

3. The Australian Financial System

The Australian banking system continues to benefit from strong overall asset performance. Bad and doubtful debt charges are at historically low levels relative to assets, with losses on business lending having declined steadily over recent years and those for housing lending remaining very low. Nonetheless, as outlined in the previous chapters, banks are facing an environment of heightened, but manageable, risk in a number of key sectors.

Specifically, strongly rising housing prices in some cities and high levels of investor activity have raised some concerns about the banks' housing loan portfolios. Housing lending is particularly important to banking stability because it represents a large and rising share of Australian banks' credit portfolios. With this in mind, the Australian Prudential Regulation Authority (APRA) and the Australian Securities and Investments Commission (ASIC), in conjunction with other agencies on the Council of Financial Regulators (CFR), have implemented a number of initiatives over the past couple of years to help guard against housing market risks and reinforce sound housing lending practices. Since the previous *Review*, banks have taken steps to reduce the level of risk-taking in their housing lending. Tighter lending practices will, over time, leave the industry better placed to cope with any future deterioration in the housing market and the broader economy. Even so, it is necessary and prudent for banks to continue to review their lending standards and ensure they remain appropriate for their risk appetite and the prevailing external environment.

APRA also recently announced an increase in capital requirements for most Australian residential

mortgages. The change, which comes into effect from 1 July 2016, applies to large banks that use the internal ratings-based approach to credit risk. 'Box C: The Regulatory Capital Framework for Residential Mortgages' of this *Review* provides background on the capital framework for residential mortgages in Australia. More broadly, APRA has endorsed the Financial System Inquiry (FSI) recommendation that Australian bank capital positions be further strengthened to ensure that they are 'unquestionably strong'. The major banks have raised a significant amount of common equity over recent months, bolstering their resilience to possible future adverse shocks.

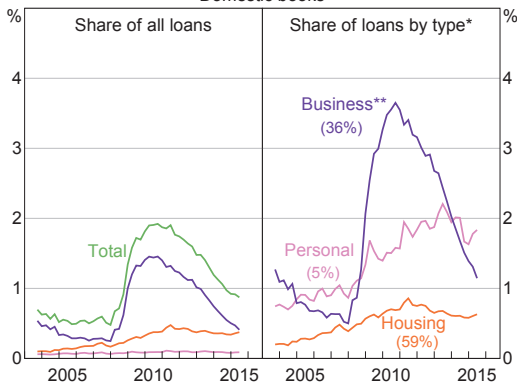
Risks to the Australian banking system have increased somewhat over the past six months from banks' lending to other sectors. The outlook for some commercial property markets has deteriorated further, and banks will need to be especially vigilant in their commercial property risk appetite and the maintenance of sound lending practices in the period ahead. Another area to watch is the four major banks' international exposures, especially housing and agricultural lending in New Zealand where the risks have continued to grow.

Profitability in the general insurance industry has fallen in recent quarters due to above-average weather-related claims, and the recent tightening in bank lending standards has reduced premium revenue for lenders mortgage insurers. With strong competition weighing on premium rates for general insurance, the adequacy of insurers' commercial product pricing warrants continued monitoring.

Bank Asset Performance and Lending Conditions

Asset performance is a key, albeit lagging, indicator of banks' stability. The asset performance of Australian banks has improved steadily over recent years and this trend continued over the first half of 2015. In banks' domestic loan portfolio, the overall ratio of non-performing assets to total loans was 0.9 per cent at June 2015, down from a peak of 1.9 per cent in mid 2010 (Graph 3.1).

Graph 3.1
Banks' Non-performing Assets
Domestic books



* Each category's share of total domestic lending at June 2015 is shown in parentheses

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

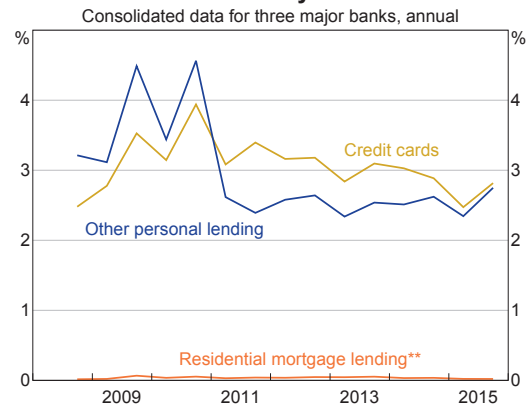
Source: APRA

Maintaining sound housing lending is important for Australian banks' total asset performance because it accounts for about 60 per cent of their domestic lending. The banks' housing non-performing loan (NPL) ratio edged higher over the six months to June 2015, to just over 0.6 per cent, but it remains below the peak of 0.9 per cent in mid 2011. According to disclosures by several major banks, housing loan arrears rates have risen in those states most exposed to weaker commodity prices.

However, historically only a small fraction of the stock of non-performing housing loans have resulted in actual losses for banks, because the value of the debt on most non-performing housing loans has been more than covered by the realisable value of the property. In recent years, the write-off rate

for the major banks' housing lending has therefore been comfortably below 0.1 per cent (Graph 3.2). In contrast, at around 2–3 per cent over recent years, write-offs on credit card debt and other personal lending have been higher, consistent with some portion of this lending being extended to borrowers with a relatively weak credit profile and on an unsecured basis. Although credit card and personal lending is riskier, it represents only a small share of banks' total domestic loans.

Graph 3.2
Credit Losses by Portfolio*



* Write-offs net of recoveries, as a share of on-balance sheet exposures

** After the effect of lenders mortgage insurance (LMI). LMI covers mortgage losses that account for an even smaller share of the major banks' exposures

Source: Banks' Pillar 3 Reports

While the overall stress in banks' housing loan portfolios remains low, banks are currently facing an environment of heightened risk in their housing lending (as discussed in the 'Household and Business Finances' chapter). In view of this, APRA has intensified its supervision of banks' housing lending practices over the past couple of years. As outlined in the previous *Review*, 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 housing lending; 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 percentage points above the loan rate, with a minimum 'floor' assessment rate of at least 7 per cent.

APRA also undertook a 'hypothetical borrower exercise' in early 2015 to investigate the range of housing lending standards. The survey required a number of lenders to provide serviceability assessments for four hypothetical borrowers – two owner-occupiers and two investors. The results revealed large variations in serviceability practices across the industry and some cases where practices were less prudent than is desirable.¹ Specifically, some lenders' serviceability assessments were based on: a lower level of living expenses than declared by the borrower; optimistic judgements of the reliability of borrowers' income; and/or implicit assumptions that interest rates on a borrower's existing debts would not rise. ASIC's recently released review of lenders' interest-only housing lending included similar findings, and also noted instances where the lender did not make reasonable enquiries that the interest-only loan was suitable for the borrowers' circumstances and their capacity to repay.² Overall, the findings of these reviews suggest that banks' lending practices, at least those relating to serviceability assessments, were somewhat looser than had been previously understood (although lending standards overall were still better than in the years leading up to the financial crisis).

Over recent months many banks have taken steps to strengthen their housing lending practices and respond to regulatory expectations.

- General housing loan serviceability criteria have been tightened. In particular, many banks have increased the interest rate buffer used to test that borrowers could continue to service the loan if interest rates were to rise. It is now typical for banks to have an interest rate buffer of at

least 2.25 percentage points above the actual loan rate, together with a floor assessment rate of at least 7.25 per cent. Some banks have also corrected their processes for collecting and recognising a borrower's declared minimum living expenses, while most are altering their minimum living expense assumptions so that they increase with borrower income.

- Serviceability criteria specifically for investor housing loans have been tightened. The prudent practice of applying an interest rate buffer to the prospective borrower's existing mortgage debt has been implemented by those banks that were not doing so, although practices still vary on how these buffers are applied. Negative gearing benefits are no longer being considered in some cases.
- Maximum allowable loan-to-valuation ratios (LVRs) have been lowered for investors by some banks. In addition, several banks have reduced LVR caps for higher-risk loans, such as those to certain locations, including mining-exposed regional towns and some metropolitan postcodes.
- Interest-only lending practices have been adjusted. Some lenders have reduced the maximum term of the interest-only period for owner-occupiers, while others have tightened their serviceability assessment by considering a borrower's capacity to make principal and interest payments over the residual term (i.e. the period after the interest-only loan expires) rather than the full life of the loan.

In addition to the adjustments to non-price loan terms, most banks have increased interest rates on their investor housing loans over the past few months. For new investor loans, fixed rates have been raised and discounts to advertised variable rates wound back. Interest rates on existing variable-rate investor housing loans have been lifted by between 20 and 50 basis points (although one major bank instead increased pricing for interest-only loans). There is now a differential between the indicator rates for owner-occupier and

1 For a more detailed discussion of the results, see Byres W (2015), 'Sound Lending Standards and Adequate Capital: Preconditions for Long-Term Success', Speech to the COBA CEO & Director Forum, Sydney, 13 May.

2 For further detail, see ASIC (2015), 'Review of Interest-only Home Loans', Report No. 445, August.

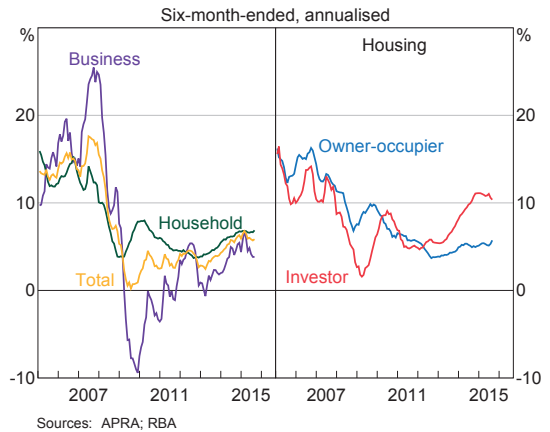
investor housing loans for the first time since 1996.³ Consequently, borrowers now have an incentive to seek reclassification of their loans as owner-occupier rather than investor lending where there has been a change to their living arrangements. Moreover, price competition for new and lower-risk owner-occupier borrowers remains strong, despite the forthcoming increase in the indicator rate announced by Westpac.

It remains too early to tell how much these changes will affect growth in investor housing lending. Annualised growth at the end of August 2015 remained above APRA's 10 per cent benchmark across the banking industry, including at some major banks (Graph 3.3). Ongoing revisions to banks' investor and owner-occupier lending data are adding volatility to these credit aggregates. Looking through this volatility, growth in aggregate investor housing credit slowed over the two months to August, and investor loan approvals have declined moderately recently. It is possible that some banks may need to further adjust their lending practices for growth to slow below 10 per cent, although, for an individual lender, any changes to headline pricing could have less of an effect than desired if competitors also move their pricing to avoid attracting a higher share of investors.

More generally, as lending practices tighten, banks' housing loan portfolios should, over time, become better placed to cope in the event of weaker economic and property market conditions. The serviceability measures also provide more assurance against the risk that new borrowers would be unable to service the loan at interest rates well above current levels. Even so, it is necessary and prudent for banks to continue to review their lending practices and ensure they remain appropriate for their risk appetite and the prevailing external environment. This includes segments of owner-occupier lending where competition among banks remains strong.

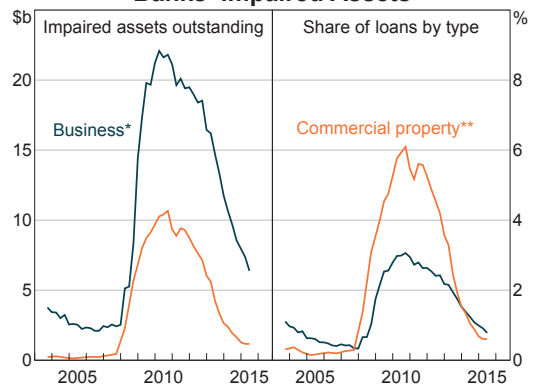
³ Lenders typically charged a 1 percentage point higher interest rate for investors until 1996. For a discussion of historical developments, see RBA (2002), 'Innovations in the Provision of Finance for Investor Housing', *RBA Bulletin*, December, pp 1–5.

Graph 3.3
Credit Growth



After deteriorating during the economic slowdown of 2008–09, the performance of banks' domestic business lending has improved steadily over recent years. This has partly reflected the strong recovery in commercial property prices, where exposures previously accounted for a large (and disproportionate) share of impaired business loans (Graph 3.4). The tightening in business lending standards around 2008–09 has also probably strengthened the underlying quality of banks' business loan portfolios. However, in recent periods some banks have reported slightly higher 'collective provisions' because credit quality has deteriorated in

Graph 3.4
Banks' Impaired Assets

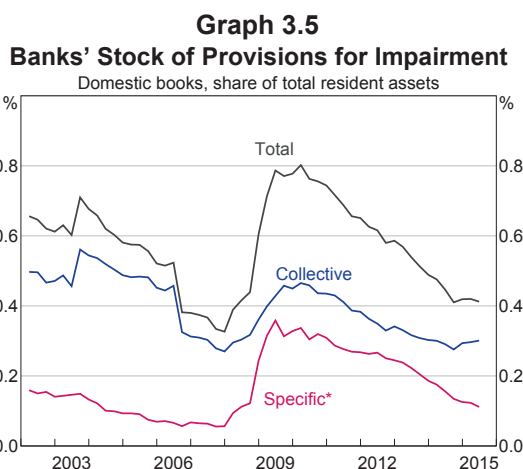


* Domestic banks; includes lending to financial businesses, bills, debt securities and other non-household loans

** Consolidated Australian operations

Source: APRA

their agricultural and mining-related loan portfolios, reflecting declines in global commodity prices (Graph 3.5).

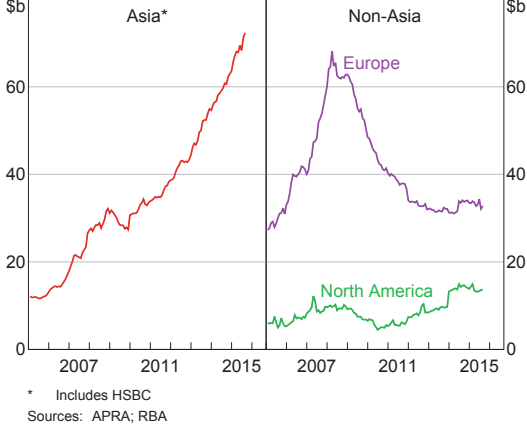


* Excludes portion of collective provision treated as specific provision for regulatory purposes
 Source: APRA

Business lending conditions have continued to ease in an environment of subdued demand for such credit. According to industry liaison, over recent quarters margins on loans to large businesses have declined to low levels, while more favourable non-price terms – such as longer loan tenor and weaker covenants – continue to be obtained by some borrowers. Vigorous competition for new large corporate loans is being induced by the narrow spreads available on market-based funding, as well as the growing presence of a number of foreign banks, particularly Asian-owned banks, in the Australian business loan market (Graph 3.6).

Competition among lenders appears especially acute in the commercial property loan market, where price and non-price lending conditions are generally under significant pressure. However, liaison contacts report a rise in bank margins and tightening of lending criteria for residential property development over recent months. These changes are a response to strong growth in banks' exposures to this segment and concerns about an oversupply of apartments in some locations; settlement risk on apartments purchased 'off-the-plan' may have

Graph 3.6
Foreign Bank Business Lending in Australia
 By region



* Includes HSBC
 Sources: APRA; RBA

also increased because of the stricter criteria that banks are now applying to investor housing loans. Despite the recent targeted adjustments, banks will need to remain vigilant in ensuring that their risk appetite and lending practices are appropriate: risks in residential property development and other commercial property markets continue to build, and this area of their lending has been a key source of bank loan losses in the past (see the 'Household and Business Finances' chapter).

International Exposures

Australian-owned banks' international exposures arise from their direct cross-border activities, as well as the operations of their overseas branches and subsidiaries. International exposures account for around one quarter of Australian-owned banks' consolidated assets (Table 3.1).

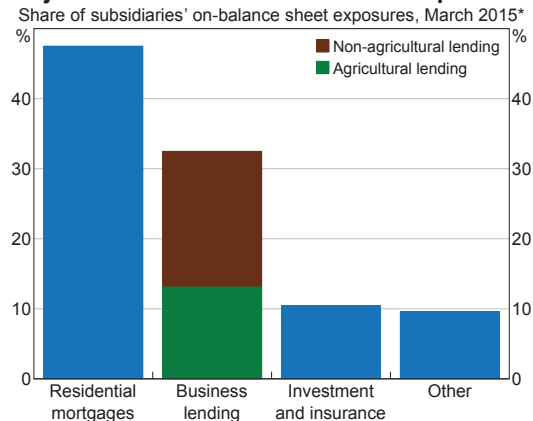
Australian-owned banks' largest international exposure is to New Zealand, where all four major banks have sizeable banking operations. As is the case in their Australian businesses, housing lending represents a substantial share (a little under half) of the major banks' credit exposures in New Zealand (Graph 3.7). The performance of their housing lending has been strong recently – the NPL ratio was 0.4 per cent in early 2015, down from a peak of 1.3 per cent

Table 3.1: Australian-owned Banks' International Exposures
Ultimate risk basis, June 2015

	Value \$ billion	Share of international exposures Per cent	Share of global consolidated assets Per cent
New Zealand	330	35	9
Asia ^(a)	183	19	5
– China	45	5	1
United Kingdom	176	19	5
United States	140	15	4
Europe	58	6	1
– Greece	0	0	0
Other	59	6	2
Total	945	100	24

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

Graph 3.7
Major Banks' New Zealand Credit Exposures
Share of subsidiaries' on-balance sheet exposures, March 2015*



* Data for CBA are end-June 2015 and data for Westpac are end-September 2014

Sources: New Zealand Subsidiaries' Annual Reports; RBA

in mid 2010. However, rapid housing price growth in Auckland, along with strong investor activity, has heightened the risk of a future fall in housing prices and associated bank loan losses. Housing lending in New Zealand is quite geographically concentrated, with about half of the stock of debt secured against properties in Auckland. The Reserve Bank of New Zealand recently announced further measures to curb investor housing lending at high LVRs in Auckland, but relaxed LVR restrictions a little in other regions of New Zealand (see 'The Global Financial Environment' chapter).

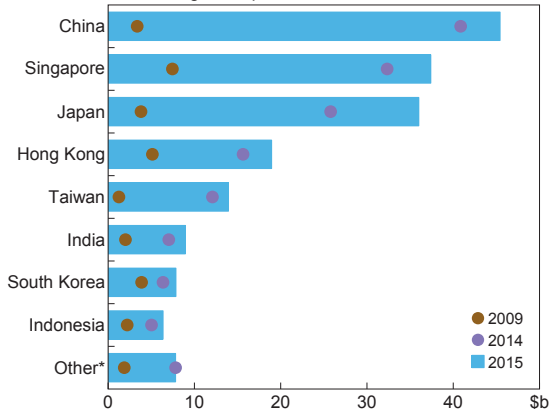
The major banks also have substantial exposures to the agriculture sector in New Zealand, reflecting the economic importance of the dairy industry there. Specifically, the major banks' exposures to the agriculture sector are around 13 per cent of their credit exposures in New Zealand, around two-thirds of which (roughly \$30 billion) are to the dairy industry. Although a much smaller share of assets than housing lending, dairy exposures are riskier in terms of both their probability of default and likely losses in that event, and the risk of loss is currently higher than usual given the low level of global milk prices. There is also a risk that stress in the dairy sector might exacerbate the rural property price cycle.

Australian-owned banks continue to expand their exposure to several jurisdictions in Asia, including China (Graph 3.8). Financial market volatility in the Asian region has increased markedly over recent months in association with concerns about economic growth in China. At this point, the direct risk to the Australian banking system from a possible deterioration in economic and financial conditions in China appears limited. Exposures to China and the broader Asian region are only a small share of Australian-owned banks' assets, and many of these are shorter-term and trade-related, factors which should lessen credit and funding risks. That said, operational and legal risks could be relatively high,

Graph 3.8

Australian-owned Banks' Exposures to Asia

Consolidated global operations, ultimate risk basis, as at June



* Cambodia, Laos, Malaysia, Philippines, Thailand and Vietnam
Sources: APRA; RBA

as some operations in Asia are new or dissimilar to those in Australia. Any material impact on the Australian banking system from developments in Asia is more likely to be due to indirect effects, such as those stemming from a sustained period of turbulence in global funding markets and/or softer economic growth across the Asia-Pacific region.

Funding and Liquidity

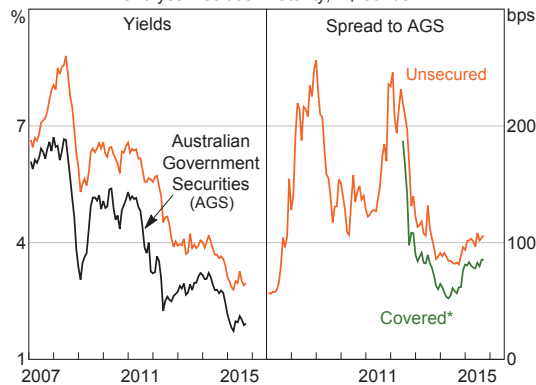
Global bank wholesale funding markets have been less affected by recent international volatility than equity markets. Australian banks generally retained good access to a range of foreign currency bond markets, and were able to issue bonds offshore in June and July, around the time of heightened concerns about Greece exiting the euro area. Spreads on the major banks' bonds have widened since early 2015 but remain well below those seen over 2008–12 (Graph 3.9).

The direct effect of higher wholesale funding costs on the *overall* cost of funding for the large Australian banks is less than five years ago because wholesale funding is now a smaller share of their balance sheets. Over recent years banks' share of domestic deposit funding has increased, while their bond issuance has only been in line with their maturities (Graph 3.10). Australian banks have issued about \$85 billion in bonds since the start of 2015; around

Graph 3.9

Major Banks' Bond Pricing

3–5 year residual maturity, A\$ bonds

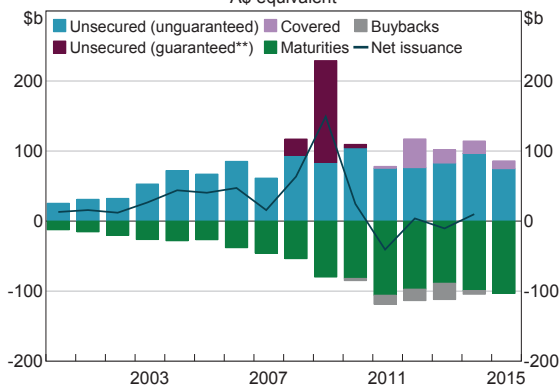


* Covered bond pricing interpolated to a target tenor of 4 years using bonds with a residual maturity between 2 and 10 years
Sources: Bloomberg; UBS AG, Australia Branch

Graph 3.10

Banks' Bond Issuance and Maturities*

A\$ equivalent



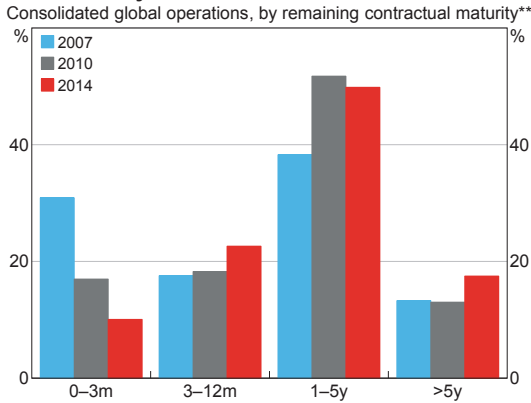
* 2015 issuance is year-to-date
** Guaranteed by the Commonwealth of Australia
Source: RBA

70 per cent was issued in offshore markets, similar to the share in the preceding few years. The recent depreciation of the Australian dollar against the major currencies should moderately reduce the need for Australian banks to use global wholesale funding markets, as less foreign currency issuance is required to fund the same amount of Australian-dollar-denominated lending. Depreciation of the Australian dollar also tends to add to banks' liquidity because they then receive collateral inflows from counterparties to their derivative transactions for hedging foreign-currency-denominated debt.

Banks can also lessen the impact of any deterioration in wholesale funding conditions by ensuring that the portion of their funding maturing in the near term is small. Since 2007 the major banks have significantly reduced the share of their wholesale debt with maturities of less than three months (Graph 3.11). Covered bonds have also enabled the major banks to issue at longer tenors, as well as attract new investors that have AAA mandates; liaison with the major banks indicates that their unsecured bond investor base has also become more diverse.

Graph 3.11

Major Banks' Debt on Issue*



* Short- and long-term debt securities, including bonds, notes, commercial paper, loan capital and bill acceptances
 ** As at end of financial year – 30 June for CBA and 30 September for ANZ, NAB and WBC
 Sources: Banks' Annual Reports; RBA

Despite these changes, further lengthening of banks' funding maturity profiles is likely to be necessary for them to meet the Basel III Net Stable Funding Ratio requirement scheduled for introduction in 2018.

The cost of banks' domestic deposit funding has declined as competition for deposits has eased. Since the start of this year, the major banks' average outstanding deposit rate has fallen by around 60 basis points, compared with a 50 basis point decline in the cash rate over this period. Banks report that they continue to refine their deposit offerings and pricing to better reflect liquidity risk and adjust to the Liquidity Coverage Ratio (LCR) requirement that was introduced at the start of this year.⁴ A focus for banks in this regard has been wholesale deposits, such as those by financial institutions and large corporations, because of the large balances involved and their less favourable treatment under the LCR.

As at 30 June 2015, all locally incorporated banks subject to the LCR exceeded the 100 per cent minimum requirement. Banks' aggregate LCR was 119 per cent, with projected net cash outflows outweighed by holdings of high-quality liquid assets (HQLA) and collateral eligible for use with the Reserve Bank's Committed Liquidity Facility (CLF) (Table 3.2). Banks' HQLA was split roughly evenly between assets denominated in Australian dollars

Table 3.2: Components of the Liquidity Coverage Ratio^(a)
 All currencies; June 2015

	Value \$ billion	Share of consolidated assets Per cent
Net cash outflows	529	14
– Cash outflows	650	17
– Cash inflows	121	3
High-quality liquid assets	376	10
Committed Liquidity Facility ^(b)	251	6

(a) LCR equals the sum of HQLA and CLF divided by net cash outflows. Only locally incorporated banks that are subject to the 100 per cent LCR requirement are included

(b) Amount of collateral eligible for use with the CLF

Sources: APRA; RBA

⁴ The LCR is a global prudential requirement for banks to hold high-quality liquid assets that at least cover their expected net cash outflows within a 30-day stress period. See RBA (2015), 'Box A: The Basel III Liquidity Reforms in Australia', *Financial Stability Review*, March, pp 32–34.

and foreign currency. Most Australian dollar HQLA holdings were state government securities ('semis') rather than Australian government securities, the other debt securities that are allowed to be included as Australian dollar HQLA.

Capital

Australian banks have increased their resilience to adverse shocks over recent years by strengthening their capital positions. In late 2014, the Final Report of the FSI recommended that Australian bank capital ratios be further strengthened to ensure they are 'unquestionably strong' by international standards. This view considered the importance of a well-functioning banking sector to the Australian economy and the trend towards higher regulatory capital settings in a number of other countries.

Assessing the capital strength of banks across jurisdictions is made difficult by, among other things, differences in national regulatory definitions and capital settings. To help inform the assessment in the Australian context, APRA recently released a study that provided internationally comparable capital ratios for the major banks and a large number of international peers as at June 2014.⁵ The study found that the major banks' aggregate Common Equity Tier 1 (CET1) capital ratio was around 300 basis points higher when reported on a comparable basis. This result highlighted APRA's conservative application of the Basel international capital framework, both for the definition of capital and the measurement of risk-weighted assets. The major banks' CET1 capital ratio sat a little above the median of international peers, while their total capital ratio was around the median; these rankings were below the 'top quartile' of the distribution that the FSI considered appropriate. APRA will use the results of the relative international bank comparisons to inform, but not determine, the appropriate capital settings in

Australia over the medium term. Directly linking domestic capital settings to a moving international benchmark could require frequent, and perhaps unnecessary, adjustment.

Within the Australian banking sector, the need for unquestioned capital strength is particularly relevant for the major banks. All four major banks have been designated domestic systemically important banks (D-SIBs) by APRA, because their dominant share of banking activity in Australia means that their distress could harm the real economy. Furthermore, they are internationally active on both sides of their balance sheets and are therefore subject to global market conditions and scrutiny. It is vital that the major banks are able to not only withstand severe external shocks, but also support the economy during such episodes by being able to secure new funding and extend new lending.

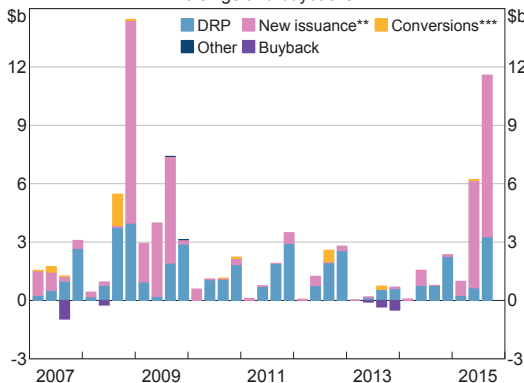
In July, APRA announced an increase in capital requirements for Australian residential mortgages of banks using the internal ratings-based (IRB) approach to credit risk – that is, the four major banks and Macquarie Bank. The change, which comes into effect from 1 July 2016, will increase the average risk weight of these exposures from about 17 per cent to at least 25 per cent (see 'Box C: The Regulatory Capital Framework for Residential Mortgages'). The announcement addressed a recommendation of the FSI to narrow the difference between banks' capital requirements when calculated under the IRB approach versus the standardised approach used by smaller ADIs. This will also increase the resilience of the banking system, given that housing lending represents a large share of credit portfolios and the IRB banks account for the bulk of Australian housing lending. Moreover, the additional capital is timely because banks are currently facing an environment of heightened risk in their housing loan portfolios.

The major banks have taken a number of actions since the previous *Review* to strengthen their capital positions. Around \$18 billion in common equity has been issued through a combination of discounted rights issues, share purchase plans,

⁵ Data limitations mean that the calculation of internationally comparable bank capital ratios is imprecise. For further details, see APRA (2015), 'International Capital Comparison Study', Information Paper, 13 July.

institutional placements and dividend reinvestment plans (DRPs) (Graph 3.12). In mid October, Westpac announced plans to issue a further \$3.5 billion in common equity. At this point the major banks have not cut their dividend payments, which would by definition accelerate the pace of their internal capital accumulation. Major bank capital positions have also been bolstered by asset divestment: ANZ sold its Esanda dealer finance business; NAB its commercial banking subsidiary in the United States; and Westpac part of its asset management business. NAB is also in the process of divesting its UK subsidiary, for which it was required to raise more than \$3 billion in capital to provision for legacy conduct issues.

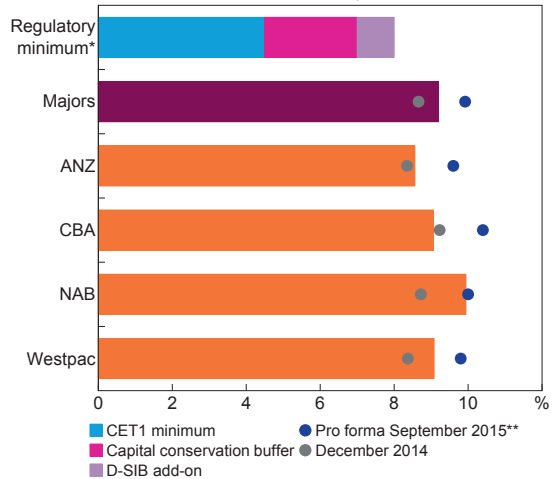
Graph 3.12
Banks' Common-equity Capital
Raisings and buybacks*



* Excludes capital raised as part of an acquisition
 ** Includes new placements, rights issues, share purchase plans and employee share schemes
 *** Conversions of banks' non-common equity capital instruments
 Sources: ASX; Banks' Annual Reports

The sizeable capital issuance drove a significant increase in the major banks' aggregate CET1 capital ratio over the six months to June 2015 to 9.2 per cent. Additional capital initiatives undertaken in the September quarter add a further 80 basis points of CET1 capital (Graph 3.13). Consequently, the major banks' capital ratios are now all well above the required regulatory CET1 ratio of 8 per cent (including the capital conservation buffer and D-SIB surcharge). Nonetheless, it is prudent for the major banks to maintain a larger-than-usual buffer above

Graph 3.13
Major Banks' CET1 Capital Ratios
APRA Basel III basis, June 2015



* The capital conservation buffer and D-SIB add-on will take effect on 1 January 2016
 ** Additional change to capital ratio from capital actions in the September quarter, all else equal
 Sources: APRA; Banks' Financial Disclosures; RBA

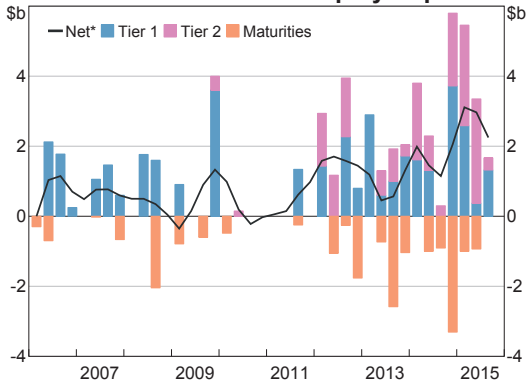
regulatory requirements at this juncture, in large part because, as noted earlier, capital requirements for their Australian mortgages are scheduled to increase from mid 2016 (which could subtract around 80 basis points from the major banks' aggregate CET1 ratio). A number of other potential capital policies on the international reform agenda might require Australian banks to further increase their capital positions.

Australian banks have also increased their issuance of non-common equity capital (Additional Tier 1 and Tier 2 instruments, sometimes called 'hybrids') in recent quarters (Graph 3.14). Issuance of around \$10½ billion in 2015 to date has been well above the level of maturities in the period, and thus has contributed to a rise in banks' total capital ratio. To help diversify their investor base, some of the major banks have issued Tier 2 foreign currency instruments in 2015, such as renminbi-denominated instruments in Hong Kong.

Spreads on banks' new Additional Tier 1 issuance drifted higher in the first half of 2015, and recent issues by the major banks have traded in the

Graph 3.14

Banks' Non-common-equity Capital



* 7-period Henderson trend; net change in capital can exceed net issuance if maturing instruments are not fully Basel III compliant
Source: RBA

secondary market at a substantial discount to their listing prices. These developments appear to have partly reflected a combination of market volatility and increased supply of hybrid instruments. Another factor could be that investors might be substituting into conventional common equity that has been offered at a discount to market prices.

Under the Basel III international capital framework, banks will be required to meet a non-risk-weighted ratio, or 'leverage ratio', from 2018. The Basel III leverage ratio is intended to be a backstop to the risk-based capital requirements. The ratio measures the size of a bank's Tier 1 capital base relative to its total on- and off-balance-sheet exposures, with a low ratio indicating greater use of non-equity funding. The largest Australian banks must begin disclosing their leverage ratio from their first reporting date after 1 July 2015. APRA expects to consult on the implementation of the leverage ratio in Australia after the calibration of the minimum international leverage ratio is finalised by the Basel Committee. The recent APRA study indicated that the major banks' aggregate ratio was about 4½ per cent at June 2014, well above the draft 3 per cent international leverage ratio requirement.

Disclosures of large global banks suggest that some have further work to do to comfortably meet their leverage ratio. There are indications that some

global banks are pulling back from financial market activities to help ensure that they meet the leverage ratio. Such balance sheet adjustments could have implications for the Australian financial system because global banks are major players in financial markets here, such as those for certain derivatives and securities financing. Because of the specialised and complex nature of these activities, it might be hard for other players to replace this activity, at least at short notice. Liquidity in some Australian financial markets could therefore be reduced; if so, market participants will need to adjust their behaviour accordingly.

Profitability

Strong profitability in recent years, driven by improving loan performance and solid income growth, has supported Australian banks' capital positions. In the six months to June 2015, banks' aggregate profit was \$20.2 billion, \$2.7 billion (15½ per cent) higher than in the previous half year (Table 3.3). Headline profit growth was supported by one-off items, as well as increasing revenues from market-based activities, such as trading and investment income. Net interest income was little changed despite solid asset growth, as the net interest margin narrowed due to strong competition in lending markets. As expected, the bad and doubtful debt charge rose from its historically low level as a share of total assets, with some banks disclosing higher collective provisions.

At the time of writing, equity market analysts expected the major banks' profitability to decline modestly in the near term (Graph 3.15). The major banks' return on equity was forecast to be around 14 per cent for the 2016 financial year, a little below the average of around 15 per cent over recent years. This reduction may reflect analysts' expectations of a small increase in bad and doubtful debts from their current low levels and/or that rises in average funding costs from higher capital levels will not be fully passed on to borrowers. Even so, a subsequent fall in the major banks' return on equity might be accommodated by investors if they were to adjust

Table 3.3: Banks' Half-yearly Profit Results^(a)
Consolidated global operations; \$ billion

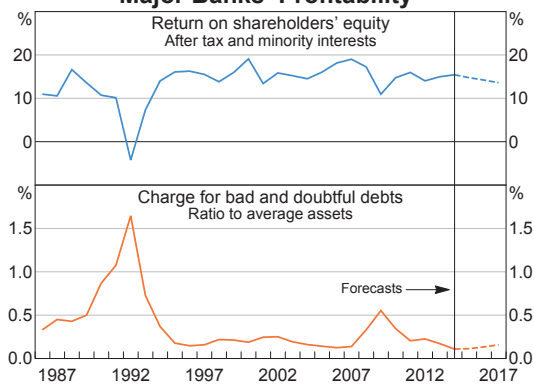
	Dec 2014	June 2015	Change	Average change since 2010 ^(b)
Income				
Net interest income	34.6	34.5	-0.2	0.8
Non-interest income	17.8	19.1	1.3	0.0
Expenses				
Operating expenses	25.4	24.3	-1.1	-0.1
Bad and doubtful debts	1.9	2.6	0.6	-0.3
Profit				
Net profit before tax	25.5	27.2	1.7	1.1
Net profit after tax and minority interests	17.5	20.2	2.7	0.9

(a) Includes all Australian-owned banks, as well as foreign subsidiaries and branches of foreign banks operating in Australia

(b) Average half-yearly change

Sources: APRA; RBA

Graph 3.15
Major Banks' Profitability*



* From 2006 data are on an IFRS basis; prior years are on an AGAAP basis; includes St. George and, from 2009, Bankwest; analysts' forecasts are for the 2014/15, 2015/16 and 2016/17 financial years

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

their required returns to account for any decline in risk arising from stronger capital positions. If, on the other hand, banks continue to maintain their return on equity targets, it will be important that they do not pursue these through reducing resources devoted to risk management and operational capabilities.

Similarly, equity market investors appear to have revised their view of the major banks' earnings and dividend prospects downwards, with their share prices declining by 18 per cent since their peak in March 2015 (Graph 3.16). This fall in share prices

Graph 3.16
Banks' Share Prices
1 January 2007 = 100



Sources: Bloomberg; RBA

partly reflects the change in risk sentiment among financial market participants globally. The major banks' recent capital raisings have also been a factor, as their share prices have fallen further than the regionals and the broader market over recent months. As a result, the major banks' equity valuation – as measured by their price-to-book ratio – is now a little below its long-run historical average level, although it remains well above those of the major advanced-economy banking systems.

Shadow Banking

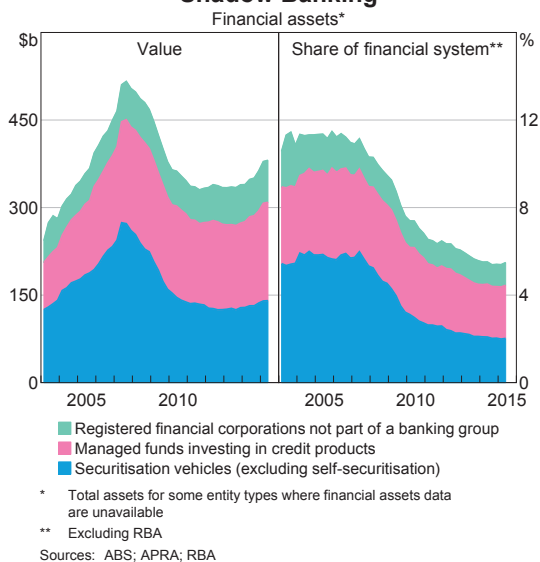
Addressing risks in shadow banking – defined as credit intermediation involving entities and activities outside the ‘regular’ banking system – has been a core area of international regulatory reform since the financial crisis. This has included assessing the potential risks that might arise from bank-like activities migrating to the shadow banking sector in response to the tighter post-crisis prudential framework for banks.

The shadow banking sector represents only around 5 per cent of financial system assets in Australia. This share is down from over 10 per cent in 2007 and well below that for a number of large economies. These estimates are based on the Financial Stability Board’s (FSB’s) ‘narrow definition’ of shadow banking, which in Australia includes securitisation vehicles, registered financial corporations that are not part of a banking group, and managed funds that invest in a range of short- and long-term credit products (Graph 3.17).⁶ Because of its small size and minimal credit and funding links to the regulated banking system, the shadow banking sector in Australia is judged to pose limited systemic risk. Nonetheless, the Reserve Bank and other Australian financial regulators continue to monitor shadow banking activity for signs of risk. As part of these efforts, the Reserve Bank provides regular updates to the CFR and participates in the FSB’s annual global assessment of shadow banking activity.

Non-bank securitisation activity is an area of shadow banking that warrants particular attention given the heightened risk environment in the domestic mortgage market. Issuance of residential mortgage-backed securities (RMBS) has picked up since 2013, including for non-ADI mortgage originators that fall outside the prudential regulatory

⁶ Other non-prudentially regulated financial entities account for a further 10 per cent of financial system assets in Australia, but are either not involved in credit intermediation or their parent institution is subject to consolidated prudential regulation. For further discussion of 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 3.17
Shadow Banking



perimeter. Mortgage originators tend to have riskier loan pools than banks: they are the only suppliers of non-conforming residential mortgages (which are those that do not meet the standard underwriting criteria of banks), and their RMBS have a higher average LVR and a larger share of low documentation loans and interest-only loans (Table 3.4). Given the riskier nature of the underlying collateral, mortgage originators usually provide more credit enhancement to senior notes to achieve AAA-ratings, such as by allocating a larger share of the RMBS to junior sub-AAA tranches or through the use of lenders mortgage insurance (LMI).

Mortgage originators’ RMBS outstanding is equivalent to about 1 per cent of the total value of Australian mortgages. At this level, mortgage originators’ activity therefore has limited influence on competition in the mortgage market and the housing price cycle. Even so, Australian financial regulators remain alert to the possibility that activity by non-bank issuers might pick up in response to the recent tightening in banks’ housing lending standards and higher pricing for banks’ investor housing loans. The potential for this to occur will depend on market demand for additional mortgage

Table 3.4: Characteristics of RMBS Issuance
At date of issuance; 2012/13–2014/15^(a)

	Major banks	Other ADIs	Non-ADIs
Average LVR	58	59	69
Per cent of loans with full documentation	100	100	83
Per cent of interest-only loans	19	21	33
Per cent of loans covered by LMI	22	97	89
Per cent of sub-AAA tranches	7	3	13

(a) For all marketed RMBS issuances with available data; weighted by loan values except per cent of sub-AAA tranches, which is based on tranche face values
Source: RBA

originators' RMBS, as well as mortgage originators' access to the necessary warehouse funding from banks (the provision of which regulators are monitoring) along with their operational capability to process greater lending volumes.

Superannuation

Superannuation funds are a large part of the financial sector, accounting for three-quarters of managed funds' total assets, and in total are over half the size of the banking sector in terms of assets. Superannuation funds' assets grew at an annualised rate of around 9 per cent over the six months to June 2015, to \$2.02 trillion. The recent pace of growth in total assets has been affected by the volatility in Australian equity markets; for example, APRA-regulated superannuation funds recorded a net investment loss of 1.7 per cent over the June quarter.

Superannuation funds are required to set an investment return objective for the assets invested on behalf of their members (by investment option). This is typically defined as a fixed percentage in excess of CPI inflation or relevant benchmark index. Over recent years, the prolonged period of low global interest rates and subdued economic growth has lowered the returns available across various investment classes, which has made it more difficult for some superannuation funds to achieve their return objectives (Graph 3.18). While superannuation fund trustees have a legal obligation to act in the best interests of their members, in this environment

Graph 3.18
Asset Class Annual Returns*
Average real yield**



* Does not account for investment fees or taxes; commercial property: IPD Australia All Property Index discount rate; international equities: MSCI World Index forward earnings yield; Australian equities: ASX 200 Index forward earnings yield; international fixed income: Barclays Global Aggregate Bond Index yield; Australian fixed income: Bloomberg AusBond Composite Index yield; cash: 1-year swap rate

** Assumes 2½ per cent inflation

Sources: Bloomberg; IPD; RBA; Thomson Reuters

there is a risk of superannuation funds choosing higher portfolio allocations to riskier assets than otherwise in order to try to boost returns. In addition to exposing fund members to greater risk, this behaviour could possibly contribute to financial instability by amplifying asset price cycles, though funds would typically aim to hold such assets for a long time. While there has been no significant shift in aggregate in superannuation funds' portfolio allocations in recent years, anecdotal evidence suggests that low returns have prompted some funds to switch into riskier assets such as commercial property that are expected to generate higher returns. However, it appears more common

for funds to have reduced their return targets or communicated to members that returns may be lower in coming years (or both).

Over the longer term, the ageing of the population means that an increasing proportion of superannuation funds' members are moving from the accumulation phase into the drawdown phase. This demographic change may result in an increase in allocation towards more conservative assets, such as cash and deposits, potentially increasing the interconnectedness between banks and the superannuation industry. Also, as benefit payments increase relative to contributions with the ageing of the population and maturing of the superannuation system, superannuation funds will need to carefully manage the associated liquidity implications.

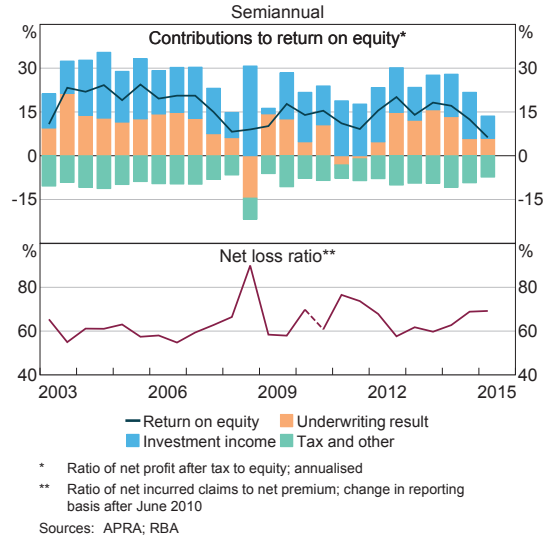
Insurance

General insurance

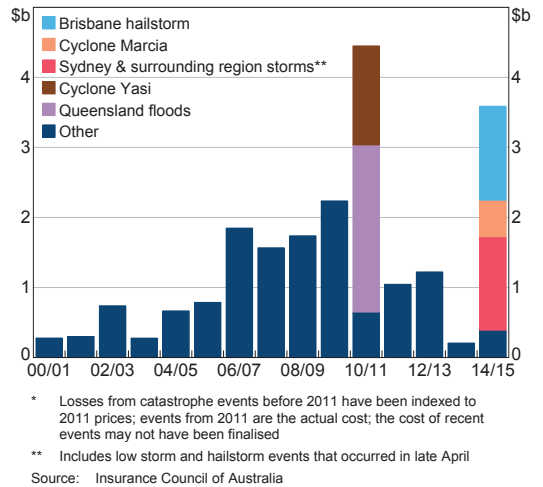
The general insurance industry remains well capitalised, with capital equivalent to 1.7 times APRA's prescribed amount. Following several years of strong outcomes, general insurers' underwriting result has declined sharply in recent periods (Graph 3.19). Net claims expenses have risen substantially, to be equivalent to around 70 per cent of premium revenue, compared with lows of 60 per cent recorded during 2012–13. Natural catastrophe claims were historically high in the 2014/15 financial year at around \$3½ billion, with these mainly arising from events in Queensland and New South Wales (Graph 3.20). Insurers' profit in the six months to June 2015 was also weighed down by lower investment income.

Insurers report that strong competition has weighed on premium rates, particularly in commercial lines of insurance, where average premiums have fallen more sharply than those for personal lines of insurance over the past year (Graph 3.21). Soft pricing conditions in commercial lines have been present in the market for several years and pose a concern that inadequate pricing may negatively

Graph 3.19
General Insurers' Financial Ratios



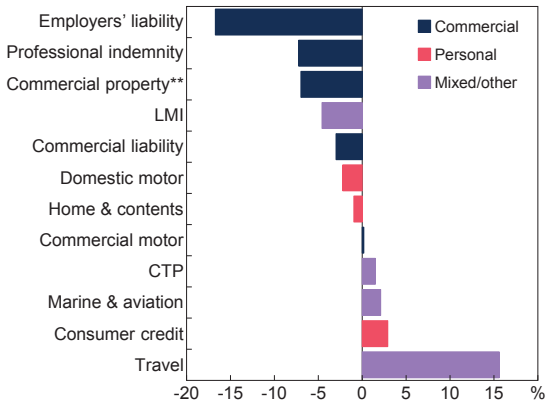
Graph 3.20
Claims from Natural Catastrophes in Australia*



affect insurers' future financial performance. This risk is exacerbated by the prolonged period of muted investment returns on low-risk debt securities, which increases the amount of premium revenue an insurer needs to cover future claims payments.

LMI are specialist general insurers that offer protection to banks and other lenders against losses on defaulted mortgages. Australian LMIs have benefited from a below-average level of

Graph 3.21
Change in
Average Insurance Premium*
 Year to June half 2015



* Gross written premium divided by number of policies written

** Fire and industrial special risks insurance

Sources: APRA; RBA

claims over recent years in a climate of rising housing prices. However, the industry's premium revenue declined in the first half of 2015, with LMIs reporting a reduction in new high-LVR policies as banks tightened their mortgage lending practices. In addition, claims from the mining-exposed states of Queensland and Western Australia have increased recently.

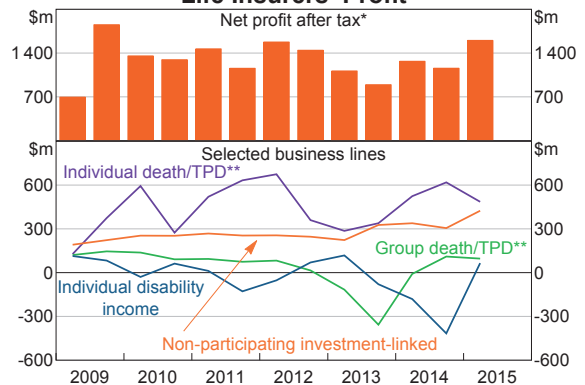
The concentration of Australian LMIs' customer base in the four major banks means that they are vulnerable to a significant decline in demand. In the first half of 2015, Westpac stopped using Genworth and QBE (the two major Australian LMIs) as its external LMI providers and shifted its risk to an offshore reinsurer. While NAB renewed its contract with Genworth in June, it is possible that banks might actively reduce their business with Australian LMIs in the future, either by switching to offshore providers or by 'self-insuring' mortgages (that is, charging the borrower a low-equity fee and retaining the risk themselves).

Life insurance

Life insurers' profits increased noticeably in the six months to June 2015, driven by an improvement in individual disability income insurance (commonly

known as 'income protection insurance'), a line of insurance business that had been generating losses since mid 2013 (Graph 3.22). As discussed in previous *Reviews*, the life insurance industry is addressing a number of structural weaknesses that have contributed to low profitability over recent years. These include poor definitions of product benefits, pricing not being adjusted for enhanced benefits, a lack of data on insurance risk and a shortage of skills for claims management. APRA has recently observed a number of improvements in these areas, particularly in pricing and data analysis on 'group' policies (that is, policies sold through superannuation funds).⁷ Despite the recent challenges, the life insurance industry is well capitalised, at 1.8 times APRA's prescribed capital amount.

Graph 3.22
Life Insurers' Profit



* Includes profit from other non-risk business

** TPD = total and permanent disability

Source: APRA

The Australian Government recently endorsed a package of reforms that were proposed by industry participants in response to ASIC's concerns about the quality of retail life insurance advice.⁸ Key components of the reforms, which could become fully effective in 2018, include a reduction of up-front commissions paid to advisers and a lengthened period during which commissions may be clawed

⁷ See Khoo B (2015), 'Letter to LI Entities on Group Insurance', 18 May.

⁸ For further details, see Frydenberg J (2015), 'Industry Reform Proposal on Retail Life Insurance Welcomed', media release, 25 June.

back if a policyholder chooses to withdraw from a policy. These initiatives, if implemented, should more closely align the incentives of advisers, insurers and customers.

Financial Market Infrastructure

Financial market infrastructures (FMIs) – such as payment systems, central counterparties (CCPs) and securities settlement systems – support most financial transactions in the economy. Because FMIs concentrate both services and risk, they need strong regulation and supervision of their financial position, governance and risk management practices. The cyber resilience of FMIs is one area that has attracted greater attention from regulators in recent years. Default management and stress testing are also important elements of risk management, and were therefore key themes in the Reserve Bank's most recent assessment of ASX.⁹

Cyber resilience

Since participants in the financial system rely on FMIs to support most financial transactions, a significant operational disruption at an FMI could, in turn, disrupt the financial system. For this reason, it is essential that FMIs maintain a high level of operational resilience, and this is reflected in the international standards for FMIs (the *Principles for Financial Market Infrastructures*, PFMI). In recent years, the growing threat of cyber attacks poses an increasing risk to FMIs' operational resilience. Recognising this, FMIs and their regulators, both in Australia and internationally, are making the resilience of FMIs to cyber threats a strategic priority.

While domestic FMIs have robust frameworks in place to protect against cyber threats, they have been taking a number of actions to enhance their resilience to the growing threat. The Reserve Bank has initiated two projects to increase the resilience

of the Reserve Bank Information and Transfer System (RITS) – Australia's wholesale payment system – to cyber threats:

- a comprehensive assessment of measures in place to prevent a cyber-related incident
- a review of RITS' ability to detect, investigate and recover from a wide range of potential operational disruptions, including a cyber attack; this review will include the identification of additional measures that could improve RITS' resilience in this area and an examination of the benefits, challenges and costs of implementing them.

Separately, ASX has carried out a high-level self-assessment against a widely used cyber resilience standard, the US National Institute of Standards and Technology *Framework for Improving Critical Infrastructure Cybersecurity*. This self-assessment concluded that ASX's cyber security practices generally aligned with the upper two tiers of 'maturity' levels under this framework.

Globally, FMI regulators are also working together through international standard-setting bodies to develop guidance in the area of cyber resilience to support relevant requirements in the PFMI. Once published, the guidance is intended to help FMIs enhance their cyber resilience and to provide a framework for supervisory dialogue.

Default of BBY

A CCP stands between the counterparties to a financial market trade and performs the obligations that each has to the other under the terms of that trade. Accordingly, in the event of the default of a participant in a market that is centrally cleared, the CCP takes on the defaulting participant's obligations to the remaining participants. This was the case for ASX Clear, when a broker participant, BBY Limited (BBY), entered into voluntary administration on 17 May 2015. To neutralise its exposure to market risk, ASX Clear had to 'close out' the financial risk associated with BBY's obligations by entering into offsetting trades or transferring client positions to another clearing participant (the latter process is

⁹ The Bank's most recent assessment of ASX against the Financial Stability Standards was published in September and is available at <www.rba.gov.au/payments-system/clearing-settlement/assessments/2014-2015/index.html>. It covers the default of BBY and enhancements to stress testing.

known as 'porting'). In the event, ASX Clear was able to manage the default without any evident market impact and held sufficient collateral from BBY to absorb all losses arising in the close-out process.

The first early warning of potential governance, control and financial issues at BBY occurred in June 2014. At that time, BBY submitted an unusually large concentrated cash market transaction for clearing, but was unable to fully meet the collateral call triggered by this transaction. ASX permitted a delayed payment, but imposed restrictions on BBY's ongoing clearing activity and required BBY to improve its governance framework and risk control systems.

On 6 May 2015, BBY was again unable to meet a collateral call. At that time BBY had more than 1 000 derivatives clients, which together accounted for around 10 per cent of ASX Clear's derivatives exposures (as measured by total margin requirements). By the time BBY entered voluntary administration it had closed out or transferred open client positions representing around one-third of its derivatives exposures. Where arrangements to transfer client positions to another clearing participant were sufficiently well advanced at the time of default, ASX proceeded with these transfers. Ultimately, over half of the outstanding derivatives exposures at 6 May were able to be ported. The remaining exposures were closed out by ASX.

ASX Clear was able to port derivatives client positions because it uses individually segregated accounts, which ensures that each client's exposure is collateralised to a high degree of confidence. The BBY incident nevertheless highlighted a number of specific impediments to the porting process. In particular, portability relies on the willingness and capacity of another participant to take on the affected clients within a short period of time. The BBY default demonstrated that porting may not be possible if transfer arrangements have not already been pre-positioned prior to a clearing participant's default, because it takes time for receiving participants to complete due diligence and 'know-your-customer' processes. ASX has

begun to consider how account structures, transfer arrangements and operational processes could be enhanced to assist the efficient porting of clients when a broker defaults.

ASX, in consultation with the Reserve Bank, has begun to assess some of the experiences gained. In addition to the impediments to porting, the BBY default has highlighted that the diversity of ASX Clear participants may justify a more risk-sensitive approach to determining minimum capital and other financial requirements. The Reserve Bank, in its recent assessment of ASX, has also encouraged ASX Clear to consider the experience gained from BBY's default as part of its broader review of the calibration of its margin model parameters.

Enhancements to ASX stress testing

Beyond defaulter pays resources, CCPs maintain additional pre-funded pooled financial resources to ensure their resilience to a participant default. Under the *Financial Stability Standards* determined by the Reserve Bank, which are based on the PFMI, a CCP's pre-funded pooled resources must be able to withstand the default of the participant and its affiliates to which it has the largest exposure under stressed market conditions. Where a CCP clears complex products or is systemically important in multiple jurisdictions, as is the case for the ASX CCPs, the test is more stringent, requiring coverage for the simultaneous default of the largest two participants and their affiliates.

A CCP is required to conduct regular stress tests to verify the adequacy of its pre-funded financial resources; this includes testing the adequacy of its liquidity arrangements. ASX Clear and ASX Clear (Futures) also use daily stress testing to calculate requirements for additional initial margin, which they collect to cover large and concentrated exposures. In order to ensure that stress tests remain appropriate, ASX reviews its set of stress scenarios on a monthly basis by using forward-looking and current market indicators. In addition, ASX performs monthly 'reverse stress tests' to identify scenarios in

which its financial resources would be exhausted. This involves varying the assumed magnitude and direction of both shocks and participant positions, as well as the number of participant defaults assumed.

In line with a Reserve Bank recommendation, in 2014/15 ASX's capital and liquidity stress test models were subject to a full evaluation by an external expert. ASX's approach was found to be broadly comparable to that of its peers, but ASX has implemented a number of changes to bring it closer into line with international best practice as identified by the benchmarking study. In particular, ASX has extended its holding period for exchange-traded products from one day to a minimum of three days and introduced a series of forward-looking hypothetical scenarios motivated by external 'macro' events, such as shocks stemming from natural disasters, collapses in commodity prices or offshore sovereign defaults. These changes are part of a first phase of enhancements to ASX's stress testing. A second phase will be partly dependent on any additional guidance coming out of the international stocktake of existing measures for CCP resilience, including stress testing (see 'Developments in the Financial System Architecture' chapter). ❖