

# Australian Bankers' Association: International comparability of capital ratios of Australia's major banks

*Australian Bankers' Association*

*August 2014*

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# 1 Overview

## 1.1 Purpose

The Australian Bankers' Association (ABA) has engaged PwC Australia to measure current levels of capital held by the four major Australian banks under the Basel Committee on Banking Supervision (BCBS) Basel Framework<sup>1</sup> and in relation to capital held by banks in other jurisdictions. We have done this using confidential data supplied by Australian banks to the ABA, together with input from PwC banking specialists both here in Australia and in overseas markets. This reports sets out our findings.

## 1.2 Background

Capital is fundamental to all businesses. This is particularly the case in banking, where the core businesses of borrowing and lending, payments, and trading all depend on capital as a marker of confidence to customers, counterparties and investors, and as a buffer for losses and unexpected events.

Reflecting the complexity of banking, the calculation and valuation of capital and estimation of capital ratios in banks is also very complex. This especially reflects the fact that the calculation of many elements of bank capital ratios requires judgment about risk, and so often a high degree of subjectivity is also involved.

Complexity also arises from the efforts by global regulators over the last three decades to ensure minimum standards for the amount of capital which banks are required to hold are calculated and applied, to the extent possible, on a consistent basis across countries. However, ultimately the regulation of banks is a matter of national sovereignty and so the global standards explicitly allow for national discretion in the way the rules are applied. In addition there have been many changes to the Basel Framework in recent years and countries are proceeding at different speeds in the application of these changes. Further, different countries adopt different accounting standards and this is another source of complexity and difference in relation to the calculation of capital, albeit that there has been significant convergence in recent years.

Finally, while capital is an important measure of balance sheet strength, it is only one measure of overall risk for a bank and always needs to be interpreted in a wider context. For instance, systemic risks, levels of credit concentration or legal uncertainty may vary significantly between banks and across different countries.

## 1.3 Overall results

It is clear to us that the four Australian major banks are well capitalized relative to both the global standards and by comparison with banks regulated in many other jurisdictions. This is widely agreed.

Based on the data provided to us by the Australian banks, our best judgment is that, on average, the four Australian banks are at or above the 75<sup>th</sup> percentile of bank capital relative to the most appropriate comparator set of global banks.

Some Australian major banks are unambiguously in the top quartile in terms of capital, others are closer to the 75<sup>th</sup> percentile but are still well above the median. Our overall summary calculation gives a weighted average Common Equity Tier 1 (CET1) ratio in the range of 11.5 per cent to 12.5 per cent, and as best as we can judge this is at or above the 75<sup>th</sup> percentile (see page 10). The estimates of risk weighted assets have a judgemental component and this, in context of Figure 1 (see page 8) explains our conclusion that a range is appropriate.

Hence, our best judgment is that, on average, the Australian banks are at or above the 75<sup>th</sup> percentile of bank capital relative to the most appropriate comparator set of global banks.

We have not been asked to consider what levels of capital are appropriate.

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<sup>1</sup> Basel Framework includes Basel II, Basel 2.5 and Basel III and refers a number of documents. Refer to the BCBS, *Regulatory Consistency Assessment Programme (RCAP): Assessment of Basel III regulations – Canada*, BIS, 2014, Annex 3: List of capital standards under the Basel Framework used for assessment.

## ***PwC's role***

### ***Independence and objectivity***

This report is not an audit. In compiling it we have issued instructions and data templates, via the ABA, to the participating banks, conducted analytical review over the data produced and through the ABA challenged individual banks to ensure that as far as possible the adjustments have been prepared fairly and reasonably and on a consistent basis. We have also compared the banks' results to externally reported information such as Pillar 3 reports, analyst reports and other relevant national and international information.

The views expressed in the report are those of PwC.

### ***Use of our Report***

This report has been prepared for the sole purpose of supporting the ABA in preparing its second round submission to the Financial System Inquiry 2014 (FSI). This report must not be used for any other purpose including that it may not be attached to third party submissions to the FSI.

### ***Declaration of Interests***

In Australia, PwC operates across all financial services sectors, and works with a high proportion of global and domestic financial institutions. The nature of our business requires the highest levels of objectivity and independence, and we have sought to reflect those standards in this document.

Given that this report has been sought by the ABA in the context of the second-round submission to the FSI, we disclose that we have advised a number of other clients, both formally and informally, on the preparations for their previous submissions to the FSI. We also note that PwC, both domestically and globally, has benefitted from the strong growth in the financial services sector in recent decades, including through the growing global complexity of bank capital and other regulations.

PwC's submission to the FSI (dated 31 March 2014) can be found at: <http://www.pwc.com.au/industry/financial-services/publications/funding-australias-future.htm>. PwC is also providing a full-time professional secondee to the FSI during 2014, at no cost to the Inquiry or Government.

We also note that we provide advice to all the Australian banks discussed in this report. We are the external auditor of the ABA and two of the Australian major banks.

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## 2 Our methodology

The objective of this study is to assess the current capital ratios of Australia’s four major banks (“the majors”) using the Basel Framework so that they can be compared on a like-for-like basis with banks in other jurisdictions. It is therefore very important to be precise about the basis of these comparisons. This involves answering three questions:

- What is the best way to measure capital ratios on a consistent basis across banks?
- Which banks or groups of banks should be used for comparison purposes?
- What is the appropriate balance date to use?

### 2.1 What is the best way to measure capital ratios on a consistent basis across banks?

At the ABA’s request, our study is concerned with the Basel III CET1, on a fully implemented basis (i.e. applying Basel III capital requirements as if they applied in full already). We have considered three ways to measure CET1 for these purposes:

- 1 Measurement using applicable national rules – e.g. **CET1 (APRA)**, **CET1 (UK)** etc.

As noted above, national regulators have discretion in relation to the application of the Basel Framework in their jurisdiction and so this measure reflects full implementation of the Basel Framework in that jurisdiction.

This measure is appropriate for answering a question like “*how would the Australian major banks be measured under the Canadian rules and how do they compare to the Canadian banks on that basis?*” In this instance we would refer to the calculation as CET1 (Canada).

- 2 Measurement using Basel Framework rules - **CET1 (Basel Framework)**<sup>2</sup>

This refers to the application of the rules as set out exactly in the Basel Framework (before any national discretion is applied). This methodology seeks to quantify all differences which have been highlighted in the BCBS Regulatory Consistency Assessment Programme report (RCAP) for a particular jurisdiction to produce a comparable set of ratios. For Australia, the RCAP report was published in March 2014<sup>3</sup>. This ratio is in principle similar to the “BCBS internationally harmonised” ratios which are self-reported by many banks, albeit with a greater range of adjustments (as identified by the March 2014 RCAP).

- 3 Measurement using Basel Framework rules and further adjusting for national regulatory treatments which would impact on how those rules are implemented in that jurisdiction by comparison to international norms - **Internationally comparable CET1**. This refers to a methodology which starts with **CET1 (Basel Framework)** and further adjusts for other recognised differences (such as risk modelling parameters and national discretions) which are applied at a local level by comparison to average international settings. This is more judgemental and harder to quantify precisely, however, the BCBS has published information which allows some level of “normalisation”.

Reflecting this more complete treatment, we believe that the **Internationally comparable CET1** measure is generally a preferable measure to the **CET1 (Basel Framework)** measure. We use this measure for answering a question like “*where do the Australian banks sit in comparison to banks drawn from many different countries?*”

Refer to section 4 and appendix B for further discussion about individual adjustments and the degree of judgement and subjectivity involved in calculating them.

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<sup>2</sup> BCBS, *Basel III: A global regulatory framework for more resilient banks and banking systems*, BIS, December 2010 (rev. June 2011)

<sup>3</sup> BCBS, *Regulatory Consistency Assessment Program (RCAP): Assessment of Basel III regulations - Australia*, BIS, March 2014

## **2.2 Which banks or groups of banks should be used for comparison purposes?**

One way to address this would be to consider the question: “*how would the Australian banks be measured under the Canadian rules and how do they compare to the Canadian banks on that basis?*”. To answer this, we have chosen six jurisdictions - Canada, Europe (using Germany as a proxy), United Kingdom, Switzerland, Singapore and Japan. We have chosen these six jurisdictions because they represent a relatively wide spread of countries across the globe broadly relevant to Australia, and which are well advanced in the implementation of Basel III, including having had an RCAP review undertaken which gives an independent assessment of the extent of national discretion. We have not chosen the US because the US banking system is generally less advanced in applying the full Basel Framework. Further jurisdictions could be examined if the ABA believes that would be useful.

In order to answer the different question: “*where do the Australian banks sit in comparison to banks drawn from many different countries?*”, we have chosen the published Basel III ratios for Global Systemically Important Banks (G-SIBs)<sup>4</sup> and Domestic Systemically Important Banks (D-SIBs)<sup>5</sup> from the six selected jurisdictions noted above.

The FSI Interim Report<sup>6</sup> uses BCBS data<sup>7</sup> covering 102 banks, from 27 countries, including small banks (down to Euro 3bn of capital) as well as large banks, and with a wide range of capital ratios (from 2.5 per cent to 20.2 per cent). Without access to the underlying data for the individual banks in the survey, we (PwC) need to be cautious in making judgements. However, from our understanding of global banking there is a risk that the wide range of capital ratios is driven by smaller banks in less relevant jurisdictions. We also note that the data is now over one year old. We would certainly welcome the opportunity to have access to the full population of that BCBS data.

It is also important to note that the data provided by the Australian major banks included in the BCBS study is not on a strictly comparable basis because it only adjusts for the capital differences and does not adjust for the majority of the risk weighted asset differences noted in this report.

While our study uses data from a smaller group of banks by comparison to the FSI Interim Report, we are satisfied that that our sample represents an appropriate group of peer banks against which to compare the Australian major banks.

Our study has a narrower range of observed Internationally comparable CET1 ratios, and therefore does not include banks with extremely high or extremely low capital ratios, observed in the BCBS larger population. Nevertheless the median CET1 ratio in the BCBS study is 10 per cent, which is very similar to the median in our chosen group of 10.4 per cent. The 75<sup>th</sup> percentile of the BCBS group is 11.7 percent by comparison to 11.4 per cent for this study.

Refer to appendix G for a detailed listing of the Australian banks and jurisdictional peers used in this analysis.

## **2.3 What is the appropriate balance date to use?**

We have chosen to carry out this study using the most recently available data of capital information. We have collected information from the Australian banks as at their most recent half year or year-end balance date.

We have also collected data from international peer banks using the most recently available information so that the comparisons are on a like-for-like basis.

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<sup>4</sup> BCBS, *Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement*, BIS, July 2013

<sup>5</sup> BCBS, *A framework for dealing with domestic systemically important banks*, BIS, October 2012

<sup>6</sup> FSI, *The Financial System Inquiry 2014 (Murray): Interim Report*, Australian Government, chapter Post –GFC Regulatory Response, Stability, section.3-36 to 3-37, July 2014

<sup>7</sup> BCBS, *Basel III Monitoring Report*, Statistical Annex: Table A3, BIS, March 2014

## **2.4 Approaches to measuring bank capital ratios**

The Basel Framework adopts a standard approach to calculating risk weighted assets based on internationally relevant criteria. However it also acknowledges that larger, more sophisticated banks, with better quality risk data and modelling expertise are able to produce their own risk weighting factors which better reflect how they manage risks. Under the Basel Framework such banks can apply to their national regulator to use their own models for producing risk weighted assets. Banks which have been accredited to use their own models for calculating risk weighted assets are referred to as advanced banks. There are in turn two Internal Ratings-based (IRB) approaches to credit risk; the Advanced (AIRB) and Foundation (FIRB). We adopt this terminology in this report for banks which have received accreditation from Australian Prudential Regulation Authority (APRA) to use their own risk models. The four Australian major banks apply the AIRB approach for credit risk to the vast majority of their portfolios.

In implementing the Basel Framework, national regulators are expected to build conservatism into their respective financial systems by including buffers in the risk assessments under Pillar 1 and to address bank specific risks by requiring banks to operate above the BCBS minimum required capital ratios under Pillar 2. The approach taken will impact the comparability of reported capital ratios both between banks within a country and between countries.

## **2.5 Total capital ratio**

As instructed by the ABA, this study has focused on CET1. Wider measures of capital (Tier 1 and Total Capital ratios) are also required to be monitored and managed under the Basel Framework.

Comparative assessments of these wider ratios for Australian banks on a fully implemented Basel III basis are complicated by the fact that different jurisdictions are at different stages in confirming the rules which would apply to different bank capital instruments in the event of a bank approaching insolvency. In Australia, for instance, banks have only recently started the process of replacing their Basel II instruments with new instruments compliant with the Basel III rules in this regard. The fact that both confirmation of the rules and consequent implementations are at such different stages in different jurisdictions makes comparisons other than for CET1 ratios much more challenging and beyond the scope of this report.

## **2.6 Leverage ratio**

The Leverage ratio is also required to be calculated and managed under Basel III from 2018 onwards. This is an alternative way of representing capital levels and may show a different picture by comparison to CET1. APRA has not yet issued their detailed rules governing how the Leverage ratio should be calculated and it has not therefore been practical to compare Leverage ratios for Australian banks by comparison to their global peers in this study.

# 3 Summary of results

## 3.1 Estimating Australian major bank capital ratios

Figure 1 below sets out our analysis of the weighted average CET1 ratio for the four Australian major banks expressed on a **CET1 (APRA)**, **CET1 (Basel Framework)** and an **Internationally comparable CET1** basis, based on the latest available information. The table also shows a similar analysis undertaken by APRA, based on earlier information, which was included in APRA's submission to the FSI<sup>8</sup>.

**Figure 1: Impact of differences in the application of the Basel Framework on CET1 (APRA) ratios**

	(Note D)	PwC Study, August 2014		APRA submission to the FSI, March 2014	
		Impact on CET1 ratio (bps)	Weighted average ratio (%)	Impact on CET1 ratio (bps)	Weighted average ratio (%)
<b>CET1 (APRA) ratio (Note A)</b>			<b>8.76</b>		<b>8.28</b>
<b>Adjustments to align with Basel III</b>					
Add back capital deductions not required under Basel III	1	109		113	
Reduce risk weightings for credit risk (residential mortgages and specialised lending exposures)	2	96		61	
Reverse capital charge for interest rate risk in the banking book	3	30		28	
Adjustment for less conservative APRA standards	4	(8)		(22)	
Standardised risk weights	5	12			
<b>Total adjustment</b>		<b>240</b>		<b>180</b>	
Actual CET1 uplift (Note B)			2.79		1.89
<b>CET1 (Basel Framework) ratio (Note C)</b>			<b>11.55</b>		<b>10.17</b>
Additional areas where credit risk estimates are more conservative in Australia by comparison to norms adopted in other jurisdictions	6	114			n/a
<b>Internationally comparable CET1 ratio</b>			<b>12.69</b>		

Source: Individual bank data, PwC analysis, 2014. Roundings have been applied above and throughout this report.

Note A: CET1 ratio (APRA) per the PwC study is based on the most recent half-year or year-end balance date, whereas APRA's figures are for earlier dates.

Note B: The items are not additive as the impact on the CET1 ratio of each item is calculated independently of the impact of the other items.

Note C: Includes RCAP differences.

Note D: Refer to section 4.2 for explanation on adjustments.

Adjustments to risk weighted assets (items 2 and 6) by their nature are more subjective, and hence the range of 11.5 per cent to 12.5 per cent expressed in our overall conclusion.

<sup>8</sup>APRA, Financial System Inquiry: Submission, APRA, March 2014



The other main points to note are:

- our preferred measure of capital Internationally comparable CET1, shows the four major Australian banks have a weighted average ratio of 12.69 per cent;
- a number of the uplift factors from CET1 (APRA) to CET1 (Basel Framework) in the PwC and APRA calculations are broadly comparable, the main exception being allowance for those factors where APRA standards are less conservative. We expect these differences are likely to be explained by this study using more recent data (and possibly a wider group of banks being used by APRA);
- our calculation of the Internationally comparable CET1 ratio shows a further 114bp uplift for the four major banks to take the weighted average ratio to 12.69 per cent.

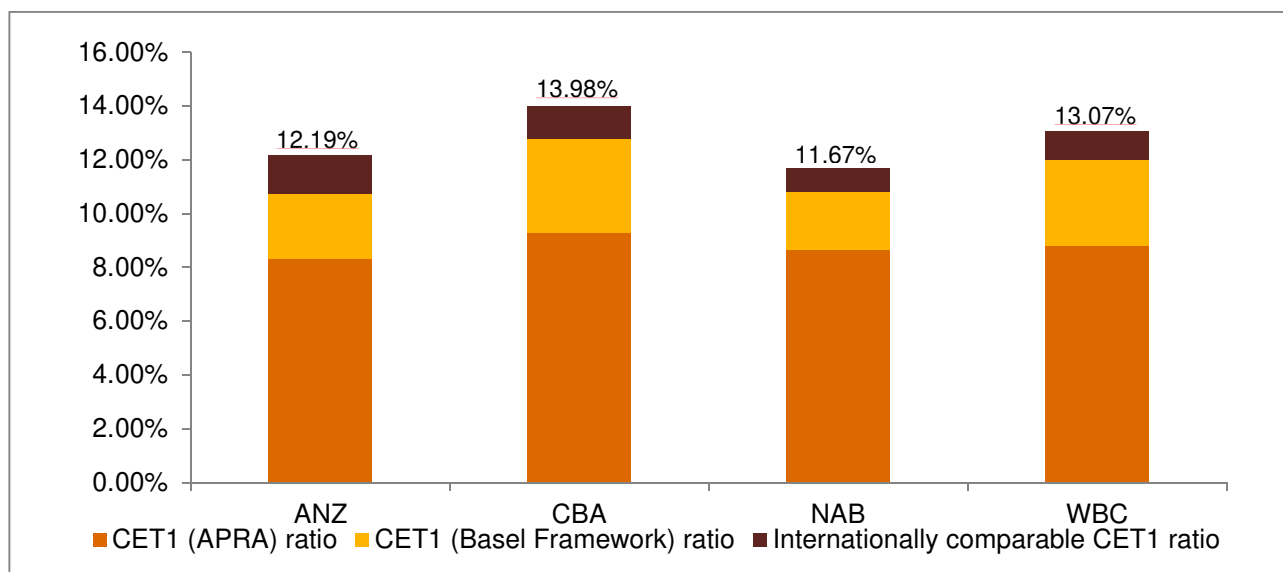
As usual, we need to avoid a sense of false precision and interpret these numbers in the context of the subjectivity and judgements involved. We believe that, in total, the analysis should best be interpreted as a weighted average CET1 ratio in the range of 11.5 per cent to 12.5 per cent for Australian major banks.

### 3.2 Australian banks' Internationally comparable CET1 ratios

Figure 2 summarises the data from Figure 1 above, for the four Australian banks in our study.

Whilst there is an uplift in the capital ratio for all the banks when measured on an Internationally comparable basis, the quantum of the uplift varies from bank to bank as it is dependent on the individual banks' own particular circumstances including asset mix and risk appetite, as well as modelling assumptions and data.

**Figure 2: Major banks' Internationally comparable CET1 ratios**



Source: Individual bank data, PwC analysis, 2014.

Note: See definitions in section 2.1.

### 3.3 Where do Australian major banks sit within an international peer group?

The most objective way to answer this question available to PwC is to compare our Internationally comparable CET1 ratio for the four Australian major banks with the closest equivalent data for a peer group of overseas banks, taking into account known differences in those offshore banks.

**Figure 3: International peer group Internationally comparable CET1 ratios**

(Refer to the following page for notes)

Rank	Bank (Note 3)	Total assets (AUD bn)	Date	Internationally comparable CET1 (Note 2)
1	Nordea (Note 4)	983	30.06.2014	15.82%
2	Commonwealth Bank of Australia	791	30.06.2014	13.98%
3	UBS AG	1,175	30.06.2014	13.50%
4	Rabobank Group	1,040	31.12.2013	13.50%
5	Danske Bank	638	30.06.2014	13.20%
6	Westpac Banking Corporation	729	31.03.2014	13.07%
7	Intesa Sanpaolo (Note 4)	909	30.06.2014	12.99%
8	State Street Corporation	299	30.06.2014	12.80%
9	DBS Group Holdings Ltd.	355	30.06.2014	12.20%
10	Australia and New Zealand Banking Group	738	31.03.2014	12.19%
11	National Australia Bank Ltd.	846	31.03.2014	11.67%
12	Deutsche Bank AG (Note 4)	2,418	30.06.2014	11.64%
13	HSBC Holdings Plc. (Note 4)	2,920	30.06.2014	11.43%
14	Oversea-Chinese Banking Corporation Limited	296	30.06.2014	11.30%
15	Natixis (owned 70% by Groupe BPCE)	795	30.06.2014	11.20%
16	Groupe BPCE	1,631	30.06.2014	11.10%
17	Lloyds Banking Group PLC	1,531	30.06.2014	11.10%
18	China Construction Bank (Note 1)	2,800	31.03.2014	11.10%
19	Industrial and Commercial Bank of China Limited (Note 1)	3,424	31.03.2014	10.90%
20	Standard Chartered Bank (Note 4)	732	30.06.2014	10.87%
21	Citigroup	2,025	30.06.2014	10.60%
22	Societe Generale (Note 4)	1,920	30.06.2014	10.51%
23	ING Group	1,409	30.06.2014	10.50%
24	Morgan Stanley	876	31.12.2013	10.50%
25	Mitsubishi UFG	2,657	31.03.2014	10.40%
26	UniCredit (Note 4)	1,217	30.06.2014	10.40%
27	BNP Paribas (Note 4)	2,768	30.06.2014	10.30%
28	Sumitomo Mitsui Financial Group	1,706	31.03.2014	10.30%
29	Royal Bank of Scotland Group PLC	1,834	30.06.2014	10.10%
30	Wells Fargo	1,695	30.06.2014	10.10%
31	Barclays PLC (Note 4)	2,385	30.06.2014	10.04%
32	Bank of Communications (Note 1)	1,037	31.03.2014	10.04%
33	Banco Bilbao Vizcaya Argentaria	896	30.06.2014	10.00%
34	Bank of New York Mellon	425	30.06.2014	10.00%
35	Canadian Imperial Bank of Commerce	390	30.04.2014	10.00%
36	Credit Agricole S.A	2,204	30.06.2014	9.90%
37	Bank of America	2,302	30.06.2014	9.90%
38	JP Morgan Chase	2,672	30.06.2014	9.80%
39	Goldman Sachs	912	31.12.2013	9.80%

## Summary of results

Rank	Bank (Note 3)	Total assets (AUD bn)	Date	Internationally comparable CET1 (Note 2)
40	Bank of Nova Scotia	778	30.04.2014	9.80%
41	Royal Bank of Canada	881	30.04.2014	9.70%
42	Bank of Montreal	572	30.04.2014	9.70%
43	Bank of China (Note 1)	2,621	31.03.2014	9.58%
44	Credit Suisse Group	1,066	30.06.2014	9.50%
45	Agricultural Bank of China (Note 1)	2,658	31.03.2014	9.48%
46	Commerzbank AG	846	30.06.2014	9.40%
47	Toronto Dominion Bank	881	30.04.2014	9.20%
48	China Merchants Bank (Note 1)	764	31.03.2014	9.09%
49	Banco do Brasil	674	30.06.2014	8.77%
50	National Bank of Canada	191	30.06.2014	8.70%
51	Mizuho FG (Note 1)	1,842	31.03.2014	8.60%
52	China Minsheng Banking Corporation (Note 1)	602	31.03.2014	8.50%

Source: Individual bank data, PwC analysis 2014.

Note 1: CET1 for Chinese banks - Calculated in accordance with the Administrative Measures for the Capital of Commercial Banks (Provisional) which is used as the comparable proxy for comparison to the CET1 (fully-loaded).

Note 2: Recalculated for Australian major banks to adjust for RCAP and other differences.

Note 3: The list of banks comprises of global banks with total assets of over A\$ 600bn, G-SIBs published by the Financial Stability Board in November 2011 and November 2013, D-SIBs which have been announced by local regulators (Canada, Singapore and Switzerland) and which have disclosed fully implemented Basel III capital adequacy ratios or sufficient public disclosure for a comparable estimate. Adequate public disclosure was unavailable for Banco Santander, Banque Populaire CdE, United Overseas Bank, Raiffeisen, Zurich Cantonal Bank, Banque Cantonale Vaudoise, Industrial Bank, Shanghai Pudong Development Bank, China CITIC Bank as at the date of this report.

Note 4: Foreseeable dividend deducted in reported fully-loaded CET1 has been added back to obtain the Internationally comparable CET1 ratio. See appendix D for further details.

Note 5: There are other potentially applicable adjustments for some international banks which are not included above due to insufficient available information.

In interpreting this chart, please note that we have been able to drill into the data for the Australian banks to a much greater degree than we have for the offshore comparator group. Nonetheless with proper allowance for these uncertainties, we believe that the data as set above sustains the conclusion that, on average, the Australian banks are at or above the 75th percentile of bank capital relative to the most appropriate comparator set of global banks. This conclusion would be sustained even if one takes the lower end of our 11.5 per cent - 12.5 per cent estimated range.

### 3.4 How do Australian major banks compare to advanced banks in other jurisdictions?

In this section we apply applicable national rules to the Australian banks for the six jurisdictions identified in section 2.2. The principle differences between Australia and the jurisdictions below are summarised in appendix D.

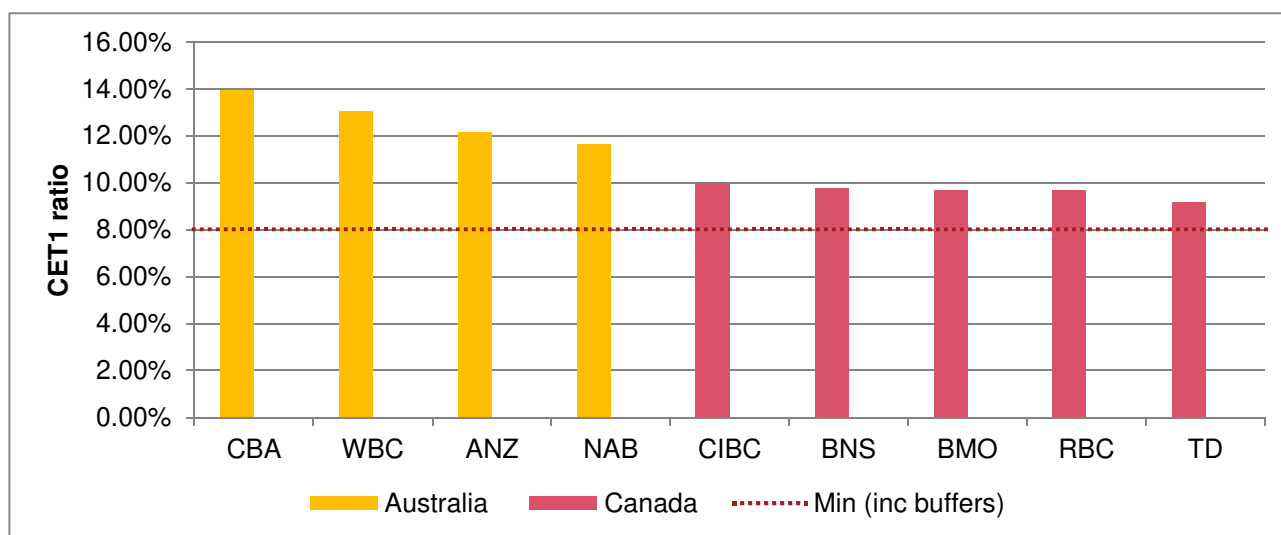
We have noted for information purposes the expected levels of CET1 which may be required following implementation of domestic systemically important banks (D-SIBs) frameworks. The expected level of CET1 post implementation has been added to each jurisdiction graph. It should be noted that in some cases the CET1 ratios are based on recommendations or preliminary guidance. In Australia, APRA’s D-SIB framework includes a 1 per cent buffer (to make an 8 per cent expected CET1 ratio, inclusive of the capital conservation buffer of 2.5 per cent).

#### 3.4.1 Canada

Reflecting the analysis in Appendix D and Appendix E, we have not identified any adjustments that need to be made to the Internationally comparable CET1 ratio for the Australian banks in calculating their CET1 (Canada) ratio.

However, when comparing to banks in Canada, account needs to be taken of structural differences in the way Lenders Mortgage Insurance (LMI) works. In Canada, mortgages may be insured with the Canada Mortgage and Housing Association, which is fully guaranteed by the Canadian government and are afforded the zero risk weight of the sovereign. The Canadian regulator also allows zero risk weights where a mortgage is comprehensively insured by a private sector mortgage insurer that has a backstop guarantee provided by the Canadian government. In Australia, LMI insurance is not taken into account by IRB banks when modelling risk weights for residential mortgages that are insured. Given that a substantial number of Canadian mortgages are LMI insured, it follows that the capital ratios for Canadian banks are not directly comparable to those of the Australian banks. This is a structural difference which is not appropriate to adjust for in this comparative study.

**Figure 4: Australian and Canadian banks on a CET1 (Canada) basis**

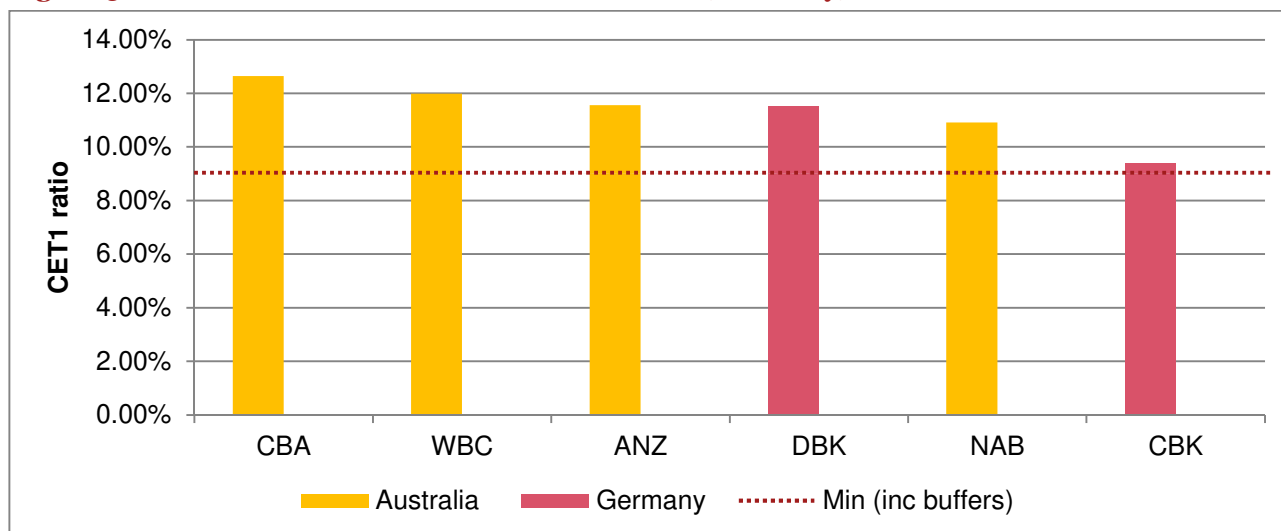


Source: Individual bank data, PwC analysis, 2014.  
Refer to appendix G for abbreviated terms.

### 3.4.2 Germany

Reflecting the analysis in Appendix D and Appendix E, we noted the following adjustment that needs to be made to the Internationally comparable CET1 ratio for the Australian banks in calculating their CET1 (Germany) ratio. Foreseeable dividends are deducted from capital when calculating their CET1 ratio, this reduces the capital ratio. In calculating the CET1 (Germany) ratio for Australian banks, a similar adjustment has been applied to reflect the dividend declared or expected out of current period earnings.

**Figure 5: Australian and German banks on a CET1 (Germany) basis**



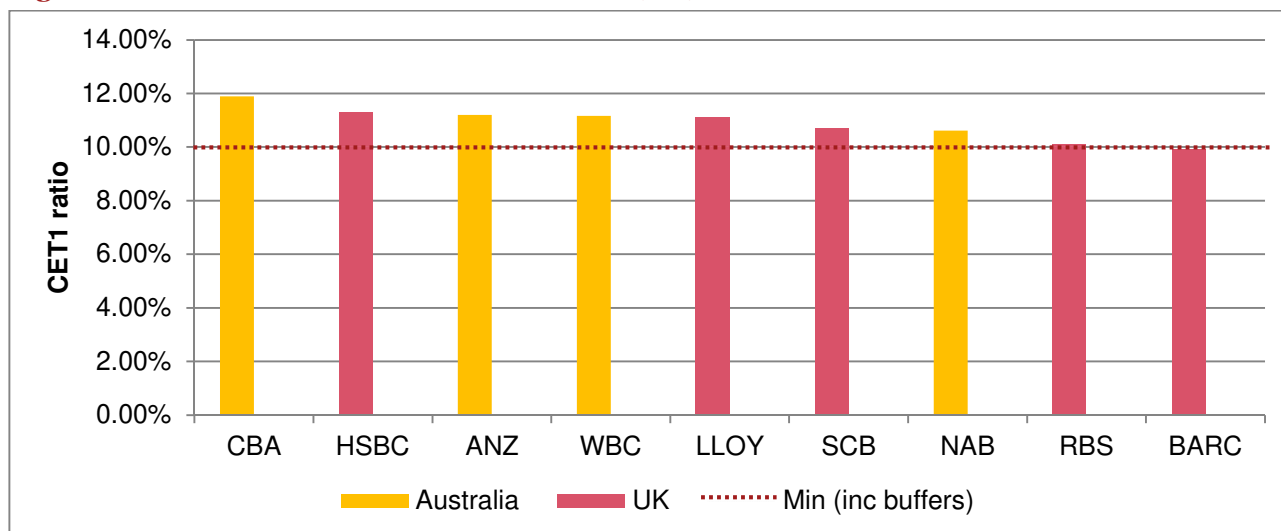
Source: Individual bank data, PwC analysis, 2014.  
Refer to appendix G for abbreviated terms.

### 3.4.3 United Kingdom (UK)

Reflecting the analysis in Appendix D and Appendix E, we noted the following adjustments that need to be made to the Internationally comparable CET1 ratio for the Australian banks in calculating their CET1 (UK) ratio:

- Deduct foreseeable dividends from the capital base (reduces capital ratio);
- Apply a 45 per cent LGD floor to sovereign exposures (reduces capital ratio); and
- Apply the supervisory slotting approach (with BCBS defined risk weights) to a portion of the specialised lending portfolio (reduces capital ratio).

**Figure 6: Australian and UK banks on a CET1 (UK) basis**



Source: Individual bank data, PwC analysis, 2014.  
Refer to appendix G for abbreviated terms.

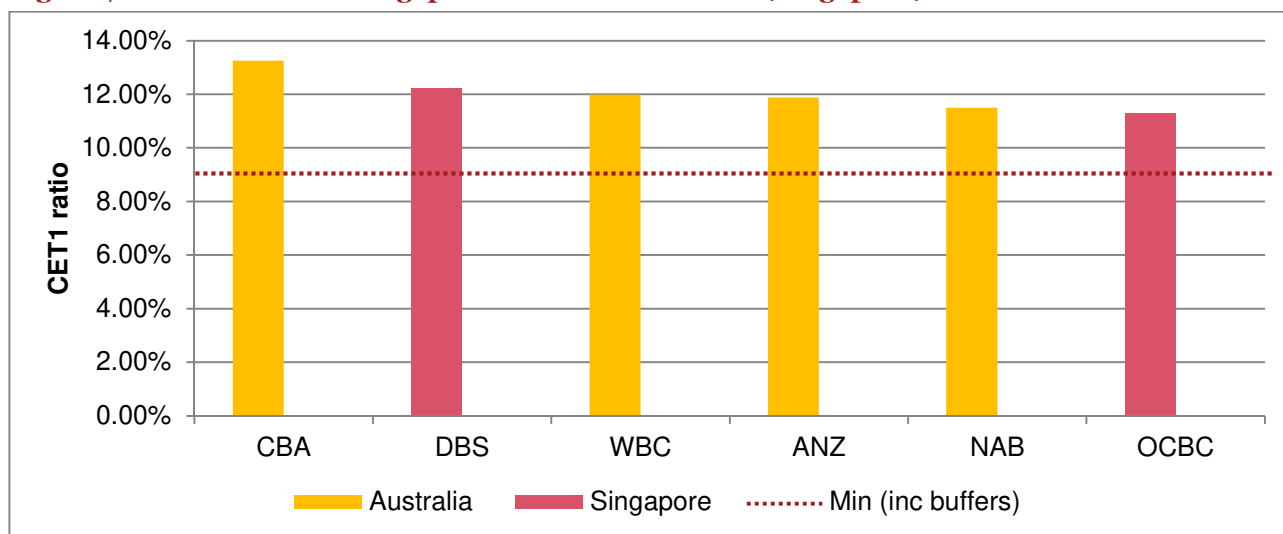
### 3.4.4 Singapore

Reflecting the analysis in Appendix D and Appendix E, we noted the following adjustment that needs to be made to the Internationally comparable CET1 ratio for the Australian banks in calculating their CET1 (Singapore) ratio.

The supervisory slotting approach for Specialised Lending (with BCBS defined risk weights) is applied to a portion of the specialised lending portfolio, this reduces the capital ratio. In calculating the CET1 (Singapore) ratio for Australian banks, a similar adjustment has been applied to the specialised lending portfolio.

As noted in section 4.1.2, there are structural differences between Australia and Singapore in relation to mortgages.

**Figure 7: Australian and Singaporean banks on a CET1 (Singapore) basis**

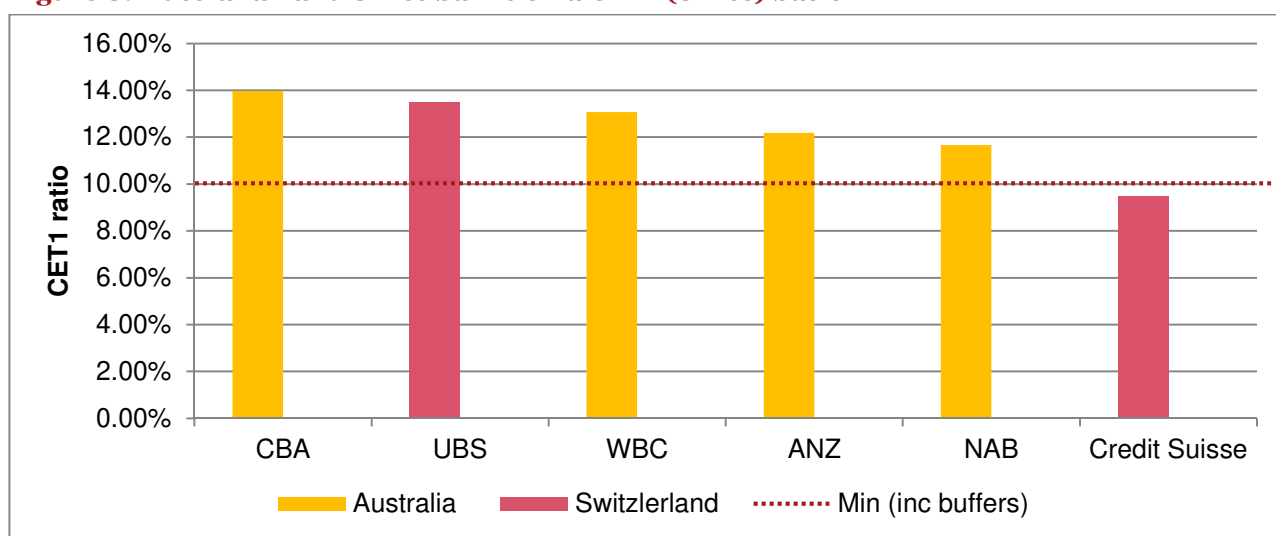


Source: Individual bank data, PwC analysis, 2014.  
Refer to appendix G for abbreviated terms.

### 3.4.5 Switzerland

Reflecting the analysis in Appendix D and Appendix E, we have not identified any adjustments that need to be made to the Internationally comparable CET1 ratio for the Australian banks in calculating their CET1 (Swiss) ratio.

**Figure 8: Australian and Swiss banks on a CET1 (Swiss) basis**



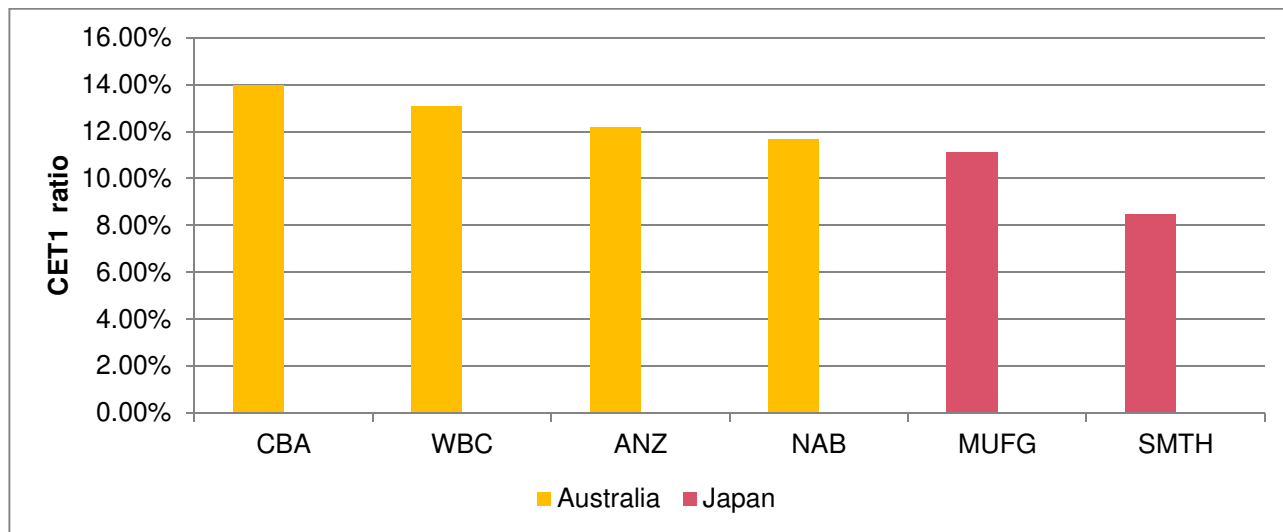
Source: Individual bank data, PwC analysis, 2014.  
Refer to appendix G for abbreviated terms.

### 3.4.6 Japan

Reflecting the analysis in Appendix D and Appendix E, we have not identified any adjustments that need to be made to the Internationally comparable CET1 ratio for the Australian banks in calculating their CET1 (Japanese) ratio.

According to the BCBS's progress report on Basel III implementation (April 2014), a D-SIB approach is still being developed.

**Figure 9: Australian and Japanese banks on a CET1 (Japanese) basis**



Source: Individual bank data, PwC analysis, 2014.  
Refer to appendix G for abbreviated terms.

# 4 Identification and analysis of differences in calculating CET1 ratios

## 4.1 Identifying differences and areas of judgement

### 4.1.1 Overall approach to identifying differences in CET1 ratio calculations

We identified differences in approach to implementing the Basel Framework from a variety of sources:

- a The BCBS (March 2014) *Regulatory Consistency Assessment Programme (RCAP), Assessment of Basel III regulations – Australia*, which identified:
  - i. twenty-seven areas where APRA was considered to be more conservative than the Basel Framework (not all of these were considered to be material differences), and
  - ii. three areas where APRA was considered to be (potentially) materially less conservative than the Basel Framework.
- b RCAP assessment reports issued by the BCBS for other countries; Canada, Brazil, China, Switzerland, Singapore, European Union, Japan and the United States (all conducted between October 2012 and June 2014).
- c BCBS' thematic study<sup>9</sup> which analysed risk weighted assets for credit risk in the banking book (this is discussed in section 4.1.2. below).
- d We also researched literature, considered other methods for calculating capital adopted by rating agencies and consulted the PwC international network. The PwC international network also assisted us in gaining an understanding of the nature of differences identified in their jurisdictions, the overall approach adopted by their respective regulators in implementing the Basel Framework and relevant structural aspects of their banking industry.

The full list of identified differences was categorised as follows:

- **Category A** – RCAP (Australia) findings where APRA is considered to be more conservative than the Basel Framework. Some of these adjustments are not applicable to the CET1 ratio for advanced banks and others were considered to be immaterial. For more information refer to appendices B and C.
- **Category B** – Potentially material RCAP (Australia) findings where APRA is considered to be less conservative than the Basel Framework. For more information refer to appendices B and C.
- **Category C** – Other adjustments identified from other RCAP reports, reviewing other banks reported information and reaching out to the PwC international network. These are discussed in more detail in section 4.1.2 below.

Appendices B to F contain a complete list of all differences we considered, detailed descriptions of individual differences and our assessment of the applicability of each difference to calculating CET1 ratios.

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<sup>9</sup> BCBS RCAP Analysis of credit risk weighted assets in the banking book, July 2013



#### **4.1.2 Credit risk weighted assets - Australia's model outcomes compared to international norms**

Credit risk is the major contributor to risk weighted assets for Australian banks and can be a cause of measureable inconsistencies between the International comparable CET1 ratios for Australian banks and global peers.

AIRB banks use their own data and models to generate the factors used to risk weight their assets. Individual bank models are subject to approval by their national regulator. National regulators can set limits when applying risk factors and require specific assumptions to be built into the models. Both individual bank modelling assumptions and the way national regulators implement the Basel Framework introduce differences which need to be considered when making comparisons.

#### **Residential Mortgage Loss Given Default (LGD) floors**

When introducing Basel II, the BCBS<sup>10</sup> set an LGD floor of 10 per cent on residential mortgages due to a lack of long-term historical data relating losses arising in periods of financial stress. This floor prevents banks from setting the LGD assumption too low. APRA has used its national discretion to impose a higher, 20 per cent, LGD floor on residential mortgages in Australia. This 20 per cent LGD floor assumption gives rise to Australian banks holding more capital against their mortgage book than banks in other jurisdictions. This is further exacerbated by the tendency for Australian banks to hold a higher proportion of residential mortgage assets than in other jurisdictions.

In order to allow for this impact in our analysis, we have required the Australian AIRB banks to apply a 15 per cent flat LGD to their residential mortgage books. For most banks that have modelled their portfolios using a 10 per cent LGD floor, the results show LGD's higher than 10 per cent, however these are not accredited models and so not judged to be a prudent basis for our estimate. Taking into consideration structural differences such as the higher loan-to-value ratios (LVRs) between Australia and other countries such as Singapore (where LVRs cannot exceed 80 per cent for first properties)<sup>11</sup> and Canada (where there is a government based LMI scheme), in our judgement we consider a 15 per cent flat LGD assumption to be a reasonable proxy. A 1 per cent change in the mortgage LGD assumption represents 7 bps change in the average CET1 ratio.

#### **Unsecured corporate lending (LGD)**

In a number of jurisdictions banks have found it difficult to achieve full AIRB accreditation for their unsecured corporate lending portfolios due in part to a lack of reliable loss data over a sufficient time period. In keeping with the Basel Framework, banks in this situation use the FIRB approach for determining risk weighted assets for the portfolio. The FIRB approach uses a 45 per cent LGD modelling assumption for unsecured corporate exposures.

The BCBS (July 2013) RCAP report, *Analysis of risk-weighted assets for credit risk in the banking book*<sup>12</sup>, confirmed that variation in LGDs for corporate exposures in the hypothetical portfolio is a driver of inconsistency in the comparability of risk weightings.

As unsecured corporate loans are a significant portfolio relative to overall balance sheet size for Australian banks, differences in this modelling assumption would be expected to impact the overall international comparability of the capital ratio.

To negate this impact in our analysis we have required the Australian banks to model their risk weighted assets for unsecured corporate exposures adopting the FIRB approach of using a 45 per cent LGD. In our judgement, given that approximately half of the international peer group currently use the FIRB approach, we consider this to be a reasonable measure to bring the Australian banks more in line with banks in other jurisdictions.

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<sup>10</sup>BCBS, *Basel II: International Convergence of Capital Measurement and Capital Standards*, BIS, June 2006

<sup>11</sup> More specific guidance is outlined in Monetary Authority of Singapore (MAS), *MAS Notice 632, Residential Property Loans*, MAS, para 30(t), February 2014

<sup>12</sup>BCBS, *Regulatory Consistency Assessment Programme (RCAP) Analysis of risk-weighted assets for credit risk in the banking book*, BIS, July 2013

## Undrawn corporate lending (EAD)

Another area of inconsistency in international comparability of risk weighted assets identified by the BCBS RCAP thematic report was the assessment of exposure at default (EAD) for undrawn commitments (referred to as credit conversion factors, or CCF in the Basel Framework). The BCBS report identified that ‘for AIRB banks, the average conversion factor applied to undrawn commitments is roughly 50 per cent; this can be contrasted with the 75 per cent CCF for such commitments under the FIRB approach’<sup>13</sup>. We understand that Australian AIRB banks use higher conversion factors for the EAD relating to undrawn commitments, typically 100 per cent.

In order to negate the impact of higher EADs for undrawn commitments, in our judgement we consider it reasonable to apply the FIRB conversion factor of 75 per cent to the undrawn commitments in the AIRB banks’ corporate loan books.

## 4.2 Explanation of the key differences identified in Figure 1 (Impact of differences in the application of the Basel Framework)

A complete list of all differences identified and considered in this study can be found in appendices C and D.

The following table further analyses the major adjustments reflected in Figure 1: Impact of differences in the application of the Basel Framework on CET1 (APRA) ratios, section 3.

Description	Ref App.B	Major banks	Weighted average impact on CET1 (APRA) (bps)
<b>Differences between APRA prudential standards and the Basel Framework</b>			
<b>1 Capital deductions</b>			
APRA requires 100 per cent deductions from capital for deferred tax assets, intangibles relating to capitalised expenses and all investments (e.g. financial institutions, funds management and insurance subsidiaries). The Basel Framework allows a concessional threshold before these deductions apply. Assets below the threshold can be risk weighted.	A3, A4, A5		109
<b>Credit risk weightings</b>			
<b>2 Mortgage Loss Given Default (LGD) 20 per cent floor</b>			
The Basel Framework imposes a 10 per cent floor in downturn LGD models used for residential mortgages, whereas APRA imposes a 20 per cent floor. In our judgement, a 15 per cent flat LGD is a reasonable proxy. Refer to section 4.1.2 above.	A1		40
<b>2 Specialised Lending</b>			
APRA rules for ‘specialised lending’ (corporate lending to project finance, certain real estate exposures, commodity finance etc) are more conservative than those contained in the Basel Framework and/or which are applied by most other prominent jurisdictions included in this study	A2		50
<b>3 Interest rate risk in the banking book (IRRBB)</b>			
APRA’s rules require the inclusion of IRRBB within the Pillar 1 risk weighted assets framework for banks using AIRB approaches; IRRBB is not required to be assessed under Pillar 1 in the Basel Framework. It is highlighted as a risk that may be taken into account in assessing Pillar 2 capital ratios.	A11		30

<sup>13</sup> BCBS, *Regulatory Consistency Assessment Programme (RCAP) Analysis of risk-weighted assets for credit risk in the banking book*, BIS, p.46, July 2013

Description		Weighted average impact on CET1 (APRA) (bps)
<p><b>4 Scaling factor related to specialised lending exposures</b>                      APRA does not apply the 1.06 scaling factor for risk weighted assets calculated under the IRB approach, to specialised lending assets classes, as prescribed in the Basel Framework.</p>	B2	(7)
<p><b>4 Non owner occupied home loans</b>                      The RCAP rated APRA's approach to residential mortgage exposures eligible for retail treatment under the IRB approach as a potentially material deviation, as APRA does not include an owner-occupancy constraint. A literal interpretation of the relevant paragraph in the Basel Framework can exclude non-owner occupied exposures. APRA commented in its response that its view is that the paragraph is ambiguous and a large number of other Basel Committee member jurisdictions have implemented the relevant paragraph in the same manner as APRA. Further commentary of this issue is contained on pages 14 to 15 of the BCBS RCAP (Singapore), March 2013.</p> <p>The banks in the study group were requested to quantify this potential deviation. In some cases, banks calculated an increase in risk weighted assets and in another case a reduction. None of the adjustments was more than 10 basis points and because of the difficulties in agreeing a consistent methodology for the adjustment, no adjustment was included for this item in the final analysis. Given APRA's comments about other Basel Committee member jurisdictions adopting a similar approach, this appears to be reasonable in the context of this study.</p>	B3	n/a
<p><b>5 Standardised risk weights</b>                      Some advanced banks have retail portfolios that are assessed using the Standardised approach. APRA applies more conservative risk weights than the Basel Framework for some standardised retail exposures.</p>	A6	11
<p><b>Other areas where credit risk estimates are more conservative in Australia by comparison to norms adopted in other countries</b></p>		
<p><b>6 Unsecured corporate lending LGD</b>                      In our judgement, we consider it reasonable to apply the assumption of 45 per cent LGD, given that approximately half of the international peer group currently use the FIRB approach, which applies this assumption. This brings Australian banks more in line with banks in other jurisdictions. Refer to section 4.1.2 above.</p>	C2	79
<p><b>6 Undrawn corporate lending EAD</b>                      In our judgement we consider it reasonable to apply the FIRB conversion factor of 75 per cent to the undrawn commitments in the AIRB banks corporate loan books. Refer to section 4.1.2 above.</p>	C1	31

**This concludes the main body of our report**

# Appendix A Australian major banks - detailed analysis of differences between Australian CET1 (APRA) and International comparable CET1 ratio

**Table A1 – Summary of CET1 adjustments (in per cent)**

	*Ref.	ANZ 31/03/2014	CBA 30/06/2014	NAB 31/03/2014	WBC 31/03/2014	Weighted Average
<b>CET1 (APRA) ratio</b>		<b>8.33%</b>	<b>9.30%</b>	<b>8.64%</b>	<b>8.82%</b>	<b>8.76%</b>
Category A adjustments: APRA more conservative						
Mortgage LGD (20% floor)	A1	0.32%	0.55%	0.28%	0.47%	0.40%
Specialised lending	A2	0.32%	0.70%	0.34%	0.69%	0.50%
Intangible assets	A3	0.15%	0.10%	0.03%	0.27%	0.14%
Equity holdings	A4	0.84%	0.80%	0.51%	0.36%	0.63%
Deferred tax assets	A5	0.20%	0.26%	0.33%	0.52%	0.32%
Standardised – retail exposures	A6	0.02%	0.12%	0.20%	0.09%	0.11%
Margin lending	A7	0.00%	0.02%	0.00%	0.02%	0.01%
Currency threshold adjustments	A8	0.01%	0.06%	0.04%	0.08%	0.05%
Operational risk	A9	0.00%	0.00%	0.06%	0.00%	0.01%
Counterparty credit risk	A10	0.00%	0.00%	0.00%	0.00%	0.00%
IRRBB	A11	0.40%	0.43%	0.16%	0.24%	0.30%
Category B adjustments: APRA less conservative						
Investment in own shares	B1	0.00%	(0.05%)	0.00%	0.00%	(0.01%)
Specialised lending – scaling factor	B2	(0.04%)	(0.08%)	(0.07%)	(0.09%)	(0.07%)
Investment home loans	B3	n/a	n/a	n/a	n/a	n/a
Total adjustment (standalone)		2.21%	2.91%	1.88%	2.64%	2.40%
<b>CET1 (Basel Framework) ratio</b>		<b>10.76%</b>	<b>12.78%</b>	<b>10.80%</b>	<b>12.00%</b>	<b>11.55%</b>
<b>CET1 uplift</b>		<b>2.43%</b>	<b>3.48%</b>	<b>2.16%</b>	<b>3.18%</b>	<b>2.79%</b>
<b>Self-reported internationally harmonised CET1 ratio</b>		<b>10.50%</b>	<b>12.10%</b>	<b>10.46%</b>	<b>11.26%</b>	<b>11.06%</b>
<b>Additional adjustments</b>						
Undrawn corporate lending EAD	C1	0.34%	0.32%	0.23%	0.36%	0.31%
Unsecured corporate lending LGD	C2	1.02%	0.83%	0.61%	0.67%	0.79%
<b>Total adjustment (standalone)</b>		<b>1.37%</b>	<b>1.15%</b>	<b>0.84%</b>	<b>1.02%</b>	<b>1.09%</b>
<b>Internationally comparable CET1 ratio</b>		<b>12.19%</b>	<b>13.98%</b>	<b>11.67%</b>	<b>13.07%</b>	<b>12.69%</b>

Source: Individual bank data, PwC analysis, 2014.

\*Note: Refer to appendix B for more detail.

Refer to appendix G for abbreviated terms.

## Table A2 – Summary of CET1 adjustments (in A\$ billions)

Capital and RWA values have been rounded to the nearest \$ billion. All totals and capital ratios have been rounded to 2 decimal places from source data.  
(Refer to the following page for notes)

As at: \$ billions	Ref	ANZ 31/03/2014		CBA 30/06/2014		NAB 31/03/2014		WBC 31/03/2014	
		Capital	RWA	Capital	RWA	Capital	RWA	Capital	RWA
<b>CET1 (APRA)</b>		30.0	360.7	31.4	337.7	31.7	367.2	28.5	322.5
Category A adjustments: APRA more conservative									
Mortgage LGD (20% floor)	A1	0.0	(13.3)	0.0	(19.0)	0.0	(11.7)	0.0	(16.3)
Specialised lending	A2	0.0	(13.2)	0.0	(23.7)	0.0	(13.8)	0.0	(23.4)
Intangible assets	A3	0.6	1.0	0.4	0.4	0.1	0.2	1.0	1.1
Equity holdings	A4	4.0	10.4	3.8	11.0	2.4	6.1	1.7	5.9
Deferred tax assets	A5	0.9	2.3	1.2	2.9	1.5	3.9	2.2	5.5
Standardised – retail exposures	A6	0.0	(0.8)	0.0	(4.4)	0.0	(8.5)	0.0	(3.3)
Margin lending	A7	0.0	(0.0)	0.0	(0.7)	0.0	(0.2)	0.0	(0.6)
Currency threshold adjustments	A8	0.0	(0.6)	0.0	(2.1)	0.0	(1.7)	0.0	(2.9)
Operational risk	A9	0.0	0.0	0.0	0.0	0.0	(2.4)	0.0	0.0
Counterparty credit risk	A10	0.0	0.0	0.0	0.0	0.0	(0.0)	0.0	0.0
IRRBB	A11	0.0	(16.4)	0.0	(14.8)	0.0	(6.8)	0.0	(8.5)
Category B adjustments: APRA less conservative									
Investment in own shares	B1	0.0	0.0	(0.2)	0.0	0.0	0.0	0.0	0.0
Specialised lending – scaling factor	B2	0.0	1.7	0.0	2.9	0.0	2.8	0.0	3.2
Investment home loans	B3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adjustment for expected loss*		0.1	0.0	0.5	0.0	0.4	0.0	0.7	0.0
<b>Total adjustment</b>		<b>5.7</b>	<b>(28.8)</b>	<b>5.7</b>	<b>(47.3)</b>	<b>4.5</b>	<b>(32.0)</b>	<b>5.5</b>	<b>(39.3)</b>
<b>CET1 (Basel Framework)</b>		<b>35.7</b>	<b>331.9</b>	<b>37.1</b>	<b>290.4</b>	<b>36.2</b>	<b>335.2</b>	<b>34.0</b>	<b>283.2</b>
<b>CET1 ratio (Basel Framework)</b>		<b>10.76%</b>		<b>12.78%</b>		<b>10.80%</b>		<b>12.00%</b>	
Category C adjustments									
Undrawn corporate lending EAD	C1	0.0	(10.2)	0.0	(7.1)	0.0	(6.8)	0.0	(8.2)
Unsecured corporate lending LGD	C2	0.0	(28.8)	0.0	(17.8)	0.0	(18.0)	0.0	(14.9)
<b>Total other</b>		<b>0.0</b>	<b>(39.1)</b>	<b>0.0</b>	<b>(24.9)</b>	<b>0.0</b>	<b>(24.9)</b>	<b>0.0</b>	<b>(23.1)</b>
<b>Internationally comparable CET1 / RWA</b>		<b>35.7</b>	<b>292.8</b>	<b>37.1</b>	<b>265.6</b>	<b>36.2</b>	<b>310.3</b>	<b>34.0</b>	<b>260.1</b>
<b>Internationally comparable CET1 ratio**</b>		<b>12.19%</b>		<b>13.98%</b>		<b>11.67%</b>		<b>13.07%</b>	

Table A2 continues on the following page.

Australian major banks - detailed analysis of differences between Australian CET1 (APRA) and International comparable CET1 ratio

As at: \$ billions	Ref	ANZ 31/03/2014		CBA 30/06/2014		NAB 31/03/2014		WBC 31/03/2014	
		Capital	RWA	Capital	RWA	Capital	RWA	Capital	RWA
Other jurisdiction specific adjustments from International comparable CET1 ratios									
<b>UK Adjustment</b>									
<b>Total adjustment (standalone)</b>		<b>(1.9)</b>	<b>9.2</b>	<b>(3.5)</b>	<b>16.7</b>	<b>(2.3)</b>	<b>8.8</b>	<b>(2.8)</b>	<b>19.3</b>
CET1 (UK)		33.8	302.0	33.6	282.2	33.9	319.1	31.2	279.5
<b>CET1 ratio (UK)</b>		<b>11.20%</b>		<b>11.90%</b>		<b>10.61%</b>		<b>11.16%</b>	
<b>Singapore Adjustment</b>									
<b>Total adjustment (standalone)</b>		<b>0.0</b>	<b>7.6</b>	<b>0.0</b>	<b>14.6</b>	<b>0.0</b>	<b>4.5</b>	<b>0.0</b>	<b>15.3</b>
CET1 (Singapore)		35.7	300.5	37.1	280.1	36.2	314.9	34.0	275.5
<b>CET1 ratio (Singapore)</b>		<b>11.88%</b>		<b>13.25%</b>		<b>11.50%</b>		<b>12.34%</b>	
<b>Germany Adjustment</b>									
<b>Total adjustment (standalone)</b>		<b>(1.9)</b>	<b>0.0</b>	<b>(3.5)</b>	<b>0.0</b>	<b>(2.3)</b>	<b>0.0</b>	<b>(2.8)</b>	<b>0.0</b>
CET1 (Germany)		33.8	292.8	33.6	265.6	33.9	310.3	31.2	260.1
<b>CET1 ratio (Germany)</b>		<b>11.55%</b>		<b>12.65%</b>		<b>10.91%</b>		<b>11.99%</b>	

Source: Individual bank data, PwC analysis, 2014.

Refer to appendix G for abbreviated terms.

\*Note: Any adjustment to risk weighted assets also potentially reduces expected loss (EL), which in turn may reduce the deduction taken by Australian major banks for the excess of expected loss over eligible provisions. We have made one single adjustment to reduce this EL deduction, rather than allocating the benefit to specific adjustments. The total EL add back to CET1 is limited to the deduction already taken in APRA reporting. The impact in table A1 (in bps) of this item is included in the cumulative capital ratio, and so is a reconciling item between the sum of stand-alone adjustments and the cumulative impact.

\*\*Note: The ratios for CET1 (Canada), CET1 (Swiss) and CET1 (Japanese) are equal to the Internationally comparable CET1 ratio above.

# Appendix B Summary of differences and related adjustments

*Ref	Description	Nature of adjustment	Primary impact	Degree of judgement required
<b>Category A: APRA more conservative</b>				
A1	Mortgage LGD (20% floor)	Reduce LGD floor from 20 per cent floor to 15 per cent flat for residential mortgage portfolios.	↓RWA	
A2	Specialised lending	Move loan portfolio(s) from supervisory slotting to IRB approach	↓RWA	
A3	Intangible assets	Add back to CET1 additional deductions as required by APRA (e.g. capitalised expenses).	↑Capital	
A4	Equity holdings	Add back to CET1 additional deductions as required by APRA.	↑RWA↑Capital	
A5	Deferred tax assets	Add back to CET1 additional deductions as required by APRA.	↑RWA ↑Capital	
A6	Standardised – retail exposures	Reduce risk weights to 35 per cent for residential mortgages; and 100 per cent to 75 per cent for other retail loans.	↓RWA	
A7	Margin lending	Reduce risk weight below APRA 20 per cent (standardised portfolios).	↓RWA	
A8	Currency threshold adjustments	Increasing \$A threshold for inclusion in retail/SME portfolios.	↓RWA	
A9	Operational risk	Remove more conservative loss definitions and modelling assumptions.	↓RWA	
A10	Counterparty credit risk	Reduce EAD for some counterparty credit risk.	↓RWA	
A11	IRRBB	Remove IRRBB risk weighted assets from Pillar 1 capital requirements.	↓RWA	
<b>Category B: APRA less conservative (material or potentially material)</b>				
B1	Investment in own shares	Additional deductions for selected own shares held by group members.	↓Capital	
B2	Specialised lending – scaling factor	Apply 1.06 scaling factor for specialised lending.	↑RWA	

Summary of differences and related adjustments



*Ref	Description	Nature of adjustment	Primary impact	Degree of judgement required
<b>Category C: Other adjustments</b>				
C1	Undrawn corporate lending EAD	Reduce EAD on corporate undrawn exposures to 75 per cent.	↓RWA	
C2	Unsecured corporate lending LGD	Reduce LGD to 45 per cent for unsecured corporate credit.	↓RWA	
C3	Sovereign LGD floor 45%	Increase LGD to 45 per cent for sovereign exposures.	↑RWA	
C4	Foreseeable dividend	Deduct foreseeable dividend from CET1.	↓Capital	

*\*Note: Refer to appendices C and D for more detail.*

**KEY**

**Primary impact**

This represents the impact of the adjustment on the capital ratio.

	Improve capital ratio (decrease risk weighted assets or increase capital base)
	Reduce capital ratio (increase risk weighted asset or decrease capital base)

Note: The table above indicates the primary impact.

**Degree of judgement required**

Each adjustments includes an element of judgement to be made when quantifying its' impact on either the capital base or the risk weighted asset. The degree of judgement required is indicated using the scale below:

	Lower
	Higher



# Appendix C Areas where APRA’s approach to calculating CET1 differs from RCAP (Australia) and other adjustments for international comparability

The table below details the list of differences where APRA adopts a more conservative approach than the BCBS minimum capital requirements (“Category A”). A “more conservative” approach is deemed to be those differences leading to higher risk weighted assets or lower capital base.

In addition, these differences having been assessed as being applicable to the four major banks, and which are material or potentially material, have therefore been considered in the analysis (items marked with ✓).

Those differences identified as immaterial have not been examined further. Furthermore, any differences not applicable (n/a) to the four major banks for the purposes of this study, have also been identified. For full details on the treatment of these differences in the analysis performed, refer to the “Approach” section in appendix E.

## Category A: APRA more conservative

Ref	Description	Source Ref: RCAP	Applicability
A1	Mortgage LGD - 20% floor	P.17	✓
A2	Specialised lending – prescribe slotting approach	P.17	✓
A3	Intangible assets – additional deductions	10.1	✓
	Own shares trading limits – additional deductions	10.2	Immaterial
A4	Reciprocal cross-holdings – additional deductions	10.3	✓
A4	Equity holdings (financial entities) – additional deductions	10.4	✓
A5	Deferred tax assets – additional deductions	10.5	✓
	Basel III capital ratios transitional arrangements - not applied	10.6	n/a
	Basel III capital instruments transitional arrangements - not applied	10.7	n/a
	Basel III capital buffers transitional arrangements – not applied	10.8	n/a

Areas where APRA's approach to calculating CET1 differs from RCAP (Australia) and other adjustments for international comparability

<b>Ref</b>	<b>Description</b>	<b>Source Ref: RCAP</b>	<b>Applicability</b>
A6	Standardised retail exposures – risk weight 100%	10.9	✓
A6	Standardised retail mortgage risk – risk weight ≥ 35%	10.10	✓
A7	Margin lending exposures - risk weight ≥ 20%	10.11	✓
A7	Margin lending – IRB approach not allowed	10.12	✓
A8	Small business exposures - threshold of \$1M	10.13	✓
A8	Retail revolving exposure – threshold of \$100K	10.14	✓
A8	SMEs– \$50M turnover threshold	10.15	✓
	Foundation IRB - other collateral not recognised	10.16	FIRB banks only
	Foundation IRB - 100% CCF for commitments etc	10.17	FIRB banks only
	Excess eligible provisions – not included in capital	10.18	Total capital only
	Securitisation originating bank– wider definition	10.19	Immaterial
	Securitisation implicit support– additional prohibitions	10.20	Immaterial
	Operational risk foreign bank subsidiaries – additional conditions	10.21	n/a
	Operational risk AMA criteria	10.22	Immaterial
A9	Operational risk AMA quantitative standards	10.23	Low materiality (only quantified by one bank)
A9	Operational Risk - fraud related losses	10.24	Low materiality (only quantified by one bank)
A10	Counterparty Credit Risk -EAD > 0	10.25	Low materiality (only quantified by one bank)
	Correlation trading portfolio	10.26	Immaterial
A11	IRRBB - Pillar 1 inclusion	10.27	✓

Areas where APRA’s approach to calculating CET1 differs from RCAP (Australia) and other adjustments for international comparability

### **CATEGORY B: RCAP Findings – APRA less conservative (material or potentially material)**

The table below details the list of differences where APRA adopts a less conservative approach than the BCBS minimum capital requirements (“Category B”). A “less conservative” approach is deemed to be those differences leading to lower risk weighted assets or higher capital base. Note, these differences were identified as part of the RCAP findings as material or potentially material, and have therefore been considered in the analysis (items marked with ✓). A range of RCAP findings identified as immaterial have not been examined further.

<b>Ref</b>	<b>Description</b>	<b>Source Ref: RCAP</b>	<b>Applicability</b>
B1	Investment in own shares	P.24	✓
B2	1.06 scaling factor	P.30	✓
B3	Non-owner occupied mortgages (potentially material)	P.31	✓
	Minimum requirement for loss absorbency at the point of non-viability (material)	P.25	Total capital only
	Indirect funding of own capital instruments (not material)	P.13	Immaterial

### **CATEGORY C: Other adjustments for international comparability**

We have identified further adjustments for other recognised differences (such as risk modelling parameters and national discretions).

<b>Ref</b>	<b>Description</b>	<b>Cross ref:</b>	<b>Applicability</b>
<i>APRA more conservative – adjustments applied in deriving Internationally comparable CET1</i>			
C1	Undrawn corporate lending EAD	See section 4.1.2 of this report	✓
C2	Unsecured corporate lending LGD	See section 4.1.2 of this report	✓
<i>APRA less conservative than some jurisdictions – adjustments applied to jurisdiction comparatives as applicable (see Appendix D)</i>			
C3	Sovereign LGD floor 45%: increase LGD to 45 per cent for sovereign exposures (UK only)	n/a	✓
C4	Foreseeable dividend: deduct foreseeable dividend from CET1 (UK / Europe)	n/a	✓

# Appendix D Areas of difference between Australia and peer group jurisdictions (refers to section 3.4)

**Table D1 – Jurisdiction specific material differences**

*Ref	Description	Australia	UK	Germany	Switzerland	Canada	Singapore	Japan
<b>APRA more conservative</b>								
A1	LGD mortgage floor	20%	10%	10%	10%	10%	10%	10%
A2	Slotting required for specialised lending	Y: additionally APRA risk weights more conservative than BCBS	Partial: income producing real-estate only. UK risk weights equivalent to BCBS	N	N	N	Y: apply BCBS risk weights	N
A4	Equity holdings: full deduction, no threshold treatment	Y	N	N	N	N	N	N
A5	Deferred tax assets: full deduction, no threshold treatment	Y	N	N	N	N	N	N
A12	IRRBB: included in Pillar 1 RWAs	Y	N	N	N	N	N	N
C1	EAD for undrawn corporate	Y	N	N	N	N	N	N
C2	LGD for unsecured corporate	Y	N	N	N	N	N	N
<b>APRA less conservative</b>								
C3	Sovereign LGD floor of 45%	N	Y	N	N	N	N	N
C4	Deduct foreseeable dividend	N	Y	Y	N	N	N	N

Areas of difference between Australia and peer group jurisdictions (refers to section 3.4)

### ***Table D2 – Foreseeable dividend adjustments applied***

The table below summarises the foreseeable dividend adjustments which have been applied in Figure 3. Not all banks who deduct foreseeable dividends publish the impact of this adjustment on fully loaded CET1. In such cases we have used the adjustment disclosed to transitional CET1 and applied to fully loaded CET1. The difference is likely to be negligible.

<b>Bank</b>	<b>Reported fully loaded CET1</b>	<b>Foreseeable dividend adjustment</b>	<b>Internationally comparable CET1</b>
Nordea	15.20%	0.62%	15.82%
Intesa Sanpaolo	12.90%	0.09%	12.99%
Deutsche Bank AG	11.50%	0.14%	11.64%
HSBC Holdings Plc.	11.30%	0.13%	11.43%
Standard Chartered	10.70%	0.17%	10.87%
Societe Generale	10.20%	0.31%	10.51%
UniCredit	10.37%	0.03%	10.40%
BNP Paribas	10.00%	0.30%	10.30%
Barclays	9.90%	0.14%	10.04%

## Appendix E Analysis of international jurisdictions RCAPs

Jurisdictions which we have used for comparison purposes have had RCAP Reports completed. In this Appendix we have summarised the findings from those RCAPs for two purposes: (i) findings where a jurisdiction has not fully applied the Basel Framework (and so APRA may be more conservative if they have fully applied the Framework) and (ii) areas where that jurisdiction has been identified as being more conservative than the Basel Framework (and where APRA may be less conservative than that jurisdiction if they have applied the Basel minimum). We have assessed each finding and assessed whether it is a factor which requires adjustment in this study.

### Canada (June 2014)

#### RCAP differences

Area	Finding	PwC Comment
<b>Definition of capital</b>		
Inclusion of Preference Share Capital	Does not require preferred shares (accounted as liabilities & incl. in Additional Tier 1) to include the automatic conversion trigger at the capital ratio of 5.125 per cent of risk weighted assets (as required by Basel).	The focus of this report is on fully implemented CET1. Accordingly no adjustment has been made for this item.

#### Areas where the Canadian rules are stricter than the Basel minimum

Area	Finding	PwC Comment
Definition of capital and transitional arrangements	Office of the Superintendent of Financial Institutions (OSFI) expects all banking institutions to attain target capital ratios equal to or greater than the 2019 capital ratios from 2013.	Equivalent to APRA. Does not impact calculation of disclosed capital ratios. No adjustment made.
	The Canadian Capital Adequacy Requirements (CAR) Guideline requires that any discretionary repurchases of common shares are subject to the prior approval of the Superintendent.	Does not impact calculation of disclosed capital ratios. No adjustment made.
	Paragraphs 16 and 29 of the CAR Guideline require that amendments to the terms and conditions of additional Tier 1 and Tier 2 instruments are subject to the prior approval of the Superintendent.	Does not impact calculation of disclosed capital ratios. Not applicable to CET1. No adjustment made.
Counterparty credit risk (Annex 4)	OSFI's expectation that banks will provide documented justification for their use of two different pricing models, in the case where the pricing model used to calculate counterparty credit risk exposure is different to the pricing model used to calculate market risk over a short horizon.	Qualitative requirement. Does not impact calculation of disclosed capital ratios. No adjustment made.
	OSFI's expectation that banks will provide documented justification for their choice of calibration methods, when two different calibration methods are used for different parameters within the effective expected positive exposure model.	Qualitative requirement. Does not impact calculation of disclosed capital ratios. No adjustment made.
Market Risk	OSFI does not allow banks using the Standardised Approach to include unrated securities in the "qualifying" category for the computation of interest rate risk.	Australian major banks are advanced. Not applicable. No adjustment made.
	OSFI does not fully implement the futures-related arbitrage strategies that attract lower market risk capital charges.	OFSI approach similar to APRA. No adjustment made.

## ***Switzerland (June 2013)***

### ***Areas where the Swiss rules are potentially less strict than the Basel minimum***

The RCAP process identified 10 “negative deviations” from the Basel text for the “International Approach”, which had not yet been rectified by amendments to the Swiss rules at the time of the assessment. The RCAP measured the cumulative average impact of these items on CET1 as 5bps. We consider this immaterial for this exercise.

### ***Areas where the Swiss rules are stricter than the Basel minimum***

None noted in the RCAP.

## ***Europe (includes Germany: preliminary report October 2012)***

### ***Areas where the EU rules are potentially less strict than the Basel minimum***

The RCAP process identified a number of material and potentially material findings. The EU has challenged a number of the findings, and the assessment remains preliminary. We have not made any additional adjustments to reflect these findings (which may increase Australian major bank capital ratios in comparison to EU institutions).

### ***Areas where the European rules are stricter than the Basel minimum***

<b>Area</b>	<b>Finding</b>	<b>PwC Comment</b>
Credit risk: IRB	Basel allows the risk weight for short-term, self-liquidating letters of credit with unrated banks to be lower than the risk weight of the bank’s sovereign of incorporation; the Capital Requirements Regulation (CRR) does not include a similar provision.	Negligible

## ***Singapore (March 2013)***

### ***RCAP differences***

<b>Area</b>	<b>Finding</b>	<b>PwC Comment</b>
<b>Credit risk: Standardised Approach</b>		
Expanded list of eligible financial collateral	Structured deposits inclusion in the list of eligible financial collateral deemed inappropriate since the structured deposits are not comparable to deposits treated as “cash” and have higher risk.	Only impacts 2 per cent of the deposits in Singapore. Applicable to standardised approach. Negligible impact for Australian majors. No further adjustment necessary for Australian major bank ratios to compare to Singapore.
<b>Credit risk: Internal Ratings-Based Approach</b>		
Definition of Retail Exposures (PM)	Allows some exposures to individuals ineligible for retail exposure treatment to be risk weighted at 100 per cent rather than being considered corporate exposures category under the IRB Approach. Also does not restrict the residential mortgage treatment of retail exposures only to exposures to individuals that are owner-occupiers of the property.	Similar to APRA approach. Determined as potentially material in Singapore (some banks noted an increase in ratio, others a decrease). No further adjustment necessary for Australian major bank ratios to compare to Singapore.

### ***Areas where the Singapore rules are stricter than the Basel minimum***

<b>Area</b>	<b>Finding</b>	<b>PwC Comment</b>
Definition of capital and transitional arrangements	Explicit CET1 capital adequacy requirement, to be set at 6.5 per cent (as compared to the Basel III minimum of 4.5 per cent)	Does not impact calculation of disclosed capital ratios. No adjustment applicable for this report.
	Tier 1 capital adequacy requirement increased from the Basel III minimum of 6 per cent to 8 per cent.	As above.

## ***Japan (October 2012)***

### ***Areas where the Japanese rules are potentially less strict than the Basel minimum***

The RCAP process noted that all identified gaps were noted to be non-material. No further adjustment necessary for Australian major bank ratios to compare to Japan.

### ***Areas where the Japanese rules are stricter than the Basel minimum***

Extract from RCAP (Japan) Annex G: “The Japanese authorities have not listed any areas as super-equivalent compared to the Basel Framework.”



# Appendix F Extracts of rules pertaining to differences

The table below explains the differences between APRA’s implementation of Basel and the core Basel text, together with the approach we have adopted in this study. “APRA v BCBS differences” are extracted directly from the BCBS’s RCAP (Australia).

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
<b>Main Findings: Credit risk: Internal Ratings-Based approach</b>				
RCAP pg.17  A1	Mortgage LGD - 20% floor	<b>Basel II para 266:</b> Owing to the potential for very long-run cycles in house prices which short-term data may not adequately capture, during this transition period, LGDs for retail exposures secured by residential properties cannot be set below 10% for any sub-segment of exposures to which the formula in paragraph 328 is applied. During the transition period the Committee will review the potential need for continuation of this floor.	Basel Framework prescribes a 10% floor for loss-given default of exposures secured by residential mortgages that must be applied at the sub segment of exposures to which the risk weight asset formula is applied. APRA prescribes a 20% floor. This floor, however, is applied at the portfolio level. While this is not strictly in conformity with the letter and intent of the Basel Framework, the risk that loss-given-default estimates for sub-segments of exposures declining below the Basel 10% floor is deemed immaterial.	Apply a flat LGD assumption. See section 4.1.2 for further discussion of approach.
RCAP pg.17  A2	Specialised lending – prescribe slotting approach	<b>Basel II para 215 and 275:</b> 215. Under the IRB approach, banks must categorise banking-book exposures into broad classes of assets with different underlying risk characteristics, subject to the definitions set out below. The classes of assets are (a) corporate, (b) sovereign, (c) bank, (d) retail, and (e) equity. Within the corporate asset class, five sub-classes of specialised lending are separately identified. Within the retail asset class, three sub classes are separately identified. Within the corporate and retail asset classes, a distinct treatment for purchased receivables may also apply provided certain conditions are met.  275. Banks that do not meet the requirements for the estimation of PD under the corporate IRB approach will be required to map their internal grades to five supervisory categories, each of which is associated with a specific risk weight.	APRA took a decision not to allow any internal modelling of the specialised lending (SL) risk parameters and to prescribe the more conservative slotting approach for all SL sub-asset classes.	The difference between the risk weighted asset calculated using the supervisory slotting methodology and the risk weighted asset calculated using participant banks internal corporate models was deducted from the regulatory risk weighted asset.  The following modelling assumptions were used : <ul style="list-style-type: none"> <li>• Current internally calculated PD, LGD and EAD</li> <li>• Exposures were moved to the Corporate Other curve or the Other SME curve depending on their characteristics.</li> </ul> It is noted that the supervisory slotting approach is a method defined by the Basel

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
				Framework, and so arguably not a departure. However, as noted in RCAP (Australia), the unavailability of internal modelling approaches for this portfolio is an area of APRA conservatism. Additionally, many comparable jurisdictions (except Singapore) permit the use of internal modelling for SL. We have therefore concluded that it is appropriate to estimate the impact on risk weighted assets of using AIRB rather than slotting for this portfolio.
<b>Definition of capital and transitional arrangements</b>				
RCAP Annex 10.1 A3	Intangible assets – additional deductions	<b>Basel III para 67:</b> Goodwill and all other intangibles must be deducted in the calculation of Common Equity Tier 1, including any goodwill included in the valuation of significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation. With the exception of mortgage servicing rights, the full amount is to be deducted net of any associated deferred tax liability which would be extinguished if the intangible assets become impaired or derecognised under the relevant accounting standards. The amount to be deducted in respect of mortgage servicing rights is set out in the threshold deductions section below.	Basel requires exposures classified as intangible assets under International Financial Reporting Standards to be deducted from Common Equity Tier 1 (CET1) capital. In addition to these exposures, APRA requires the deduction from CET1 capital of certain other items which APRA deems should be treated in a similar fashion to intangibles (for example, capitalised expenses, capitalised transaction costs and mortgage servicing rights).	Add back to CET1 the additional deductions required by APRA. These items were identified from the following items included in capital adequacy reports submitted to APRA (ARF110). 2.6.1. Loan and lease origination fees and commissions paid to mortgage originators and brokers 2.6.2. Costs associated with debt raisings 2.6.3. Costs associated with issuing capital instruments 2.6.5. Securitisation start-up costs 2.6.6. Other capitalised expenses The above items were added to risk weighted assets, calculated at a risk weight of 100 per cent.
RCAP Annex 10.2 n/a	Own shares trading limits – additional deductions	<b>Basel III para 78:</b> All of a bank's investments in its own common shares, whether held directly or indirectly, will be deducted in the calculation of Common Equity Tier 1 (unless already derecognised under the relevant accounting standards). In addition, any own stock which the bank could be contractually	Basel requires that banks deduct investments in own shares (treasury stock) from CET1 capital. APRA also requires the deduction of any unused portion of any trading limits in own shares that have been agreed with APRA.	Participant banks calculated the portion of unused trading limits in their own shares which are deducted from CET1. This item was deemed immaterial, and so no adjustment to add back to CET1 has been applied in this study.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
	<p>obliged to purchase should be deducted in the calculation of Common Equity Tier 1. The treatment described will apply irrespective of the location of the exposure in the banking book or the trading book. In addition:</p> <ul style="list-style-type: none"> <li>Gross long positions may be deducted net of short positions in the same underlying exposure only if the short positions involve no counterparty risk.</li> <li>Banks should look through holdings of index securities to deduct exposures to own shares. However, gross long positions in own shares resulting from holdings of index securities may be netted against short position in own shares resulting from short positions in the same underlying index. In such cases the short positions may involve counterparty risk (which will be subject to the relevant counterparty credit risk charge).</li> </ul> <p>This deduction is necessary to avoid the double counting of a bank's own capital. Certain accounting regimes do not permit the recognition of treasury stock and so this deduction is only relevant where recognition on the balance sheet is permitted. The treatment seeks to remove the double counting that arises from direct holdings, indirect holdings via index funds and potential future holdings as a result of contractual obligations to purchase own shares.</p> <p>Following the same approach outlined above, banks must deduct investments in their own Additional Tier 1 in the calculation of their Additional Tier 1 capital and must deduct investments in their own Tier 2 in the calculation of their Tier 2 capital.</p>			
RCAP Annex 10.3  A4	Reciprocal cross-holdings – additional deductions	<p><b>Basel III para 79:</b></p> <p>Reciprocal cross holdings of capital that are designed to artificially inflate the capital position of banks will be deducted in full. Banks must apply a “corresponding deduction approach” to such investments in the capital of other banks, other financial institutions and insurance entities. This means the deduction should be applied to the same component of capital for which the capital would qualify if it was issued by the bank itself.</p>	Basel requires reciprocal cross-holdings in the capital of banking, financial and insurance entities to be deducted from CET1 capital. APRA requires the full deduction of all holdings of capital of banking, financial and insurance entities, regardless of whether they are reciprocal.	Any reciprocal cross holdings as disclosed on participant banks QIS were deducted from CET1.  Other deductions (not reciprocal) are treated as below.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
RCAP Annex 10.4  A4	Equity holdings (financial entities) – additional deductions	<p><b>Basel III para 80–81:</b></p> <p>80. The regulatory adjustment described in this section applies to investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation and where the bank does not own more than 10% of the issued common share capital of the entity. In addition:</p> <ul style="list-style-type: none"> <li>Investments include direct, indirect and synthetic holdings of capital instruments. For example, banks should look through holdings of index securities to determine their underlying holdings of capital.</li> <li>Holdings in both the banking book and trading book are to be included. Capital includes common stock and all other types of cash and synthetic capital instruments (e.g. subordinated debt). It is the net long position that is to be included (i.e. the gross long position net of short positions in the same underlying exposure where the maturity of the short position either matches the maturity of the long position or has a residual maturity of at least one year).</li> <li>Underwriting positions held for five working days or less can be excluded. Underwriting positions held for longer than five working days must be included.</li> <li>If the capital instrument of the entity in which the bank has invested does not meet the criteria for Common Equity Tier 1, Additional Tier 1, or Tier 2 capital of the bank, the capital is to be considered common shares for the purposes of this regulatory adjustment.</li> <li>National discretion applies to allow banks, with prior supervisory approval, to exclude temporarily certain investments where these have been made in the context of resolving or providing financial assistance to reorganise a distressed institution.</li> </ul> <p>81. If the total of all holdings listed above in aggregate exceed 10% of the bank's common equity (after applying all other regulatory adjustments in full listed prior to this one) then the amount above 10% is required to be deducted, applying a corresponding deduction approach. This means the deduction should be applied to the same component of capital for which the capital would qualify if it was issued by the bank itself. Accordingly, the amount to be deducted from common equity should be calculated as the total of all holdings which in</p>	Basel does not require the deduction of the aggregate amount of investments in the capital of banking, financial and insurance entities in which the bank owns less than 10% of the issued share capital of each entity where this (aggregate) amount is less than 10% of the bank's adjusted CET1 capital. APRA requires the full amount of such investments to be deducted from CET1 capital.	The portion of equity investments in financial and insurance entities below the 10 per cent threshold, as identified in each participant banks' QIS, was added back to CET1. A corresponding adjustment was added to risk weighted asset based on Basel defined risk weights.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		<p>aggregate exceed 10% of the bank's common equity (as per above) multiplied by the common equity holdings as a percentage of the total capital holdings. This would result in a common equity deduction which corresponds to the proportion of total capital holdings held in common equity. Similarly, the amount to be deducted from Additional Tier 1 capital should be calculated as the total of all holdings which in aggregate exceed 10% of the bank's common equity (as per above) multiplied by the Additional Tier 1 capital holdings as a percentage of the total capital holdings. The amount to be deducted from Tier 2 capital should be calculated as the total of all holdings which in aggregate exceed 10% of the bank's common equity (as per above) multiplied by the Tier 2 capital holdings as a percentage of the total capital holdings.</p>		
RCAP Annex 10.5  A5	Deferred tax assets – additional deductions	<p><b>Basel III para 87–89:</b> 87. Instead of a full deduction, the following items may each receive limited recognition when calculating Common Equity Tier 1, with recognition capped at 10% of the bank's common equity (after the application of all regulatory adjustments set out in paragraphs 67 to 85):</p> <ul style="list-style-type: none"> <li>• Significant investments in the common shares of unconsolidated financial institutions (banks, insurance and other financial entities) as referred to in paragraph 84;</li> <li>• Mortgage servicing rights (MSRs); and</li> <li>• DTAs that arise from temporary differences.</li> </ul> <p>88. On 1 January 2013, a bank must deduct the amount by which the aggregate of the three items above exceeds 15% of its common equity component of Tier 1 (calculated prior to the deduction of these items but after application of all other regulatory adjustments applied in the calculation of Common Equity Tier 1). The items included in the 15% aggregate limit are subject to full disclosure. As of 1 January 2018, the calculation of the 15% limit will be subject to the following treatment: the amount of the three items that remains recognised after the application of all regulatory adjustments must not exceed 15% of the CET1 capital, calculated after all regulatory adjustments. See Annex 2 for an example.</p> <p>89. The amount of the three items that are not deducted in the calculation of Common Equity Tier 1 will be risk weighted at 250%.</p>	<p>APRA did not adopt the threshold deduction approach for deferred tax assets for temporary differences, significant investments in unconsolidated financial entities and mortgage servicing rights. Instead, these exposures must be deducted in full from CET1 capital.</p>	<p>The portion of Deferred Tax Assets within the Basel threshold as calculated in the participant banks QIS was added back to CET1; a corresponding addition was added to risk weighted assets, at a weighting of 250 per cent.</p>

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
RCAP Annex 10.6  n/a	Basel III capital ratios transitional arrangements - not applied	<p><b>Basel III para 94:</b></p> <p>The transitional arrangements for implementing the new standards will help to ensure that the banking sector can meet the higher capital standards through reasonable earnings retention and capital raising, while still supporting lending to the economy. The transitional arrangements include:</p> <p>a) National implementation by member countries will begin on 1 January 2013. Member countries must translate the rules into national laws and regulations before this date. As of 1 January 2013, banks will be required to meet the following new minimum requirements in relation to risk weighted assets (RWAs):</p> <ul style="list-style-type: none"> <li>- 3.5% Common Equity Tier 1/RWAs;</li> <li>- 4.5% Tier 1 capital/RWAs, and</li> <li>- 8.0% total capital/RWAs.</li> </ul> <p>b) The minimum Common Equity Tier 1 and Tier 1 requirements will be phased in between 1 January 2013 and 1 January 2015. On 1 January 2013, the minimum Common Equity Tier 1 requirement will rise from the current 2% level to 3.5%. The Tier 1 capital requirement will rise from 4% to 4.5%. On 1 January 2014, banks will have to meet a 4% minimum Common Equity Tier 1 requirement and a Tier 1 requirement of 5.5%. On 1 January 2015, banks will have to meet the 4.5% Common Equity Tier 1 and the 6% Tier 1 requirements. The total capital requirement remains at the existing level of 8.0% and so does not need to be phased in. The difference between the total capital requirement of 8.0% and the Tier 1 requirement can be met with Tier 2 and higher forms of capital.</p> <p>See Basel III for paras (c) -(g) for further details of transitional arrangements.</p>	APRA did not provide transition for the Basel III minimum capital ratios, regulatory adjustments (deductions) or the treatment of minority interest and other capital held by third parties. These requirements came into effect on 1 January 2013.	This area of conservatism impacts absolute levels of capital required, but does not impact the actual calculation of a disclosed ratio for comparison purposes. Additionally the focus of this report is on a full implementation basis. Accordingly no adjustment has been made for this item.
RCAP Annex 10.7  n/a	Basel III capital instruments transitional arrangements - not applied	<p><b>Basel III para 95–96:</b></p> <p>95. Capital instruments that do not meet the criteria for inclusion in Common Equity Tier 1 will be excluded from Common Equity Tier 1 as of 1 January 2013. However, instruments meeting the following three conditions will be phased out over the same horizon described in paragraph</p>	Basel details transitional arrangements for capital instruments issued before 1 January 2013. APRA had more stringent transitional arrangements for capital instruments issued before this date.	The focus of this report is on fully implemented CET1. Accordingly no adjustment has been made for this item.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		94(g): (1) they are issued by a non-joint stock company <sup>33</sup> ; (2) they are treated as equity under the prevailing accounting standards; and (3) they receive unlimited recognition as part of Tier 1 capital under current national banking law.  96. Only those instruments issued before 12 September 2010 qualify for the above transition arrangements.		
RCAP Annex 10.8  n/a	Basel III capital buffers transitional arrangements – not applied	<p><b>Basel III para 133–135 and 150:</b></p> <p>133. The capital conservation buffer will be phased in between 1 January 2016 and year end 2018 becoming fully effective on 1 January 2019. It will begin at 0.625% of RWAs on 1 January 2016 and increase each subsequent year by an additional 0.625 percentage points, to reach its final level of 2.5% of RWAs on 1 January 2019. Countries that experience excessive credit growth should consider accelerating the build up of the capital conservation buffer and the countercyclical buffer. National authorities have the discretion to impose shorter transition periods and should do so where appropriate.</p> <p>134. Banks that already meet the minimum ratio requirement during the transition period but remain below the 7% Common Equity Tier 1 target (minimum plus conservation buffer) should maintain prudent earnings retention policies with a view to meeting the conservation buffer as soon as reasonably possible.</p> <p>135. The division of the buffer into quartiles that determine the minimum capital conservation ratios will begin on 1 January 2016. These quartiles will expand as the capital conservation buffer is phased in and will take into account any countercyclical buffer in effect during this period.</p> <p>150. The countercyclical buffer regime will be phased-in in parallel with the capital conservation buffer between 1 January 2016 and year end 2018 becoming fully effective on 1 January 2019. This means that the maximum countercyclical buffer requirement will begin at 0.625% of RWAs on 1 January 2016 and increase each subsequent year by an additional 0.625 percentage points, to reach its final maximum of 2.5% of RWAs on 1 January 2019. Countries that experience excessive credit growth during this transition period will consider accelerating the build up of the capital conservation buffer and the countercyclical buffer. In</p>	APRA will not implement the transitional arrangements for the capital conservation and countercyclical capital buffers. Authorised deposit-taking institutions (ADIs) will be required to meet these in full from 1 January 2016.	<p>This area of conservatism impacts absolute levels of capital required, but does not impact the actual calculation of a disclosed ratio for comparison purposes.</p> <p>Additionally the focus of this report is on a full implementation basis.</p> <p>Accordingly no adjustment has been made for this item.</p>

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
				addition, jurisdictions may choose to implement larger countercyclical buffer requirements. In such cases the reciprocity provisions of the regime will not apply to the additional amounts or earlier time-frames.
<b>Credit risk: Standardised Approach</b>				
RCAP Annex 10.9	Retail exposures – risk weight 100%	<b>Basel II para 69:</b> 69. Claims that qualify under the criteria listed in paragraph 70 may be considered as retail claims for regulatory capital purposes and included in a regulatory retail portfolio. Exposures included in such a portfolio may be risk-weighted at 75%, except as provided in paragraph 75 for past due loans.	APRA did not adopt the 75% risk weight for retail exposures; such exposures are risk weighted at 100%.	Reduce risk weighting to 75 per cent on relevant portfolios subject to the standardised approach.
A6				
RCAP Annex 10.10	Retail mortgage risk – risk weight ≥ 35%	<b>Basel II para 72:</b> 72. Lending fully secured by mortgages on residential property that is or will be occupied by the borrower, or that is rented, will be risk weighted at 35%. In applying the 35% weight, the supervisory authorities should satisfy themselves, according to their national arrangements for the provision of housing finance, that this concessionary weight is applied restrictively for residential purposes and in accordance with strict prudential criteria, such as the existence of substantial margin of additional security over the amount of the loan based on strict valuation rules. Supervisors should increase the standard risk weight where they judge the criteria are not met.	Basel allows claims secured by residential property to be risk weighted at 35%. APRA introduced a residential mortgage risk weight matrix whereby the risk weights for exposures secured by residential property range from 35% to 100%.	Reduce risk weighting to 35 per cent on relevant portfolios subject to the standardised approach.
A6				
RCAP Annex 10.11	Margin lending exposures - risk weight ≥ 20%	<b>Basel II Credit risk mitigation:</b> 145. The following collateral instruments are eligible for recognition in the simple approach: a) Cash (as well as certificates of deposit or comparable instruments issued by the lending bank) on deposit with the bank which is incurring the counterparty exposure b) Gold. c) Debt securities rated by a recognised external credit assessment institution where these are either: – at least BB- when issued by sovereigns or PSEs that are treated as sovereigns by the national supervisor; or – at least BBB- when issued by other entities (including	Basel II credit risk mitigation techniques would generally result in a minimal capital charge for margin lending exposures. Instead, APRA has set a 20% risk weight for margin lending exposures secured by listed instruments on recognised exchanges (unless subject to deduction under APS 111). Otherwise (e.g. where the underlying instruments are unlisted) the ADI must treat the exposure as a secured loan (unless subject to deduction under APS 111).	Reduce risk weighting to reflect impact of applying qualifying collateral to margin lending in line with Basel text.
A7				



RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		<p>banks and securities firms); or</p> <ul style="list-style-type: none"> <li>– at least A-3/P-3 for short-term debt instruments.</li> </ul> <p>d) Debt securities not rated by a recognised external credit assessment institution where these are:</p> <ul style="list-style-type: none"> <li>– issued by a bank; and</li> <li>– listed on a recognised exchange; and</li> <li>– classified as senior debt; and</li> <li>– all rated issues of the same seniority by the issuing bank must be rated at least BBB- or A-3/P-3 by a recognised external credit assessment institution; and</li> <li>– the bank holding the securities as collateral has no information to suggest that the issue justifies a rating below BBB- or A-3/P-3 (as applicable); and</li> <li>– the supervisor is sufficiently confident about the market liquidity of the security.</li> </ul> <p>e) Equities (including convertible bonds) that are included in a main index.</p> <p>f) Undertakings for Collective Investments in Transferable Securities (UCITS) and mutual funds where:</p> <ul style="list-style-type: none"> <li>– a price for the units is publicly quoted daily; and</li> <li>– the UCITS/mutual fund is limited to investing in the instruments listed in this paragraph</li> </ul> <p><i>Note: RCAP refers to Basel II ‘Credit Risk Mitigation’ as the relevant Basel reference. Only Basel II paragraph 145 has been included in this table.</i></p>		
<b>Credit risk: Internal Ratings-Based approach</b>				
RCAP Annex 10.12  A7	Margin lending – IRB approach not allowed	<p><b>Basel II para 215:</b> Under the IRB approach, banks must categorise banking-book exposures into broad classes of assets with different underlying risk characteristics, subject to the definitions set out below. The classes of assets are (a) corporate, (b) sovereign, (c) bank, (d) retail, and (e) equity. Within the corporate asset class, five sub-classes of specialised lending are separately identified. Within the retail asset class, three sub-classes are separately identified. Within the corporate and retail asset classes, a distinct treatment for purchased receivables may also apply provided certain conditions are met.</p>	<p>Under the Basel IRB approach, banks must categorise banking book exposures into five broad asset classes: (a) corporate, (b) sovereign, (c) bank, (d) retail and (e) equity. APRA does not include margin lending exposures in these IRB portfolios. The risk weights for such exposures are the same as under APRA’s standardised approach (refer to item 11 above). This results in a considerably higher capital charge than would be expected under the Basel IRB treatment.</p>	<p>As APRA does not permit inclusion of margin lending in the IRB portfolio participant banks were not able to quantify the risk weighted asset impact if these exposures to be measured using the IRB approach. The impact was quantified under the standardised approach in item 11 above.</p>

<b>RCAP / PwC Refs.</b>	<b>Description</b>	<b>Basel Ref.</b>	<b>APRA v BCBS difference</b>	<b>Approach taken in this study</b>
RCAP Annex 10.13 A8	Small business exposures - threshold of \$1M	<p><b>Basel II para 232:</b></p> <p>The exposure must be one of a large pool of exposures, which are managed by the bank on a pooled basis. Supervisors may choose to set a minimum number of exposures within a pool for exposures in that pool to be treated as retail.</p> <ul style="list-style-type: none"> <li>Small business exposures below €1 million may be treated as retail exposures if the bank treats such exposures in its internal risk management systems consistently over time and in the same manner as other retail exposures. This requires that such an exposure be originated in a similar manner to other retail exposures. Furthermore, it must not be managed individually in a way comparable to corporate exposures, but rather as part of a portfolio segment or pool of exposures with similar risk characteristics for purposes of risk assessment and quantification. However, this does not preclude retail exposures from being treated individually at some stages of the risk management process. The fact that an exposure is rated individually does not by itself deny the eligibility as a retail exposure.</li> </ul>	Basel II set a threshold of EUR 1 million for small business exposures to be included in the retail portfolio. APRA converted this threshold to Australian dollars on a 1:1 basis (effectively setting a lower threshold).	Participant banks calculated the risk weighted asset impact if the current retail threshold was increased to \$1.6m from \$1m.
RCAP Annex 10.14 A8	Retail revolving exposure – threshold of \$100K	<p><b>Basel II para 234:</b></p> <p>All of the following criteria must be satisfied for a sub-portfolio to be treated as a qualifying revolving retail exposure (QRRE). These criteria must be applied at a sub-portfolio level consistent with the bank's segmentation of its retail activities generally. Segmentation at the national or country level (or below) should be the general rule.</p> <ol style="list-style-type: none"> <li>The exposures are revolving, unsecured, and uncommitted (both contractually and in practice). In this context, revolving exposures are defined as those where customers' outstanding balances are permitted to fluctuate based on their decisions to borrow and repay, up to a limit established by the bank.</li> <li>The exposures are to individuals.</li> <li>The maximum exposure to a single individual in the sub-portfolio is €100,000 or less.</li> <li>Because the asset correlation assumptions for the QRRE risk weight function are markedly below those for the other retail risk weight function at low PD values, banks</li> </ol>	<p>Basel II sets the maximum exposure to a single individual in the qualifying revolving retail sub-portfolio at EUR 1 million. APRA converted this threshold to Australian dollars on a 1:1 basis (effectively setting a lower threshold). In addition, APRA does not allow exposures for business purposes to be included in the qualifying revolving retail portfolio. Such (otherwise qualifying) exposures fall into the other retail portfolio (or possibly the corporate portfolio), which results in a higher capital requirement.</p> <p><i>Note: Error noted in RCAP - per Basel II para 234: maximum exposure to single individual in the sub-portfolio is €100,000 or less.</i></p>	Participant banks calculated the risk weighted asset impact if the current retail threshold was increased to \$160k from \$100k.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		<p>must demonstrate that the use of the QRRE risk weight function is constrained to portfolios that have exhibited low volatility of loss rates, relative to their average level of loss rates, especially within the low PD bands. Supervisors will review the relative volatility of loss rates across the QRRE subportfolios, as well as the aggregate QRRE portfolio, and intend to share information on the typical characteristics of QRRE loss rates across jurisdictions.</p> <p>e) Data on loss rates for the sub-portfolio must be retained in order to allow analysis of the volatility of loss rates.</p> <p>f) The supervisor must concur that treatment as a qualifying revolving retail exposure is consistent with the underlying risk characteristics of the sub-portfolio.</p>		
RCAP Annex 10.15	SMEs– \$50M turnover threshold	<p><b>Basel II para 273:</b></p> <p>Under the IRB approach for corporate credits, banks will be permitted to separately distinguish exposures to SME borrowers (defined as corporate exposures where the reported sales for the consolidated group of which the firm is a part is less than €50 million) from those to large firms. A firm-size adjustment (i.e. <math>0.04 \times (1 - (S - 5) / 45)</math>) is made to the corporate risk weight formula for exposures to SME borrowers. S is expressed as total annual sales in millions of euros with values of S falling in the range of equal to or less than €50 million or greater than or equal to €5 million. Reported sales of less than €5 million will be treated as if they were equivalent to €5 million for the purposes of the firm-size adjustment for SME borrowers.</p>	The Basel II firm size adjustment for small and medium-sized entities that are risk weighted on the corporate curve cuts out for firms with turnover above EUR 50 million. APRA converted this threshold to Australian dollars on a 1:1 basis (effectively setting a lower threshold).	Participant banks calculated the impact on RWAs of increasing the SME threshold from \$50m turnover to \$80m.
A8				
RCAP Annex 10.16	Foundation IRB - other collateral not recognised	<p><b>Basel II para 295 :</b></p> <p>The methodology for determining the effective LGD under the foundation approach for cases where banks have taken eligible IRB collateral to secure a corporate exposure is as follows.</p> <ul style="list-style-type: none"> <li>Exposures where the minimum eligibility requirements are met, but the ratio of the current value of the collateral received (C) to the current value of the exposure (E) is below a threshold level of C* (i.e. the required minimum collateralisation level for the exposure) would receive the appropriate LGD for unsecured exposures or those</li> </ul>	Although Basel II allows other collateral to be recognised under the foundation IRB approach, APRA does not recognise other collateral in these circumstances. Under APRA's standards, if collateral does not meet the requirements for eligible financial collateral, financial receivables or residential or commercial real estate, the exposure must be considered unsecured and assigned a higher loss-given-default estimate under the foundation IRB approach.	No participant banks use the Foundation IRB approach for these portfolios – no adjustment made for this item.
n/a				

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		<p>secured by collateral which is not eligible financial collateral or eligible IRB collateral.</p> <ul style="list-style-type: none"> <li>Exposures where the ratio of C to E exceeds a second, higher threshold level of C** (i.e. the required level of over-collateralisation for full LGD recognition) would be assigned an LGD according to the following table.</li> </ul> <p>The following table displays the applicable LGD and required over collateralisation levels for the secured parts of senior exposures:</p> <p>(Also see paras 521–522)</p>		
RCAP Annex 10.17  n/a	Foundation IRB - 100% CCF for commitments etc	<p><b>Basel II para 312:</b></p> <p>312. A CCF of 75% will be applied to commitments, NIFs and RUFs regardless of the maturity of the underlying facility. This does not apply to those facilities which are uncommitted, that are unconditionally cancellable, or that effectively provide for automatic cancellation, for example due to deterioration in a borrower's creditworthiness, at any time by the bank without prior notice. A CCF of 0% will be applied to these facilities.</p> <p>(also see paras 366–367 for purchased receivables)</p>	Under the foundation IRB approach, banks may assign a 75% credit conversion factor for commitments, note issuance facilities and revolving underwriting facilities. APRA has set the standard supervisory credit conversion factor to 100% for such exposures.	No participant banks use the Foundation IRB approach for these portfolios – no adjustment made for this item.
RCAP Annex 10.18  n/a	Excess eligible provisions – not included in capital	<p><b>Basel II para 384–385 (and 43):</b></p> <p>384. As specified in paragraph 43, banks using the IRB approach must compare the total amount of total eligible provisions (as defined in paragraph 380) with the total EL amount as calculated within the IRB approach (as defined in paragraph 375). In addition, paragraph 42 outlines the treatment for that portion of a bank that is subject to the standardised approach to credit risk when the bank uses both the standardised and IRB approaches.</p> <p>385. Where the calculated EL amount is lower than the provisions of the bank, its supervisors must consider whether the EL fully reflects the conditions in the market in which it operates before allowing the difference to be included in Tier 2 capital. If specific provisions exceed the EL amount on defaulted assets this assessment also needs to be made before using the difference to offset the EL amount on non-defaulted assets.</p>	Banks must compare the total amount of eligible provisions with a total expected loss amount. Where the expected loss amount is less than the provision amount, Basel says that the difference may be included in Tier 2 capital subject to supervisors' satisfaction that the bank's expected loss fully reflects the conditions in the market. APRA is arguably more conservative in that prohibits any excess provision related to defaulted exposures to be included in Tier 2 capital.	This impacts Total Capital. An impact for this difference was not calculated for this study as the focus is on CET1.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		43. Under the internal ratings-based (IRB) approach, the treatment of the 1988 Accord to include general provisions (or general loan-loss reserves) in Tier 2 capital is withdrawn. Banks using the IRB approach for securitisation exposures or the PD/LGD approach for equity exposures must first deduct the EL amounts subject to the corresponding conditions in paragraphs 563 and 386, respectively. Banks using the IRB approach for other asset classes must compare (i) the amount of total eligible provisions, as defined in paragraph 380, with (ii) the total expected losses amount as calculated within the IRB approach and defined in paragraph 375. Where the total expected loss amount exceeds total eligible provisions, banks must deduct the difference. Deduction must be on the basis of 50% from Tier 1 and 50% from Tier 2. Where the total expected loss amount is less than total eligible provisions, as explained in paragraphs 380 to 383, banks may recognise the difference in Tier 2 capital up to a maximum of 0.6% of credit risk weighted assets. At national discretion, a limit lower than 0.6% may be applied.		
<b>Credit risk: securitisation</b>				
RCAP Annex 10.19  n/a	Securitisation originating bank– wider definition	<b>Basel II para 543:</b> For risk-based capital purposes, a bank is considered to be an originator with regard to a certain securitisation if it meets either of the following conditions:  a) The bank originates directly or indirectly underlying exposures included in the securitisation; or b) The bank serves as a sponsor of an asset-backed commercial paper (ABCP) conduit or similar programme that acquires exposures from third-party entities. In the context of such programmes, a bank would generally be considered a sponsor and, in turn, an originator if it, in fact or in substance, manages or advises the programme, places securities into the market, or provides liquidity and/or credit enhancements.	Basel defines an originating bank as one that directly or indirectly originates exposures in the securitisation or one that sponsors an asset-backed commercial paper conduit or similar program that acquires exposures from third-party entities. APRA's definition is wider and includes ADIs that manage non-asset backed commercial paper structures as the definition of origination is not dependent on the structure of the securitisation but rather on the ADI's role.	Participant banks estimated that the risk weighted asset benefit is immaterial should the narrower BCBS definition of originating bank be applied.
RCAP Annex 10.20	Securitisation implicit support– additional	<b>Basel II para 554(f):</b> An originating bank may exclude securitised exposures from the calculation of risk weighted assets only if all of the following conditions have been met. Banks meeting these	Basel defines implicit support (which is prohibited). APRA goes beyond the Basel definition and also prohibits an increase in yield as a result of changes in the credit rating of the originator.	This difference impacts transaction structure and documentation, as such any RWA benefit is not quantifiable.

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
n/a	prohibitions	<p>conditions must still hold regulatory capital against any securitisation exposures they retain.</p> <p>f) The securitisation does not contain clauses that (i) require the originating bank to alter systematically the underlying exposures such that the pool's weighted average credit quality is improved unless this is achieved by selling assets to independent and unaffiliated third parties at market prices; (ii) allow for increases in a retained first loss position or credit enhancement provided by the originating bank after the transaction's inception; or (iii) increase the yield payable to parties other than the originating bank, such as investors and third-party providers of credit enhancements, in response to a deterioration in the credit quality of the underlying pool.</p>		
<b>Operational risk: Advanced Measurement Approaches</b>				
RCAP Annex 10.21	Foreign bank subsidiaries – additional conditions	<p><b>Basel II para 656:</b></p> <p>A bank adopting the AMA may, with the approval of its host supervisors and the support of its home supervisor, use an allocation mechanism for the purpose of determining the regulatory capital requirement for internationally active banking subsidiaries that are not deemed to be significant relative to the overall banking group but are themselves subject to this Framework in accordance with Part 1. Supervisory approval would be conditional on the bank demonstrating to the satisfaction of the relevant supervisors that the allocation mechanism for these subsidiaries is appropriate and can be supported empirically. The board of directors and senior management of each subsidiary are responsible for conducting their own assessment of the subsidiary's operational risks and controls and ensuring the subsidiary is adequately capitalised in respect of those risks.</p>	<p>Basel allows foreign bank subsidiaries to use the parent bank's allocation mechanism for the purpose of determining the regulatory capital requirement for operational risk at that level if the host regulator accepts the mechanism. APRA has set out detailed conditions and criteria a foreign bank subsidiary must satisfy before its allocation mechanism is recognised for regulatory capital purposes. This includes requirements around sufficiency of allocated capital, appropriate risk-sensitivity of the allocation mechanism, controls on data and governance and the operational risk management framework aligning to the Advanced Measurement Approaches (AMA) (not simply the allocation mechanism). APRA also requires that the home supervisor's requirements (relating to the AMA) are sufficiently similar to those of APRA.</p>	<p>Not applicable - none of the participant banks are subsidiaries of foreign parent banks.</p>
n/a				

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
RCAP Annex 10.22  n/a	Operational risk AMA criteria	<p><b>Basel II para 664:</b> 664. In order to qualify for use of the AMA a bank must satisfy its supervisor that, at a minimum:</p> <ul style="list-style-type: none"> <li>• Its board of directors and senior management, as appropriate, are actively involved in the oversight of the operational risk management framework;</li> <li>• It has an operational risk management system that is conceptually sound and is implemented with integrity; and</li> <li>• It has sufficient resources in the use of the approach in the major business lines as well as the control and audit areas.</li> </ul>	<p>Basel II includes specific risk management and governance criteria for use of the AMA. APRA's requirements are in some respects more precise and detailed including specific requirements relating to Board and senior management responsibilities and the operational risk management function.</p>	<p>This difference is seen procedural in nature and as such not quantifiable in RWA or capital terms.</p>
RCAP Annex 10.23  A9	Operational risk AMA quantitative standards	<p><b>Basel II para 667–668:</b> 667. Given the continuing evolution of analytical approaches for operational risk, the Committee is not specifying the approach or distributional assumptions used to generate the operational risk measure for regulatory capital purposes. However, a bank must be able to demonstrate that its approach captures potentially severe 'tail' loss events. Whatever approach is used, a bank must demonstrate that its operational risk measure meets a soundness standard comparable to that of the internal ratings based approach for credit risk, (i.e. comparable to a one year holding period and a 99.9th percentile confidence interval).  668. The Committee recognises that the AMA soundness standard provides significant flexibility to banks in the development of an operational risk measurement and management system. However, in the development of these systems, banks must have and maintain rigorous procedures for operational risk model development and independent model validation. Prior to implementation, the Committee will review evolving industry practices regarding credible and consistent estimates of potential operational losses. It will also review accumulated data, and the level of capital requirements estimated by the AMA, and may refine its proposals if appropriate.</p>	<p>Basel II sets quantitative standards regarding AMA soundness. APRA explicitly requires a number of elements regarding conservatism in modelling choices and assumptions including comprehensive and rigorous sensitivity analysis. These requirements are also applied to changes to the operational risk measurement system. APRA also requires ADIs to consider and document evolving industry practices in assessing its own practices.</p>	<p>Participant banks were asked to quantify the impact of not applying the APRA conservatism in modelling assumptions.</p>

RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
RCAP Annex 10.24  A9	Operational Risk - fraud related losses	<p><b>Basel II para 673:</b> To qualify for regulatory capital purposes, a bank's internal loss collection processes must meet the following standards:</p> <ul style="list-style-type: none"> <li>• To assist in supervisory validation, a bank must be able to map its historical internal loss data into the relevant level 1 supervisory categories defined in Annexes 8 and 9 and to provide these data to supervisors upon request. It must have documented, objective criteria for allocating losses to the specified business lines and event types. However, it is left to the bank to decide the extent to which it applies these categorisations in its internal operational risk measurement system.</li> <li>• A bank's internal loss data must be comprehensive in that it captures all material activities and exposures from all appropriate sub-systems and geographic locations. A bank must be able to justify that any excluded activities or exposures, both individually and in combination, would not have a material impact on the overall risk estimates. A bank must have an appropriate de minimis gross loss threshold for internal loss data collection, for example €10,000. The appropriate threshold may vary somewhat between banks, and within a bank across business lines and/or event types. However, particular thresholds should be broadly consistent with those used by peer banks.</li> <li>• Aside from information on gross loss amounts, a bank should collect information about the date of the event, any recoveries of gross loss amounts, as well as some descriptive information about the drivers or causes of the loss event. The level of detail of any descriptive information should be commensurate with the size of the gross loss amount.</li> <li>• A bank must develop specific criteria for assigning loss data arising from an event in a centralised function (e.g. an information technology department) or an activity that spans more than one business line, as well as from related events over time.</li> <li>• Operational risk losses that are related to credit risk and have historically been included in banks' credit risk databases (e.g. collateral management failures) will</li> </ul>	Basel provides guidance on operational risk losses that are related to credit risk. In addition to the Basel guidance, APRA requires fraud perpetrated by parties other than the borrower to be treated as operational risk (rather than credit-related) for the purpose of determining regulatory capital.	Participant banks were asked to quantify the impact of not applying the APRA requirement of allocating fraud perpetrated by parties other than borrowers of the bank.



RCAP / PwC Refs.	Description	Basel Ref.	APRA v BCBS difference	Approach taken in this study
		<p>continue to be treated as credit risk for the purposes of calculating minimum regulatory capital under this Framework. Therefore, such losses will not be subject to the operational risk capital charge.<sup>109</sup> Nevertheless, for the purposes of internal operational risk management, banks must identify all material operational risk losses consistent with the scope of the definition of operational risk (as set out in paragraph 644 and the loss event types outlined in Annex 9), including those related to credit risk. Such material operational risk-related credit risk losses should be flagged separately within a bank's internal operational risk database. The materiality of these losses may vary between banks, and within a bank across business lines and/or event types. Materiality thresholds should be broadly consistent with those used by peer banks.</p> <ul style="list-style-type: none"> <li>Operational risk losses that are related to market risk are treated as operational risk for the purposes of calculating minimum regulatory capital under this Framework and will therefore be subject to the operational risk capital charge.</li> </ul>		
<b>Counterparty credit risk</b>				
RCAP Annex 10.25	Counterparty Credit Risk - EAD > 0	<p><b>Basel II Annex 4 para 7–8:</b></p> <p>7. Under all of the three methods identified in this Annex, when a bank purchases credit derivative protection against a banking book exposure, or against a counterparty credit risk exposure, it will determine its capital requirement for the hedged exposure subject to the criteria and general rules for the recognition of credit derivatives, i.e. substitution or double default rules as appropriate. Where these rules apply, the exposure amount or EAD for counterparty credit risk from such instruments is zero.</p> <p>8. The exposure amount or EAD for counterparty credit risk is zero for sold credit default swaps in the banking book where they are treated in the framework as a guarantee provided by the bank and subject to a credit risk charge for the full notional amount.</p>	Basel sets the exposure at default estimate for counterparty credit risk for credit derivative protection at zero. APRA imposes a more stringent requirement as the exposure at default amount for such exposures is not set at zero.	Participant banks were asked to quantify the risk weighted asset impact of changing the EAD for credit derivative protection at zero.
A10				

<b>RCAP / PwC Refs.</b>	<b>Description</b>	<b>Basel Ref.</b>	<b>APRA v BCBS difference</b>	<b>Approach taken in this study</b>
<b>Market risk</b>				
RCAP Annex 10.26  n/a	Correlation trading portfolio	<p><b>Revisions to the Basel II market risk framework (updated December 2010):</b></p> <p>Paragraph 709(ii) of the Basel II Framework will be changed as follows, and a new paragraph 709(ii-1-) will be introduced. Changed and new wording is underlined.</p> <p>709(ii). The minimum capital requirement is expressed in terms of two separately calculated charges, one applying to the “specific risk” of each security, whether it is a short or a long position, and the other to the interest rate risk in the portfolio (termed “general market risk”) where long and short positions in different securities or instruments can be offset. The bank must, however, determine the specific risk capital charge for the correlation trading portfolio as follows: The bank computes (i) the total specific risk capital charges that would apply just to the net long positions from the net long correlation trading exposures combined, and (ii) the total specific risk capital charges that would apply just to the net short positions from the net short correlation trading exposures combined. The larger of these total amounts is then the specific risk capital charge for the correlation trading portfolio.</p>	Given that managing a correlation trading portfolio introduces additional complexity and risk, ADIs must seek APRA’s approval in order to use the more favourable capital treatment.	Participant banks were asked to quantify the impact of applying more favourable BCBS treatment for correlation trading portfolios. Participants determined the impact was not material.
<b>Pillar 2</b>				
RCAP Annex 10.27  A11	IRRBB - Pillar 1 inclusion	<p><b>Basel II para 763–764:</b></p> <p>763. The revised guidance on interest rate risk recognises banks’ internal systems as the principal tool for the measurement of interest rate risk in the banking book and the supervisory response. To facilitate supervisors’ monitoring of interest rate risk exposures across institutions, banks would have to provide the results of their internal measurement systems, expressed in terms of economic value relative to capital, using a standardised interest rate shock.</p> <p>764. If supervisors determine that banks are not holding capital commensurate with the level of interest rate risk, they must require the bank to reduce its risk, to hold a specific additional amount of capital or some combination of the two. Supervisors should be particularly attentive to the sufficiency</p>	Basel includes interest rate risk in the banking book (IRRBB) as a Pillar 2 consideration. APRA requires a mandatory Pillar 1 capital charge for IRRBB for those ADIs using the IRB approach to credit risk and the AMA for operational risk.	The current Pillar 1 IRRBB risk weighted asset was reduced to zero.

<b>RCAP / PwC Refs.</b>	<b>Description</b>	<b>Basel Ref.</b>	<b>APRA v BCBS difference</b>	<b>Approach taken in this study</b>
	<p>of capital of 'outlier banks' where economic value declines by more than 20% of the sum of Tier 1 and Tier 2 capital as a result of a standardised interest rate shock (200 basis points) or its equivalent, as described in the supporting document Principles for the Management and Supervision of Interest Rate Risk.</p>			

# Appendix G Names of Australian banks and jurisdictional peers used in this analysis

## Australian major banks

No.	Bank full name	Abbreviation
1	Australia and New Zealand Banking Group	ANZ
2	Commonwealth Bank of Australia	CBA
3	National Australia Bank Ltd.	NAB
4	Westpac Banking Corporation	WBC

## Jurisdictional peers in Canada, Singapore, UK, Japan, Switzerland and Germany

No.	Jurisdiction	Bank full name	Abbreviation
1	Canada	Royal Bank Canada	RBC
2	Canada	Toronto-Dominion Bank	TD
3	Canada	The Bank of Nova Scotia	BNS
4	Canada	Bank of Montreal	BMO
5	Canada	Canadian Imperial Bank of Commerce	CIBC
6	Singapore	DBS Group Holdings Ltd	DBS
7	Singapore	Oversea-Chinese Banking Corporation Limited	OCBC
8	UK	HSBC Holdings PLC	HSBC
9	UK	Barclays PLC	BARC
10	UK	Royal Bank of Scotland Group PLC	RBS
11	UK	Lloyds Banking Group PLC	LLOY
12	UK	Standard Chartered Bank	SCB
13	Japan	Mitsubishi UFJ Financial Group Inc.	MUFG
14	Japan	Sumitomo Mitsui Trust Holdings Inc.	SMTH
15	Switzerland	Credit Suisse Group AG	Credit Suisse
16	Switzerland	UBS Group AG	UBS
17	Germany	Deutsche Bank AG	DBK
18	Germany	Commerzbank AG	CBK

## Appendix H Glossary

ABA	Australian Bankers' Association
ABCP	Asset-backed commercial paper
ADC	Acquisition, development and construction
ADI	Authorised deposit-taking institution
Advanced banks	Banks which have been accredited to use their own models for calculating risk weighted assets
AIRB (or Advanced IRB)	Advanced internal ratings-based approach
AMA	Advanced measurement approaches
APRA	Australian Prudential Regulation Authority
Basel Framework	Basel Framework includes Basel II, Basel 2.5 and Basel III and refers a number of documents. Refer to the BCBS' Regulatory Consistency Assessment Programme (RCAP), Assessment of Basel III regulations – Canada June 2014, Annex 3: List of capital standards under the Basel Framework used for assessment.
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
CAR	Canadian Capital Adequacy Requirements
CCF	Credit conversion factor
CET1	Common Equity Tier 1
CET1 (APRA)	Measurement using applicable Australian rules
CET1 (Basel Framework)	Measurement using Basel Framework rules
CET1 (Canadian)	Australian and Canadian banks on a CET1 (Canadian) basis
CET1 (German)	Australian and German banks on a CET1 (German) basis
CET1 (Japanese)	Australian and Japanese banks on a CET1 (Japanese) basis
CET1 (Singaporean)	Australian and Singaporean banks on a CET1 (Singaporean) basis
CET1 (Swiss)	Australian and Swiss banks on a CET1 (Swiss) basis
CET1 (UK)	Australian and UK banks on a CET1 (UK) basis
CRR	Capital Requirements Regulation
D-SIB	Domestic systemically important bank
DTAs	Deferred tax assets
EAD	Exposure at default
EL	Expected loss
FIRB (or Foundation IRB)	Foundation internal ratings-based approach

## Glossary

FSI	Financial System Inquiry
G-SIB	Global systemically important bank
HVCRE	High-volatility commercial real estate
Internationally comparable CET1	Measurement using Basel Framework rules and allowing for national regulatory treatments which would impact on how those rules are implemented in that jurisdiction by comparison to international norms
IRB	Internal Ratings-Based
IRRBB	Interest rate risk in the banking book
LGD	Loss-given-default
LVR	Loan to value ratio
MSR	Mortgage servicing rights
NIF	Note issuance facility
OSFI	Office of the Superintendent of Financial Institutions
PD	Probability of default
PSE	Public sector entity
QRRE	Qualifying revolving retail exposures
RCAP	Regulatory Consistency Assessment Programme
RUF	Revolving underwriting facility
RWA	Risk weighted assets
SL	Specialised lending
SME	Small- and medium-sized entity
UCITS	Undertakings for collective investments in transferable securities

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