

Background notes on capital review

The internal models framework has not lived up to its promise

- The internal models approaches to calculating risk-weighted assets aim to improve banks' capital allocation by taking advantage of the internal information banks have on their portfolios to better aligning regulatory capital with risk. However, internal models are opaque (undermining market discipline) and are not incentive compatible (without strong oversight, banks can engineer their models to reduce capital back to the privately optimal level).
- The Bank and other regulators have been unable to assess whether outcomes from internal models represent genuine differences in the underlying risk exposures of banks, or differences in the modelling methodologies. Differences in capital outcomes across banks due to the latter are not justified, but in practice it is very difficult to disentangle the two contributing factors.
- Contingent convertible instruments were brought into Basel III framework as an alternative to requiring more high-quality capital (CET1). However, they:
 - are complex for banks, regulators, and markets;
 - have questionable loss capacity (particularly when held by retail investors);
 - have not always worked in practice as "going-concern" instruments (i.e. recapitalising a bank prior to its failure).
- We adopted the minimum capital ratio requirements in Basel III, but some options were left on the table (e.g. higher capital for SIFIs). In recent years, other regulators have continued to ratchet up their minimum requirements, and on some measures of overall conservatism, we are towards the middle of the pack now. We want to reconsider whether we have the right calibration given NZ's risk profile.

We aim for a framework that is robust, risk-sensitive, and fair to all

- We have a very high degree of confidence that the system's capital will be there to absorb losses when needed.
- The capital requirements are sensitive to risk, where risk can be reliably and objectively measured and monitored, to allow banks to efficiently allocate their capital.
- The framework doesn't confer unjustified competitive advantages on to IRB banks over standardised banks, or for one IRB bank over others.
- The framework has built-in mitigants that allow us to focus less on verifying compliance and prescribing the details of the models, and more on analysing the risks in institutions and across the system.
- IRB banks aren't frustrated by model approval processing delays, because we can focus on the most important risks and not sweat the details by streamlining the model approval process dramatically. This means they can get on with identifying and managing their risks.
- The level of capital in the system is calibrated to New Zealand's banking industry and country risk profile, and reflects policy and government risk appetite.
- The framework is robust, simple to monitor and comply with, aligned with APRA where it makes sense to do so, and accepted as fit for NZ purpose.

Some differences across banks are justified, many aren't

- The key consideration is whether differences in risk weight outcomes are due to differences in the underlying risk exposures of the bank, or due to the methodology the bank uses to model the risk.

- If we can objectively verify comparative riskiness (for example, the LVR profile of a mortgage portfolio, or interest coverage for farm lending), we are comfortable with differences in capital outcomes across banks.
- This also applied to the standardised approach – the standardised approach is a one-size-fits-all, fall-back option, so we should be open to lower risk weights where there is supporting empirical evidence (and the converse, if the risks are shown to be higher).
- Risk weight advantages that are not justified include:
 - Where the outcome is due to a less conservatively calibrated model, given the same portfolio risk.
 - Where the bank has no informational advantage relative to standardised banks to justify the use of an internal model, e.g. where the bank just uses an external credit rating, or where data quality and systems are poor.

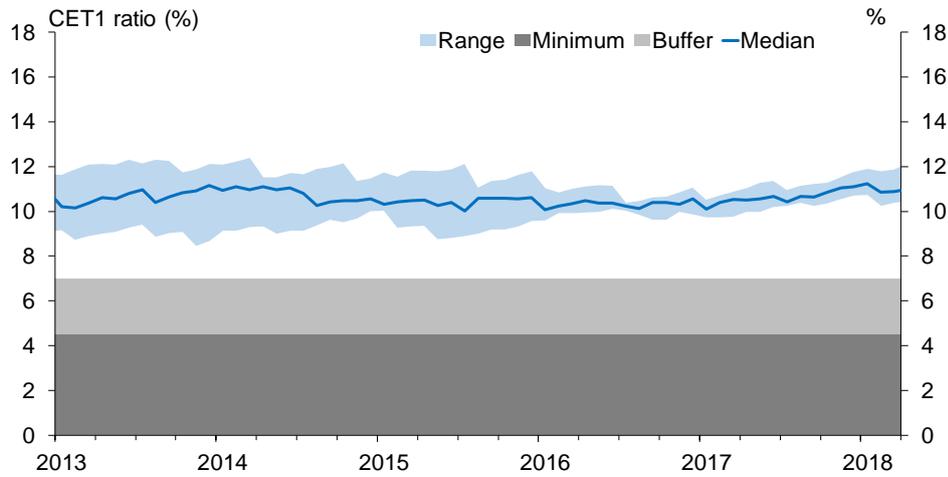
Both theory and empirics suggest the cost of higher capital on GDP is very small

- From a theoretical point of view, the Modigliani and Miller theorem states that the value of a firm's assets is unaffected by how those assets are financed (the contributions of equity and debt). Reducing a bank's leverage through requiring more equity funding should leave its weighted average cost of funding unchanged, because the cost of its equity should decrease (the equity becomes less risky). This is not likely to hold in practice for a variety of reasons, but it is a useful starting point.
- Even if equity funding is more costly because of distortions such as implicit guarantees, and limiting the ability of banks to take advantage of these subsidies through higher capital requirements leads to increases in lending costs, these costs are private costs borne by shareholders and borrowers who are, in effect, receiving subsidised loans. Higher capital requirements are not necessarily socially costly.
- The empirical evidence on the cost of bank capital show the links between capital levels and lending rates are modest. The effect of bank capital on lending growth is ambiguous, with recent cross-country studies showing a positive relationship between banks' capital levels and lending growth, due to the reduced cost of well-capitalised banks' debt funding.
- Our survey of the literature in 2016 concluded that a one percentage point increase in Tier 1 requirements could lead to a 5-8 basis point increase in lending spreads, reducing the steady state level of GDP by 1-5 basis points. Recent studies suggest the increase in lending spreads could be lower (around 3 basis points).

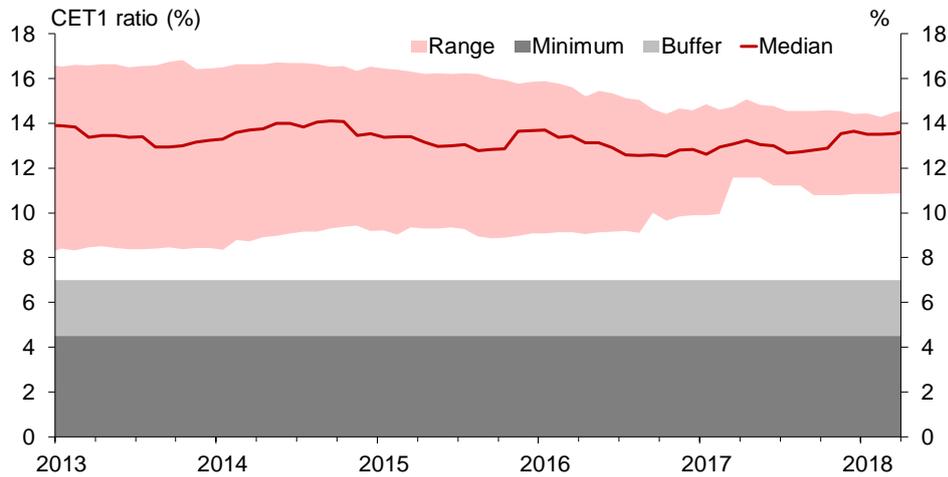
Capital levels in New Zealand

- In practice, the large banks operate with significant headroom above the regulatory minimum and regulatory buffer (minimum 4.5%, buffer 2.5% on top).
- Small banks operate at capital levels that are higher still than the large banks, at around 13% (and this is calculated using the higher standardised risk weights).
- Banks' capital ratio targets are chosen with reference to:
 - the regulatory minima;
 - rating agency and wholesale funding market expectations;
 - international and domestic peer comparison;
 - other internal analysis in banks' ICAAP process (e.g. stress testing); and,
 - an allowance for year-to-year variability above the regulatory buffer.
- Despite the gradual increase in the large banks' Tier 1 capital ratios and declining leverage since 2008, profitability on a return on equity and return on asset basis is around its historical norms (15% and 1%).

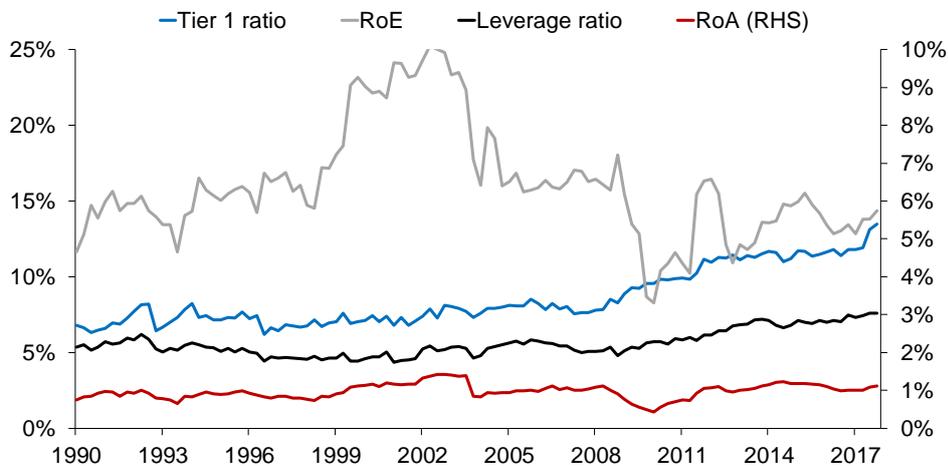
CET1 capital ratios: range and median of **large banks**, regulatory minimum and buffer



CET1 capital ratios: range and median of **small banks**¹, regulatory minimum and buffer



Capital and returns: median of **large banks**' Tier 1 ratio, RoE, and RoA



¹ Co-op, Heartland, Kiwibank, Rabo NZ, SBS, TSB.