### Timeline of the Capital Review

<table>
<thead>
<tr>
<th>Ratio Analysis</th>
<th>Final Decisions</th>
<th>‘Small’ Policy changes &amp; Handbook Restructure</th>
<th>Transitional Period</th>
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<tbody>
<tr>
<td>- Confirm in-principle decisions on denominator</td>
<td>- Draft Regulatory Impact Statement (RIS) and final decisions</td>
<td>- Consult on ‘small P’ changes (incl. APRA changes)</td>
<td>- Numerator decisions in effect (i.e. New issues need to comply straight away)</td>
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<td>- Buffers and minima</td>
<td>- Publish RIS and final decisions</td>
<td>- Ongoing revisions to exposure drafts due to ‘small P’ changes</td>
<td>- Grandparenting of noncompliant capital instruments</td>
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<td>- Output floor calibration</td>
<td>- Consult and finalise exposure drafts (BPR / BPG)</td>
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<td>- Transition period for dual reporting/ output floor etc.</td>
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<td>- Optimal capital ratio calibration and framework: draft consultation paper</td>
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<td>- Publish consultation paper</td>
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<td>- Consultation period</td>
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**2018**
- Nov 7: Confirm in-principle decisions on denominator
- Nov 7: Buffers and minima
- End-Nov / Early Dec: Output floor calibration
- End-Nov / Early Dec: Optimal capital ratio calibration and framework: draft consultation paper
- Dec: Publish consultation paper
- Dec: Consultation period

**2019**
- Nov 7: Confirm in-principle decisions on denominator
- End-Nov / Early Dec: Optimal capital ratio calibration and framework: draft consultation paper
- Apr: Draft Regulatory Impact Statement (RIS) and final decisions
- Apr / May: Publish RIS and final decisions
- Apr / May: Consult and finalise exposure drafts (BPR / BPG)
- June: Numerator decisions in effect (i.e. New issues need to comply straight away)
- June: Grandparenting of noncompliant capital instruments
- June: Transition period for dual reporting/ output floor etc.
- Submissions close end-March 2019

**2020**
- Q1: Draft Regulatory Impact Statement (RIS) and final decisions
- Q1: Publish RIS and final decisions
- Q1: Consult and finalise exposure drafts (BPR / BPG)
- Q2: Consult on ‘small P’ changes (incl. APRA)
- Q2: Ongoing revisions to exposure drafts (BPR / BPG)
- Q2: Transition period for noncompliant instruments
- Q2: Transition period for dual reporting, output floor, etc.
The Risk Appetite Framework
A framework for setting capital requirements

Presentation to FSO Nov 2018.
In order to set a capital target...

We need a **policy goal**. It must:

- Be consistent with our legislative mandate
- Make sense in the real world
- Draw on findings from the international literature on capital
- Accommodate NZ-specific issues
- Lend itself to a numerical goal (therefore allowing us to incorporate modelling rather than simply qualitative judgements)
- Be precise enough for us to be held accountable
...and we need a decision-making framework. It must:

- Be consistent with our public statements that the capital framework must reflect NZ conditions (we can’t just uplift other countries’ targets)
- Draw on findings from the international literature on capital
- Consistent with our legislative mandate
- Make sense in the real world
- Be capable of generating a credible capital target
- Give us a manageable range of capital target options
- Be workable given data limitations
Things to consider

• People are risk averse, so we need consider risk explicitly (people aim for stability in and of itself, not just because it impacts on output).

• There is a complex two-way relationship between capital and ‘output’ (material well-being). This introduces trade-offs and thus “efficiency” (economics meaning). Earthquake preparedness analogy.

• We’re tasked with maintaining “soundness” and “efficiency”.

• Many possible interpretations of ‘efficiency’, if we’re not explicit about our meaning there will be confusion and unproductive debate about our capital target.
Proposed 2-part policy goal

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<tr>
<th>For public consumption</th>
<th>Interpretation used in-house</th>
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<td>• Ensure the banking system remains solvent and has the confidence of creditors even when subject to extreme shocks (delivering ‘soundness’)</td>
<td>• Cap the probability of banking sector insolvency in a given year at 0.5% to 1% and have enough capital to maintain creditor confidence after a crisis (‘soundness’)</td>
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<tr>
<td>• If there are opportunities to simultaneously reduce risk and increase output, take advantage of them (delivering ‘efficiency’)</td>
<td>• If there are opportunities to simultaneously reduce risk and increase the present value of future output, take advantage of them (‘efficiency’)</td>
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More on efficiency

• Increasing capital is assumed to always reduce risk (increase stability).

• Capital has an ‘output benefit’. This is the output that would otherwise be lost if a crisis occurred.

• Capital also potentially has an ‘output cost’. This is the output lost due to lending rate being higher (assuming increasing capital increases lending rates).

• When capital is very low it is likely that the benefit of increasing capital far outweighs the cost. So it makes sense to increase capital (risk goes down and output goes up = win-win) (efficiency head-room)

• When capital is very high, the net output benefit of increasing capital may be negative, meaning the present value of future output will go down (but risk will go down too).

• Earthquake preparedness analogy
More on efficiency

- A country may be relatively accepting of risk and therefore needs relatively little capital to achieve its soundness goal. In this case, efficiency will ultimately determine the capital target, not soundness (point A in the illustration) – US policy towards small banks

- A country that is more risk averse will have a low tolerance for a crisis. At the level of capital needed to meet the soundness objective there may be no efficiency headroom (soundness, not efficiency, will dictate the capital target) (point B in the illustration) - Asia
Proposed 2-step decision making framework

• Step 1: identify what capital is required to cap the probability of banking sector insolvency in any given year at 0.5% or 1% and consider what more might be required to maintain creditor confidence after a crisis.

• Step 2: consider whether increasing the capital target above what is required to meet the soundness objective is likely to increase the net present value of future output (see if there is any win-win opportunity).
Risk-appetite framework

- Policy goal and decision-making framework explicitly consider risk

- “Soundness and efficiency” interpretation is tailored to capital target setting, not necessarily transferable to other areas of the RBNZ
How do we plan to deliver soundness?

1. Establish the capital needed to ensure banking system solvency
   - Basel III capital equation applied to a stylised systemic NZ bank
     - PD, LGD, correlation R, risk tolerance are inputs
     - Use NZ NPL history, other country’s NPL experience, NZ economic data, BS2B limits on LGD and correlation R
   - NZ stress test results
   - Use other regulators analysis linking capital to the probability of bank failure
   - Sense checks
   - Sensitivity analysis

2. Consider how to ensure creditor confidence after a crisis (when capital has been eroded but system is solvent)
   - CET1 or Tier 2?
   - Double-up rule of thumb (as per TLAC) or something else?
   - Implications of CCyB policy?
How do we plan to deliver efficiency?

1. Assess the likely impacts on lending rates and output of the capital needed to achieve the soundness objective

2. Contrast with the likely impacts on output of banking sector insolvency and a loss of creditor confidence
   - Use international literature
   - Look at other regulators’ estimates
   - A RBNZ optimal capital model is available if need be.
Things to consider

1. It’s seems unlikely, based on the modelling so far, that efficiency will dictate our capital target (i.e. once we take soundness into account there may be no efficiency headroom – we’ll be close to the top of the curve)

2. The capital needed to deliver solvency for the system may have the unintended consequence of increasing the capital required of small banks.

3. [Redacted]
Next steps

1. Finalising our soundness-related analysis

2. Considering the merits (or not) of using our own rudimentary optimal capital model

3. Incorporating decisions about the output floor and AT1

4. Liaising with MFD re: buffers

5. Drafting the consultation paper