Setting the capital ratio

Presentation to FSO 20 Nov 2018.

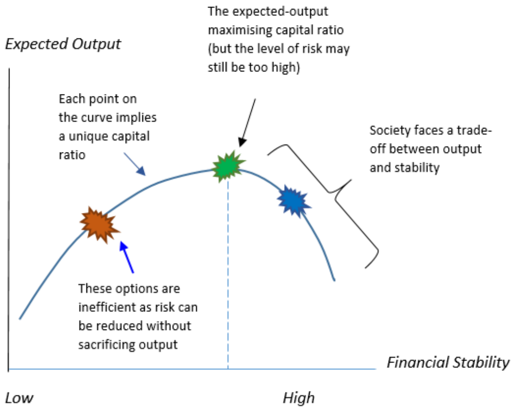
RESERVE BANK
OF NEW ZEALAND
TE PŪTEA MATUA

Our framework

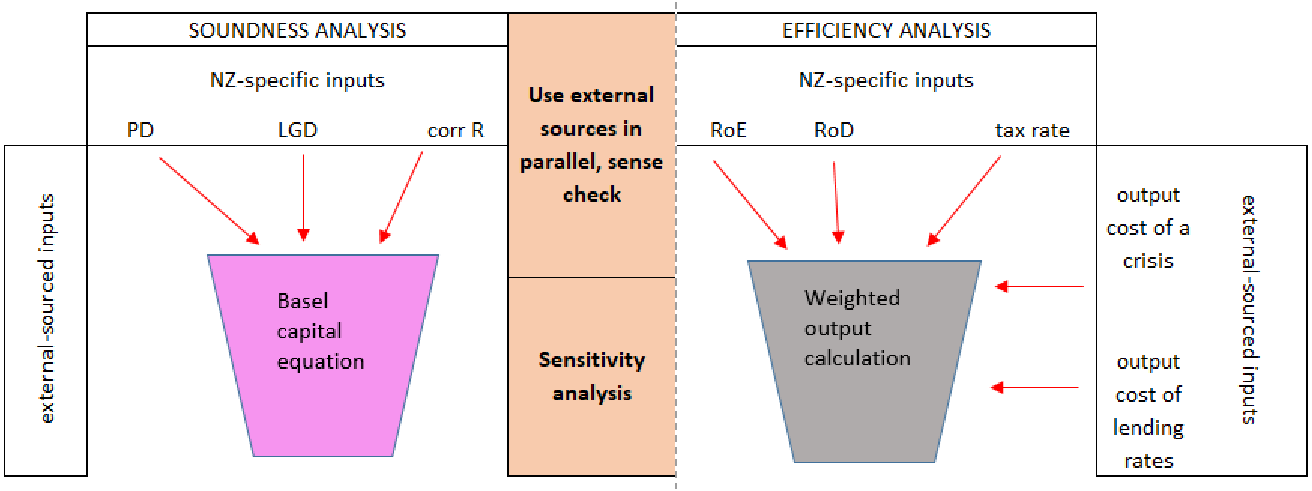
2-step process:

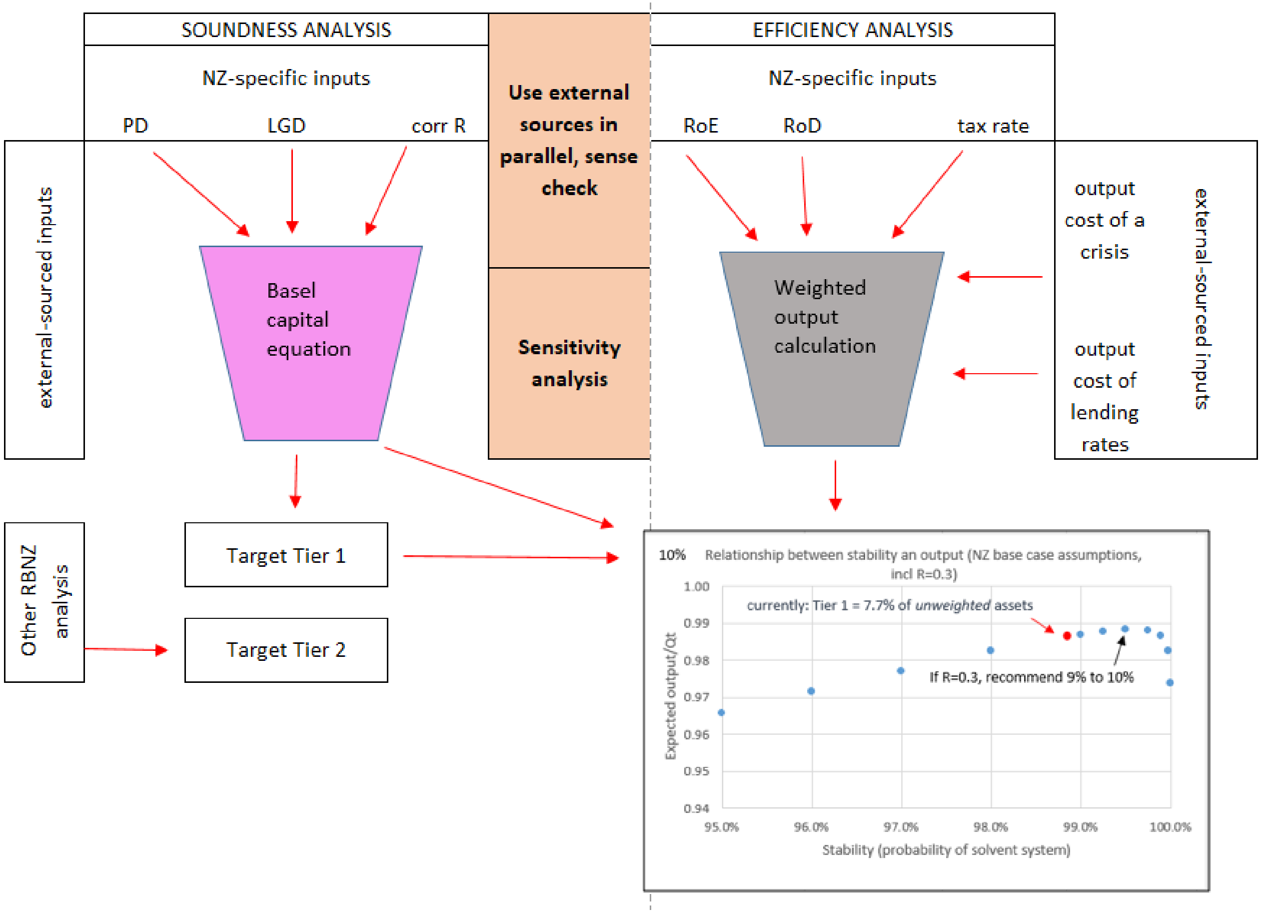
- Identify the level of capital that will cap the probability of a crisis.

- See if any win-win opportunities remain at the capital target.



Our methodology



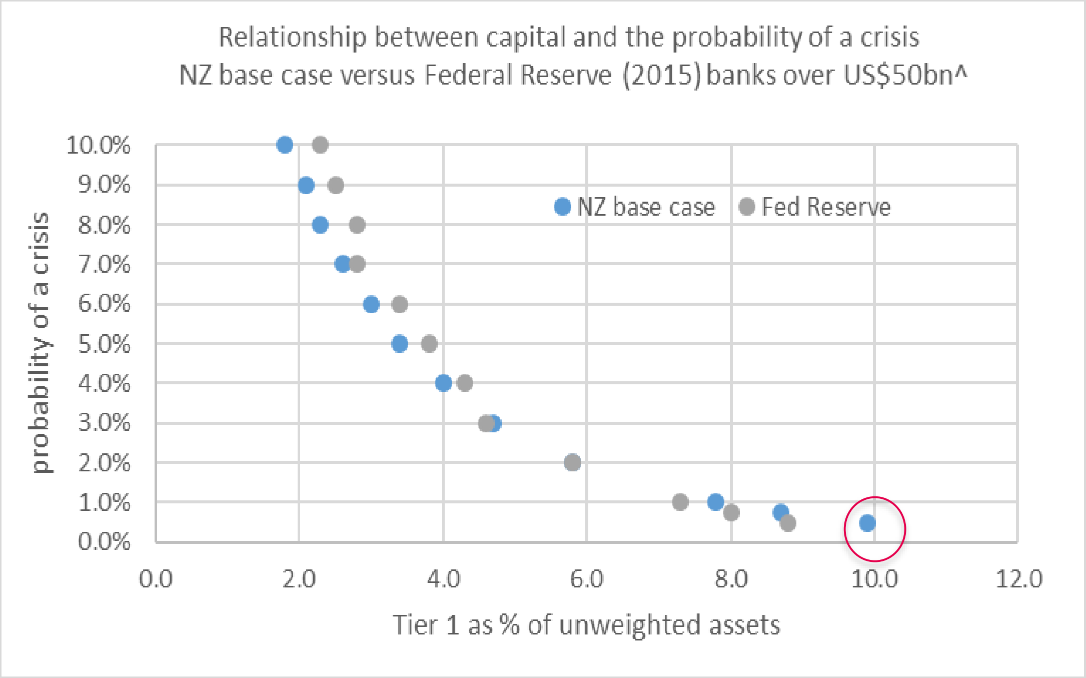


SOUNDNESS ANALYSIS
NZ-specific inputs
PD
LGD
corr R
external-sourced inputs
Basel capital equation
Use external sources in parallel, sense check
Sensitivity analysis
EFFICIENCY ANALYSIS
NZ-specific inputs
RoE
RoD
tax rate
Weighted output calculation
output cost of a crisis
output cost of lending rates
external-sourced inputs
Other RBNZ analysis
Target Tier 1
Target Tier 2
10%
Relationship between stability an output (NZ base case assumptions, incl R=0.3)
currently: Tier 1 = 7.7% of unweighted assets
If R=0.3, recommend 9% to 10%
Expected output/Qt
Stability (probability of solvent system)
1.00
0.99
0.98
0.97
0.96
0.95
0.94
95.0%
96.0%
97.0%
98.0%
99.0%
100.0%

Sense checks

- Other methods for calculating the relationship between capital and the probability of crises (Fed Reserve functions, BoE studies, IMF)
- Implied shock losses versus loss experience in crisis countries
- Explanatory power re: Ireland’s losses
- Input assumptions reflect variety of NZ and external data
    - IMF, World Bank data on global NPLs
    - Optimal capital literature methods and findings
    - NZ stress tests results informed LGD assumptions
    - Indicators of correlations between asset values and output

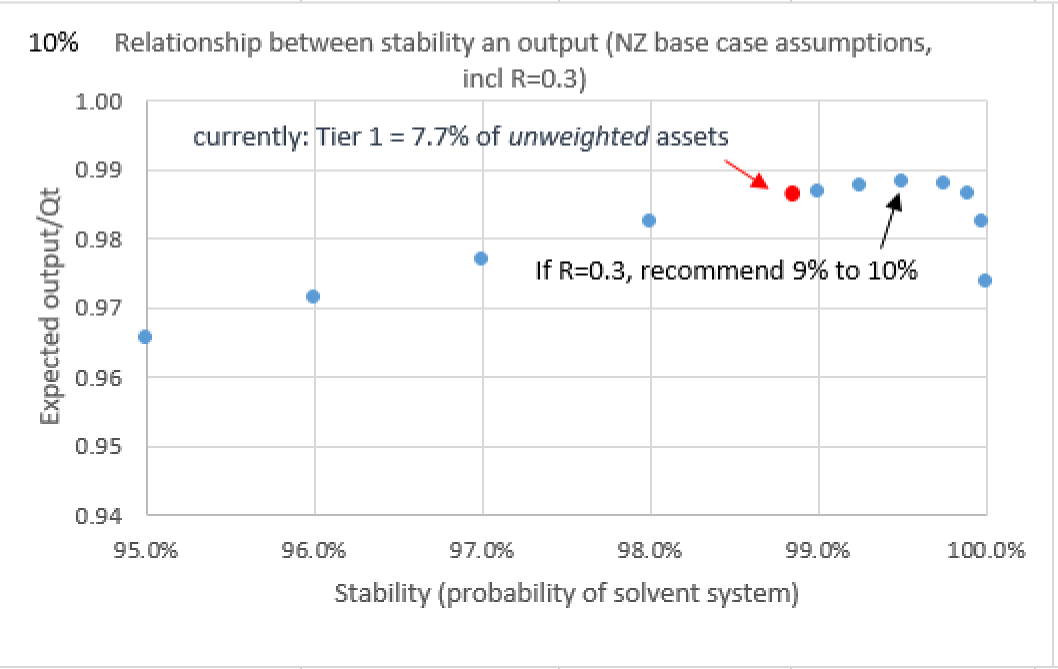
The key to achieving soundness: the probability of insolvency and capital



Recommended Tier 1 target

Tier 1 capital	What we have now	Possible targets for Tier 1				
As % of RWA	12.6%	13.0%	14.5%	16.0%	17.5%	19.0%
$bn	40.0	41.4	46.2	51.0	55.8	60.5
non-compliant AT1 $bn	6.3					
Implied new Tier 1 $bn		7.7	12.5	17.3	22.1	26.8
Annual dividends $bn	3.4					
Annual profits ex tax, extras $bn	4.7					

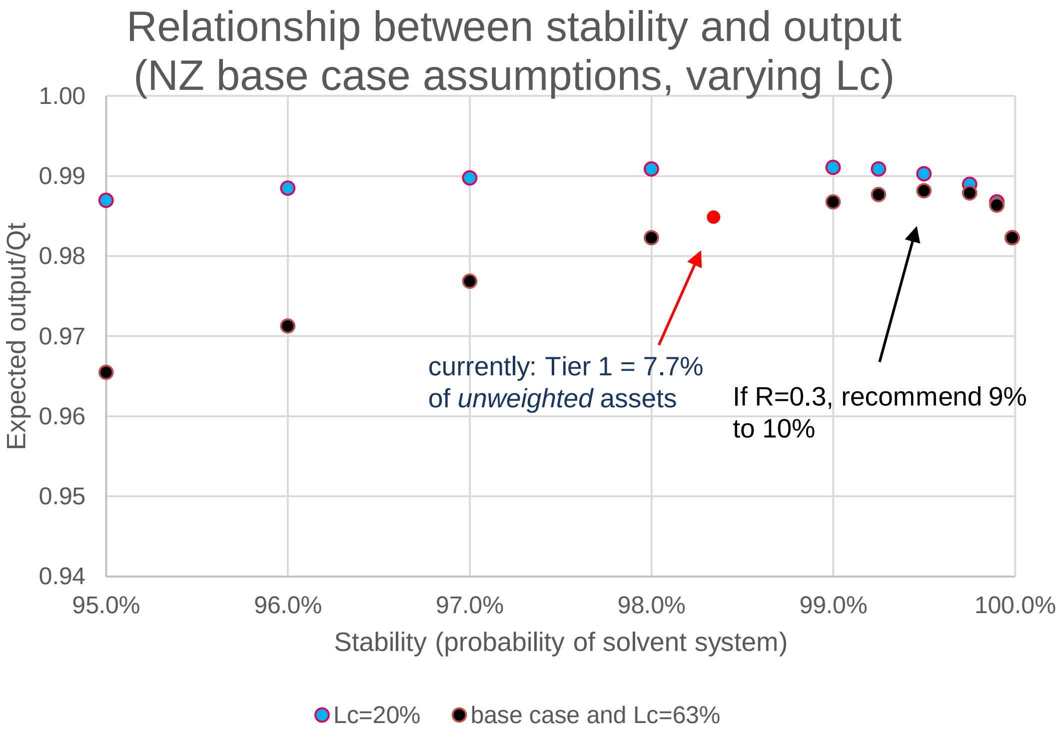
Efficiency: any win-win opportunities at the capital target?



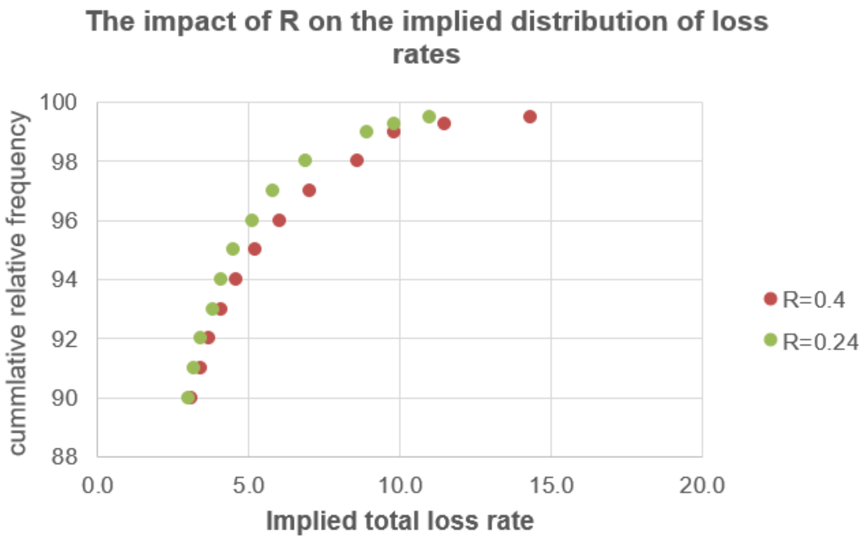
Extra slide if any questions about where the targets came from

		Target Tier 1/unweighted assets %				
LGD 40%, confidence 99.5%		R = 0.24	R = 0.30	R = 0.35	R = 0.4	R = 0.5
	PD %					
	1.5	5.4%	6.7%	7.9%	9.1%	11.8%
	2.0	6.5%	8.0%	9.4%	10.9%	14.0%
	2.5	7.5%	9.2%	10.8%	12.4%	15.9%
	2.8	8.0%	9.9%	11.5%	13.2%	16.9%
	3.0	8.4%	10.3%	12.0%	13.7%	17.5%
		Target Tier 1 (credit risk) is 7.5% to 12% of u/w assets				
		Add 0.6% for op and market risk				

Extra slide if any questions about the impact of changing Lc to 20% of GDP (NPV output lost in a crisis)



Extra slide if any questions about the way R interacts with the loss distribution



Extra slide if any questions about effect of lower R

LGD 40%, confidence 99.5%		Target Tier 1/unweighted assets %				
		R=0.16	R = 0.24	R = 0.30	R = 0.35	R = 0.4
	PD %					
	1.5	4.3	5.4%	6.7%	7.9%	9.1%
	2.0	5.3	6.5%	8.0%	9.4%	10.9%
	2.5	6.2	7.5%	9.2%	10.8%	12.4%
	2.8	6.7	8.0%	9.9%	11.5%	13.2%
	3.0	7.1	8.4%	10.3%	12.0%	13.7%
		Target Tier 1 (credit risk) is 7.5% to 12% of u/w assets				
		Add 0.6% for op and market risk				

99.5%, low R=16	Probability of insolvency = 0.5%	Total bank sector				
	Unweighted assets $m					507,752
	Current Tier 1 $m					40,013
	Tier 1 target % of u/w Assets	7.0%	8.0%	9.0%	10.0%	11.0%
	Tier 1 target $m	35,543	40,620	45,698	50,775	55,853
	Tier 1 shortfall from target $m	(4,471)	607	5,684	10,762	15,839
	Non-compliant AT1 $m					6,318
	Tier 1 new capital issue $m	1,847	6,925	12,002	17,080	22,157
	Current RWA $m					291,698
	Proposed RWA (using floor) $m					318,674
	Tier 1 target as % new RWA	11.2%	12.7%	14.3%	15.9%	17.5%
	Average annual divs (last 5 yrs) $m					3,443
	Avg annual net profit after tax-plus (last 5 yrs) $m					4,686