



# IMF Working Paper

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Australian Banking System Resilience:  
What Should Be Expected Looking  
Forward? An International Perspective

*Pierluigi Bologna*

**IMF Working Paper**

Monetary and Capital Markets Department

**Australian Banking System Resilience: What Should Be Expected Looking Forward?  
An International Perspective**

**Prepared by Pierluigi Bologna<sup>1</sup>**

Authorized for distribution by the Asia and Pacific Department

October 2010

**Abstract**

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This paper reviews Australian banks' performance from an international perspective, with a focus on changes in capital and liquidity risk. The paper analyses the extent of any vulnerability that might arise from a potential deterioration in the funding markets and discusses whether liquidity rules, such as those being considered by the Basel Committee on Banking Supervision, may help reduce banks' liquidity risks and improve financial stability.

JEL Classification Numbers: G01, G20, G21, G28, F32

Keywords: Australia, Banking, Liquidity Risk, Liquidity Requirements, Capital, Stress Tests, External Debt

Author's E-Mail Address: [pbologna@imf.org](mailto:pbologna@imf.org)

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<sup>1</sup> I wish to thank the Reserve Bank of Australia, the Australian Prudential Regulation Authority, and the Australian Treasury for their valuable comments on earlier drafts of this paper. I benefited greatly from comments and suggestions by Mike Moore, Ceyla Pazarbasioglu and Noel Sacasa. I also would like to thank Byung Kyoong Jang for his inputs. I am particularly grateful to Ray Brooks for the guidance and comments throughout the entire work. Kessia De Leo and Raneen Sirihorachai provided excellent editorial assistance. Moses Kitonga, Fernan Ramirez, and Mousa Shamouilian provided valuable research assistance. This paper is based on information available as of July 2010.

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## I. INTRODUCTION

Australian banks were resilient to the global financial crisis, thanks to good fundamentals and a sound prudential and supervisory framework. Banks were not substantially affected by the crisis on the asset side of their balance sheet, with little exposure to U.S. structured credit products and a limited increase in nonperforming loans. On the liability side, banks were successful in rolling over most of their short-term debt in international markets, when markets were impaired after the collapse of Lehman Brothers. The authorities' wholesale funding guarantee and liquidity support helped banks' meet their funding needs.

This paper reviews Australian banks' performance from an international perspective, with a focus on changes in capital and liquidity funding risk. Looking ahead, the paper analyses the extent of any vulnerability that might arise from a further deterioration of the situation in Europe and discusses whether liquidity rules, such as those being considered by the Basel Committee on Banking Supervision, may help reduce banks' liquidity risks.

The analysis shows that Australian banks, in the context of a sound and effective supervisory environment, are well capitalized and hence well placed to face the forthcoming regulatory changes on capital. Potential increases in credit risk do not appear to pose a threat to the stability of the system although vigilance is warranted for risks stemming from the mortgage sector.

It is also shown that banks are improving the stability of their funding by reducing their reliance on short-term wholesale funding. The increase in liquid assets helps to make the system more resilient to a potential liquidity shock. Meeting the requirement proposed by the Basel Committee on Banking Supervision might however be challenging.

Prudent liquidity management is important to maintain financial stability. Therefore, the benefits of strengthening liquidity rules in Australia, as well as in other banking systems, appear to be soundly based.

## II. BANKING SYSTEM FINANCIAL SOUNDNESS

Since 2008, Australian banks have improved an already strong capital position, mainly by issuing common equity (Tables 1 and 2). They raised capital directly from their shareholders at only moderate discounts to existing market prices in contrast to overseas peers and without the need for government intervention. The Australian government did not inject equity capital but provided a guarantee on wholesale funding and retail deposits. Banking system Tier 1 capital was 9.4 percent at the end of 2009, up 220 basis points from the level of two years earlier. Issuing common equity helped raise the level of capital and improved its quality. Shareholders' capital as a percentage of total regulatory capital increased from 43 percent at the end of 2006 to 76 percent at the end of 2009.<sup>2</sup>

Table 1. Australia: Selected Financial Soundness Indicators of the Banking Sector  
(In percent, year end)

	2007 Dec.	2008 Dec.	2009 Dec.	2010 Mar. 1/
<b>Profitability</b>				
Return on assets (after tax)	1.0	0.6	0.6	0.8
Return on equity (after tax)	18.0	13.7	10.4	13.9
<b>Capital adequacy</b>				
Regulatory capital to risk-weighted assets	10.2	11.4	12.0	11.9
Tier I capital to risk-weighted assets	7.2	8.2	9.4	9.4
<b>Asset quality</b>				
Gross impaired assets to total assets	0.2	0.8	1.2	0.9
Net impaired assets to equity	1.9	8.6	12.3	9.9
Specific provisions to impaired assets	39.5	35.6	34.4	30.0
Risk-weighted assets to total assets	54.4	43.4	45.2	49.6

Sources: Reserve Bank of Australia; Australian Prudential Regulation Authority; and banks' financial reports.

1/ Quarterly data for Westpac, NAB, and ANZ only.

<sup>2</sup> Shareholders' capital includes paid-up ordinary shares plus a limited amount of non-innovative Tier 1 capital instruments (such as irredeemable preference shares on which dividends are noncumulative). It does not include retained earnings. Total regulatory capital is net of deductions such as future income tax benefits, intangible assets, investments in nonconsolidated subsidiaries, holdings of other banks' capital instruments and other assets that are not eligible for inclusion in capital (Reserve Bank of Australia, Statistics on Banks Consolidated Group Capital, [http://www.rba.gov.au/statistics/tables/index.html#assets\\_liabilities](http://www.rba.gov.au/statistics/tables/index.html#assets_liabilities)).

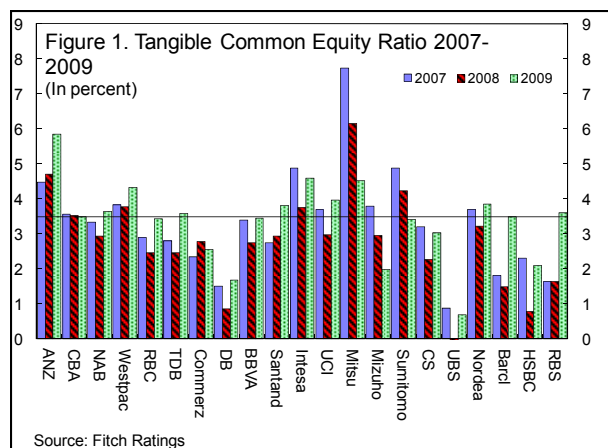
Table 2. Australia: Australia's Four Largest Banks--Selected Financial Soundness Indicators  
(In percent)

	ANZ		NAB		CBA		Westpac	
	Mar-10	Sep-09	Mar-10	Sep-09	Dec-09	Jun-09	Mar-10	Sep-09
<b>Profitability</b>								
Return on assets	0.8	0.6	0.7	0.6	0.8	0.7	1.0	0.9
Return on equity	12.2	10.3	12.9	10.9	12.9	10.9	16.6	13.8
Net interest margin	2.4	2.4	2.3	2.3	2.2	2.2	2.3	2.4
<b>Capital adequacy</b>								
Tier I capital ratio	10.7	10.6	9.1	9.0	9.1	8.1	8.4	8.1
Total capital ratio	13.0	13.7	12.1	11.5	11.6	10.4	11.4	10.8
TCE ratio 1/	5.2	6.0	4.9	4.9	4.2	3.9	4.2	3.9
<b>Assets quality and provisioning</b>								
Past due 90 days plus/total loans	0.4	0.5	0.5	0.5	0.6	0.6	0.3	0.3
Gross impaired to total assets	1.1	0.9	0.9	0.8	0.8	0.6	0.6	0.6
Net impaired assets to equity	11.5	8.8	11.4	10.7	8.9	7.9	5.2	7.0
Specific provision to gross impaired assets	29.9	34.7	25.3	26.4	37.8	41.1	36.7	32.6
Total provision to gross impaired assets	86.9	103.1	76.8	80.0	108.7	117.0	114.9	116.3
<b>Liquidity</b>								
Cash to total assets	4.5	5.3	3.7	3.9	1.9	1.8	0.7	0.6
Cash and due from banks to total assets	5.8	6.4	9.6	9.0	3.8	4.2	2.3	2.2

Sources: Banks' disclosure statements, and Fund staff calculations.

1/ TCE ratio = total common equity minus intangible assets / total assets minus intangible assets.

**The improvements achieved over time in terms of capital adequacy put Australian banks in a favorable position compared to their international peers.** The tangible common equity ratio, one of the most conservative measures of capital adequacy, for three out of the four largest Australian banks is above the median of a peer group (Figure 1). The conservative requirements set by Australian Prudential Regulation Authority (APRA) on banks' capital helped in achieving these results.<sup>3</sup>



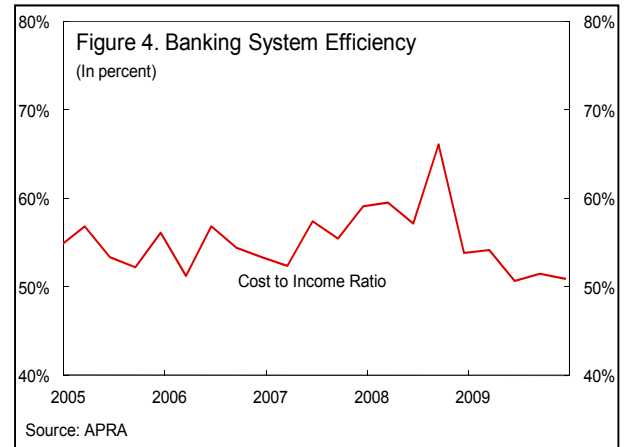
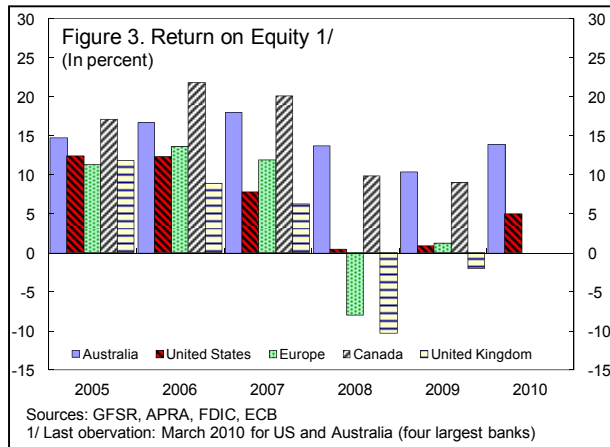
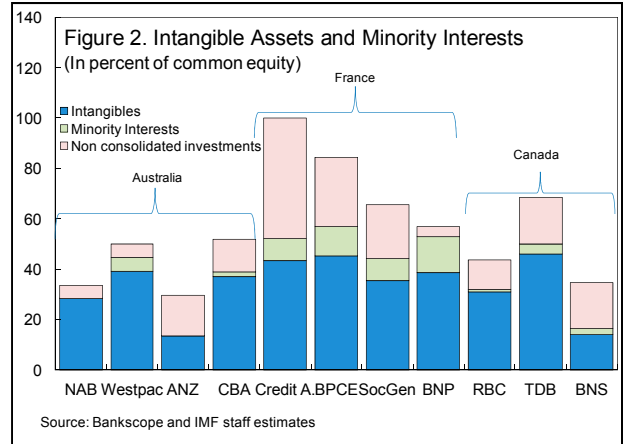
**Australian banks are also likely to be able to face the forthcoming rules on capital proposed by the Basel Committee on Banking Supervision (BCBS) better than international peers.** The new rules proposed by the BCBS entail a strengthening of existing capital requirements through increased minimum requirements, a more restrictive treatment than before for items to be deducted from capital and more relevance given to the capital

<sup>3</sup> In 2006, APRA tightened its requirements on capital composition while taking a more conservative approach than other jurisdictions for the treatment of intangible assets for capital purposes (see J.F. Laker, *The Australian Banking System Under Stress?*, Australian Business Economists, Sydney, June 9, 2010).

effectively available in going concern situations (e.g., common equity).<sup>4</sup> The new rules will impact banks differently based on current country-specific capital rules. Australian banks appear to be in a better position than others thanks to the good quality of capital and the limited level of intangible assets, minority interests, and nonconsolidated investments (Figure 2).<sup>5</sup>

**The resilience to the global financial crisis of Australian banks is shown also by their stable performance and improved cost efficiency.**

The four largest banks remained profitable through the crisis (Figure 3). Headline profits (\$A 13.8 billion) declined by 17 percent in 2009 year-on-year, mainly due to a one-off additional taxation on New Zealand operations and increased costs for bad and doubtful loans. The change in profits in 2009 was also affected by M&A related activity. In the semester ended in March 2010, however, profitability returned to near pre-crisis levels. Net income was also supported by an improvement of efficiency, with the cost-to-income ratio down to a historically low level (Figure 4).

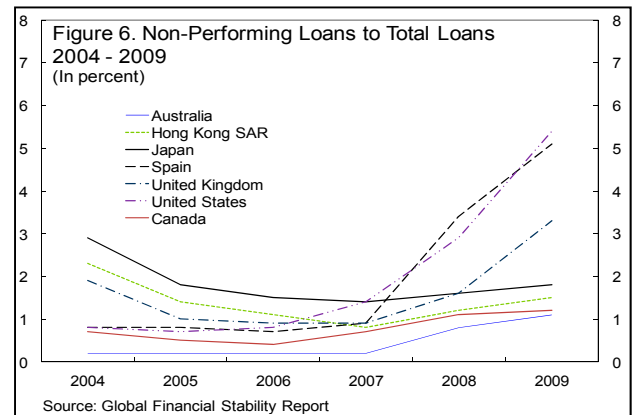
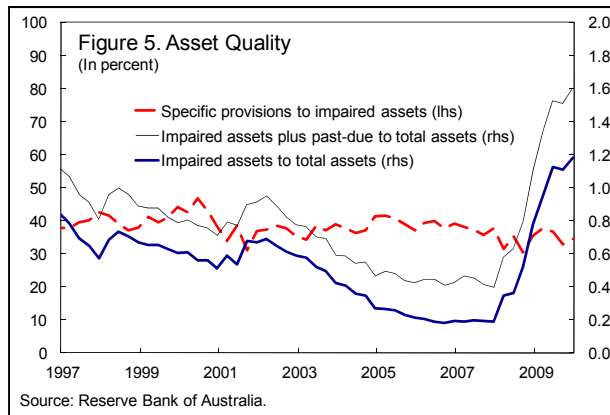


**Nonperforming assets increased significantly since 2008, albeit from a very low level** (Figure 5). Despite the recent increase, asset quality remains good by international standards (Figure 6). At the end of March 2010, the four large banks reported impaired assets between 0.6 and 1.1 percent of total assets, well below the levels of U.S., U.K., and Spain. Total

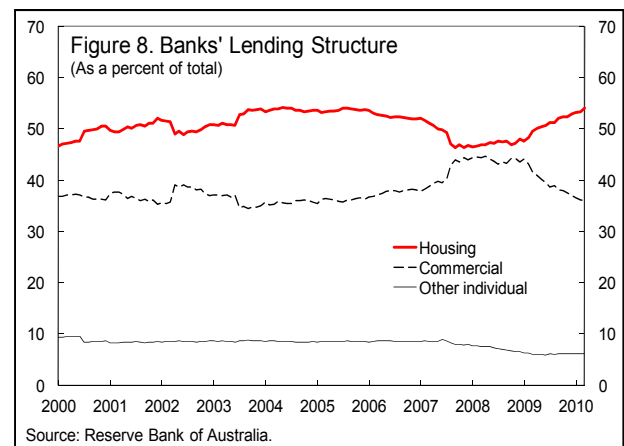
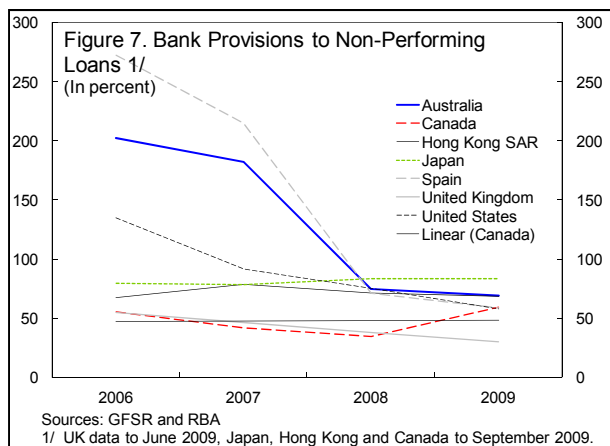
<sup>4</sup> For the details of the new measures see Basel Committee on Banking Supervision, *Strengthening the Resilience of the Banking Sector*, December 2009b, and Basel Committee on Banking Supervision, Press Releases of July 26 and September 12, 2010.

<sup>5</sup> French banks for instance, show higher level of minorities than others.

provisioning declined significantly as a share of nonperforming assets, in line with that observed in the U.S. and Spain, but remains adequate, with Australia still showing the second highest level of provisioning, after Japan (Figure 7). Specific provisioning remained substantially unchanged as a share of nonperforming assets, confirming its adequacy over time.



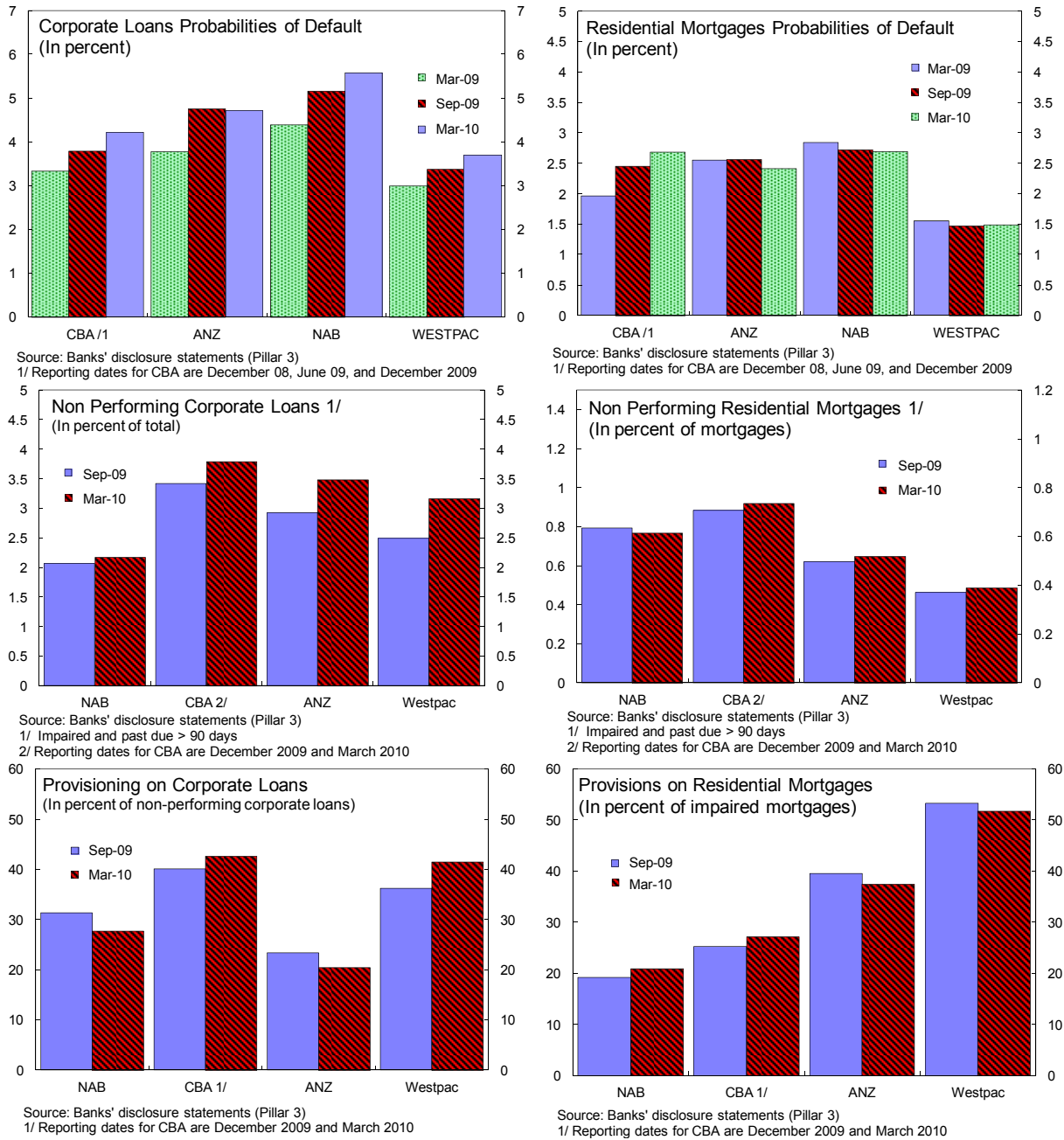
**Exposure to the household sector is a large share of banks' assets and a potential source of risk.** Probabilities of default (PDs) on mortgages were slightly lower in March 2010 compared with March 2009 but an increase in risk is signaled by the dynamics of NPLs, provisioning, and write-offs which increased moderately for most banks. With more than half of the loans represented by residential mortgages, high household indebtedness (157 percent of household disposable income in March 2010), and possible overvaluation of house prices make exposure to residential mortgages a significant source of credit risk to banks (Figures 8 and 9).<sup>6</sup> As for exposures to corporates, a general increase of risk was observed in the first quarter 2010, with PDs about 25 percent higher year on year. Provisions, however, remained adequate.



<sup>6</sup> P. Tumbarello and S. Wang, 2010, "What Drives Housing Prices in Australia? A Cross-Country Approach," *IMF Working Paper*, forthcoming.



Figure 9. Australia's Four Largest Banks' Risk Indicators



**A number of mitigating factors limit potential losses from mortgages. These include:**

- Limited exposure to high-risk mortgages. Most loans to owner occupiers are to individuals in higher income groups (Figure 10).<sup>7</sup> The percentage of high loan-to-value (LTV) loans is low and current supervisory rules encourage banks' use of lenders mortgage insurance (LMI) when LTV exceeds 80 percent.<sup>8</sup> Less than 10 percent of owner-occupiers with mortgages had a LTV higher than 80 percent and/or a debt-servicing ratio higher than 30 percent of income (Table 3). Recent evidence seems, however, to suggest that the share of households with high LTV and high debt service ratio is increasing slightly. But the situation remains very different from the US, where the highest debt-to-income ratios are in the lowest income groups of households (Figure 10).<sup>9</sup>

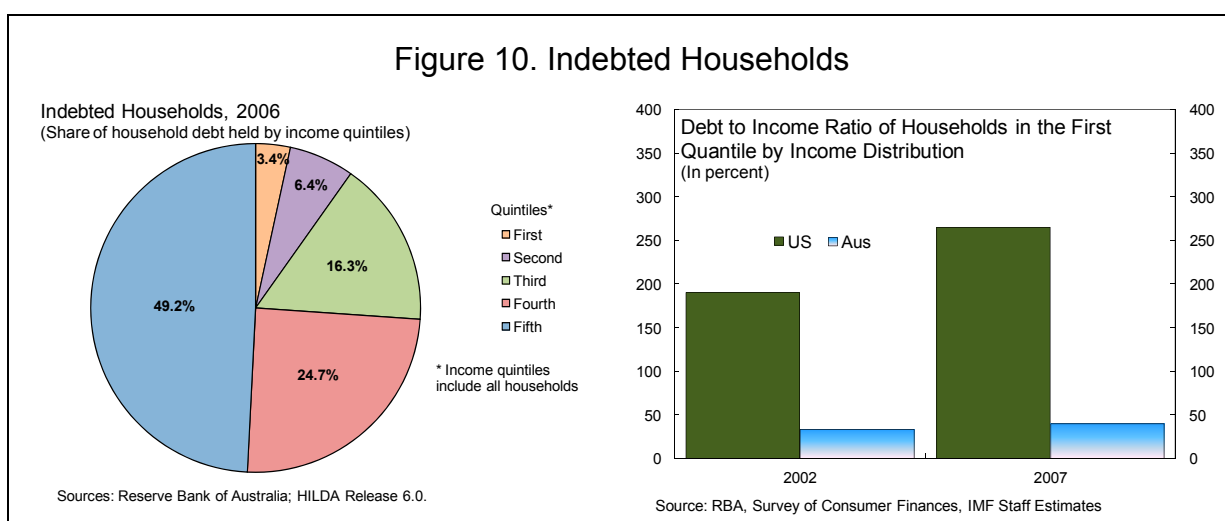


Table 3. Indebted Owner-Occupier Households, 2006  
(In percent of all owner-occupier households)

Debt-Service Ratio	Loan-to-Value		
	< 40	40–80	> 80
0–20	33.2	9.7	1.7
20–30	11.1	13	3.1
30–40	4.4	6.9	3.4
40–50	2	3.2	1.7
50+	1.4	2.9	2.3

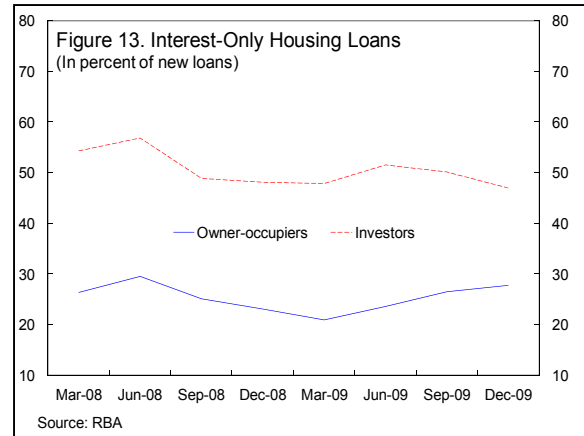
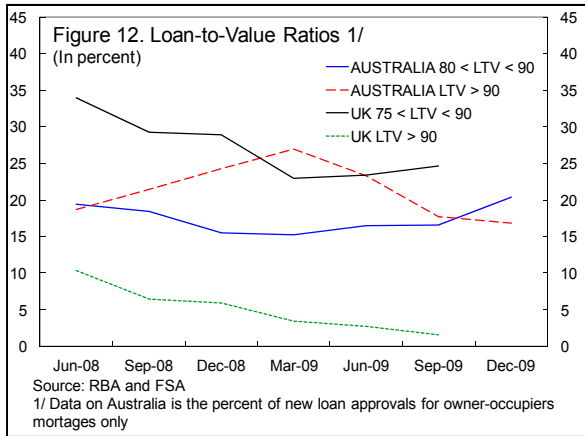
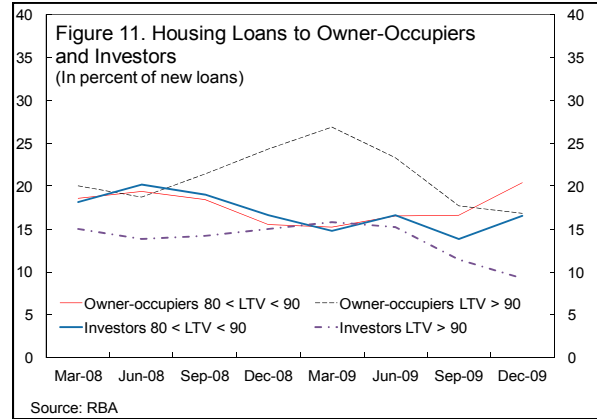
Sources: Reserve Bank of Australia; HILDA Release 6.0.

<sup>7</sup> R. Battellino, *Aspects of Australia's Finances*, Address to Financial Executives International of Australia, Sydney, June 10, 2010.

<sup>8</sup> It is therefore a common banks' practice to require LMI when the LTV is over 80 percent although exceptions might exist.

<sup>9</sup> Battellino (2010) and Reserve Bank of Australia, *Financial Stability Review*, March 2010.

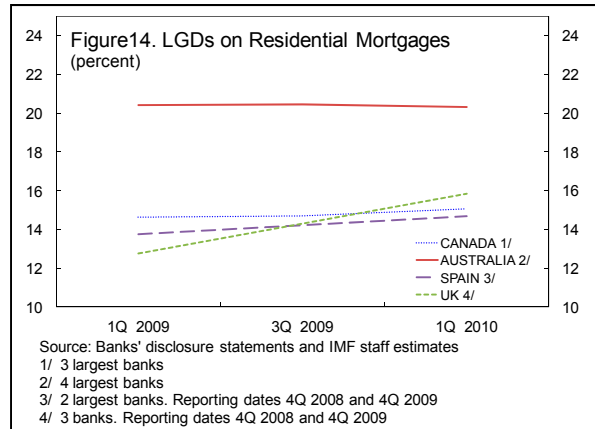
- LTVs are low on loans for investment purposes. The share of loans being written with a high LTV decreased both for owner-occupiers and investors mortgages, with LTV being lower in the latter category (Figure 11). This reflects a tightening of lending standards, but average LTV remains higher than in comparable countries such as the UK (Figure 12). The share of interest-only loans has also declined, remaining however significantly higher for investors than owner-occupiers mortgages, also as a possible consequence of existing differences in the tax treatment of interest in the two cases (Figure 13).



- The recourse nature of housing loans.<sup>10</sup> Such a feature of mortgage loans gives a significant incentive to households to repay their borrowings and deters them from strategically defaulting as compared to the incentives embedded in nonrecourse loan agreements.
- The limited use of equity refinancing of existing mortgages to finance households' consumption. This behavior limits the exposure to risks otherwise incurred when increases in housing prices are used to finance consumption.

<sup>10</sup> With a recourse loan the borrower is personally liable to repay a debt even if the funded asset (acquired with the loan proceeds) cannot be liquidated or the proceeds of its disposal are not enough to cover the loan amount. Hence, in case of a default, the lender can seize and sell the funded asset as well as the borrower's unpledged assets or properties, whenever necessary.

- Prudential rules set by APRA guide banks toward a conservative assessment of risk. This is the case for the floor of 20 percent applied to LGD estimates, which makes banks' LGD higher than those of some peers (Figure 14).<sup>11</sup>



- The resilience of banks to shocks to their mortgage book. As suggested by Takats and Tumbarello (2009), a migration of the entire portfolio of mortgages to the next higher risk bucket and a simultaneous doubling of the level of LGD would reduce the Tier 1 ratio by only 150 basis points. To reduce the capital adequacy ratio to the regulatory minimum, Takats and Tumbarello (2009) estimate that a six-fold increase of probability of defaults would be needed.
- APRA regular stress tests show that banks could withstand extreme, but plausible, shocks. The most recent exercise was conducted in 2009/10 in cooperation with the Reserve Bank of New Zealand and the New Zealand subsidiaries of Australian banks. A three year macroeconomic scenario was used for the tests, assuming a global economic downturn that results in a 3 percent contraction of real GDP in Australia in the first year, followed by a V-shaped recovery. The scenario also assumed a rise in the unemployment rate to 11 percent, a fall in house prices of 25 percent, and a fall in commercial property prices of 45 percent. The results suggest that none of the banks would have breached the 4 percent minimum Tier 1 capital requirement of the Basel II framework. The weighted average reduction in Tier 1 capital ratios from the beginning to the end of the three-year stress scenario was 3.1 percentage points (Table 4).

<sup>11</sup> See International Monetary Fund, "Australia: Basel II Implementation Assessment," *IMF Country Report No. 10/107*, May 2010 for a more in-depth analysis and evidence of the sound supervisory system operated by APRA in implementing Basel II in Australia, which built on the robust regulatory and supervisory process already in place prior to Basel II. As part of it, it is worth recalling the history of stress testing in Australia, with the first exercise being carried out by APRA back in 2002/2003 (Laker, 2010).

Table 4. Australia, Europe and United States: Banking System Stress Tests

Country	Coverage		Reference Date	Time Horizon of Stress	Main Assumptions			Results	
	Number of banks	Percentage of System Assets			Drop in GDP	Increase in Unemployment	Threshold	Banks Below Threshold	Drop in Tier 1 Ratio (percentage points)
Australia	20	98	Jun-09	3 years	3 % in 1 year then V-shaped recovery	5.2%	Tier 1 Ratio > 4%	None	3.1
Europe	91	65	Dec-09	2 years	3% over 2 years from the baseline	0.5 - 1 %	Tier 1 Ratio > 6 %	7	2
USA	19	67	Dec-08	2 years	2.9% over 2 years from the baseline	1.9%	Tier 1 Ratio > 6% and Tier 1 Common Capital Ratio > 4%	9	2.3

Source: Board of Governors of the Federal Reserve System, Committee of European Banking Supervisors, Lakers (2010)

**Despite the mitigating factors listed above, the Australian authorities should remain vigilant for risks in the mortgage sector.** LTVs might turn out to be higher than they appear today if house prices drop sharply. Vigilance is also needed, in this context, to make sure that provisioning would remain adequate if nonperforming-mortgages increase.

### III. BANKS' LIQUIDITY RISKS

**The recent crisis reminded us that a strong liquidity position is as important as a strong capital position in allowing banks to handle difficult market conditions.** A more balanced maturity and currency mix of funding vis-à-vis the maturity and currency composition of assets, together with larger holdings of highly liquid assets, would have resulted in less pressure on funding needs during the global financial crisis. In turn, this would have reduced instability of the entire financial system and the need for central bank intervention.

**Australian banks have significantly improved the stability of their funding since the onset of the crisis.** Banks have reduced the extent to which they fund their assets through short-term wholesale funding, understanding the risks inherent in their business model.<sup>12</sup> Both the domestic and the foreign components of short-term funding declined, albeit the latter to a much lesser extent, in favor of a higher share of domestic deposits and long-term debt (Figures 15, 16, and Table 5). The support provided by the government wholesale funding guarantee also helped. This resulted in a more favorable, although still high, loan-to-deposit ratio for the entire banking system (Figure 17).

**Australian banks have also increased their liquid assets** (Figure 18). Liquid assets have grown by about 10 percentage points of total assets from December 2007 to December 2009, significantly improving banks' ability to face possible funding shocks. However, cross-

<sup>12</sup> R. Battellino, *Some Comments on Bank Funding*, Remarks to the 22<sup>nd</sup> Australasian Finance and Banking Conference, Sydney, December 16, 2009, and Battellino (2010).

country comparisons still show Australia in the low range amongst its peers and the authorities should continue to encourage banks to strengthen their liquidity position.

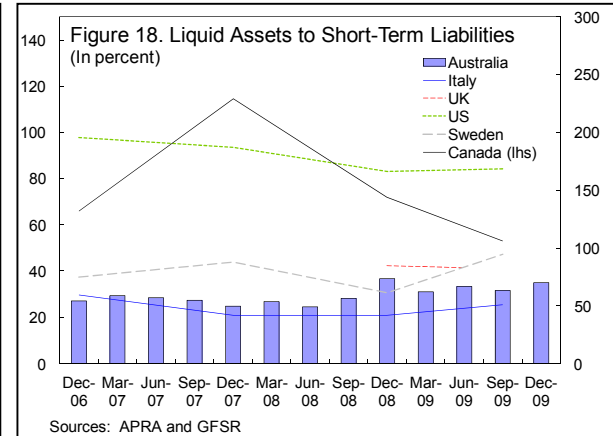
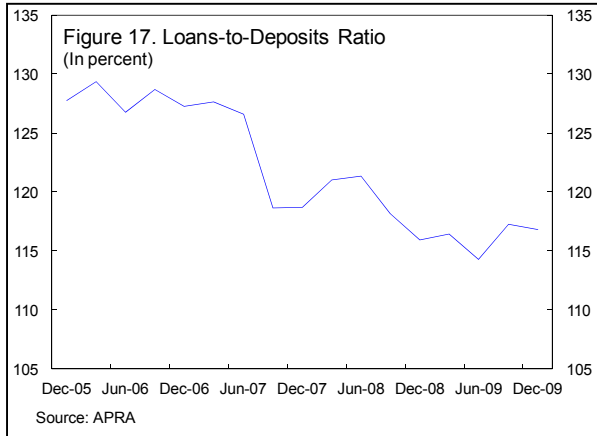
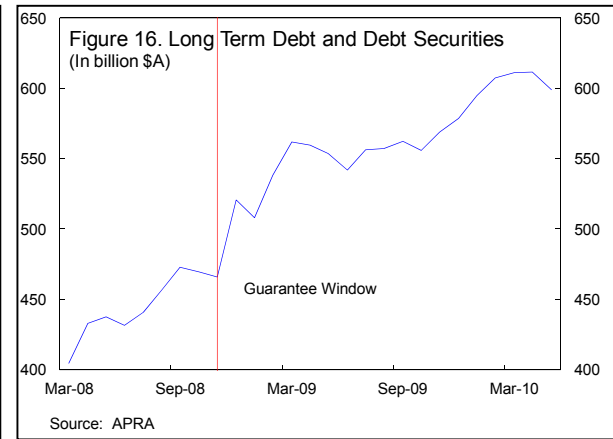
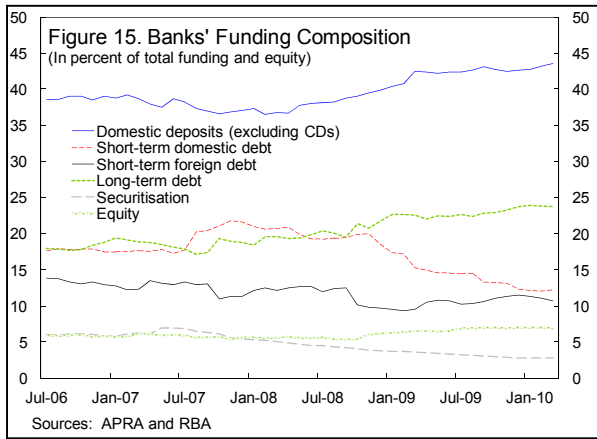


Table 5. Australian Banks' Liabilities  
(percent of total)

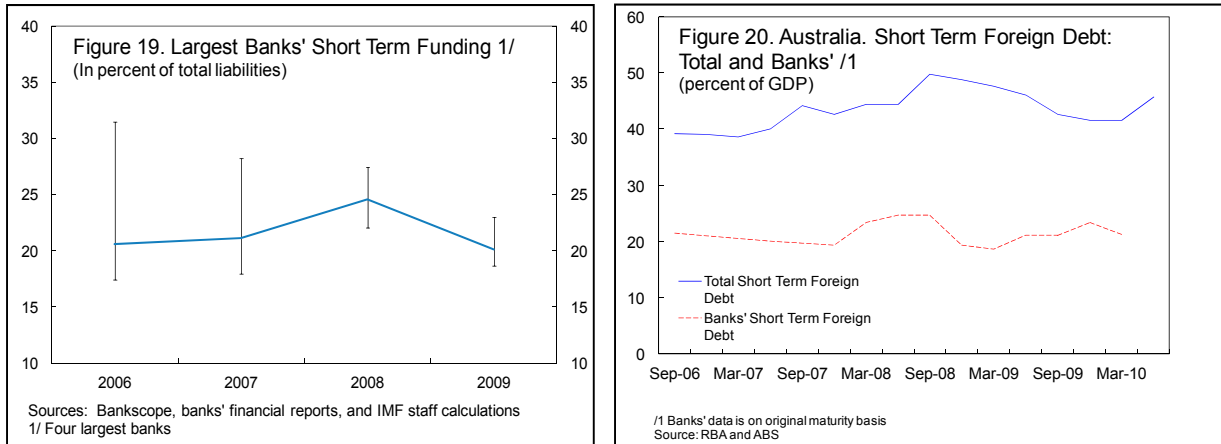
	Dec-06	Dec-07	Dec-08	Jun-09	Dec-09	Mar-10
Domestic deposits	41.5	39.3	42.5	45.4	45.9	46.8
Foreign deposits	5.6	5.7	6.4	7.0	7.5	6.6
Short term funding	32.4	35.0	30.1	27.0	25.6	24.7
Domestic	18.6	22.9	19.8	15.6	13.2	13.2
Foreign	13.8	12.0	10.3	11.4	12.3	11.5
Long term funding	19.9	19.9	23.2	24.0	25.5	25.5
Domestic	4.7	3.8	5.3	6.2	7.2	6.9
Foreign	15.2	16.2	17.9	17.8	18.4	18.6
Securitization	6.2	5.8	4.1	3.6	3.0	3.0
<b>Total liabilities (excluding equity)</b>	<b>1619</b>	<b>2037</b>	<b>2316</b>	<b>2321</b>	<b>2381</b>	<b>2347</b>

Sources: APRA, RBA

**The analysis of banks' funding is complicated by some data limitations.** While data provided by RBA/APRA shows a decline of short-term funding, in lined with banks' financial reports (Figure 19), it is on an original maturity basis, thus leading to an

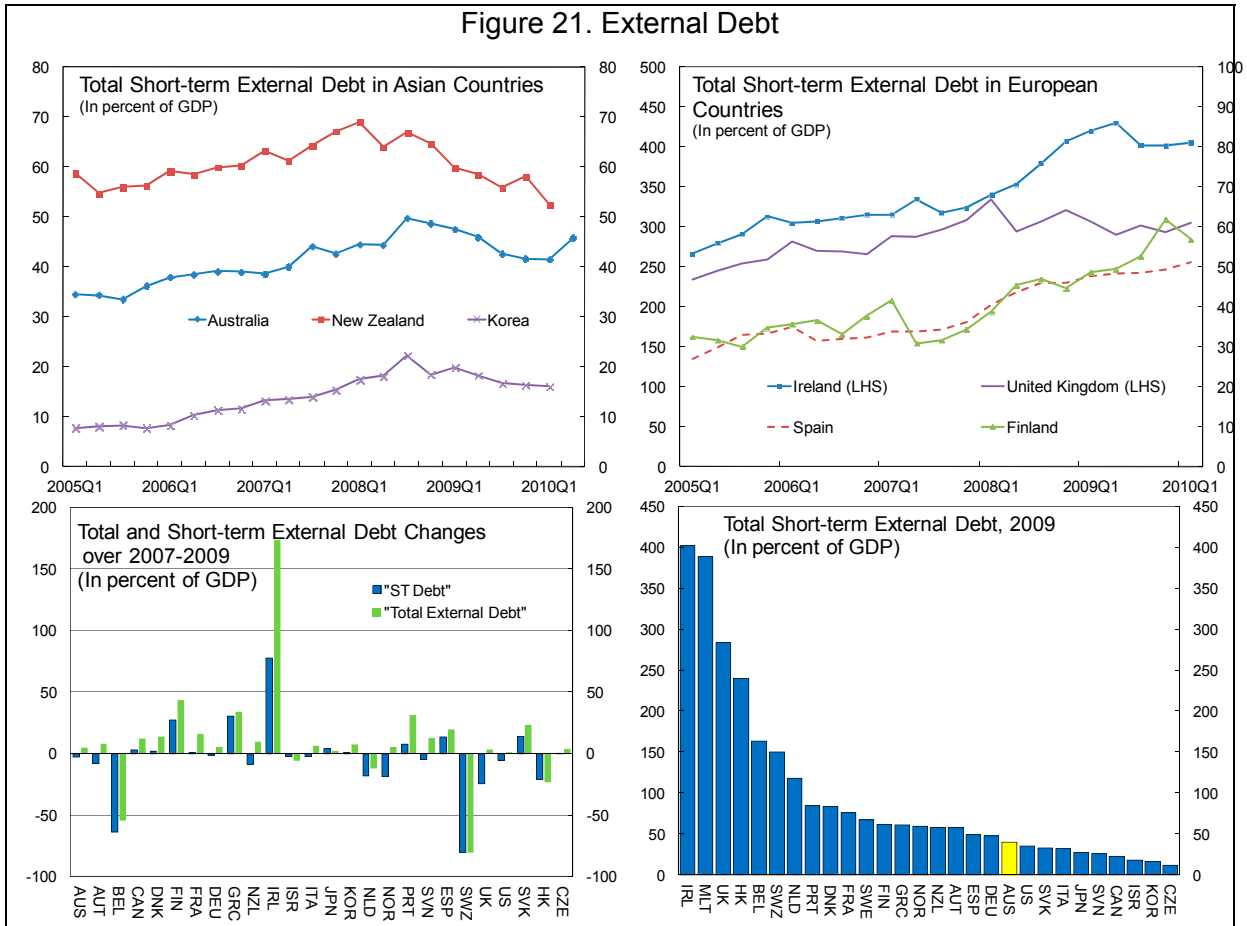
underestimate of the short term component of banks' funding, the magnitude of which is difficult to ascertain. Data from a different source, the Australian Bureau of Statistics (ABS), is on a residual maturity basis and would allow a more accurate picture of banks' funding by maturity if a breakdown by sector (e.g., banks, corporate, and others) were available.<sup>13</sup> The authorities should consider publishing data on a residual maturity basis to ease analysis of banks' funding structure.

**A reduction of banks' short-term foreign funding is partially reflected also in short-term external debt data for the whole economy (banks, corporate, and others)** (Figures 20 and 21). Australian short-term external debt declined steadily from September 2008 to March 2010, comparing with increases observed in many other countries, with the notable exceptions in the region (New Zealand and Korea) and in the United Kingdom. In June 2010, however, Australian short-term external debt registered a significant rebound by 4 percentage points as a share of GDP, back to the levels observed in mid-2008. A lack of sector breakdown in ABS data does not allow a full understanding of the causes behind the recent spike. However, this is likely to be at least partly due to banks' bond issuances getting closer to their maturity, with some of their debt having recently fallen into the short-term bucket, and with the 6 months to 1 year maturity bucket having increased the most.<sup>14</sup> Short-term external debt in Australia remains sizable in absolute terms (at almost \$A 600 billion in June 2010) although relative to GDP it is smaller than in several other advanced economies.

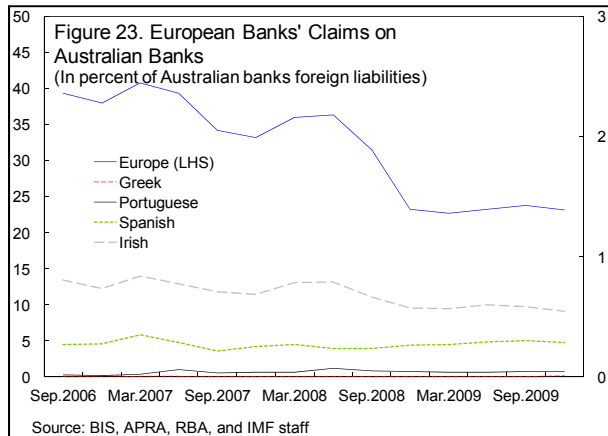
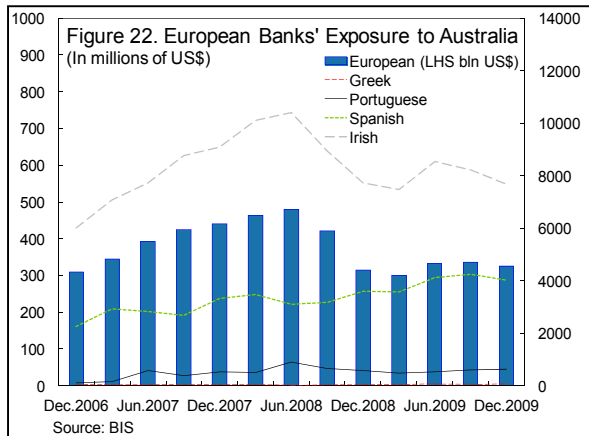


<sup>13</sup> It needs also to be noted that for the international comparison of short-term external debt data most of other countries, except New Zealand, report debt on an original maturity basis.

<sup>14</sup> S. Black, A. Brassil and M. Hack, "Recent Trends in Australian Banks' Bond Issuance," *RBA Bulletin*, March Quarter 2010, show in fact that about 65 percent of bonds issued by Australian banks in 2007 and 2008 (\$A 216 billion in the two years, the majority of which offshore) had a maturity at issuance of up to four years (with almost 40 percent maturity between two and four years). It is therefore likely that two to three years after the issue date the residual maturity of many of those bonds would be shorter than one year, putting them in the short-term debt bucket. A similar pattern would occur for bonds issued in the period 2005–07 with original maturities of four to six years as well as for those issued in 2009 with original maturities of two years.



**Australian banks remains exposed to possible spillovers from further deterioration of financial conditions in Europe.** Australian funding from Europe has fallen significantly since mid-2008, but remains sizable, at over US\$300 billion according to BIS data or about 30 percent of Australia’s gross external debt (Figure 22). The extent of funding from EU peripheral countries is limited and banks’ funding from this source is estimated to be negligible, at less than 1 percent of banks’ foreign liabilities.





**A generalized pull back by European banks may make it more difficult to roll over wholesale financing, but should not threaten the stability of the Australian banking system** (Figure 23). Assuming that about 30 percent of the European banks claims on Australia is short-term and that banks would be able to roll-over half of this funding, as banks in the region did during the Asian crisis, the remaining funding gap would be in the range of 15–17 percent of liquid assets held by Australian banks. Even in an extreme scenario where no roll-over of short-term funding from Europe would take place, the amount of liquidity held by banks should be enough to buffer the shock. Moreover, the RBA could make further liquidity available, as it did following the Lehman shock.

**A further mitigating factor would come from the exchange rate.** A disruption in funding from European banks would likely lead to a depreciation of the Australian dollar as occurred after the Lehman collapse in late 2008. Such a depreciation would reduce the U.S. dollar and Euro funding required to meet banks' desired Australian dollar funding. Also, the relatively small holdings of foreign currency-denominated assets by Australian banks would limit banks' need for foreign currency funding.

**It is very likely, however, that a sudden pull back by European banks would cause strains in global financial markets and may increase the cost of capital for Australian banks.** Furthermore, the comfortable picture described above does not exclude the possibility that challenges may arise if there is a significant deterioration in economic conditions in Europe. Consequently, the Australian Government and the regulators will need to continue to monitor very closely international economic conditions including in Europe.

#### IV. LIQUIDITY RISK REGULATIONS

**In September 2009, APRA issued a discussion paper on liquidity risk** that proposed changes to its current prudential approach to liquidity risk management for deposit-taking institutions.<sup>15</sup> The proposals emphasize stress tests and defined a three-month “market disruption” scenario that mainly targets banks' resilience to a disruption in access to offshore wholesale funding. The proposals reflect the authorities' views that existing regulatory arrangements have worked effectively over recent years in Australia and severe stress in the financial system was avoided during the recent financial crisis.

**The BCBS issued a liquidity framework in December 2009 that aims to introduce two new quantitative requirements for liquidity risks.**<sup>16</sup> One of the standards is a 30-day liquidity coverage ratio (LCR) which aims to ensure banks have sufficient high quality liquid

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<sup>15</sup> Australian Prudential Regulation Authority, “APRA's Prudential Approach to ADI Liquidity Risk,” *Discussion Paper*, September 11, 2009.

<sup>16</sup> Basel Committee on Banking Supervision, *International Framework for Liquidity Risk Measurement, Standards and Monitoring*, December 2009a.

resources to survive an acute stress scenario lasting for one month. The second, the Net Stable Funding Ratio (NSFR), is a structural liquidity ratio which promotes resiliency over longer-term horizons by creating incentives for banks to fund their activities with more stable sources of funding. In addition, banks will have to adhere to principles for liquidity management published by the BCBS in July 2008.<sup>17</sup>

**The Group of Governors and Heads of Supervision, the oversight body of the BCBS, revised the initial proposals on the liquidity framework in July 2010.**<sup>18</sup> The revision entails for the LCR a recalibration of the stress scenarios to “achieve a conservative bank level and plausibly severe system wide shock”. The Committee also revised the definition of qualifying liquid assets. As for the NSFR, the BCBS acknowledged that the initial calibration needs to be modified due to concerns related to the calibration itself and the relative incentives across certain business models, in particular retail versus wholesale. A number of significant adjustments have been proposed and are under consideration for the finalization of the NSFR by the end of 2010. The changes proposed would entail a more favorable treatment of retail and SME deposits, mortgages and off-balance sheet commitments with respect to the December calibration. The July proposal also postpones the introduction of the revised NSFR to 2018.

**Following issuance of the Basel Committee proposals, APRA postponed the final prudential standards on liquidity.** The decision not to overlap with the Basel process contrasts with the Reserve Bank of New Zealand whose new liquidity requirements became effective in April 2010.<sup>19</sup>

**The Basel Committee proposals would help banks further strengthen their liquidity position, although meeting the proposed standards could be a challenge.** The liquidity rules in New Zealand may have been a factor behind the sharper fall of short-term external debt in New Zealand than in most other countries. Therefore, the introduction of liquidity requirements may help Australian banks’ reduce further their exposure to rollover risk. The proposed NSFR is similar to the ratios recently introduced in New Zealand but could be challenging to meet, especially for those institutions with relatively low deposit-to-asset ratios.

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<sup>17</sup> Basel Committee on Banking Supervision, *Principles for Sound Liquidity Risk Management and Supervision*, September 2008.

<sup>18</sup> Basel Committee on Banking Supervision, 2010a.

<sup>19</sup> Reserve Bank of New Zealand, Press Release, October 22, 2009 and B.K. Jang, “New Zealand’s New Liquidity Policy: Will it Work as a Macroprudential Policy Tool?,” Unpublished, June, 2010.

**The increase in bank funding from term deposits with maturities longer than one year is a step toward more stable funding** (Figure 24).<sup>20</sup> The move by banks is a reaction to the tensions experienced during the financial crisis but it is also likely to be a response to market pressures on banks to stabilize their funding as well as a preemptive action by the banks to cope with foreseeable regulatory changes.

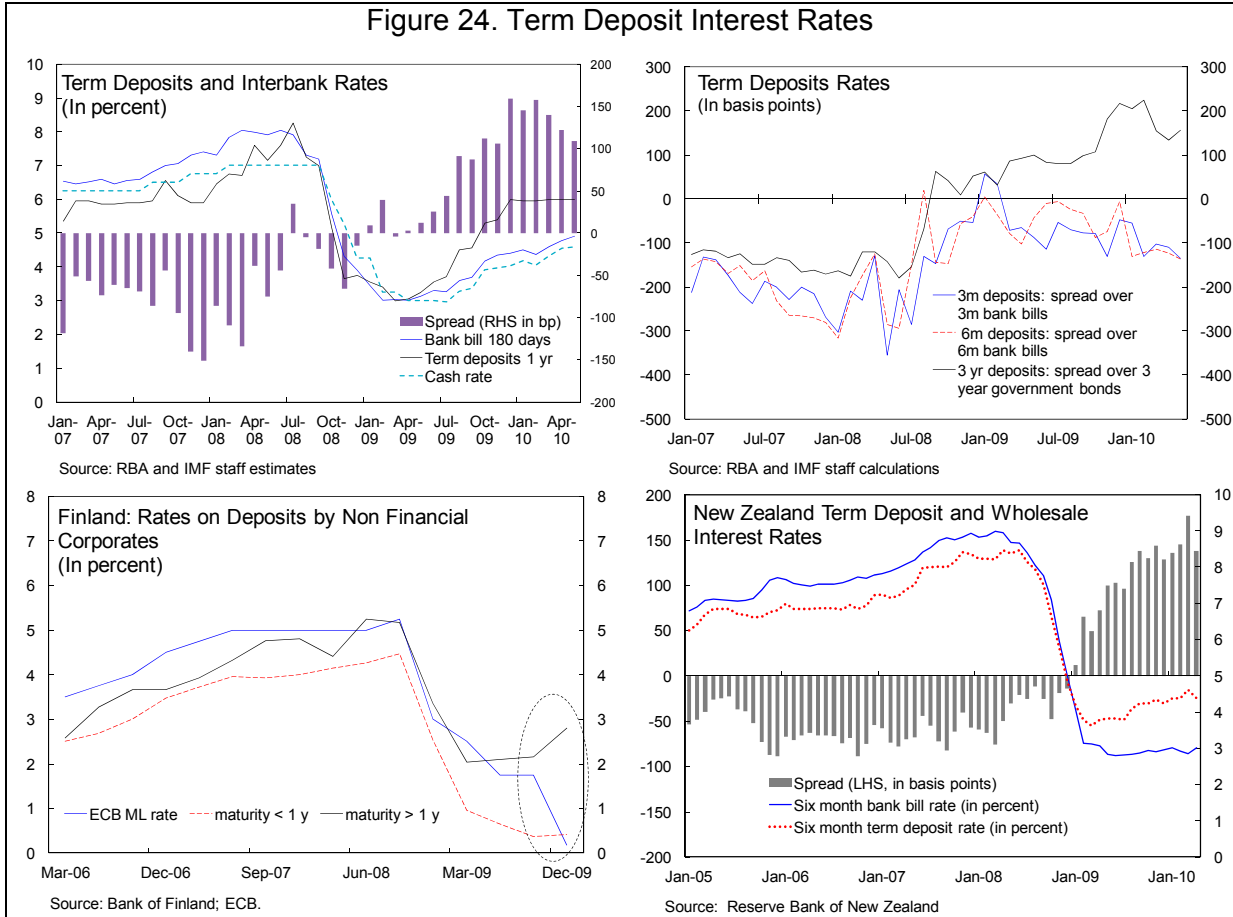
**Competition in the deposits market increased banks' funding costs but the pressure has not been felt so far on profitability as interest rate margin remained sound.** The cost of funding increased as banks raised more long-term funding in the context of a positively sloped yield curve but also as a consequence of increased competition for deposits.<sup>21</sup> Rates on term deposits with maturities longer than one year increased substantially since the first quarter of 2009, becoming more expensive than other comparable sources of funding.<sup>22</sup>

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<sup>20</sup> Deposits with maturities longer than one year will benefit in fact with a more favorable treatment in the new framework for liquidity proposed by the Basel Committee.

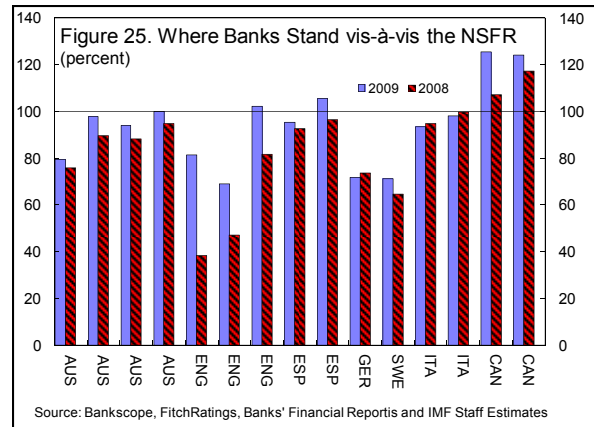
<sup>21</sup> See A. Brown, M. Davies, D. Fabbro and T. Hanrick, "Recent Developments in Banks' Funding Costs and Lending Rates," *RBA Bulletin*, March Quarter 2010 for a discussion on the increase of the cost of long-term funding.

<sup>22</sup> Spreads between term deposit rates with longer maturities and government bond yields or banks' bill rates of comparable maturities have become structurally positive after being negative before the crisis. While a similar trend is observed also for deposits with maturities shorter than one year, the magnitude of the change appears to be smaller, even controlling for changes in the yield curve, with the spread remaining negative with few limited exceptions. This would be consistent with banks' showing a preference for longer maturities funding, preempting foreseeable prudential regulations. A fuller analysis of term deposits by maturity is however hampered by a lack of data, with no information available on the rates for the so-called term deposits specials.



**To better assess the challenges ahead we compute a proxy of the NSFR for a sample of international banks (Figure 25). For this purpose we use the December 2009 definition**

amended with the adjustments presented in July 2010, which are expected to be part of the final definition of the NSFR.<sup>23</sup> We use the NSFR as a tool to compare the structural funding features of banks in different countries rather than to strictly assess the shortfall from the 100 percent NSFR target. The NSFR was estimated for a sample of fifteen banks from seven different countries, based on end-2008 and end-2009 financial statements.



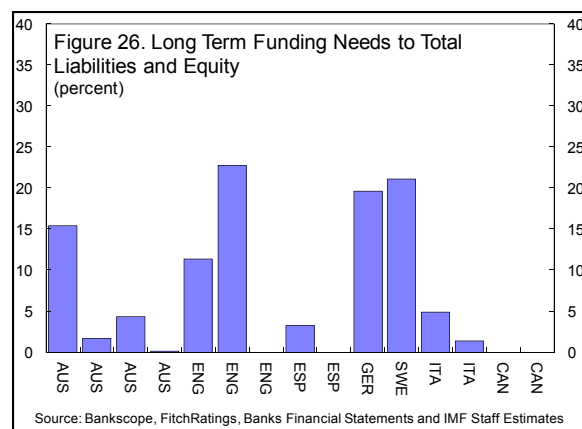
<sup>23</sup> Further refinements cannot however be excluded at this stage, particularly with the aim of reducing the distortions and cliff effects in the banks' assets and liabilities maturity mix by introducing more granularity for the remaining terms of asset and liabilities within the one-year time horizon of the NSFR.

### Results show an improvement of banks' structural funding between 2008 and 2009.

Banks managed to improve their liquidity after the peak of the financial crisis, responding to severe weaknesses shown by many banks in their liquidity risk management and control of their liquidity risk exposures. The dispersion of the ratio in 2009 is significant, ranging between 70–125 percent. More traditional commercial banks show higher ratios than banks with a higher share of investment banking business, while banks with higher shares of wholesale funding show ceteris paribus lower ratios. Australian banks compare relatively well with other international banks, generally showing ratios close to or higher than the sample mean.

### Results also show that meeting the required target is likely to be a challenge for banks in a number of countries, although less demanding than that entailed in the original proposal.

The amount of long term funding needed to raise the NSFR to 100 percent in some cases is sizeable, in the range of 20 percent of banks' liabilities and equity (Figure 26).<sup>24</sup> This should not be considered an impossible target given the generalized improvements observed between 2008 and 2009, but may raise the average cost of bank funding. Assuming that banks would have to meet the requirement in eight years, as foreseen by the new proposal, and that interest spreads for longer maturities remain at current levels, we estimate that for Australian banks the additional costs of long-term funding might average to about 1 percent of banks' net annual income.<sup>25</sup> The impact on banks, which should be manageable, would depend on how much of the additional cost will be passed to customers and the extent to which it might be compensated by lower policy rate settings by the RBA.<sup>26</sup> The authorities should nonetheless remain vigilant about the possibility that banks would increase their risk exposure by shifting their activity towards more risky assets to offset the increased cost of funding.



<sup>24</sup> The funding gap could have however reached levels as high as 30 percent according to the BCBS December 2009 proposal.

<sup>25</sup> Conservatively assuming income levels unchanged over the period considered.

<sup>26</sup> The estimated impact of the new measure on banks' income has reduced substantially from the original proposal, entailing much tighter calibration and substantially shorter period for the introduction of the rule (three years versus eight years). However, even considering a short introduction period of three years (as originally planned) the impact would be on average about 3 percent of post-tax annual income.

**Challenges also arise from the Liquidity Coverage Ratio (LCR).** Because of Australia's sound fiscal position and relatively low public debt, there will not be sufficient government securities on issue for Australian banks to comply with the LCR rules as announced in December 2009. Consequently, the authorities are seeking flexibility in the LCR rules to allow for national discretion to take account of local circumstances. Moreover, the LCR would entail significant opportunity costs for banks in holding a larger share of liquid assets. The details of the NSFR and of the LCR are currently being discussed by the Basel Committee and a set of revised proposals has been announced for the end of 2010.

**Despite the challenges, prudent liquidity management is important to maintain financial stability.** In the past, market discipline induced by disclosure requirements was not enough incentive for banks to hold sufficient liquidity. Therefore, the benefits in terms of financial stability of strengthening of the liquidity rules in Australia, as well as in other banking systems, appear to be soundly based.

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