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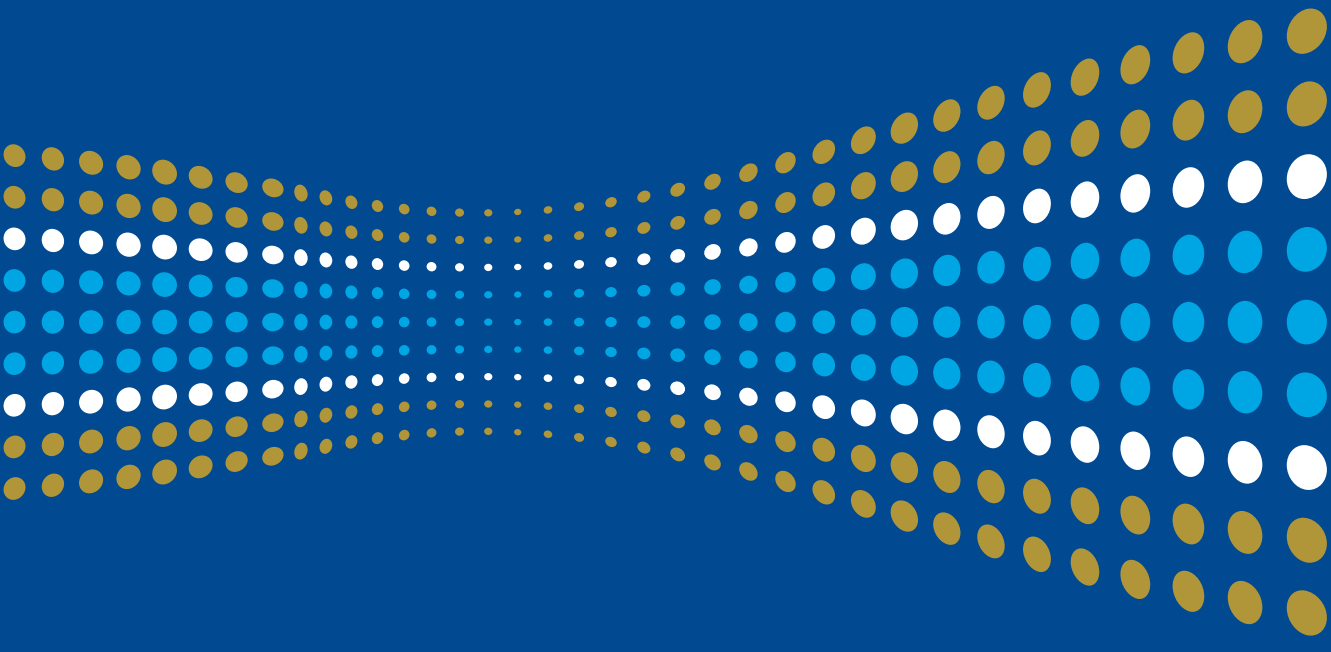
ISSUE TWO | 2012



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ISSUE TWO | **2012**

AUSTRALIAN PRUDENTIAL REGULATION AUTHORITY (APRA)

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Contents

ADI INDUSTRY RISKS

This article provides an overview of the risks facing the ADI industry in Australia, in an uncertain operating environment.

Introduction

The authorised deposit-taking institution (ADI) industry in Australia remains strong, profitable and well capitalised, supported by a domestic economy that has not experienced a recession for over 20 years. However, the outlook for the industry is clouded by an uncertain operating environment, driven primarily by concerns external to the Australian economy.

These concerns focus on the risks around sovereign debt and bank restructuring in the euro area, and uncertainty around the growth trajectory of the US and Chinese economies. Such risks impact on ADIs in Australia through a number of transmission mechanisms: direct exposures, funding markets and flow-on effects of slower global growth on the domestic economy.

The direct risk is low, since ADIs have limited credit exposure to the troubled economies in the euro area. However, volatility and heightened risk aversion in global financial markets is generating higher funding costs for ADIs and, at times, interruptions to market access. Domestically, the low credit growth environment poses a structural challenge for ADIs, as they seek to maintain shareholder returns without sustained high asset growth.

APRA has recently highlighted the challenges facing ADIs in negotiating the current operating environment.[1] These challenges continue to be an important topic of discussion between APRA and ADI boards and management. In particular, APRA has cautioned against the pursuit of higher-risk strategies to chase profitability, mindful of the implications for credit quality, funding and risk profile.

Within this context, this article provides an overview of the key prudential issues in the ADI industry. It presents a snapshot of the industry and its capital strength, and reviews the key risks to which the industry is exposed, and which APRA continues to monitor closely.

Industry structure

The ADI industry is composed of major banks, other Australian-owned banks, foreign bank branches and foreign subsidiary banks. In addition, there is a substantial number of credit unions and building societies (CUBS), as well as smaller specialised ADIs. As at 30 June 2012, there were 174 ADIs licensed to operate in Australia (Table 1).

The outlook for the industry is clouded by an uncertain operating environment...

1 J.F. Laker, '*Life in the Slow Lane*', Address to the American Chamber of Commerce in Australia, Melbourne, May 2012.

The most significant changes to the industry structure occurred in late 2008 when St George Bank was acquired by Westpac Banking Corporation, and Bank of Western Australia was acquired by Commonwealth Bank of Australia. Since then, the overall composition of the industry has remained broadly static, with the major banks continuing to dominate in key product markets.

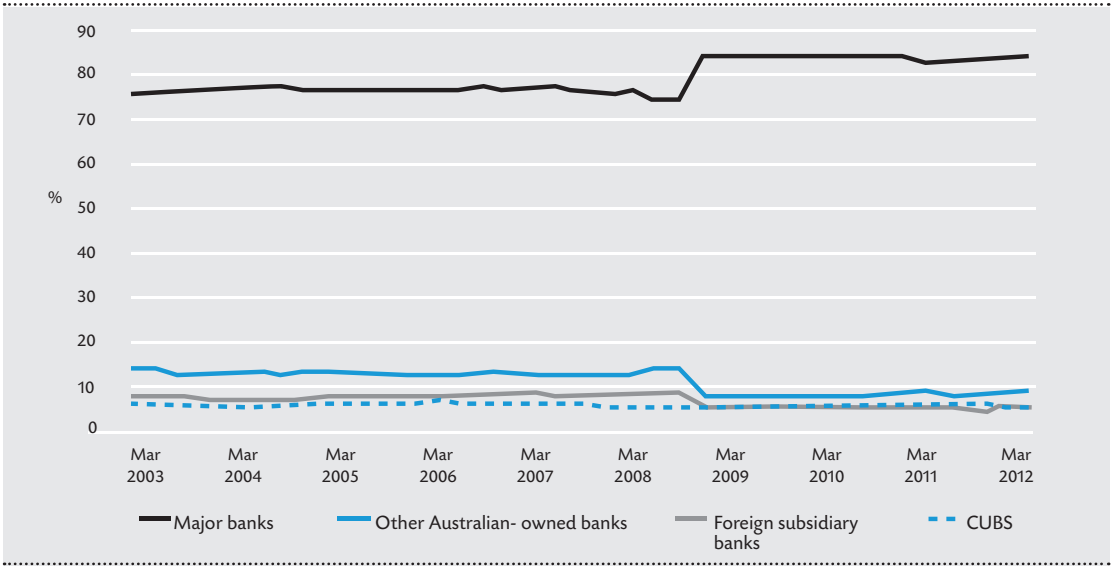
Table 1: Number of ADIs

ADI Sector	30 June 2009	30 June 2010	30 June 2011	30 June 2012
Major banks	4	4	4	4
Subsidiaries of major banks	3	1	1	1
Other Australian-owned banks	7	7	7	14
Foreign subsidiary banks	9	9	9	8
Foreign bank branches	34	34	35	39
CUBS	128	119	113	101
Other ADIs	8	8	8	7
Total ADIs	**193**	**182**	**177**	**174**

Source: APRA

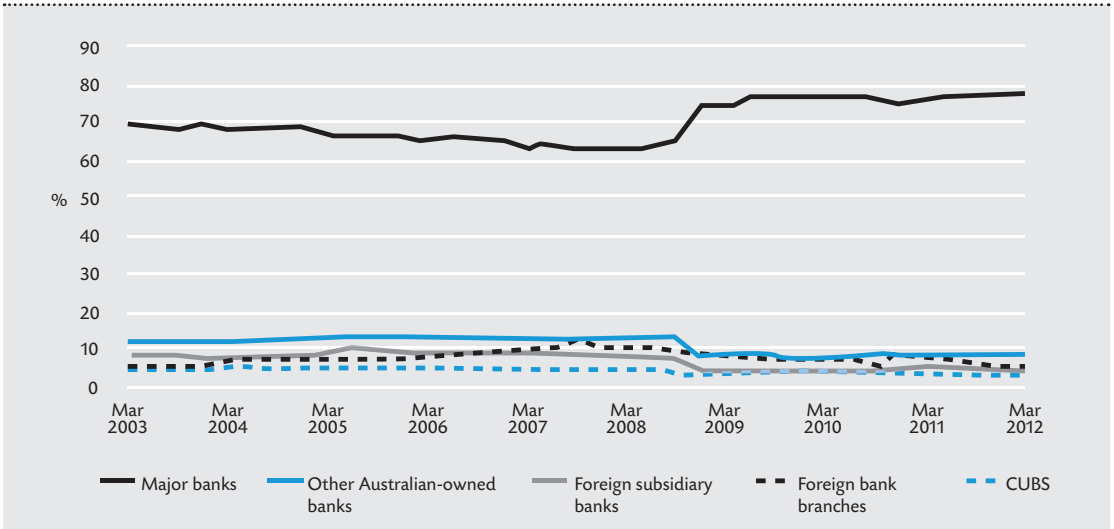
ADI industry risks

Figure 1: Market share - housing loans



Source: APRA

Figure 2: Market share - deposits

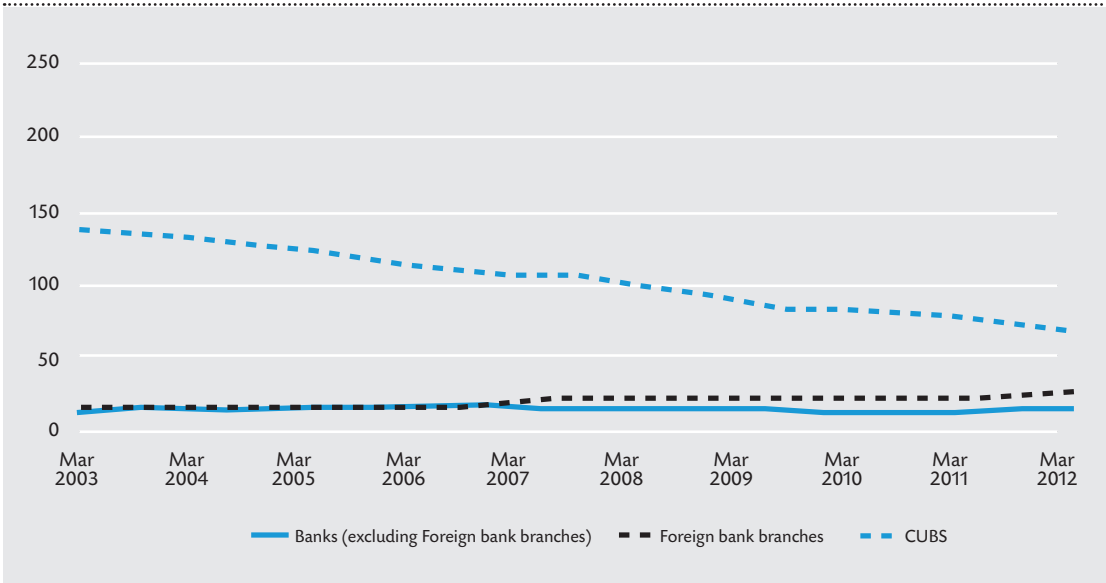


Source: APRA

There has been a marked shift within the foreign branch sector, with a decline in the share of the market held by European bank branches as a consequence of the deleveraging process that many European banks have been undertaking since 2008. To some extent, the gap has been filled by branches of Asian and other non-European banks, and has also created opportunities for Australian ADIs. Over the past year, five new foreign bank branches were authorised to operate in Australia, while one foreign bank branch left.

Consolidation among CUBS has continued, with numbers reducing over the past year following further mergers and conversions to mutually owned banks (Figure 3).

Figure 3: Number of ADIs



Source: APRA

Capital

ADIs have continued to strengthen their capital positions in response to market expectations, and in anticipation of the higher requirements of the Basel III framework. The ADI industry aggregate Tier 1 ratio increased to 10.5 per cent, an improvement of 0.6 percentage points over the year.[2] The system stands well above minimum Tier 1 requirements on a Basel II basis.

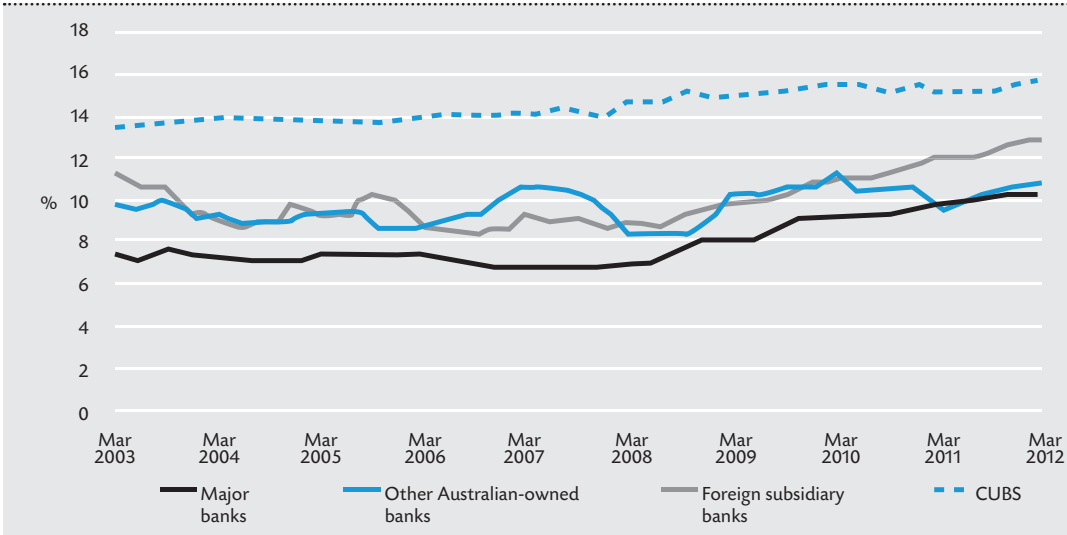
ADIs have continued to strengthen their capital positions...The positive trend in capital ratios is evident across each sector...

The positive trend in capital ratios is evident across each sector within the ADI industry. Over the past year, in aggregate:

- the major banks raised Tier 1 ratios to 10.2 per cent in aggregate, an increase of 0.6 percentage points;
- other Australian-owned banks increased Tier 1 ratios to 10.8 per cent, an increase of 1.4 percentage points;
- foreign subsidiary banks raised Tier 1 ratios to 12.8 per cent, an increase of 0.7 percentage points; and
- CUBS raised Tier 1 ratios by 0.6 percentage points and continue to operate with high capital ratios.

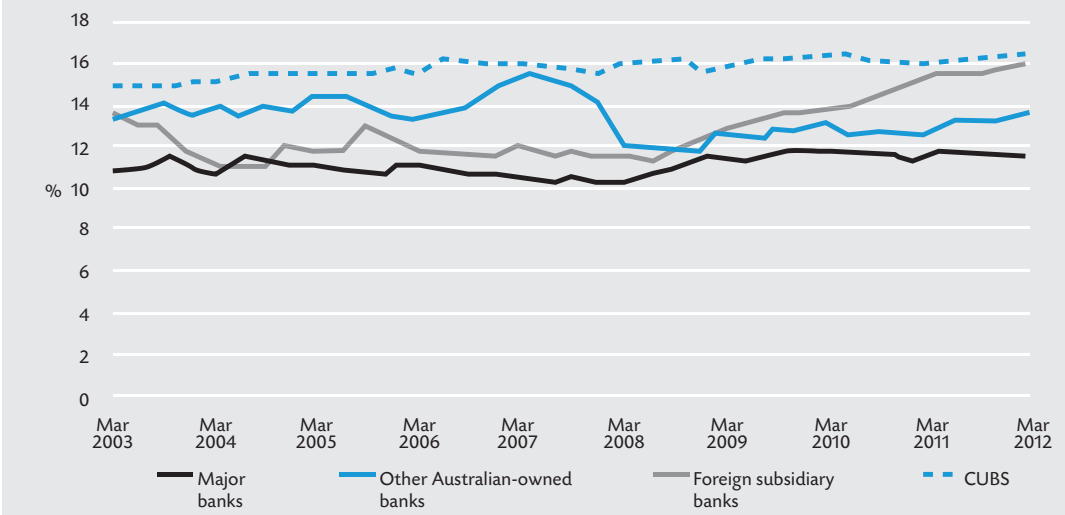
2 All data in this article is for the year ended 31 March 2012, unless otherwise stated.

Figure 4: Tier 1 capital ratio by sector



Source: APRA

Figure 5: Total Capital ratio by sector



Source: APRA

Key drivers of ADI capital ratios include:

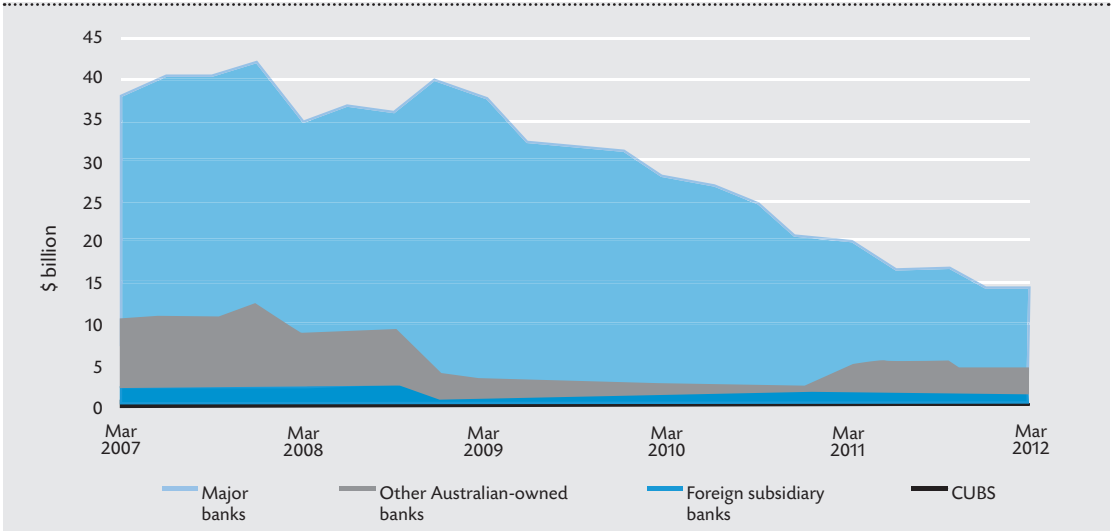
- changes in the level of regulatory capital;
- growth in risk-weighted assets (RWAs); and
- profitability as a source of organic capital growth.

(i) Regulatory capital

Tier 1 capital levels have increased by $14.6 billion in aggregate, a rise of 10 per cent over the year. Although Tier 1 capital has strengthened, there has not been a commensurate increase in Total Capital, because of a decline in Tier 2 capital (Figure 6).

This reflects the emphasis placed on higher quality capital, and the reluctance of ADIs to raise Tier 2 until the detailed eligibility criteria for these instruments under Basel III has been finalised. The largest run-down in Tier 2 capital has been by the major banks. As ADIs transition to the Basel III framework, APRA expects this trend to reverse.

Figure 6: Net Tier 2 capital by sector



Source: APRA

(ii) RWAs

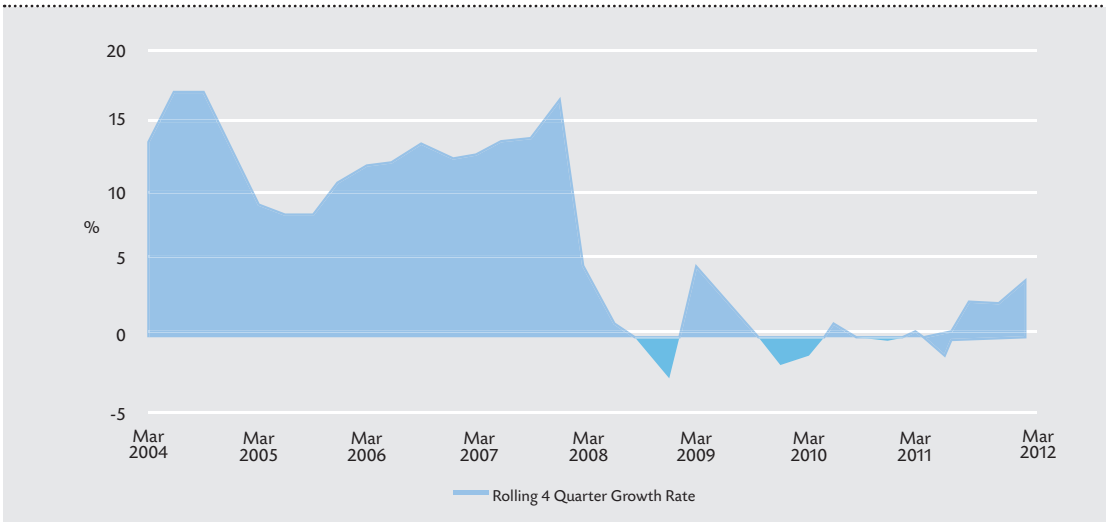
While changes in regulatory capital are closely monitored, shifts in RWAs are also important. RWAs have been impacted by both subdued growth in credit and by changes in risk models: lower growth in RWAs directly impacts on capital ratios.

The major banks are accredited to use their own models under the advanced internal ratings-based (IRB) approach to calculating RWAs ('advanced ADIs').[3]

Growth in RWAs was 4.5 per cent for this sector over the year, and was driven by a number of factors:

- asset growth;
- shifts in portfolio composition towards lower-risk lending, particularly housing;
- credit migration effects as some exposures moved to better risk grades; and
- revisions to IRB risk estimates resulting from improvements to data and methodologies.

Figure 7: Risk-weighted asset growth*



Source: APRA

3 Except for one other bank, other ADIs use the standardised approach, which specifies risk-weights for certain loan types.

* Note RWAs impacted in March 2008 by introduction of Basel II

The average credit risk-weight for the major banks, a measure of risk intensity, decreased over the past year from 40 per cent to 37 per cent.[4] In contrast, the average credit risk-weight for other ADIs has remained at 52 per cent.

Changes to IRB risk models must be notified to APRA and are reviewed in routine validation visits by supervisors and credit risk specialists. While some proposed changes represent valid improvements, others have not been accepted by APRA.

(iii) Profitability

The ADI industry remains profitable in comparison to banking systems in many other countries. Profit retention will be an important element of the transition to the higher Basel III capital requirements for a number of ADIs.

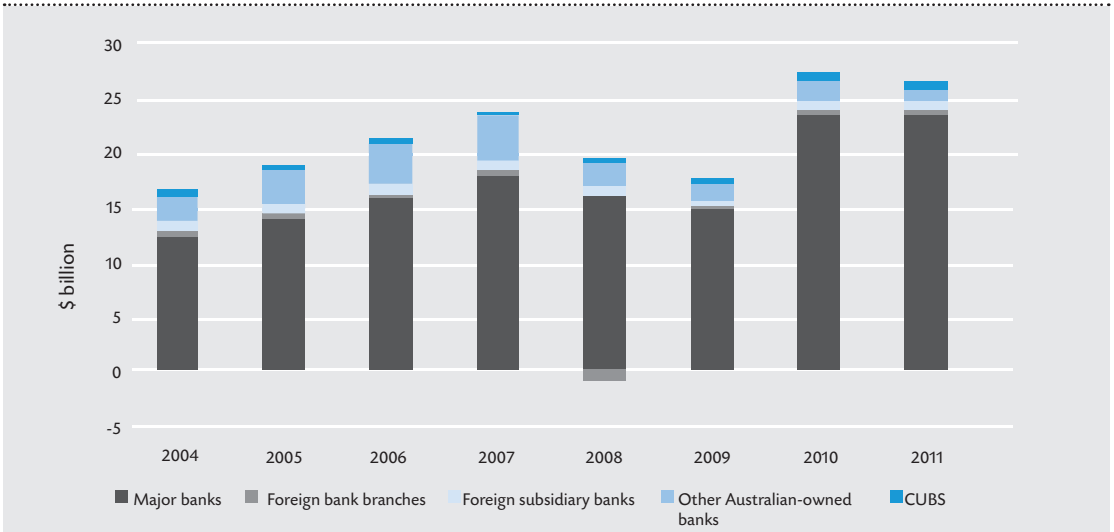
Net profit after tax for the ADI industry totalled $26.5 billion in the year to 31 March 2012, a slight decrease of three per cent over the prior year (Figure 8). The major banks accounted for almost 90 per cent of this total.

Profit retention will be an important element of the transition to the higher Basel III capital requirements...

ADI profitability has been supported by broadly stable net interest margins, cost constraints and further reductions in charges for bad and doubtful debts. The return on equity (ROE) at an industry level was 14 per cent, around the average level over the previous decade. This figure masks different patterns of ROE for different types of ADI (Figure 9).

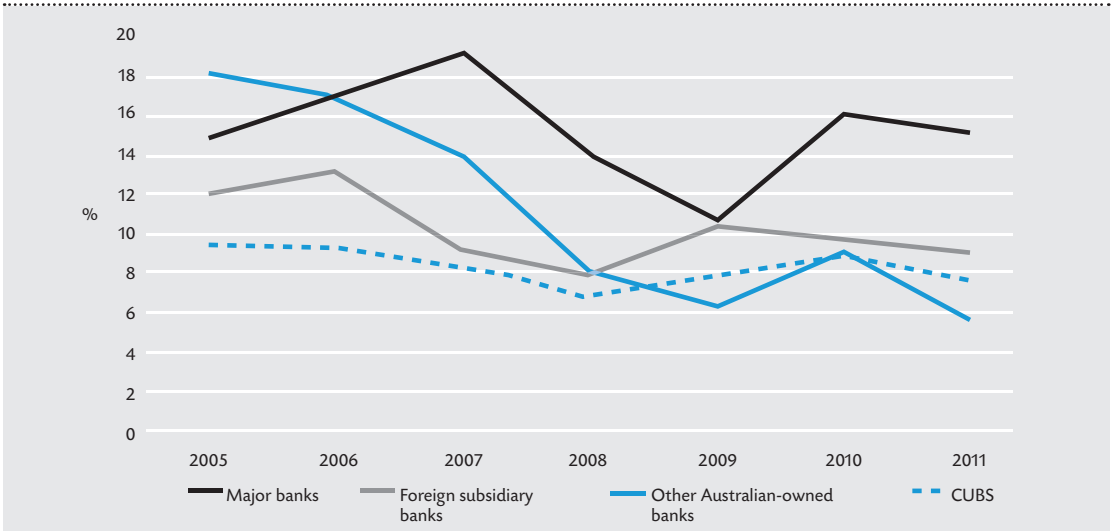
4 Average credit risk-weight is calculated as on-balance sheet credit RWAs divided by on-balance sheet credit exposure.

Figure 8: Net profit after tax



Source: APRA

Figure 9: Return on equity



Source: APRA

ADI industry risks

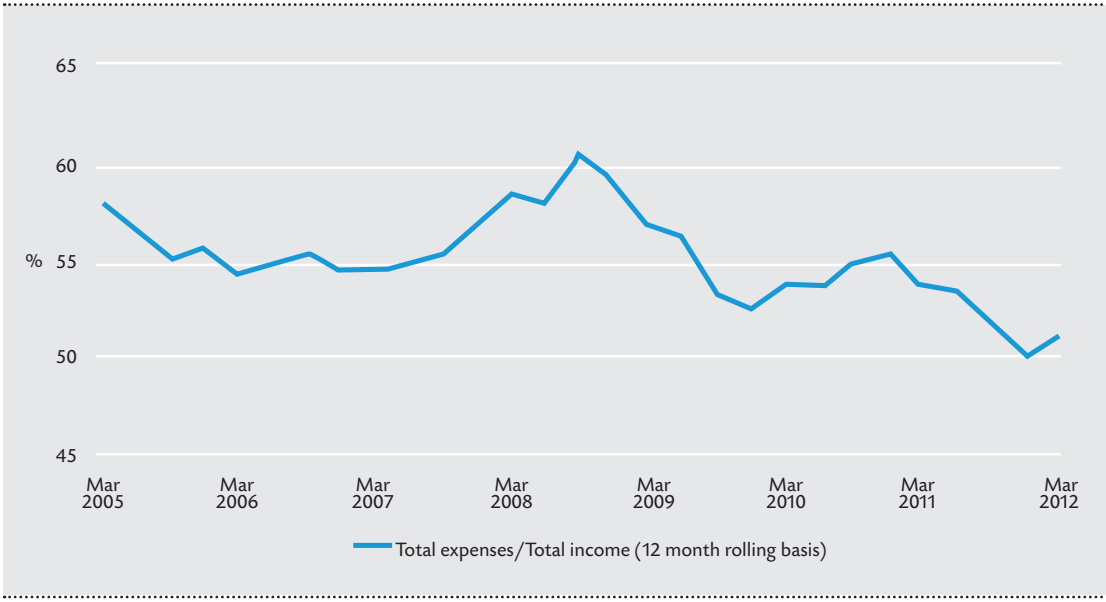
With pressure on revenues in the current operating environment, ADIs have increased their focus on strategic initiatives and increasing efficiency. Where strategies involve expansion into new markets and products, APRA has warned that they need to be supported by rigorous planning and appropriate enhancements in risk management.

One path to efficiency gains has been an increased use of outsourcing and offshoring arrangements (see Box 1 on page 18). Another path has been direct cost cutting. The aggregate cost-to-income ratio for the ADI industry decreased from 54 per cent to 51 per cent over the year (Figure 10). Staff expenses typically account for around half of total operating costs for an ADI.

From APRA's perspective, risks arise when efficiencies are sought through reductions in critical support functions. In particular, under-investment in risk management capabilities can leave ADIs more exposed to any future deterioration in economic conditions.

With pressure on revenues in the current operating environment, ADIs have increased their focus on strategic initiatives and increasing efficiency.

Figure 10: ADI cost-income ratio



Source: APRA

Box 1: Outsourcing and technology risk

Across ADIs, a focus on cost control has resulted in a significant increase in the volume of material outsourcing and offshoring arrangements being reported to APRA. Not all of these arrangements appear to have been subject to robust due diligence.

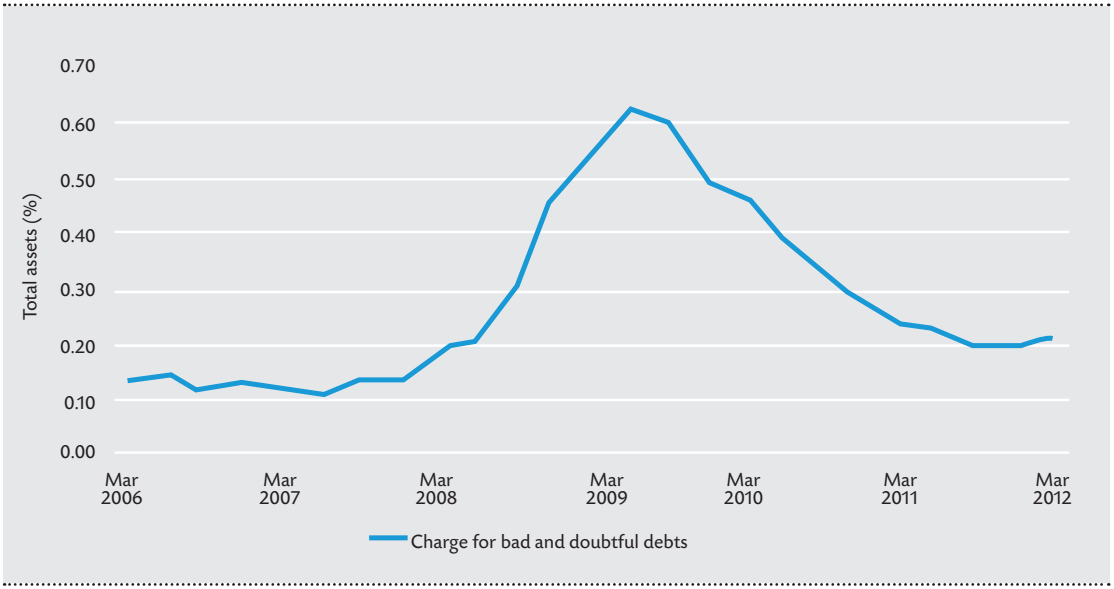
Beyond entity-specific issues, the use across the industry of common vendors and common offshore locations creates concentration risks around certain service providers and countries. A cross divisional working group has been created within APRA to evaluate associated outsourcing issues.

From a technology risk perspective, APRA has observed a marked reduction in the number of high severity system outages. Nevertheless, serious outages still occur. Often the outages are avoidable and are the result of poor knowledge retention and a high reliance on third parties.

APRA and the Reserve Bank of Australia are co-ordinating efforts to promote greater resilience in ADIs' retail operations, including encouraging continued progress in programs of remediation. Information technology is seen increasingly by ADIs as part of the strategic agenda. Cost constraints, however, can be a threat to completion of remediation programs that aim to make up for past underinvestment in information technology.

Reductions in charges for bad and doubtful debts have also supported profitability. At an industry level, charges for bad and doubtful debts have fallen from the recent peak of around 0.60 per cent of average assets in 2009 to 0.20 per cent (Figure 11). The decline was most pronounced for the major banks. The prospects for further improvements will depend on economic conditions, but these charges have a natural floor.

Figure 11: Charge for bad and doubtful debts



Source: APRA

Credit risk

Credit is the dominant source of risk for the ADI industry, with credit exposures comprising over 85 per cent of total RWAs.

Credit quality is broadly following a recovery path since the global financial crisis, and ADIs have relatively strong credit quality compared to banks in many other countries. Impairments, however, are still well above their levels prior to the global financial crisis. A key risk in this area is that, given low credit growth and a competitive retail banking environment, ADIs seek to gain or maintain market share by relaxing underwriting standards.

The gradual improvement in credit quality is reflected in several metrics. Non-performing loans have declined from 2.2 per cent to 1.9 per cent of total loans over the past year.[5] Total provisions have also declined, from 1.2 per cent to 1.0 per cent of total loans (Figure 12). Within this, however, specific provisions remain elevated, accounting for over 45 per cent of total provisions, compared to less than 20 per cent in the period before 2007.

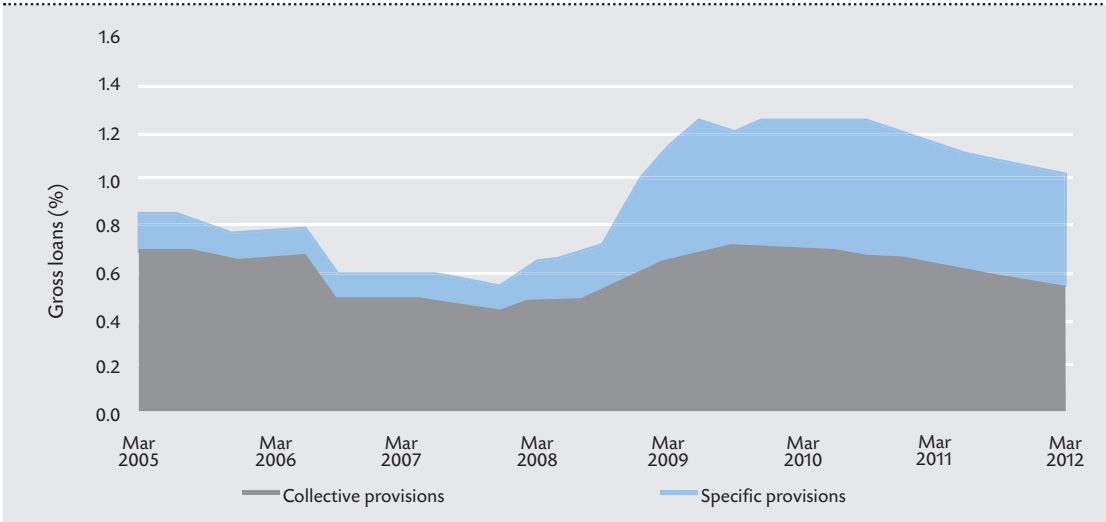
Credit quality also differs across sectors (Figure 13). For the major banks, non-performing loan ratios have fallen marginally, mainly due to improvements in their business loan portfolios. However, the inflow of newly impaired assets remains relatively high, indicative of weaknesses in a number of industries outside the resources sector.

Foreign bank branches have the highest ratio of non-performing loans, although the ratio has improved significantly from peak levels. Their experience has been a reminder of the importance of effective management of risk when lending outside home markets, a pointer to Australian banks lending in overseas locations. Other Australian-owned banks also have a high proportion of non-performing loans, in part a reflection of weaknesses in sectors of the Queensland economy.

A key risk in this area is that... ADIs seek to gain or maintain market share by relaxing underwriting standards.

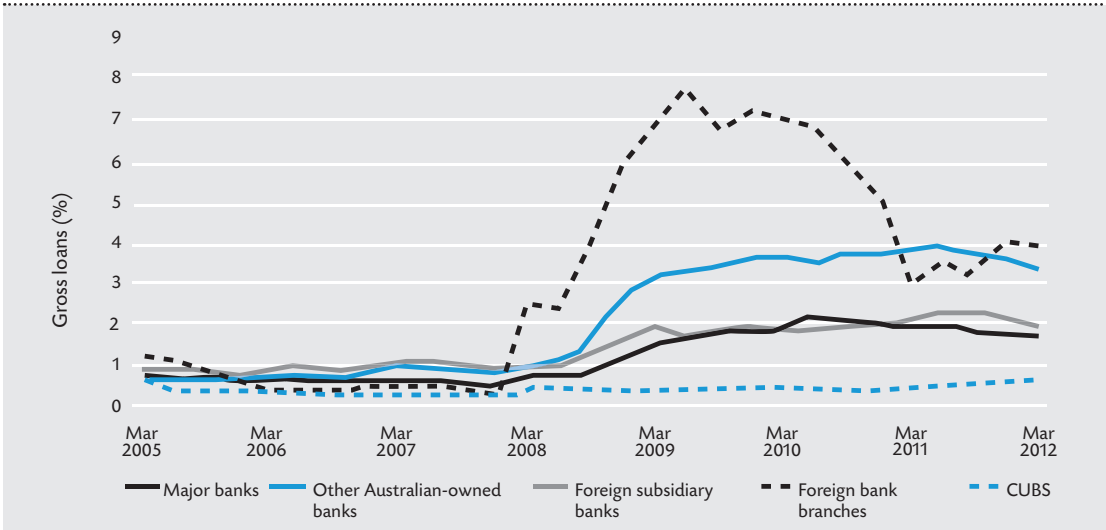
5 Non-performing loans include impaired and past due loans..

Figure 12: Collective and specific provisions



Source: APRA

Figure 13: Non-performing loans



Source: APRA

Housing credit

Housing loans are the single largest asset class on the balance sheets of ADIs, accounting for around 60 per cent of total loans. Although housing loans have not historically been a substantial source of loss, Australian ADIs are more highly exposed to housing credit risk than banks in most other advanced economies. Given the loan book concentration on housing, this type of lending is a key focus for APRA.

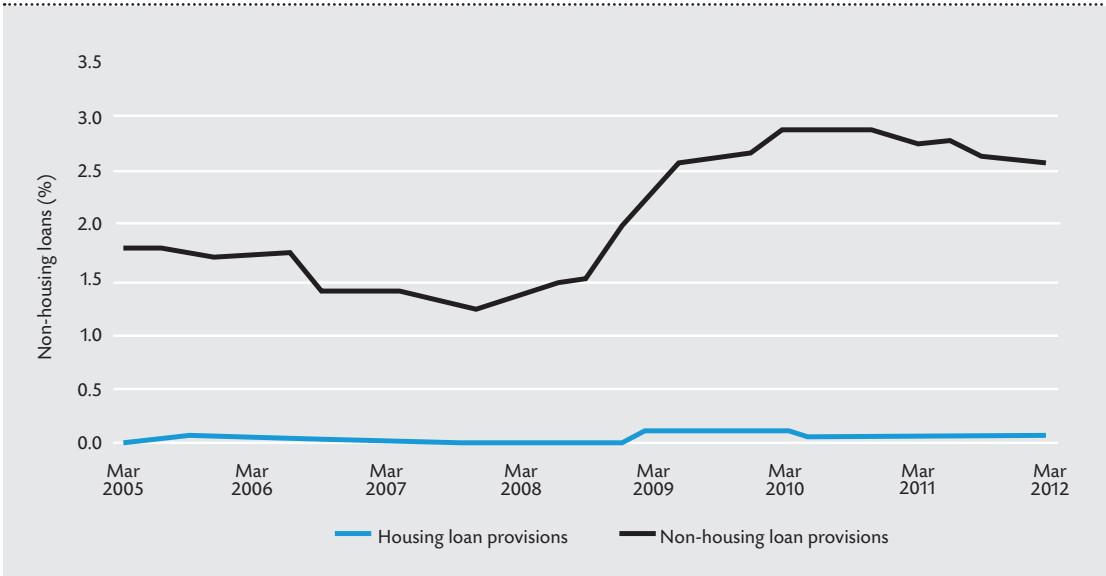
Housing loan impairments are currently low compared to other credit portfolios, but have drifted higher over 2011/12. Provisions on housing loans cover less than 0.1 per cent of the housing loan book (Figure 14). Recent overseas experience, however, illustrates that this perceptively safe asset class has the potential to generate significant losses. Such losses are magnified where origination practices are ill-disciplined, elevated prices are paid for properties, and there is a downturn in economic conditions.

ADIs are facing subdued housing loan demand, with higher levels of amortisation (repayments). Higher amortisation creates pressure on ADIs to originate greater volumes of loans just to keep portfolio size constant.

In this environment, pressure to respond to low demand can lead to the relaxation of lending standards and an increase in the number of loans approved as exceptions to lending policies. APRA has seen signs that some ADIs have begun to unwind the more conservative housing lending standards that they had imposed during the early phases of the global financial crisis.

There have also been changes in asset quality trends. For example, the proportion of new housing loans approved with a loan to valuation ratio above 90 per cent has increased over the past year, although it remains lower than the peak in 2008. Mortgage arrears have also drifted upwards from earlier lows, with a variation by state.

Figure 14: Provisions on housing and non-housing loans*



Source: APRA

APRA wrote to the boards of larger ADIs in 2011 to remind them of the need to be alert to any deterioration in lending standards. APRA sought assurances that boards are actively monitoring housing loan standards, including the level and type of exceptions to lending policies.

In 2012, APRA asked external auditors of a number of larger ADIs to conduct a targeted review of housing loan approval standards, focusing on debt serviceability criteria. The scope of this review will encompass not only serviceability policy, but also an assessment of how the policy works in practice.

* Note provisions includes specific provisions and the general reserve for credit losses

Business credit

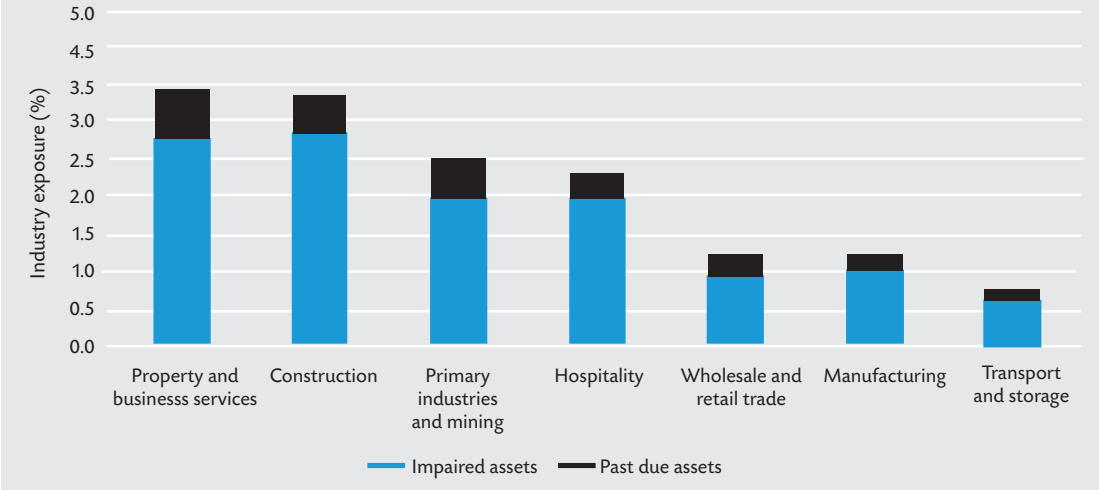
Lending to business accounts for a higher share of impaired assets than housing. Although the trend in impaired assets is downwards, absolute levels remain elevated. Credit quality trends reflect weaknesses in industries outside of the resources sector, particularly the commercial property sector and those sectors impacted by a persistently strong Australian dollar.

Commercial property lending is a key driver of risk in business loan portfolios, and has traditionally been a significant source of bad debt charges for ADIs. ADIs increased their exposure to commercial property ahead of the global financial crisis, but have since reduced their appetite for this risk.

Total commercial property lending by the ADI industry currently stands at around $200 billion. This is equivalent to 127 per cent of Tier 1 capital, a reduction from the peak of nearly 200 per cent reached in 2008 (Figure 16). Many ADIs continue to work through issues in commercial property portfolios stemming from prior lending, mainly relating to construction and development loans. These exposures are particularly high risk and remain a key focus for APRA supervisors.

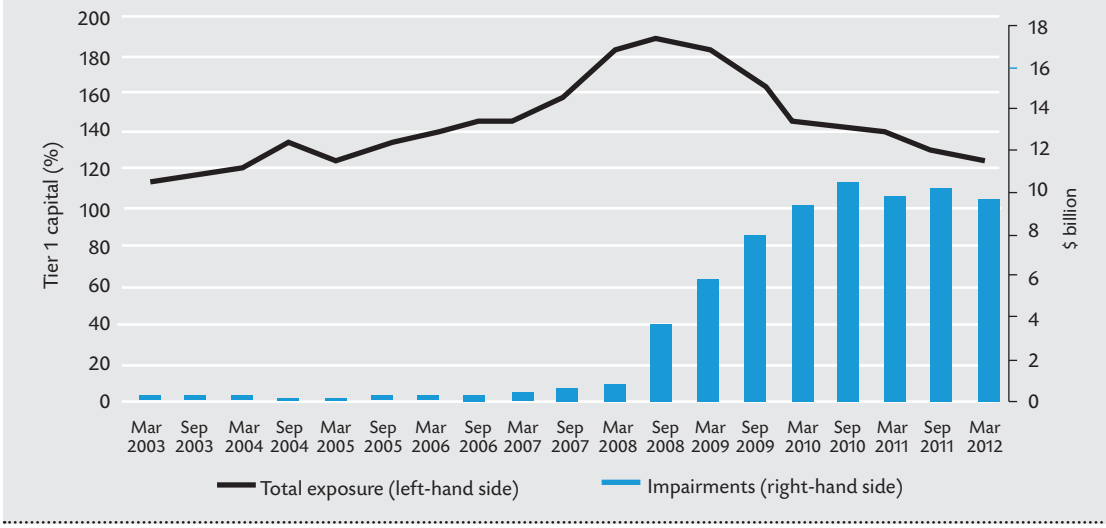
Although the trend in impaired assets is downwards, absolute levels remain elevated.

Figure 15: Business credit quality by industry



Source: Major Bank Pillar 3 Reports - March 2012 (CBA June 2012), APRA

Figure 16: Commercial property exposures*



Source: APRA

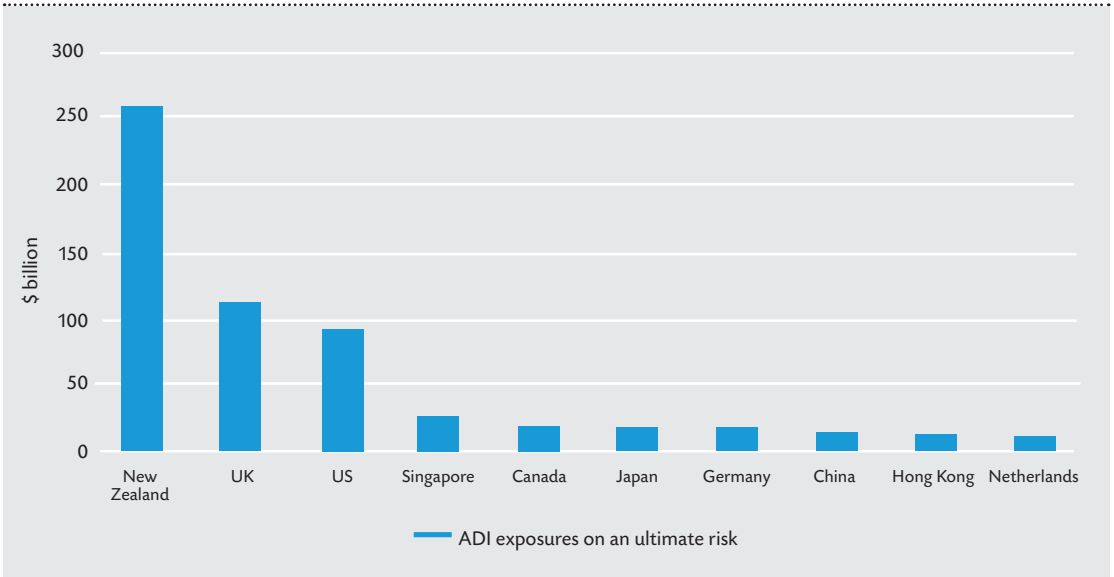
* Excludes foreign bank branches, as this sector does not have capital requirements

International exposures

The ADI industry's most significant offshore exposures are to New Zealand, the United Kingdom and the United States (Figure 17).

ADI exposures to counterparties in the euro area are limited and have reduced since 2008. Exposures to the troubled euro area countries have fallen to $4.7 billion, equivalent to only 0.2 per cent of total ADI assets on an ultimate risk basis.[6]

Figure 17: International exposures of ADIs



Source: APRA

6 Exposure of Australian-owned banks to Greece, Ireland, Italy, Portugal and Spain, as at March 2012. Exposures on an 'ultimate risk basis' may be different to the location of the direct counterparty to the exposure. Figure 17 shows the 10 largest country exposures.

Liquidity and funding

The acute dislocation in global funding markets in late 2011 was a reminder of the importance of maintaining strong liquidity and diversified funding positions. In addition, the introduction of covered bonds, the slow recovery of securitisation markets and the transition to the new Basel III liquidity framework are changing the structure of funding for ADIs.

The acute dislocation in global funding markets in late 2011 was a reminder of the importance of maintaining strong liquidity and diversified funding positions.

Funding conditions

In late 2011, funding conditions were challenging for the larger Australian banks issuing offshore. While overseas short-term funding remained accessible (albeit at an elevated cost), long-term unsecured funding markets were effectively closed to banks, whatever their origin. Funding conditions improved in early 2012, enabling Australian banks to increase their bond issuance and reduce wholesale funding costs from their 2011 highs. Despite further funding market volatility during 2012, Australian banks have retained access to offshore term funding, though with limited further improvement in spreads.

The combination of higher wholesale funding costs and the prospective Basel III liquidity standards has increased incentives for ADIs to focus on domestic deposit funding. More intense competition for deposits by the major banks has raised deposit rates relative to benchmark wholesale rates and, in turn, has added to pressure on interest rate margins. Deposit competition has also created funding pressures on smaller ADIs, which typically rely more on this source of funding than the major banks.

Structural change

Since 2008, banks have increased their deposit funding and markedly reduced their reliance on short-term wholesale funding (Figure 18 on page 29). This is a positive development from a prudential perspective, since short-term wholesale funding is vulnerable to market disruptions if investors refuse to roll paper.

Following legislative changes enabling covered bonds, the first issuance by an Australian bank was in November 2011. Given investor preference for security, the majority of term issuance by Australian banks in early 2012 was in the form of covered bonds (Figure 19). The operational and legal hurdles involved in issuing covered bonds make a rapid issue more difficult than other forms of funding. Unsecured term debt, for example, can be issued in a matter of days if need be. Nonetheless, the introduction of covered bonds represents a significant structural change for banks' funding profiles, in favour of longer-dated instruments.

Securitisation markets remain subdued. The Australian Office of Financial Management (AOFM) has been a key participant in the residential mortgage-backed securities (RMBS) issues of smaller ADIs and non-bank lenders. Although the AOFM has a mandate to invest further, its funds are finite. While new RMBS transactions are occurring, issuance comes at a significantly higher cost than before the crisis. Furthermore, covered bonds represent an alternative funding channel for ADIs and, from an investor perspective, a lower risk asset (investors have recourse to the ADI in addition to the security of the cover pool). Reflecting these developments, ADIs have reduced the extent to which their funding comes from securitisation.

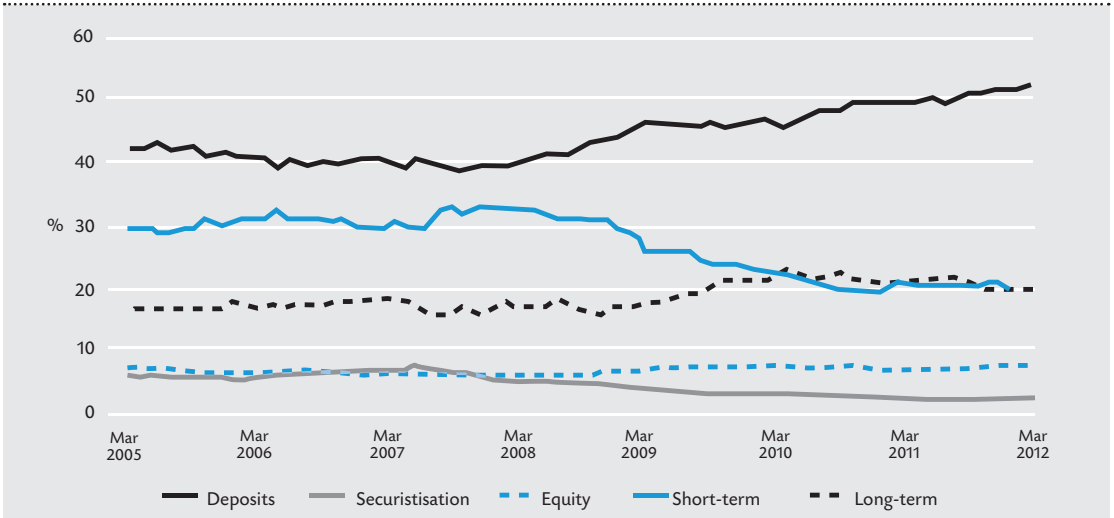
Funding profile

ADI funding positions have benefited from strong deposit growth and subdued asset growth. However, uncertainty in funding markets is likely to persist. Ensuring robust funding and liquidity positions must be a high priority for ADIs. Strengthening funding profiles can be achieved through various strategies, including issuing long-term debt where possible to pre-fund upcoming maturities and asset growth; lengthening the term of wholesale funding (both short- and long-term); increasing deposit funding, with a focus on sticky retail deposits; and building and maintaining holdings of high-quality liquid assets.

Other ADI risks

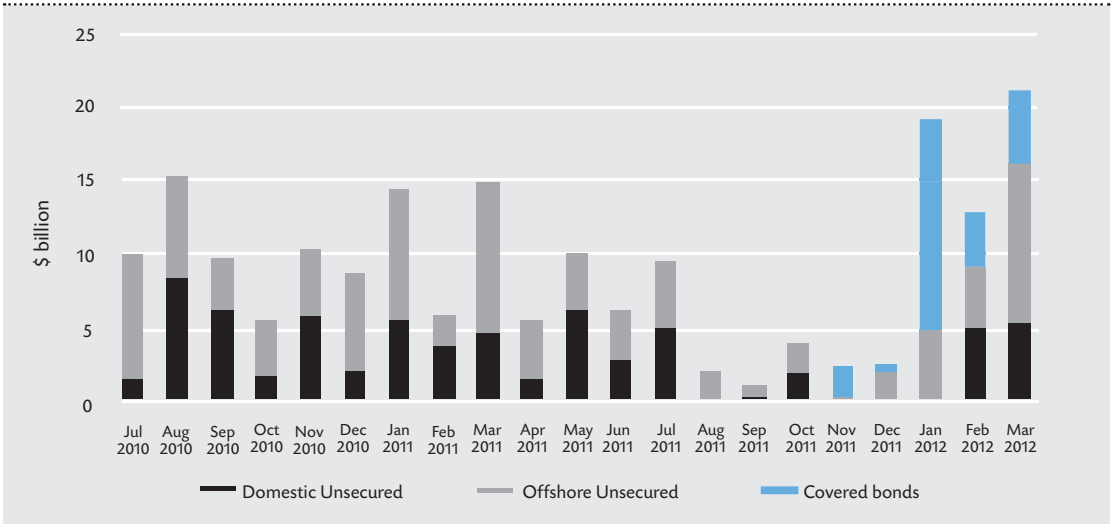
Compared to many overseas peers, ADIs in Australia have generally low levels of complexity and undertake traditional banking business. Few locally incorporated ADIs generate a significant proportion of their income from trading or other investment banking activities. As a result, the levels of market and operational risk to which they are exposed are not as significant as for some overseas peers. Nonetheless, these areas still present sources of risk for some ADIs and they are areas where APRA has invested, and will continue to invest, supervisory time.

Figure 18: Bank funding composition



Source: RBA, Standard & Poor's, APRA

Figure 19: New debt issuance



Source: RBA, APRA

Market risk

Market risk accounts for a relatively small proportion of risk exposure for ADIs (around two to seven per cent of total RWAs). This level has remained broadly stable over the past year. The introduction of Basel 2.5 in January 2012 was a key development. It significantly reduces the return on regulatory capital for proprietary trading through the introduction of a stressed value-at-risk methodology for determining capital requirements. Securitisation and resecurisation exposures also now incur higher capital charges. As a consequence of these charges, ADIs may modify or further restructure their trading activities to reduce the higher capital impact.

Interest rate risk in the banking book

Advanced ADIs are subject to an additional capital charge for interest rate risk in the banking book (IRRBB), measured through additional RWAs. This capital charge provides a disincentive to enter into speculative interest rate positions. IRRBB represents less than five per cent of total RWAs on average for these banks. ADIs on the standardised approach are not subject to the charge. Instead, interest rate risk is considered within the broader Pillar 2 supervisory review process.

Operational risk

Reported operational risk losses over the past year were significantly lower than in the preceding two years, when tax losses in New Zealand, fraud and mis-selling issues resulted in a higher incidence of loss. Direct operational risk losses are a small part of overall operational risk concerns. Tail events are rare by definition, but when they occur they can be significant. Aside from direct financial loss, operational risk impacts on the reliability of banking services, and on public and market confidence in ADIs.

For smaller ADIs, the areas of supervisory focus on operational risk include the design and implementation of operational risk frameworks; adequacy of oversight, governance and independent review; business continuity planning (in particular, impact assessments and robust testing); and quality of loss data capture and reporting.

For advanced ADIs, significant changes to modelling approaches continue to be made (many of which have been driven by APRA). Areas in which APRA is pushing for improvement include greater sensitivity of operational risk capital to changing risk profiles; more frequent updating of key inputs to reflect material changes in risk profile; and greater use of operational risk modelling in day-to-day business decision-making. APRA has requested that these ADIs provide a detailed substantiation of their current operational risk capital levels.

Risk management and recovery planning

In the current operating environment, ADIs continue to strengthen their risk management frameworks. This includes preparations to manage in potential stressed operating conditions.

'Living wills' are a new initiative designed to address this latter issue. The term refers to two separate but related matters: recovery plans, in which an ADI or other financial institution sets out the actions that it would take to survive a severe crisis and resolution plans, in which the authorities map out the measures that would be taken if recovery is not possible.

APRA conducted a pilot program on recovery planning in 2011/12 involving a number of the larger ADIs. This required participating ADIs to develop a 'menu of options' that could be deployed in a range of scenarios, sufficient in ambition to rebuild capital and liquidity positions in the event of severe ADI-specific or market-wide stress conditions. Plans were expected to be able to provide a material benefit to capital and funding within a reasonable period of time, with actions that would be credible and realistic.

For the larger ADIs, the pilot is not seen by APRA as a temporary post-crisis project. Rather, recovery planning will become a permanent part of the supervisory framework. Plans will be discussed with and updated regularly by ADIs to reflect changes in market conditions, business structure and management teams. APRA intends to extend the recovery planning program to a wider set of ADIs in 2013, once final plans under the pilot program have been fully assessed.

Gideon Holland
Paul Tattersall
Industry Analysis Team
Diversified Institutions Division

The impact of the Basel III capital reforms in Australia

This article provides an overview of the Basel III capital reforms to be implemented by APRA and the likely impacts the reforms will have upon the Australian banking system and the Australian economy.

Introduction

Australia will implement the Basel III capital reforms via prudential standards issued by the Australian Prudential Regulation Authority (APRA). This paper considers the likely impacts the reforms will have upon the Australian banking system and the Australian economy.

In general, more capital in banking institutions in any jurisdiction means slightly higher lending interest rates, less borrowing, and slower economic growth in good times. But on the other hand, more capital means safer banking institutions and a safer financial system, reducing the risk of bank failures and financial crises. The challenge for APRA and global regulators is to balance the benefits of safer banking systems, with any output, efficiency or competition costs associated with higher capital requirements.

Australian regulatory arrangements

Banking institutions[1] may only do business in Australia if they hold an authority from APRA. Banking institutions incorporated in this country, including foreign-owned banking institutions, must among others things meet APRA's capital requirements if they wish to obtain and then retain a banking authority.

APRA makes prudential standards under the *Banking Act 1959*. Prudential standards cover many areas, including capital requirements. Since 1988, APRA (and its predecessor bank regulator, the Reserve Bank of Australia (RBA)) has taken as a minimum requirement the international capital accords produced by the Basel Committee on Banking Supervision (Basel Committee). The first of these accords was introduced in 1988. The so-called Basel II reforms were introduced in 2008 and the Basel III reforms will become effective from January 2013, with transition largely completed by 2016.

As APRA moves to implement the Basel III requirements, it has considered the likely impact upon the Australian banking system and the Australian economy. This paper outlines the issues that APRA has analysed in this process.

Australia's banks responded to the global financial crisis by strengthening their capital positions, as did other ADIs. The strengthening was concentrated in equity... and was not directly driven by changes in regulation

1 This paper refers to 'banking institutions' in general. In the Australian context, this means 'authorised deposit-taking institutions' (ADIs), which comprise banks, building societies, credit unions, and a small number of special purpose entities.

Basel III in brief

The Basel III framework reforms both capital and liquidity arrangements for the global banking community. This paper considers only the capital reforms.

The three core calculations in the global bank capital framework are:

(i) the amount of 'risk-weighted assets' held by a bank;

(ii) the amount of regulatory capital, of various classes, held by that bank; and

(iii) the required ratio of capital to risk-weighted assets.

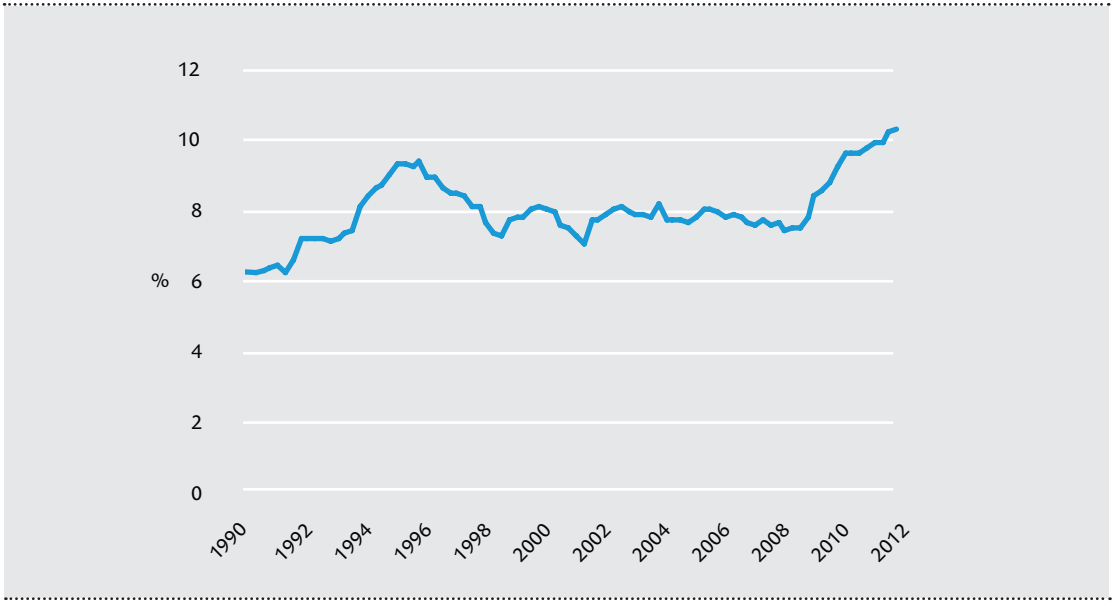
Risk asset definitions were largely reformed under Basel II, and Basel III addresses capital definitions and requirements. This paper will focus upon the Common Equity Tier I (CET1) requirement. CET1 is roughly equivalent in Australian financial accounting terms to tangible ordinary equity. CET1 is the focus of capital reform under Basel III.

Under Basel I and Basel II, the theoretical minimum requirement for CET1 was two per cent of risk-weighted assets. This theoretical minimum was never relevant in Australia, as banking institutions held CET1 ratios starting at around five per cent and, in the case of some smaller institutions, much higher ratios.

Under Basel III, the minimum CET1 requirement has more than doubled from two to 4.5 per cent. Furthermore, Basel III introduces the so-called 'capital conservation buffer', which in normal practice adds another 2.5 per cent to the minimum CET1 ratio. On top of this aggregate seven per cent ratio, APRA may choose to apply extra capital requirements at the institution-specific level, and all institutions will wish to hold a buffer above APRA's requirements against inadvertent losses or unexpectedly rapid growth.

Therefore, in theory Australia's banking institutions are facing a regulatory equity ratio increase from two per cent to seven per cent, a very large apparent increase. A comparison of theoretical minima, however, overstates the effects on Australia's banking institutions. The more relevant position is the movement from actual capital held before the Basel III reforms, to capital held voluntarily by banking institutions as a result of a more risk-averse world, to capital likely to be held post the Basel III reforms.

Figure 1: Tier 1 capital of locally incorporated banks (per cent of risk-weighted assets)



Source: APRA

Figure 1 indicates that Australia's banks responded to the global financial crisis by strengthening their capital positions, as did other ADIs. The strengthening was concentrated in equity, rather than in less high quality capital, and was not directly driven by changes in regulation, though the larger banks may have anticipated that such changes would be forthcoming.

From capital requirements to economic effects

Before finalising the Basel III reforms, the Basel Committee undertook a comprehensive cost-benefit analysis of the long term economic impact of the reforms, drawing on a variety of methodologies and models (BCBS 2010). This analysis was undertaken by the Basel Committee's Macroeconomic Assessment Group.

This paper follows the broad cost-benefit framework used by the Basel Committee.

For the larger Australian banks, the Basel III reforms will, when fully implemented, lift the regulatory equity (CET1) they hold over what those banks might have held if left to their own devices.[2] The 'cost' element in the chain of economic effects of such higher regulatory capital is:

1. higher bank equity ratios;
2. higher weighted funding costs (including debt and equity funding) and lower return on equity;
3. banking institutions increase lending rates to restore some of their lost return on equity;
4. borrowers increase their aggregate borrowings more slowly than would otherwise have been the case; and
5. GDP grows more slowly than would have otherwise been the case, for most of the business cycle.

The 'benefit' chain is:

1. higher bank equity ratios;
2. safer banks, which can therefore borrow funds and raise capital more cheaply;

2 Many smaller banks, credit unions and building societies already hold much more than the minimum CET1 requirement under Basel III, so their change in capital is unlikely to be material.

3. reduced bank failure and impairment rates; and
4. reduced risk and potential depths of financial crises.

The rest of this paper will consider the trade-offs between the above costs and benefits.

Broadly speaking, banking institutions hold equity for three reasons:

- to cover the unexpected losses that their boards and management think might arise;
- to give customers and investors sufficient comfort to deal with the institution; and
- to meet regulatory requirements.

In this context, boards and management naturally have an eye to shareholder returns, so their own view of how much capital is needed is not necessarily a constraint on maximum leverage. The customer constraint is typically represented by a target or minimum credit rating[3], and may be the binding constraint, depending upon the rating target. Australia's larger banks target a low double-A rating from the major ratings agencies. As a national group, they are among the most highly rated banks in the world.

The ratings constraint is to some extent reflected in the equity actually held by the larger banks, which currently is a CET1 ratio on the order of seven per cent.

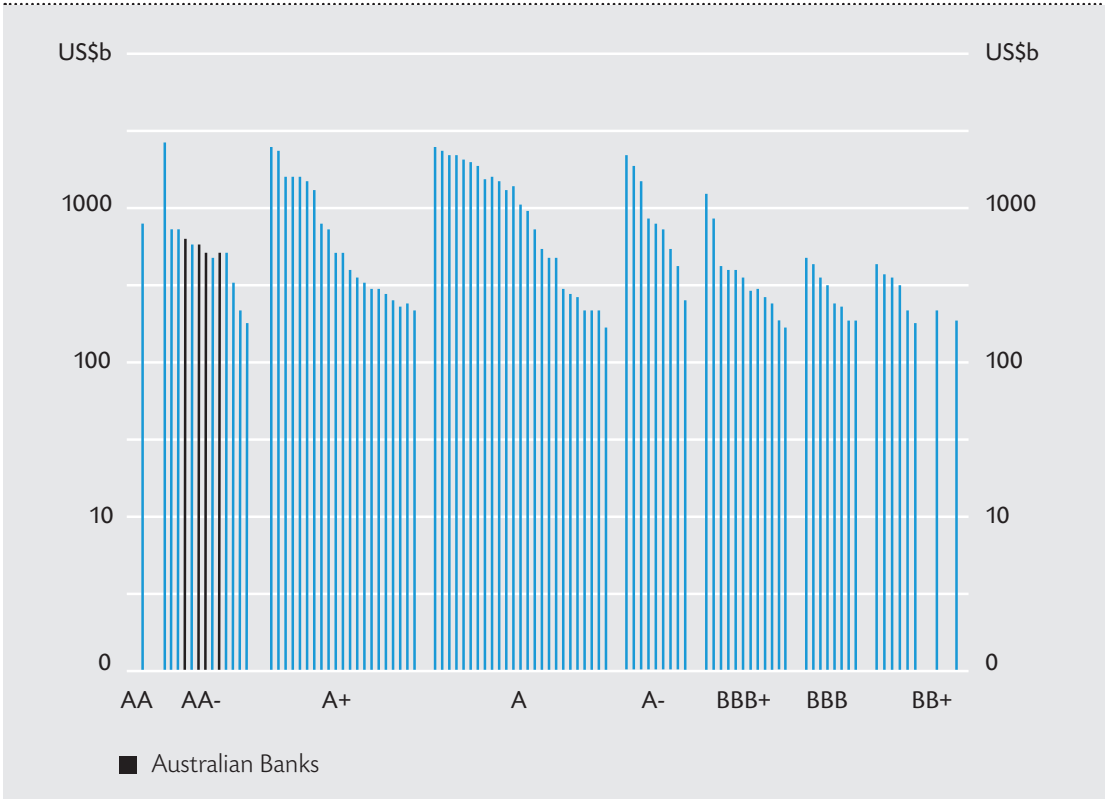
For APRA's cost-benefit considerations, the marginal regulatory capital requirement is the difference between the CET1 ratio a banking institution will target, including a buffer over APRA's regulatory requirements, compared to the CET1 ratio it would have held to meet its board or (usually) ratings agency constraints, in the absence of APRA's Basel III requirements.

In the Australian context, this is the difference between what is held now, about a seven per cent CET1 ratio, and what will be held by 2016, when the Basel III capital rules are fully in place.

For the purposes of this paper, an arithmetic analysis is conducted on the basis of a two per cent increase in CET1 ratios by the larger banks. This increase does not predict likely outcomes but is used to illustrate the broad impact of higher capital requirements. Actual movements in CET1 will vary by banking institution and will be affected by other factors, including market expectations.

3 The Australian Centre for Financial Studies and KPMG (2011), *ACFS-KPMG Monograph The Future of Bank Funding*, p3.

Figure 2: Credit ratings of the largest 100 banking groups March 2012 (by assets, log scale)[4]



Source: Ratings sourced from Moody's, Standard & Poor's, ***The Banker***

4 Reserve Bank of Australia (2012) ***Financial Stability Review March 2012***, Sydney, p31.

How do banking institutions determine lending rates of interest?

A bank loan interest rate will be the sum of:

(i) the risk-free interest rate;

(ii) the increment paid by banking institutions to raise funds, on top of the risk-free rate;

(iii) operating costs associated with the loan;

(iv) expected credit and other losses associated with the loan; and

(v) the net cost of equity.[5]

Before addressing the cost of equity, which is the main focus of this paper, recent moves in the other determinants of loan pricing are considered.

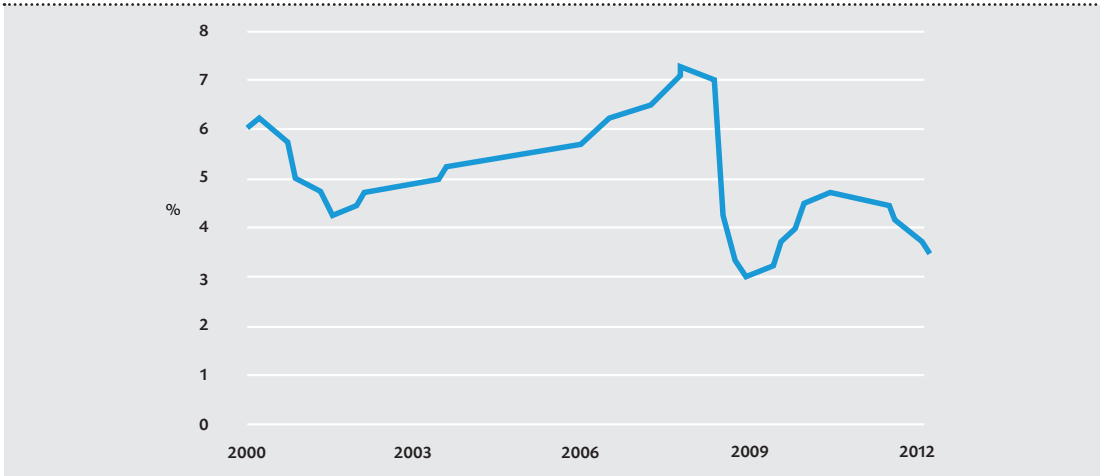
The risk-free rate

Identifying the risk-free rate is a substantial academic topic. In Australia, the short-term risk-free rate is proxied by the Reserve Bank of Australia's (RBA's) cash rate and the long term risk-free rate is proxied by the 10-year Commonwealth Government Securities (CGS) rate.

The graphs show that the risk-free rate can easily move up to four percentage points, in a relatively short period. If the time series is taken back to the 1980s, then much larger movements would be apparent.

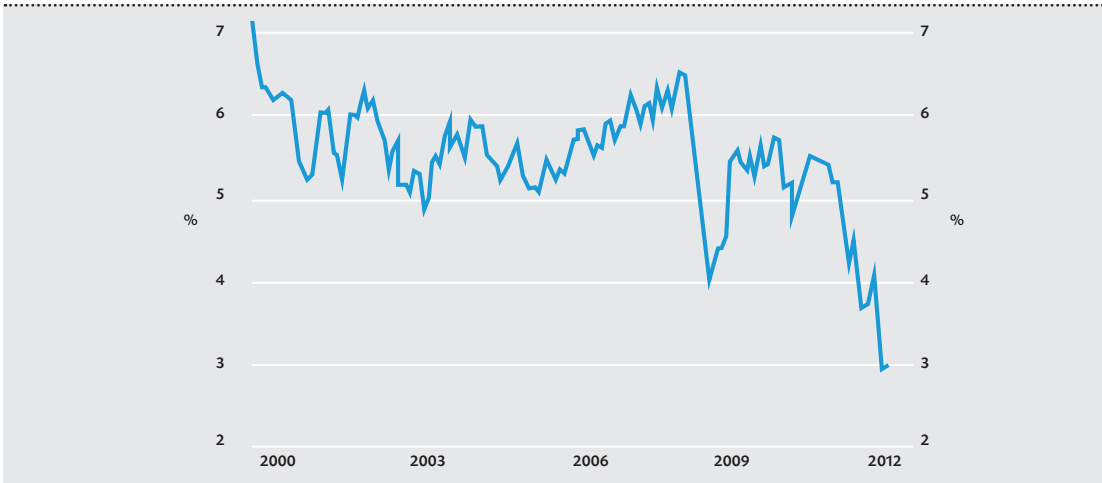
5 This is a simplification, in that it includes all non-CET1 capital costs as an interest cost rather than a cost of equity.

Figure 3: Australian cash rate



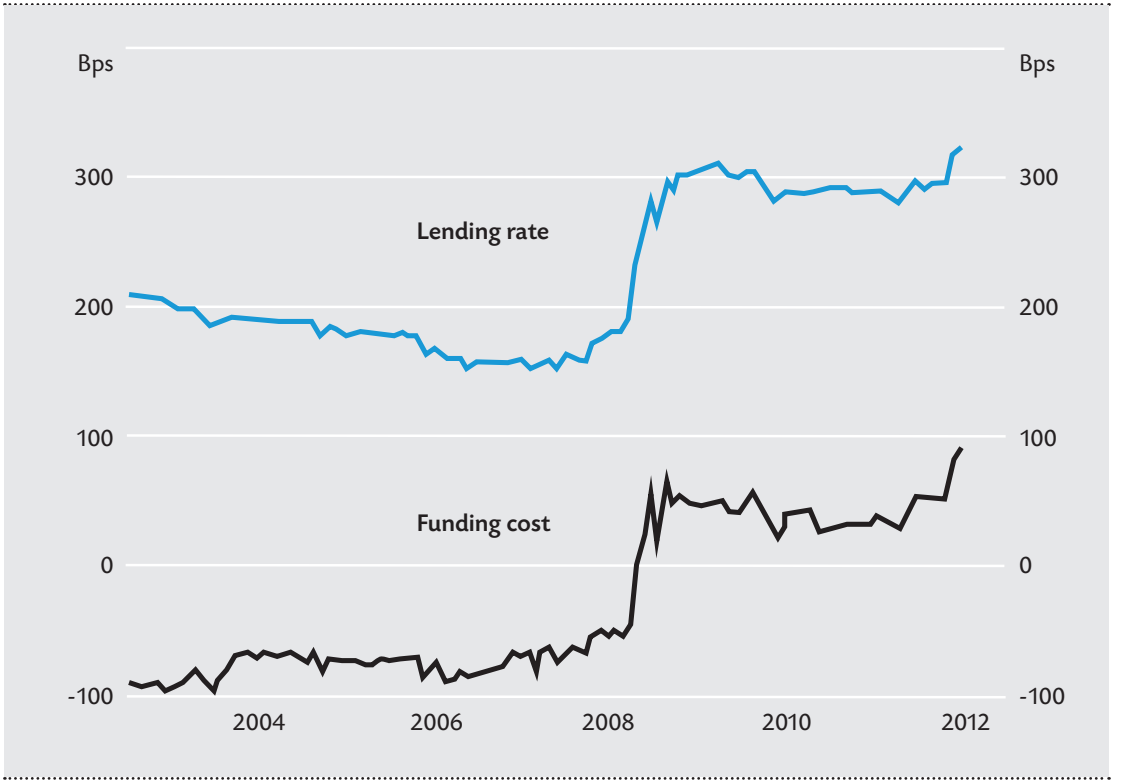
Source: RBA

Figure 4: 10-year Commonwealth Government Securities rate



Source: RBA

Figure 5: Average rates on major banks' outstanding lending and funding (spreads to cash rate, monthly)



Source: RBA

Figure 5 shows a striking pattern. Up until 2007, the average cost of debt funding for the major banks was low and stable. This reflected a ***de facto*** credit bubble globally in which credit risks were clearly under-priced.

From 2007, a different funding proposition emerged. Average funding costs have moved from around 75 basis points below to 75 basis points above the RBA cash rate. There is considerable complexity associated with assessing changes in bank funding costs but it seems clear that, since the global financial crisis, marginal bank funding costs relative to risk-free rates have increased between 100 and 200 basis points. As older and cheaper bank funding rolls over, this increased marginal cost inevitably rolls into higher average funding costs, forcing up both deposit and lending rates.

The RBA has recently conducted research on this point, and estimates that the major banks' costs of funding their aggregate loan books has increased by 140 to 150 basis points relative to the cash rate since mid 2007, largely due to banks rolling over their maturing long term funding at higher spreads and to high term deposit costs at both short and long maturities.[6]

Up until 2007, the average cost of debt funding for the major banks was low and stable.

6 Reserve Bank of Australia (2012) ***Submission to the Inquiry into the Post-Global Financial Crisis Banking Sector,*** submission to the Senate Economics References Committee Inquiry into the post-GFC banking sector, p5.

Operating costs

Table 1: Operating costs of Australian banks compared to other countries[7]

Country[8]	Operating costs (% of total assets)		
	2009	2010	2011
Australia (4)	1.20	1.24	1.17
Austria (2)	2.05	2.01	1.96
Canada (6)	2.04	1.88	1.87
France (4)	1.09	1.16	1.12
Germany (4)	1.24	1.23	1.21
Italy (3)	1.76	1.70	1.80
Japan (5)[9]	0.76	0.75	0.85
Netherlands (2)	1.14	1.26	1.18
Spain (3)	1.57	1.61	1.72
Sweden (4)	0.95	0.88	0.79
Switzerland (3)	1.97	1.97	1.74
United Kingdom (6)	1.82	1.37	1.41
United States (9)	2.98	3.22	3.23

The four major Australian banks have seen little change in operating costs from 2009 through 2011 (Table 1). On that basis, this paper will not further consider changes in operating costs as a factor in loan pricing.

7 Bank for International Settlements, *82nd Annual Report 2012*, Basel, p79.
8 Largest banking institutions in each country by total asset size. The number of banking institutions in the 2011 data is indicated in parentheses.
9 No personnel costs are included for Japanese banking institutions.

Expected credit losses

Table 2: Loan loss provisions of Australian banks compared to other countries[10]

Country[11]	Loan losses (% of total assets)		
	2009	2010	2011
Australia (4)	0.54	0.31	0.19
Austria (2)	1.23	0.94	0.93
Canada (6)	0.44	0.25	0.18
France (4)	0.36	0.23	0.22
Germany (4)	0.29	1.15	0.12
Italy (3)	0.77	0.63	0.69
Japan (5)	0.25	0.11	0.02
Netherlands (2)	0.28	0.13	0.24
Spain (3)	1.00	0.84	0.82
Sweden (4)	0.46	0.11	0.03
Switzerland (3)	0.10	-0.0	0.01
United Kingdom (6)	0.90	0.59	0.46
United States (9)	1.89	1.14	0.54

Table 2 demonstrates that the credit quality of the four major Australian banks is both high in global terms, and improved between 2009 and 2011. More recent APRA data indicating that non-performing loan rates have decreased in 2012 suggest that loan loss ratios may improve further. Hence, there is little in the data to suggest that the major Australian banks need to change their view of the average riskiness of lending in Australia through a business cycle.

10 Bank for International Settlements, *82nd Annual Report 2012*, Basel, p79.

11 Largest banking institutions in each country by total asset size. The number of banking institutions in the 2011 data is indicated in parentheses.

Figure 6 suggests that the large Australian banks (those accredited to use the 'advanced' Basel III approaches) do not expect to increase their loan pricing in the immediate future to compensate for an increase in loan losses.

Summary: Loan pricing other than capital cost

Recent experience confirms that lending interest rates may move several per cent per annum, due to changes in the risk-free cost of money. Since 2007, lending interest rates have been additionally pressured by an approximately 1.5 per cent increase in the spread paid by banks over the risk-free rate, in order to raise funds. Operating costs and expected credit losses have generated relatively little change in aggregate loan pricing.

Calculating the cost of equity

The cost of equity within a lending interest rate at the micro level (i.e. loan by loan) is based upon four variables:

(i) the target equity to risk-weighted assets ratio for the loan;

(ii) the cost of equity;

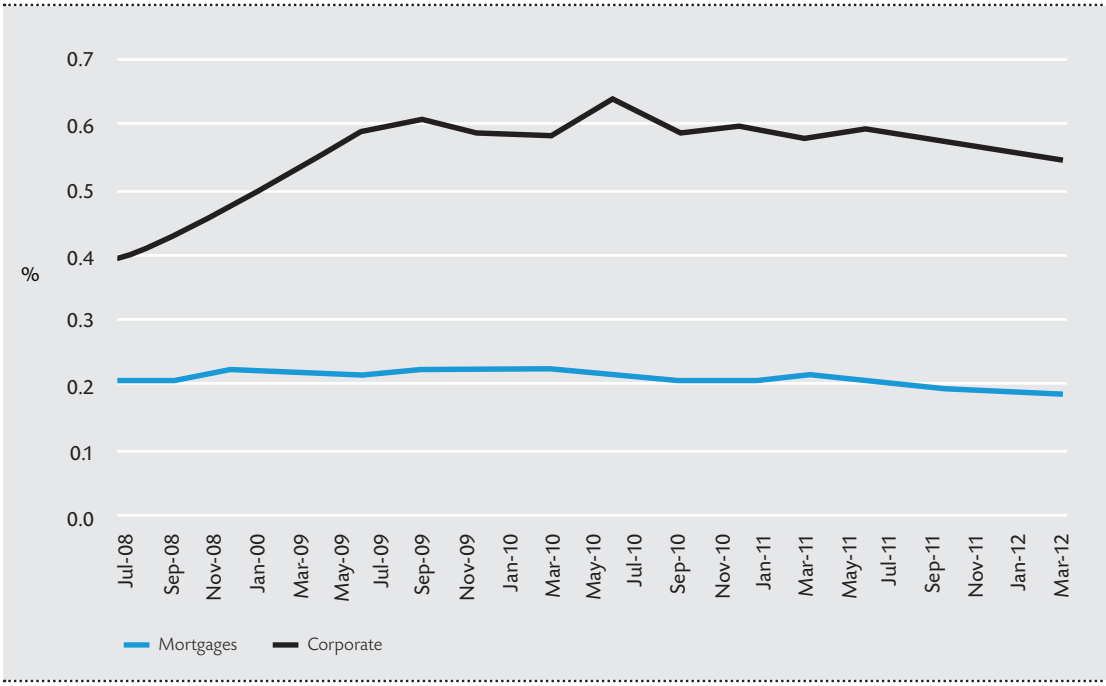
(iii) the funding cost saved because equity does not pay interest;[12] and

(iv) an adjustment to reflect the ratio of the regulatory risk asset weighting for a given loan or loan portfolio.

For the analysis in this paper, the cost of the total equity supporting a loan does not need to be calculated, only the cost associated with the increase in equity as a result of APRA's Basel III arrangements. As noted earlier, for illustrative purposes this increase is assumed to be two per cent CET1.

12 Any dividends associated with equity are included under item 2, the target return on equity.

Figure 6: Large Australian banks' expected losses (per cent of exposures for non-defaulted assets)[13]



Source: APRA

13 Corporate here is defined as Large Corporate plus SME Corporate.

Cost of equity

In considering the cost of equity, it is important to distinguish between a banking institution's cost of equity and its aspirational return on equity. Broadly, the cost of equity is the rate of return necessary to meet shareholder expectations; this could also be thought of as the return necessary to avoid a reduction in share price. The aspirational return on equity is the amount that a banking institution seeks to earn in order to create additional wealth for shareholders.

This raises the philosophical question: when faced with a regulatory imposition of more equity than the banking institution would otherwise hold, should the resultant loan pricing reflect the cost of equity, or the aspirational return on equity? In APRA's view, the appropriate basis for any increases in lending rates arising from such a regulatory imposition should be the cost of, not the aspirational return on, that extra equity.[14] This is the approach APRA is taking in its cost-benefit calculations. Based on indications from the larger banking institutions, the cost of equity is assumed to be around 16 per cent pre-tax.

Saved debt funding cost

As an example, assume that a banking institution before Basel III is funding loans with $93 in borrowings and $7 in equity, and after Basel III it will fund with $91 in borrowings and $9 in equity. This institution needs to find $2 in additional equity, which will have its costs, but can forego the need for $2 in borrowings, which saves the interest that would otherwise be paid on those borrowings.

The graphs presented in this paper demonstrate that risk-free rates in Australia have fallen recently, but the incremental cost of bank borrowing over the risk-free rate has increased. For illustrative purposes, assume that the incremental cost of borrowing saved by an increase in equity funding is six per cent per annum pre-tax. The cost saved is not the bank's average borrowing cost but its most expensive incremental borrowing source.

14 Banking institutions can, of course, offset the cost impact of higher equity requirements in other ways, such as increasing efficiency or reducing operating costs.

The assets to 'risk-weighted assets' adjustment

Under Basel II and Basel III, all banking institution exposures are adjusted to a risk-weighted asset equivalent. The mechanics of this adjustment are beyond the scope of this paper but, in aggregate, risk-weightings are considerably less than the actual loan amounts. For the larger banks, average risk-weightings are on the order of about 20 per cent of the loan amount for home loans and around 50 per cent for other loans.[15]

Loan pricing arithmetic

From the previous sections, the necessary arithmetic to calculate incremental loan pricing effects from APRA's Basel III implementation can be assembled. The calculation for this illustration is:

> Loan rate increase = Extra equity x (Cost of equity – saved funding cost) x risk-weighting.

On the assumptions made in this paper, for the average non-housing loan this calculation generates:

- 2% x (16 – 6)% x 50% = 0.10% per annum.

For a home loan with a 20 per cent risk-weighting, the calculation would be:

- 2% x (16 – 6)% x 20% = 0.04% per annum.

From the above formulae, the estimated loan rate increase attaching to a two per cent CET1 ratio increase, for an average loan in a large Australian bank's portfolio, would be on the order of 0.10 per cent per annum. The increase for a home loan on typical risk-weightings would be around 0.04 per cent per annum.

Differing assumptions could be used for the above calculations. Whatever assumptions are made, however, the critical outcome is that the loan pricing effects of APRA's requirement that banks hold more capital than they might prefer are very small. The changes in the risk-free rate, and recently the changes in funding costs over the risk-free rate, dwarf any reasonable estimate of the loan pricing effects associated with additional capital requirements.

15 Estimates taken from APRA statistical data.

Macro loan pricing and capital effects

The above micro calculations assumed that APRA's extra capital requirements would not affect the lender's cost of capital or cost of funding. At the level of an individual loan, this is a reasonable assumption but it does not hold across the whole portfolio. When macro effects are considered, the loan pricing changes illustrated above shrink even further.

All other considerations being equal, when a banking institution holds more equity, it is safer, and will be perceived to be safer. This perception should lead to both a reduction in the cost of funding, and a reduction in the required return on equity for the institution's shareholders.

The Modigliani-Miller theorem on capital structure gives one basis to consider the potential reduction in cost of equity and in funding costs. Without reprising the empirical research on Modigliani-Miller, it is worth simply noting that there is a reasonable consensus that safer institutions can borrow and raise capital more cheaply than less safe institutions. Depending upon the assumptions used, this effect can partially, fully, or even more than fully offset the cost of any increased equity requirement.

Building on the Modigliani-Miller theory, Admati *et al*. (2011), Yang and Tstsaronis (2012) and Kashyap *et al*. (2010) argue that the reduction in risk premia when a bank increases its equity funding lowers the required rate of return, offsetting the increase in the required rate of return when shifting from debt to equity financing. The reduced risk reflected in a lower rate of return should reduce the increase in banks' funding costs (taking debt and equity funding together). Admati (2011) goes further, asserting that the net effect need not increase total funding costs at all.

APRA's cost-benefit analysis takes into account the macro effects of safer banking institutions, which clearly include a benefit to those institutions as well as to society at large, but does not attempt to quantify the reduction in risk premia.

All other considerations being equal, when a banking institution holds more equity, it is safer, and will be perceived to be safer.

In summary:

- for a two per cent increase in the CET1 ratio, and ignoring the reduction in risk premia, the effect on a typical non-housing loan will be no more than 0.10 per cent per annum and, for a home loan, no more than 0.04 per cent; but
- there is an offset to these figures from Australia's banking institutions becoming safer and, accordingly, enjoying lower funding costs, more access to funding and, to some extent, a lower required return on equity. These benefits are appreciable and positive, but difficult to calculate in the context of any specific banking institution's cost of equity and cost of funding.

APRA cannot calculate a single figure for the loan rate impacts associated with regulatory capital requirements but the plausible range of impacts can best be summarised as 'zero to not much at all'. This is particularly the case when compared with the post-2007 incremental costs of bank funding, which likely are on the order of 150 basis points per annum. In this context, the cost of APRA's Basel III capital increment in new lending rates is close to a rounding error.

From lending rates to total credit and GDP effects

In recent years a substantial academic and applied literature has emerged on how lending rates transmit to lending demand, and how aggregate lending growth is associated with aggregate GDP growth.

The Basel Committee's Macroeconomic Assessment Group (MAG) is the repository of considerable expertise on the links between lending conditions and macroeconomic effects. In its December 2010 study, the MAG closely considered these issues.[16]

This MAG study and similar work by others proceeds on the basis that additional bank equity leads to somewhat higher loan pricing. The resultant tighter credit conditions (through higher lending rates and perhaps reduced lending) lead to lower aggregate demand, decreasing real GDP. Empirically, however, very small increases in loan pricing can only lead to very small decreases in loan demand, so overall GDP reductions are correspondingly small.

16 MAG (2010b), Final Report: ***Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements***, Macroeconomic Assessment Group established by the Financial Stability Board and the Basel Committee on Banking Supervision, December.

Financial crises occur with depressing frequency in both developed and developing economies. Not only are they frequent, they are by definition very expensive.

The transmission mechanism of loan pricing to loan demand to GDP is not universally accepted. Using historical data for UK and US banks, Miles *et al*. (2011) argued that based on past practice, there are no clear links between leverage and the cost of bank loans, nor are there any clear links between leverage and GDP movements. Furthermore, these studies show that even proportionally large increases in bank capital are likely to lead to small increases in the associated costs of funding.

Therefore, bank customers face only a small long run impact on borrowing costs. Yang and Tsatsaronis (2012) considered that if the equity-to-assets ratio of an average bank were to double from five per cent to 10 per cent, the weighted average cost of funds would only be about 40 basis points higher. Similar conclusions are reached for US banks by Kashyap (2010) and for UK banks by Miles (2011). Kashyap (2010) concluded that if the minimum capital ratio were raised by 10 per cent, loan rates would increase by just 25 to 45 basis points. Miles (2011) estimated that if Tier 1 capital were to double from around 8.4 per cent to 16.8 per cent, the costs of bank funding would increase by around 10 to 40 basis points.

Further, the impact of slight reductions in lending growth on GDP growth is likely to be modest at best. The MAG (2010a) interim report used a two-step approach to determine the costs of higher capital requirements. First, the impact of higher capital targets on lending spreads and economy-wide lending volumes was estimated. Then, the forecast paths for lending spreads and lending volumes were used as inputs into macroeconomic forecasting models used by central banks and regulatory agencies.
The models are used to estimate the effects of changes in lending spreads and bank lending standards on consumption, investment and other macroeconomic variables. The MAG (2010b) final report used a set of models broadly similar to the interim report and found that a one per cent increase in bank capital ratios (equity to risk-weighted assets) led to a decline in lending volume of 1.4 to 1.9 per cent after eight years.

Reasonable estimates of GDP loss for a financial crisis range from 10 to 50 per cent of GDP.

This study further estimated that the impact of implementing the Basel III reforms would lead to a small reduction in GDP of 0.22 per cent after eight years, followed by a period of growth where, finally, GDP would stand at 0.13 per cent below baseline after 12 years. In other words, the projected effects are so small that they would not be observable in the realised economic statistics.

Angelini ***et al***. (2011) used a similar suite of models as those used to contribute to the MAG (2010a) study, to determine the long term (steady-state) impacts of new capital regulation. The conditions of higher capital requirements were simulated through substituting either higher capital-to-assets ratios or different interest rate spreads into the models. It concluded that a one per cent increase in the capital ratio translated into a 0.09 per cent loss in the level of steady state output.

Though not necessarily definitive, the research papers referred to above have a common theme:

- even substantial increases in bank capital requirements do not produce large increases in lending rates;
- small increases in lending rates will lead to correspondingly small changes in loan demand; and
- small decreases in loan demand will lead to very small decreases, over many years, in GDP.

The benefits: financial crises avoided, costs of failure reduced

Because the costs associated with increases in regulatory capital requirements are more amenable to calculation, cost-benefit analyses spend a lot of time on the costs. The benefits associated with a safer banking system are large, but are not always easy to quantify.

The frequency and costs of financial crises

Financial crises occur with depressing frequency in both developed and developing economies.[17] Not only are they frequent, they are by definition very expensive.[18] Reasonable estimates of GDP loss for a financial crisis range from 10 to 50 per cent of GDP. The costs do not seem to reduce over time; recent estimates of the costs associated with the Irish banking crisis, for example, are on the order of 50 per cent of GDP.[19] In the United Kingdom, it is estimated that the current cumulative loss from the recent global financial crisis is likely to be 25 per cent of annual GDP.[20]

Uncontrolled and poorly supervised banking often leads to large bank failures and financial crises...

17 See for an example: Rogoff, K. and C. Reinhart (2009) ***This Time is Different: Eight Centuries of Financial Folly,*** Princeton University Press, New Jersey.

18 Caprio, G. and D. Klingebiel (1996) ***Bank Insolvencies: Cross-Country Experience***, World Bank Policy Research Working Paper No. 1620, the World Bank, Washington, D.C. See also: Caprio, G., D. Klingebiel, L. Laeven and G. Noguera (2005) 'Appendix: Banking Crisis Database,' in P. Honohan and L. Laeven (2005) ***Systemic Financial Crises: Containment and Resolution***, Cambridge University Press, Cambridge.

19 Lane, P. (2011) ***The Irish Banking Crisis***, Discussion Paper No. 8287, Centre for Economic Policy Research, London, p19.

20 Vickers' Report (2011) ***Final Report Recommendations,*** Independent Commission on Banking, London, p124.

The above paragraph contains the core of the argument for conservative bank regulation and supervision: uncontrolled and poorly supervised banking often leads to large bank failures and financial crises, so well-controlled and well-supervised banking is a core national strategy to avoid bank failures and reduce the risk and severity of financial crises.

The extant literature suggests that higher capital requirements will lead to a lower probability of a financial crisis occurring, and will reduce the severity of a crisis when it does occur. The BCBS (2010) study estimates that a banking crisis occurs every 20 to 25 years with the costs of a single banking crisis being substantial. Taking into account the possible permanent effects of a crisis, the BCBS (2010) estimates that the cumulative loss in output is likely to be approximately 63 per cent of GDP. The study further suggests that higher capital requirements can significantly reduce the probability of a banking crisis. However, the relationship is not linear – the incremental benefits of a fall in the probability of a crisis decline as a banking system becomes better capitalised.

The study shows, for instance, that increasing capital ratios from 10 to 11 per cent induces a drop in the likelihood of crises about one-quarter to one-third of the corresponding drop when capital ratios are increased from seven to eight per cent. More capital is not always the right answer in achieving an appropriate balance between safety and efficiency but within the practical range under consideration in Australia, somewhat more capital will produce a safer banking system without compromising output or other objectives.

As regards financial crises and bank safety, Australia is something of an outlier. Its last systemic banking crisis was in the 1890s. Its last substantial bank failures were in the early 1990s, when some middle-sized banks owned by state governments, and outside the prudential regulation regime of the RBA, needed rescue.

The implementation of Basel III will see Australia's larger banks increase their CET1 ratios. It is difficult to calculate the degree to which the increase will reduce the risk of a single bank failure or of a systemic banking crisis, but it will surely generate a non-trivial increase in banking system safety.

Furthermore, the benefits associated with such a strengthening extend well beyond avoided financial crises. Statistically, it is considerably more likely that Australia's economy and banking system will be exposed to a typical recession rather than an atypical crisis. In the event of a recession, a more strongly capitalised banking industry will be materially better placed to maintain its funding and capital access, which in turn will better support those who rely upon the banking system for their own funding and savings needs.

Well-controlled and well-supervised banking is a core national strategy to avoid bank failures and reduce the risk and severity of financial crises.

An optimal bank equity ratio?

Stronger capital positions are an important asset during a systemic crisis. An IMF study by Demirguc-Kunt ***et al***. (2010) found that during the recent financial crisis, banking institutions located in countries with strong capital regulation performed better, and higher capital was associated with better stock market performance for large banks. Capital matters because of its ability to absorb losses as well as its possible role as a signal of bank asset quality. Stock market investors placed higher value on better capitalised banks during the crisis. Miles (2011) suggested that in light of the benefits of holding more capital, such as the reduced probability of a systemic banking crisis, a capital ratio of at least twice as large as agreed under Basel III would take the banking sector closer to an optimal position.

Other jurisdictions have already signalled higher capital requirements than the Basel III minimum requirements, and much higher in some cases. The Swedish Riksbank (2011), for example, has advocated that the four major Swedish banking groups be subject to a minimum 10 per cent CET1 ratio in 2013, rising to 12 per cent in 2015. The Riksbank is of the view that higher capital ratios are required as the Swedish economy is at higher risk of a banking crisis. For example, the Swedish banking system is large compared

to the size of the Swedish economy and is also highly concentrated. The Vickers Report (2010) recommended that large UK banking groups should have equity capital of at least 10 per cent of risk-weighted assets. Switzerland has implemented capital requirements that are significantly higher than the global minima, requiring its banks to hold a capital baseline of 19 per cent of risk-weighted assets, of which 10 per cent would be CET1.

Summary

Over the past decade, Australia's banking system has been among the strongest in the world, but also among the most rewarding for shareholders and among the systems most able to support sound lending growth. This success was achieved against a backdrop of a consciously conservative regulatory and supervisory regime in Australia.

The implementation of the Basel III capital reforms in Australia, in broad terms, is likely to generate very small increases in lending interest rates. Increased rates could over time result in a very slight decrease in GDP growth compared to what GDP would have been otherwise. For these potential costs, Australia is more likely to retain one of the world's soundest banking systems. This seems an eminently sensible trade-off.

The Basel III capital reforms are an important but far from the only part of APRA's approach to encouraging a safe banking system. APRA's strategy includes conservative regulation, starting with but extending beyond minimum standards set globally, and assertive and where necessary intrusive supervision. Furthermore, APRA's supervision is founded upon the principle that larger and more systemically significant institutions will receive closer attention upon earlier signs of any financial distress.

Charles Littrell
Executive General Manager
Policy, Research and Statistics

Rebecca Pu
Graduate Analyst
Policy Development
Policy, Research and Statistics

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Supporting Australia's regional neighbours through technical assistance

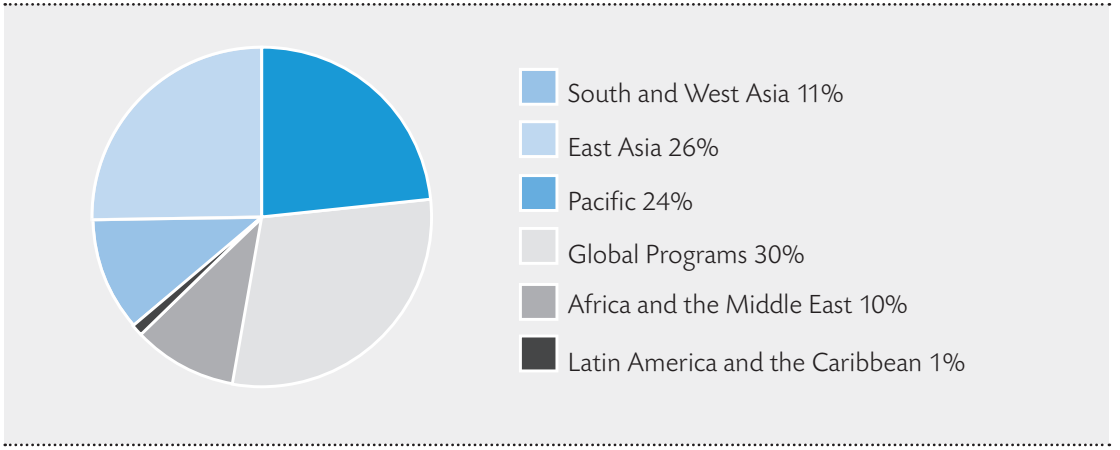
This article provides an overview of APRA's involvement in providing technical assistance to Australia's neighbours in the East Asia and Pacific regions.

Introduction

Well functioning financial systems and regulatory structures are important to development in the Asia-Pacific region. In line with the Australian Government's commitment to lift official sector assistance to this region, APRA and the Australian Agency for International Development (AusAID) continue to support the deepening of institutional capacity among Asian and Pacific counterparts. Improvements in regulatory, legal and related governance structures in the region are critical to the conduct of business and the betterment of the business environment in those countries and can influence the participation of Australian and other foreign investors.

APRA's technical assistance activities aim primarily at helping to build relationships with other regulatory agencies within the region through sharing supervisory skills and experience. The technical assistance interaction provides benefits for both parties. International secondees at APRA not only make a valuable contribution to their host teams but also assist APRA develop useful partnerships with foreign regulators and gain a greater understanding of their financial sector, regulatory regime, supervisory approach and challenges faced. Regulators from developing, emerging and newly industrialised economies often face a more challenging environment than that in Australia.

Figure 1: Australian official development assistance by region 2012/13



Where APRA staff assist 'on the ground' in the region, APRA also benefits from an enhanced information flow, particularly in relation to cross-border entities and other common issues, and broader experience through exposure to problems that need to be resolved in different ways. There are also valuable development and experience benefits for APRA staff involved in skills transfer, such as gaining experience as a trainer, mentoring junior team members and supporting and engaging interns.

Government assistance

The AusAID 2012/13 aid program budget was set at $5.2 billion, an increase of almost $0.4 billion from the previous year. This increase is in line with the Australian Government's longer term commitment to increase aid towards 0.5 per cent of gross national income by 2016/17 (currently 0.35 per cent). Most of this new assistance is directed to Australia's immediate regional neighbours, particularly Indonesia and the Pacific.

As Figure 1 shows, during 2012/13, 50 per cent of estimated Australian official development assistance (ODA) shall be provided to the Pacific and East Asia regions. Around 19 per cent of this spending relates to improving economic governance.[1]

In keeping with the Government's request, APRA is playing its part in the all-of-government engagement with its counterparty agencies in the Pacific and Indonesia.

The Pacific

Since 2004, APRA has administered two distinct but complementary programs with Pacific regulatory agencies, both supported under the AusAID Pacific Public Sector Linkages Program and its predecessor, the Pacific Governance Support Program. The Pacific On-site Prudential Supervision Project (POPSP) provides for APRA supervisors to travel to Pacific countries for two weeks at a time to conduct training programs with on-site review teams comprised of local and other visiting Pacific prudential regulators.

The various jurisdictions involved include Bank of Papua New Guinea, Central Bank of Samoa, Central Bank of the Solomon Islands, Federated States of Micronesia Banking Board and Federated States of Micronesia Insurance Board, Financial Supervisory Commission of Cook Islands, National Reserve Bank of Tonga, Papua New Guinea Insurance Commission, Reserve Bank of Fiji and Reserve Bank of Vanuatu. APRA supervisors are chosen from frontline staff, based upon their level of experience as well as their ability to engage successfully across cultures and to facilitate, rather than direct, the learning of others.

Around 75 per cent of the staff of Pacific prudential regulators have attended at least one APRA supported on-site program visit.

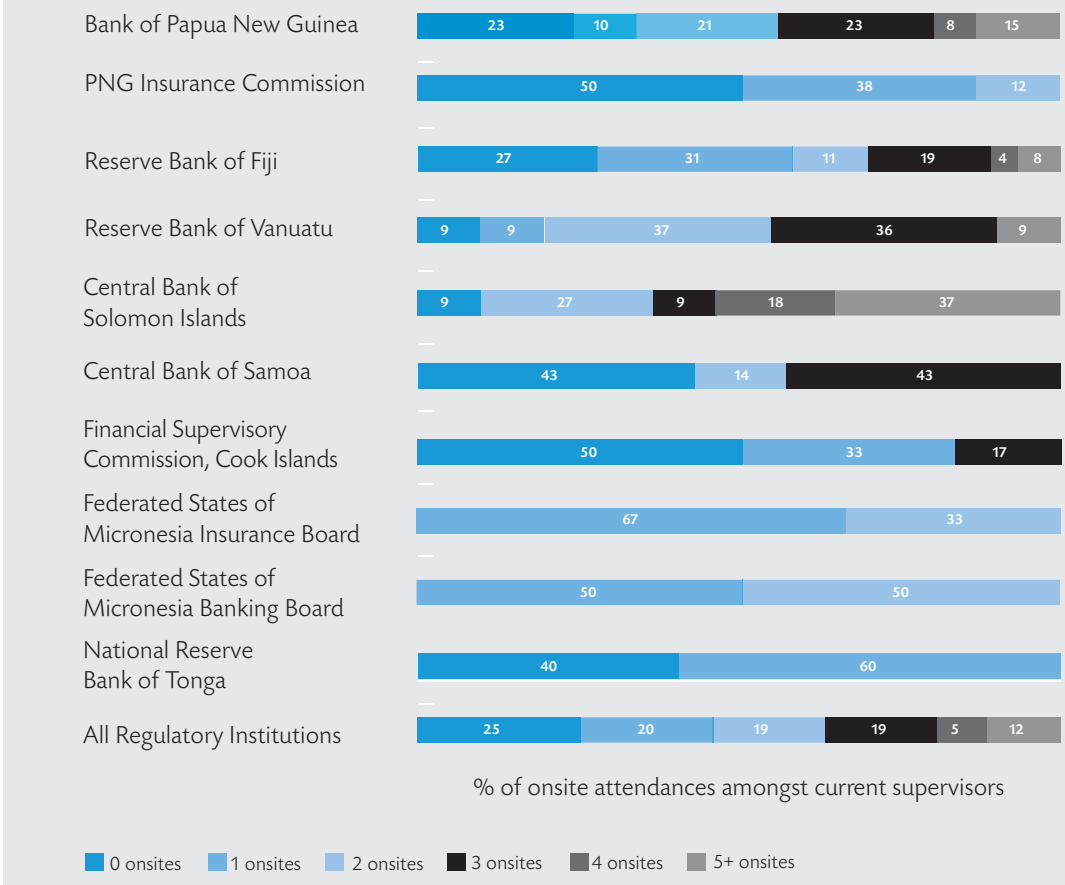
1 *Summary of Australia's Overseas Aid Program 2012-13 Budget High lights* – 8 May 2012 (http://www.ausaid.gov.au/Publications/Pages/summary-budget-2012-13.aspx#aidprogram)

The POPSP program is designed to deepen the supervisory capacity of Pacific participants in conducting on-site visits. This program has grown since its inception to incorporate the expanding remit of supervisory responsibility of the Pacific regulators to include superannuation, banking, and life and general insurance. Practically, this training focuses on the preparation of review plans, the conduct of on-site interviews, documentation reviews and determining an appropriate supervisory response based on assessments of the Pacific participants. While participants are sent to different jurisdictions to learn about new issues and broaden their capacity, they also receive the benefit of networking opportunities as the program encourages Pacific supervisors to consult with APRA as well as with other Pacific colleagues. Participating jurisdictions report that the availability of supervision training in the Pacific is quite limited and the POPSP program is the only hands-on training they are able to access.

Going forward, the program will develop a 'train the trainer' aspect. Initially two senior Pacific supervisors have completed a 'workplace training' course at APRA and then will undertake the 'on-site trainer' function for future on-site reviews in their home jurisdictions, with participants from other Pacific jurisdictions in attendance. The focus of this development is building the sustainability of the POPSP program and expanding the use of deep local technical knowledge and skills, with appropriate cultural sensitivity.

To date, 35 POPSP on-sites have taken place and this has seen the involvement of 281 Pacific participants across the various Pacific jurisdictions. Figure 2 gives the percentage of on-site attendance amongst Pacific prudential regulators.

Figure 2: Current supervisors' participation in on-site programs by regulator

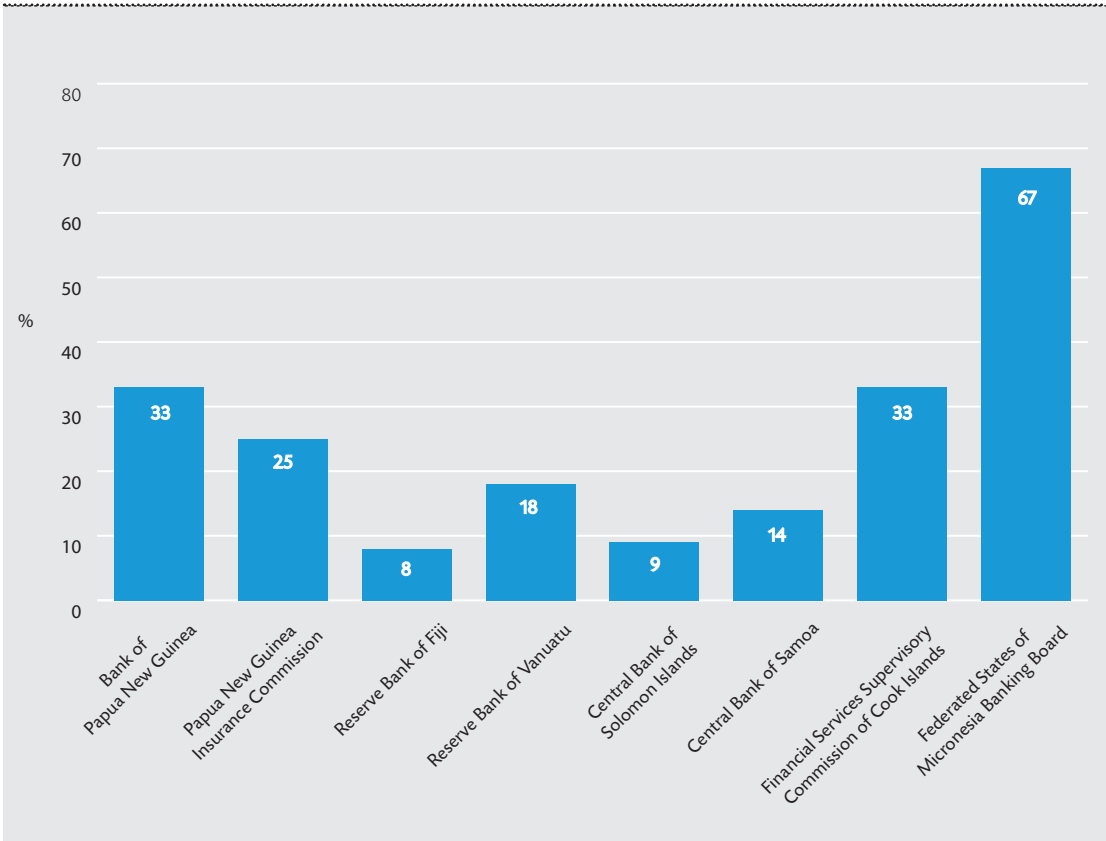


Around 75 per cent of the staff of Pacific prudential regulators have attended at least one APRA supported on-site program visit. In the future, APRA will be targeting Pacific prudential regulators that have undertaken fewer than three training events (represented by the blue segments above) in an effort to broaden and deepen on-site examination skills.

The Pacific Regulator Internship Project places staff from Pacific prudential regulators within APRA's frontline supervisory divisions for a period of between one to 18 weeks to learn about risk-based prudential supervision techniques. The program has involved 28 interns from Pacific jurisdictions including Bank of Papua New Guinea, Central Bank of Samoa, Central Bank of the Solomon Islands, Federated States of Micronesia Banking Board, Financial Services Supervisory Commission of Cook Islands, Papua New Guinea Insurance Commission, Reserve Bank of Fiji and Reserve Bank of Vanuatu. Placements involved 20 staff in APRA's Specialised Institutions Division and eight in its Diversified Institutions Division, across the Sydney, Melbourne and Brisbane offices.

The choice of intern is determined by the home jurisdiction and APRA on the basis of experience, the potential for development, the significance of their role and the particular needs of the jurisdiction itself. Figure 3 shows the percentage of current staff of each Pacific prudential regulator who have had an internship at APRA. Approximately 20 per cent of all current Pacific supervisors have had an internship at APRA, broadly equivalent to 23 per cent of the current female staff and 18 per cent of the current male staff of Pacific prudential regulators.

Figure 3: Proportion of current supervisors who have attended an internship



Supporting Australia's regional neighbours through technical assistance

An external review by independent consultants of APRA's AusAID funded Pacific technical assistance programs on risk-based supervision was completed in August 2011. The review confirmed that Pacific partner jurisdictions uniformly value the program, which through its hands-on components in particular was seen as filling a useful training gap. The program was found to be 'clearly in line with (AusAID guideline) requirements' of demonstrated relevance to both Australian government and partner government development priorities and very effective in meeting the program's short-term and intermediate objectives. These include raising levels of understanding and awareness of risk-based supervision, creating confidence around risk-based supervision implementation and delivery, developing capacity to adapt, implement and deliver risk-based supervision, and promoting Pacific regulatory networks.

> *'More broadly, the intended impact of the project is relevant to Australian Government intentions for the Pacific, which includes support for economic stability in the region, in that financial sector stability contributes to economic stability more generally.*[2]*'*

The program was also considered to represent good value for money, give attention to sustainability and gender equality, and to have a well considered approach to capacity development. The review also had some useful suggestions for long term improvements to the program for discussion with participants, though resource constrains at APRA will continue to be an issue.

2 APRA Risk-based Supervision Project Review, August 2011, Praxis Consulting Pty Ltd, p. 12

Indonesia

In Asia, APRA's engagement is primarily focused on, but not limited to, technical assistance activities with Indonesia. APRA has been engaged with Badan Pengawas Pasar Modal dan Lembaga Keuangan (Bapepam-LK), Indonesia's integrated regulator of securities markets and non-bank financial institutions, for the past seven years, while APRA's engagement with Bank Indonesia has continued since 2006.

APRA's assistance to Bapepam-LK and Bank Indonesia is funded by AusAID through a multi-year initiative under the auspices of the Government Partnership Fund (GPF) II. By improving economic governance and public sector management, the GPF program aims to contribute to a healthy financial sector, which is an essential prerequisite to economic development and the efficient flows of resources within and between economies. The goal of APRA's work in Indonesia is to assist the development and implementation of a risk-based approach to prudential supervision, drawing on and adapting APRA's experience and systems. The program consists of two work areas: Indonesian secondees in Australia and ongoing strategic discussion through senior management relationships often delivered on-site.

The secondments for Indonesia are similar to the short-term secondments hosted by APRA for Pacific prudential regulators, in that they are designed to transfer knowledge of APRA's approach to risk based supervision. Secondees are hosted in frontline and specialist risk, data collection and/or reporting teams. To date, 64 secondments have been undertaken within the Sydney and Melbourne offices, with approximately one third being female secondees. Some 49 of those have been from Bapepam-LK, nearly equally divided between their Insurance and Pension Funds Bureaus, and ranging in duration between two and 12 weeks.

In 2008, the Pension Funds Bureau developed the SPERIS (Sistem Pemeringkatan Risiko/Risk Rating System) and SANBERRIS (Sistem Pengawasan Berbasis Risiko/Risk-based Supervision System) tools for the pension industry in Indonesia, which have been adapted from APRA's PAIRS (Probability and Impact Rating System) and SOARS (Supervisory Oversight and Response System) tools. The purpose of the SPERIS SANBERRIS tools is to determine the probability of a pension fund fulfilling its obligation to its participants and the impact on the pension fund industry as a whole. APRA has been working with the Pension Funds Bureau to strengthen the use of these tools, assisting in the development of systems,

procedures and protocols, including risk rating, benchmarking and supervisory action planning. The SPERIS-SANBERRIS tool has been working well since its implementation and has been welcomed by the Indonesian pension industry, as it assists in providing a greater understanding of key risks in the daily management of their pension funds. Moreover, they can learn how to mitigate those risks in order to manage their pension funds better and more prudently.

Similarly to Bapepam-LK, Bank Indonesia has utilised internships and focused study visits to APRA to assist in refining its banking supervision process. In October 2011, it released its Risk-based Bank Rating (RBRR) Guidance for Supervisors and Banks and in January this year the RBRR project was implemented across all bank supervisors. The RBRR applies similar philosophy and methodology to APRA's PAIRS and SOARS. To ensure effective implementation of the RBRR, which also requires change management processes, Bank Indonesia plans to carry out further short term study visits to APRA this year to exchange experience and views with senior APRA staff. To date, Bank Indonesia has participated in 15 internships at APRA – six have been for six months, one for three months and eight for two weeks.

The Indonesian Government is currently planning to integrate supervision of banking, capital market and non-bank financial industries into one new agency called Otoritas Jasa Keuangan (OJK) (Financial Services Authority) by the end of December 2012 (for supervision of capital market and non-bank financial industries) and by the end of December 2013 (for supervision of banks). Towards this aim, APRA has assisted several visits by representatives from both Bapepam-LK, Bank Indonesia and other relevant officials to review Australia's regulatory framework, coordination arrangements with other regulators and, in particular, APRA's formation process.

Other technical assistance activities

Since 2000, APRA has hosted 109 short-term secondments of up to six months of overseas supervisory personnel from emerging, developing and newly industrialised countries. A full breakdown of secondee figures by country is given in Table 1. These intern programs, which specifically target skill transference in risk-based supervision, are delivered in Sydney, Melbourne and Brisbane and involve a broad range of APRA staff. Of these 109 secondments, 85 were undertaken on a cost recovery basis via AusAID funded programs, as discussed above.

Table 1: Secondments from emerging, developing and newly industrialised country regulators since 2000

Country	Regulator	Secondments	AUSAID	%
Brazil	SUSEP	2		
China	China Banking Regulatory Commission	3		
Cook Islands	Financial Supervisory Commission Cook Islands	2	2	
Fiji	Reserve Bank of Fiji	5	3	
India	Reserve Bank of India	2		
Indonesia	Bapepam-LK	45	45	
	Bank of Indonesia	15	14	
Malaysia	Bank Negara Malaysia	2		
Mauritius	Mauritius Financial Services Commission	1		
Micronesia	Federated States of Micronesia Banking and Insurance Board	2	1	
Oman	Central Bank of Oman	1		
PNG	Bank of Papua New Guinea	15	14	
	Papua New Guinea Insurance Commission	3	3	
Samoa	Central Bank of Samoa	1	1	
Solomon Islands	Central Bank of the Solomon Islands	3	1	
Thailand	Bank of Thailand	5		
Vanuatu	Vanuatu Financial Services Commission	2	1	
		109	**85**	**78%**

Table 2: Overseas enquires by country type

	2009/10		2010/11		2011/12	
Country	No of enquiries	% of total	No of enquiries	% of total	No of enquiries	% of total
Developing	114	41	114	33	91	33
OECD	139	49	191	55	119	44
Multilateral	29	10	41	12	62	23
Total	**282**	**100%**	**346**	**100%**	**272**	**100%**

In addition to secondments, many international delegations visit APRA to enquire about its supervisory techniques and other matters. Delegation visit numbers run at on average around 100 per annum. Over half of these delegations are from emerging, developing and newly industrialised countries, and most have a technical assistance purpose. APRA receives on average around 250 enquiries per annum mostly from overseas regulators, with approximately 350 in 2010/11 (Table 2). On average, approximately half of all enquiries are from emerging, developing and newly industrialised countries.

APRA also supports initiatives of multilateral institutions by providing speakers to regional seminars, particularly where there is a technical assistance objective. Speaking engagements typically include the Financial Stability Institute (FSI) (of the Bank for International Settlements), the Asia-Pacific Economic Cooperation (APEC) Study Centre at RMIT University, the APEC Financial Regulatory Training Initiative, the Association of South-East Asian Nations (ASEAN) Insurance Training and Research Institute (AITRI), International Federation of Pension Funds Administrators (FIAP) and the South East Asian Central Banks (SEACEN) Centre.

Over the past five years APRA provided 47 speakers to conferences organised by the FSI which are often co-hosted with other regional bodies. During this period, APRA also hosted a workshop on liquidity management in Brisbane for the APEC Financial Regulatory Training Initiative and a workshop on risk-based supervision of pension funds in Sydney in conjunction with the Annual Meeting of the International Organisation of Pension Supervisors (IOPS).

In addition, APRA hosted an executive development program for two groups of 25 senior staff from the China Banking Regulatory Commission (CBRC) and co-hosted, with the Reserve Bank of Australia (RBA), a meeting of the Executives' Meeting of East Asia Pacific Central Banks (EMEAP) Working Group on Banking Supervision. APRA also supports the Pacific Financial Technical Assistance Centre (PFTAC) in Fiji whose aim is to build skills and institutional capacity in 15 Pacific Island countries.

APRA is also a member of the Asian Forum of Insurance Regulators (AFIR), South-East Asia New Zealand and Australia (SEANZA), the Financial Regulators Training Initiative of the Bank Supervisors' Advisory Group of Asia-Pacific Economic Cooperation, coordinated through the Asian Development Bank, and the Australian APEC Study Centre Advisory Group.

APRA represents Australia as an observer at the Association of Financial Supervisors of Pacific Countries (AFSPC) which facilitates cooperation between regulators in the region and supports its activities through sponsoring speakers on topical issues at the Association's annual meeting.

Funding

APRA's core business is to ensure that, under all reasonable circumstances, financial promises made by the institutions that it regulates are met within a stable, efficient and competitive financial system. There is an opportunity cost to releasing resources for technical assistance program work and this constantly has to be balanced against core business needs. Currently, APRA has decided that, subject to these needs, it will allocate up to three APRA full time equivalent (FTE) personnel per annum to technical assistance activities, primarily focussed on the Asia Pacific region. This represents around 0.5 per cent of APRA's FTE staff of just over 600. APRA is careful to emphasise that the technical assistance activities remain subject to cancellation or rescheduling if it has conflicting prudential demands or other core business constraints. A number of activities, for example, were deferred during the global financial crisis.

Table 3: APRA's technical assistance (TA) activity by calendar year

TA activity	2010			2011		
	$	%	FTE days*	$	%	FTE days*
TA costs recovered	626,000	67	415	782,000	74	341
Other	311,000	33	234	268,000	26	157
Total	**$937,000**	**100%**	**649**	**$1,050,000**	**100%**	**498**

*FTE – Full-time equivalent

Table 4 - APRA's cost recovery from AusAID

Country program	2009	2010	2011	Program total 2005-2012
Pacific – On-sites	$241,000	$297,000	$358,000	$1,624,000
Pacific – Internships		$50,000	$56,000	$638,000
Indonesia – Bapepam-LK – Internships	$118,000	$133,000	$177,000	$1,262,000
Indonesia – Bank Indonesia – Internships	$107,000	$123,000	$185,000	$425,000
Year total	**$466,000**	**$603,000**	**$776,000**	**$3,949,000**

As a funding principle, APRA does not believe it is appropriate to use levy funding from regulated institutions in Australia to contribute to technical assistance, other than incidental amounts. Consequently, AusAID and other institutions involved in the delivery of technical assistance fund a large proportion of APRA's expenditure on these activities. During 2011, total use of APRA staff resources for technical assistance activities was estimated at around 500 FTE days (64 per cent of the cap), of which 341 days (nearly 70 per cent) were subject to cost recovery. Of estimated total spending of $1.05 million on technical assistance activities over 2011, APRA recovered around 74 per cent. This compares with recoveries of 67 per cent of the estimated $937,000 program spend over 2010, outlined in Table 3.

In managing its resources for technical assistance, APRA looks to leverage the activities it undertakes by concentrating its efforts where possible. For example, APRA favours multilateral initiatives over bilateral ones and, where possible, draws on training approaches and materials that are used for APRA's own staff. Table 4 outlines APRA's cost recovery for technical assistance activities from 2009 to 2012 on a program basis.

Conclusion

APRA's technical assistance program activity, though unavoidably limited, is nonetheless making a worthwhile contribution to developing supervisory capacity in counterpart organisations in the Asia Pacific region. APRA's efforts are acknowledged by regulators in the region and valued by participants.

The development and capacity issues faced by many regulators can only be addressed in the medium- to long-term. APRA accepts that, on occasion, there are likely to be setbacks to achieving program objectives but judges that, overall, its contribution to strengthening the capacity of regional regulators is an appropriate use of its expertise. This effort is also helping make APRA itself a better regulator, as it broadens its perspective on risk management and many of its staff gain valuable development opportunities.

Scott Jarrott
Senior Analyst
International Relations

NOTES

APRA OFFICES

Head Office

SYDNEY

Level 26
400 George Street
Sydney NSW 2000
GPO Box 9836
Sydney NSW 2001

Tel: 02 9210 3000
Fax: 02 9210 3411

Info Line: 1300 55 88 49
Web: www.apra.gov.au

ADELAIDE

Level 5
100 Pirie Street
Adelaide SA 5000
GPO Box 9836
Adelaide SA 5001
Tel: 08 8235 3200
Fax: 08 8232 5180

BRISBANE

Level 9
500 Queen Street
Brisbane QLD 4000
GPO Box 9836
Brisbane QLD 4001
Tel: 07 3001 8500
Fax: 07 3001 8501

CANBERRA

Level 4, 10 Rudd Street
Canberra 2601
GPO Box 9836
Canberra ACT 2601
Tel: 1300 131 060
Fax: 02 6213 5307

MELBOURNE

Level 21
Casselden Place
2 Lonsdale Street
Melbourne VIC 3000
GPO Box 9836
Melbourne VIC 3001
Tel: 03 9246 7500
Fax: 03 9663 5085

PERTH

Level 15, QV1 Building
250 St Georges Terrace
Perth WA 6000
GPO Box 9836
Perth WA 6001
Tel: 08 9481 8266
Fax: 08 9481 8142