

# Australian Bank Capital and the Regulatory Framework

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The amount and quality of the Australian banking sector's capital has increased considerably over the past couple of years. As in a number of other countries, this is because the recent global financial crisis has prompted both markets and regulators to reappraise their views on acceptable levels and forms of capital. National and international regulatory bodies have proposed a number of major changes to existing capital regulations, details of which will be finalised later this year.

## Introduction

A bank's capital, in its simplest form, represents its ability to withstand losses without becoming insolvent. As demonstrated in a number of North Atlantic countries during the recent financial crisis, bank failures – and fears of bank failure – can be highly disruptive to the macroeconomy. National regulators therefore promote resilience in the banking sector by specifying a minimum amount of capital that banks must hold and the form that capital should take. The financial crisis has prompted a rethink of how strict these requirements should be.

This article explains how the minimum capital requirement currently operates in Australia, discusses the Australian banking system's capital position and how it has evolved over the recent crisis period, and briefly outlines some of the main regulatory changes that are being considered.<sup>1</sup>

## Capital Regulation in Australia

The Australian Prudential Regulation Authority (APRA) makes and enforces the rules which govern the capital adequacy of Australian banks. The current set of rules are a conservative application of the latest set of international capital standards issued by the Basel Committee on Banking Supervision (BCBS), which

are collectively termed 'Basel II'.<sup>2</sup> APRA introduced these standards to Australia in 2008 as an update to the first set of Basel standards – 'Basel I' – that were implemented in 1988. Central to the design of the Basel capital standards is the idea that a bank should hold capital in relation to its likelihood of incurring losses. The standards focus heavily on the definition of capital and the measurement of risk.

## Measuring capital

An Australian bank's regulatory capital is the sum of its 'Tier 1' and 'Tier 2' capital, net of all specified 'deductions'.

Tier 1 capital consists of the funding sources to which a bank can most freely allocate losses without triggering bankruptcy. This includes, for example, ordinary shares and retained earnings, which make up most of the Tier 1 capital held by Australian banks (Table 1). It can also include specific types of preference shares and convertible securities but, since it is more difficult for banks to allocate losses to these instruments, APRA currently specifies that no more than 25 per cent of Tier 1 capital can be in this form. Total net Tier 1 capital of Australian banks as at March 2010 was \$131 billion.

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1 While the same capital requirements also apply to other Authorised Deposit-taking Institutions in Australia, such as credit unions and building societies, this article focuses on Australian banks only.

2 The BCBS' governing body comprises central bank governors and (non-central bank) heads of supervision from its 27 member countries, which include Australia and the rest of the G-20.

**Table 1: Australian Banks' Regulatory Capital<sup>(a)</sup>**  
As at end March 2010

	\$billion	Per cent of total
<b>Net Tier 1</b>	<b>131.0</b>	<b>79.9</b>
of which:		
Ordinary shares	115.0	70.1
Retained earnings	52.9	32.2
Reserves and minority interests	-2.4	-1.5
Tier 1 preference shares	12.8	7.8
Tier 1 convertible securities	13.0	8.0
Deductions	-60.4	-36.8
<b>Net Tier 2</b>	<b>33.0</b>	<b>20.1</b>
of which:		
Term subordinated debt	35.8	21.8
Other Tier 2 instruments	7.0	4.3
Deductions	-9.8	-5.9
<b>Total capital</b>	<b>164.0</b>	<b>100.0</b>

(a) Locally incorporated banks, consolidated global banking group; all instruments are measured at book value  
Source: APRA

Tier 2 capital is made up of funding sources that rank below a bank's depositors and other senior creditors, but in many cases are only effective at absorbing losses when a bank is being wound up. In this way, Tier 2 capital provides depositors with an additional layer of loss protection after a bank's Tier 1 capital is exhausted. Tier 2 capital of the Australian banking system primarily consists of subordinated debt, though it also comes in other varieties, such as preference shares. Total net Tier 2 capital of the Australian banking system as at March 2010 was \$33 billion.

Both Tier 1 and Tier 2 capital are measured net of deductions, which are adjustments for factors that lessen the loss absorption capabilities of capital. For example, banks often have equity balancing their holdings of intangible assets, like goodwill, which can automatically lose value as a result of the threat of bankruptcy. That part of a bank's gross capital is therefore unavailable to absorb other incurred losses. As at March 2010, there were \$70 billion

of regulatory capital deductions on the books of Australian banks. Around \$45 billion were generated by holdings of intangible assets, most of which were in the form of goodwill.

### Measuring risk

For capital adequacy purposes, Australian banks are required to quantify their credit, market and operational risks. The most significant risk of these is typically credit risk, reflecting Australian banks' focus on traditional lending activities.

Credit risk is measured as the risk-weighted sum of a bank's individual credit exposures, which gives rise to a metric called 'risk-weighted assets'. Under the Standardised approach employed by most of the smaller banks, the risk weights are prescribed by APRA and are generally based on directly observable characteristics of each exposure. For example, if a residential mortgage has a loan-to-valuation ratio of 70 per cent, full documentation and no mortgage insurance, APRA specifies a risk

weight of 35 per cent. If the outstanding balance of that mortgage is \$100, its corresponding risk-weighted asset is \$35. Corporate exposure risk weights are based on external credit ratings and are generally higher than for residential mortgages because the exposures are usually riskier.<sup>3</sup>

Some banks, including the four largest, use an alternative Internal Ratings-based approach whereby risk weights are derived from their own estimates of each exposure's probability of default and loss given default.<sup>4</sup> APRA grants approval to use this approach only after a bank has met strict governance and risk modelling criteria.

**Table 2: Australian Banks' Risk-weighted Assets<sup>(a)</sup>**  
As at end March 2010

	Exposure \$billion	Average risk-weight Per cent	Risk-weighted assets \$billion	Per cent of total
<b>Credit risk</b>	<b>2 739</b>	<b>43</b>	<b>1 181</b>	<b>85</b>
of which:				
Corporate	472	78	370	27
Residential mortgage	1 157	26	302	22
Other retail <sup>(b)</sup>	171	80	137	10
Bank	103	18	18	1
Sovereign	99	7	7	½
Off-balance sheet <sup>(c)</sup>	560	36	200	14
Other <sup>(d)</sup>	177	83	147	11
<b>Market risk</b>			<b>63</b>	<b>5</b>
of which:				
Traded			22	2
Non-traded (IRRBB)			41	3
<b>Operational risk</b>			<b>102</b>	<b>7</b>
Securitisation <sup>(e)</sup>			24	2
Other <sup>(f)</sup>			20	1
<b>Total</b>			<b>1 390</b>	<b>100</b>

(a) Locally incorporated banks, consolidated global banking group

(b) Includes exposures to individuals for small business purposes, credit card exposures, and other personal exposures

(c) Excludes risks associated with selling securitised assets; exposure amount is on an on-balance sheet equivalent basis

(d) Includes, for instance, fixed asset investments and margin lending exposures

(e) Charges for risks associated with the buying or selling of asset-backed securities

(f) Charges that are applied to banks using the Internal Ratings-based approach to credit risk to ensure that there are no unintended falls in banking system capital during the transition to Basel II

Source: APRA

3 Corporate exposures that are unrated are assigned a risk weight of 100 per cent.

4 One bank operates under a different Internal Ratings-based approach, whereby internal models are used to estimate default probabilities but supervisory rules are used to determine each exposure's loss given default.

These methodologies together give rise to \$1 200 billion in credit risk-weighted assets at Australian banks (Table 2). This compares with (unweighted) assets of around \$2 700 billion. Within the risk-weighted total, corporate exposures account for \$370 billion, while residential mortgage exposures are lower at around \$300 billion, reflecting their relatively lower risk weights. There are also \$200 billion in credit risk-weighted assets that are generated from off-balance sheet exposures. These are predominantly in the form of corporate credit commitments, interest rate derivatives, and foreign exchange derivatives.

The market and operational risks are also measured in terms of risk-weighted assets, though this is more of a naming convention than being indicative of the underlying measurement process. For instance, as part of market risk, APRA requires some banks to consider interest rate risk in the banking book (IRRBB), which refers to the potential for loss arising from timing and size mismatches in the repricing of a bank's funding and lending instruments. Measuring this risk requires a holistic approach to the bank's balance sheet rather than the granular use of risk weights for each exposure.<sup>5</sup> As at March 2010, total market and operational risks accounted for 5 per cent and 7 per cent of the Australian banking system's total risk-weighted assets.

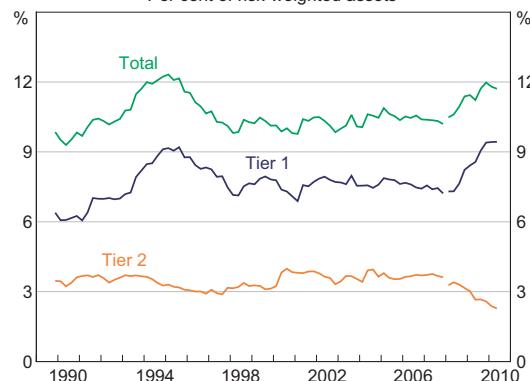
### Minimum capital requirements

APRA requires all locally incorporated banks to hold total capital of at least 8 per cent of their risk-weighted assets. At least half of their total capital must be the better-quality Tier 1, implying a minimum Tier 1 ratio of 4 per cent.<sup>6</sup> APRA can and does also increase these minima for individual banks where considered necessary on account of their risk profile.

<sup>5</sup> It is also worth noting that Australia is the only country in which IRRBB is explicitly included in banks' risk-weighted assets. That said, IRRBB is a relatively small risk in Australia because most lending is made at variable rates and interest rate mismatches are usually relatively minor.

<sup>6</sup> Foreign banks operating in Australia as branches are not required to hold capital in Australia. They are capitalised through their head office, offshore.

**Graph 1**  
**Australian Banks' Capital\***  
Per cent of risk-weighted assets



\* Locally incorporated banks, consolidated global banking group; break in March 2008 due to the introduction of Basel II for most banks  
Source: APRA

As at March 2010 the Australian banking system had an aggregate total capital ratio of 11.8 per cent and an aggregate Tier 1 capital ratio of 9.4 per cent, with both ratios having increased significantly over the past couple of years (Graph 1).

### Recent Developments in Australian Banks' Capital

The recent global financial crisis has prompted much greater focus on banking system capital. Notably, large and sudden losses incurred by some of the world's largest banks prompted investors, regulators and rating agencies to reappraise the prospect of bank losses and appropriate levels of capital. In addition, some of the lower-quality forms of capital were not as available to absorb losses as anticipated, and were subsequently looked upon less favourably as a source of financial strength. Convertible securities, for example, were included in the Basel II definition of Tier 1 capital on the premise that banks would exercise their option to convert them into common equity whenever additional capital was needed. These securities have not been as widely used in Australia as in a number of other countries, but some domestic and international banks have recently opted to raise capital in other ways rather than convert, fearing the negative signal that conversion might send to markets.

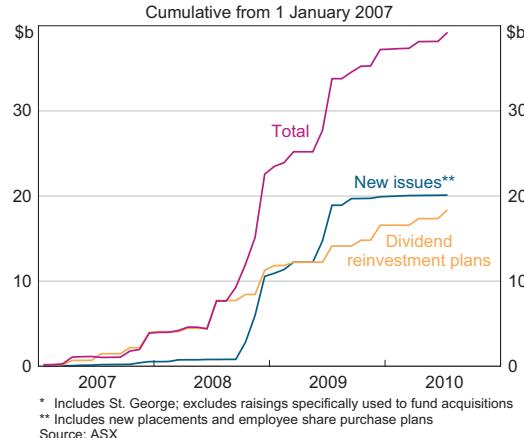
Australian banks have responded to the change in global attitudes by significantly increasing the level and quality of their capital. Changes to the growth and composition of their loan portfolios have also limited increases in their risk-weighted assets. As a result, the Australian banking system's total capital ratio rose by 0.9 percentage points from September 2008 to March 2010 (it rose by 1.3 percentage points from March 2008 to March 2010, though this figure is clouded by data issues associated with some banks' delayed transition to Basel II and the introduction of the IRRBB charge in September 2008). Moreover, the system's Tier 1 capital ratio rose by 1.8 percentage points during this time, to its highest level since at least the 1980s (when comparable data first became available). The sizes of these capital ratio increases are similar to the experience of the early 1990s, during which Australia had a recession and the banking sector also faced strong market pressures to improve its capital position.

### Holdings of capital

The amount of capital held by the Australian banking system rose by \$13.7 billion from September 2008 to March 2010. Within this total, there was a rise in Tier 1 capital of \$26 billion and a decline in Tier 2 capital of \$12.4 billion (Table 3).

The rise in the banking system's Tier 1 capital mostly reflects a large amount of new equity that was issued in late 2008 and the middle of 2009 (Graph 2). The major banks issued \$30 billion during this time, largely through a combination of new share issuance and dividend reinvestment plans. The regional banks issued a further \$2.1 billion. In contrast to some of their international peers, these issues were at only modest discounts to the market price, and were entirely to the private sector; there was no injection of public money into Australian bank capital. New equity raisings were

**Graph 2**  
**Major Banks' Equity Raisings\***



**Table 3: Change in Australian Banks' Capital and Risk-weighted Assets<sup>(a)</sup>**  
September 2008 to March 2010

	\$billion	Per cent
<b>Total capital</b>	<b>13.7</b>	<b>9.1</b>
of which:		
Net Tier 1	26.0	24.8
Net Tier 2	-12.4	-27.3
<b>Risk-weighted assets</b>	<b>16.3</b>	<b>1.2</b>
of which:		
Credit risk	-6.6	-0.6
Market risk	11.3	21.9
Operational risk and other	11.7	8.6

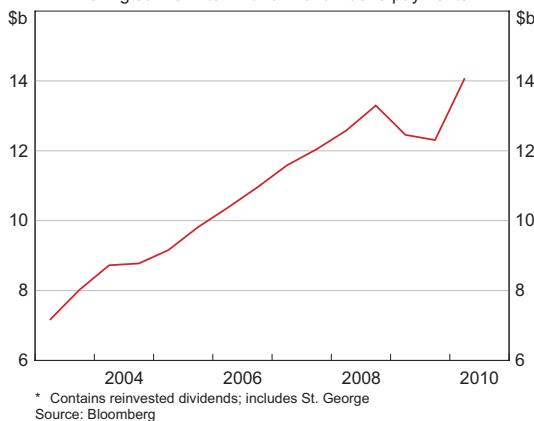
(a) Locally incorporated banks, consolidated global banking group  
Source: APRA

the key driver of increases to the Australian banking sector's Tier 1 capital in the early 1990s as well.

Having reported solid profits throughout the turmoil, the Australian banking sector was also able to generate Tier 1 capital organically, through increases in retained earnings. Some banks supported this process by making cuts to the overall value of dividend payments, which contributed to higher retained earnings than would have otherwise been the case (Graph 3).

**Graph 3**  
**Major Banks' Dividend Payments\***

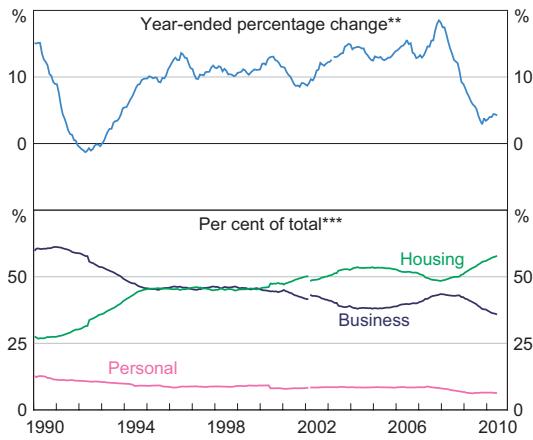
Rolling sum of interim and final dividend payments



\* Contains reinvested dividends; includes St. George

Source: Bloomberg

**Graph 4**  
**Domestic Bank Credit\***



\* Includes securitisation

\*\* Adjusted for series breaks; prior to 2002 includes all domestic credit extended by Australian financial institutions

\*\*\* Series break in 2002 is due to change in reporting requirements

Sources: APRA; RBA

The effect of these initiatives in increasing Tier 1 capital was somewhat offset by a rise in deductions, partly because a number of acquisitions generated new goodwill through the purchase price exceeding the book value of assets. There was also a \$1 billion fall in the outstanding amount of Tier 1 convertible securities. The financial crisis has highlighted that there can be strong disincentives for banks to use them as loss absorption tools, so they have become less highly regarded as sources of bankruptcy protection by markets and regulators. The BCBS has signalled that the status of these securities is being reviewed in forthcoming revisions to international capital standards.

With a number of governments overseas having recently demonstrated their willingness to shore-up banks' balance sheets before their Tier 2 capital takes losses, markets are also placing less emphasis on this form of capital. Most notably, the outstanding balance of Australian banks' term subordinated debt has fallen by around \$10 billion since September 2008, after strong issuance in the earlier part of the decade.

## Exposures to risk

The Australian banking sector's total risk-weighted assets rose by \$16.3 billion, or 1.2 per cent, from September 2008 to March 2010. There was a \$11.3 billion rise in the charge for market risk, with the IRRBB charge increasing as a result of rises in long-term interest rates from early in 2009 and the amortisation of past IRRBB gains. The operational risk charge rose by \$11.7 billion.

Partly counteracting these rises was a \$6.6 billion fall in credit risk-weighted assets. One reason for this decline is the relatively slow growth in Australian banking sector lending over this period, as banks tightened their lending standards and businesses worked to reduce their leverage.<sup>7</sup> The sector's total domestic credit has grown at an annualised rate of 4.5 per cent since September 2008, compared with an average of around 14 per cent over the previous five years (Graph 4). There has also been

7 See, for example, Black, Kirkwood and Shah Idil (2009).

a shift in the composition of banks' loan portfolios, towards housing lending, which typically attracts much lower risk weights than business and personal lending. The amount of banks' off-balance sheet credit commitments has been falling recently as well. The slower growth in credit and the change in its composition are similar to the patterns of the early 1990s recession, when credit growth of the Australian banking sector fell significantly and the share of credit devoted to housing increased strongly. Credit risk-weighted assets, though measured differently at the time, fell by 6.4 per cent from December 1990 to December 1993.

These recent size and compositional changes to bank lending have been partly offset by an increase in the average risk weight of banks' business exposures. For the major banks, whose credit risk weights are derived using internal models, estimates of the average probability of default for large corporate counterparties increased by around  $\frac{1}{2}$  of one percentage point to  $1\frac{1}{2}$  per cent (Graph 5). Their average probability of default estimates for residential mortgages have increased only very slightly and remain at a little over 1 per cent. There were also some rises in loss given default estimates across these categories.

## Forthcoming Regulatory Developments

With the financial crisis revealing a number of inadequacies in the capital held by banks globally, there has been a strong push by national regulators to tighten global capital regulations, particularly in those countries most affected by the crisis. The BCBS has been the main driver of international reforms in this area over the past year or so and has released a number of consultative documents suggesting major changes to its Basel II capital standards.<sup>8</sup> There are several proposed key reforms (some of which are now closed to consultation and have aspects on which broad agreement seems to have been reached).

- Increase the quality, international consistency and transparency of the capital base. This

**Graph 5**  
**Counterparty Default Probabilities\***  
Simple average of major banks' estimates



\* Consolidated global banking group; on-balance sheet portfolios assessed under the Internal Ratings-based approach only

\*\* Loans to households and small businesses that are secured by residential mortgages

Source: APRA

includes enhancing a bank's capacity to absorb losses on a going concern basis, such that more of its Tier 1 capital is in the form of common shares and retained earnings.

- Strengthen the risk coverage of the capital framework, with more capital being required for counterparty credit risk exposures arising from derivatives and repurchase agreements. This would strengthen the resilience of individual banks and reduce the risk that shocks might be transmitted from one institution to another through the derivatives and financing channels.
- Introduce a non-risk-weighted simple leverage ratio requirement as a supplement to the Basel II risk-weighted capital adequacy rules. The stated advantages of this methodology are that it would help contain the build-up of excessive leverage in the banking system and introduce additional safeguards against attempts to 'game' the risk-based requirements.
- Reduce procyclicality by promoting the build-up of capital buffers in good times that can be drawn down in periods of stress. Based on one of the current proposals, this would work in the form of a system-wide capital surcharge that national authorities would put into effect when they judge that there is a build-up of system wide risk.

<sup>8</sup> See, in particular, BCBS (2009, 2010a).

- Ensure that even if a failed or failing bank is rescued through a public-sector capital injection, all of its capital instruments are capable of absorbing losses. This includes a requirement that the contractual terms of capital instruments allow them to be written off or converted into common equity if a bank is unable to support itself in the private market.

Most of these reforms will inevitably raise the cost of intermediation above pre-crisis levels, and it will be important to ensure an appropriate balance between this cost and the benefit of financial systems being subject to stronger standards. In order to help policymakers assess this balance, the BCBS undertook a detailed quantitative impact study of some of these proposed changes during the first half of 2010. APRA led Australia's contribution to this work and consulted with Australian banks involved in the study. APRA and the Reserve Bank also participated in international working groups that took a 'top-down' look at the capital proposals by determining benchmarks against which they will be judged, and assessed their likely macroeconomic effects.<sup>9</sup>

APRA will consider the agreed international timetable when implementing the new standards, which on the basis of the latest proposals would see the first of the new requirements in place from the start of 2013, with some longer phase-in periods for certain elements of the package. The BCBS has committed to issue details of finalised capital reforms and transition arrangements later this year. APRA will provide further guidance on Australian transition arrangements around that time, but currently does not expect that banks in Australia will need an extensive transition period to meet the new capital requirements. Australian banks appear to be better placed to meet the new capital criteria than banks in a number of other countries, partly because APRA's existing capital rules are based on a relatively more conservative application of the Basel II standards.

## Conclusion

The Australian banking system has significantly increased its capital buffer against potential losses in recent years. To a large extent this has been driven by the financial crisis, which prompted markets, regulators and rating agencies to reappraise appropriate levels and forms of capital. Australian banks responded by issuing considerable amounts of new equity – the highest quality form of capital – while changes to the growth and composition of their loan portfolios limited increases in their risk-weighted assets. Unlike banks in a number of other countries, at no point was there any injection of public money into Australian bank capital.

National and international regulatory bodies have proposed major changes to capital regulations, which include: increasing the quality, consistency and transparency of the capital base; strengthening the risk coverage of the capital framework; implementing a leverage ratio; and introducing countercyclical capital requirements. The details of the new global capital standards will be finalised, along with other reforms, later in the year. ↗

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<sup>9</sup> See BCBS (2010b) and Macroeconomic Assessment Group (2010).