

### 3. The Australian Financial System

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Overall, the Australian banking system remains in good shape after a number of years of strong profit growth and efforts to strengthen bank resilience. Nonetheless, the performance of banks' domestic assets has deteriorated a bit this year, from a very strong position. The weakening has been evident in both banks' consumer and business lending portfolios, and has been concentrated in mining-related industries and regions. There has also been some worsening in the performance of banks' New Zealand exposures, particularly to the dairy sector. These factors resulted in a marked increase in the charge for bad and doubtful debts in the most recent half, albeit off a low base after declining over several years. Rising bad debt charges have, in turn, contributed to bank profits declining recently to levels of around two years ago. Analysts expect these charges to rise further over coming years.

For some time banks have been tightening lending standards and taking other steps to strengthen their resilience, in part prompted by regulatory expectations. Of late, the Australian banks have further tightened lending standards and collateral requirements for higher-density residential projects and other commercial property development, and reduced their exposures to resource-related businesses. Some of this pull-back by Australian banks has been offset by a persistent and rapid expansion of Asian banks' lending, including for commercial property development. Banks have also maintained tighter standards for mortgage lending, following a number of changes that were introduced over the past year or so. These developments have contributed to a slowing in the pace of overall credit growth over the past six months or so.

As a consequence, the Australian banks continue to be well placed to address the risks they face. Each of the major banks has a sizeable buffer to the regulatory capital ratios required, and they are expected to steadily accumulate capital as the Australian Prudential Regulation Authority (APRA) provides additional details on a framework for achieving 'unquestionably strong' capital standards. Banks have also increased their resilience to liquidity shocks over recent years, with further efforts underway in advance of the implementation of the Net Stable Funding Ratio (NSFR) requirement from 2018. Access to long-term debt funding has been favourable for Australian banks this year, and they have used this opportunity to raise considerably more funding from debt markets than in recent years, often at longer tenors.

The profitability of the general insurance industry remains lower than a few years ago, reflecting modest investment returns and below-average underwriting results as commercial premiums continued to decline. Life insurers' profitability continues to be affected by the under-pricing of individual disability income insurance. The profitability of lenders' mortgage insurers has been relatively stable to date. However, their revenue will come under pressure from the declining volume of high loan-to-valuation ratio (LVR) loans following banks' tightening of mortgage lending standards, and they will face higher claims if housing loan performance deteriorates further. Insurers in all three segments maintain capital well in excess of the regulatory minimum and appear well placed to manage these challenges.

## Bank Asset Performance and Lending Conditions

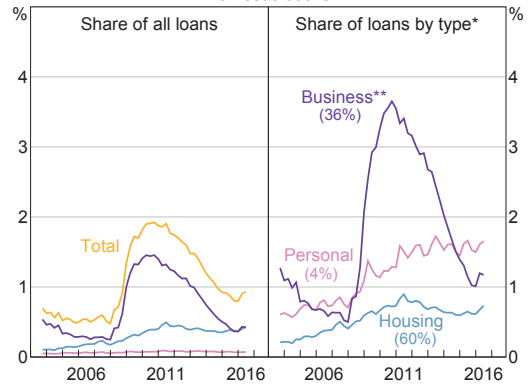
Australian banks' domestic asset performance deteriorated slightly over the first half of 2016, after several years of steady improvement. The non-performing assets ratio rose by 13 basis points to 0.9 per cent at June 2016, though it remains well below its mid 2010 peak (Graph 3.1).<sup>1</sup> This recent weakening in asset performance was broad based across loan types. The deterioration in housing loan performance has been most pronounced in Western Australia and Queensland (as discussed in the 'Household and Business Finances' chapter). To date, the pick-up in the non-performing housing loans ratio has been almost entirely in 'past-due' rather than 'impaired' loans, suggesting that, at current prices, banks generally expect to recover the full amount of their loans.<sup>2</sup> Nonetheless, impairments could increase, especially if housing markets in mining regions deteriorate further or if weaker conditions spill over further into the broader Perth or Brisbane markets. The non-performing personal loans ratio remains elevated, also partly reflecting economic conditions in Western Australia and Queensland.

The increase in the non-performing business assets ratio also reflects the deterioration in the performance of loans to mining-related business and other businesses in mining regions, along with the impairment of a few large national corporate exposures. The major banks have lifted provisioning and reported higher stressed exposures in the mining and New Zealand dairy industries. Their share of corporate exposures with an estimated probability of default of at least 10 per cent has increased since early 2015 but remains at a low level (Graph 3.2); on average, less than one-tenth of these

1 Following guidance from APRA, some banks have recently changed their reporting of the non-performing status of loans granted hardship concessions. These changes have accounted for a small part of the recent increase in the non-performing loans ratio.

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

**Graph 3.1**  
**Banks' Non-performing Assets**  
Domestic books

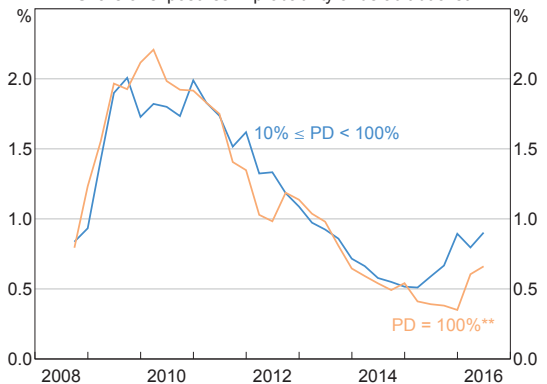


\* Each category's share of total domestic lending at June 2016 is shown in parentheses

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

Sources: APRA; RBA

**Graph 3.2**  
**Major Banks' Corporate Exposures\***  
Share of exposures in probability of default bucket



\* Level 1 basis; on- and off-balance sheet exposures assessed under the internal ratings-based approach before credit risk mitigation techniques

\*\* Defaulted exposures

Source: APRA

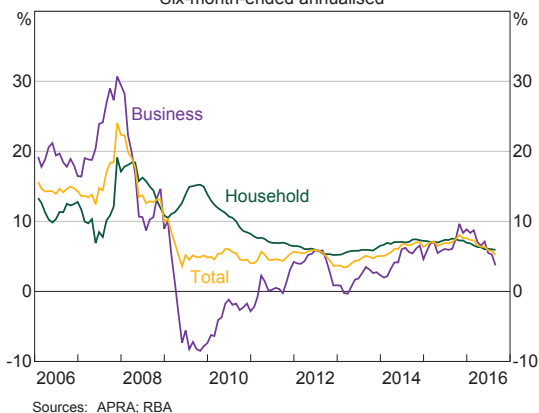
exposures have an estimated loss-given-default of 70 per cent or more of the exposure value.

Future asset performance will largely depend on the evolution of macroeconomic conditions, especially conditions in property markets and the resources sector. Nonetheless, the considerable strengthening of housing lending standards over the past year or so should assist with future loan performance. In the business sector, banks have further increased

borrowing rates and tightened lending standards for commercial property since the previous *Review*, lifting presales requirements and lowering loan-to-development cost ratios for residential development. Banks also continue to closely monitor conditions in the resources sector. In recent years, they have imposed lower maximum LVRs for business loans in mining regions. Nonetheless, competition between lenders remains strong for most other industries in an environment of moderating growth in banks' domestic business loan books.

Growth in banks' domestic loan books has slowed over the past six months, partly reflecting the tightening of standards in some segments (Graph 3.3). For example, banks have reduced their business lending to some industries where loan performance has recently deteriorated, such as mining. The major banks have also pulled back somewhat on their commercial property lending recently, although Asian banks' lending to the sector continues to grow rapidly. Investor housing lending is growing at a slower pace than in recent years, despite picking up modestly of late, as banks have tightened lending to meet APRA's growth benchmark. However, the slowing in domestic loan growth also reflects some easing in demand for household and non-property business credit. In this environment there is a risk that banks compete

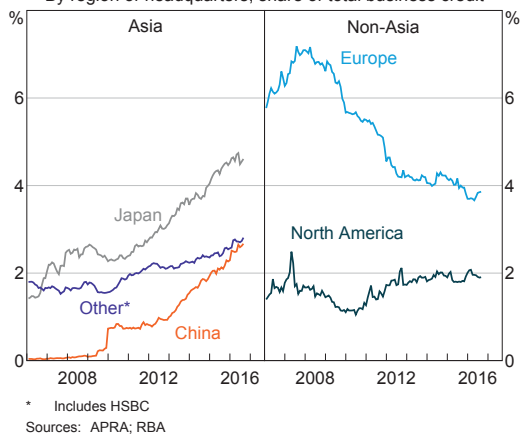
**Graph 3.3**  
**Banks' Domestic Credit Growth**  
Six-month-ended annualised



excessively on price or non-price terms for the available customers, although business lending margins have widened a bit in recent months.

In contrast, foreign banks operating in Australia, particularly Asian banks, have continued to increase lending to businesses rapidly over the past year (Graph 3.4). A key risk is that such lending by foreign banks can be highly procyclical, especially when extended to more marginal borrowers, which could exacerbate asset price and economic cycles.

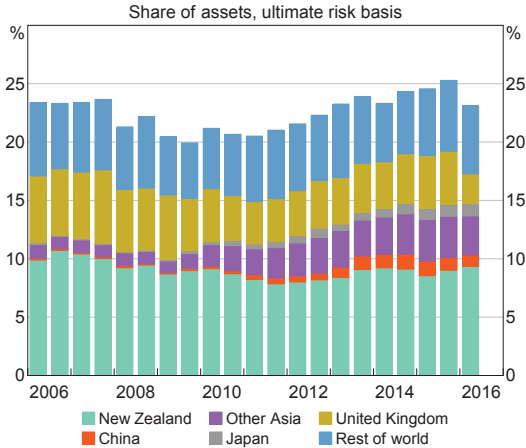
**Graph 3.4**  
**Foreign Bank Business Credit in Australia**  
By region of headquarters, share of total business credit



## International Exposures

Australian-owned banks have significantly reduced their international exposures over the past six months, which has made them less vulnerable to risks arising from foreign shocks, different regulatory environments and competitive offshore markets. Much of this decline reflects NAB's sale of its UK Clydesdale subsidiary, but there has also been a further decline in exposures to the Asian region as some banks increase their focus on core activities in the domestic market (Graph 3.5). International exposures now account for less than one-quarter of total consolidated assets and are likely to decline a little further in coming years as ANZ looks to divest low-return or higher-risk assets in Asia as part of a broader strategy to increase the group's return on equity.

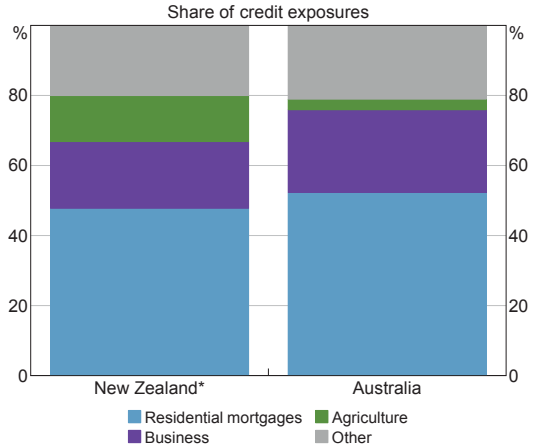
**Graph 3.5**  
**Australian-owned Banks' International Exposures**



New Zealand still accounts for by far the largest share of Australian banks' international exposures, at around one-tenth of their consolidated assets, as each of the major banks has substantial banking operations there. The balance sheets of the major banks' New Zealand subsidiaries are very similar to those of their Australian parents, and housing lending accounts for a little under half of their total credit exposures (Graph 3.6). As discussed in 'The Global Financial Environment' chapter, one of the main sources of risk to the New Zealand financial system is the combination of rapid housing price growth and high levels of household debt, which might increase the risk of large housing price falls in the future. So far, however, the performance of the major banks' New Zealand housing portfolio has remained strong, with the non-performing loan (NPL) ratio declining steadily to 0.2 per cent.

The major banks also have substantial exposures to the dairy industry in New Zealand. Persistently low milk prices have seen the performance of banks' dairy portfolios deteriorate at the same time as banks have significantly increased their provision of working capital loans to struggling borrowers that they assess as being viable in the medium term. The NPL ratio on dairy loans has risen modestly

**Graph 3.6**  
**Major Banks' Credit Exposures**



since the start of the year, although favourable climatic conditions, lower operating costs (including interest costs) and some loan forbearance have limited the increase. Banks have reported a marked increase in 'watchlist' loans, which have historically been a leading indicator of loan performance; performance would likely deteriorate further if climatic conditions worsened or dairy prices remained low. In response to these developments, banks have steadily increased collective provisions for dairy exposures over the past year.

## Liquidity and Funding

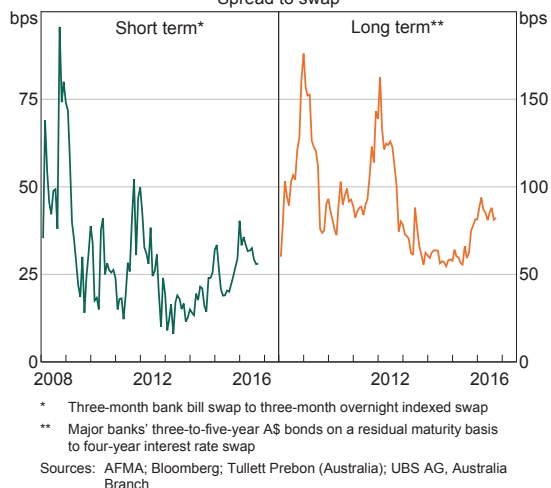
Banks' resilience to liquidity and funding shocks has improved since the financial crisis. Banks are now less exposed to wholesale funding markets, having significantly increased the share of deposit funding to around 60 per cent of total funding. Banks have also strengthened their resilience to short-term periods of liquidity stress by increasing their holdings of high-quality liquid assets. As a result, the aggregate Liquidity Coverage Ratio (LCR) of banks subject to the requirement was 120 per cent at June 2016, which allows for a sizeable buffer above the minimum requirement of 100 per cent.

From the start of 2018, banks will also be subject to the NSFR requirement. The NSFR is part of the Basel III liquidity framework and is intended to complement the LCR by limiting maturity mismatch and encouraging greater use of more stable sources of funding, such as long-term debt and retail deposits. APRA recently released revised rules for the NSFR, which are due to be finalised later this year. Although most banks already appear to broadly meet the minimum requirement based on these standards, they are likely to want to increase the share of more stable types of funding to ensure they maintain a suitable buffer above the regulatory minimum. This could see some banks issuing more long-term debt than they have in recent years, increasing their exposure to longer-term wholesale funding markets. Alternatively, some of the adjustment could come from increasing at-call and longer-dated retail deposit funding, but this route may be limited by the pool of available deposits and the fact that a shift in retail deposits from at-call to term will not increase their NSFR ratio much. The NSFR may also influence the composition of banks' assets, given that unsecured lending to businesses and households generally requires more stable funding than housing lending.

The focus on increasing more stable funding sources has already helped to increase competition for deposits that are treated favourably under the NSFR framework, and banks expect this to continue over the next year. Partly reflecting this, the major banks' average outstanding deposit rate has declined by less than the 50 basis point reduction in the cash rate since May. There have been limited changes to most term deposit rates over this time and advertised rates on some longer-dated deposits have increased since the August cash rate reduction, though deposits with this length of maturity account for only a small share of banks' total funding.

Spreads on Australian banks' wholesale funding have narrowed since March but remain higher than over recent years (Graph 3.7). Higher short-term

**Graph 3.7**  
**Banks' Debt Pricing**  
Spread to swap

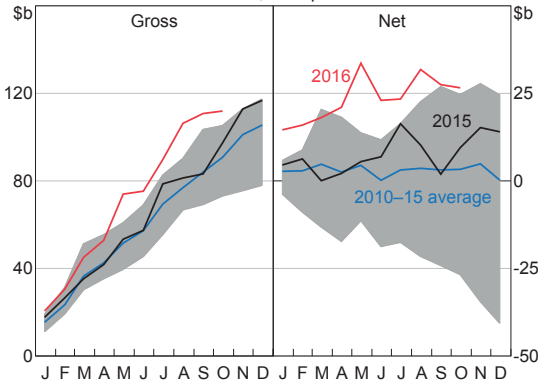


wholesale funding spreads partly reflect the effect of impending reforms to prime money market funds in the United States, which make them less attractive for investors and have led to an increase in spreads in both offshore and domestic markets.<sup>3</sup> Spreads on long-term funding have also remained elevated compared with those in recent years, but have generally proven resilient to periods of market volatility over the past six months, particularly around the UK referendum. Spreads were also little changed after S&P and Moody's placed the major Australian banks' credit ratings on negative outlook, in part because they would remain highly rated relative to other international banks even in the event of a one-notch downgrade.

While spreads are higher, Australian banks have retained good access to wholesale funding markets and have issued a greater amount of bonds than in recent years. Banks have increased the amount of their outstanding bonds by \$27 billion since the start of the year and have rolled over a further \$85 billion of maturing bonds (Graph 3.8). By already raising

<sup>3</sup> The new regulations require prime funds targeted at institutional investors to trade on a variable, rather than constant, net asset value basis. In addition, funds are permitted to impose liquidity fees and redemption gates, reducing the ability of investors to rapidly withdraw money during high-redemption periods.

**Graph 3.8**  
**Banks' Bond Issuance\***  
 Cumulative, A\$ equivalent



\* Shaded area is the range for 2010–15  
 Source: RBA

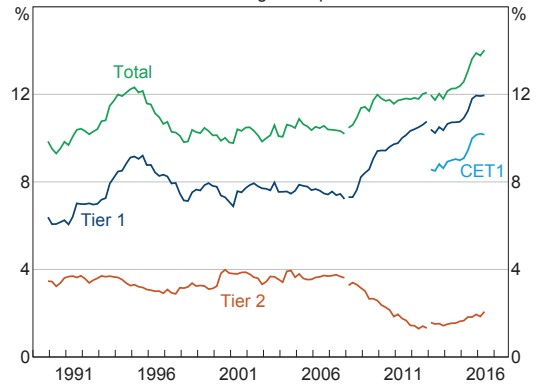
a large amount of funding, banks have limited the need to borrow over the remainder of the year. Liaison suggests that banks expect good access to offshore markets in the future.

In contrast, issuance of residential mortgage-backed securities (RMBS) has remained subdued and spreads remain elevated compared with recent years. However, banks have generally replaced this source of funding with unsecured issuance.

### Capital and Profitability

Australian banks have significantly increased their resilience to adverse shocks by strengthening their capital positions over the past couple of years (Graph 3.9). Most of this occurred in the second half of 2015 when the major banks raised a large amount of capital in response to APRA's announcement that it would increase the average risk weight for Australian mortgages measured under the internal ratings-based approach to credit risk from 1 July 2016. This increase in capital has strengthened their combined Common Equity Tier 1 (CET1) capital position relative to international banks such that they now sit in the top quartile of the distribution. It also builds on the changes to their liquidity and funding structures since the financial crisis that were discussed earlier. Together,

**Graph 3.9**  
**Banks' Capital Ratios\***  
 Consolidated global operations

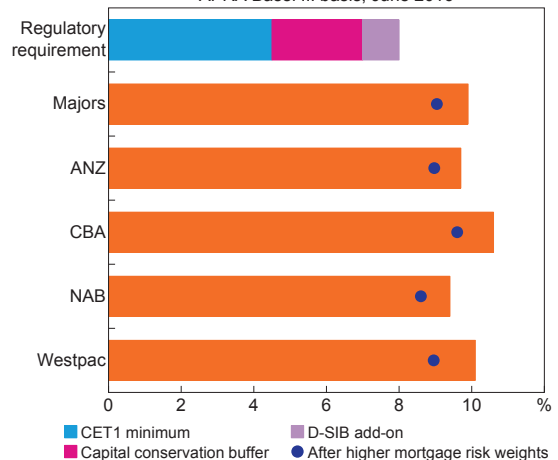


\* Per cent of risk-weighted assets; break in March 2008 due to the introduction of Basel II; break in March 2013 due to the introduction of Basel III  
 Source: APRA

these changes improve the banking system's ability to maintain its core economic functions during periods of stress.

The major banks' CET1 capital ratio was around 10 per cent of risk-weighted assets as at June 2016 (Graph 3.10). All other things equal, higher risk weights for Australian mortgages are expected to reduce their capital ratios by between 0.7 and 1.1 percentage points in the second half of 2016.

**Graph 3.10**  
**Major Banks' CET1 Capital Ratios**  
 APRA Basel III basis, June 2016



Sources: APRA; Banks' financial disclosures; RBA

Even after this adjustment, each of the major banks is expected to maintain a buffer of around 1 percentage point above the standard regulatory CET1 requirement of 8 per cent, which includes the 2.5 per cent capital conservation buffer and the 1 per cent add-on for domestic systemically important banks (D-SIBs).

The increase in capital ratios over the past year has also been reflected in higher leverage ratios, given that the average risk weight of their assets was largely unchanged. The leverage ratio is a non-risk based measure of a bank's Tier 1 capital relative to its total exposures, and is intended to be a backstop to the risk-based capital requirements. The leverage ratio framework is yet to be finalised internationally, although the Basel Committee's governing body agreed the minimum requirement should be 3 per cent and that the leverage ratio should be effective from January 2018. Each of the major banks' leverage ratios was around 5 per cent at June 2016, well above that minimum. At this level, the major Australian banks' leverage ratio sits around the median of international banks.

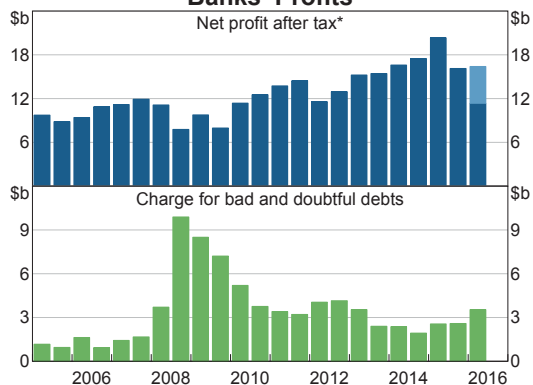
The total capital ratio of the whole banking system increased slightly over the first half of 2016, to around 14 per cent of risk-weighted assets. Australian banks issued a large amount of non-common equity capital (Additional Tier 1 (AT1) and Tier 2 (T2) instruments), although much of this was to replace existing AT1 instruments and was also offset by regulatory deductions; as a result the net increase was only around \$1 billion. Each of the major banks have issued AT1 instruments this year despite primary market spreads remaining elevated, and ANZ issued the first foreign currency-denominated AT1 instrument by a major bank since 2009. Banks continued to issue a large share of T2 instruments into offshore markets, maintaining a more diversified investor base.

APRA is expected to provide further details on a framework for Australian banks to achieve an 'unquestionably strong' position after changes to

the international capital framework are finalised around the end of the year. Although changes to the international framework are not intended to materially increase capital requirements, they could result in higher requirements in some areas. APRA has indicated that any required increases in capital for Australian banks should be well within the capacity of the banking system to absorb over the next few years. However, since capital generation from earnings has slowed, banks may need to reduce their dividend payout ratios if they want to increase capital ratios without issuing new capital. Any increase in capital could also exert downward pressure on banks' return on equity, as is further discussed in 'Box C: Recent Developments in Australian Banks' Capital Position and Return on Equity.'

Aggregate profit was little changed in the most recent half, after adjusting for a \$5 billion loss that NAB incurred on the sale of its UK subsidiary in February, and is at a similar level to that of two years ago (Graph 3.11). A sharp increase in the charge for bad and doubtful debts from low levels subtracted from profits as asset performance deteriorated across a number of portfolios. In particular, the major banks reported an increase in provisions for a small number of resource exposures and against some parts of their consumer portfolio and

**Graph 3.11**  
**Banks' Profits**



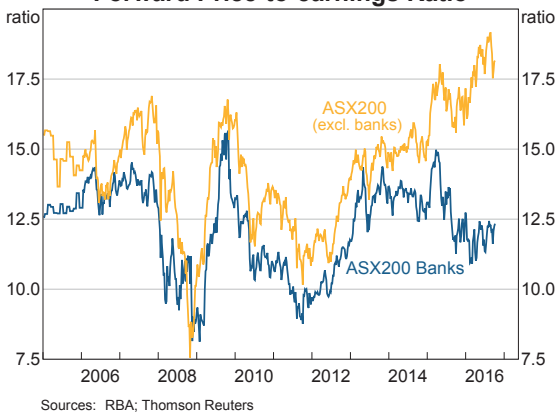
\* Shaded area abstracts from losses associated with NAB's divestment of Clydesdale

Sources: APRA; Banks' financial disclosures; RBA

New Zealand dairy exposures. In addition, moderate asset growth and narrowing margins weighed on net interest income, with most of the major banks reporting that the benefits from mortgage repricing were offset by higher funding and liquidity costs in the most recent half. Non-interest income (such as from trading and fees) has also declined recently.

Looking ahead, analysts expect profit growth to remain subdued in coming years. This reflects forecasts of an ongoing decline in net interest margins and only moderate asset growth. Bad debt charges are forecast to continue increasing from the low levels achieved in recent years, which will weigh on profit growth. This is in contrast to the previous six years when banks benefited from a steady decline in bad debt charges. Despite recovering since early April, Australian banks' share prices have continued to underperform the market and are lower than at the end of last year. The underperformance of bank share prices appears to reflect ongoing concerns about risks to future profitability and the potential need for banks to lower dividend payout ratios to meet higher capital requirements. These concerns have resulted in a marked divergence between bank equity valuations and those of the rest of the market (Graph 3.12).

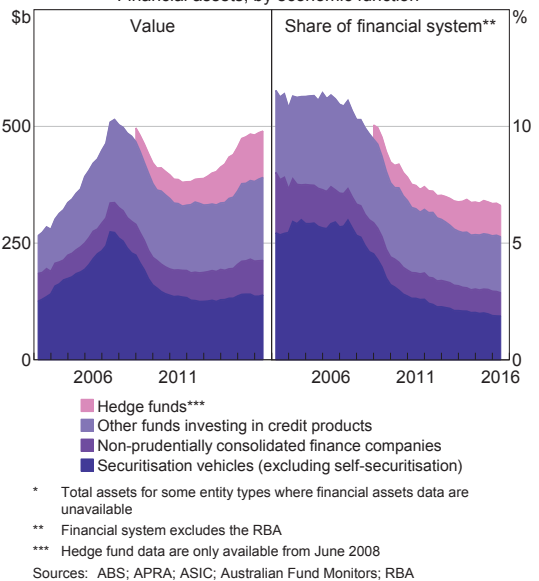
**Graph 3.12**  
Forward Price-to-earnings Ratio



## Shadow Banking

The tighter post-crisis prudential framework for banks creates a risk that credit activities will migrate to the less-regulated shadow banking sector. However, there is little evidence that this has occurred so far. The size of the shadow banking sector in Australia has remained at around 7 per cent of financial system assets over recent years, having declined from over 10 per cent in 2007, and is considerably smaller than in a number of large economies (Graph 3.13). Because of its small size and minimal credit and funding links to the regulated banking system, the shadow banking sector in Australia is currently judged to pose limited systemic risk.

**Graph 3.13**  
Shadow Banking in Australia  
Financial assets, by economic function\*



Securitisation is one area of shadow banking in Australia warranting ongoing attention, given that prudentially regulated entities have tightened their lending standards and mortgage originators tend to have somewhat riskier loan pools than banks. For example, mortgage originators' RMBS are backed by higher shares of loans with



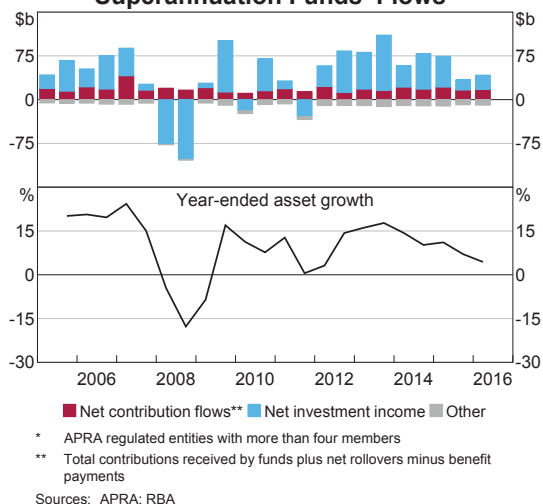
low documentation and high LVRs. However, outstanding RMBS issued by the shadow banking sector remains low, at around 1 per cent of Australian mortgages. Mortgage originators are in part constrained from adding much to overall credit growth because their access to warehouse funding from banks is limited and they lack capacity to process significantly larger loan volumes.

## Superannuation

The superannuation sector is a large part of Australia's financial system. Total assets amount to over \$2 trillion, equivalent to around half the size of the Australian banking system and three-quarters of the assets in the managed fund sector (a higher share than in other advanced economies). The risks inherent in the superannuation sector are lower than for other financial sectors because debt funding is only a very small share of total superannuation liabilities. Self-managed super funds (SMSFs) – which represent nearly one-third of superannuation assets and are not regulated by APRA – are permitted limited use of gearing through non-recourse borrowing and are more exposed than other funds to the risk of a commercial or residential property correction. However, banks are required to take into account the different (and potentially higher) risks posed by lending to SMSFs.

Total superannuation assets grew at an annualised rate of nearly 5 per cent over the first half of 2016, somewhat below the average pace of recent years, as low bond yields and relatively subdued equity market returns weighed on investment income (Graph 3.14). While net contributions have remained fairly stable in recent years, it is likely that outflows will trend higher relative to contributions as the population ages and more members enter the drawdown phase. Superannuation funds will therefore need to consider the associated liquidity implications.

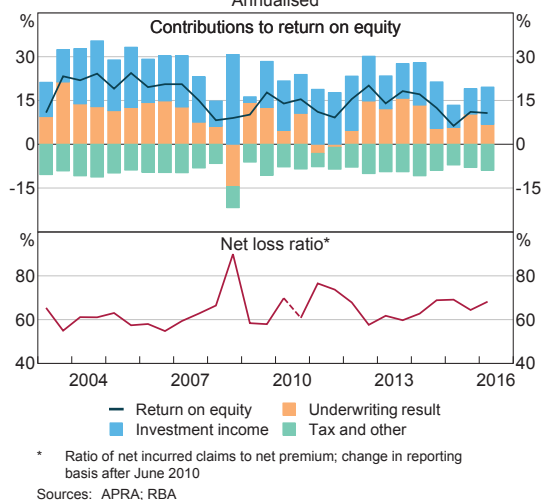
**Graph 3.14**  
**Superannuation Funds' Flows\***



## Insurance

The profitability of general insurers remains lower than a few years ago because of below-average underwriting results and investment returns (Graph 3.15). Insurers' underwriting results have been affected by declining commercial premium rates as a result of strong competitive pressures. In combination with an increase in reinsurance

**Graph 3.15**  
**General Insurers' Financial Ratios**  
Annualised

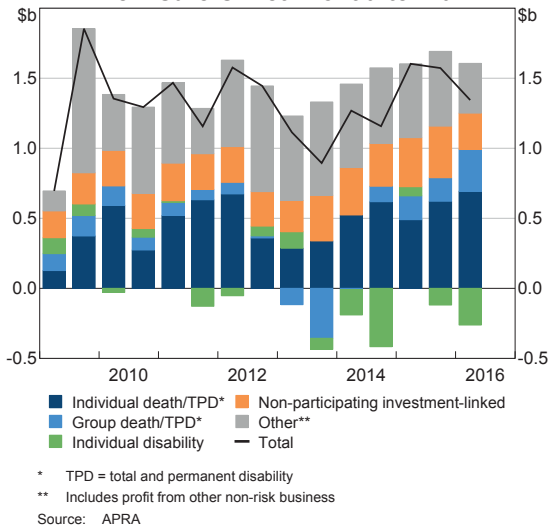


expenses (as insurers seek to lower their exposure to catastrophe risk), this has seen net premium revenues fall in both absolute terms and relative to claims, increasing insurers' net loss ratio. These factors have been exacerbated by persistent low returns on insurers' bond portfolios. The pressure on profits creates a risk that insurers might lower the credit quality of their investment portfolios or let underwriting standards slip (for example, by inappropriately pricing risks) in an attempt to raise returns. Nonetheless, the general insurance industry remains well capitalised with a capital position equivalent to 1.7 times APRA's prescribed amount.

Lenders mortgage insurers (LMIs) are specialist general insurers that offer protection to banks and other lenders against losses on defaulted mortgages. Profitability in the LMI industry has been relatively stable over the past couple of years, benefiting from rising housing prices and improving labour market conditions. However, LMIs are facing headwinds from a decline in high-LVR lending as banks tighten their mortgage lending practices and from an increase in claims due to higher delinquencies in Western Australia and Queensland. In addition, some LMIs remain vulnerable to large declines in premium revenue if other banks were to follow Westpac's move in 2015 and self-insure their mortgages.

The life insurance industry remains well capitalised, with capital equivalent to 1.8 times APRA's prescribed amount. However, the industry continues to be affected by losses on individual disability income insurance (commonly known as 'income protection insurance') partly as a result of the mispricing of risk (Graph 3.16). APRA's recent stress tests highlighted insurers' exposure to disability income insurance risks, but life insurers showed that they could restore their capital ratios to around current levels after taking reasonable mitigating actions (such as external capital

**Graph 3.16**  
**Life Insurers' Net Profit after Tax**



support).<sup>4</sup> Life insurers are also working to address structural weaknesses related to this product.

## Financial Market Infrastructures

Financial market infrastructures (FMIs) – including payment systems, central counterparties (CCPs) and securities settlement systems – facilitate the completion of most financial transactions in the economy. FMIs need strong regulation and supervision because they concentrate both services and risk as a result of their activities. The FMIs that support Australia's financial markets have continued to perform well and have demonstrated their resilience to periods of stress that have occurred throughout the year.

CCPs that are systemically important in Australia continue to enhance their management of financial risk, consistent with work globally to increase resilience. This is increasingly important because a greater volume of over-the-counter derivatives are being cleared through CCPs (as a result of regulations mandating this for many

<sup>4</sup> See Summerhayes G (2016), *Preparing for the unexpected – Insights from APRA's 2015 Life Insurance stress test*, Speech delivered to insurers who participated in APRA's 2015 Life Insurance Stress Test, Sydney, 19 August.

trades). For instance, the ASX Group CCPs have introduced new stress test scenarios to enhance their management of credit and liquidity exposures in extreme but plausible circumstances. These CCPs are also considering new 'add-ons' in calculating margin requirements from participants, to better address liquidity and concentration risks that could crystallise if a participant were to default.

One key way that CCPs manage the financial risk of defaults is by requiring market participants to provide 'margin' (collateral) to cover potential losses from past or future price changes. The significant price volatility and higher trading volumes that immediately followed the UK referendum triggered a higher-than-usual number of margin calls by CCPs for additional collateral, and this process was handled smoothly. All margin calls on the day of the referendum were met on time, including intraday calls. Intraday calls were particularly important for the ASX Group CCPs, since this allowed them to cover potential volatility during the European and US trading days (when Australian markets were closed). High-value payment and settlement systems in Australia also experienced high processing volumes during this period, but all the relevant systems accommodated these volumes and settlement was completed without incident.

Payments systems have also continued to function effectively. The Reserve Bank Information and Transfer System (RITS) settles Australian dollar payment obligations between banks and other approved institutions on a real-time gross settlement (RTGS) basis. The use of RTGS for large-value transactions mitigates settlement risk in the Australian payments system by reducing the build-up of large obligations between system participants. In the six months to end September, RITS settled around 6 million payments worth \$22 trillion with no major operational issues. The

frequency and duration of operational incidents affecting RITS transaction processing reported by members were at historically low levels during this period.

As a systemically important piece of market infrastructure, the Bank maintains a robust framework for the resilience of RITS. This includes duplication of critical infrastructure at two geographically separate sites. To ensure that RITS remains a highly secure system, projects are underway to review the system's resilience. Two significant milestones have recently been achieved in this work, with the completion of reviews of cyber security controls and the ability of RITS to detect, investigate and recover from a wide range of potential operational incidents. While finding that the overall resiliency of RITS is generally very strong, these reviews have also identified some areas where further enhancements will be made.

Cyber resilience has been a focus for the widely used financial messaging network operated by SWIFT, following a number of attacks targeting the network this year. The most prominent was on the central bank of Bangladesh, in which more than US\$80 million was stolen. Investigations to date suggest that the attacks were possible because of vulnerabilities in that bank's IT environment, rather than SWIFT's core messaging infrastructure. Nevertheless, SWIFT has announced a 'customer security program' in response, recognising the impact of successful attacks on the confidence of its network. This program aims, among other things, to improve information sharing on threats and best practice security procedures, and to enhance security guidelines and provide assurance frameworks for users of the SWIFT network. Ongoing efforts to increase the cyber resilience of other FMs are discussed in the 'Developments in the Financial System Architecture' chapter. ✦