

MEMORANDUM FOR FSO Committee

FROM Financial Policy (author: Gael Price)

DATE 07/09/2016

SUBJECT **CAPITAL REVIEW: CURRENT STANDARDS AND INTERNATIONAL COMPARISONS**

FOR YOUR Information

We recommend that the Committee:

1. **Notes** that while our approach to capital adequacy appears to be more conservative than that taken by either Basel or APRA, genuine international comparison is made difficult by the complexity of implementation differences across jurisdictions.
2. **Notes** that our key areas of difference relative to Basel are in our standards for the IRB approach. Our requirements for the standardised approach also appear to be more conservative than Basel in some places.
3. **Notes** that our conservatism relative to Basel is very difficult to quantify. Evidence from APRA and from selected individual banks suggests that our standards are roughly equivalent to banks holding an additional 1-2 percentage points of CET1 capital when measured on a Basel basis.
4. **Notes** that we do not seek any decision today on how to position ourselves relative to the capital standards of other jurisdictions.

Introduction

1. This paper provides a very high-level assessment of our capital adequacy standards compared with standards in other jurisdictions.
2. We find that our standards are generally somewhat more conservative than those in other jurisdictions, and as a result, our banks are likely better capitalised than it would appear from simply comparing capital ratios. However, we note that any comparisons of capital standards across countries – whether quantitative or qualitative – are fraught with difficulty and highly prone to error. Attempts to make such comparisons should be treated in conjunction with other approaches to measuring conservatism, such as benchmarking exercises. The reason for this is that even at the asset class level, the risk weight assigned at a given portfolio or segment of a portfolio may or may not be appropriate, either because of model design or segmentation, or asset class selection. That is why exercises such as benchmarking are important.
3. The introduction of new standards by the Basel Committee on Banking Supervision (BCBS) may erode our comparatively conservative stance, at least in appearance. BCBS has indicated that overall capital is not intended to increase under the new rules. However, some of the proposed new standards appear to align BCBS with our

current practice, meaning that our standards will no longer be transparently more conservative.

4. One example is the proposed introduction of risk weight differentiation by LVR for residential mortgage loans under the BCBS standardised approach – a form of differentiation that is already in our own standardised approach. Although still under consultation and hence subject to uncertainty, a change of this nature by BCBS would leave our standards looking more similar to other jurisdictions' than is currently the case.
5. On the other hand, there are some conservative measures used internationally that we have chosen not to implement. These include Pillar 2 capital, capital add-ons for systematically important financial institutions (SIFIs), and total loss-absorbing capital (TLAC). In such areas we are transparently less conservative than international practice. (Note however, that in not implementing a D-SIFI overlay, the question of the overall level of capital conservatism was left for the current capital review.)
6. We do not seek a decision today upon how we should position ourselves relative to other jurisdictions. Rather, this paper seeks to provide background information ahead of possible future decisions. Later papers will address questions around whether and how we could adjust our framework to maintain our margin of conservatism, along the lines of the FSI thinking in Australia.
7. The paper has three sections:
 - a. A brief overview of our current standards;
 - b. A summary of how, historically, we arrived at our current standards;
 - c. Qualitative and quantitative comparisons between our standards and those in other jurisdictions.

A. Overview of our current standards

8. Our capital adequacy standards are made up of:
 - a. Definitions of capital
 - b. Minimum capital ratios
 - c. Standards for measuring risk-weighted exposures to
 - i. Credit risk
 - ii. Operational risk
 - iii. Market risk

9. The table overleaf summarises our standards relative to Basel standards in each area.

Aspect	Area	Basel basis	Key differences from Basel ¹
Definitions of capital	CET1	Basel III ²	Few
	AT1		
	T2		
Minimum capital ratios	CET1	Basel III	Few
	Tier 1		
	Total		
	Buffer	Basel III	Sum of the conservation buffer and countercyclical capital buffer ³
Credit risk	Standardised approach	Basel II ⁴	Additional risk weight differentiation by LVR for housing loans Higher risk weights for investor loans Higher risk weights for reverse mortgages
	IRB approach	Basel II	A number of additional features result in risk weights higher on average than other jurisdictions' (see section C of this paper)
Operational risk	Standardised approach	Basel II	Few
	Advanced measurement approach	Basel II	A nominal floor on operational risk capital is imposed for each AMA bank
Market risk	Standardised approach	Market risk amendment (1996) ⁵	Includes a measure of interest rate risk in the banking book as a part of market risk No specific risk charge, commodities risk, or internal modelling
Leverage ratio		Basel III	Not implemented

¹ These differences were recently summarised for FSAP purposes in [#6461429](#), pages 178-181.

² <http://www.bis.org/bcbs/basel3.htm>

³ <https://www.bis.org/bcbs/ccyb/>

⁴ <http://www.bis.org/publ/bcbs128.htm>

⁵ <http://www.bis.org/publ/bcbs24.htm>

B. Historical perspective

10. Our approach to capital standards has long been to adopt international standards as far as we consider them appropriate for New Zealand. While Basel II was under development, its suitability for implementation here was considered in a number of internal papers.
11. Early discussion⁶ dealt with whether certain aspects of the draft Basel II standards were appropriate for New Zealand. Specifically, questions were raised about the suitability and usefulness of:
 - a. Pillar 2;
 - b. The IRB approach to credit risk;
 - c. The other internal model approaches (to operational risk and market risk); and
 - d. The additional detail in the Basel II Pillar 3 disclosures.
12. As the discussion evolved, focus fell particularly on the IRB approach. It was noted that allowing internal models could compromise our principles of conservatism and incentive-compatible supervision.⁷ Following lobbying by the banks and Australian authorities, it was further noted that APRA intended to implement the approach in a conservative fashion with features that would limit the fall in risk weights.⁸
13. Once the Basel II standards were finalised in June 2004, engagement with APRA about the IRB approach became formal.⁹ In late 2004 we considered how our concerns about the IRB approach could be mitigated through implementation details, including division of labour with APRA.¹⁰
14. A final decision to allow the IRB approach was taken in February 2005.¹¹ Decisions followed in 2005 and 2006 on implementing the Advanced Measurement Approach for operational risk¹² and on the implementation details of the standardised approach to credit risk.¹³
15. The Basel III framework was announced in 2010 and revised in June 2011. We began work on implementing the reforms almost immediately¹⁴, and decided following consultation to adopt the entire package¹⁵, with the exception of the leverage ratio. Our consultative document noted that “the one-size-fits-all aspect of the leverage ratio is poorly targeted and can give a misleading picture of risk... the risk-based approach renders a leverage ratio unnecessary.”¹⁶ (We will revisit the merits of a leverage ratio as part of the capital review.)

⁶ See Brady (2001), [#103584](#).

⁷ See Brady (2002), [#123186](#).

⁸ See FSD (2003), [#134253](#).

⁹ See Twaddle (2004), [#156238](#).

¹⁰ See Harrison (2004), [#162849](#).

¹¹ See Twaddle (2005), [#1426958](#).

¹² See Frith and Twaddle (2005), [#1826703](#).

¹³ See Yeh (2006), [#2341129](#).

¹⁴ See Irvine (2011), [#4364668](#).

¹⁵ See Irvine and Barker (2012), [#4812493](#).

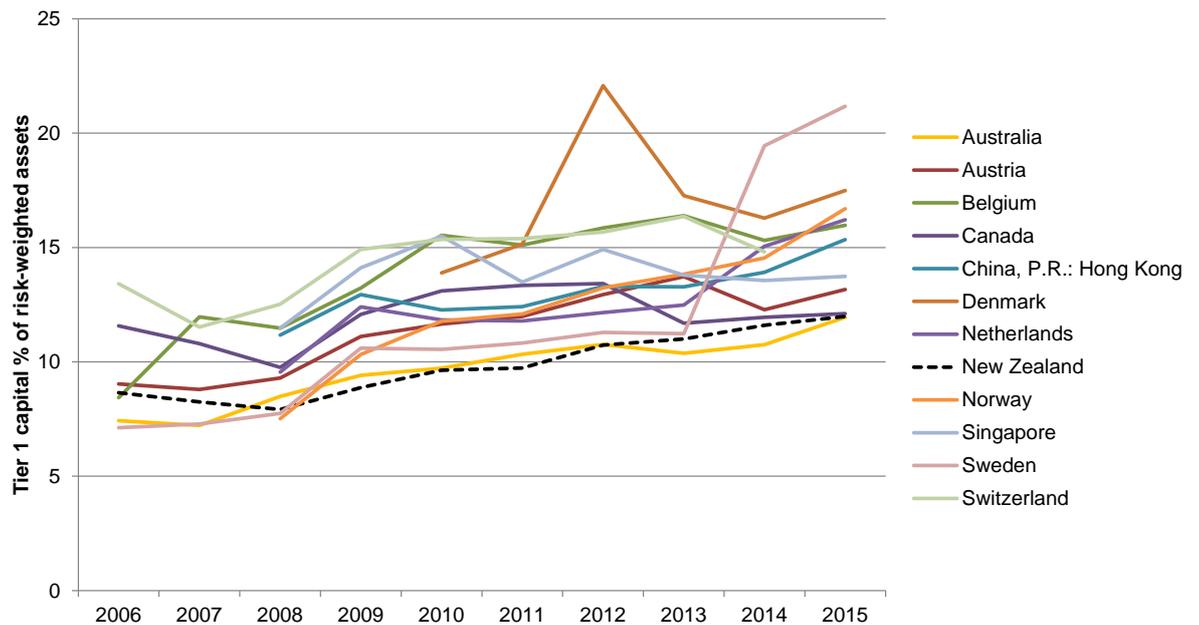
¹⁶ [Consultation Paper: Implementation of Basel III capital adequacy requirements in New Zealand](#), November 2011, page 13.

C. International comparisons

16. When implementing the Basel standards, we made a number of adjustments in favour of ensuring that capital is held at a conservative level. The majority of these conservative adjustments are in the IRB approach to credit risk.
17. The main conservative adjustments to the IRB approach¹⁷ are:
- a. Increased risk weights on farm lending – achieved via a maturity floor, minimum LGDs, and no firm size adjustment;
 - b. Increased risk weights on residential mortgage loans – achieved via minimum LGDs and a higher correlation coefficient;
 - c. Higher risk weights for investor loans – achieved via higher minimum LGDs and a higher correlation coefficient;
 - d. Higher risk weights for reverse mortgages;
 - e. No use allowed of the Qualifying Revolving Retail Exposures asset class; and
 - f. No point-in-time variables allowed in internal models.
18. There are also several conservative adjustments in our standardised approach, relative to the BCBS standard. These adjustments are:
- a. Additional risk weight differentiation by LVR for housing loans;
 - b. Higher prescribed risk weights for investor loans; and
 - c. Higher prescribed risk weights for reverse mortgages.
19. At the same time, there are some areas where our approach is less conservative than international practice. These include:
- a. Our limited use of pillar 2 capital add-ons;
 - b. Other novel uses of capital, such as SIFI add-ons and TLAC;
 - c. Our standards allowing investors to be placed in the residential mortgage asset class (BCBS wording treats them as corporates); and
 - d. Our hands-off approach to the supervision of internal models means that we have limited sight of the true appropriateness of calibrations in IRB banks' models, which could mean that actual risk weights resile from conservatism in ways we don't fully understand.
20. The effect of our conservative adjustments is to increase risk weights for New Zealand banks, relative to a hypothetical bank holding the exact same portfolio in some other (Basel III-consistent) country. As a result of the higher risk weights, banks' reported capital ratios are lower than they would be if risk weights were comparable across jurisdictions.
21. Figure 1 overleaf shows system-wide tier 1 capital ratios since 2006 in selected jurisdictions. New Zealand's capital ratio appears near the bottom of the range; this is partly a result of our higher risk weights reducing reported capital ratios. As a result, simple capital ratio comparisons of this nature provide limited information, since implementation differences across jurisdictions mean that headline ratios are not directly comparable.

¹⁷ See our FSAP self-assessment ([#6461429](#)), pages 179-180, for discussion.

Figure 1: System tier 1 capital ratio (IMF financial soundness indicators)



Source: [IMF](#), New Zealand banks' disclosure statements

22. Quantifying the effect of our conservative adjustments on reported capital ratios would be an impractically time consuming exercise and require detailed information about individual banks' specific exposures. The challenging nature of such an exercise was noted in the *Final Report* of the Australian Financial System Inquiry, which observed:

There is no benchmark of international practice: all jurisdictions have implemented the Basel framework in a different manner, reflecting their domestic circumstances. As a result, it is highly complex to compare even two jurisdictions, let alone to compare all jurisdictions.¹⁸

23. Notwithstanding such caveats, APRA has recently attempted to quantify their own conservatism relative to BCBS standards.¹⁹ In addition, several of our Australian-owned banks have attempted a similar exercise, measuring their reported New Zealand capital levels on an APRA basis. At first glance, it appears that it may be possible to take this evidence in sum as an indicator of New Zealand's distance from BCBS, in capital terms.

24. However, any conclusions from such an exercise cannot be treated as definitive. The process is almost certainly filled with errors and omissions, including the following.

- a. APRA acknowledge that their own measures are likely to be at least somewhat inaccurate, observing that "computing a precise 'internationally harmonised' capital ratio is not practically possible"²⁰ (emphasis in original).
- b. The studies undertaken by banks are unlikely to be directly comparable with APRA's work. [REDACTED] claim that their "analysis aligns with the APRA study", but we have no way of verifying this; even so, the complexity of the exercise is such that mistakes could easily have been made, even with the best of

¹⁸ *Final report*, Financial System Inquiry, November 2014, [Chapter 1: Capital levels](#).

¹⁹ [International capital comparison study](#), APRA information paper, 13 July 2015.

²⁰ *Ibid.* p. 10.

intentions. The other banks do not claim that their numbers are comparable with APRA's work.)

- c. The evidence of our distance from APRA derives from work conducted by only three banks. As such, it will be heavily influenced by those banks' unique portfolios. There is no reason to suppose that these banks' numbers are in any way representative on a system level. Indeed, when two of the banks replicate APRA's work directly by computing the distance between APRA and BCBS standards for their own portfolios, the spreads they report are significantly smaller than the system-wide spread estimated by APRA. This evidence suggests either that these two banks' portfolios are not representative, or that errors or omissions reduce the comparability of the banks' own work with the work done by APRA.
 - d. The banks' work was carried out on their own portfolios for the purpose of demonstrating their capital adequacy to international investors. Consequently, there is a clear incentive for their "adjusted" capital ratios to be inflated, even unintentionally. If this occurred it would exaggerate the upward adjustment made to New Zealand reported capital ratios, and hence overstate our conservatism relative to BCBS.
 - e. The banks' work relates to two different dates (March 2014 and June 2015), both of which are different from APRA's reference date (June 2014).
25. APRA's study concluded that the additional conservatism in Australian standards relative to BCBS was the equivalent of around 300 basis points on CET1 ratios as at June 2014. This spread was enough to lift the average comparable capital ratio of Australian banks from 8.6 percent to 11.7 percent, or from the first to the third quartile of peer jurisdictions.
26. Work by three of our banks suggests that the implied spread between our standards and BCBS standards varies by bank, with a range of 110 to 210 basis points for CET1 ratios. The banks' studies relate to different dates from the APRA study.
27. It should be noted that two of these banks also calculated their capital on an APRA basis, and found APRA's spread over Basel to be less than 100 basis points for their specific portfolios – much smaller than the system-wide spread of 300 basis points computed by APRA.
28. The banks' results are shown in figure 2 on the next page. We have no way of verifying these figures; given the complexity of the exercise, it is likely that errors or omissions have distorted them. As a result they should be treated as indicative, not definitive.
29. This information allows us to tentatively place ourselves on the world's distribution of CET1 ratios used in the APRA study. The degree of conservatism implied by the banks' private work would lift our average capital ratio to the boundary of the third and fourth quartiles (see figure 3 on the next page). It should be noted that these results are highly dependent upon individual banks' studies, and no attempts have been made to correct the figures to be representative of the system as a whole. Consequently, the bounds of confidence on our relative position are very wide.

Figure 2: CET1 capital ratios measured on RBNZ and “internationally comparable” bases

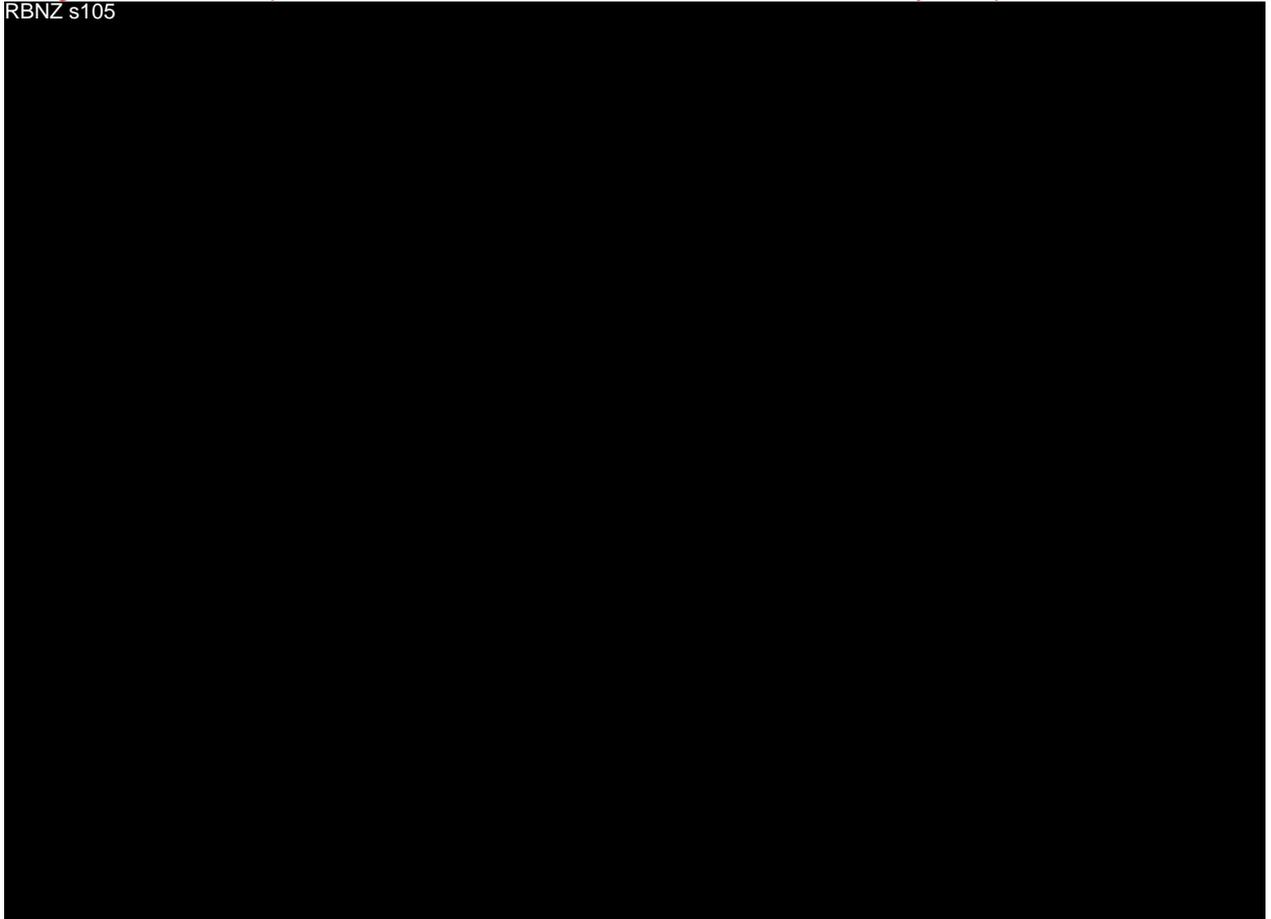
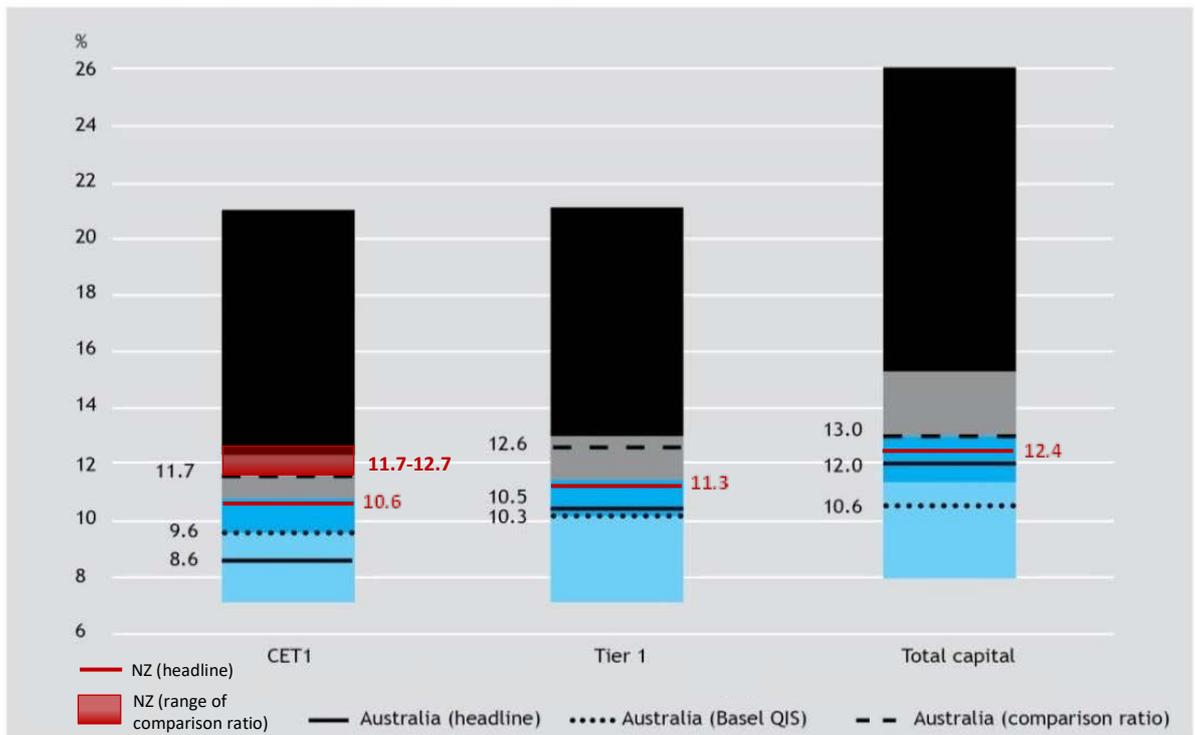


Figure 3: Basel QIS capital adequacy ratios (June 2014, New Zealand added)



Sources: APRA *International comparison study*, bank disclosure statements, selected banks’ calculations. The New Zealand “comparison ratio” is based on an average spread derived from work by individual banks, at different dates, and is unlikely to be representative of the system as a whole.