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Submission to the Financial System Inquiry

Research into the integrity of Australian Banks' reporting of international comparisons of Common Equity Tier 1 ("CET1")

Is APRA really as hard as the Majors say and do they deserve a 2-3% capital uplift?

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Executive Summary

The submission herein is an updated version of an earlier report, a copy of which was supplied to the FSI. The submission relates to the first observation outlined in the FSI's interim report wherein the 4 major banks are acknowledged as too big too fail and enjoy a capital advantage over their smaller ADI competitors through the use of IRB models under Basel II. Nevertheless and based on illogical comparisons the 4 majors continue to present to shareholders, investors and the market their capital ratios, when harmonised with international peers, as being higher than reported under APRA regulation and supervision.

The Australian Prudential Regulation Authority (APRA) makes and enforces the rules which govern the capital adequacy of Australian banks. An Australian bank's regulatory capital is the sum of its 'Tier 1' and 'Tier 2' capital, net of all specified 'deductions'.

Australia's 4 Major banks work within the Basel Committee's Advanced Internal Ratings Based approach which allows them to deduce through history and mathematical algorithms the relevant risk weighting they need to apply to balance sheet assets. The rest of Australia's banking industry (MBL being the exception) does not have the luxury of implying and applying their own capital weights rather they work under APRA's standardised system of mandated risk weights when calculating their capital.

On the face of it this is an advantageous situation which allows the Majors to hold less capital for any dollar of assets than the rest of the Australian banking sector. The flip side to this special status for the Majors is an APRA mandated increase in capital they have to carry because of the status they carry as Domestically Systemically Important banks ("D-SIBs")

The research on which this summary rests however looks at the persistent situation where Australia's Big 4 major banks (The Majors) consistently in the presentation of their annual and half yearly accountants together with many investor presentations, characterise their capital in a manner such that when compared to international counterparts an uplift in total capital held over and above the APRA mandated capital calculations is highlighted.

The impact of these calculations is to imply the Majors are carrying more capital than is required and to give the impression that APRA's measurements are far harsher than if these banks were somehow transported to the UK and regulated by the Bank of England or some other jurisdiction.

Indeed the Majors typically assert in their investor presentations that when comparing their capital ratios to overseas banks, investors should make an upward adjustment of between 182bps and 290bps in order to harmonise capital ratios calculated under APRA requirements to Basel Committee on Bank Regulation "Basel III" minimum requirements.

The question that then arises from this practice is whether or not this is a fair representation of the situation or whether, on the other hand, Australia's Majors are quoting an uplift in capital that is unsupported by the evidence?

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In this paper we will discuss APRA's approach to measuring capital, where it differs from the global standard, the BCBS Regulatory Consistency Assessment Program (RCAP) review of the impact of these differences and then posit what we believe the impact of these deviations from the international standard mean for the capital position of Australia's major banks.

However; it is worth stating upfront that the results of the research into the publically available information from the Majors and APRA lead to the conclusion that the attempts by Australian D-SIBs, the Majors, to portray capital harmonisation as a straightforward calculation process that simply assumes that other jurisdictions only require minimum standards and makes no allowances for IRB model variations, differences in definition of capital, allowable deductions etc. and Pillar 2 supervisory powers are unlikely to produce accurate nor meaningful comparisons with these jurisdictions.

Moreover; the lack of disclosure and of transparency in the international regulatory framework further inhibits attempts at meaningful inter-jurisdictional comparisons. The Basel Committee on Banking Supervision sets out three Pillars for a sound financial system. The first imposes industrywide capital requirements, and the third draws on market discipline by forcing banks to show how they meet those requirements, while the second imposes bank specific requirements to account for individual bank risk profiles. Disclosing bank-specific capital needs, which are set by national regulators, isn't required under Basel III or European capital rules. Pillar 2 requirements can in some cases more than double the minimum amount of equity and debt a bank must hold to absorb losses.

With only Denmark currently disclosing its Pillar 2 requirements (and Sweden preparing to follow suit) any attempt at comparing capital ratios of banks across differing jurisdictions runs the very real risk of being totally invalid due to the unavailability of the required data. The fall-back position of any bank in any jurisdiction that attempts such a comparison would seem to be to compare its own actual known CET1 capital to the minimum Basel 111 requirements in the other jurisdiction; which not surprisingly, in almost all cases, would result in a significant uplift in the "home" bank's capital ratio when "harmonised" to the other jurisdiction. Of course, such a self-serving (for gaining cheaper funding from capital markets) comparison would be totally spurious and unethical.

Indeed, and as outlined in more detail in this report, the capital adjustments made by each Major relating to the recognition of equity investments, deferred tax, interest rate risk in the banking book, risk weighted assets of residential mortgages and specialised lending appear to lack a valid basis for the quantum of the CET1 adjustments. Indeed no detailed information is provided by the Majors to support their case (Refer to Table 1).

Equally, the attempts by Australia's Majors to portray capital harmonisation as a straightforward calculation process that simply assumes that other jurisdictions only require minimum standards and makes no allowances for IRB model variations, differences in definition of capital, allowable deductions, regulatory supervision etc. are unlikely to produce valid, accurate nor meaningful

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comparisons and therefore should not be used as any type of financial measurement tool. (Refer to Table 2).

For this reason we believe that the capital portrayal by the majors of the comparison of APRA regulated capital to offshore capital offers nothing to the debate of the true level of capital that the Major's hold compared to offshore counterparts.

CBA's CEO, Ian Narev, stated at the bank's results media briefing on 13th August 2014 that,

> *"...it is important that [the capital positions of Australia's banks] be shown in the best possible light [so as to gain the lowest possible funding pricing.]"*

The danger is that comparing the capital positions of banks in multiple jurisdictions that rely on their own internal risk models (many of which are vendor models that internal bank staffs are likely to have varying degrees of understanding of all of the model parameters) is likely to result in highly inaccurate comparisons; particularly given that individual banks have different business models, varying appetites for risk-taking, varying lengths of data windows for risk calculations, and are unlikely to arrive at identical risk assessments of millions of individual exposures. Moreover; without knowing the supervisory requirements under Pillar 2 where additional capital is imposed on banks by regulators, then there is simply a lack of certainty all round. Add into the mix counterparty exposures and in some cases substantial over the counter derivative exposures and it is understandable that in order to make a harmonised capital calculation exercise manageable the investment banks and accounting firms to whom the Australian major banks have sub-contracted out the capital comparison have found it necessary to try to harmonise the APRA compliant capital of the Majors to minimum Basel III Pillar 1 standards but not the actual rules or regulations of a particular jurisdiction added through Pillar 2.

The reality is likely to be that very few, if any, regulators and therefore banks in any jurisdiction are operating at the minimum Basel III Pillar 1 standards; rendering the harmonised capital comparisons of the Majors to be completely fictitious and potentially highly misleading. In order to gain short-term funding advantages in international capital markets, the Majors run the risk of misrepresenting their risk and capital positions to investors leading to possible future financial system instability that could expose taxpayers to yet another GFC type bailout scenario.

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Background: Why this study was conducted?

This study was conducted in the interests of better understanding the accuracy with which the majors represent their capital uplift as a result of their assertion that APRA's capital regime is harder on them than if they were regulated offshore.

This is an important question to ask because Australia's big 4 major banks make up 90% of new lending, 30% of the capitalisation of the ASX and have an implied government guarantee within Australia's Triple A rating. This means they are fundamental to the economic health of the Australian economy over the short, medium and long terms.

Indeed the Commission of Audit went so far as to suggest the government should account for all of the guarantees it has and begin to account for these via a provisioning fund.

In asserting they have more capital than they need the majors are implicitly suggesting that APRA should water down its approach to the measurement of capital for the Majors. This is important because management is naturally incentivised to seek to achieve this because lower capital held increases return on equity all other things equal and should improve the performance of the shares of the Majors relative to the what they would have been.

The flipside of such an approach and noting the fact the government has guaranteed all Australian deposits below $250,000 and has an implicit guarantee on the Majors because of their D_SIB or Too-Big-To-Fail status is that lower capital might increase returns to management and shareholders of the banks but it maximises the support that tax-payers are exposed to should the Majors get into financial difficulty.

Bank Capital Regulation in Australia and the Measurement of Capital

The Australian Prudential Regulation Authority (APRA) makes and enforces the rules which govern the capital adequacy of Australian banks. An Australian bank's regulatory capital is the sum of its 'Tier 1' and 'Tier 2' capital, net of all specified 'deductions'.

Tier 1 capital consists of the funding sources to which a bank can most freely allocate losses without triggering bankruptcy. This includes, for example, ordinary shares and retained earnings, which make up most of the Tier 1 capital held by Australian banks.

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

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Both Tier 1 and Tier 2 capital are measured net of deductions, which are adjustments for factors that lessen the loss absorption capabilities of capital. For example, banks often have equity balancing their holdings of intangible assets, like goodwill, which can automatically lose value as a result of the threat of bankruptcy.

Measuring risk

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

Credit risk is measured as the risk-weighted sum of a bank's individual credit exposures, which, gives rise to a metric called 'risk-weighted assets'. Under the Standardised approach employed by most of the smaller banks, the risk weights are prescribed by APRA and are generally based on directly observable characteristics of each exposure. For example, if a residential mortgage has a loan-to- valuation ratio of 70 per cent, full documentation and no mortgage insurance, APRA specifies a risk weight of 35 per cent. If the outstanding balance of that mortgage is $100, its corresponding risk-weighted asset (RWA) is $35.

Corporate exposure risk weights are based on external credit ratings and are generally higher than for residential mortgages because the exposures are usually riskier.

The D-SIBs use an advanced Internal Ratings Based ("IRB") approach whereby risk weights are derived from their own estimates of each exposure's probability of default and loss given default.

This gives them a substantial capital advantage in that they are able, as a result of their internal calculations, to hold less capital per dollar of assets than banks under the standardised approach. For example in the above $100 loan example a D-SIB can have a RWA of $14-17 compared with the Standardised approach.

Assessing APRA's approach to measuring capital versus its global peers (See Table 1)

In March 2014, the BCBS RCAP review of Australia's Basel III implementation by APRA was released. RCAP finds the Australian prudential regulation to be compliant with the Basel Framework. Twelve of the fourteen components assessed are graded as compliant; while two components (definition of capital and the Internal Ratings-based (IRB) approach for credit risk) are regarded as being largely compliant. The other components of the Basel framework are assessed as compliant, with only some non- material or non-significant differences.

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During the RCAP review, the Assessment Team noted some minor items in APRA's prudential standards that, while differing from the Basel standards, have in most cases no material effect. APRA has indicated its intent to correct these oversights.

One component where Australia has been assessed as largely compliant relates to the IRB approach for credit risk. In particular, the Assessment Team has 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. The likely potential risk for capital understatement that could result from APRA's current treatment of non-owner occupied mortgages was considered material. On this basis, the RCAP team views this deviation **as a potentially material negative effect on capital requirements**.

The Basel Framework prescribes a scaling factor be applied to the risk-weighted asset amounts for credit risk assessed under the IRB approach. APRA, however, did not apply this scaling factor to the specialised lending sub-asset class. The High-Volatility Commercial Real Estate (HVCRE) (one of the specialised lending (SL) sub- asset classes in the Basel Framework) is not included in the Australian IRB Prudential Standard. However, APRA indicated that none of their ADIs have the type of exposures targeted by the HVCRE category; and moreover real estate underwriting standards in the Australian market are relatively stronger than those specified in the slotting criteria.

In addition, 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. Accordingly the impact of not having a separate HVCRE category was deemed immaterial.

On the evidence it appears that the RCAP review found no material differences between Basel III and APRA frameworks and that their conclusion does not support any material adjustment to capital ratios being made when comparing Australian D-SIBs with international peers.

The international regulatory framework is not conducive to a meaningful cross-border comparison of capital ratios.

The Basel Committee on Banking Supervision sets out three Pillars for a sound financial system. The first imposes industrywide capital requirements, and the third draws on market discipline by forcing banks to show how they meet those requirements, while the second imposes bank specific requirements to account for individual bank risk profiles. Disclosing bank-specific capital needs, which are set by national regulators, isn't required under Basel III or European capital rules. Pillar 2 requirements can in some cases more than double the minimum amount of equity and debt a bank must hold to absorb losses.

Sweden will start publishing banks' individual capital requirements in a step designed to reveal risks investors have so far been unable to measure based on reported buffers.

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The Swedish Financial Supervisory Authority is planning to follow its Danish counterpart and disclose so-called Pillar 2 requirements as Scandinavia leads Europe in stepping up efforts to improve transparency. In Denmark, which like Sweden has a bank industry whose assets are four times gross domestic product, lenders can be shut down by the regulator if reserves drop below individual requirements.

In an interview reported by Bloomberg on July 30 2014, Johan Eriksson, senior adviser for bank policy at Sweden's FSA, stated: "Failure to tell investors a bank's individual capital requirement is "certainly sub-optimal, Pillar 2 affects "significant parts of banks' capital requirements Ideally, the banks' aggregate capital requirements would be disclosed as they clearly represent important constraints on any bank's capital policy and may impact risks to investors more broadly."

The layers of capital that regulators can force banks to hold have multiplied as policy makers seek to avert a repeat of the global financial crisis. Efforts to rein in bank risk have touched on the industry's systemic role in the economy to preventing lenders understating the probability of losses by imposing stricter risk weights on assets.

Sweden already requires its biggest banks to meet some of the world's most rigorous capital standards, ranging from 14 percent for Nordea Bank AB to 19 percent for Swedbank AB. In May 2014, the FSA said banks should hold a 1 percent counter-cyclical buffer after household debt burdens swelled to a record.

Greater disclosure in general will aid market discipline, according to Ross Levine, a professor at the University of California at Berkeley's Haas School of Business and co-author of "Guardians of Finance: Making Regulators Work for Us."

. "The primary reason for non-disclosure is that banks do not want to be disciplined by the market and manipulate regulators to help them keep information private."

The Basel Committee recommended changes in June 2014 to its Pillar 3 disclosure framework to make it easier to compare banks. The committee said information on how banks went about risk weighting was particularly "inadequate."

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CASE STUDY[1]: A Review of CBA's methodology in harmonising capital ratios across jurisdictions.

Why do variations in capital calculations occur between banks governed by different regulators given that all are subject to the Basel III regime? For a number of valid reasons, discretion is given to local regulators, Pillar 2 (Supervisory Review Process) plus there are unknown variations within IRB models.

CBA, as do the other Australian D-SIBs, in presentations to investors assert that because APRA has harsher rules in some capital calculations under Basel requirements that its capital ratios when compared to banks in other jurisdictions should be higher.

In CBA's results presentation for the year ending 30 June 2014, CBA reports that whilst its CET1 ratio by APRA is 9.3% it's a much healthier 12.1% under international comparisons. Two Slides are reproduced below as examples of CBA's own capital adjusted calculations compared to banks in other countries.

[1] The CBA was chosen as a case study as it is Australia's biggest and most well-known bank but it does not infer that CBA has done anything that the other majors haven't. The other 3 majors are briefly reviewed in the appendices

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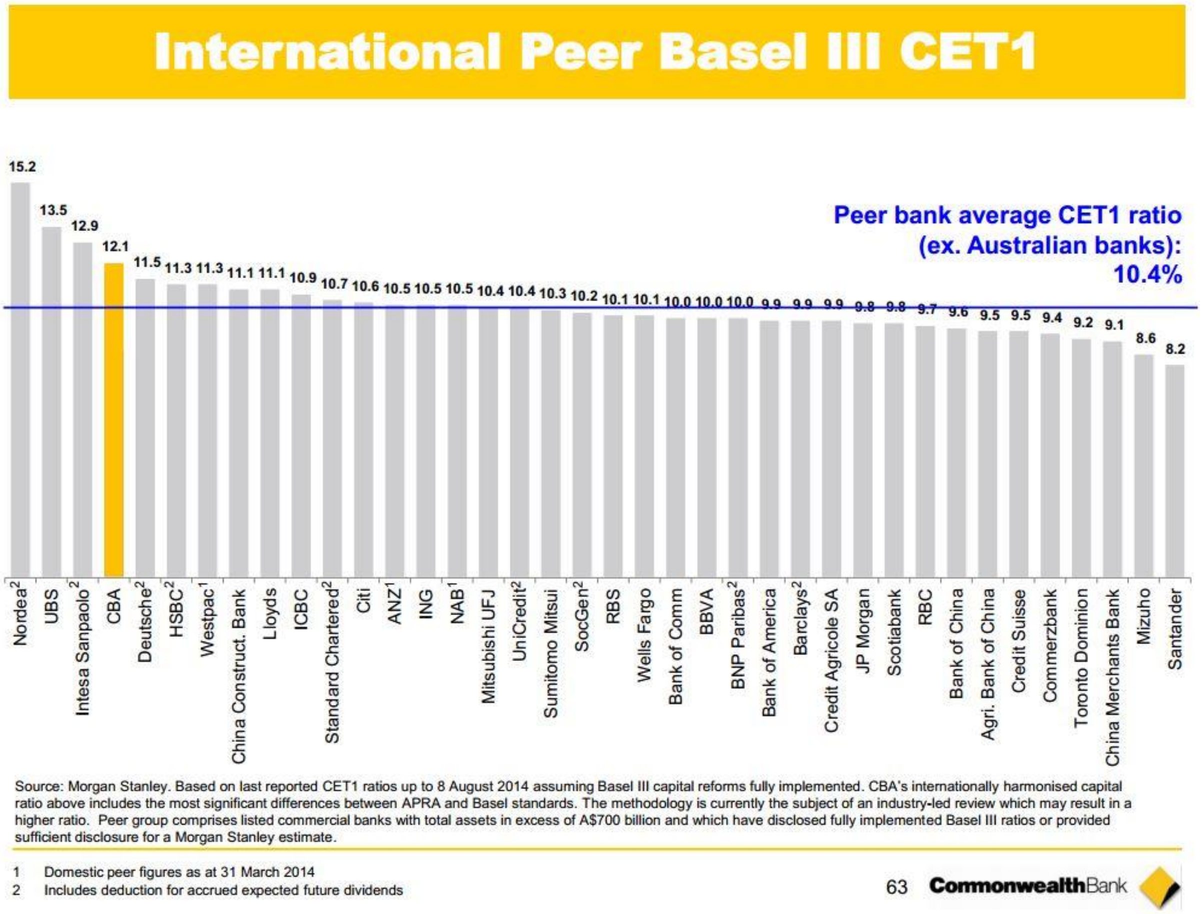

The second slide is of CBA's international jurisdiction capital comparisons. t. This data would seem to imply that a number of international regulators have not implemented the minimum Basel 111 standards nor exercised any Pillar 2 supervisory powers

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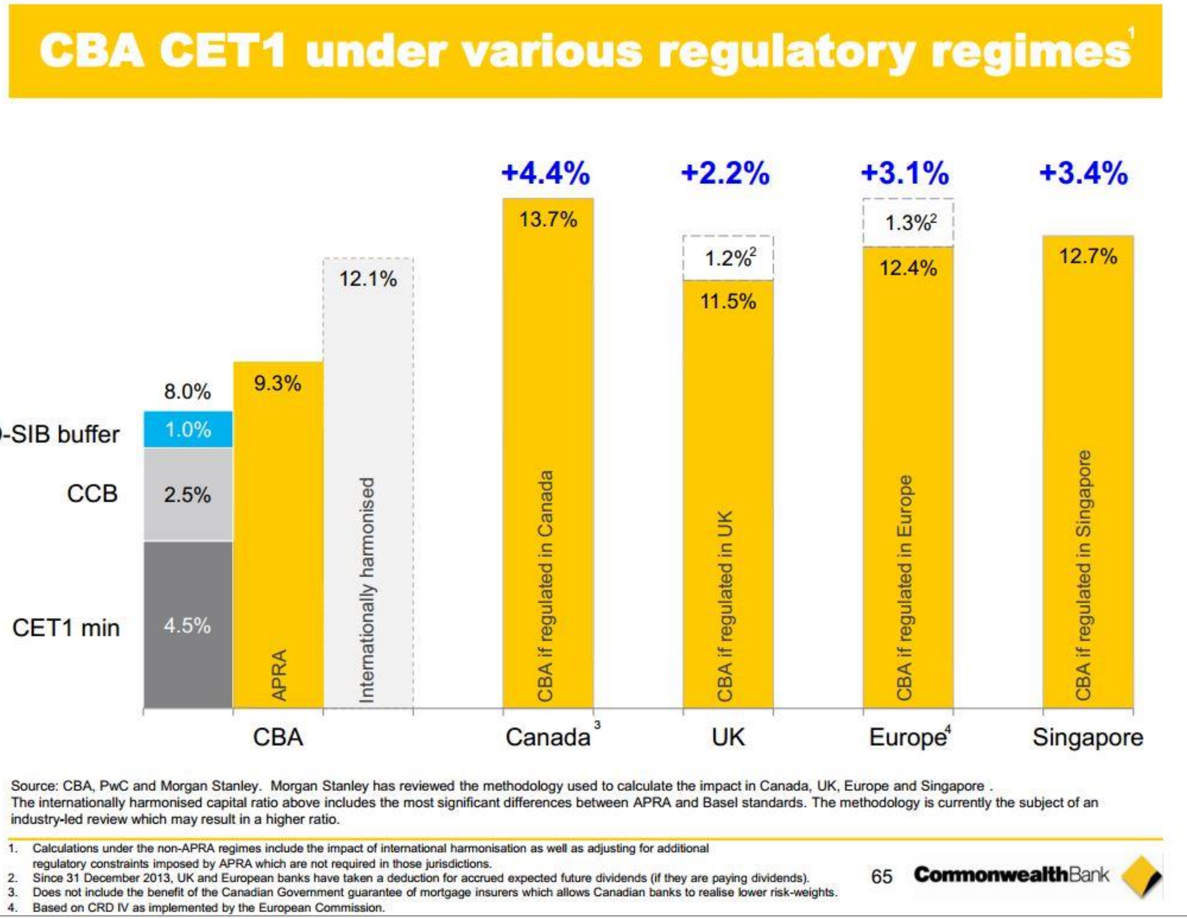

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APRA & international comparison

The following table provides details of the impact on CBA Group capital, as at 30 June 2014, of the differences between the APRA Basel III prudential requirements[1] and the requirements of the Basel Committee on Banking Supervision (BCBS).[1]

%	CET1	Tier 1 Capital	Total Capital
Basel III (APRA)	**9.3%**	**11.1%**	**12.0%**
Equity investments	0.9%	0.9%	0.9%
Deferred tax assets	0.3%	0.3%	0.3%
IRRBB risk weighted assets	0.4%	0.5%	0.5%
RWA treatment - mortgages	1.2%	1.4%	1.4%
Total adjustments	**2.8%**	**3.1%**	**3.1%**
Basel III (International)	**12.1%**	**14.2%**	**15.1%**

1 APRA Basel III final standards released September 2012, BCBS December 2010 Paper

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RWA Treatment – Residential Mortgages

Residential Mortgages are the business line and bedrock on which Australia's majors profitability rests. But even though, using its own IRB models, CBA is able to hold less capital than its ratings peers, the CBA reports that due to APRA imposing harsher parameters on the calculation of risk weighted assets for residential mortgages that it can add a substantial 1.2% to its capital for an analyst to compare its capital ratios to offshore banks.

This is a huge uplift and for this to be valid, then the regulator in the other jurisdiction must be forcing its banks to use exactly the same calculation and method to calculate risk weighted assets for residential mortgages as Australian D-SIBs except for the single highlighted parameter difference. Capital calculations for residential mortgages are quite complex and are based on many factors including the probability of the loan defaulting which in turn depends on other factors such as LVR or serviceability as well as measures of expected loss. Exact comparisons across jurisdictions and across models are very difficult exercises.

In presentations CBA makes reference to the significant difference between APRA requirements and other regulators that it believes exist in the Loss Given Default ("LGD") required to be used in the IRB models which are used to calculate minimum capital requirements. APRA stipulates a minimum of 20% for residential mortgages whilst other regulators stipulate 10%.

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This would appear to be a straight forward calculable difference, but the following calculation highlights the opacity of even an apparently straight forward calculation.

IRB models to calculate RWAs are just that, internally generated models and no two are the same. There is currently much debate amongst global regulators about how IRB models produce such widely varying results both across and within jurisdictions. It's most unreliable to assume that for residential mortgages, banks in other jurisdictions have the same IRB models except for a single LGD parameter.

Put simply Internal Ratings Based models are complex and to assume that the only difference between internal models is the LGD parameter would appear to way oversimplify the comparison.

Likewise taking the step to calculate RWAs, an expected loss measure is calculated which is the product of LGD and Probability of Default ("PD"). Unless one knows the PD formula other regulators or banks use in their IRB models, it is simply not possible to calculate reliably the effect of a change in LGD.

To be clear, the LGD of 10% set out by the Basel Committee and used by other regulators is a floor or minimum not a maximum. Regulators in other jurisdictions do not simply apply an LGD of 10% to every loan. LGDs, as is sensible are recognized as higher for higher LTV loans e.g. >90%. It's actually not unreasonable to assume that the difference in minimum LGD has very little effect across jurisdictions in the calculation of RWAs for residential mortgages. This is because the minimum LGD may only apply in low PD loans whilst higher PD loans would be required to have higher LGDs and would contribute a much higher proportion of the total capital requirement.

On page 22 of their 2014 full year results presentation, CBA stated that:

"APRA requires a minimum loss given default floor of 20 per cent to be applied to residential mortgages which is higher than regulatory requirements elsewhere."

A paper titled "Calibration of the CMA and Regulatory Capital for Securitisations" released on 24 April 2014 by BNP Paribas executives Dr Georges Duponcheele and Alexandre Linden and supported by the Active Quant Group (an association of 32 major banks) included the results of a survey of LGD inputs for residential mortgages into Internally Ratings Based Approach banks – table 9 from page 22 of their research report is reproduced below.

Securitisation Regulatory Asset Class	(Input)	(Input)
	IRBA RW	IRBA LGD
Wholesale		
Granular Short Term Bank/Corporate	86%	37%

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Granular Low RW Medium to Long Term Bank/Corporate	76%	37%
Granular High RW Medium to Long Term Bank/Corporate	184%	46%
Granular Small- and Medium-sized Entities	85%	41%
Specialised Lending (Commodities Finance)	92%	32%
Specialised Lending (Project Finance)	23%	11%
Specialised Lending (Object Finance)	38%	11%
Specialised Lending (Income Producing Real Estate)	84%	27%
Specialised Lending (High Volatility Commercial Real Estate)	203%	52%
Other Granular Wholesale	130%	52%
Other Non-Granular Wholesale	88%	38%
Retails		
Low RW Residential Mortgages	12%	22%
High RW Residential Mortgages	124%	43%
Revolving Qualifying Retail	41%	45%
Other Retail	61%	42%

The study found an average of 22 per cent for low risk weighted residential mortgages and 43 per cent for high risk mortgages. CBA's capital harmonisation calculation has erroneously assumed that all international peers have a ten per cent LGD as an input into their capital ratios.

So how can CBA make such a confident claim that a very large difference exists?

We are unable to replicate the CBA's stated 1.2% capital comparison uplift for residential mortgages as a result of very little available information. However; as the analysis of the CBA Pillar III disclosures below demonstrates this 0.9% uplift appears to be, on the face of it, implausibly large.

CBA Pillar 3 disclosures report for the year ending 30 June 2014, show that the IRB RWA weighting for residential mortgages is 14.3% which when multiplied by the standard 8% capital requirement gives a minimum capital requirement of 1.14% against the actual balance of the mortgage book used in the IRB models.

To put that in context that is $1.14 in capital to support $100 in mortgage loans outstanding

To get to an end point where the CBA is able to assert that there is a comparison pick up of 1.2%, then there must be an assumption that regulators in those jurisdictions outlined above and as cited by CBA, for RWA purposes weight residential mortgages at 2.5% (1.4% minus 1.2%' divided by 8%) providing a minimum capital requirements of just 0.32% (8% times 4%) This seems to be

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an unrealistic result. As an example, is it realistic to assume that the Prudential Regulatory Authority in the UK would be happy to present the UK's banks to the world as having such miniscule RWAs for residential mortgages (2.5%) and gearing of: 500:1.

Quantitative restrictions on residential lending

In Australia, interest rates are at historic lows, while house prices and household indebtedness are rapidly approaching historic highs, but so far no steps have been taken to address the latter. The Reserve Bank has expressed reluctance to introduce any form of quantitative control on mortgage lending, and remains cool on lifting interest rates while there is little sign the non-mining sectors of the economy might step up to counter the effects of the passing of the mining boom. There is also concern that any move to raise interest rates will result in appreciation of the currency, rather than a depreciation, which has been much talked about but not actively pursued.

In 2013, The Reserve Bank of New Zealand was also reluctant to raise interest rates, and instead introduced quantitative controls on mortgage lending. From October 1 2013r, no more than 10 per cent of bank mortgage lending could be allocated to home loans with high loan-to-valuation ratios (defined as loans greater than 80 per cent of the value of the property being lent against).Prior to the introduction of this quantitative restriction, approximately 25 per cent of new mortgages were classified as being high LVR. By the end of March 2014, high LVR lending had fallen to 5.6 per cent of all new mortgages.

In June of 2014, the Bank of England announced that it would consult with UK mortgage lenders that lend more than £100 million a year, on the introduction of a different form of quantitative control. The Financial Policy Committee has recommended that from October 1 2014, new mortgage loans made to borrowers that exceed a loan-to-income ratio of 4.5 times should be restricted to no more than 15 per cent of all loans made. The use of a loan-to-income ratio directly targets the ability of a borrower to service their loan, rather than simply looking to the value of the property to cover a loan, once the borrower has defaulted.

Similarly, Canada's Mortgage and Housing Corporation has announced that it would establish maximum house prices, amortisation periods and debt servicing ratios, effective from July 31 2014, for its standard mortgage insurance product. The change is designed to increase market discipline in residential lending, while reducing taxpayers' exposure to the housing sector through CMHC.

However, the latest country to implement controls on mortgage lending and thereby household indebtedness is Norway. Greater capital discipline is being imposed on mortgage lending banks.

Finanstilsynet, the financial supervisory authority of Norway, announced in July 2014 that it would change the way risk weightings are calculated for mortgages by banks using the internal ratings based method. From the start of 2015, the minimum loss given default component of the calculation will increase to 20 per cent from 10 per cent. This change will have the effect of increasing the overall risk weighting assigned to residential mortgages to determine the amount

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of capital that needs to be set aside, to around 20 per cent to 25 per cent, from the current level of 10 per cent to 15 per cent. Finanstilsynet said mortgage risk weights have fallen in recent years, while higher house prices and higher household indebtedness have increased the risk present in the mortgage market.

By way of comparison, the risk weightings employed by the major Australian banks under the internal ratings based approach, range from 14 per cent to around 20 per cent. This will certainly place the Australian banks behind the Norwegian banks after the change comes into effect.

IRB Models Generally – A review

In the above we have argued that it is difficult to calculate reliable comparisons across jurisdictions in the order of magnitude that Australia's Majors, in this case study the CBA, does.

Indeed calculating RWAs is highly complex, which increases the potential for different interpretations, and offers limited transparency. The formula relies on many parameters, with key inputs such as Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD) and Maturity (M).

The Bank of England's Andrew Haldane probably put it best when he recently[2] observed; "the number of risk buckets has increased from around seven under Basel I to, on a conservative estimate, over 200,000 under Basel II. To determine the regulatory capital ratio of this bank, the number of calculations has risen from single figures to over 200 million. The quant and the computer have displaced the clerk and the envelope."

This is especially so when the IMF Monetary and Capital Markets Department in their paper, "Revisiting RWAs" and the Basel Committee on Bank Supervision's Regulatory Consistency Assessment Program (RCAP) analysis of RWA's both found that due to large, unexplainable variances in IRB model calculations of RWAs it is simply not possible to complete a meaningful comparison of RWAs across jurisdictions or between banks within jurisdictions.

This is important because this lack of model consistency among banks operating under the Internal Ratings Based Approach is the basis for both the IMF and BIS proposing that national regulators consider conducting regular "Hypothetical Portfolio Exercises" to foster greater consistency so that in the future the type of comparisons that CBA, and the other Majors, are presenting to the market may have some validity.

This is our hope and goal in presenting this report as well.

[2] The paper or talk at which Haldane delivered this should be linked as a footnote

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The Financial Stability Board ("FSB") has formed the Enhanced Disclosure Task Force ("EDTF") which notes that due to inconsistencies in the design and use of IRB models users have significant difficulty in understanding RWA disclosures. This is particularly the case for banks in the scope of Basel II.

As a result, investors and other stakeholders can find it difficult to make meaningful comparisons between banks, particularly across jurisdictions.

Under Basel's Pillar III obligations with regard to disclosures external stakeholders are meant to enable an analyst to recreate or back solve for the RWA calculation. However; at present globally banks currently disclose very little information about the details of their internal models for computing RWAs and, as a result, users are unable to ascertain the reasons for differences in the data from the multiplicity of models, and their impact on capital, both within a single bank and among different banks.

Users also find it difficult to understand the extent to which the use of internal models has affected a bank's capital requirements and are not able to make meaningful comparisons between banks and across jurisdictions. The disclosure of sufficient information to show how internal ratings grades and PD bands map against external credit ratings for significant non-retail banking book credit portfolios could help meet users' needs for better comparability.

Given the large data set, complexity and variability in RWA calculations, it would seem implausible that any institution could arrive at a capital ratio accurately harmonised to another jurisdiction by tweaking just a small number of model factors, in this case study reducing the LGD for residential mortgages from APRA's 20% standard to the 10% floor level stipulated in Basel II.

As a result of the above analysis it therefore seems difficult, without further transparency from the CBA and other majors, to accurately determine the accuracy or indeed to ascertain a quantifiable justification for CBA's assertion that a 1.2% capital uplift for residential mortgages is warranted when comparing its' APRA compliant capital ratio to international capital standards.

Moreover; given that APRA allow investment loans (buy to let) to be treated as retail residential mortgages rather that commercial loans and that CBA and other majors have such a high concentration of residential mortgages on the balance sheets (58% of the total loan book for CBA) it may be that in an international comparison where the local regulator took both these factors into account under Pillar 2 supervisory powers that an international harmonisation would result in a decrease in capital ratios not an increase?

Equity Investments

CBA asserts that because of harsher treatment by APRA of banks' equity investments, its capital can be increased by 0.9% in making comparisons with offshore banks' capital ratios.

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The following extract is from the Basel Committee on Banking Supervision Consultative Document, Capital requirements for banks' equity investments in funds, Issued for comment by 4 October 2013:

"The Basel II framework outlines the current treatment of banks' equity investments in funds under the Standardised Approach and the Internal Ratings-Based (IRB) approaches for credit risk. More specifically:

- *At present, there is no explicit treatment under the Standardised Approach for banks' equity investments in funds. Instead, these exposures would be classified as claims on "other assets", which receive a 100% risk weight (see paragraph 81 of Basel II). National supervisors may decide to apply a risk weight of 150% or higher reflecting the risks associated with some other assets (e.g. venture capital or private equity exposures – see paragraph 80 of the Basel II framework).*

- *Under the IRB approach, banks may risk weight their investments using either the treatment applicable to the majority of a fund's underlying holdings or the "look-through approach", where the fund's underlying components are considered as separate and distinct investments (see paragraph 360 of the Basel II framework). Alternatively, banks may consider the investment mandate of the fund and apply the relevant risk weight assuming that the fund has invested, to the maximum extent allowed, in the asset class attracting the highest capital requirement, and then, for the other asset classes, in descending order of risk weight applied (see paragraph 361 of the Basel II framework).*

In a number of areas, it has been suggested the Basel II framework text would benefit from more clarity on how banks should implement the above provisions, e.g. greater clarity on how the "majority of holdings" is defined, on how to apply the IRB approach to the mandate of a fund, and on how to interpret the expression "where possible". Moreover; the framework does not explicitly require banks to reflect the relevant fund's leverage when determining capital requirements associated with the bank's investments, even though leverage is an important risk driver. The Basel II framework also does not provide a rank ordering between the look-through approach and the mandate-based approach, as reflected in paragraphs 360 and 361 of the framework. In view of these ambiguities and shortcomings, the Committee has decided to review the prudential treatment of banks' equity investments in funds by developing a revised capital regime."

The basis for CBA's 0.9% positive adjustment to its capital ratio is in the "threshold deductions" section of the Basel III framework, the validity and extent of which is outlined below. However; comparing CBA to banks operating on the Standardised Approach in jurisdictions that set risk weights of 150% or even higher, then there is a prima facie case that a downward adjustment to CBA's capital would be more appropriate rather than an upward adjustment.

Deferred Tax Assets ("DTA")

Basel II guidelines have clearly indicated since at least 2010 that deferred tax assets are to be deducted from CET1. This treatment is to be phased-in commencing in 2014 and to be completed in 2018. The Resilience Document observes that inconsistencies in the definition of capital and capital deductions across jurisdictions inhibit the ability of the market to fully assess and compare the quality of capital between banks. It therefore proposes to harmonise deductions internationally and, in general, to apply them to Common Equity. The one substantive difference between APRA regulated ADIs and overseas ADIs is that the Basel III minimum requirements provide for concessional thresholds before a 100% deduction is required from CET1 for

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deferred tax assets relating to temporary differences. APRA requires all deferred tax assets, including those relating to temporary differences, to be deducted fully from CET1.

There may be a justifiable argument that because APRA requires all deferred tax assets, including those arising from temporary differences to be 100% deducted from CET1 then an adjustment could be warranted for this item. CBA could put a range on their table from 0-0.3% rather than a straight 0.3%. However; BCBS RCAP report notes that inconsistencies in the definition of capital and capital deductions across jurisdictions inhibit comparability and therefore BCBS proposes to harmonise deductions internationally.

With the RCAP report stating that differences between APRA requirements and Basel III have an immaterial impact on capital ratios, then analysts need to decide whether CBA's claim of a 0.3% uplift is a material amount.

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Threshold deductions

Under Basel III instead of a full deduction, the following items may each receive limited recognition when calculating CET1 (after the application of all regulatory adjustments):

- Significant investments in the common shares of unconsolidated financial institutions (banks, insurance and other financial entities);
- Mortgage servicing rights (MSRs); and
- DTAs that arise from temporary differences.

From 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 Common Equity Tier 1 capital, calculated after all regulatory adjustments.

The amount of the three items that are not deducted in the calculation of Common Equity Tier 1 will be risk weighted at 250%.

In calculating the combined DTA and Equity Investment threshold deductions at 1.3%, CBA is marginally exceeding the 15% aggregate limit of CET1 given a starting Capital Ratio of 8.5%.

Interest Rate Risk in the Banking Book ("IRRBB")

APRA requires banks to determine risk weighted assets (RWAs) for interest rate risk in the banking book. The BCBS Basel III minimum requirements make no reference to RWAs for interest rate risk in the banking book. CBA claims a 0.5% upward adjustment is appropriate given this anomaly. CBA implausibly, and conveniently ignores the fact that other regulators including the UK's Prudential Regulation Authority do not ignore IRRBB and in fact capture it via Pillar 2 additional capital requirements that Basel requirements do not currently require to be disclosed and as detailed earlier in this report only Denmark's (and soon Sweden's) banking regulator require public disclosure of individual bank Pillar 2 regulator imposed requirements.

Is this an appropriate uplift given that globally local regulators do not ignore IRRBB but have different ways of dealing with it? It's also clear that every jurisdiction has its different systems and interest rates which vary IRBB greatly. Also, many banks mark to market many interest rate instruments which therefore go into capital calculations.

As reported recently in the Financial Times, "While some regulators including the UK's Prudential Regulation Authority require banks to hold bank-specific "Pillar 2" capital against interest rate risk, the Committee is examining the practicalities of an industry-wide "Pillar 1" standard instead"

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Whilst Australia may be a little ahead of the curve on IRRBB by making it Pillar 1, the Basel Committee is trying to get a global standard for Pillar 1. To simply assume that it's valid to compare with global banks on the basis that they do not adequately take into account IRRBB appears prima facie unrealistic in that it ignores Pillar 2 requirements.

Summary of Capital Ratio Harmonisation Methodology Research Findings

In conclusion and on balance it would seem plausible that a marginally positive adjustment to Australia's Major bank capital ratios might be warranted to appropriately reflect harmonisation to the standards of overseas regulators, in terms of APRA's harsher treatment of equity investments, and deferred tax assets.

However; given the low level of disclosure from banks in general across the globe and the lack of consistency and transparency of IRB model parameters, inputs and outputs, any estimate of an internationally harmonised capital ratio by any individual bank can be assumed to have a low level of confidence attached to it.

Given these uncertainties, it would be more appropriate for any bank publishing an internationally harmonised capital ratio to indicate a range of possible capital ratio outcomes to investors given the low degree of accuracy that any such calculations are able to be given.

Moreover; the lack of consistency between the harmonisation methodologies adopted by the Australian Majors in areas such as treatment of LGD and specialised lending casts further doubt on the veracity of the published harmonised capital ratios. Current initiatives in this area include work by the International Accounting Standards Board and Financial Accounting Standards Board to develop new financial reporting requirements for the impairment of financial instruments and the disclosure requirements of IFRS 13 'Fair Value Measurement'. These initiatives should increase the quality of credit risk disclosure, and may help improve comparability between banks.

Recommendations made by the BCBS and implemented by national regulators are also a source of change in credit risk disclosure, as are separate initiatives by a number of national banking regulators. For example, the Financial Services Authority in the UK takes a close interest in the disclosure by banks of their forbearance strategies. Finally, the underlying assumption that all overseas peers have only implemented the absolute minimum capital adequacy standards is highly dubious; particularly given the disclosures of Pillar 2 additional capital requirements being imposed in several European jurisdictions. APRA was advised via the BCBS RCAP review's assessment team in March 2014 that its practice of allowing Australian banks to include commercial lending to investors within the residential mortgage category is not fully compliant with BCBS requirements that only mortgages for owner occupied residential property are to be given the lower risk weights.

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The bottom line is that comparing the capital adequacy of Australia's D-SIBs to international peers is not all one way. CBA's CEO, Ian Narev, stated at the bank's results media briefing on 13th August 2014 that,

"…it is important that [the capital positions of Australia's banks] be shown in the best possible light [so as to gain the lowest possible funding pricing.]"

The danger is that comparing the capital positions of banks in multiple jurisdictions that rely on their own internal risk models (many of which are vendor models that internal bank staffs are likely to have varying degrees of understanding of all of the model parameters) is likely to result in highly inaccurate comparisons; particularly given that individual banks have different business models, varying appetites for risk-taking, varying lengths of data windows for risk calculations, and are unlikely to arrive at identical risk assessments of millions of individual exposures. Moreover; without knowing the Pillar 2 additional capital requirements imposed on individual banks by regulators there is simply a lack of certainty all round. Add into the mix counterparty exposures and in some cases substantial over the counter derivative exposures and it is understandable that in order to make a harmonised capital calculation exercise manageable the investment banks and accounting firms to whom the Australian major banks have sub-contracted out the capital comparison have found it necessary to harmonise the APRA compliant capital of the Majors to minimum Basel 111 standards. However; the reality is likely to be that very few regulators and therefore banks are operating at the minimum Basel 111 standards; rendering the harmonised capital comparisons of the Majors to be completely fictitious and potentially highly misleading. In order to gain short-term funding advantages in international capital markets, the Majors run the risk of misrepresenting their risk and capital positions to investors leading to possible future financial system instability that would expose taxpayers to yet another GFC bailout scenario.

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Appendix A – A Review of ANZ, Westpac and NAB's approach to harmonising Capital ratios across jurisdictions

Review of ANZ Bank's methodology in harmonising capital ratios across jurisdictions.

ANZ, like CBA portrays capital harmonisation as a straightforward calculation process and simply assumes that other jurisdictions only require minimum standards and makes no allowances for IRB model variations, differences in definition of capital, allowable deductions and Pillar 2 supervision.

ANZ Capital reconciliation under Basel 3

	CET1	Tier 1	Total Capital
APRA	**8.3%**	**10.3%**	**12.1%**
10% allowance for investments in insurance subs and ADIs	0.8%	0.7%	0.7%
Mortgage 20% LGD floor and other measures	0.6%	0.7%	0.7%
IRRBB RWA (APRA Pillar 1 approach)	0.4%	0.5%	0.6%
Up to 5% allowance for deferred tax asset	0.2%	0.2%	0.2%
Other capital items	0.2%	0.2%	0.2%
Internationally Harmonised	**10.5%**	**12.6%**	**14.5%**

(Source: ANZ Half Year Results 1 May 2014)

In its 9 months to 30 June quarterly update, ANZ advised that its internationally harmonised capital was 10.3% whilst its CET1 (APRA) capital was unchanged at 8.3%.

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Review of ANZ Bank's treatment of equity investments and deferred tax assets

ANZ in the above table is attributing 1% of the uplift to its capital ratio for harmonisation to **international** jurisdictions to the threshold deductions that Basel III permits for equity investments and deferred tax assets arising from temporary differences. While this adjustment would be appropriate ceteris paribus, the fact is that other things are far from equal. The BCBS has decided to revise the prudential treatment of banks' equity investments in funds so that in the future meaningful inter-jurisdictional comparisons can be made.

The previously quoted extract from the Basel Committee on Banking Supervision Consultative Document, Capital requirements for banks' equity investments in funds, (Page 11) applies equally to ANZ and other D-SIBs, as to CBA

The authors' research opinion is that a valid harmonisation methodology for the treatment of banks' equity investments is currently unachievable due to the following complicating factors:

1. The BCBS concerns expressed about inconsistent treatment of banks equity investments for capital allocation purposes.
2. The BCBS March 2014 RCAP review of APRA finding that differences due to the treatment of equity investments and to deferred tax assets were either non-significant or non-material.
3. The lack of disclosure of treatment of equity investments in internal models of banks in all other jurisdictions operating on the Internal Ratings Based Approach.
4. The lack of explicit treatment of banks' equity investments in funds for banks operating under the Standardised Approach.

Given that treatment of equity investments is typically the largest single contributor to capital ratio harmonisation adjustments, we caution investors and other users of financial reports issued by Australian D-SIBs in placing a high degree of confidence in the accuracy of any internationally harmonised capital ratios that have not been formally reviewed and approved by both APRA and the BCBS.

Review of ANZ Bank's treatment of residential mortgage RWAs

In regard to the treatment of mortgages the BCBS RCAP Assessment Team has 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. The likely potential risk for capital understatement that could result from APRA's current treatment of non-owner occupied mortgages was considered material. On this basis, the RCAP team views this deviation as potentially material.

Moreover; ANZ's assumption that all other jurisdictions simply apply a minimum 10% LGD Basel III requirement is highly questionable as shown in our analysis of the CBA's treatment of mortgage RWAs on pages 9 and 10, above.

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Given the risks identified by the RCAP review of APRA's treatment of mortgages secured by income-producing residential property and the identified potential for understatement of capital required to support such assets, we contend that a minor downward adjustment of approximately 0.5% could be more appropriate in any calculation for the harmonisation of capital allocation for mortgages, rather than an upward movement of 0.6%.

Interest Rate Risk in the Banking Book

APRA requires banks to determine risk weighted assets (RWAs) for interest rate risk in the banking book. The BCBS Basel III minimum requirements make no reference to RWAs for interest rate risk in the banking book. ANZ is claims a 0.4% upward adjustment is appropriate given this anomaly. Local regulators everywhere do not ignore IRRBB but have different ways of dealing with it. It's also clear that every jurisdiction has its different systems and interest rates which vary IRRBB greatly. Also many banks mark to market many interest rate instruments which therefore go into capital calculations.

Many jurisdictions, e.g. UK, ensure that IRRBB is taken into account in capital calculations under Pillar 2 requirements.

Whilst the Basel Committee is trying to get a global standard, to simply assume that its valid to compare with other banks on the basis that they do not adequately take into account IRRBB is unrealistic. Having regard to the BCBS RCAP March 2014 review of APRA's finding that this is either a non-material or non-significant difference we contend that no harmonisation adjustment is warranted to take account of differences in treatment of IRRBB across jurisdictions.

Other ANZ Capital Harmonisation Items

ANZ bank attributes 0.2% of the uplift to its internationally harmonised capital ratio to unspecified "other capital items." ANZ's lack of disclosure of any detail with regard to these non-specific items makes it impossible for financial analysts to give credence to their assertion. Furthermore; the BCBS observes that inconsistencies in the definition of capital and capital deductions across jurisdictions inhibit the ability of the market to fully assess and compare the quality of capital between banks. It therefore proposes to harmonise deductions internationally and, in general, to apply them to Common Equity. We therefore caution investors and users of financial reports against placing a high degree of confidence in this adjustment.

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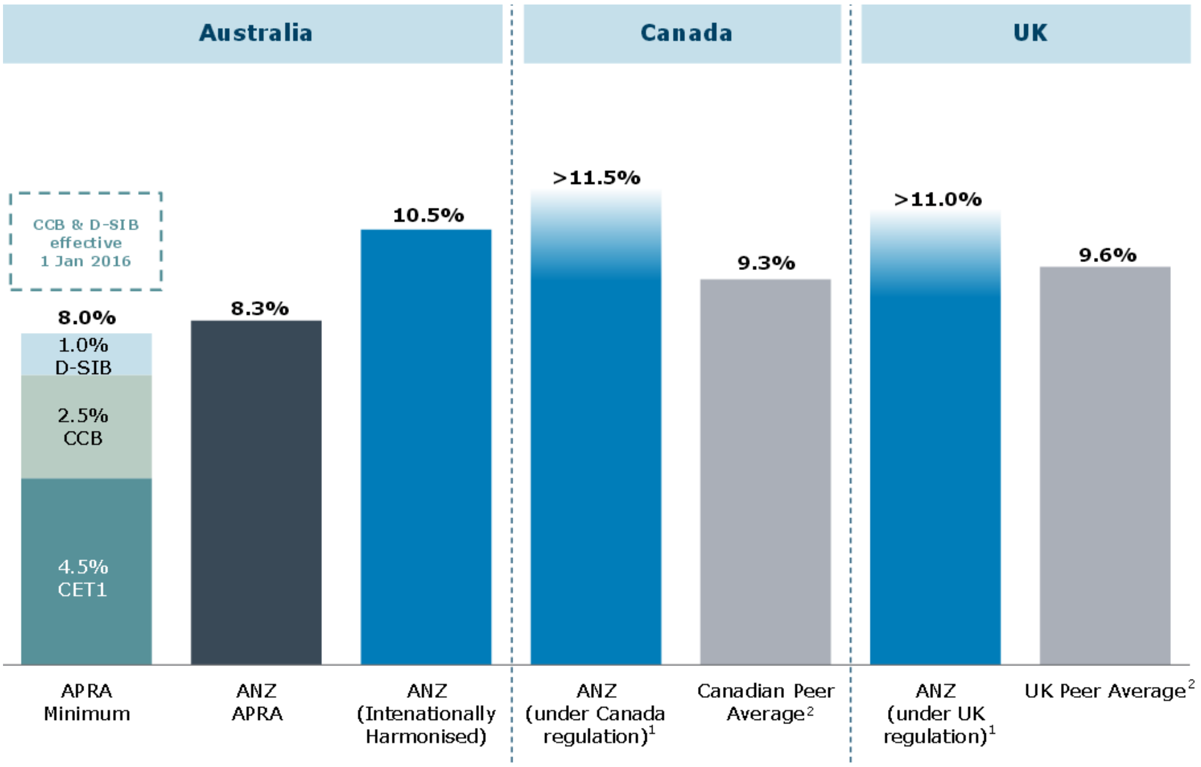
ANZ CET1 comparison with other jurisdictions



1. ANZ estimate
2. Canada Peers (Scotiabank, BMO, TD Bank, and RBC) as at Jan 14 and UK Peers (HSBC, Barclays, and RBS) as at Dec 13 based on a Basel 3 fully transitioned basis, obtained from most recent Capital Adequacy and Risk Management (Pillar 3) disclosures

(Source: ANZ Half Year Results 1 May 2014)

Surprisingly, ANZ's results presentation includes a comparison to Canadian and UK CET1 calculations and portrays ANZ as having CET1 capital ratios in each of these jurisdictions that are even higher than its calculated 10.5% CET1 harmonised to BCBS Basel III minimum requirements; implying that Canadian and UK regulators are setting regulatory standards below BCBS Basel III minimum standards.

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A Review of Westpac's methodology in harmonising capital ratios across jurisdictions.

Westpac presents its APRA CET1 Capital Ratio of 8.82% as at March 2014 as being equivalent to 11.26% under Basel III minimum standards, i.e. an uplift of 244bps. In an interesting development, Westpac's limited disclosure of its harmonisation methodology, copied below, does acknowledge that the BCBS RCAP review of APRA released in March 2014 casts some doubt on the harmonisation process; however, Westpac states that it will await APRA's response before making any required changes. Whilst this disclosure does differentiate Westpac from CBA, ANZ and NAB disclosures, the authors can only speculate on why Westpac then proceeds to present the capital harmonisation as if there was no doubt

In addition to the adjustments for equity investments, deferred tax and residential mortgages discussed in more detail previously in this research, Westpac's harmonisation process differs from the other three Australian D-SIBs in that Westpac makes a 0.4% positive adjustment for specialised lending; whereas none of the other three make any adjustment for specialised lending.

However, the BCBS RCAP review of APRA found that APRA's more conservative treatment of specialised lending merely offsets the absence of a separate higher risk-weighted "High Volatility Commercial Real Estate" category as set-out under Basel III; thereby casting some doubt over the appropriateness of this adjustment.

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CET1 APRA to BCBS Basel III reconciliation

- APRA has maintained a conservative stance for its Basel III capital standards, resulting in a significant variance between capital measured under APRA and fully harmonised Basel III
- Key differences in the calculation of CET1 capital ratios between APRA's Basel III and fully harmonised Basel III under BCBS are detailed below
- In March 2014 the BCBS released a report on its assessment of Basel III regulations in Australia. No changes have been made to the fully harmonised Basel III calculations compared to prior periods. Any required changes will be made once APRA have clarified outstanding questions arising from this report

Description	Common equity tier 1 ratio
Westpac's common equity tier 1 capital ratio under APRA Basel III	**8.82%**
Under BCBS, supervisors have the option of applying concessional thresholds when determining the capital requirements of deferred tax assets, investments in non-consolidated subsidiaries (NCS) and equity investments in commercial entities held in the banking book. Risk weighted asset treatments apply in lieu of common equity deductions if these items are individually less than 10% and together less than 15% of common equity. To the extent the amounts are greater than the concessional thresholds, common equity deductions apply APRA has chosen not to apply this concessional treatment and requires a 100% deduction from common equity for deferred tax assets, investments in non-consolidated financial institutions, NCS, equity investments, and all under-writing positions in financial and commercial institutions held for more than 5 business days Westpac's common equity tier 1 capital ratio would increase if APRA applied concessional thresholds	+107bps
Mortgage risk weights under APRA are based on a minimum loss given default (LGD) of 20%, whereas BCBS sets a minimum LGD of 10%. The actual LGD used must be supported by historical data but APRA's higher minimum means that Australian mortgage risk weights are typically higher than those calculated using the lower BCBS LGD minimum	+73bps
APRA applies a risk weighted asset requirement to Interest rate risk in the banking book (IRRBB). This is not currently considered under BCBS standards	+24bps
Other differences, including treatment of specialised lending	+40bps
Westpac's fully harmonised Basel III common equity tier 1 capital ratio under BCBS	**11.26%**

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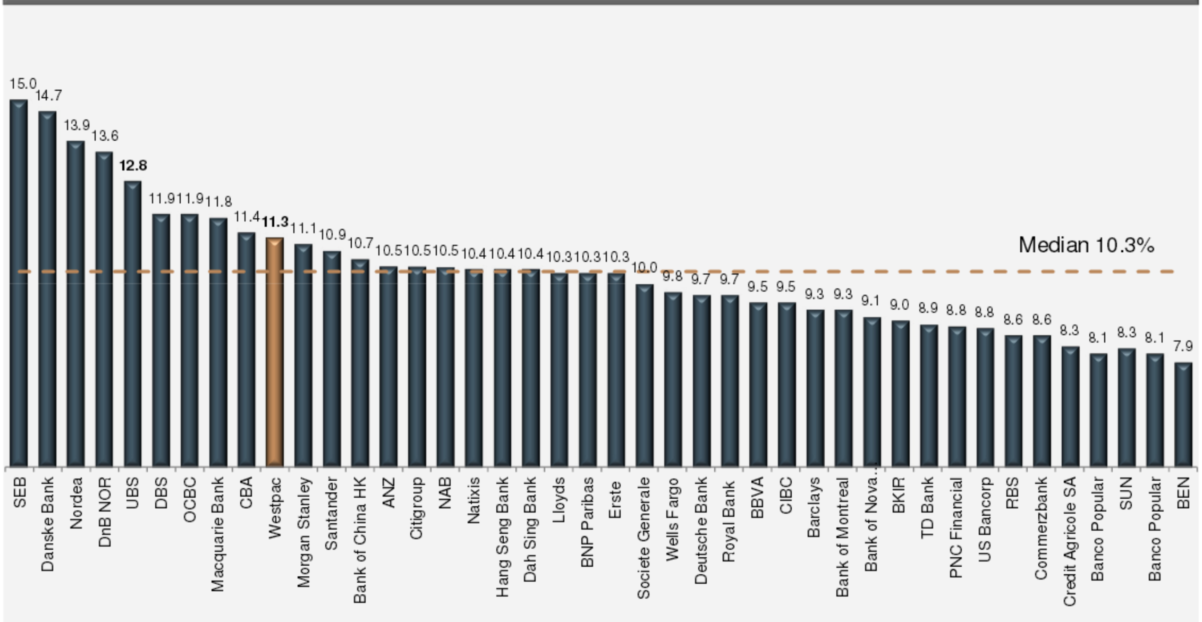
Fully harmonised common equity tier 1 capital ratio at the upper end of global peers

Global peer comparison of Basel III pro-forma common equity tier 1 capital ratios[1] (%)



1 Company data, Credit Suisse estimates (based on latest reporting data as at April 2014). Australian banks based on 1H14 results.

A Review of National Australia Bank's ("NAB")methodology in harmonising capital ratios across jurisdictions.

NAB's capital harmonisation methodology involves adding 98bps for threshold deductions relating to equity investments and deferred tax assets that APRA does not recognise and the Basel III minimum standards do and also adding 84bps for RWA adjustments, presumably relating to IRRBB and RWA for residential mortgages. Unfortunately, National Australia Bank provides neither further disclosure nor any accompanying commentary for analysts to verify the appropriateness of these adjustments. Moreover; in justification of these adjustments National Australia Bank simply includes the following footnote:

> *"The Group's March 2014 Harmonised Ratio is consistent with the Australian Bankers' Association Fact Sheet "Comparison of APRA and the Basel Committee on Banking Supervision Basel III Capital Ratios, released 14 December 2012."*

The NAB first half 2014 Results presentation makes no reference to the findings of the BCBS RCAP review of APRA released in March 2014 that APRA's treatment of equity investments, deferred tax assets and IRRBB as compared to BCBS Basel III requirements are either non-material or non-significant.

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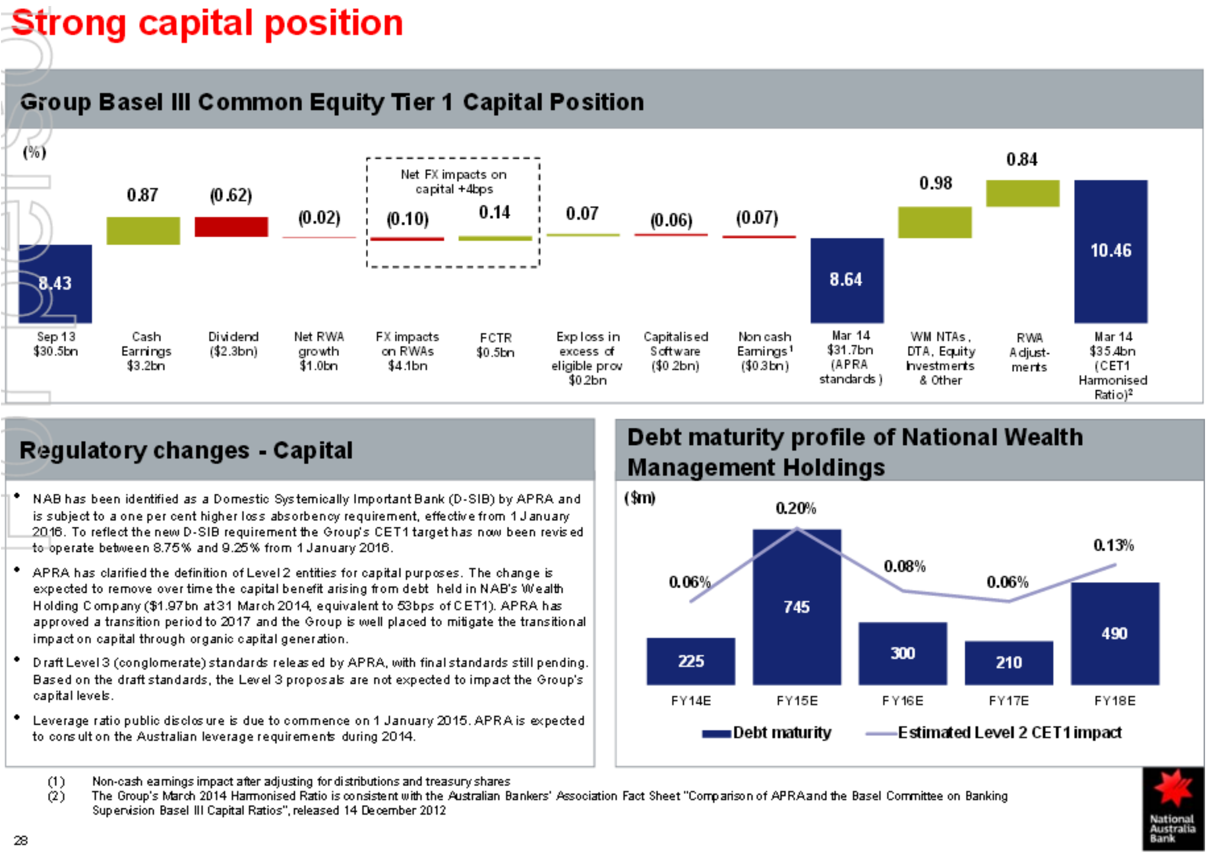
Perhaps significantly, NAB makes the lowest harmonisation adjustments of the D-SIBs and seems to place the lowest emphasis on capital comparisons in its market presentations than either of CBA, Westpac or ANZ. Maybe NAB does not have the same commitment to the validity of the harmonisation process?



Source: National Australia Bank 1H Results 2014 presentation 8/May/2014.

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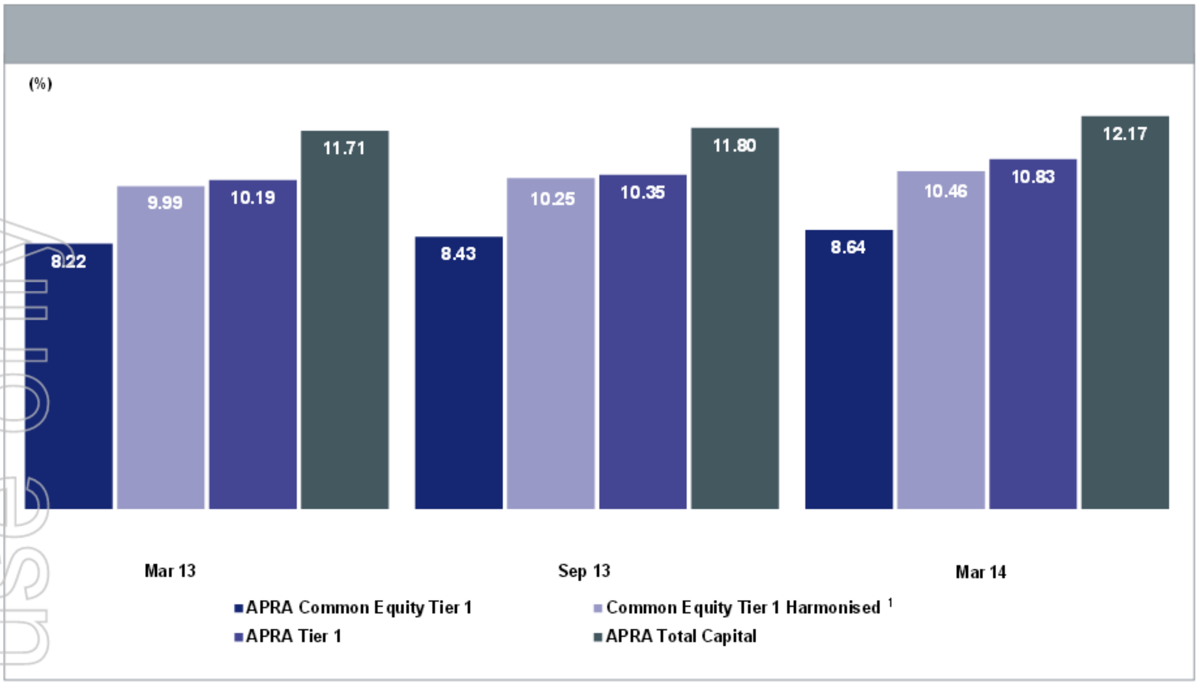
Group Basel III Common Equity Tier 1 Ratios



(1) The Group's March 2014 Harmonised Ratio is consistent with the Australian Bankers' Association Fact Sheet "Comparison of APRA and the Basel Committee on Banking Supervision Basel III Capital Ratios", released 14 December 2012

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National Australia Bank

As per Table 1 attached, the authors caution investors and other users of financial reports issued by the D-SIBs against relying on capital ratio harmonisation data that has not been approved by APRA and the BCBS and merely cites a 2012 Australian Bankers' Association fact sheet as the sole supporting justification for the integrity of the method.

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Appendix B

The Future of International Banking Regulation

Some commentators have argued that even before Basel III is fully implemented, a Basel IV may already be starting to emerge with moves towards:

- A tighter leverage ratio.
- Higher risk weighted assets.
- Pro-cyclically adjusting capital ratios and buffers after the potential impact of severe stress events are analysed following simulations.
-

Given the difficulty in balancing risk-sensitivity, simplicity and comparability it is possible that a Basel IV framework might emerge that:

- Recognises simplicity as an additional objective against which any new Basel Committee proposals should be judged.
- Might seek to mitigate the complexity in model-based approaches by adding floors to constrain the results modelled capital requirements and by limiting national regulator and individual bank discretions in the area of internal models (i.e. adopt a more standardized approach to internal models).
- Strengthens the leverage ratio by imposing tougher requirements on systemically important banks.
- Full Pillar 2 disclosure as is required in Denmark and soon in Sweden.
- Enhances disclosure by requiring banks to disclose results of applying their models to hypothetical portfolios, and to publish additional metrics that might be useful to investors, such as credit risk data on mortgages rather than the overly-simplistic Basel III reporting that is limited to reporting dollar values of mortgages that fall within specific LVR bands.

More fundamental, longer term reforms might include:

- Abandoning the use of internal models given that approximately 2/3rds of banks have purchased vendor models and there is considerable doubt over the degree of familiarity and understanding that the internal staffs of banks has of the models.
- Market-share limits to aid in the ending of the too big to fail assumption and so limit the unfunded liabilities that are not currently or appropriately reflected on government balance sheets.
- Linking executive remuneration to customer centric metrics rather than to ROE to foster the innovations necessary to break the link between bank profitability and market volatility and to dampen excessive risk-taking.

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- A better alignment of capital and risk reporting for regulatory purposes and the economic decision-making of individual banks.

Acknowledgements

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Table 1 - Comparison of A.P.R.A. and the Basel Committee on Banking Supervision Basel III Capital Ratios

Key differences relating to the definition of CET 1 according to Australian Bankers' Association sourced from the ABA Dec. 2012 Fact Sheet.		Movement in CET 1 ratio from APRA Basel III to internationally harmonised Basel III	Morgij Analytics and Margate Financial Research Solutions research view	Basel Committee On Bank Supervision RCAP Review of Australia
Equity investments	The BCBS Basel III minimum requirements provide concessional thresholds before a 100% deduction is required from CET1 for equity investments in financial institutions and entities that are deconsolidated for regulatory purposes (e.g. insurance and funds managements businesses). APRA requires these equity investments to be deducted fully from CET1.	Increase ratio	We agree with BCBS that meaningful cross-jurisdictional comparability is unattainable and that differences are immaterial.	BCBS is reviewing the prudential treatment of banks' equity investments due to ambiguities. Inconsistencies and lack of disclosure of IRB models results in useful comparability being unattainable.
Deferred tax assets	The BCBS Basel III minimum requirements provide for concessional thresholds before a 100% deduction is required from CET1 for deferred tax assets relating to temporary differences. APRA requires all deferred tax assets, including those relating to temporary differences, to be deducted fully from CET1.	Increase ratio	We agree with the BCBS view that differences are immaterial and that there is a need to harmonise internationally the definition of capital and the treatment of deductions.	Inconsistencies in the definition of capital and capital deductions across jurisdictions inhibit comparability. APRA is assessed as "largely" compliant, rather than fully compliant. BCBS proposes to harmonise deductions internationally.
Capitalised expenses net of deferred fee income	APRA requires capitalised expenses net of deferred fee income to be deducted from (or added to) CET1. The BCBS Basel III minimum requirements do not provide for any adjustments for capitalised expenses from CET1 net of deferred income.	Increase or decrease ratio	APRA's approach is inconsistent with Basel III and therefore reduces international comparability.	The BCBS Basel III minimum requirements do not provide for any adjustments for capitalised expenses from CET1 net of deferred income.
Treasury shares	APRA does not require investments in a bank's own shares to be deducted from CET1 if they relate to employee share base remuneration schemes –subject to prescribed conditions.	Decrease ratio	APRA's approach is inconsistent with Basel III and therefore reduces international comparability.	Under the BCBS Basel III minimum requirements investments in a bank's own shares are required to be deducted from CET1

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Interest Rate Risk in the Banking Book	APRA requires banks to determine risk weighted assets (RWAs) for interest rate risk in the banking book.	Increase ratio	IRRBB is recognized and measured by all regulators operating under Basel III.	The BCBS Basel III make no reference to RWAs for interest rate risk in the banking book.
Downturn loss given default (LGD) for mortgage portfolios.	APRA imposes a floor of 20% on the downturn LGD used in advanced credit models for determining credit RWAs for residential mortgages. The BCBS Basel III minimum requirements impose a floor of 10% for these exposures. The BCBS floor has a flow on impact on the calculation of expected loss for these exposures, which impacts the capital deduction relating to expected loss in excess of eligible provisions.	Increase ratio	Comparability of RWAs produced by internal bank models is far more complex than adjusting a single LGD parameter, whilst ignoring the impact of other parameters including PD. Regulators do not simply apply the floor LGD as a standard parameter. CBAs assumption of a 1.1% comparison adjustment to its capital ratio implies that overseas regulators apply a tiny 5% RWA to residential mortgages resulting in a minimum capital requirement of a miniscule 0.4% and gearing of 200:1.	The BCBS Regulatory Consistency Assessment Program, March 2014 review of Australia expressed concern at APRA potentially understating the capital required to back residential mortgages because Australia is failing to restrict the definition to owner-occupied dwellings.
Specialised lending/slotting	APRA requires the supervisory slotting approach be used in determining credit RWAs for project finance, object finance, income-producing real estate, and commercial real estate exposures, rather than the IRB Advanced approach. The internal ratings based approach also has a flow on impact on the calculation of expected loss for these exposures, which impacts the capital deduction relating to expected loss in excess of eligible provisions.	Increase ratio	We agree with the BCBS Regulatory Consistency assessment Program that this is not a material difference and does not warrant an increase in the harmonised capital ratio as it merely compensates for the exclusion of the High Value Commercial Real Estate category may result in HVCRE exposures being classified in the income-producing real-estate category, therefore attracting lower risk- weights than envisaged by the Basel Framework.	The BCBS Basel III minimum requirements allow the advanced internal ratings based approach to be used in determining credit RWAs for these exposures. BCBS requires a High Value Commercial Real Estate category to be assessed with higher RWAs.

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Table 2 – APRA and International Comparison of Capital Ratio Harmonisation Adjustments for Common Tier 1

	CBA	NAB	ANZ	Westpac	MFRS[3] & Morgij Analytics
Equity investments	0.9%	0.74%[4]	0.8%	0.80%[5]	0.0%[6]
Deferred tax assets	0.3%	0.24%	0.2%	0.27%	0.0-0.3%[7]
Capitalised expense net of deferred fee income	0.0%	0.0%	0.2%	0.0%	0.0%
Treasury shares	0.0%	0.0%	0.0%	0.0%	0.0%
Interest Rate Risk in the Banking Book	0.4%	0.84%[8]	0.4%	0.24%	0.0%[9]
Downturn loss given default (LGD) for mortgage portfolios.	1.2%	0.0%	0.6%	0.73%	-0.5%[10]
Specialised lending/slotting	0.0%	0.0%	0.0%	0.4%[11]	0.0%
Total Adjustments	2.8%	1.82%	2.20%	2.44%	-0.2-0.5%

3

4 NAB combines equity investments and deferred tax assets at 0.98%, we have assumed 75% of the total is attributable to equity investments.

5 Westpac combines equity investments and deferred tax assets at 1.07 without itemising; we have assumed 75% of the total is attributable to equity investments.

6 This item has been assessed as non-material or non-significant in the BCBS March 2014 RCAP review of APRA.

7 This item has been assessed as non-material or non-significant in the BCBS March 2014 RCAP review of APRA.

8 NAB simply attributes 0.84% to RWA adjustments with no further disclosure.

9 This item has been assessed as non-material or non-significant in the BCBS March 2014 RCAP review of APRA.

10 We assume a small negative adjustment based upon BCBS RCAP March 2014 finding that APRA does not restrict residential mortgages to "owner-occupied."

11 Westpac includes unspecified "other differences" with specialised lending.

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