficiencies in pricing, provisioning and claims processes. These structural weaknesses were highlighted last year by APRA in its stress tests on domestic life insurers and form some of the matters being considered by the parliamentary inquiry into the life insurance industry that was announced in September 2016.



the managed fund sector (a higher share than in other advanced economies) and equivalent to around half the size of the Australian banking system. Total superannuation assets grew by 7 per cent in 2016, around the post-crisis average rate, supported by stronger investment returns as global share markets rallied (Graph 3.19). The financial stability risks inherent in the superannuation industry are lower than for other parts of the financial system because debt funding accounts for a very small share of its total liabilities (particularly for APRA-regulated funds). However, APRA-regulated superannuation funds face increased liquidity risks as the ageing of Australia's population results in a trend increase in members entering the drawdown phase, or as members roll funds into self-managed superannuation funds.



Superannuation

The superannuation sector remains a large and growing part of Australia's financial system. Total assets amount to over \$2 trillion, accounting for three-quarters of the assets in

Financial Market Infrastructures

Financial market infrastructures (FMIs) – such as payment systems, central counterparties (CCPs) and securities settlement systems – facilitate the completion of most financial transactions in the economy. FMIs need strong regulation and supervision because they concentrate both services and risk as a result of their activities.

FMI operating in Australia have continued to function smoothly over the past six months. The Reserve Bank Information and Transfer System (RITS) – which is used by financial institutions to settle payments – processed around 6 million transactions in the six months to March, with an aggregate value of \$22 trillion. There were no major RITS operational incidents during this period and the frequency and duration of members’ operational incidents remained at historical lows. For CCPs, a major test was during the period of heightened volatility associated with the US Presidential election. The ASX Group CCPs implemented a number of changes to margin requirements ahead of the election to mitigate the risks associated with potentially elevated market volatility. These included maintaining margin rates at the elevated level in the period following the UK referendum and reducing intraday exposure limits. ASX communicated to market participants

in advance of the measures being used to ensure that participants were adequately prepared for the additional margin calls. The additional margin calls enabled by the changes – particularly those conducted late in the Australian trading day – provided additional protection against the risks associated with potentially elevated volatility during the overnight session, when adhoc margin calls are currently not operationally possible.

Additional work is underway to further enhance the resilience of FMIs. In relation to RITS, the Reserve Bank’s recent evaluation included a focus on projects to review cyber security controls and the system’s ability to detect and recover from operational incidents. This exercise concluded that security controls were generally very strong. Nonetheless, a number of recommendations were made for further improvements, some of which have already been implemented while others are in progress. ✎

4. Developments in the Financial System Architecture

International regulatory efforts have continued to focus on the core post-crisis reform areas of addressing 'too big to fail', finalising outstanding Basel III capital reforms and shadow banking. While the goal of completing the Basel reforms by the end of 2016 was not reached, discussions are ongoing to try to finalise an agreement soon. A potential source of uncertainty is the deregulatory focus of the new US administration, including for the financial sector, which could affect the international financial reform agenda in the period ahead.

As implementation of global reforms has progressed, there has also been a continued focus on assessing the effects of reforms and whether they have achieved their intended outcomes. In addition, work has progressed on new and emerging risks, such as those related to the asset management industry and financial technology ('fintech').

Domestically, the Council of Financial Regulators (CFR) agencies have continued work on implementing internationally agreed reforms, as well as regulatory enhancements, in areas such as resolution and crisis management, risk management in financial institutions, and settlement systems.

International Regulatory Developments and Australia's Response

Addressing 'too big to fail'

A key issue highlighted during the financial crisis was that governments can feel obligated in

certain cases to 'bail out' a failing bank or other financial institution that is very large, performs critical functions and/or is highly interlinked with other parts of the financial system. This is commonly referred to as 'too big to fail' and can lead to institutions taking on more risk than they otherwise would. Recent work on ending 'too big to fail' has largely focused on implementing the Financial Stability Board's (FSB's) total loss-absorbing capacity (TLAC) standard for global systemically important banks (G-SIBs). As discussed in the previous *Review*, TLAC aims to ensure that G-SIBs can be resolved in an orderly manner by requiring them to have sufficient liabilities (or capacity) suitable to absorbing losses. Some G-SIBs have issued TLAC-eligible securities, though major jurisdictions have not yet finalised how their TLAC regimes will operate in practice. G-SIBs with headquarters in advanced economies are required to start meeting the new standard from 1 January 2019.

The TLAC standard is also intended to provide 'host' authorities (i.e. authorities in jurisdictions where a G-SIB subsidiary or branch operates) with confidence that there is sufficient loss-absorbing capacity available to subsidiaries. This is being addressed through 'internal TLAC' – a mechanism whereby losses of a subsidiary of a G-SIB are passed to the parent without the need for the subsidiary to enter into resolution. The FSB released a consultation paper on internal TLAC provisions in December, and will issue guiding principles later this year.

With international work on the resolution of banks well progressed, the FSB, along with other

standard-setting bodies, has more recently been focusing on the resolution of central counterparties (CCPs) given their increasing importance in over-the-counter (OTC) derivatives markets. The FSB released draft guidance on CCP resolution and resolution planning in February, which aims to assist with the development and implementation of effective regimes and credible resolution strategies for CCPs. The guidance considers the policy objectives for CCP resolution, and the resolution powers and tools required. Finalised guidance is expected to be published in June. Relevant to this work is an ongoing assessment coordinated by the FSB of the interdependencies between CCPs, major clearing members and financial service providers.

Domestically, legislative changes to enhance the Australian Prudential Regulation Authority's (APRA's) crisis management powers are expected to be introduced into parliament during 2017. Reforms to introduce a resolution regime for financial market infrastructures (including CCPs) will also be developed over the next year or so.

Building resilient financial institutions

As discussed in previous *Reviews*, the Basel III reforms were the key element of G20 efforts to build resilient financial institutions following the crisis. Most elements of these reforms have already been completed, and the Basel Committee on Banking Supervision (BCBS) has been working on finalising the remaining Basel III capital reforms. The outstanding reforms aim to reduce the observed variability in banks' risk-weighted assets, including by adjusting the 'standardised' (i.e. fixed risk weights set by regulators) and 'internal ratings-based' (i.e. weights based on banks' own models) approaches for credit risk, as proposed in earlier BCBS consultation documents. Also to be finalised is the 'output floor', which would place a limit on the benefit a bank derives from using its internal models for estimating regulatory capital.

The expectation is that there would not be a significant increase in *overall* capital requirements as a result of these changes but that there would be some impact on the minimum capital requirement for outlier banks.

The BCBS had set a goal of completing these outstanding capital reforms by the end of 2016. However, in January, the Group of Central Bank Governors and Heads of Supervision (GHOS) – the oversight body of the BCBS – announced that more time was needed to finalise the remaining work. The Bank and APRA, as BCBS and GHOS members, are continuing to contribute to these discussions.

Separately, the BCBS has continued its monitoring of Basel III implementation as well as ongoing policy development work.

- In its February progress report on the implementation of the Basel III reforms, the BCBS found that, as at June 2016, all member jurisdictions have implemented the main Basel III risk-based capital rules, Liquidity Coverage Ratio regulations and capital conservation buffers. The BCBS also reported the results of a survey of banks on the interaction of regulatory instruments. The survey found that banks see their most important challenges as regulatory uncertainty, the complexity of the regulatory framework and the difficulty of meeting many of the new Basel III requirements simultaneously.
- In March, following an earlier consultation, the BCBS released its standard retaining the current regulatory treatment of accounting provisions for an interim period. Under new international accounting standards that start to come into effect from 2018, a forward-looking estimate of credit losses would be used by banks to calculate provisions. These accounting standards require the recognition of credit losses earlier than is currently the

case and thereby address a problem that arose during the crisis where losses were not fully recognised in a timely manner. The BCBS's standard allows more time for it to consider the longer-term implications of these accounting changes for regulatory capital before finalising the regulatory treatment of provisions in the Basel framework.

- Also in March, the BCBS released its 'consolidated and enhanced' framework for Pillar 3 disclosure requirements. The new standard has three main elements: consolidation of all existing BCBS disclosure requirements into the Pillar 3 framework (covering, for example, the composition of capital, the leverage ratio and the countercyclical capital buffer); enhancements to the Pillar 3 framework (such as a 'dashboard' of a bank's key prudential metrics); and revisions and additions to the Pillar 3 standard arising from ongoing reforms to the regulatory policy framework. In most cases, the implementation date has been set for each bank's 2017 financial year end.

Shadow banking

Following the crisis, international bodies such as the FSB, the BCBS and the International Organization of Securities Commissions (IOSCO) released a series of reforms to address the risks posed by shadow banking entities (such as money market funds (MMFs) and finance companies) and shadow banking activities (including securities financing transactions (SFTs) such as repurchase agreements and securities lending). These bodies have continued with policy development in this area, as well as the monitoring of implementation.

- Following on from its 2013 framework for the regulation of SFTs, in January the FSB finalised further elements of its SFT recommendations. These focused on how collateral held under

SFTs can be used, with the FSB publishing reports on 're-hypothecation' and collateral re-use, as well as non-cash collateral re-use. (The FSB defines 're-hypothecation' as the use of *client* assets by a financial intermediary, and defines 'collateral re-use' as the use of assets delivered as collateral in a transaction by an intermediary or collateral taker.) The report on re-hypothecation and collateral re-use examined the possibility of harmonising regulatory approaches on the re-hypothecation of client assets. The FSB concluded that there was no immediate case for harmonisation as there would be significant operational challenges associated with such an effort. In addition, jurisdictions' current regulatory approaches, while varied, are already designed to protect client assets. The second report finalised the FSB's preferred measure of non-cash collateral re-use in SFTs, and associated indicators that authorities can use to monitor collateral re-use for financial stability purposes.

- A CFR working group has recently assessed the need for Australia's compliance with the SFT framework. It found that the small size of Australia's SFT market meant that certain recommendations (regarding haircut floors on non-bank to non-bank SFTs) did not need to be implemented in Australia (as allowed under the FSB's framework). The Bank will continue to monitor the size of the SFT market along with broader shadow banking developments, including in its annual shadow banking update to the CFR.

The BCBS's post-crisis reform work on shadow banking has focused on addressing the systemic risks arising from banks' involvement with shadow bank entities. In March, it released a second consultation paper on identifying and managing 'step-in' risk. This is the risk that a bank

might support unconsolidated entities (such as securitisation conduits and MMFs) beyond any contractual obligation in order to protect itself from reputational damage that might arise from its connection to such entities. If not appropriately anticipated, the materialisation of step-in risks could erode banks' capital and liquidity positions. The BCBS has proposed several measures to manage step-in risk, such as including relevant entities within the regulatory scope of consolidation and within the banks' stress-testing frameworks.

IOSCO has been monitoring the implementation of shadow banking measures, along with broader shadow banking developments.

- In October, it published a report on the implementation status of the G20/FSB policy recommendations related to strengthening securities markets, covering areas such as hedge funds, securitisation and structured products, and improving the oversight of credit rating agencies. IOSCO concluded that most responding jurisdictions have taken steps to implement the FSB recommendations and IOSCO guidance in each reform area, with reforms most advanced in relation to hedge funds, structured products and securitisation, and still in progress in relation to commodity derivatives markets.
- In February, IOSCO published its findings from a survey on 'loan funds' – an innovative type of fund that is involved in restructuring, granting or acquiring loans. The report described how the market has evolved and how regulators are addressing emerging risks from these products. The report concluded that, while IOSCO will continue to monitor developments in this market, further work is not warranted at this stage, with many jurisdictions considering their general rules for funds to be sufficient to mitigate any specific risks arising from loan funds.

Risks and reforms beyond the post-crisis agenda

Newer areas of focus for the FSB include vulnerabilities associated with asset managers, efforts to evaluate the effectiveness of the post-crisis policy reforms, along with work on 'fintech', correspondent banking and climate change.

The FSB has been considering structural vulnerabilities posed by **asset management activities** and, following an earlier consultation, published its final policy recommendations in January. These vulnerabilities include, in certain cases, mismatches between the relative illiquidity of asset managers' investments and the relative ease of redemptions in open-ended funds. IOSCO will operationalise recommendations on liquidity mismatch in open-ended funds by the end of 2017 and develop consistent leverage measures for funds by the end of 2018.

With the majority of the core post-crisis policy reforms in the process of being implemented, there is increasing focus on **assessing their effects and effectiveness**. There are two elements to this work.

- The FSB is developing a comprehensive post-implementation policy evaluation framework. This aims to guide assessments of whether the G20 reforms are achieving their intended outcomes and to help identify any material unintended consequences that may need to be addressed. The Bank is a member of this FSB workstream. The framework was issued for consultation in April. It will be published by July, ahead of the G20 Summit.
- Ahead of the G20 Summit, the FSB will release its third annual report on the implementation and effects of reforms, which will include results of reviews underway in two core reform areas: the adequacy of post-crisis shadow banking policy tools and monitoring

processes; and progress in OTC derivatives market reforms and their effects to date.

'Fintech' is gaining increased attention from global and national regulators as fintech start-ups emerge in new fields within the financial system, often aiming to disrupt long-standing business models. Fintech and the spread of digital technology more generally are themes of the German G20 Presidency this year and the FSB is to prepare a report to the G20 by July on the regulatory and supervisory issues raised by fintech. The Australian Treasury is contributing to this work, in liaison with the Bank and the Australian Securities and Investments Commission (ASIC).

One aspect of fintech that has been examined closely is the emergence of distributed ledger technology (DLT), often referred to as 'blockchain' technology. The Bank is participating in a working group of the Committee on Payments and Market Infrastructures examining DLT and its implications. In February, the working group published an analytical framework for authorities wishing to review and analyse the use of this technology for payments, clearing and settlement.

In February, IOSCO published a research report on fintech that highlighted the increasingly important intersection between fintech and securities market regulation, and discussed the impact fintech could have on investors and financial services. The report analysed four main innovative business models and emerging technologies that are transforming financial services: financing platforms, retail trading and investment platforms, institutional trading platforms and DLT.

Domestic regulators are also directing attention to fintech:

- A CFR working group has considered the potential implications of DLT and how it fits within the existing regulatory framework in Australia.
- The Bank has established an internal working group to consider the implications of the technology.
- In December, ASIC announced a class waiver to allow eligible fintech businesses to test certain services on a limited scale without an Australian financial services or credit licence (referred to as a 'regulatory sandbox'). ASIC has also established an 'innovation hub' that makes it easier for fintech start-ups to engage with ASIC and understand the regulatory environment.

The FSB and other international bodies are continuing their work on assessing and addressing the decline in **correspondent banking**, based on an FSB workplan released in November 2015. The work reflects increasing concern about 'de-risking' in correspondent banking, since a decline in the number of correspondent banking relationships may affect the ability to send and receive international payments, or may drive some payment flows to less regulated channels. These risks could in turn affect growth, financial inclusion and financial stability. The FSB published a progress report on this initiative in December.

In a related development, the BCBS initiated a consultation in November on revisions to its *Sound management of risks related to money laundering and financing of terrorism* guidelines. The proposed revisions recognise that not all correspondent banking relationships bear the same level of risk, and accordingly banks should conduct correspondent banking business with the best possible understanding of the applicable requirements regarding anti-money laundering and countering the financing of terrorism.

In December, the FSB-convened **Task Force on Climate-related Financial Disclosures** (TCFD) initiated a consultation on a proposed framework

for the disclosure of climate-related risks in financial statements. The TCFD's final report, due in mid 2017, will detail a set of voluntary and consistent disclosure recommendations for use by both financial and non-financial firms to provide information on their climate-related financial risks to investors, lenders and insurance underwriters. The work of the TCFD has been extended to at least September 2018 to promote and monitor the adoption of its recommendations.

In February, APRA noted the work of the TCFD as part of a broader speech on climate change and prudential risks. APRA stated that some climate risks are distinctly financial in nature and that many of these risks are foreseeable, material and actionable now. A key first step is for firms to understand and monitor these risks, and be transparent about them. APRA will look at climate risks as part of its system-wide stress testing, and expects firms to include these risks in their own stress testing of risks. ASIC too has been reminding companies of the requirement to disclose any material climate-related risks in the 'Operating and Financial Review' part of their annual reports, and in transaction documents.

Other Domestic Developments

Risk management

As noted in the 'The Australian Financial System' chapter, in October APRA released an information paper on risk culture practices in a range of banking, insurance and superannuation businesses. The paper notes that there has been a stronger focus on risk culture among APRA-regulated institutions over the past year or so. Nonetheless, it stresses that continued effort and ongoing attention are required by institutions to better understand and manage their risk cultures. As part of its increased focus

in this area, APRA will also review remuneration policies and practices among financial institutions and assess how these interact with risk culture.

Following feedback on an earlier consultation, in October APRA released the final version of its prudential standard on margining and risk mitigation for non-centrally cleared derivatives. This standard implements in Australia an important component of the G20's post-crisis reforms aimed at reducing systemic risk in OTC derivatives markets. It requires banks and other covered APRA-regulated entities that trade in non-centrally cleared derivatives to exchange margin (i.e. collateral) to mitigate counterparty credit risk associated with their derivative activities when the level of this activity exceeds minimum qualifying levels. The new risk mitigation requirements are intended to increase the transparency of bilateral positions between counterparties, promote legal certainty over the terms of non-centrally cleared derivative transactions and facilitate the timely resolution of disputes. The prudential standard commenced on 1 March 2017, with a multi-year phase-in that reflects the internationally agreed timetable.

Settlement systems

In March the CFR released a consultation paper on competition in the settlement of Australian cash equities. The paper seeks feedback on risks and policy issues associated with competition in the settlement of these products, and on proposed policy guidance to ensure that any such competition is safe and effective. This work was prompted by views that technological changes have increased the likelihood of competition in settlement; a review of competition in clearing of Australian cash equities was finalised in 2016. ✎

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