Financial Stability Review

MARCH 2015

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Reserve Bank

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Overview

Volatility in global financial markets has increased somewhat since the previous *Review*, following a lengthy period of very low volatility and compressed risk premia. Divergent economic and monetary policy outlooks in the major advanced economies have contributed to some sharp adjustments in currency markets as the US dollar has appreciated. The fall in oil prices has added to downward pressure on oil exporters' currencies and widened yield spreads on bonds issued by oil producers, although it is positive for global growth overall. To date, financial systems have been resilient to this increased volatility.

Low interest rates in the advanced economies continue to encourage financial risk-taking. Although this is supportive of economic growth, such activity can contribute to a build-up of financial system vulnerabilities. A broad reassessment of risks could lead to a sharp adjustment in asset prices, particularly if investors have not fully adjusted to an environment of lower market liquidity. Potential triggers for a reassessment include actual and expected monetary policy actions as well as a range of geopolitical risks.

Risks surrounding euro area banks and sovereigns remain. There have been some broadly supportive developments over the past six months, including the European Central Bank's decision to expand its asset purchase program and the conclusion of its comprehensive assessment of the euro area banking system. However, many banks are still dealing with high levels of impaired assets, a task made more difficult by the slow pace of the economic recovery. Low nominal income growth continues to weigh on the process of balance sheet repair. Vulnerabilities are most acute for euro area economies where sovereigns are more indebted, particularly Greece where negotiations between the new government and its creditors are still proceeding.

In emerging Asia, including China, the slower growth outlook has focused attention on the ongoing build-up in indebtedness in a number of countries, as well as developments in asset prices. Higher debt levels have potentially made Asian financial systems more sensitive to adverse shocks.

Meanwhile, the Australian financial system continues to perform strongly. Banks' asset performance improved further over the second half of 2014, while their profitability remained robust. The recent increase in volatility in global funding markets has had only a minor effect on banks' wholesale funding costs, and their direct exposures to the countries in stress are low. The banking system has continued to accumulate equity capital organically and increase total capital through net issuance of other capital instruments. Looking forward, a number of domestic and international policy initiatives, if implemented as recommended or proposed, would require banks to increase their capital positions further over time.

Competition among lenders remains vigorous in a number of domestic markets and lending margins have fallen. Property-related lending has been a particular focus of the competition in the corporate lending market. Although the Australian banking system's exposure to the commercial property sector declined following the global financial crisis, and the recent lending has not increased its share

of banks' domestic assets, risks in this area appear to be building. Investor demand for both new and existing commercial property developments has been strong, despite weakening leasing conditions in a number of market segments. Particular caution around collateral valuations is warranted in the current environment of declining property yields. Lenders should also be mindful of the collective effects of strong lending activity within particular market segments, even if individual borrowers appear to be of low risk.

Household sector risks continue to revolve largely around the housing and mortgage markets. At this stage, competitive pressures have not induced a material easing in non-price housing lending standards. The composition of new mortgage finance remains skewed to investors, however, particularly in the largest cities. Ongoing strong speculative demand would tend to amplify the run-up in housing prices and increase the risk that prices in at least some regions might fall significantly later on. In the first instance, the consequences of such a downturn in prices are more likely to be macroeconomic in nature because the effects on household wealth and spending would be spread more broadly than just on the recent property purchasers. However, the further housing prices fall in that scenario, the greater the chance that lenders would incur losses on their housing loans. At the margin, the recent decline in mortgage interest rates can be expected to boost demand for housing further, though it will also make it easier for existing borrowers to service their debts. Indicators of household stress are currently at low levels, but could start to increase if labour market conditions weaken further than currently envisaged.

In this environment of low interest rates and strong demand, it is important that lending standards do not decline, and the measures announced by the Australian Prudential Regulation Authority and the Australian Securities and Investments Commission in December are designed with that intent. While it is too early to see the effects of these measures in overall housing lending activity, the authorities will be monitoring an array of information in the period ahead to help ensure that the current risk profile in the mortgage market does not deteriorate.

Outside of the property markets, risks in the non-financial business sector appear relatively low. Measures of distress such as non-performing loans and business failures have been declining and gearing ratios remain lower than those prevailing before the financial crisis. Some resources and mining services firms are facing more difficult trading conditions now that the mining investment boom is winding down and some commodity prices have fallen sharply. However, firms in these industries typically carry less debt than similarly sized firms in other industries, and much of their borrowing is from outside the domestic banking system.

International financial reform work has continued across the four core areas emphasised during Australia's G20 presidency in 2014. Many of these post-crisis reforms have now been agreed and are in the process of being implemented, although some design work remains to be completed, including on the proposal for total loss-absorbing capacity for global systemically important banks. Progress in implementing some reforms affecting derivatives markets has been slow and uneven. This is in part because of difficulties posed by regulation in some jurisdictions that has cross-border effects, or that does not allow their national authorities to defer to counterparts in other countries with oversight of activity within their own borders.

Domestically, the *Financial System Inquiry Final Report* was published in December. In line with the Interim Report, the Final Report does not recommend substantial changes to the regulatory architecture in Australia, but makes several recommendations to strengthen the resilience of the banking sector. The Report also calls for existing processes for strengthening crisis management powers to be completed; these had been put on hold pending the outcome of the Inquiry.

1. The Global Financial Environment

As advanced economy banking systems have continued to build resilience, risks associated with broader financial market developments have attracted more attention. Market volatility has increased over the past six months, albeit from low levels. Divergent economic and monetary policy outlooks in the major advanced economies have contributed to sharp adjustments in some currency markets as the US dollar has appreciated against a broad range of currencies. In commodity markets, the fall in oil prices has added to downward pressure on oil exporters' currencies and widened yield spreads on bonds issued by oil producers. At the same time, sovereign bond yields have fallen to very low levels in the major advanced economies, leaving global financial conditions very accommodative overall. Search for yield behaviour continues to be evident in a range of markets.

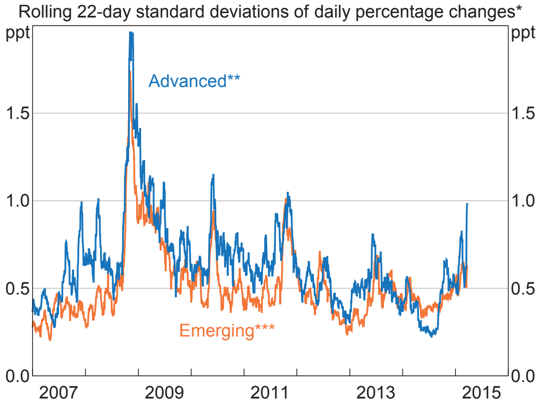
While some portfolio rebalancing is the desired response to changing monetary policy settings and should be supportive of longer-run financial stability, the speed and magnitude of recent adjustments in some currency markets illustrate how such transitions can themselves be a source of risk, even when warranted and widely anticipated. To the extent that some end investors may not have appropriately priced liquidity risk to reflect a structural decline in market liquidity, there could continue to be some sharp adjustments, including in bank and corporate bond markets.

Banking systems have continued to be resilient to some sharp market movements. Since the financial crisis, banks have retreated from riskier activities, improved liquidity management and built up capital buffers. In the major advanced economies, bank profitability continues to be supported by improving asset quality, especially in the United Kingdom and the United States. In the euro area, where bank balance sheet repair has been more drawn out, the European Central Bank's (ECB's) comprehensive assessment has helped to improve confidence in the banking system's health. Nevertheless, headwinds to bank profitability in the major advanced economies remain. For some banks, net interest margins are compressed in the low interest rate environment and further regulatory fines and litigation costs for past misconduct are anticipated. For banks operating in emerging Asia, profits have continued to be supported by relatively wide interest margins and strong credit growth, but have moderated in recent months in line with softening economic conditions in the region.

Global Financial Markets

Much of the recent pick-up in currency market volatility from low levels (Graph 1.1) has been associated with divergent macroeconomic developments and hence diverging monetary policy outlooks in the major advanced economies. The ongoing economic recovery in the United States has contrasted with more modest economic growth and lower inflation expectations in the euro area and Japan. The Federal Reserve ended its bond purchasing program in October 2014 and financial markets assign a high probability to the Federal Reserve raising rates later this year, whereas during

the past six months the ECB and the Bank of Japan have increased monetary policy stimulus through balance sheet expansion (Graph 1.2).

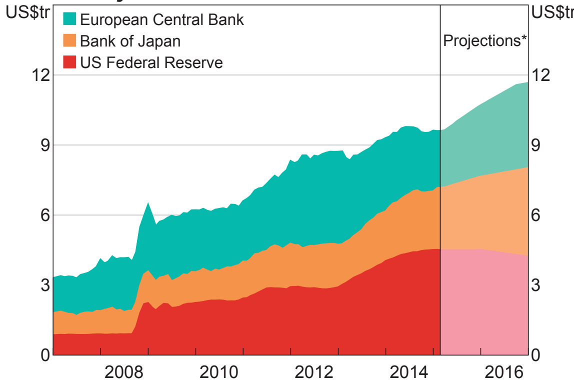


* Median of bilateral exchange rates against the US dollar

** Australia, Canada, euro area, Japan, New Zealand, Switzerland and United Kingdom

*** Brazil, Chile, Colombia, India, Indonesia, Malaysia, Mexico, Philippines, Russia, South Africa, South Korea, Taiwan, Thailand and Turkey

Sources: Bloomberg; RBA

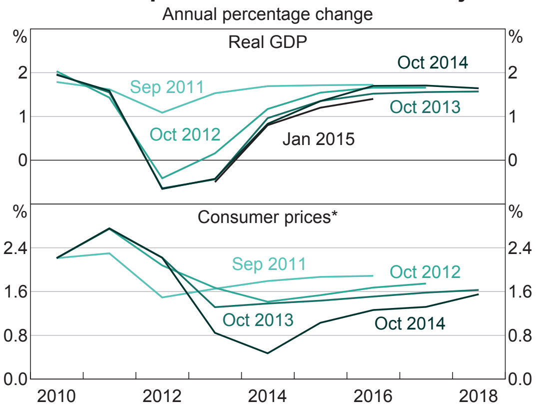


* Based on central bank communicated intentions; assumes constant exchange rates

Sources: Bloomberg; RBA; Thomson Reuters

Commodity exporters have faced falling commodity prices on top of increased currency market volatility. In particular, the price of oil in US dollar terms has fallen by roughly 50 per cent since mid 2014, mainly driven by supply-side developments. In general, lower oil prices and the broader fall in commodity prices are likely to be positive for global financial stability because they should boost overall world economic growth. However, this will be at least partly offset by the negative effect on some commodity-exporting countries, even though currency depreciations and stronger global economic growth should generally be supportive of exports in these economies.

The potential for financial stress in the euro area remains a risk to global financial stability. The euro area recovery has been slow, with realised outcomes for growth and inflation persistently below most medium- and long-term forecasts in recent years (Graph 1.3). Low rates of nominal income growth make balance sheet repair more difficult and could weigh on existing vulnerabilities in some euro area economies, particularly those where sovereigns remain highly indebted and where banking systems have not fully recovered. Even though the expansion of the ECB's asset purchase program and the fall in oil prices are expected to support economic activity, the ECB considers that risks surrounding the economic outlook for the euro area remain on the downside.



* The IMF last updated its *World Economic Outlook* euro area inflation forecast in October 2014

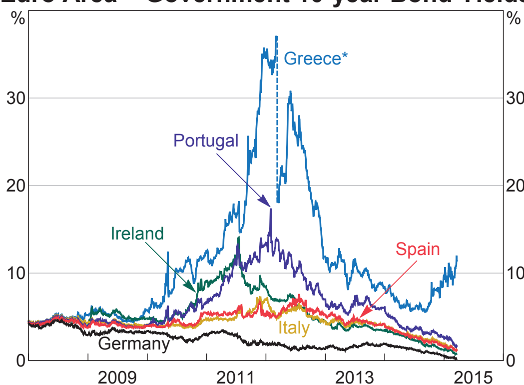
Source: IMF

In Greece, concerns regarding the sustainability of sovereign debt resurfaced in the past six months, restricting sovereign and bank access to funding markets. Greek banks' liquidity was also strained by deposit outflows. In February, the Eurogroup broadly agreed to a four-month extension to a

financial assistance facility, contingent on the Greek Government submitting a plan for broader and stronger structural reforms and resisting the rollback of existing measures, with negotiations on the details of this agreement continuing. However, without a sustainable longer-term agreement, vulnerabilities remain. In the near term, Greek banks could continue to face pressures on their liquidity. In the longer term, reform efforts could stall both in Greece and in other euro area countries, while overly restrictive fiscal policy could further impede growth prospects in Greece and hamper balance sheet repair by Greek banks.

Contagion from Greece to other vulnerable euro area financial systems has so far been limited (Graph 1.4). In contrast to the situation in 2011, holdings of Greek sovereign debt are now more concentrated in the official sector, European banks have made progress with balance sheet repair and there have been further advances in the European framework for bank regulation. Bond prices in other periphery countries have also been supported by the announcement of additional policy stimulus by the ECB.

Graph 1.4
Euro Area – Government 10-year Bond Yields



* Break on 12 March 2012 due to the first private sector debt swap
Source: Bloomberg

Another market focus in Europe was the unexpected decision by the Swiss National Bank in January 2015 to abandon its policy of capping the franc-euro exchange rate ahead of the ECB's decision to expand its asset purchase program. As a result of the subsequent sharp appreciation of the Swiss franc, some banks and investors sustained large losses and some retail trading platforms became insolvent. Further out, a few banks could face losses on Swiss franc-denominated loans to non-Swiss households and corporations. These loans have been common in central and eastern Europe. In Hungary, risks were mitigated by an earlier decision of the Hungarian Government to convert foreign currency housing loans into local currency. In Poland, however, almost half of mortgage lending is still denominated in foreign currencies.

Some emerging market currencies have depreciated substantially in the past three months, including the Turkish lira, the Russian rouble and the Brazilian real. These sharp depreciations have exacerbated existing financial system vulnerabilities in these economies. Wider risks might arise both from direct financial and economic exposures to these countries and from the potential for a more general rise in risk aversion to trigger broader market adjustments among emerging markets and oil exporters.

In Russia, sanctions imposed on some banks and corporations have impeded their access to international capital markets. Financial stability risks associated with the sanctions and currency weakness against the US dollar have been amplified by the more recent fall in the price of Russia's oil exports. Over the past six months, the rouble has depreciated by around 35 per cent against the US dollar. Russian authorities have drawn on Russia's foreign currency reserves to help Russian corporations to meet their foreign currency payment obligations; some Russian banks have also received rouble-denominated capital injections from the National Wealth Fund and Deposit Insurance Agency. Russian banks and corporations have considerable external debt obligations, potentially exposing international investors and creditors to corporate default. As at the end of September 2014, around US$165 billion of Russian banks' and corporations' external debt (or 8 per cent of GDP) was due over 2015 and in the first three quarters of 2016.

While some banks have announced losses on Russian exposures, aggregate banking exposures to Russia appear to be small as a share of total assets (Table 1.1). Austrian banks appear to have the largest relative cross-border exposures to Russia and could, more generally, be vulnerable to a deterioration in asset quality in emerging central Europe. While broad onward contagion from Austrian banks appears unlikely given the size of banking system exposures, some German banks have recently faced losses on legacy exposures to an Austrian bank after the Austrian Government ruled out providing it with further capital support.

Since June 2014, the Turkish lira has depreciated by around 17 per cent against the US dollar. Much of Turkey's external debt is denominated in foreign currencies and intermediated through the banking sector. Substantial currency depreciations could therefore place pressure on any mismatch between the banking sector's foreign currency assets and liabilities, as well as on the ultimate borrowers' capacity to service their debts. While firms in some sectors could have limited natural hedging opportunities in the form of foreign currency revenues, financial hedging markets are relatively well developed in Turkey. Turkish banks' external creditors are mostly European banks, but, in aggregate, these loans are typically small compared with the size of the respective banking systems.

In Brazil, lower prices of oil and other commodities have aggravated risks associated with an already slowing economy and high inflation. The depreciation of the Brazilian real by around 25 per cent over the past six months, while supportive of Brazilian exports, has added to inflationary pressures and falling commodity revenues have added to fiscal pressure. In light of these and other factors (associated with corporate misconduct) in Brazil, ratings agencies have downgraded some large Brazilian corporations recently. That said, measures of corporate and household indebtedness in Brazil are not high by international standards. Further, while around two-thirds of Brazil's external debt is denominated in foreign currencies, much of this appears to be naturally hedged with foreign currency revenue, and financial hedging markets are also well developed in Brazil.

While investors appear to have become somewhat more discerning about risks in recent months, search for yield behaviour is still evident in a range of markets. The low interest rate environment has remained supportive of prices across many

Table 1.1: Banks' International Exposure
Claims by BIS reporting banks; ultimate risk basis; September 2014[(a)]

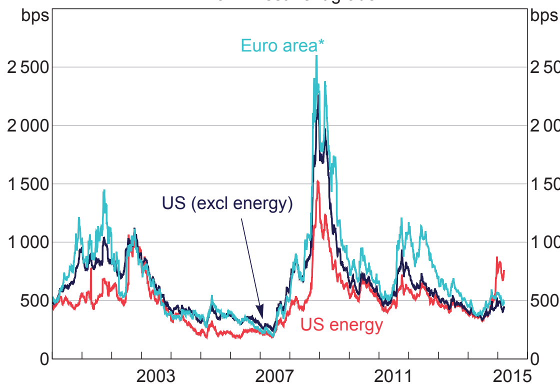
	Share of global consolidated assets (per cent)				
	Austria	Brazil	Greece	Russia	Turkey
Euro area	0.6	0.6	0.0	0.3	0.4
Austria	–	0.0	0.0	1.3	0.1
France	0.2	0.3	0.0	0.5	0.4
Germany	0.7	0.1	0.1	0.2	0.2
Greece	0.0	0.0	–	0.1	6.2
Italy	2.7	0.0	0.0	0.8	0.2
Portugal	0.2	1.5	0.1	0.0	0.0
Spain	0.1	3.7	0.0	0.0	0.5
Japan	0.0	0.2	0.0	0.1	0.1
Switzerland	0.5	0.7	0.1	0.2	0.2
United Kingdom	0.1	0.6	0.1	0.1	0.3
United States	0.1	0.5	0.1	0.2	0.2

(a) Latest available data used where September 2014 claims data not available
Sources: BIS; BoJ; ECB; FDIC; SNB

international equity, property and fixed interest assets. In the United States, the increase in non-investment grade corporate bond spreads has mainly been for energy producers. US energy producers account for a significant share of non-investment grade bond issuance, of which some of the proceeds have been used to fund investment in relatively high-cost productive capacity. However, spreads on non-investment grade bonds issued by US corporations in other sectors remain low by historical standards. In the euro area, spreads on non-investment grade bonds have been broadly stable in net terms in the past six months (Graph 1.5). European leveraged bond issuance remains close to pre-crisis levels despite declining somewhat in the second half of 2014. However, overall issuance of higher-yielding debt by financial and non-financial corporations in the United States and the euro area has declined over the past six months (Graph 1.6), while investment grade issuance has picked up.

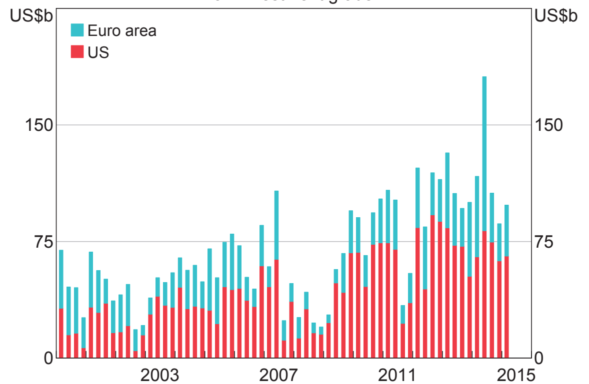
Since the financial crisis, the volume and share of credit intermediated in financial markets outside of the formal banking system have increased (Graph 1.7). This has reflected several developments, including responses by the banks to the crisis – both of their own choosing and as required by regulators – to de-risk their balance sheets, improve their liquidity positions and raise capital ratios. Low interest rates in the advanced economies over this period have increased investor demand for higher-yielding financial assets and encouraged bond issuance by corporations. As discussed in a recent Committee on the Global Financial System (CGFS) report, regulatory efforts have, as intended, increased the cost of market making by banks and shifted liquidity and some other risks to end investors.[1]

Graph 1.5
Higher-yielding Debt Spreads
Non-investment grade



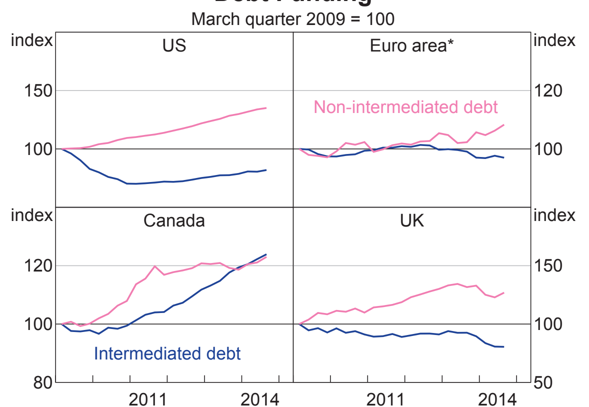
* B-rated bonds
Sources: Bank of America Merrill Lynch; Bloomberg; RBA

Graph 1.6
Higher-yielding Debt Issuance*
Non-investment grade**



* March 2015 is quarter-to-date
** Includes unrated bonds
Sources: Dealogic; RBA

Graph 1.7
Private Non-financial Corporations' Debt Funding



* Public and private non-financial corporations
Sources: ECB; ONS; RBA; Statistics Canada; Thomson Reuters

1 CGFS (2014), 'Market-making and Proprietary Trading: Industry Trends, Drivers and Policy Implications', CGFS Papers No 52. See also Cheshire J (2015), 'Market Making in Bond Markets', RBA *Bulletin*, March, pp 63–73.

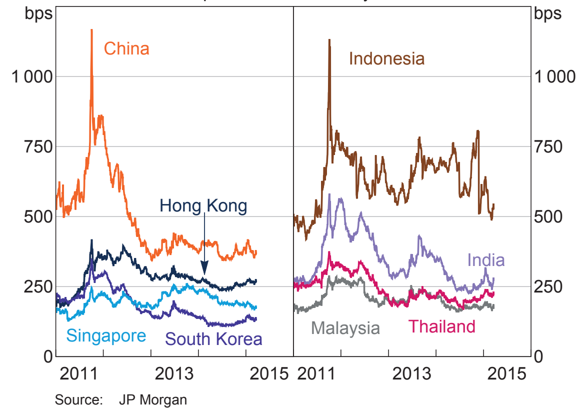
As policy interest rates rise and unconventional monetary policies are withdrawn, there could be periods of strained market liquidity, leading to a sharp adjustment in bond yields and heightened volatility in asset markets generally. Because the corporations issuing the debt have tended to do so at longer maturities, their rollover risk appears to be limited. The greater risk seems to lie with some asset managers and end investors, who may not be appropriately pricing liquidity risk.

A historically riskier asset class that could be vulnerable to swings in economic growth and monetary policies is commercial property. Commercial property prices have been bid up globally in the search for yield, but strong construction volumes and insufficient demand have led to high vacancy rates in some cities, including in commodity-exporting economies. Capital values of prime office property in Moscow and São Paulo fell sharply in 2014, where high construction volumes and soft demand have contributed to high vacancy rates.

In recent years, economies in emerging Asia have generally experienced favourable external financing conditions associated with the low interest rate environment, particularly those economies with fixed or managed exchange rate regimes (Graph 1.8). The prolonged period of strong growth in indebtedness in several economies, through credit from intermediaries and/or non-intermediated finance, has increased vulnerability to an economic slowdown (Graph 1.9). Over the past six months, growth forecasts have generally been revised lower across the region.

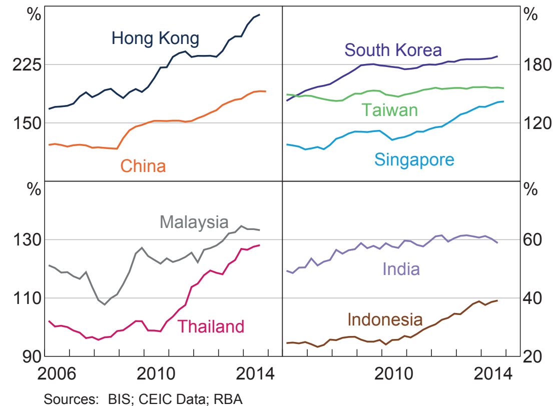
Bond issuance by corporations in Asia has continued to rise strongly over the past six months, most notably in China, Singapore and Hong Kong. Outside of China, much of this corporate issuance has been external and denominated in foreign currencies, resulting in ongoing concerns about the risk of currency mismatch. In many Asian jurisdictions, this borrowing appears mainly to have been undertaken by firms in sectors with natural hedges in the form of

Graph 1.8
Asian Corporate Bond Spreads
To equivalent US Treasury bonds



Source: JP Morgan

Graph 1.9
Asia – Total Credit
Per cent to nominal GDP



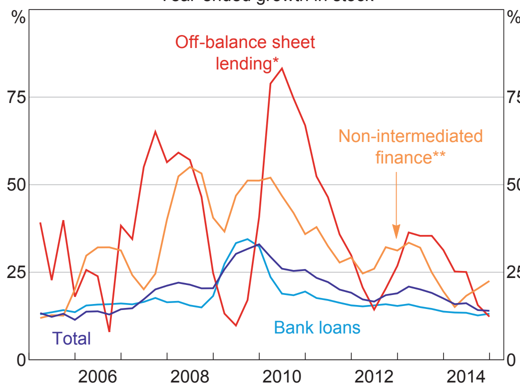
Sources: BIS; CEIC Data; RBA

foreign currency revenue or assets. For firms that are not naturally hedged, the development of foreign currency derivatives markets and local currency bond markets in Asia has supported their ability to borrow in local currencies. Even so, as discussed in previous *Reviews*, liquidity in many secondary emerging bond markets remains low, which could amplify asset price dynamics in a market repricing scenario, such as in response to monetary policy tightening in the United States.

In China, debt has continued to grow, albeit at a slower pace, as the authorities have implemented measures to put non-bank and off-balance sheet financing on a more sustainable footing

and economic growth has continued to slow (Graph 1.10). Concerns about the Chinese shadow banking sector include that exposures may be to marginal borrowers – particularly property developers – unable to obtain financing through the banking system, and that the sector has a number of linkages with banks that are not well understood. To address these risks, the authorities have recently put in place further policy measures to address aspects of the Chinese financial system that contributed to growth in the shadow banking sector. These measures include relaxing ceilings on deposit interest rates, draft regulations to constrain entrusted loans from being funded by debt or invested in most financial instruments, and the announced introduction of a deposit insurance scheme.

Graph 1.10
China – Total Social Financing
Year-ended growth in stock

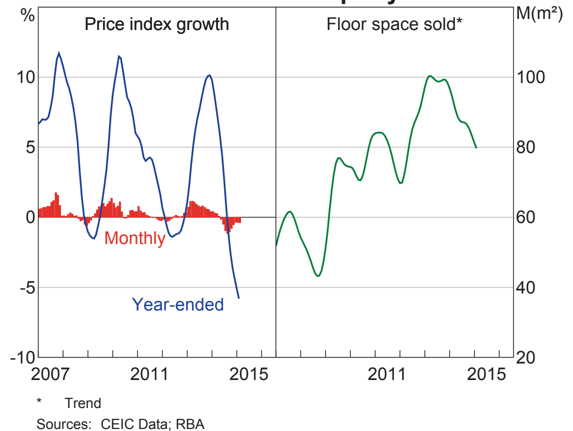


* Entrusted loans, trust loans and bank accepted bills
** Corporate bond and non-financial corporate equity issuance
Sources: CEIC Data; PBC; RBA

Related to concerns about the debt build-up in China is recent property market weakness; residential property prices and sales volumes have continued to fall (Graph 1.11). Available evidence suggests that property developers are more highly geared than in previous property market downturns, adding to financial stability risks.[2] Some of this credit

2 See Cooper A and A Cowling (2015), 'China's Property Sector', RBA *Bulletin*, March, pp 45–54.

Graph 1.11
China – Residential Property Market



* Trend
Sources: CEIC Data; RBA

may have been obtained through the shadow banking sector, given restrictions on bank lending to property developers. In addition, US dollar-denominated debt issued by property developers in China increased in 2013 and 2014. Few of the largest real estate firms and property developers that have issued foreign currency-denominated debt appear to derive foreign currency revenue and the burden of servicing this debt could increase as interest rates rise in the United States and/or if the Chinese renminbi were to depreciate. More generally, the value of US dollar-denominated bond issuance by all non-financial corporations in China has increased sharply in recent years, but remains close to its decade average as a proportion of total corporate bond issuance (at around 10 per cent).

Another market where asset price growth has been associated with leverage is the Chinese equity market, where prices have risen sharply in recent months. Although some valuation metrics, such as price-to-earnings ratios, suggest that equity prices were previously undervalued, the recent increase in equity prices occurred despite little apparent change in market fundamentals. It was also supported by strong growth in margin lending, some of which appears to have been indirectly funded by banks through the shadow banking sector. The prevalence of margin lending could magnify the potential losses associated with a correction in equity prices

if lenders demand margin calls that investors are unable to meet. In January, the China Securities Regulatory Commission banned some brokerages from opening new margin trading accounts for a period of three months.

Banking Systems in Advanced Economies

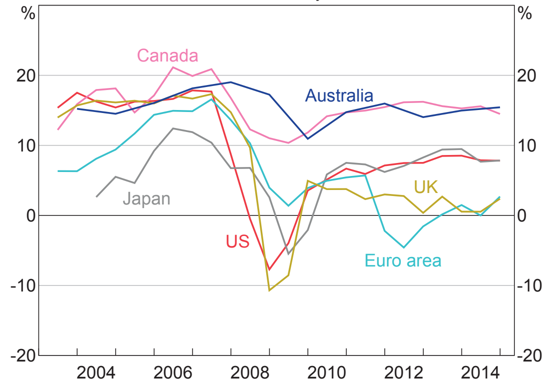
Bank profitability and capital

Despite improving in the second half of 2014, the profitability of large banks remains under pressure in some advanced economies (Graph 1.12), as reflected in banks' share price to book value ratios (Graph 1.13). Regulatory fines and legal expenses associated with past misconduct continued to weigh on bank profitability in the second half of 2014 and uncertainty remains over banks' ongoing exposure to litigation. For some banks, flatter yield curves associated with very low interest rates have compressed net interest margins.

Banks do not appear to have large direct exposures to the energy sector and commodity producers, so their profitability is unlikely to be affected by the falls in commodity prices. In recent years, banks have retreated from some commodity-related businesses – such as the physical ownership of commodities – in response to low profitability and regulatory action. Banks' direct exposures through lending to commodity producers also appear to be small in aggregate, including in Australia. That said, lower commodity prices could indirectly reduce profitability of business units in commodity-exporting economies as economic growth slows in these countries.

Most large banks in advanced economies increased their Common Equity Tier 1 (CET1) ratios over the second half of 2014. In addition, all the global systemically important banks (G-SIBs) that report fully phased-in Basel III CET1 ratios continued to exceed their regulatory minimums (Graph 1.14). Increases in advanced economy banks' capital ratios have largely been driven by retained earnings. Global

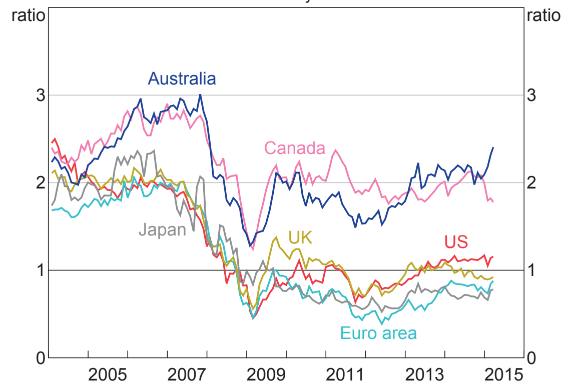
Graph 1.12
Large Banks' Return on Equity*
After tax and minority interests



* Number of banks: Australia (4), Canada (6), euro area (41), Japan (4), UK (4) and US (18); adjusted for significant mergers and acquisitions; reporting periods vary across jurisdictions; estimates used where banks have not reported for December 2014

Sources: Banks' Annual and Interim Reports; Bloomberg; RBA; SNL Financial

Graph 1.13
Banks' Share Price to Book Value Ratios
Monthly*



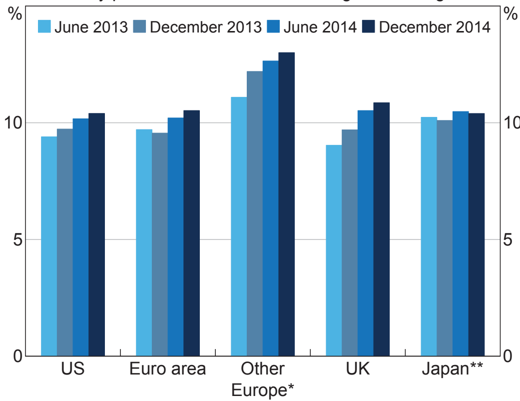
* End of month; March 2015 observation is based on latest available data

Sources: Bloomberg; RBA

issuance of Additional Tier 1 and Tier 2 convertible capital instruments increased in the second half of 2014, particularly from Asian banks replacing instruments no longer eligible as capital under Basel III. The aggregate Tier 1 capital shortfall for G-SIBs has fallen significantly since the end of 2013, though an aggregate total capital shortfall remains (Graph 1.15).

Euro area banks' efforts to improve their resilience have been supported by recent supervisory assessments. The results of the ECB's comprehensive

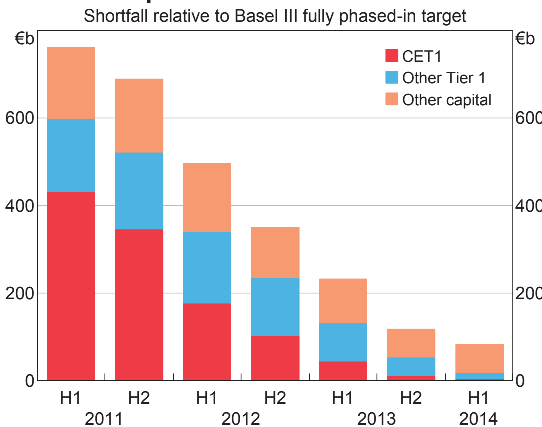
Graph 1.14
Advanced Economy G-SIBs' CET1 Ratios
Fully phased-in Basel III, asset-weighted average



* Credit Suisse, Nordea and UBS
** Japanese banks' CET1 ratios are based on transitional Basel III requirements

Sources: Banks' Annual and Interim Reports; Bloomberg; RBA; SNL Financial

Graph 1.15
Capital Shortfalls of G-SIBs
Shortfall relative to Basel III fully phased-in target



Source: BIS

assessment of European banks were released in October 2014, prior to the ECB taking over as the prudential supervisor for the euro area's largest banks. The exercise included an asset quality review designed to enhance transparency, encourage balance sheet repair and build confidence, for example, by harmonising the definition of non-performing exposures across jurisdictions. It resulted in almost €50 billion in downward adjustments to asset carrying values. The stress test component of the comprehensive assessment was more rigorous and transparent than past stress tests for euro area banks. Once capital raised in 2014 and ECB approved restructuring plans were taken into account, 8 of the 130 banks participating in the assessment fell short of the required capital thresholds.

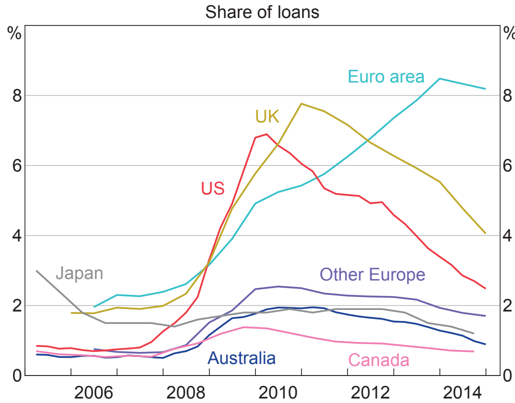
In the United States, for the first time since Dodd-Frank Act stress tests began in 2009, all 31 participating bank holding companies maintained capital levels above what the US Federal Reserve views as a minimum requirement during the test scenarios. However, the US subsidiaries of two international banks had their capital distribution plans objected to under the Comprehensive Capital Analysis and Review, due to 'widespread and substantial weakness across their capital planning processes'.[3] These banks may only make capital distributions that are expressly permitted by the Federal Reserve and may choose to resubmit their capital plans after addressing the issues identified. In addition to the two US subsidiaries, the Board of Governors issued a conditional non-objection to one US bank holding company, requiring it to correct weaknesses in some elements of its capital planning process and to resubmit a capital plan.

Asset performance, funding and credit conditions

Over the past few years, loan-loss provisions associated with non-performing loans (NPLs) have explained much of the variation in bank profitability and valuations, both across advanced economy banking systems and over time. The NPL ratios for large banks in the major advanced economies declined over the second half of 2014, but generally remain above pre-crisis levels (Graph 1.16). The euro area banks' NPL ratios declined moderately in 2014 for the first year since the crisis, with asset quality improvements for banks in most euro area countries,

3 Board of Governors of the Federal Reserve System (2015), 'Comprehensive Capital Analysis and Review 2015: Assessment Framework and Results', p 3.

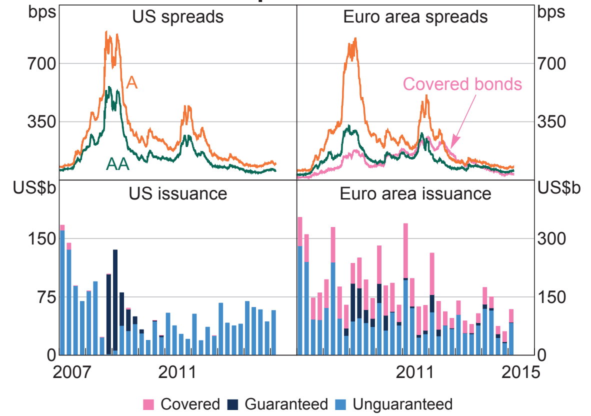
Graph 1.16
Large Banks' Non-performing Loans*
Share of loans



* Definitions of 'non-performing loans' differ across jurisdictions; number of banks: Australia (4), Canada (6), euro area (41), Japan (5), other Europe (10), UK (4) and US (18)

Sources: APRA; Banks' Annual and Interim Reports; Bloomberg; FSA; RBA; SNL Financial

Graph 1.17
Banks' Bond Spreads and Issuance*



* Spread to equivalent government bonds; March 2015 issuance is quarter-to-date

Sources: Bank of America Merrill Lynch; Bloomberg; Dealogic; RBA

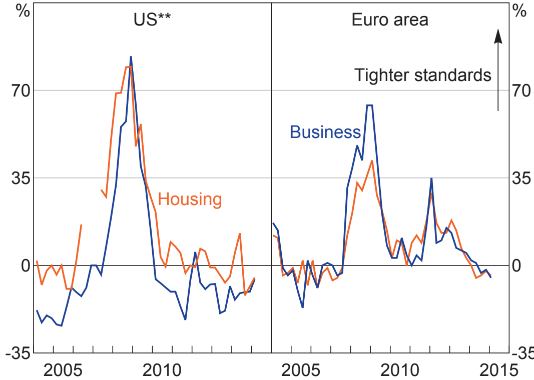
especially in Spain and Ireland. In the United States and United Kingdom, improvements in overall asset quality were supported by the broader economic recovery. In the United States, lower NPL ratios for both residential and commercial real estate loans drove the decline, although those for residential real estate remain elevated relative to pre-crisis levels. In Japan, large banks' measured asset quality has been supported by an expansion in overseas lending, which has a lower non-performance rate than domestic lending.

Bank funding conditions in the advanced economies remained favourable in the second half of 2014 and bank bond yields and spreads remain low overall (Graph 1.17). That said, the volume of bank bond issuance has slowed from the strong pace of the first half of 2014. Banking systems have generally taken further steps towards improving their liquidity positions, including increasing their holdings of high-quality liquid assets (HQLA) ahead of the phase-in of the Liquidity Coverage Ratio (LCR), which commenced on 1 January 2015. Between December 2013 and June 2014, the large international banks' fully phased-in LCR shortfall is estimated to have decreased by around €50 billion to €305 billion (0.5 per cent of total assets) on a fully phased-in basis to be made up by 2019.

Banks must hold sufficient HQLA to cover expected net cash outflows over a 30-day stress period. Therefore liabilities that are susceptible to rapid withdrawal, such as at-call deposits, must be covered by an appropriate amount of HQLA. Some large banks are considering fees to compensate for the higher cost of holding large deposits, or are encouraging institutional clients with large deposits to use alternative products that have fewer 'at-call' features (see 'Box A: The Basel III Liquidity Reforms in Australia' for more details on the Australian implementation of the LCR).

Lending standards in the major advanced economies have continued to ease (Graph 1.18), but overall credit conditions vary markedly across regions. The ECB's bank lending survey indicates that lending standards eased moderately in the second half of 2014, though they remain tight by historical standards and euro area private sector credit growth remains flat. In the United States, improved funding conditions and the further progress in banks' balance sheet repair contributed to an overall easing in credit conditions according to the Federal Reserve's Senior Loan Officer Opinion Survey. US credit growth has also picked up recently. The Bank of Japan's Senior Loan Officer Opinion Survey on Bank Lending Practices highlighted stronger demand for loans by firms and households and bank credit growth increased in Japan during the second half of 2014.

Graph 1.18
US and Euro Area Credit Standards*



* Net percentage of respondents reporting tighter standards
** US housing is total housing before 2007, a simple average of prime and non-traditional mortgage loans from June 2007 to December 2014, and an average of government-sponsored enterprise eligible, qualified and non-qualified mortgage loans from January 2015; business series represents large and medium respondents only

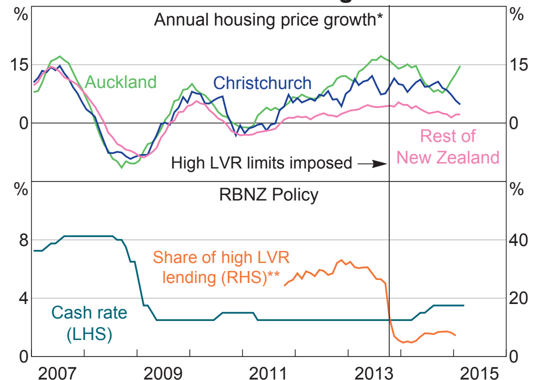
Sources: ECB; RBA; Thomson Reuters

New Zealand

Developments in New Zealand remain an important focus for Australia given the large Australian banks' operations there. For some time, the Reserve Bank of New Zealand (RBNZ) has been concerned that rapid housing price growth increases the likelihood and the potential impact of a significant fall in housing prices at some point in the future. In response, in 2013 the RBNZ placed temporary limits on high loan-to-valuation ratio (LVR) lending and increased banks' capital and liquidity requirements. Between March and July 2014, the RBNZ also increased the overnight cash rate from 2.5 to 3.5 per cent. While growth in housing prices slowed during most of 2014, it appears to be increasing again in Auckland (Graph 1.19). The RBNZ has attributed this recent increase to rising household incomes, falling interest rates on fixed-rate mortgages, strong migration inflows and ongoing supply shortages.

The RBNZ is currently consulting on a new treatment for mortgage loans to residential property investors within its capital adequacy requirements. It proposes to amend existing rules by requiring all locally incorporated banks to include residential property investment mortgage loans in a separate asset sub-class, and hold appropriate regulatory capital for those loans.

Graph 1.19
New Zealand Housing Market



* Smoothed; year to latest three months
** Share of mortgages with a loan-to-valuation ratio above 80 per cent

Sources: RBNZ; REINZ

The RBNZ has also identified high levels of indebtedness in the dairy sector as a key risk to financial stability in New Zealand given international price developments. In 2014, the international auction price for whole milk powder fell by more than 50 per cent from its October 2013 peak. The RBNZ has said that if milk prices do not recover sufficiently, household spending could slow sharply in 2016 as additional pressure is placed on dairy farmers' balance sheets and rural land prices. Dairy producers account for 9.5 per cent of the stock of outstanding bank credit in New Zealand; around half of this debt is owed by 10 per cent of New Zealand dairy farmers (see also 'The Australian Financial System' chapter).

Banking Systems in Emerging East Asia

Chinese banks remain highly profitable and continue to report high capital ratios and low NPL ratios. Nonetheless, slowing economic growth has been associated with an increase in the stock of NPLs in China during the past six months, particularly in the wholesale and retail trade sectors. While banks' return on equity has declined somewhat, the effect of the increase in the stock of NPLs on bank profitability and NPL ratios has been moderated by continuing strong credit growth. The effects of the ongoing build-up of debt in an environment of

slowing economic growth are likely to be important drivers of bank profitability in the period ahead.

Despite the moderation in profitability, large Chinese banks' capital ratios have continued to increase during the past six months. Several Chinese banks issued hybrid Basel III compliant capital instruments in the second half of 2014, following regulatory changes in April 2014. Over two-thirds of this issuance was by the five largest Chinese banks, and nearly half of their issuance has been classified as Additional Tier 1 capital under Basel III. The Chinese authorities restrict banks from issuing common equity when their share price to book value ratio is below one; these hybrid issuances have thus been used by the largest banks to improve their Basel III capital ratios, while continuing to grow their asset portfolio. Nevertheless, as discussed in the previous *Review*, these hybrid instruments have inherent risks over common equity.

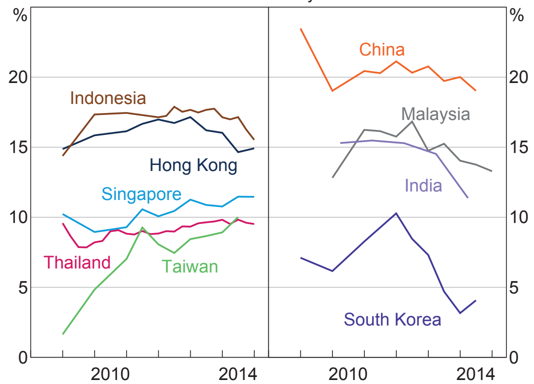
Overall, key banking indicators are generally sound across other Asian economies. Profitability across the region has moderated somewhat but remains generally high in most countries (Graph 1.20). All banking systems in Asia continue to report aggregate capital ratios well above regulatory minimums. NPL ratios remain generally low relative to their own history, though they are typically a lagging indicator of asset performance (Graph 1.21). In some countries, NPL ratios continue to be compressed by strong credit growth.

In Hong Kong, Singapore and Malaysia, housing prices have risen rapidly in recent years, leading to concerns about increasing household indebtedness. More recently, property price growth has begun to moderate in some economies, in line with a broader softening in economic conditions. In Hong Kong, authorities have recently tightened macroprudential policy settings targeted at real estate, given renewed signs of overheating in the property market. ✠

Graph 1.20

Asian Banks' Return on Equity*

After tax and minority interests



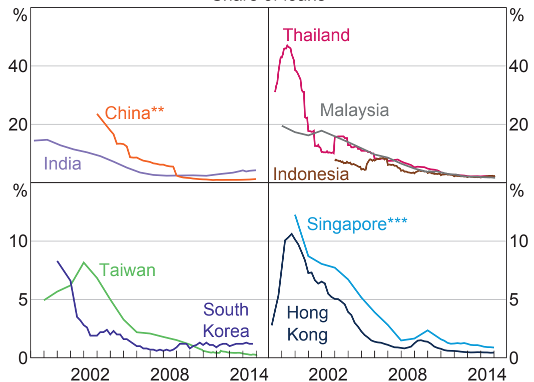
* Number of banks: China (51), Hong Kong (19), India (39), Indonesia (37), Malaysia (35), Singapore (3), South Korea (16), Taiwan (30) and Thailand (22); adjusted for significant mergers and acquisitions

Sources: RBA; SNL Financial

Graph 1.21

Asian Banks' Non-performing Loans*

Share of loans



* Definitions of non-performing loans differ across jurisdictions

** Data for 2002–2004 are for major commercial banks only

*** Singaporean-owned banks only

Sources: CEIC Data; National Banking Regulators; RBA; SNL Financial

2. The Australian Financial System

The Australian banking system has performed strongly since the previous *Review*. Banks' profitability remains robust, supported by a further steady improvement in asset performance. Funding costs have declined modestly as competition in domestic deposit markets has eased. The major banks have continued to accumulate capital over recent quarters, and appear well placed to adjust to any further increases in capital targets in the period ahead. Another recent focus of Australian banks has been implementing the Liquidity Coverage Ratio (LCR) requirement from the start of this year. The new liquidity rules, outlined in 'Box A: The Basel III Liquidity Reforms in Australia', reinforce the need for banks to manage their liquidity risks prudently.

Nonetheless, risks in housing and commercial property markets are rising in association with fast price growth in some cities, heightened investor activity and strong price competition among lenders. It will be important for macroeconomic and financial stability that banks' lending practices take into account system-wide risks in these property markets, and in this light the Australian Prudential Regulation Authority (APRA) recently announced a number of supervisory measures aimed at ensuring banks maintain sound housing lending practices.

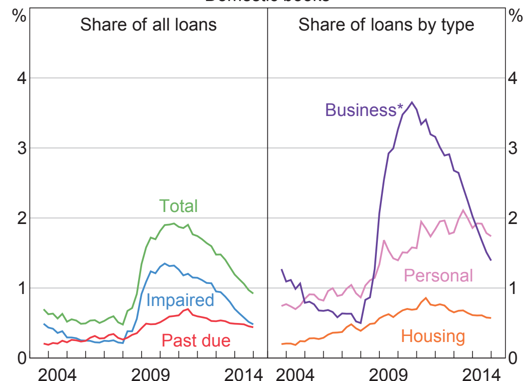
Profitability has been strong in the general insurance industry over recent years, although it declined in the most recent period due to above-average weather-related losses. The buoyant housing market has contributed to lower insurance claims and increased profitability for lenders mortgage insurers. With competition in the sector strong, insurers' pricing policies and the adequacy of their claims reserves will warrant ongoing attention.

Bank Asset Performance and Lending Conditions

Asset performance is a key indicator of Australian banks' soundness and a focus of financial stability analysis. Current and future asset performance depend on bank lending conditions, including price and non-price lending terms, as well as macroeconomic and property market conditions.

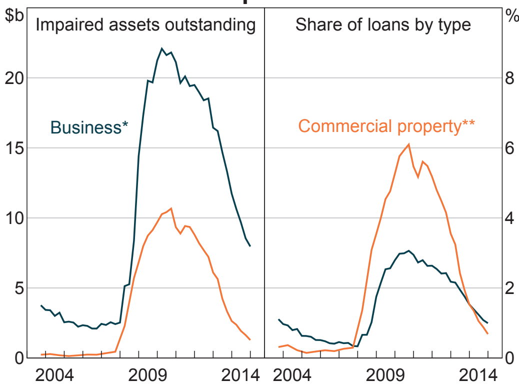
The asset performance of Australian banks has improved steadily over recent years, and this trend continued over the second half of 2014. In the banks' domestic loan portfolio, the ratio of non-performing assets to total loans was 0.9 per cent at December 2014, down from a peak of 1.9 per cent in mid 2010 (Graph 2.1). This improvement has been concentrated in business loans, although there have also been smaller declines in the ratios of non-performing housing and personal loans over the past few years.

Graph 2.1
Banks' Non-performing Assets
Domestic books



* Includes lending to financial businesses, bills, debt securities and other non-household loans
Source: APRA

The decline in non-performing business loans has been particularly evident in commercial property loans, which also drove much of the earlier increase (Graph 2.2). The impairment rate for commercial property loans has declined to a level below that for other business loans over recent quarters, assisted by the strong recovery in commercial property prices. More generally, the tightening in lending standards around 2008–09 has strengthened the underlying quality of banks' business loan portfolios, and has probably made this portfolio more resilient to possible adverse macroeconomic conditions.



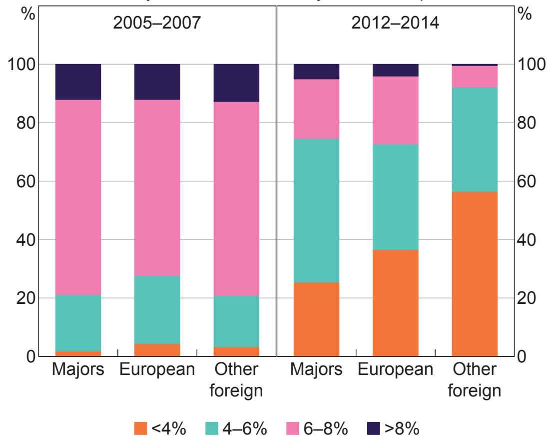
* Domestic books; includes lending to financial businesses, bills, debt securities and other non-household loans

** Consolidated Australian operations

Source: APRA

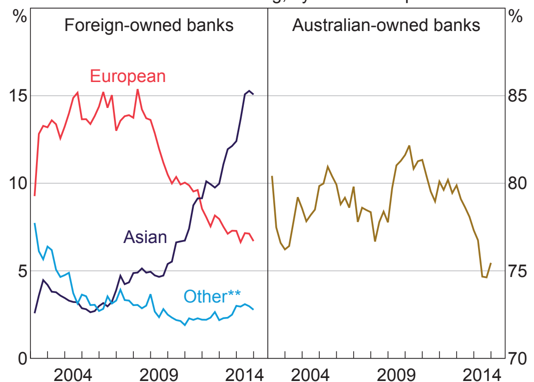
Nonetheless, in the current environment of low interest rates and relatively subdued demand for credit by businesses, business lending conditions have eased somewhat. According to industry liaison, strong competition among lenders has compressed margins on some large corporate loans, and this trend continued in recent quarters. Also contributing to pressure on margins are the narrow spreads available on market-based funding for these borrowers, as investors globally continue to search for yield. In addition, loan covenants have been relaxed for certain borrowers. Some foreign banks in particular are offering very competitive pricing and terms in an effort to increase their business lending in Australia (Graph 2.3). Over the past few years the share of large business lending extended by Asian-owned banks (mainly banks domiciled in China and Japan) has risen markedly; in contrast, the share extended by European-owned banks has continued to decline, in part because of difficulties in some banks' home jurisdictions (Graph 2.4).

Competitive pressures appear to be most pronounced in the commercial property loan segment, despite falling yields and an emerging oversupply in some major capital city markets (see



* Loans $2 million and over

Sources: APRA; RBA



* Loans $2 million and over

** Mostly North American

Sources: APRA; RBA

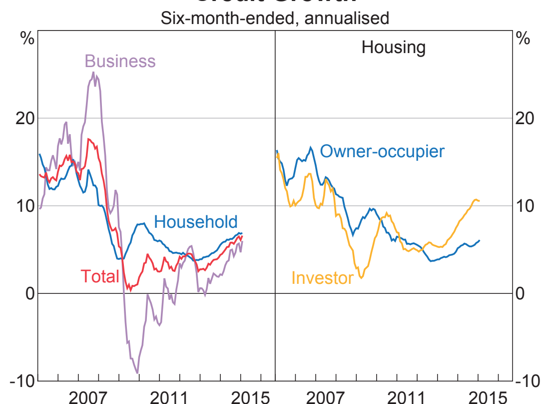
'Household and Business Finances' chapter). While the effect of these developments on overall financial stability has been modest to date, risks appear to be rising in the commercial property market. Banks will therefore need to be especially cautious in their commercial property valuations and in their loan-to-valuation ratios (LVRs) given that prices are rising strongly. They should also ensure they do not build up concentrated exposures within this sector (e.g. by geography, property segment or developer), as these can give rise to correlated losses for lenders, as occurred during 2008–09.

The performance of banks' domestic household loan portfolios has continued to improve. The non-performing share of banks' housing loans was about 0.6 per cent at December 2014, down from a peak of 0.9 per cent in 2011. Banks' housing loan performance continues to be aided by low interest rates, which ease the debt-servicing requirements of borrowers. Rising housing prices have also contributed by making it easier for home owners to sell rather than stay in arrears should they run into servicing difficulties, and for banks to dispose of their existing stock of troubled housing assets. The non-performing ratio for personal loans is higher, at 1.7 per cent, but it has declined modestly over the past couple of years. Personal loans are only a small part of banks' total domestic lending and therefore have little influence on banks' overall asset performance.

Price competition in the residential mortgage market has remained vigorous over the past six months. Lenders are competing for new borrowers by offering attractive fixed rates and significantly discounting their advertised variable rates; discounts of 100 basis points or more are now widely available. Short-term interest rate 'specials' targeted at specific borrower segments, such as borrowers refinancing with low LVRs, have become more prevalent. Banks have also increased commission rates paid to brokers and provided other incentives to their broker networks. These developments have coincided with an increase in the share of loan approvals that are refinanced, as well as the share distributed through mortgage brokers; industry estimates indicate that 40–50 per cent of new housing loans are now sold through mortgage brokers. The more banks use brokers, the greater is the risk that a misaligned broker incentive structure would generate significant amounts of lending that is outside their risk tolerance or is otherwise inappropriate.

Reports from banks and other mortgage market participants suggest that key non-price loan criteria, such as serviceability and deposit criteria, have remained broadly steady overall; the exception is that some banks recently applied stricter criteria for some inner-city apartment markets and certain mining-exposed regional towns. Nonetheless, low housing loan rates and strong growth in investor housing credit have raised the macroeconomic risks arising from the housing market (Graph 2.5). For instance, speculative demand by investors may amplify the housing price cycle and increase the potential for prices to fall later on. In addition, the rising share of interest-only loans may increase risks because these loans are not required to amortise for a period of time, sometimes five years or longer, leaving households with more debt than otherwise.

In this environment, it is especially important for macroeconomic and financial stability that lending practices take into account system-wide risks in



the housing and residential mortgage markets. In view of this, in December 2014 APRA announced a number of additional supervisory measures to reinforce sound housing lending standards at authorised deposit-taking institutions (ADIs). These measures include expectations that: ADIs should not be increasing their share of higher-risk lending, for example lending at high LVRs or high debt-servicing levels, as well as lending to owner-occupiers for lengthy interest-only periods; annual growth in ADIs' investor housing lending should not be materially above 10 per cent; and ADIs' serviceability assessments should include an interest rate buffer of at least 2 per cent above the loan rate, with a minimum floor assessment rate of 7 per cent (see 'Box B: Responses to Risks in the Housing and Mortgage Markets'). If an ADI does not meet these expectations, it will face heightened supervisory actions, possibly including additional capital charges. The Australian Securities and Investments Commission (ASIC) also announced that it will be reviewing whether lenders' interest-only housing lending complies with responsible lending laws. On the basis of the current data, these responses will likely prompt some banks to moderately tighten their lending practices and standards, and a number of banks to slow their investor housing lending. Importantly, APRA's supervisory measures and ASIC's review should help ensure that banks' housing lending standards do not weaken from here.

International Exposures

Australian-owned banks' international exposures arise from the activities of their overseas branches or subsidiaries, and the direct cross-border activities of their Australian-based operations. While these exposures provide diversification and other benefits to banks, they also expose them to a range of risks.

International geopolitical events, such as those in Greece and Russia, have been prominent in recent months (see 'The Global Financial Environment' chapter). Australian-owned banks' direct exposures to Greece and emerging Europe (including Russia) are a negligible share of their global consolidated assets (Table 2.1); foreign banks operating in Australia have little exposure to these countries as well. As a consequence, these events do not present a direct risk to the Australian banking system. There could be indirect effects, however, if the economic and financial challenges in Greece and Russia were to result in generalised turbulence in global debt markets.

In contrast, Australian-owned banks' aggregate exposure to New Zealand is quite large, because all four major banks have substantial banking operations there. The performance of the major banks' New Zealand exposures continued to improve over the second half of 2014, with the aggregate non-performing asset ratio declining to 0.8 per cent at December 2014, compared with 1 per cent a year earlier. However, the Reserve Bank of New Zealand has expressed concern about further rapid housing price growth in Auckland, as well as indebtedness in the agricultural sector given the recent large fall in global dairy prices. Australian banks' New Zealand subsidiaries have sizeable exposures to the housing market and agricultural sector, so difficulties in these areas could weigh on their overall asset performance.

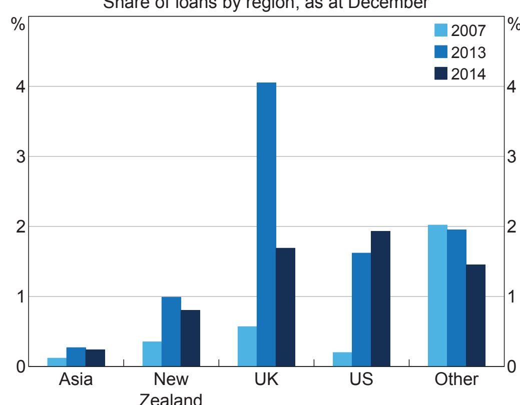
The performance of Australian-owned banks' assets in the United Kingdom has been relatively weak for some time, reflecting challenging economic and property market conditions. Nonetheless, the non-performing asset ratio fell sharply over the second half of 2014 (Graph 2.6). NAB has disclosed that it sold parts of its UK portfolio of impaired commercial property loans during this period. It continues to progress the run-off of its impaired commercial real estate portfolio, and is investigating options to sell its UK retail banking subsidiary.

Exposures to the Asian region, in particular to China, have grown strongly over recent years, and now account for 19 per cent of Australian-owned banks' total international exposures. Longer-term lending

Table 2.1: Australian-owned Banks' International Exposures
Ultimate risk basis, September 2014

	Total exposure	Share of international exposures	Share of global consolidated assets
	$ billion	Per cent	Per cent
New Zealand	319	38	8
United Kingdom	143	17	4
United States	116	14	3
Asia[(a)]	163	19	4
– Emerging Asia	*96*	*11*	*2*
Europe	52	6	1
– Emerging Europe	*1*	*0*	*0*
Other	48	6	1
– Emerging Other	*5*	*1*	*0*
Total	**840**	**100**	**22**

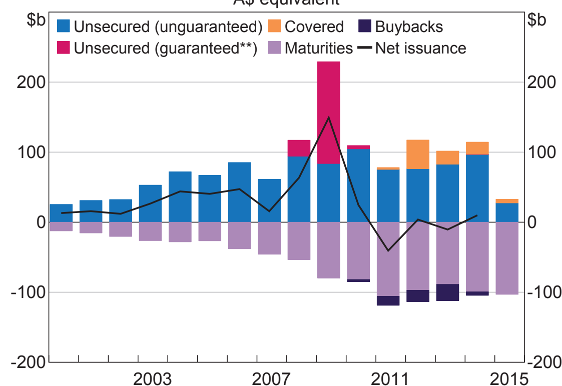
(a) Includes offshore centres Hong Kong and Singapore
Sources: APRA; RBA



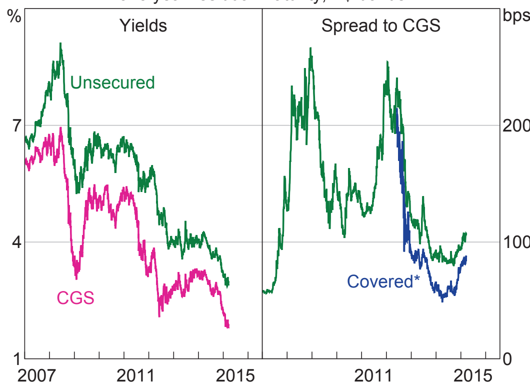
to households and businesses represents only a small proportion of these exposures; the majority of the banks' exposures are instead shorter term and trade-related, lending that typically poses lower funding and credit risks. Even so, further sharp falls in commodity prices and weaker economic conditions in Asia could still present a challenging environment for Australian banks' local operations in these countries.

Funding and Liquidity

Australian banks are also exposed to international financial and economic risks affecting the liability side of their balance sheets. Global wholesale funding conditions have improved significantly over the past few years as investor risk appetite and search for yield behaviour have strengthened. Even so, Australian banks' bond issuance was broadly in line with maturities in 2014, as it has been for a number of years (Graph 2.7).



Over recent months, increased volatility in international markets has seen a moderate widening in spreads on the major banks' bonds (Graph 2.8). At this stage, the increase in spreads has been more than offset by the general decline in government bond yields, leaving bank bond yields lower than a few months ago. Banks have retained good access to a range of foreign currency bond markets, even though the cost of swapping some foreign currencies back into Australian dollars has increased a little. However, wholesale funding costs for Australian banks could increase significantly if ongoing vulnerabilities in a range of economies and banking systems were to spur more substantial and sustained volatility in global debt and currency markets (see 'The Global Financial Environment' chapter).



* Covered bond pricing interpolated to a target tenor of 4 years using bonds with a residual maturity between 2 and 10 years

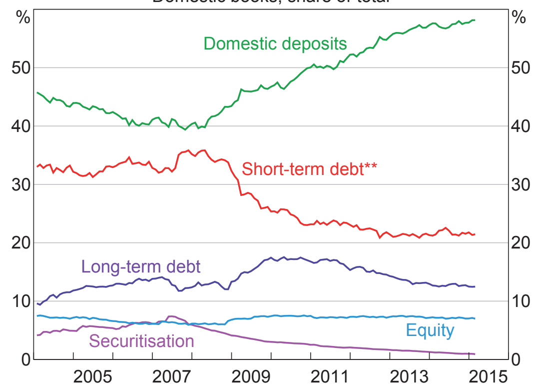
Sources: Bloomberg; UBS AG, Australia Branch

Conditions in domestic deposit markets have continued to ease over the past six months, contributing to a further decline in Australian banks' overall funding costs.[1] Some of the major banks' at-call and term deposit rates have declined by more than the cash rate over this period – for example, interest rates on some 'bonus' savings accounts have been reduced by about 60 basis points.

The LCR was implemented in Australia on 1 January 2015. The LCR is a global prudential requirement for banks to hold high-quality liquid assets that are greater than their expected net cash outflows within a 30-day stress period (see 'Box A: The Basel III Liquidity Reforms in Australia'). As at 1 January 2015, all locally incorporated banks that are subject to the LCR exceeded the 100 per cent minimum requirement. The aggregate LCR was around 115 per cent.

Australian banks had already made substantial adjustments to the composition and maturity structure of their funding following the global financial crisis, well ahead of the LCR requirement coming into force. Most notably, banks significantly increased their use of domestic deposits, in particular retail deposits, and reduced that of short-term wholesale funding, which is regarded as less stable than other forms of funding (Graph 2.9). Banks have also increased the average maturity of their short- and long-term debt, and there are indications that the diversity of their bond investor base has also increased.

The new liquidity rules are reinforcing the need for banks to manage their liquidity risks prudently and will help ensure that they continue to do so should the market environment become less conducive



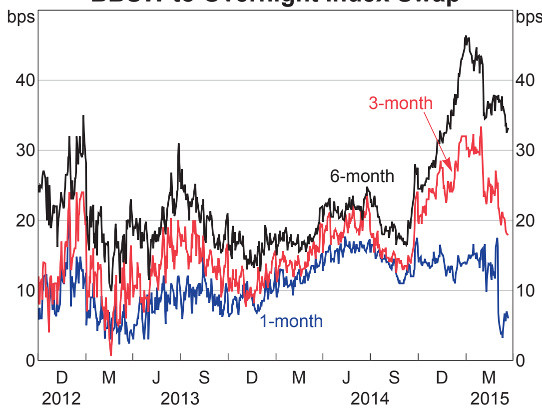
* Adjusted for movements in foreign exchange rates; tenor of debt is estimated on a residual maturity basis

** Includes deposits and intragroup funding from non-residents

Sources: APRA; RBA; Standard & Poor's

1 For further discussion of banks' funding costs, see Tellez E (2015), 'Developments in Banks' Funding Costs and Lending Rates', RBA *Bulletin*, March, pp 55–61.

to self-discipline. Banks have recently put in place a number of targeted strategies to manage their regulatory liquidity requirement, such as refining the terms and pricing of their deposits to better reflect liquidity risk and introducing new accounts that require depositors to give notice before withdrawing funds. Banks report that this adjustment process has gathered pace over the past few months: interest rates on short-term deposits from financial institutions have declined by more than those for deposits with more favourable treatment under the LCR rules, while many retail customers have been advised that they must give notice of at least 31 days before breaking a term deposit. Another recent development is that banks have increased their issuance of 6-month and 12-month bills and reduced issuance of bills with shorter terms. Among other factors, this contributed to widening in the bills-OIS spreads for longer-dated bills in late 2014 and early 2015 (Graph 2.10).

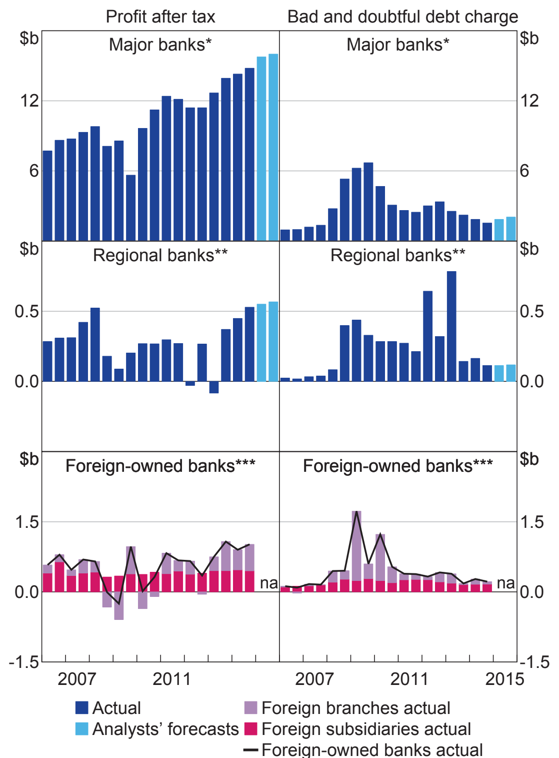


More generally, although much of the adjustment to the LCR has already occurred, some further changes are likely as banks seek to price liquidity risk efficiently throughout their business. To this end, banks report that they are investing in better data systems to track customers' decisions around funds withdrawal.

Profitability

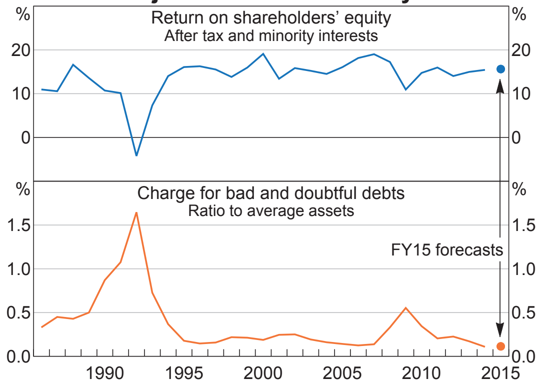
Strong profitability in recent years has contributed to banks' capital adequacy and supported public and investor confidence in the banking system. Banks' profit outcomes have been driven by improving loan performance and solid income growth.

Aggregate profit of the major banks was $14.8 billion in their latest half-yearly results, 6 per cent higher than the corresponding period a year ago (Graph 2.11). The major banks' bad and doubtful debt charge declined substantially and is now at a historically low level as a share of total assets



(Graph 2.12). In addition, net interest income grew at a solid pace, even though price competition in lending markets induced a slight narrowing in net interest margins. NAB reported a sharp increase in expenses in the latest half of the year, reflecting a substantial increase in provisions for UK conduct charges as well as software writedowns.

Graph 2.12
Major Banks' Profitability*



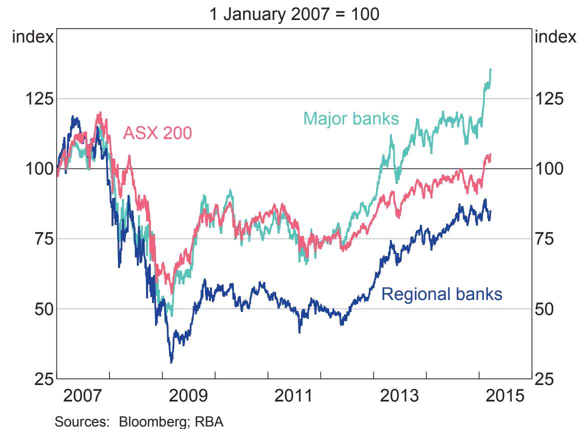
* Data from 2006 are on an IFRS basis, while prior years are on an AGAAP basis; dots represent financial year 2015 analysts' forecasts

Sources: Banks' Annual and Interim Reports; Credit Suisse; Deutsche Bank; Morgan Stanley; RBA; UBS Securities Australia

Aggregate profit for the three regional banks (Suncorp, Bank of Queensland, and Bendigo and Adelaide Bank) was $529 million in their latest half-year results. This outcome was 43 per cent higher than the corresponding period a year earlier and was driven by continued improvement in these banks' loan performance. In contrast to the major banks, regional banks' profit was also supported by a small rise in their net interest margins. Foreign-owned banks' profit was around $1 billion in the six months to September 2014, a little lower than the corresponding period a year earlier, due to a rise in the bad and doubtful debt charge and higher operating expenses.

Looking ahead, equity market analysts expect that the major banks' aggregate return on equity in their 2015 financial year will be a bit above 15 per cent, broadly similar to the returns recorded over the past few years. This is despite the expectation that profits will not be boosted by further reductions in bad and doubtful debt charges. Equity market investors also seem to be viewing the major banks' financial positions and earnings prospects favourably, with their share prices rising by about 20 per cent over the past six months (Graph 2.13). The major banks' relatively high dividend yields have been attractive to many investors given the low interest rate environment.

Graph 2.13
Banks' Share Prices



Sources: Bloomberg; RBA

Over the medium term, Australian banks' profitability will be affected by the efficiency gains they can achieve from investment in new technology. Significant investment is already underway in digital banking. Banks' revenues from this investment (and hence their ability to achieve lower unit costs) will depend on how strongly banks compete in this market, how well the digital transition is managed and how risks around these new banking channels can be controlled. Given the large investment costs involved relative to their asset base, a key challenge for smaller ADIs will be to ensure that they are able to provide the digital banking services demanded by their customer base in the future.

Capital

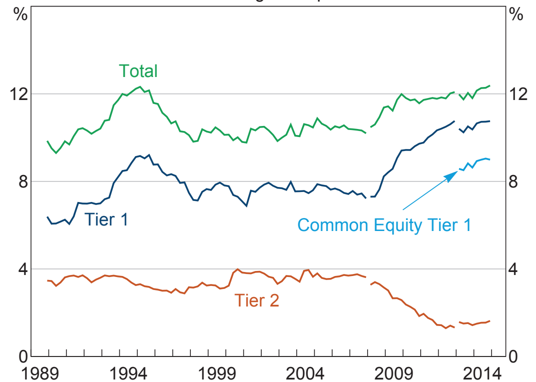
The Australian banking system has strengthened its capital position in recent years, thereby increasing its resilience to adverse shocks. Banks' aggregate Common Equity Tier 1 (CET1) capital ratio stood

at 9 per cent of risk-weighted assets (RWAs) at December 2014, up from around 8½ per cent in early 2013 (Graph 2.14). Robust profitability over this period helped banks accumulate common equity capital mainly through retained earnings. In the second half of 2014, most major banks raised additional capital through dividend reinvestment plans; over recent years the major banks had generally offset the boost to common equity arising from their dividend reinvestment plans by repurchasing their shares on the market.

Banks' issuance of non-common equity capital instruments (Additional Tier 1 and Tier 2 instruments, sometimes referred to as 'hybrids') was strong in 2014, at around $12 billion (Graph 2.15). This amount exceeded maturities in the period, and thus contributed to an increase in banks' total capital ratio, which stood at 12.4 per cent at December 2014. The significant increase in issuance in late 2014 appears to have weighed upon secondary market pricing of listed Additional Tier 1 capital instruments; accordingly, issuance spreads on comparable instruments priced in early 2015 have widened. Several major banks issued Tier 2 instruments denominated in renminbi in early 2015 to help diversify their offshore investor bases.

The major banks are adjusting to higher regulatory capital requirements arising from their designation as domestic systemically important banks (D-SIBs) by APRA. As discussed in previous *Reviews*, the major banks' minimum regulatory CET1 capital ratio (including the capital conservation buffer and D-SIB add-on) will be set at 8 per cent of RWAs from 1 January 2016, 1 percentage point above that for smaller banks. In practice, banks' capital targets will need to be somewhat higher than these minimums to meet any additional risk-based capital charges that APRA may impose and to provide a buffer in case of a temporary negative shock to capital. Accordingly, two major banks have recently announced an increase in their capital targets. Based on their current pace of capital accumulation, the

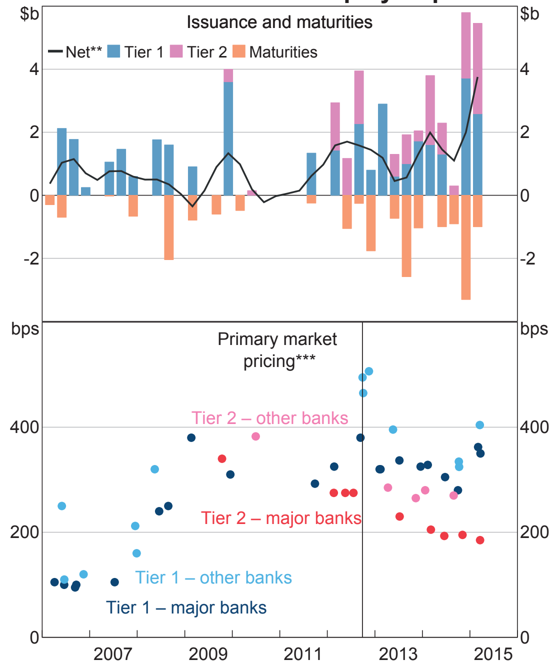
Graph 2.14
Banks' Capital Ratios*
Consolidated global operations



* Per cent of risk-weighted assets; break in March 2008 due to the introduction of Basel II for most ADIs; break in March 2013 due to introduction of Basel III for all ADIs

Source: APRA

Graph 2.15
Banks' Non-common-equity Capital*



* Includes securities that have been priced but not yet issued; March 2015 is quarter-to-date

** 7- period Henderson trend; net issuance may not directly translate to net movement in capital as maturing instruments may not be fully Basel III compliant

*** Spread to 90-day bank bill swap rate; excludes offshore issuance; vertical line indicates the timing of APRA's clarification of Basel III requirements for Additional Tier 1 and Tier 2 capital

Source: RBA

major banks appear well placed to transition to higher capital targets over the course of this year.

A number of potential capital policies on the horizon, if implemented as proposed, would require banks to increase their capital positions even further. These include the government's response to recommendations from the Final Report of the Financial System Inquiry (FSI), and the Basel Committee on Banking Supervision's (BCBS's) proposals to revise the capital floor for banks using the internal ratings-based (IRB) approach and alter the standardised framework for credit risk (see 'Developments in the Financial System Architecture' chapter).

A possible outcome from the current capital policy considerations is an increase in the residential mortgage risk weights that are derived from banks' IRB capital models, bringing them closer to the higher risk weights of banks using the more prescribed standardised method. For example, the FSI considered a range between 25 and 30 per cent to be appropriate in targeting an average IRB mortgage risk weight; this compares with the current average mortgage risk weight of about 18 per cent across the major banks' IRB residential mortgage exposures. Given this disparity, as well as the size of the major banks' residential mortgage portfolios, such a policy could significantly increase the major banks' capital requirements.[2]

APRA's regular stress tests of banks' balance sheets can provide a perspective on the adequacy of individual bank and system-wide capital positions. The most recent stress test, which was finalised in late 2014, assessed banks' resilience to large negative macroeconomic shocks, including a severe downturn in the housing market.[3] Under this scenario, banks would have incurred significant credit losses, higher funding costs and an increase in average risk-weights. Losses on residential mortgage portfolios (around two-thirds of lending) accounted for around one-third of banks' aggregate credit losses. No bank would have breached the minimum CET1 capital requirement of 4.5 per cent, but some would have been required to constrain dividend payments and trigger convertible capital instruments. How banks would recover from such a scenario remains an important question. APRA concluded that some banks' stated recovery actions may not have been feasible and were only loosely connected to their existing recovery plans; it is likely that they would have curtailed supply of new credit to the economy, and thereby exacerbated the downturn. In view of these results, APRA will be engaging with banks to review and improve these areas of their crisis preparedness.

Another area of focus for Australian banks is their conduct and culture. These issues are receiving greater attention among market commentators and the global regulatory community, following a number of conduct-related problems that have resulted in substantial legal expenses for certain global banks. Australian banks are required to maintain a sound operational risk framework that ensures the proper functioning and behaviour of systems, processes and people; complex and diversified banks should have a more robust framework in place. Banks are also expected to understand their 'risk culture', which can be thought of as the way the management of risk is viewed in practice across the institution. Conduct-related events in one area of a banking group may be a signal of broader governance, cultural and risk management deficiencies, and could give rise to entity-wide reputational risks.

Shadow Banking

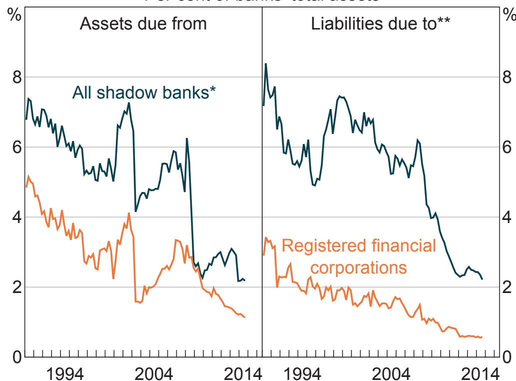
Addressing risks in shadow banking – defined as credit intermediation involving entities and activities outside the prudentially regulated banking system – has been a core area of international reform since

2 For further discussion of this policy, see Commonwealth of Australia (2014), *Financial System Inquiry Final Report* (D Murray, Chair), Canberra, pp 60–66.

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

the crisis. The shadow banking sector in Australia is estimated at around 4 per cent of financial system assets, having declined markedly since the financial crisis.[4] In addition to its small size, the shadow banking sector is judged to pose limited systemic risk in Australia because of its minimal credit and funding links to the regulated banking system (Graph 2.16). Nonetheless, the Reserve Bank and other agencies in the Council of Financial Regulators continue to monitor shadow banking activity for signs of potential systemic risk.

Graph 2.16
Banks' Connections to Shadow Banks
Per cent of banks' total assets



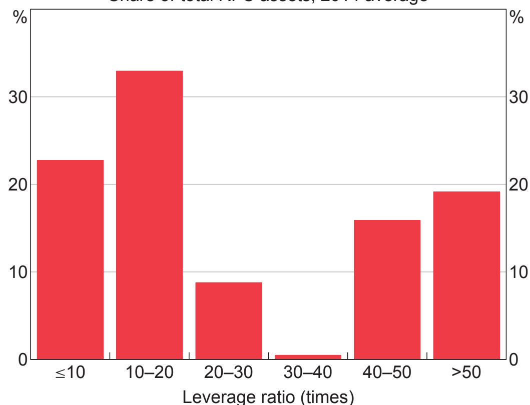
* Based on a less-preferred measure of shadow banking due to data constraints; includes prudentially consolidated entities that are not usually considered as shadow banks; excludes bond and mortgage investment funds

** Includes equity funding

Sources: ABS; APRA; RBA

One concern is that, in the absence of prudential regulation, shadow banks may seek to operate at relatively high levels of leverage to maximise returns, thereby increasing risk in the financial system. This is particularly relevant for registered financial corporations (RFCs), which are the shadow banking entities with business structures that are most similar to banks. While many RFCs have a leverage ratio (total assets to equity) of 20 or less, a portion of the RFC sector operates at much higher levels of leverage (Graph 2.17). Some of the larger RFCs

Graph 2.17
RFC Assets by Leverage Ratio*
Share of total RFC assets, 2014 average



* Ratio of assets to equity; excludes some small institutions; excludes institutions that reported negative average equity in 2014 or did not report data in all 12 months

Sources: APRA; RBA

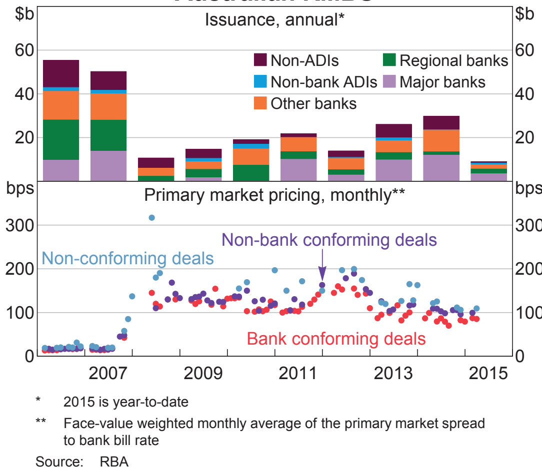
have sizeable repurchase agreements ('repos') on both sides of their balance sheet. Most repos in Australia are transacted using high-quality Australian government securities as collateral, which limits the credit and funding risks that can arise from this activity.

Another area of shadow banking activity in Australia that warrants attention is securitisation, given its connections with the housing market and banking system. Consistent with the buoyant housing market, issuance of residential mortgage-backed securities (RMBS) has picked up over the past year and spreads have narrowed, including for non-bank issuers such as mortgage originators (Graph 2.18). Mortgage originators tend to have riskier loan pools than banks; for example, their RMBS are backed by larger shares of low doc and high LVR loans. These originators currently represent only a small share of the housing loan market, but a significant pick-up in their activity could signal a broader strengthening in debt investors' risk appetite for housing loans.

Australian regulators remain alert to the potential risks from securitisation activity. APRA's proposed reforms to the prudential framework for securitisation should help reduce complexity in issuance by regulated lenders, as well as better align

4 This estimate is based on the Financial Stability Board's 'narrow measure' of shadow banking. For further details on the components and trends in Australia's shadow banking sector, see Manalo J, K McLoughlin and C Schwartz (2015), 'Shadow Banking – International and Domestic Developments', RBA *Bulletin*, March, pp 75–83.

Graph 2.18
Australian RMBS



* 2015 is year-to-date
** Face-value weighted monthly average of the primary market spread to bank bill rate
Source: RBA

their incentives with those of RMBS investors. APRA has also proposed to limit the concessional capital treatment on warehouse facilities to only cover those of up to one year in duration, which should encourage banks to hold sufficient capital to cover rollover risks associated with funding warehouse facilities (including those to mortgage originators). The Reserve Bank will introduce mandatory reporting requirements for repo-eligible asset-backed securities, including RMBS, from 30 June 2015. The required information, which must also be made available to permitted users, will promote greater transparency in the RMBS market.

Superannuation

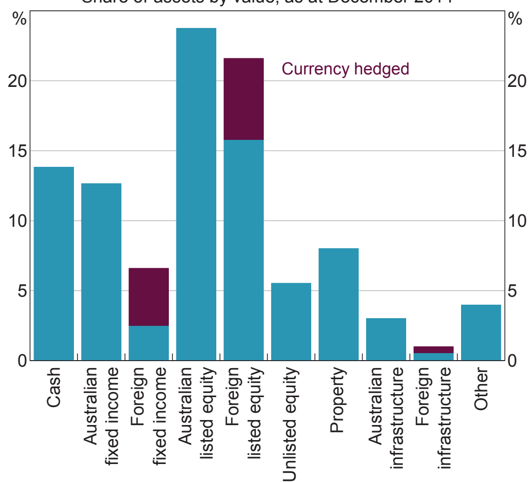
Superannuation funds represent about three-quarters of assets in the managed fund sector in Australia, a higher share than in the major economies' financial systems. Superannuation funds are subject to prudential regulation by APRA, unlike most other managed funds.

Superannuation funds' asset growth picked up over the second half of 2014, in part due to valuation effects on overseas assets as the Australian dollar depreciated over the period. Nonetheless, growth remained slower than in 2013, with assets rising by around 10½ per cent in six-month-ended annualised terms, to $1.93 trillion. At the end of 2014, the requirement that all new default contributions be paid into MySuper products had been in place for one year, with around one-fifth of superannuation assets held in these products.

While the broad asset allocation of APRA-regulated funds has been quite stable over recent years, the allocation towards foreign assets has increased gradually, to be 30 per cent of total assets at the end of 2014. Around two-thirds of these foreign asset holdings are not currency hedged, leaving fund members exposed to exchange rate movements in addition to movements in the foreign assets' prices (Graph 2.19). While the recent depreciation of the Australian dollar means that unhedged foreign currency exposures have been quite profitable of late, accounting for around 7 per cent of funds' investment income in 2014, increased volatility in foreign exchange and other global financial markets increases the chance of market losses on these positions.

Over the longer term, superannuation funds' asset allocations are likely to be affected by the ageing of the population. Until recently, the majority of superannuation funds' members have been in

Graph 2.19
Superannuation Funds' Asset Allocation*



* APRA-regulated superannuation funds
Source: APRA

the accumulation phase; funds' asset allocations have consequently been tilted towards growth assets. A significant number of members are now moving into the drawdown phase, with members over 60 years of age owning more than one-third of superannuation assets. As this transition progresses, funds are likely to increasingly invest in more conservative and liquid assets, such as cash and deposits, potentially increasing the interconnectedness between banks and the superannuation industry. This tendency is evident in the high allocation to deposits by self-managed superannuation funds (more than one-quarter of their assets); these funds have a significantly higher share of members in, or near, retirement than do other fund types. Superannuation funds will also need to carefully manage the liquidity implications arising from the ageing of the population and the maturing of the superannuation system, as benefit payments increase relative to contributions.

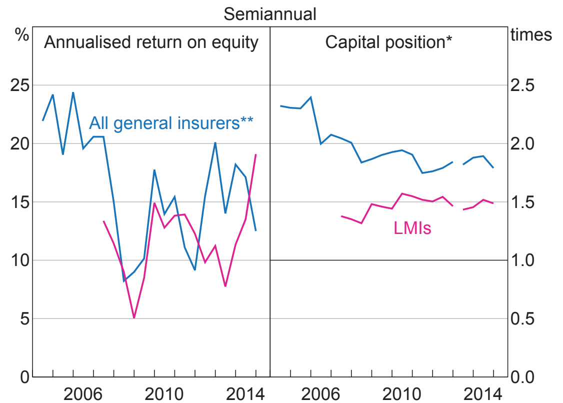
Insurance

Insurers assume the risk of financial loss from physical events, in exchange for an up-front premium. By shielding households and businesses from potentially severe losses, insurers can contribute to financial stability, but they need to ensure their own finances are sufficiently robust in order to perform this role.

General insurance

The general insurance industry in Australia remains well capitalised, with its capital equivalent to 1.8 times APRA's prescribed capital amount (Graph 2.20). General insurers' profitability has been strong in recent years, mainly due to favourable catastrophe claims outcomes. Reinsurance costs have also declined, as investor search for yield has attracted capital towards the global reinsurance market. Insurers' profitability declined sharply in the second half of 2014, however, driven by a significant increase in claims arising from the South East Queensland hailstorms in November. The Insurance

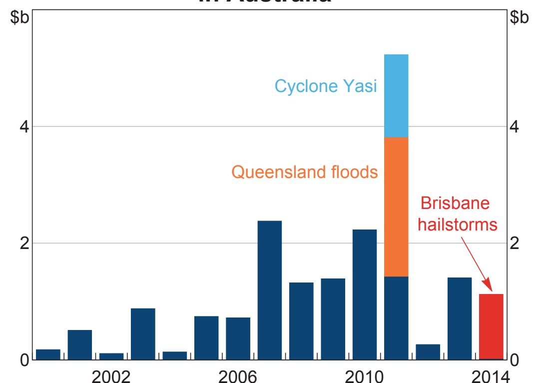
Graph 2.20
Financial Performance of General Insurers
Semiannual



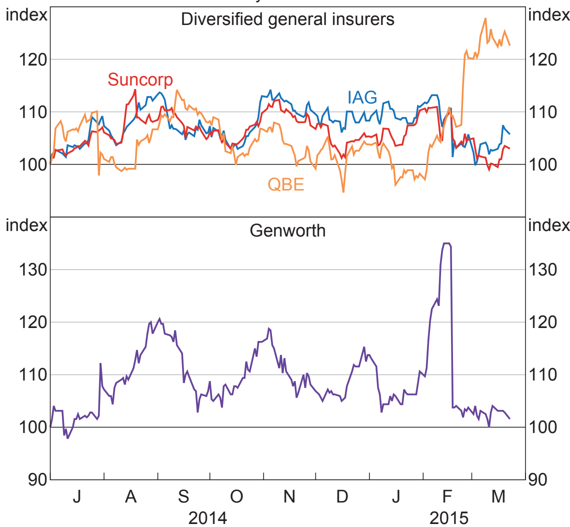
* Capital held relative to respective regulatory minimum; break due to capital reforms implemented at the start of 2013
** Includes lenders mortgage insurers (LMIs)
Source: APRA

Council of Australia currently estimates the value of claims from this event to be $1.1 billion; this would be the largest single loss event since Cyclone Yasi and the Queensland floods in 2011 (Graph 2.21). Insurers are experiencing additional claims from Cyclone Marcia in late February 2015. The share prices of major insurers IAG and Suncorp have declined by around 5 per cent since they reported their results earlier in February (Graph 2.22). In contrast, QBE's share price rose after it reported an

Graph 2.21
Claims from Natural Catastrophes in Australia*



* Losses from catastrophe events before 2011 have been indexed to 2011 prices; events from 2011 to 2014 are the actual cost; the cost of events in late 2013 and 2014 have not been finalised
Source: Insurance Council of Australia



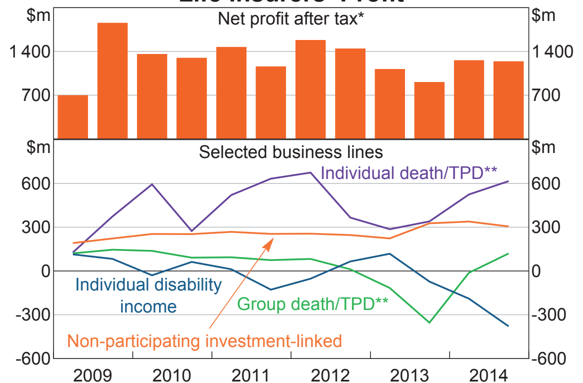
improved underwriting result, largely because of a turnaround in its North American operations.

Insurers report that strong price competition has weighed on premium rates for both personal and commercial lines of insurance over recent quarters. A particular concern is that competitive pressures are inhibiting insurers from raising prices in 'long tail' commercial lines (e.g. liability insurance) by enough to cover future claims payments, as low interest rates weigh on insurers' investment revenue. APRA is closely examining commercial insurers' pricing policies and continues to monitor the adequacy of insurers' reserves against future claims.

Lenders mortgage insurers (LMIs) are specialist general insurers that offer protection to banks and other lenders against losses on defaulted mortgages. LMIs' profitability continued to improve in the second half of 2014, with the industry posting a return on equity of 19 per cent, considerably higher than the rates recorded a couple of years earlier. The value of claims on LMIs declined further, partly in response to the buoyant housing market. Despite this, some market commentators have expressed concern that the major banks will reduce their business with Australian LMIs over the longer term. This followed an announcement by Westpac that it would stop using Genworth (one of two major Australian LMIs) as its external provider, which sparked a sharp drop in Genworth's share price, after a large run-up the month before. In addition, over recent years some banks have increased the proportion of high-LVR loans that they 'self-insure', by charging the borrower a low-equity fee and retaining the risk themselves.

Life insurance

Life insurers' profit was little changed in the second half of 2014 but remained higher than in 2013 (Graph 2.23). Profits on superannuation 'group' life insurance products picked up, after life insurers sharply increased premium rates in response to significant losses and a previous underpricing of risk. However, APRA remains concerned that insurers have not fully addressed some underlying structural challenges, including poor product design, weak underwriting standards and inadequate claims management capabilities. Insurers are also continuing to respond to changes in social attitudes to insurance – such as claimants' increased use of lawyers and greater recognition of mental health illnesses – that have increased the propensity of



policyholders to make claims.[5] Meanwhile, the industry has also been dealing with a trend increase in lapse rates for 'individual' life insurance policies and with recent losses on individual disability income insurance. Despite these difficulties, the life insurance industry's capital position is sound, at 1.8 times APRA's prescribed capital amount.

Financial Market Infrastructure

Financial market infrastructures (FMIs), such as payment systems, central counterparties (CCPs) and securities settlement systems, support most financial market transactions in the economy. FMIs can contribute to the efficiency and stability of the financial system, although the concentration of services and risk in FMIs necessitates strong regulation and supervision. In the case of CCPs, work is underway globally to further enhance their resilience. This is increasingly important as global regulatory reforms encourage the central clearing of over-the-counter (OTC) derivatives.

Reserve Bank Information and Transfer System

The Reserve Bank Information and Transfer System (RITS) is the system through which banks and other approved institutions settle their Australian dollar payment obligations on a real-time gross settlement basis. Around five million payments worth $20 trillion were settled in RITS over the past six months. RITS is designed to be a highly resilient system, with critical functions duplicated in two geographically separate sites. RITS operations were unaffected by the security incident in Martin Place on 15 December 2014.

While most transactions are submitted to RITS for settlement on a real-time gross basis, RITS settles some interbank obligations on a multilaterally netted basis, including obligations arising from low-value payments, such as cheques, direct entry and consumer electronic (card-based) transactions. From 10 November 2014, these also included interbank cash settlements related to property transactions, as part of a new national electronic conveyancing system. Each property settlement in RITS is processed as a batch, so that all payments related to that property transaction are settled simultaneously. Funds for paying participants in the batch are initially reserved in RITS while title changes are lodged with the relevant land titles office, with settlement only following successful acceptance of the title lodgement. In this way, the system minimises the risk that a party to the settlement does not fulfil its settlement obligations. The average daily value of property transactions in RITS increased to about $21 million in early March.

Reflecting its importance, the Reserve Bank assesses RITS annually against the internationally agreed *Principles for Financial Market Infrastructures*. These principles, set by the Committee on Payments and Market Infrastructures and the Technical Committee of the International Organization of Securities Commissions, aim to ensure the resilience of financial market infrastructures. The 2014 assessment concluded that RITS observed all the relevant principles, and supported ongoing work by the Reserve Bank to ensure that RITS continues to meet international best practice, including a comprehensive review of its regulations and conditions of operation.[6] Reviews are also being undertaken in the areas of cyber security, recovery from an operational incident and participants' compliance with new business continuity standards.

Developments in CCP risk management

CCPs offer market participants centralised management of counterparty credit risk. In Australia, there are four licensed CCPs:

- ASX Clear and ASX Clear (Futures) – both owned by the ASX Group (ASX) – which clear trades originating from ASX's equities and derivatives markets, and the OTC interest rate derivatives market.

5 For further discussion of these issues, see Laughlin I (2015), 'Life Risk Insurance – A Challenge to the Life Industry: Managing for Long Term Portfolio Health', Speech to the Actuaries Institute, Sydney, 3 March.

6 For further details, see RBA (2014), '2014 Assessment of the Reserve Bank Information and Transfer System', December.

- Chicago Mercantile Exchange Inc. (CME), which was granted an Australian clearing and settlement facility licence in September 2014. This licence permits CME to clear only OTC interest rate derivatives and certain non-Australian dollar-denominated interest rate derivatives traded on the CME market or the Chicago Board of Trade market.
- LCH.Clearnet Limited (LCH.C Ltd), which is licensed in Australia to clear OTC interest rate derivatives through its SwapClear service and certain financial products that will be traded on a new derivatives market, the Financial and Energy Exchange.

Given their importance to the financial system, CCPs licensed to operate in Australia must meet Financial Stability Standards (FSS) determined by the Reserve Bank, which are based on the internationally agreed *Principles for Financial Market Infrastructures*. The FSS for CCPs impose requirements on several aspects of a CCP's operations such as its legal basis, governance, risk management and disclosures. Under the FSS, a CCP is required to prepare a recovery plan that includes mechanisms for the CCP to address any uncovered credit losses and liquidity shortfalls, and replenish financial resources. In October 2014, international guidance on such recovery plans was finalised (see 'Developments in the Financial System Architecture' chapter).

In parallel, ASX released a consultation paper setting out recovery planning proposals for ASX Clear and ASX Clear (Futures). The ASX consultation proposes the following approaches for the two CCPs to address a severe shock.

- Both CCPs would initially seek to allocate losses via calls for cash contributions from surviving participants, subject to a cap. ASX Clear (Futures) would also be able to allocate additional losses by applying a 'haircut' to its outgoing variation margin payments to participants.
- Both CCPs would have the power to force the settlement or termination of some or all open contracts in order to rebalance their books.

ASX is expected to further develop its recovery proposals over the coming months, including providing more detail on how the CCPs' financial resources would be replenished following a severe financial shock. ASX is also expected to articulate how the CCPs would address losses that were not caused by a participant default, such as investment or general business losses. ASX's recovery proposals are complemented by government proposals to establish a special resolution regime for FMIs, which would provide the Reserve Bank with powers to intervene if an ASX-initiated recovery could not be successfully implemented.

CME is also in the process of developing recovery and wind-down plans. The recovery plan will address how CME would allocate any losses and liquidity shortfalls. CME already has within its rules the power to allocate losses through additional cash contributions from surviving participants. The recovery plan will also consider the replenishment of prefunded financial resources.

LCH.C Ltd introduced recovery and wind-down plans in the first half of 2014. In the SwapClear service, if losses were greater than the size of its prefunded financial resources, LCH.C Ltd could:

- call non-defaulting clearing participants for cash contributions, subject to a cap
- allocate remaining losses by haircutting variation margin payments due to clearing participants with net gains, again subject to a cap
- request non-defaulting participants make voluntary payments to meet the unallocated losses.

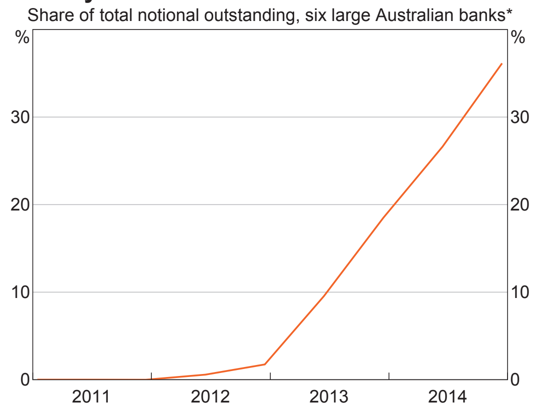
If insufficient voluntary payments were made, under the wind-down plan all SwapClear contracts would be terminated and the service would be shut down. Now that the international recovery guidance has been finalised, it is expected that LCH.C Ltd will review its recovery plan to ensure that it is consistent with this guidance.

Consistent with the G20 commitment to implement the FSB's *Key Attributes of Effective Resolution Regimes for Financial Institutions*, it is expected that CME and LCH.C Ltd would be subject to special resolution regimes in their respective home jurisdictions in the event that their recovery plan could not be successfully implemented. However, the crisis management arrangements for these CCPs will have important implications for all jurisdictions in which they operate.

Use of CCPs for clearing OTC derivatives

Australian banks continue to increase their use of CCPs to clear OTC interest rate derivatives. More than 95 per cent of centrally cleared Australian-dollar denominated OTC interest rate derivatives are cleared through LCH.C Ltd, with CME and ASX Clear (Futures) each accounting for only a small share of this business. The major Australian banks are now all direct participants in both LCH.C Ltd and ASX Clear (Futures). Some of these banks, as well as other Australian financial institutions, also have clearing arrangements for OTC derivatives with LCH.C Ltd and CME as customers of direct participants. Now that CME is licensed in Australia, Australian entities can join CME as direct participants. However, in the short term, CME expects Australian entities to continue to clear as customers of international banks.

The share of Australian banks' interest rate derivatives positions cleared by LCH.C Ltd rose sharply over the second half of 2014, to 36 per cent (Graph 2.24). Current and expected overseas requirements to centrally clear, as well as commercial incentives, continue to be the main drivers of this growth. Participants have also shifted to central clearing in anticipation of future domestic clearing mandates (see 'Developments in the Financial System Architecture' chapter).



* Principal notional outstanding with LCH.C Ltd as a percentage of all AUD and non-AUD OTC interest rate derivative positions reported by Australian banks in the BIS semiannual derivatives survey; observation for December 2014 is provisional and is subject to revision

Sources: BIS; LCH.C Ltd; RBA

Globally, market liquidity has increased in derivatives markets that are centrally cleared, although there is some evidence that it is has fallen in many bilateral derivatives markets that face higher capital charges and margin requirements due to recent regulatory reforms. For instance, in Australia, turnover in interest rate swaps (which are moving to centrally cleared solutions) is above pre-crisis levels, whereas turnover in cross-currency swaps (which remain bilateral) is slightly below.[7] The cross-currency swap market is particularly important for the Australian financial system because it enables financial and non-financial institutions to hedge the currency risk on their long-term borrowing. The Reserve Bank continues to closely monitor developments in this market.

7 For further discussion of these issues, see Cheshire J (2015), 'Market Making in Bond Markets', RBA *Bulletin*, March, pp 63–73.

Box A

The Basel III Liquidity Reforms in Australia

Banks assume liquidity risk – the risk of being unable to satisfy cash flow needs – largely because they engage in maturity transformation. That is, they offer short-term liabilities (such as deposits) and transform them into longer-term assets (such as loans). The global financial crisis revealed that a number of banks globally had not managed their liquidity risk prudently; as funding market liquidity evaporated over 2007–08, some came under severe strain. As part of its post-crisis response, the Basel Committee on Banking Supervision (BCBS) developed the Basel III international bank liquidity framework, which aims to improve banks' resilience to future liquidity shocks.[1] The framework includes two global minimum quantitative requirements: the Liquidity Coverage Ratio (LCR), which promotes stronger buffers against acute short-term liquidity stress; and the Net Stable Funding Ratio (NSFR), which improves resilience by ensuring that banks maintain a funding structure appropriate to the composition of their assets. Public disclosure and enhanced supervision of liquidity risk will complement these regulatory requirements. This box focuses on the LCR requirement and other aspects of the prudential liquidity standard in Australia.[2]

The Basel III LCR requires banks to hold enough high-quality liquid assets (HQLA) to at least cover their expected net cash outflows over a 30-day period of stress. HQLA are assets that are unencumbered and have proven to be easily and immediately convertible into cash in private markets with little or no loss of value under stressed market conditions. The level of net cash outflows is determined by comparing the liabilities likely to be withdrawn during a 30-day liquidity stress scenario with banks' expected cash inflows over the same period, based on the composition and maturity structure of their balance sheet. To calculate the expected cash outflows, the Basel III LCR framework specifies the rate at which certain liabilities can be expected to 'run off' based on the characteristics of the product and the customer relationship. Banks are expected to hold a buffer of HQLA above their estimated net cash outflows, and thus maintain an LCR above the minimum requirement of 100 per cent. Banks may, however, liquidate some HQLA and fall below the minimum LCR in periods of market stress after notifying the supervisor. That said, the LCR framework and other Basel III reforms are designed to make such periods of stress less likely.

Implementation of Basel III Liquidity Reforms in Australia

The Australian Prudential Regulation Authority's (APRA's) LCR framework was implemented in Australia on 1 January 2015, after APRA determined that Australia did not need the extended BCBS phase-in period that lasts until 2019. Those banks that are larger and more complex with respect to their liquidity risk are subject to the LCR in Australia.[3] Of these, 14 locally incorporated banks applied for a Committed Liquidity Facility (CLF) (see discussion below). Implementing the LCR framework for foreign bank branches is challenging because they

1 See BCBS (2011), 'Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems', revised version, June, pp 8–10.

2 The NSFR is not scheduled to become a global minimum regulatory requirement until 2018. APRA intends to implement the NFSR in Australia in line with the BCBS time line. For further explanation of the NSFR, see BCBS (2014), 'Basel III: The Net Stable Funding Ratio', October, p 2.

3 Banks and authorised deposit-taking institutions that are exempt from the LCR requirement must ensure that their liquid asset holdings are at least 9 per cent of their liabilities.

are not legally separate from their parents, which are also bound by LCR requirements in their home jurisdictions. As an interim measure, these banks are therefore required to meet a lower LCR requirement of 40 per cent in HQLA in Australia. APRA is more broadly considering foreign bank branches' liquid asset requirements this year.

APRA has advised that the only Australian dollar-denominated instruments that qualify as HQLA are notes and coin, cash balances at the Reserve Bank, and debt instruments issued by the Commonwealth and state governments (i.e. Commonwealth Government securities (CGS) and semis). Because the stock of public debt in Australia is relatively low, the banking system's overall liquidity needs to meet the LCR exceed what the banks could reasonably hold in these assets. In such circumstances, the Basel III framework permits central banks to offer a committed liquidity facility that can be counted towards the regulatory requirement. Through this facility, the Reserve Bank commits to provide pre-specified amounts of Australian dollar liquidity to banks subject to the full LCR, against a range of assets under repurchase agreement.[4] The Reserve Bank's CLF is provided for a fee of 15 basis points, regardless of whether it is drawn upon, and CLF-eligible assets are subject to appropriate haircuts. CLF-eligible assets include all debt securities accepted for the Reserve Bank's market operations, including high-quality, Australian dollar-denominated supranational and foreign government debt, and certain related-party debt securities such as self-securitised residential mortgage-backed securities. APRA expects banks to avoid concentrations in CLF-eligible debt securities by type, issuer, credit quality and tenor.

The size of the CLF commitment granted to each covered bank is determined by APRA annually, after reviewing the bank's funding plan and ensuring that the bank has taken 'all reasonable steps' to minimise its CLF through its own balance sheet management. APRA recently announced that the total CLF requirement of the Australian banking system for 2015 was around $275 billion. This figure was based on the Reserve Bank's assessment that the amount of CGS and semis that could reasonably be held by banks without unduly affecting market functioning was $175 billion. The CLF amount is the difference between this estimate and the overall Australian dollar liquidity needs of the system, plus a small buffer.

Drawing on the Basel III framework, APRA has specified the run-off rates for banks' liabilities within a 30-day liquidity stress scenario. For example, retail deposits attract a run-off rate of 5 per cent if they are covered by the Financial Claims Scheme (i.e. the Australian Government deposit guarantee) and either are in transactional accounts or involve a relationship between bank and customer that makes withdrawal unlikely. That is, for every $100 of these 'stable' deposits, banks must hold at least $5 of HQLA. At the other end of the spectrum, some liabilities attract a run-off rate of 100 per cent, such as certain short-dated unsecured wholesale funding.

Banks in Australia report their LCR data to APRA on a quarterly basis, and in the future they will also be required to publicly disclose their LCRs and the main components along with the publication of their financial statements. These disclosures should include a qualitative discussion of the LCR, such as the main drivers of the LCR, the composition of HQLA and the concentration of funding sources. A number of banks have already publicly reported an overview of their LCR information.

4 For further details, see RBA (2011), 'The RBA Committed Liquidity Facility', Media Release No 2011-25, 16 November. Foreign bank branches are not eligible to apply for the Reserve Bank's Committed Liquidity Facility.

Other Prudential Liquidity Requirements

Alongside the LCR requirement, APRA's liquidity standard requires banks to maintain a broader framework for monitoring, measuring and managing liquidity risk. The framework should include:

- a statement of liquidity risk tolerance
- various liquidity management policies, such as those on the composition and maturity of assets and liabilities, the diversity and stability of funding sources, and the approach to managing liquidity across different currencies and business units
- regular stress tests to identify sources of potential liquidity strain
- a contingency plan for addressing liquidity shortfalls.

In evaluating a bank's liquidity risk management, APRA will also consider whether the remuneration arrangements for key liquidity personnel are consistent with liquidity risk objectives, and how well banks' internal pricing of products reflect the cost of liquidity. ✠

3. Household and Business Finances

Risks posed to the household sector continue to stem largely from the housing and mortgage markets, especially from investor activity in some cities. This activity has led to continued strong housing price growth in Sydney and higher levels of construction, with a risk of oversupply in some regions, particularly in the inner-city areas of Melbourne and Brisbane. More broadly, the heightened level of investor activity and borrowing could amplify the housing price cycle and increase the risk of significant price falls later. The growing prevalence of interest-only lending might also increase households' vulnerability, since borrowers can pay down their loans more slowly than required under conventional principal and interest loans.

At the margin, the recent decline in mortgage interest rates will be likely to add to overall housing demand. However, the actions announced by the Australian Prudential Regulation Authority (APRA) and the Australian Securities and Investments Commission (ASIC) in December – which are designed to reinforce sound housing lending practices – aim to temper risks arising from the housing market (for further discussion, see 'Box B: Responses to Risks in the Housing and Mortgage Markets'). These risks should also be placed in the context of the current low levels of household financial stress.

Risks also appear to have increased somewhat in the commercial property sector, including property development. Search for yield behaviour has underpinned strong investor demand for commercial property assets, particularly from offshore investors, which has continued to drive prices higher and yields lower both in Australia and abroad. However, leasing conditions have remained soft in many local markets, and oversupply is emerging in the Perth and Brisbane office markets. These dynamics increase the vulnerability of the commercial property market to a price correction. Nonetheless, the consequent risk to the domestic financial system has been lessened by the significant reduction in banks' exposure to the sector since the financial crisis.

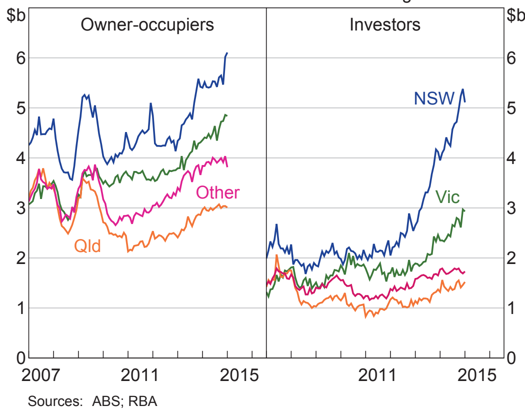
Other parts of the business sector appear to present little near-term risk to financial stability. Gearing levels are low by historical standards, and indicators of financial stress have continued to decline. While recent sharp falls in commodity prices will make it difficult for some resource-related companies to service their debt, the risks posed to the domestic financial system from these developments seem limited: the financial positions of the largest resource companies are robust, and the exposures of banks to the sector are not large.

Household Sector

Housing market developments

Investor demand continues to drive housing and mortgage markets, with low interest rates and strong competition among lenders translating into robust growth in investor lending, especially in Sydney. Investor housing loan approvals in New South Wales have increased by almost 150 per cent over the past three years, and now account for almost half the value of all housing loan approvals in that state (Graph 3.1). They have also increased quite strongly in Victoria over the same period. At the national level,

Graph 3.1
Housing Loan Approvals by State
Includes construction and refinancing



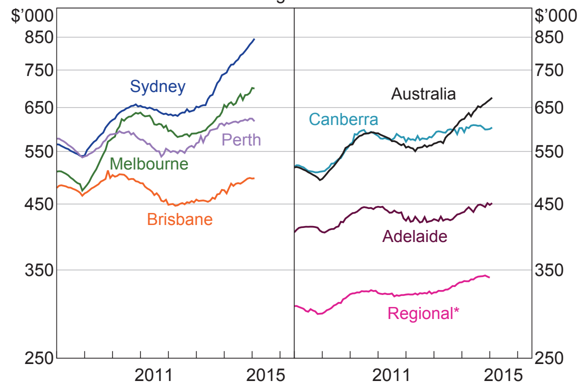
Sources: ABS; RBA

growth in investor housing credit has continued to increase over recent months, to now be around 10½ per cent in six-month-ended annualised terms. It is too early to expect a material slowing in investor loan approvals or credit growth in response to APRA's measures, partly because of the pipeline of pre-approvals already agreed before the measures were announced.

Repeat-buyer owner-occupier demand has picked up a bit over recent months, with loan approvals to repeat buyers increasing in New South Wales and Victoria. In contrast, first home buyer owner-occupiers remain a low and declining share of the mortgage market, partly due to the winding back of government incentives for first home buyers in the established dwellings market over the past two years or so.

As discussed in the previous *Review*, the main risk from the ongoing strong level of investor activity is most likely to be macroeconomic in nature. Heightened investor demand can amplify the housing price cycle, especially when it involves the use of leverage, and so increases the risk that prices later fall significantly; investors are more likely to engage in speculative behaviour than are owner-occupiers, and they face lower barriers to exiting when the market turns down. Robust investor demand has helped underpin continued rapid housing price growth in Sydney, though price growth has been more moderate elsewhere (Graph 3.2). Periods of rising housing prices can also increase expectations for further price rises, inducing even more demand, although recent survey evidence indicates that expectations for price growth remain below the high levels reached in late 2013. Importantly, a future fall in housing prices would reduce wealth and dampen spending for the broader household sector, particularly for those households with significant housing debt, not just for the investors who contributed to the upswing.

Graph 3.2
Housing Prices
Log scale

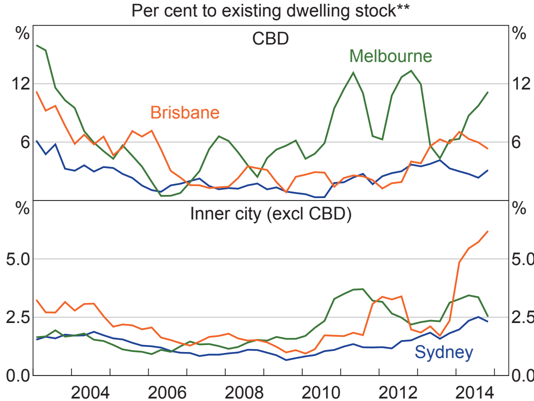


* Excludes apartments; measured as areas outside of capital cities in mainland states

Sources: CoreLogic RP Data; RBA

Another risk arising from robust investor activity is that speculative demand could lead to an excessive increase in construction activity and future supply overhang. While dwelling construction has risen strongly over the past year or so, driven by low interest rates and rising housing prices, at this stage there is little to suggest that oversupply is in prospect at the national level. Nonetheless, at the local level some areas look more vulnerable (Graph 3.3):

- The risk of oversupply appears most evident in inner-city Melbourne, where the level of high-rise apartment construction has been elevated for a number of years. The rental market already looks fairly soft, with relatively high vacancy rates and little growth in rents. And given the



* Four-quarter rolling sum

** Dwelling stocks estimated by RBA

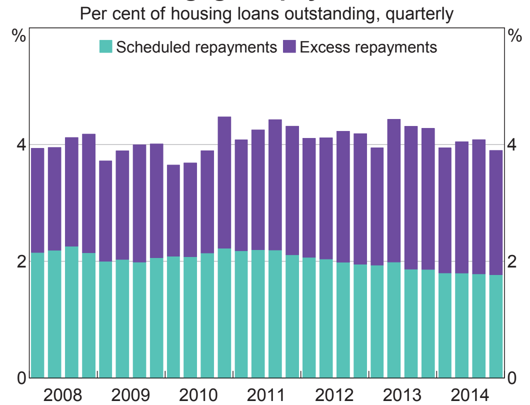
Sources: ABS; RBA

strength in approvals of late, and the time lags between approval and completion, significant new supply will continue to come on line over the next few years. Liaison suggests that a large amount of activity has been driven by foreign developers and foreign investors, with some of these developments consisting of smaller-sized apartments targeted at international students. These apartments may be difficult to sell in the secondary market if investors' expectations of future student demand are not met, which could place downward pressure on prices, including in the broader Melbourne apartment market.

- More recently, there has been a strong increase in higher-density dwelling approvals in inner-city Brisbane. Some reports suggest that the vacancy rate has started to drift higher and that growth in rents has slowed of late. In liaison, banks and other firms have conveyed some concern about possible future oversupply in this market.

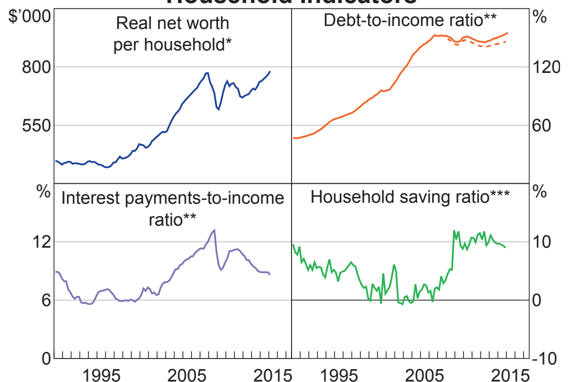
Borrowing and balance sheet position

Outside of investor housing, household sector finances are currently less cause for concern. Household credit growth has remained moderate, because new lending for purposes other than investor housing has been more subdued and because existing borrowers are taking advantage of low interest rates to pay down debt more quickly than contractually required (Graph 3.4). The aggregate mortgage buffer – as measured by balances in offset and redraw facilities – has risen to almost 16 per cent of outstanding loan balances (more than two years' worth of scheduled repayments at current interest rates). More broadly, households continue to save a greater share of their income than in the decade or so prior to the financial crisis (Graph 3.5). Households' ability to



* Data are backcast before December 2010 to adjust for a reporting change by one bank

Sources: APRA; RBA



* In 2012/13 dollars; RBA estimates for December quarter 2014 and March quarter 2015

** RBA estimates for March quarter 2015; dashed line is net of balances in offset accounts

*** Household sector includes unincorporated businesses; net of depreciation

Sources: ABS; APRA; CoreLogic RP Data; RBA

meet interest payments on their loans is being aided by the low level of interest rates. However, while the debt-to-income ratio has been relatively stable over the past decade or so, especially once balances in offset accounts are netted off, it is high relative to its longer-run history.

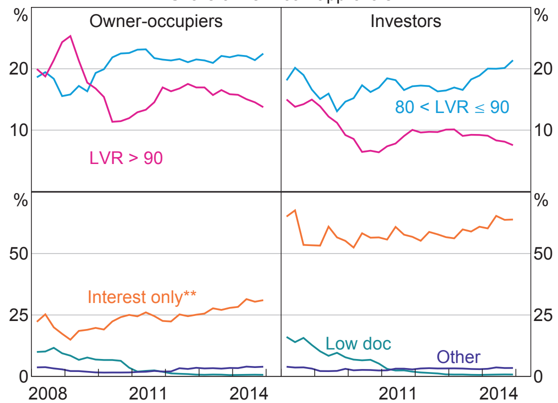
As might be expected in the low interest rate environment, some households have shown a willingness to accept increased risk in order to earn a higher return on their financial investments. For example, some retail investors have been attracted to the relatively high rates of return offered by the nascent market of peer-to-peer lenders, which provide a platform for households to lend directly to businesses or other households. ASIC has warned that investors should understand and take into account the associated financial risks of these products, which include a lack of liquidity and a difficulty in assessing the quality of the borrower.

Housing loan characteristics

While an environment of historically low interest rates, rising housing prices and strong competition in the mortgage market poses some risk that lenders will loosen housing lending standards, there are relatively few signs that this has occurred to date. The share of loan approvals with loan-to-valuation ratios (LVRs) above 90 per cent – which expose the borrower to a higher risk of falling into negative equity should housing prices decline – continued to trend lower over 2014 (Graph 3.6). This decline was led by lenders that had previously reported higher than average shares of these types of loans in their new lending; this shift might have been partly in response to APRA's already enhanced level of supervisory intensity. Some of this higher-risk lending activity has now shifted into the 80–90 per cent LVR category, which in part accounts for the rise in that type of lending to investors since mid 2013.

A low interest rate environment can also increase the risk of households taking out larger loans than they could comfortably repay if interest rates were to rise. However, banks typically apply interest

Graph 3.6
Banks' Housing Loan Characteristics*
Share of new loan approvals



* LVR = loan-to-valuation ratio; 'Other' includes loans approved outside normal debt-serviceability policies and other non-standard loans

** Series is backcast before December 2010 to adjust for a reporting change by one bank

Sources: APRA; RBA

rate buffers and minimum floor interest rates in serviceability assessments to moderate this risk, with APRA's recently announced supervisory measures clarifying its expectations in this area. Indeed, the profile of new lending suggests that households continue to be well placed to service their loans. Some evidence suggests that only a very small share of new lending has both a high LVR and a high loan-to-income ratio, implying that few households are simultaneously exposed to the risks of falling into negative equity and of facing difficulty in making their loan repayments.

One area of potential concern is the increase in interest-only loans as a share of total housing loan approvals, for both owner-occupiers and investors. For investors, the prevalence of interest-only borrowing is consistent with the tax deductibility of investors' mortgage interest payments, which reduces the incentive to pay down the loan principal. In liaison, banks have suggested that for owner-occupiers the trend rise in interest-only lending has been driven more by borrowers' desire for increased flexibility in managing their repayments than affordability pressures. Some of this demand for flexibility has come from owner-occupiers who plan to later switch their dwelling into an investment

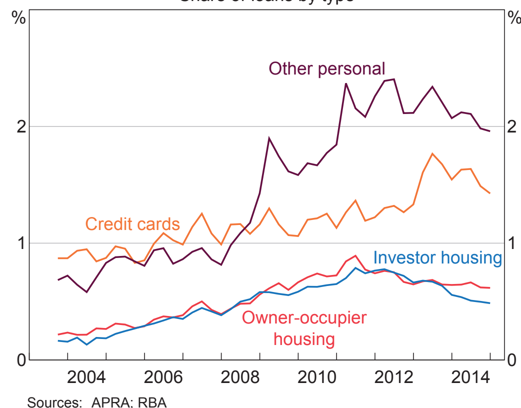
property, at which point they will have an incentive to withdraw balances that they have accumulated in attached offset accounts. The banks have indicated that many owner-occupiers with interest-only loans are in practice building sizeable buffers in attached offset accounts and redraw facilities, and that non-performance rates on these types of loans are low. They also note that, in principle, interest-only loans should not increase borrowing capacity because consumer protection regulations imply that lenders should assess a borrower's ability to service principal and interest payments following the expiry of the interest-only period. ASIC is in the process of assessing compliance with this obligation through its review of interest-only lending. Despite these considerations, interest-only loans – especially for owner-occupiers – nonetheless involve greater risk because they enable borrowers to pay down principal more slowly than a conventional principal and interest loan would require.

Loan performance and other indicators of financial stress

Indicators of overall household financial stress remain low, aided by low interest rates and rising asset prices. This comes despite the slow pace of wage growth and gradual weakening in labour market conditions seen over the past couple of years. In particular, the non-performance rates for all types of housing and non-housing related bank lending to households declined further over the six months to December 2014 (Graph 3.7). Looking ahead, however, loan performance is likely to at least partly depend on how conditions evolve in the labour market. Although forward-looking indicators of labour demand improved a little throughout 2014, they suggest only moderate employment growth in the near term.

More granular data on securitised housing loans show a broad-based improvement in housing loan performance across most regions, although arrears in mining-exposed towns seem to have picked up. As mentioned in the chapter 'The Australian Financial

Graph 3.7
Banks' Non-performing Household Loans
Share of loans by type



Sources: APRA; RBA

System', banks have been tightening housing lending standards in many of these towns. Given further weakness in commodity prices recently, and more cuts to investment and exploration spending by resource-related firms, some further increase in financial stress among households in mining-exposed areas could be expected.

Other indicators also point to low levels of financial stress in the broader household sector. As a share of the dwelling stock, applications for property possessions continue to decline in the four largest states and have stopped rising in Tasmania. Non-business related personal administrations as a share of the adult population are also trending lower, with the decline fairly broad based across states.

Commercial Property

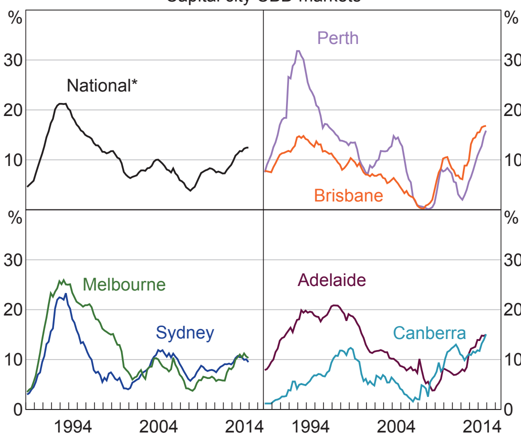
The commercial property sector has historically posed a disproportionately large risk to lenders' balance sheets and been responsible for a number of episodes of stress in the banking sector, both domestically and overseas. Among the reasons for this is that new supply takes time to be built, which means that supply responses to changes in tenant demand are sluggish; large swings in vacancy rates and prices often ensue. The property development part of this sector is especially cyclical, and developer failures tend to be highly correlated in a downturn.

In recent years, commercial property conditions have softened significantly and there are now clear signs of an emerging oversupply in some markets. In CBD office markets, vacancy rates are high and generally increasing, rents are flat or falling, and leasing firms are offering sizeable incentives to secure tenants (Graph 3.8). Conditions appear particularly weak in Brisbane and Perth, where vacancy rates are already high and demand for office space has fallen as resource companies and, in Brisbane, the public sector have reduced their space requirements (Graph 3.9). On the supply side, a significant amount of new office space is still expected to come on line in Brisbane and Perth in the next couple of years due to earlier investment decisions. As a result, market commentators expect vacancy rates in these cities to rise further. Consistent with this weak outlook, building approvals for offices have fallen over the past year, and industry liaison suggests that some new projects are being delayed or shelved ahead of construction, due to difficulties in acquiring a sufficient level of tenant precommitments. Leasing conditions in industrial and retail property markets also appear subdued nationwide, with rents flat or falling.

Graph 3.8

Office Vacancy Rates

Capital city CBD markets



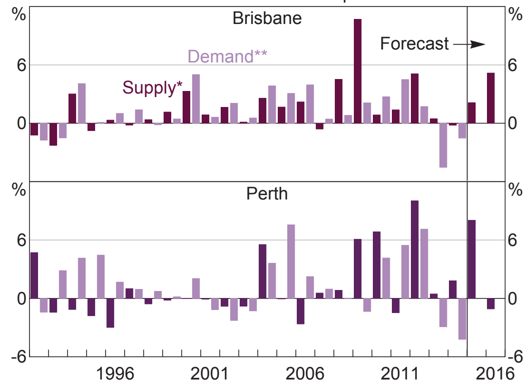
* Excluding Darwin and Hobart

Source: JLL Research

Graph 3.9

CBD Office Property

Per cent of CBD office space



* Completions net of withdrawn space; forecast is projects under construction and plans approved less average withdrawals

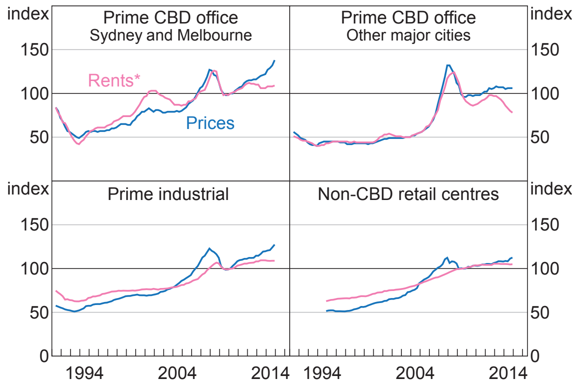
** Change in occupied space; no forecasts are available

Sources: Property Council of Australia; RBA

Despite this weakness in leasing conditions, commercial property prices have continued to rise at a national level, driven in particular by investors' search for yield in the global environment of low interest rates and ample liquidity, with the lower Australian dollar also likely to be adding some impetus to foreign demand (Graph 3.10). As a consequence, the total value of office, industrial and retail property transactions has risen sharply recently, with a notable increase in the share of transactions involving foreign purchasers, particularly in Sydney. The divergence between rising prices and falling rents in office and industrial, and to a lesser extent retail, property has widened further since the previous *Review*, with an associated fall in yields.

As a result of these developments, the risk of a large repricing and associated market dislocation in the commercial property sector has increased. This could be triggered by several factors, such as growing excess supply that prompts a reassessment of valuations, or a sharp fall in foreign investor demand, perhaps due to a rise in global interest rates or weaker conditions in foreign investors' home countries. The CBD office markets in Brisbane and Perth seem most vulnerable, with the recent fall in global commodity prices likely to weigh further on tenant demand from resource-related companies.

Graph 3.10
Commercial Property Market Conditions
2009 = 100

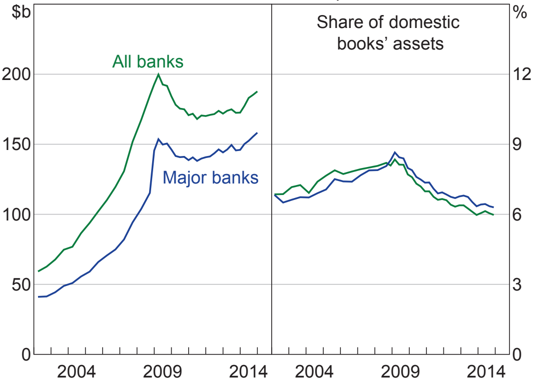


* Effective rents for offices, face rents for industrial and retail property
Sources: ABS; JLL Research; Property Council of Australia; RBA

Property developers in some apartment markets are facing similar risks. Prices for development sites have risen sharply over the past year or so, largely reflecting strong demand from foreign residential developers. Some apartment markets, particularly in inner-city Melbourne as outlined earlier, also look vulnerable to potential oversupply, partly because apartment construction is subject to the same supply lags that affect other commercial property development. While investor demand appears strong at present, including from foreign investors, vacancy rates in these areas are relatively high and future tenant demand, including from international students, is uncertain. The current high rate of pre-sales should provide developers with some level of protection against a downturn in these apartment markets, but this protection is somewhat untested in an environment of falling prices, when investors might have the incentive to sacrifice their deposits and walk away. It is also unclear how foreign banks and developers – both of which are quite active in apartment markets on the eastern seaboard – would react to falling prices in these markets.

At this stage, the near-term risks to the domestic financial system from the commercial property sector seem relatively modest, though they are building. Banks' exposure to commercial property as a share of their total assets has fallen substantially since the financial crisis, and has remained stable over the past year (Graph 3.11). However, with lending to this sector picking up, and reports of strong competition among lenders leading to some relaxation of lending standards, this is an area that will likely require close scrutiny for some time to come.

Graph 3.11
Banks' Commercial Property Exposures*
Consolidated Australian operations



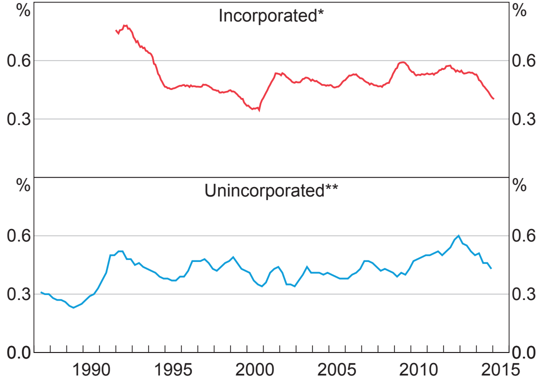
* Quarterly from September 2008; some banks report only on a semiannual basis
Sources: APRA; RBA

Other Business Sectors

Business conditions and funding

Outside commercial property, including property development, risks to financial stability from non-financial businesses appear generally low. Survey measures of business conditions remain around long-run average levels, while business failure rates and the share of banks' business loans that is non-performing have continued to fall (Graph 3.12). Like many households, businesses remain fairly cautious in their spending and borrowing decisions, despite the low level of interest rates. Over 2014, intermediated business credit increased moderately, to be slightly above its pre-crisis level, while net issuance of corporate bonds was negative. Equity raisings picked up, but from a low base, reflecting increased IPO activity. Notwithstanding this cautious behaviour, if banks relax lending standards to gain a competitive edge amid low demand for business finance, this could pose a risk to future

Graph 3.12
Business Failures
Share of businesses in each sector, annual



* Corporations entering external administration

** Business-related personal administrations and other administrations

Sources: ABS; AFSA; ASIC; RBA

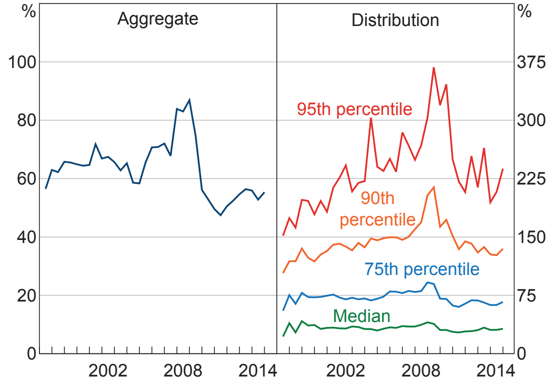
loan performance. As discussed in the chapter 'The Australian Financial System', despite strong pricing competition for loans to large corporations, to date loan covenants have been relaxed only for certain borrowers.

Business finances

In line with the ongoing improvement in stress indicators, business finances generally appear to be in good shape. After the sustained period of deleveraging following the financial crisis, the aggregate gearing ratio of listed corporations remains near its historical lows (Graph 3.13). Furthermore, gearing ratios in the more vulnerable tail of the distribution are significantly lower than levels seen immediately before and during the financial crisis. Partly reflecting the low level of gearing, as well as low interest rates, the business sector seems well placed to service its debts. The aggregate debt-servicing ratio of listed corporations remains at a fairly low level, with companies' net interest expense absorbing only around 10 per cent of profits, though debt owed by companies with relatively high ratios remains above its pre-crisis level.

Despite this relatively benign backdrop, some potential risks from the business sector have emerged over the past six months or so.

Graph 3.13
Listed Corporations' Gearing*
Book value debt-to-equity ratio



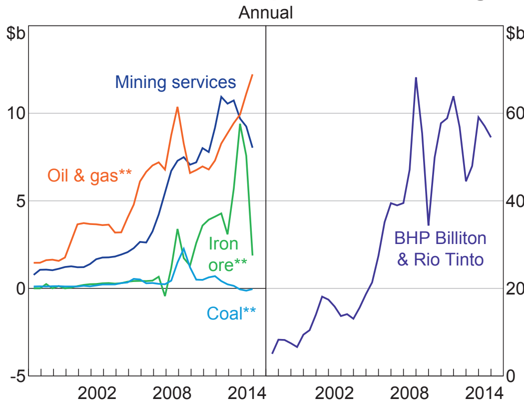
* Excludes financial and foreign-domiciled corporations

Sources: Bloomberg; Morningstar; RBA

In particular, as discussed in the chapter 'The Global Financial Environment', the prices of oil and iron ore have fallen more sharply than expected, following earlier large declines in coal prices. These lower commodity prices have reduced the profitability and cash flow of Australia's resource producers (Graph 3.14). Many of them have responded by further reducing planned capital expenditure and targeting greater efficiencies.[1] The prospects for mining services companies have therefore also weakened, compounding the already subdued conditions in this sector as the investment phase of the mining boom winds down; the profits of listed mining services companies are estimated to have fallen by more than 15 per cent in 2014. While the full effects of the falls in commodity prices are yet to be felt, these headwinds could make it more difficult for resource-related firms to service their debt, raising the risk of default. The credit ratings of some resource-related companies have already been downgraded, while ratings implied by credit default swaps and bond pricing suggest that the market expects more downgrades to follow.

Several factors are, however, limiting the risks to financial stability in Australia from these

1 For further discussion, see RBA (2015), 'Box D: The Impact of Recent Commodity Price Movements on Resource Companies', *Statement on Monetary Policy*, February, pp 60–61.



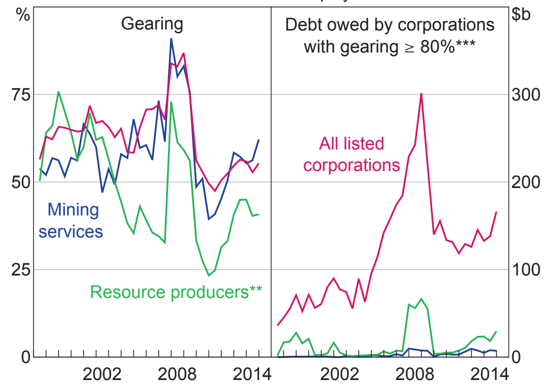
Graph 3.14
Resource-related Corporations' Earnings*
Annual

* Listed corporations' EBITDA; excludes financial and foreign-domiciled corporations
** Excludes BHP Billiton & Rio Tinto
Sources: Bloomberg; Morningstar; RBA

developments. First, the domestic banks' exposure to the resource-related sector is not large. A significant share of resource-related firms' outstanding debt is either non-intermediated or sourced from foreign banks through syndicated loans. Based on the major banks' earnings reports and other data, RBA staff estimate that the combined value of exposures of the Australian banking system to resource producers and services companies is only around 2 per cent of banks' total exposures.

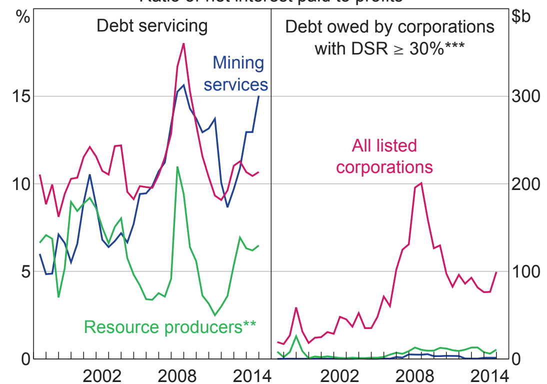
Second, the finances of listed resource-related corporations are generally quite robust. In aggregate, the gearing and debt-servicing ratios for resource producers remain noticeably lower than those of the broader listed corporate sector (Graph 3.15 and Graph 3.16). In addition, most of the debt is owed by large companies that have neither high gearing nor high debt-servicing ratios; these companies are generally expected to be relatively well placed to ride out a period of low commodity prices because they have reasonably strong balance sheets, low costs of production, high margins and access to other sources of funding. Nonetheless, several smaller resource producers (including in the coal and iron ore industries) are likely to struggle to cover costs at current prices.

The financial health of mining services companies looks less robust than that of the broader corporate sector: the aggregate debt-servicing ratio of listed mining services companies has increased significantly over the past couple of years as profits have fallen sharply, and is now around the peak reached during the financial crisis, while aggregate liquidity is also lower than for other listed corporations. It is likely that parts of the mining services sector will find



Graph 3.15
Resource-related Corporations' Gearing*
Book value debt-to-equity ratio

* Listed corporations; excludes financial and foreign-domiciled corporations
** Includes listed junior explorers
*** Includes corporations with negative equity
Sources: Bloomberg; Morningstar; RBA



Graph 3.16
Resource-related Corporations' Debt Servicing*
Ratio of net interest paid to profits

* Listed corporations; excludes financial and foreign-domiciled corporations
** Includes listed junior explorers
*** Includes corporations with negative profits
Sources: Bloomberg; Morningstar; RBA

the current operating environment challenging, particularly those firms that are more exposed to resource investment or exploration. However, mining services firms account for only 16 per cent of debt owed by listed resource-related corporations, and liaison with banks suggests that loan defaults to date have generally been limited.

The depreciation of the Australian dollar over the past six months will partly offset the effect of declining global commodity prices on local resource producers' profitability, and will boost demand for trade-exposed firms in other sectors. While the recent resurgence in volatility in global currency markets is likely to make hedging currency risk more expensive, and could expose any instances of poorly designed hedging practice, the available evidence suggests that it is unlikely to pose significant risks to the non-financial business sector overall. ✠

Box B

Responses to Risks in the Housing and Mortgage Markets

Recent trends in housing and mortgage markets have raised some concerns about the level of risk being taken by authorised deposit-taking institutions (ADIs) and households (see the chapters 'The Australian Financial System' and 'Household and Business Finances' for a discussion).[1] In response to these concerns, the Australian Prudential Regulation Authority (APRA) announced measures in December 2014 to reinforce sound housing lending practices. At the same time, the Australian Securities and Investments Commission (ASIC) announced that it will review whether mortgage lenders' interest-only lending complies with their responsible lending obligations. These actions were taken following discussions with member agencies of the Council of Financial Regulators (CFR), and build on the increased supervision and communication on housing market risks that CFR member agencies have been engaged in over the past year or so.

APRA's Response

The measures recently announced by APRA outline prudential expectations of ADIs' lending behaviour regarding: the extent of higher-risk mortgage lending; the pace of growth in investor housing lending; and the interest rate buffers and floors used in loan serviceability assessments. The benchmarks specified are not intended to be hard limits, but rather to serve as a trigger for more intense supervisory action, potentially including additional capital requirements.

APRA supervisors will be alert to growth in an individual ADI's investor housing loan portfolio that is materially above a benchmark of 10 per cent per year. This benchmark was established by APRA after consultation with other members of the CFR, and takes into account a range of factors including household income growth and recent market trends. The benchmark is specified in terms of an ADI's national lending to investors; although recent investor activity has been concentrated in Sydney and Melbourne, data on investor loan exposures are difficult to monitor on a state level. The benchmark is intended to be temporary and hence should not entrench a structural change in the competitive environment.

As part of its regulatory response, APRA has also specified that ADIs' loan serviceability assessments should include an interest rate buffer of at least 2 percentage points above the standard variable rate (less any discount that is applied for the whole term of the loan), with a floor assessment rate of at least 7 per cent. APRA noted that good practice would be to maintain a buffer and floor rate comfortably above these levels, rather than operate at the minimum expectation.

The use of interest rate buffers and floors in serviceability assessments provides some allowance for borrowers to accommodate future increases in interest rates (or declines in their servicing capacity). One implication is that when lending rates are low, such that the interest rate floor is higher than the lending rate plus the buffer, a borrower will not be able to take out a larger loan just because lending rates have fallen. The recommended buffer and floor rates are based on a number of considerations, including the size of past increases in lending rates in Australia and other jurisdictions, international benchmarks for serviceability buffers and long-run average lending rates in Australia. Supervisors will also

1 ADIs include banks, credit unions and building societies.

be monitoring other elements of ADIs' serviceability assessments such as allowable income, minimum living expenses, and other debt commitments to ensure these are not relaxed and that prudent loan serviceability standards are maintained.

APRA also stated that in the current environment it would consider enhanced supervisory action when ADIs undertake large volumes of lending in risky categories, or increase higher-risk lending as a proportion of total new lending. Higher-risk loans include those with high loan-to-valuation ratios, loans with high debt-servicing levels, loans to owner-occupiers with lengthy interest-only periods and loans with very long terms.

Supervisory action

When an ADI does not adhere to APRA's prudential expectations as outlined above, this will lead to a graduated increase in the level of supervisory intensity (e.g. increased reporting obligations and additional on-site reviews) and the consideration of additional capital requirements. APRA will use its discretion as to the appropriate size of its response based on a number of factors, including the behaviour of each ADI and their share of the mortgage lending market. ADIs that meet APRA's expectations will continue to be closely monitored but will be otherwise unaffected.

Any additional capital requirements would be implemented through changes to individual ADIs' 'Pillar 2' capital adjustments. Pillar 2 supervisory adjustments are a feature of the international Basel III capital framework that take into account institution-specific risks not adequately captured by 'Pillar 1' minimum capital requirements, and form part of an ADI's binding capital requirement. Pillar 2 adjustments can vary for an individual ADI through time and have been used by APRA for some years, although they are not disclosed publicly. The advantages of using Pillar 2 capital adjustments in these circumstances are that they are sufficiently flexible to target areas of prudential concern, and allow for a proportionate, incentive-based response.

APRA's approach differs from some international precedents on housing market regulatory intervention, which have tended to rely more on hard limits to certain lending behaviours rather than a supervisory guidance and capital approach. This difference arises, among other reasons, because APRA considers that at this stage a supervisory approach backed by the capital flexibility built into its current rules balances prudence and efficiency better than setting hard quantitative limits or prohibiting certain lending behaviours outright.

ASIC's Review of Interest-only Housing Lending

As part of the coordinated response to housing and mortgage market risks by CFR member agencies, ASIC announced a review of interest-only housing lending in December 2014. The review will investigate whether lenders are complying with their responsible lending obligations set out in the *National Consumer Credit Protection Act 2009*. Lenders are required by law to assess loan serviceability such that new borrowers do not overstretch themselves to purchase property or rely on expectations of future increases in housing prices to enable them to do so. The heightened scrutiny by ASIC should help to prevent borrowers from obtaining loans that they are unlikely to be able to repay without experiencing undue hardship. ASIC is working closely with APRA, as well as other members of the CFR, on this review.

Monitoring and Evaluation

APRA is currently in the process of reviewing ADIs' housing lending practices and ASIC's review of interest-only lending is also underway. While many ADIs already operate broadly in line with APRA's and ASIC's expectations, current lending practices of some ADIs are likely to attract the attention of the regulators. These measures and subsequent

behavioural adjustments should help to ensure that prudent lending standards are maintained across the system, which is particularly important in the current environment of low interest rates, strong competition among lenders and rapid housing price growth in some locations.

The overall effectiveness of these actions will be subject to ongoing monitoring, and regulators will consider whether additional steps are needed depending upon the evolution of risks in the housing and mortgage markets in the period ahead. ✠

4. Developments in the Financial System Architecture

International financial reform work has continued across the four core areas highlighted during Australia's G20 presidency in 2014: addressing 'too big to fail'; responding to shadow banking risks; making derivatives markets safer; and building resilient financial institutions. Implementation of agreed reforms remains a key focus of the G20 and the Financial Stability Board (FSB). The FSB has also highlighted the importance of completing the design of remaining post-crisis reforms, as well as addressing possible new risks and vulnerabilities, including those arising from shadow banking and market misconduct.

Domestically, the Financial System Inquiry (FSI) released its Final Report, which presented a generally favourable view of the financial system and considered that Australia's regulatory architecture does not need major change. The Report emphasised the importance of maintaining financial stability, and recommended several measures to enhance the resilience of the banking system, including increased capital requirements and strengthening resolution arrangements. On payments system issues, the Report was generally supportive of the work the Bank's Payments System Board (PSB) has undertaken since its inception in 1998. The government is expected to respond to the FSI's recommendations over which it has jurisdiction later this year, following a consultation period that is currently underway. The Australian Prudential Regulation Authority (APRA), the Australian Securities and Investments Commission (ASIC) and the Reserve Bank are also considering the recommendations that relate to their respective legislative mandates.

International Regulatory Developments and Australia

Addressing 'too big to fail'

A key G20/FSB reform area has been to work towards ending 'too big to fail' – that is, addressing the risks posed by systemically important financial institutions (SIFIs). This work has several elements, such as supervising SIFIs more intensively and enhancing resolution regimes. As discussed in the previous *Review*, particular focus recently has been on two policy measures affecting global systemically important banks (G-SIBs).

- The first is a proposal for total loss-absorbing capacity (TLAC) requirements for G-SIBs, which the FSB presented to the G20 Leaders' Summit in Brisbane in November 2014. This additional loss absorbency is intended to ensure that G-SIBs can be resolved in an orderly way that limits the effect on financial stability and avoids using taxpayer funds for recapitalisation. The proposal is essentially for a doubling of Basel III capital requirements for G-SIBs (to between 16 and 20 per cent of risk-weighted assets). A third of the requirement would be met by eligible debt instruments, to allow 'bail-in' of debt during resolution. An FSB consultation on the proposal recently ended and is to be followed by a quantitative impact study (QIS) this year. A final TLAC proposal will be submitted to the G20 by the 2015 Summit in November.

  Australia's banks are not G-SIBs and therefore are not captured by this proposal. However, the Final Report of the FSI recommended that

APRA should develop a framework for minimum loss-absorbing capacity for Australian authorised deposit-taking institutions (ADIs) in line with emerging international practice. Through the FSB and the G20, the Bank and other Council of Financial Regulators (CFR) agencies have been closely engaged in the development of the TLAC proposal, partly because international appetite could emerge to apply the framework beyond G-SIBs.

- The second is an industry agreement to prevent cross-border derivative contracts from being terminated disruptively once a G-SIB enters resolution. The International Swaps and Derivatives Association, in consultation with regulators and the FSB, has developed a protocol for over-the-counter (OTC) derivatives contracts that are not centrally cleared. If adhered to by both counterparties, this protocol will enable temporary stays of early termination rights to be enforced across borders. An initial set of 18 G-SIBs (reportedly representing 90 per cent of derivatives trading activity) have to date adhered to the protocol.

The two specific proposals above are part of broader ongoing international efforts to enhance resolution frameworks for global SIFIs (G-SIFIs) and financial institutions more generally. Central to these efforts is the *Key Attributes of Effective Resolution Regimes for Financial Institutions* (*Key Attributes*), released by the FSB in 2011 and which the G20 has committed to implementing for all parts of the financial sector that could be systemic in the event of failure. In November, the FSB reported to the G20 on progress in reforming resolution regimes, resolution planning for G-SIFIs, and implementing the *Key Attributes*. The report concluded that while many FSB jurisdictions have adopted the powers and tools needed to resolve failing banks, few jurisdictions have resolution regimes in place that are fully compliant with the *Key Attributes*, and that also provide adequate powers for resolving failures in the non-bank financial sector. The FSB is currently conducting a peer review on resolution regimes for banks, which should provide a further update on current and planned reforms in this area.

In October 2014, the FSB incorporated new annexes into the *Key Attributes* providing guidance covering: resolution of financial market infrastructures (FMIs) and insurers; the protection of client assets in resolution; and arrangements for information sharing that support the effective resolution of cross-border financial institutions. The resilience and resolution of FMIs, and in particular central counterparties (CCPs), is gaining increased attention as CCPs play a more central role in the financial system. Particular areas of focus include the level of stress that CCPs should be designed to withstand, as well as recovery planning and resolution arrangements for CCPs. In this regard, the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) also released in October a report on FMI recovery. At their February meeting, G20 Ministers and Governors asked the FSB, working with the CPMI, IOSCO and the Basel Committee on Banking Supervision (BCBS), to report in April on a work plan on CCP resilience, recovery and resolution, with particular attention to potential financial stability risks arising where CCPs are systemic in multiple jurisdictions.

Australian authorities have also been working on FMI resolution in recent years. In February, the government, acting on the advice of CFR agencies, launched a consultation process on proposals for a special resolution regime for FMIs. The regime would cover: domestic clearing and settlement facilities, with the Bank as the resolution authority; and domestic trade repositories that are identified as systemically important, with ASIC as the resolution authority. The scope and structure of the proposed regime and the powers envisaged are consistent with the *Key Attributes*. The consultation closes on 27 March. The consultation paper on FMI resolution is part of broader ongoing work by CFR agencies to strengthen domestic resolution and crisis management arrangements. This includes a recent review by agencies of crisis management

procedures, and ongoing engagement with New Zealand authorities in this area.

Also in October, the FSB issued for consultation draft guidance on:

- crisis management group (CMG) cooperation and information sharing with non-CMG host authorities in jurisdictions where a G-SIFI has a systemic presence. The *Key Attributes* require home and key host authorities of G-SIFIs to maintain CMGs. However, this could end up excluding some jurisdictions where operations of the firm are locally systemic but not material to the resolution of the overall group. Because those jurisdictions may be directly affected if the firm fails, the *Key Attributes* therefore require cooperation and information sharing between CMGs and non-CMG host jurisdictions.
- the identification of the critical functions and critical shared services for systemically important insurers. The guidance aims to assist national authorities in implementing the recovery and resolution planning requirements set out in the *Key Attributes* and in the policy measures of the International Association of Insurance Supervisors (IAIS) for global systemically important insurers (G-SIIs). In a related step, the IAIS finalised in October its 'basic capital requirement' for G-SIIs and in December it also began a consultation on a risk-based global insurance capital standard that would apply to all globally active insurers.

International work continues in the area of identifying G-SIFIs, which is the first step in imposing additional requirements on them.

- The FSB released in November updated lists of G-SIBs and G-SIIs. In updating the latter, the FSB noted that by November 2015, the IAIS will further develop the G-SII assessment methodology to ensure that it appropriately addresses all types of insurance and reinsurance, and other financial activities of global insurers. The revised G-SII assessment methodology will be applied from 2016.
- In March 2015, the FSB and IOSCO released a second consultation paper on identification methodologies for non-bank non-insurer (NBNI) G-SIFIs – essentially large cross-border financial institutions operating in the shadow banking sector. Following feedback on earlier released proposals, the new paper includes near-final methodologies for finance companies and market intermediaries (broker-dealers), a revised methodology for investment funds (including hedge funds), and a new proposed methodology for asset managers. The methodologies are expected to be finalised by the end of 2015, after which the FSB and IOSCO will begin work to develop any policy measures needed to address the risks posed by NBNI G-SIFIs.

Shadow banking

Work is continuing to strengthen the oversight and regulation of shadow banking, in line with an updated 2015 'roadmap' reported to the G20 Leaders in November. Shadow banking, which the FSB defines as credit intermediation outside the regular banking system, covers entities and activities such as money market funds (MMFs), asset managers and securities financing transactions (SFTs). The FSB has been coordinating international reform work over recent years to address the problems revealed by the global financial crisis, with the aim of transforming shadow banking into resilient 'market-based financing' for the economy.

With many of the post-crisis shadow banking reforms released in 2012 and 2013, the focus more recently has been on implementation. Peer reviews in this area by the FSB and IOSCO are planned for, or ongoing in, 2015. The FSB is soon to commence a peer review on the implementation of its 2013 framework for shadow banking entities other than MMFs, such as finance companies. As part of that peer review, the FSB will initiate a comprehensive information sharing process, to ensure existing shadow banking risks in jurisdictions are adequately addressed, and to enhance understanding of evolving potential risks such as new innovative

forms of shadow banking. IOSCO will publish in the second quarter of 2015 its peer review reports on the implementation by jurisdictions of its recommendations on MMFs and securitisation. In banking regulation developments related to securitisation:

- The BCBS released its revised securitisation capital framework in December. This framework aims to strengthen capital standards for securitisation exposures held in the banking book and reduce reliance on external ratings.
- Also in December, the BCBS and IOSCO published proposed criteria for identifying 'simple, transparent and comparable' securitisation structures; the BCBS will consider this year how the finalised criteria could be incorporated into the capital framework.
- Domestically, APRA is continuing with proposed changes to simplify the prudential framework for securitisation and in November responded to certain issues raised during industry consultation. APRA expects a revised prudential standard will be issued for consultation later in the year.

The FSB has continued its work in the area of SFT regulation and released in October a regulatory framework for haircuts on non-centrally cleared SFTs.[1] This framework takes into account feedback received on the FSB's 2013 policy framework for securities lending and repos, as well as the results of a QIS. It aims to limit the build-up of excessive leverage outside the banking system and to help reduce the procyclicality of that leverage. It consists of (i) qualitative standards for methodologies used by market participants that provide securities financing to calculate haircuts on the collateral received; and (ii) numerical haircut floors that will apply to non-centrally cleared transactions providing financing against collateral other than government securities to entities other than banks and broker-dealers. In finalising the framework, the FSB has raised the levels of numerical haircut floors based on the QIS results, existing market and central bank haircuts, and data on historical price volatility of different asset classes. The FSB also consulted on a proposal to apply the numerical haircut floors to non-bank-to-non-bank transactions so as to ensure shadow banking activities are fully covered, to reduce the risk of regulatory arbitrage and to maintain a level playing field. The FSB will complete its work on this last proposal by the second quarter of 2015. FSB jurisdictions are to implement the framework for SFTs, including the numerical haircut floors, by the end of 2017.

In a related development, the FSB published in November 2014 a consultative report on *Standards and Processes for Global Securities Financing Data Collection and Aggregation*, which is based on the FSB's 2013 policy framework. The FSB recommended that national authorities collect appropriate data on securities financing markets to detect financial stability risks and develop policy responses, and to provide the total data for these markets to the FSB for aggregation in order to assess global trends in financial stability. The consultation closed in February.

With many international shadow banking reforms now finalised, CFR agencies are further considering their potential application to Australia. The main areas of current focus are the FSB's 2013 framework for shadow banking entities other than MMFs, and proposals for regulations on SFTs such as minimum haircuts, and data collection and aggregation standards. This work will help to ensure that Australian regulatory arrangements are proportionate to the risks, and also to assure the international regulatory community that risks are being addressed appropriately.

CFR agencies have already acted on one of the FSB's SFT recommendations, namely consideration of the potential role for a CCP in repo markets, to help ensure that these markets function continuously

1 A haircut is a percentage discount deducted from the market value of the security that is being offered as collateral in a repo or similar SFT. In adjusting the market value of collateral, a haircut reflects the risk that the cash realised by the liquidation of collateral securities may turn out to be less than the quoted market value of those securities (due, for example, to issuer credit and market liquidity risks on the securities).

and effectively, even in stressed circumstances. Consistent with developments in other core markets, such as that for OTC interest rate derivatives, the FSB recommended that authorities evaluate the costs and benefits of introducing CCPs in their interdealer repo markets, with a view to mitigating systemic risks.

No CCP currently clears transactions in the Australian repo market. Therefore, the Bank issued a consultation paper in March 2015 inviting stakeholder views on how the availability of a repo CCP might affect the functioning of the Australian repo market and the management of risk.

OTC derivatives markets

International progress in implementing agreed OTC derivatives market reforms continues to be slow and uneven, reflecting difficulties in overcoming issues arising from the cross-border reach of regulation. A current focus is promoting deference to other jurisdictions' rules. To inform the policy debate in this area, the FSB issued a report in September summarising the outcome of a survey of regulatory authorities' ability to defer to one another in the cross-border regulation of OTC derivatives markets and FMIs. Australia's regime compared favourably with others in both the scope for deference and existing arrangements with other jurisdictions. The OTC Derivatives Regulators Group has undertaken work to address cross-border implementation issues that were identified in its report to the G20 Summit in November, and the FSB will continue to promote the appropriate use of deference in the cross-border application of derivatives regulations.

Work is continuing by the FSB and standard-setting bodies in other areas of derivatives markets.

- Part of the regime for products that cannot be cleared by a CCP is a set of rules for managing the risks in other ways. In January, IOSCO published its final 'Risk Mitigation Standards for Non-centrally Cleared OTC Derivatives'. The standards cover documentation, trade confirmation, valuation, portfolio reconciliation, compression and dispute resolution. It is expected that authorities will implement the standards 'as soon as practicable', potentially alongside the phase-in of margin requirements for non-centrally cleared derivatives. The margin requirements, which were developed by the BCBS and IOSCO, are scheduled to be phased in from 1 September 2016.
- While progress has been made to reduce the opacity of OTC derivative markets, there are still significant legal and other barriers to the reporting, sharing and aggregation of key information about trades. The FSB and other bodies are working on removing these obstacles. By the G20 Summit in November 2015:
  - The FSB will identify the legal barriers in member jurisdictions to reporting counterparty information to trade repositories and set a deadline for jurisdictions to address these barriers.
  - The CPMI and IOSCO will propose guidance on the design of a global Unique Transaction Identifier and Unique Product Identifier to aid consistent trade reporting.
  - IOSCO will finalise its cross-border regulatory toolkit that will be applicable not only to OTC derivatives but also to regulation of other markets.

Since September, Australian authorities have made further progress in establishing cooperative arrangements with overseas authorities to support the roll-out of regulatory reforms in OTC derivatives markets and regulation of cross-border FMIs. In particular:

- The European Union (EU) adopted equivalence decisions for the regulatory regimes for CCPs in Australia, Hong Kong, Japan and Singapore in October 2014. Further to this determination, the Bank and ASIC concluded a Memorandum of Understanding (MoU) with the European Securities and Markets Authority (ESMA) to govern cooperation and information sharing in the regulation of CCPs. ESMA is currently

considering the Australian Securities Exchange's (ASX's) applications for CCP recognition in the EU.

- In December, the US Commodity Futures Trading Commission (CFTC) invited ASX Clear (Futures) and other non US-based CCPs to apply for permanent exemption from the requirement to register with the CFTC as a 'derivatives clearing organisation'. To date, the CFTC has issued only time-limited relief from this registration requirement to non US-based CCPs.
- In February, the Bank and ESMA signed an MoU on access to trade repository data. This will allow European trade repositories to provide the Bank with data relevant to the Bank's mandate that is reported under European rules. ASIC signed a similar MoU with ESMA in November.

In parallel, further to the regulators' recommendations in April 2014, work continues domestically to implement mandatory clearing obligations for internationally active dealers in Australian dollar-, US dollar-, euro-, British pound- and Japanese yen-denominated interest rate derivatives. Submissions to a July 2014 government proposals paper were generally supportive. The government is now expected to consult on the determination and regulations in coming months, with ASIC issuing a consultation paper on its Derivative Transactions Rules on clearing at around the same time.

Building resilient financial institutions

Banks globally and in Australia continue to move towards meeting the new Basel III capital and liquidity reforms. The BCBS regularly monitors the implementation of these reforms and assesses the consistency of the implemented reforms through its Regulatory Consistency Assessment Programme (RCAP).

- In November, the BCBS released a report to the G20 Leaders detailing member jurisdictions' progress in implementing the Basel III regulatory reforms. This report found that all member jurisdictions have implemented the Basel risk-based capital regulations and members have now turned their efforts to adopting the Basel III regulations on liquidity, leverage and systemically important banks.
- The latest results from the BCBS' Basel III monitoring exercise were released in March 2015. As at 30 June 2014, all large internationally active banks met the 4.5 per cent common equity Tier 1 (CET1) minimum capital requirement. The amount of additional capital needed by these banks to meet their CET1 target ratios (including the capital conservation buffer and any G-SIB capital surcharges) had been further reduced, implying that their capital positions had strengthened. Over 80 per cent of participating banks met the 100 per cent Basel III Liquidity Coverage Ratio (LCR) required by 2019, with around 95 per cent meeting the 2015 phase-in requirement of 60 per cent. Banks that did not meet the 60 per cent requirement had an aggregate LCR shortfall of €155 billion.

The BCBS published in December 2014 RCAP assessments of the Basel III frameworks in the EU and United States, and in March, those for Hong Kong and Mexico.

- The EU was deemed materially non-compliant with the Basel III capital framework, reflecting material non-compliance with the internal ratings-based (IRB) approach for credit risk and non-compliance with the counterparty credit risk framework. In the EU, IRB banks are able to use standardised risk weights for certain exposures. In particular, central government exposures are eligible for a zero risk weight under the standardised approach; however, these exposures would likely be subject to a small positive risk weight under the IRB approach. In terms of the EU's counterparty credit risk framework, derivatives exposures to certain counterparties are exempt from credit valuation adjustment (CVA) capital charges. While the report suggests legislative changes are necessary to address these two issues, the EU authorities noted that they have already taken measures to limit the use of standardised risk weights by IRB banks over time and also that

the BCBS is considering making major changes to the CVA risk capital requirements.

- The United States was deemed largely compliant with the Basel III capital framework, despite material non-compliance with both the securitisation framework and standardised measurement method for market risk. In response, the US authorities indicated that they will consider amending their securitisation rules in 2015. The authorities will also consider making legislative changes to address their material non-compliance with the standardised measurement method for market risk once the BCBS completes its fundamental review of the trading book.
- For Hong Kong and Mexico, the implementation of the risk-based capital standards and the LCR was found, overall, to be compliant with the Basel framework. In Hong Kong, 12 out of 13 components were assessed as compliant, while one component, Pillar 3, was determined to be largely compliant with the Basel standards. In Mexico, 12 out of 14 components were assessed as compliant, while the countercyclical buffer and Pillar 3 were considered largely compliant.

While much of the policy development work on the new capital and liquidity reforms has been completed, the BCBS has continued work on outstanding elements of the Basel III framework. The Net Stable Funding Ratio, which aims to make banks' funding structures more resilient, was finalised in October. In November, the BCBS outlined its plan to G20 Leaders for addressing excessive variability in the measurement of risk-weighted assets for capital adequacy purposes, to improve the consistency and comparability of banks' capital ratios. Among other policy measures, this plan includes a review of the standardised approaches for calculating regulatory capital and a revised capital floor based on these new standardised approaches. Consistent with the plan, the BCBS finalised in January 2015 improved disclosure requirements for banks' internal model-based approaches, and has issued consultation papers in recent months on:

- proposed revisions to the standardised approach for credit risk that aim to strengthen the capital framework by reducing the reliance on credit rating agency ratings, increasing the risk sensitivity of capital requirements (including on residential mortgages), and allowing for greater comparability with the IRB approach
- outstanding issues for its fundamental review of the trading book capital standards, to improve trading book capital requirements and to promote consistent implementation of the rules so that they produce comparable levels of capital across jurisdictions
- proposed revisions to the standardised approach for measuring operational risk capital
- the design of the revised capital floor framework, which aims to: ensure a prudent level of capital across the banking sector; reduce model risk and measurement error stemming from internal model-based approaches; address issues relating to banks' incentives when modelling risk weights; and improve the comparability of risk-weighted capital ratios.

The BCBS has also enhanced elements of its wider set of guidance and principles for banking regulation. In October 2014, it issued for consultation revised corporate governance principles for banks and in February 2015 the BCBS outlined supervisory expectations regarding sound credit risk practices associated with implementing and applying an 'expected credit loss' accounting framework.

Market conduct and risk management

Recently, there has been increased focus by the G20, the FSB and other bodies on market misconduct by banks and other financial institutions, such as in the area of financial benchmarks. The concern is that the scale of recent misconduct in some financial institutions could create systemic risks by undermining trust in financial institutions and markets. As part of further work in this area, the

FSB will consider whether enforcement can be made more effective, and thereby credibly deter misconduct, by increasing cross-border cooperation between conduct supervisors and enhancing consistency in market regulation. Other reforms the FSB will consider in this area include (i) assessing reforms to risk governance, compensation structures and benchmarks and, where appropriate, proposing additional measures in these areas; and (ii) considering ways to improve market structure, standards of practice and incentives for good conduct in financial markets more broadly.

In February, the Joint Forum (comprising the BCBS, IAIS and IOSCO) reported on changes in firms' credit risk management practices since 2006. The Joint Forum's proposed recommendations for supervisors emphasised: caution of an over-reliance on internal models; awareness of an increase in 'search for yield' behaviour; recognition of the increasing need for high-quality liquid collateral to meet margin requirements for OTC derivatives transactions; and consideration of whether firms are accurately capturing CCP exposures.

Other Domestic Regulatory Developments

Financial System Inquiry

The *Financial System Inquiry Final Report* was released in early December. The Inquiry found that Australia's financial system is performing well and recommended incremental rather than 'root and branch' changes to domestic regulatory arrangements, a conclusion consistent with the Bank's submissions to the Inquiry. In the payments system area, the Report was generally supportive of the work of the PSB, though it made several recommendations that are being considered by the PSB. Some of the main recommendations relating to resilience, regulatory architecture and payments are outlined below.

- To improve banking sector resilience, the Report recommends that APRA raise ADIs' capital requirements (to make them 'unquestionably strong'), increase mortgage risk weights for the (currently five) banks using the IRB approach for capital, and develop a framework for minimum loss-absorbing capacity. According to the Report, the costs of higher capital on lending rates and GDP growth would be small. The BCBS' revisions to elements of the capital framework, discussed above and which are due to be finalised by the end of this year, are likely to be relevant for implementation of these recommendations.

  In a related area, the Inquiry considers that ex-post funding of the Financial Claims Scheme should be maintained, as its other recommendations, if implemented, should reduce the need to activate the Scheme. In 2013, the CFR advised the previous government to implement ex-ante funding.
- Regarding the broader regulatory framework, the Report concludes that Australia's 'regulatory architecture does not need major change'. In particular, no fundamental changes are recommended for macroprudential arrangements or the membership/structure of the CFR. The Report does, however, recommend several 'minor refinements' around regulator accountability, including the creation of a Financial Regulator Assessment Board to conduct annual independent reviews of APRA, ASIC and the payments regulation function of the Bank.
- In the area of payments, the Report acknowledges the critical role payment systems play in the broader financial system, and emphasises the need for efficiency, transparency and innovation in this area. On retail payment systems, the Report addresses issues related to card interchange fees and surcharging – many of which the Bank raised in its submissions to the Inquiry. The Report recommends that the PSB consider a range of possible changes to card payments regulation; the Bank initiated a consultation on these and related issues in March. The FSI also recommends simplifying the regulatory framework for payment systems,

particularly for Purchased Payment Facilities (PPFs). This would include APRA developing a new two-tiered prudential regime for PPFs, and the government and ASIC narrowing the licensing regime for non-cash payment facility providers; these actions are to be undertaken in consultation with other regulators, including the Bank. The Report also calls for existing processes for strengthening crisis management powers to be completed; these had been put on hold pending the outcome of the Inquiry. They include legislative amendments recommended by the CFR, such as introducing a special resolution regime for FMIs. As noted earlier, the government recently released a consultation paper on this recommendation. The CFR also expects to release soon a related consultation paper, which seeks to clarify the regulators' approach to assessing whether an overseas clearing and settlement facility falls within the scope of the Australian licensing regime.

The government is currently conducting a public consultation process on the FSI recommendations. Submissions close on 31 March, with the government's final response expected later in the year. The Bank will continue to be actively engaged with the FSI process as required.

Prudential framework

Several recent international and domestic developments are likely to place upward pressure on capital requirements for Australian ADIs. Some recent BCBS proposals, including several noted above, may result in higher capital requirements for ADIs. For example:

- the revised capital floor may be binding for ADIs using internal models-based approaches
- the proposed changes for calculating mortgage risk weights could increase risk weights for ADIs using the standardised approach for credit risk, while the revised approach for operational risk is also likely to increase capital requirements in general for ADIs.

As such, these proposals, combined with the FSI's recommendations for APRA to (i) impose increased capital requirements for ADIs, and (ii) develop a framework for minimum loss-absorbing capacity, point to possible increased capital requirements for ADIs in the period ahead. The size of any increase in capital requirements will depend on the BCBS' finalisation of its proposals, and the response by the government and APRA to the FSI's recommendations.

Meanwhile, following consultation, APRA finalised several elements of its prudential framework for the entities it supervises.

- In October APRA issued a prudential practice guide on group insurance arrangements. The guide addresses poor risk management practices identified in the group insurance market. APRA also released the results of its peer comparison of insurers' Internal Capital Adequacy Assessment Process reports. APRA determined that the reports were adequate, but noted areas where they did not meet APRA's expectations.
- In November APRA released a final prudential practice guide on residential mortgage lending, which provides guidance on its view of sound lending practices. In conjunction with the release, ASIC updated its responsible lending guidance, clarifying that lenders must inquire about consumers' actual incomes and expenses, and not rely on benchmark living expenses applying to typical or low-income households.
- A prudential standard and practice guide on risk management for the banking and insurance industries were released in December. The guide encourages institutions to implement effective risk governance models in line with APRA's heightened expectations of risk management practices.

Competition in cash equities

In February, the government announced a review of competition in the clearing of Australian cash equities, to be conducted by the CFR, working with the Australian Competition and Consumer

Commission. The CFR subsequently issued a consultation paper seeking stakeholder views on the potential implications of competition or alternative policy approaches for the Australian cash equity market. The review comes after a two-year moratorium on competition in this area, which followed a 2012 review into the matter by the same agencies. While the moratorium was in place, the ASX was encouraged to work with industry to develop a code of practice to govern its clearing and settlement services for cash equities; the code of practice was introduced in August 2013. It is anticipated that the findings of the CFR's review will be presented to the government in mid 2015. ✠