



Institute of Actuaries of Australia

5th Financial Services Forum

Renovating the Financial System

2010

13 and 14 May 2010 – SYDNEY

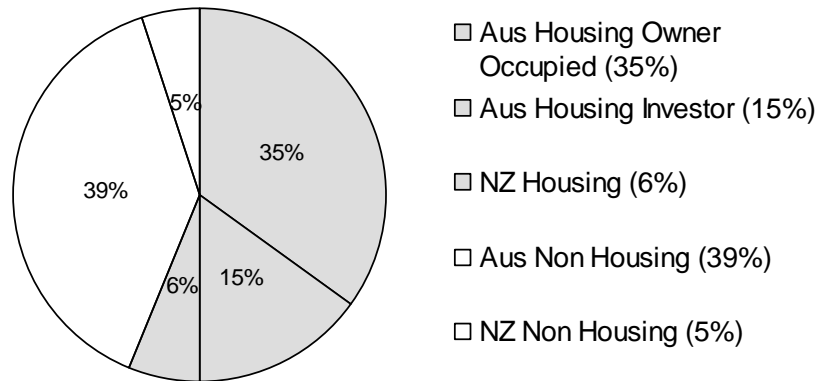
APS330 Home Lending Data - Application & Insights

Tim Gorst

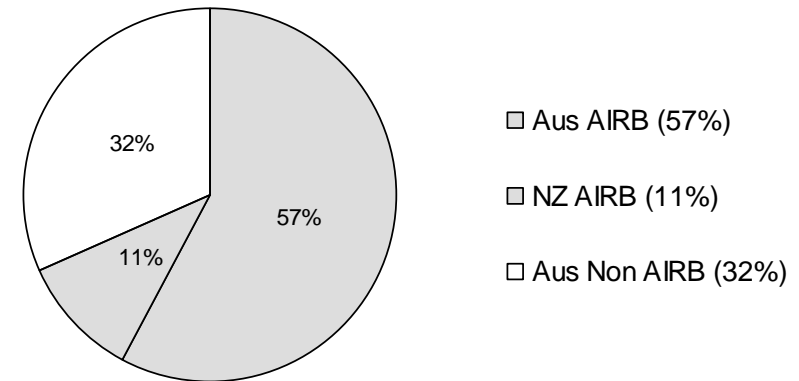
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Sizing the \$1.2 Tr Home Lending System

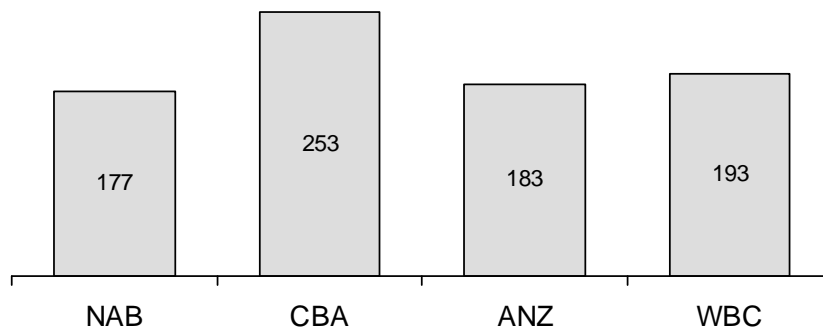
Total Aus / NZ Lending System
(\$2.2 Trillion AUD)



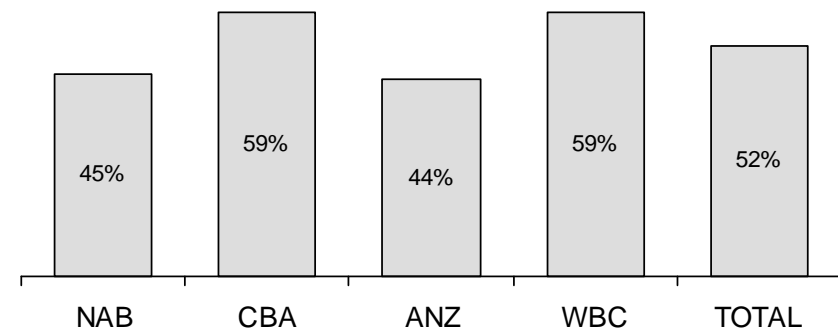
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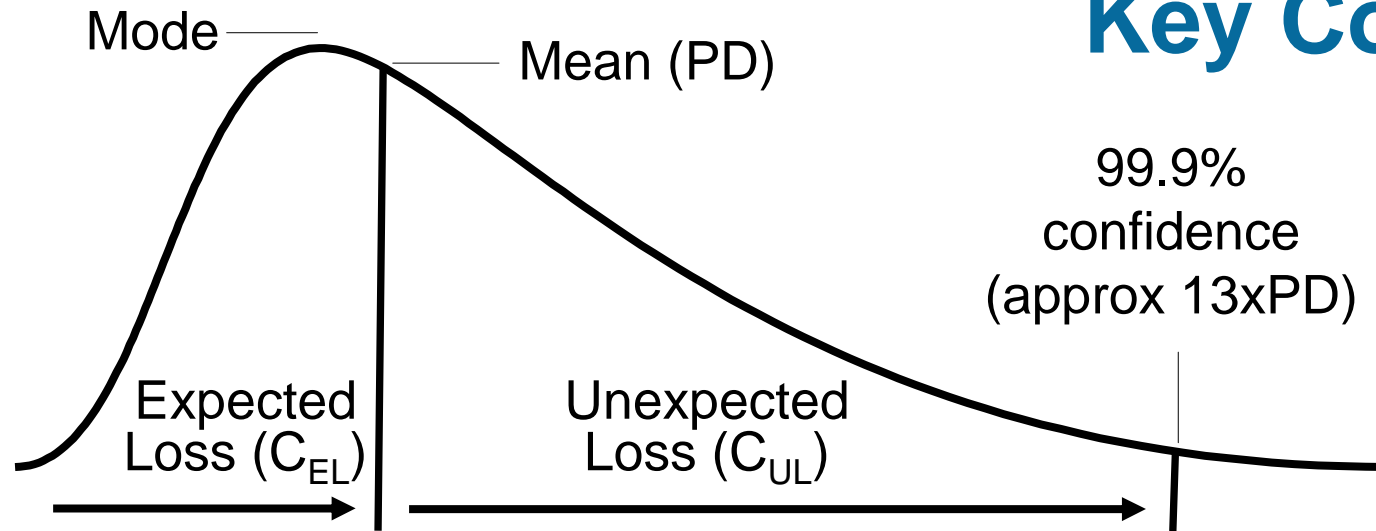
Aus / NZ Home Lending Balances by Major
(Sep 09 \$b AUD – Drawn Balances AIRB Only)



% of Home to Total AIRB Lending by Major
(Sep 09 \$b AUD – Drawn Balances AIRB only)

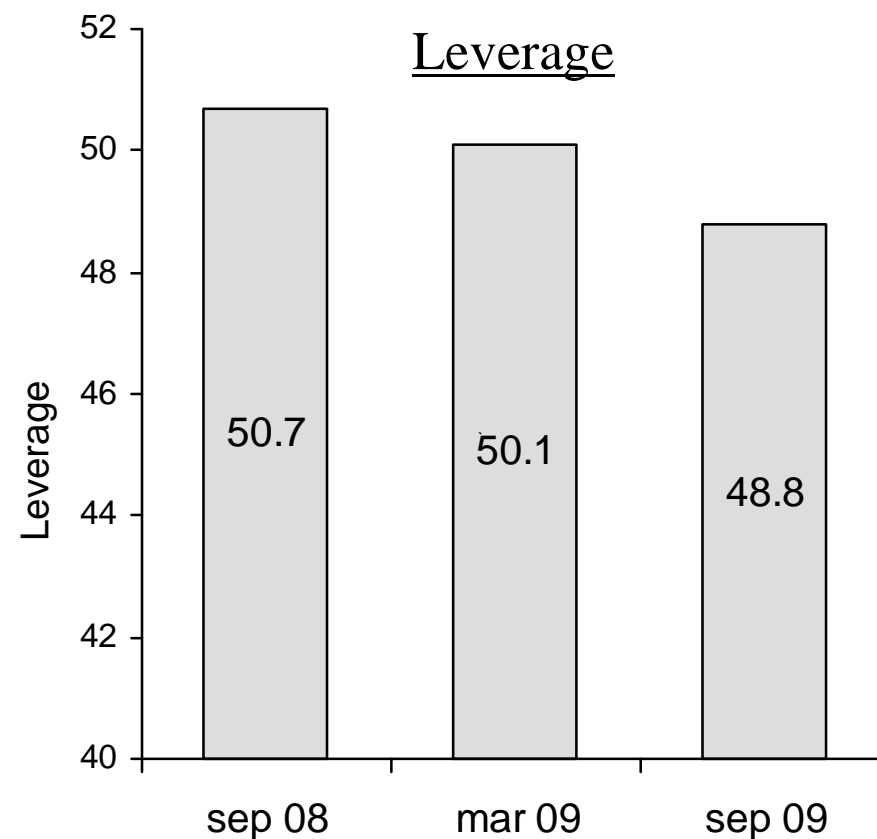
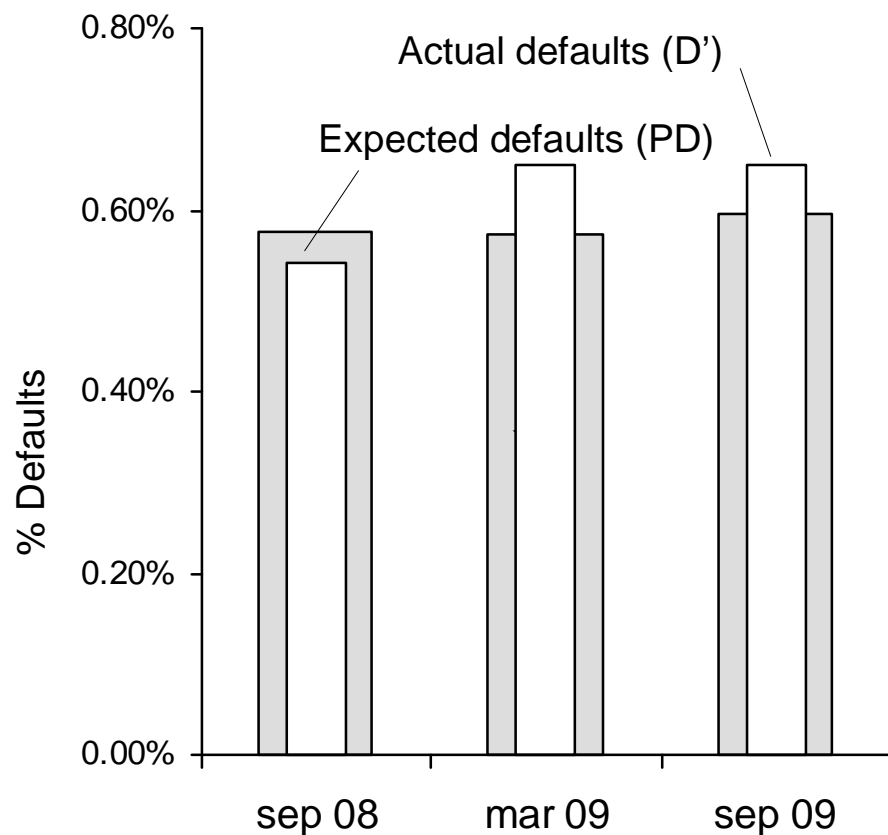


Key Concepts



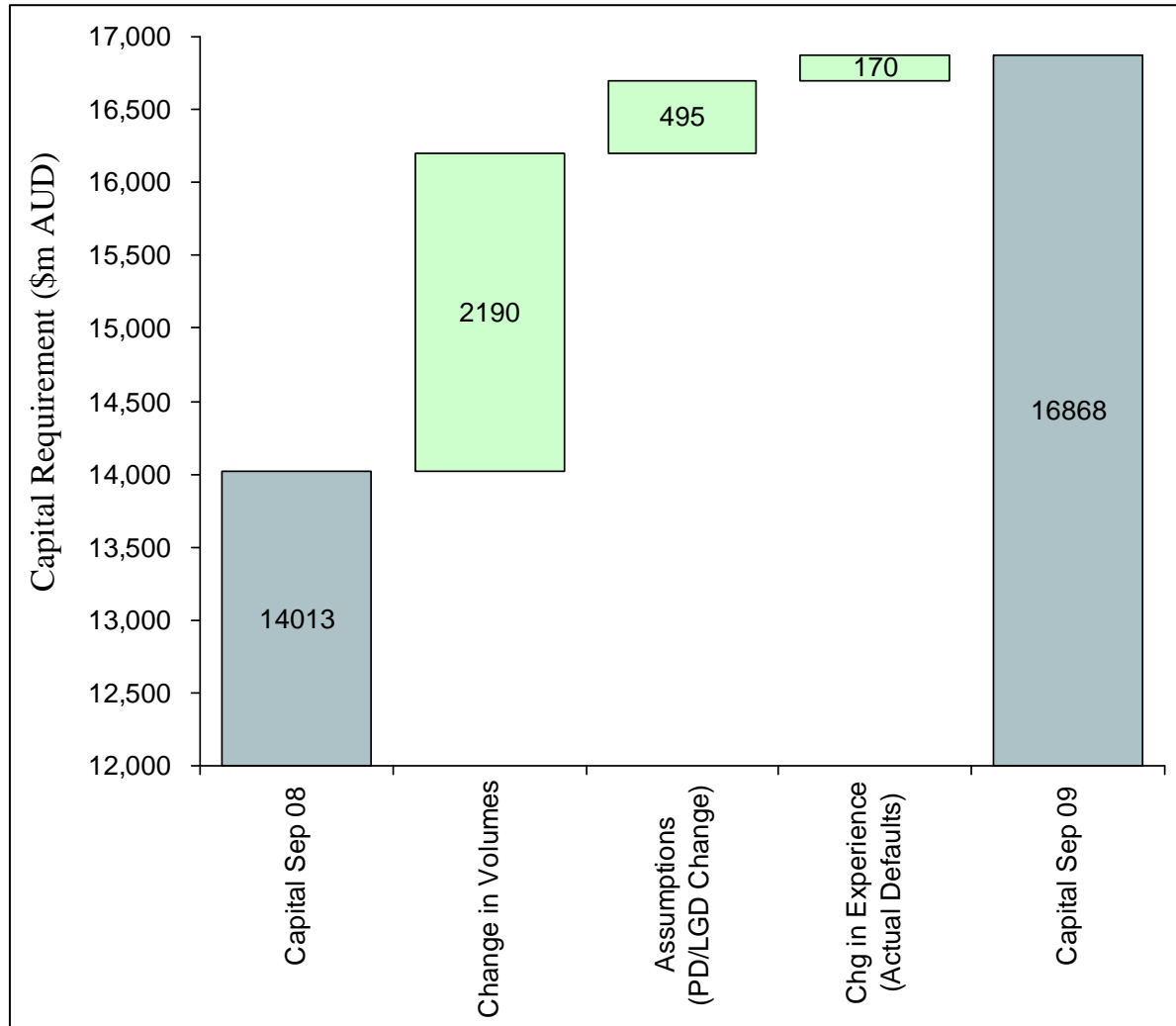
- Basel 2 (B2)
- Exposure (EAD)
- Default Prob. (PD)
- Default Loss (LGD)
- Expected Loss (EL)
- Unexpected Loss (UL)
- Risk Weighted Asset (RWA)
- Capital (C)
- Leverage
- Pro cyclical

Model Outcomes

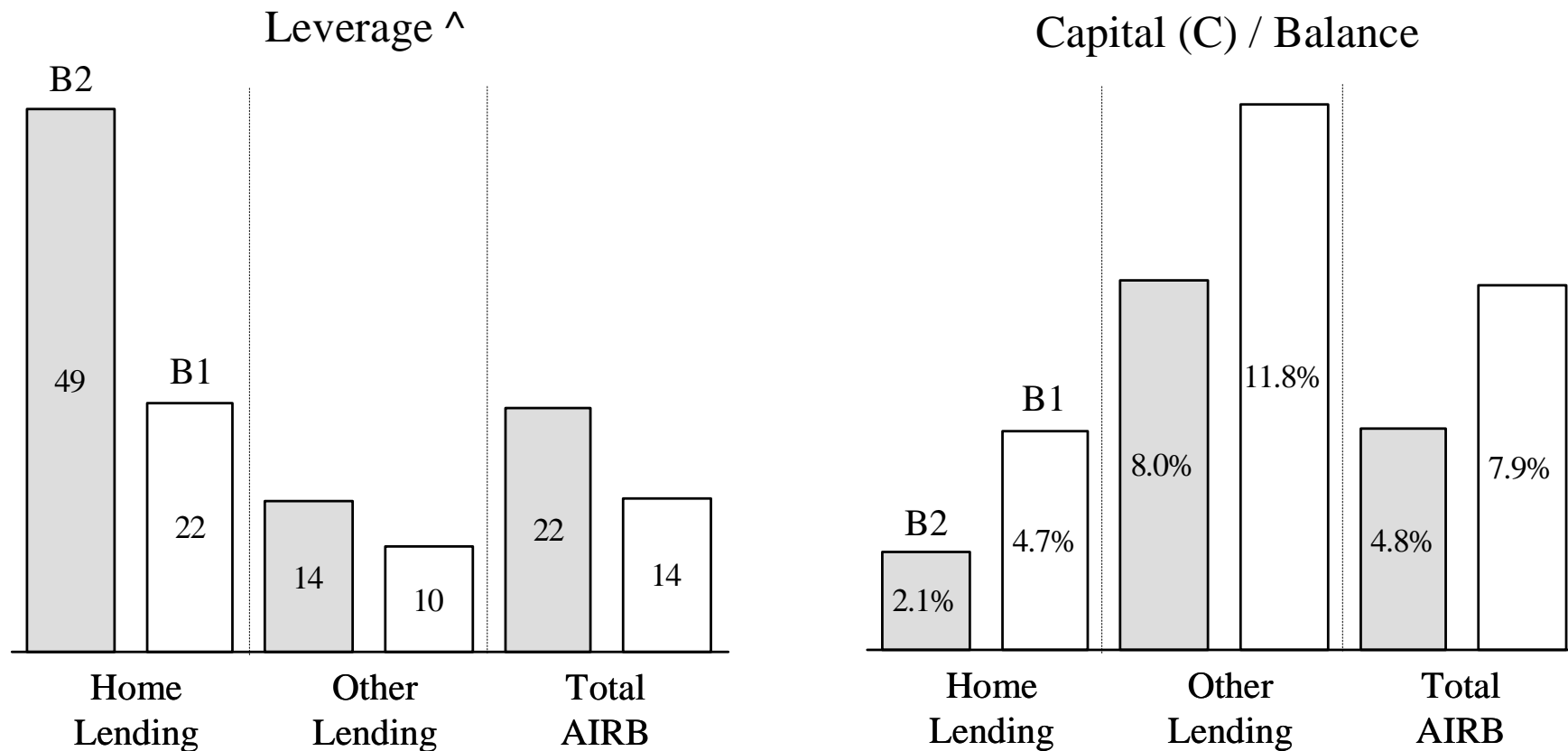


| | | | |
|----------|------|------|------|
| EAD(\$b) | 815 | 879 | 942 |
| LGD(%) | 20.3 | 20.4 | 20.4 |

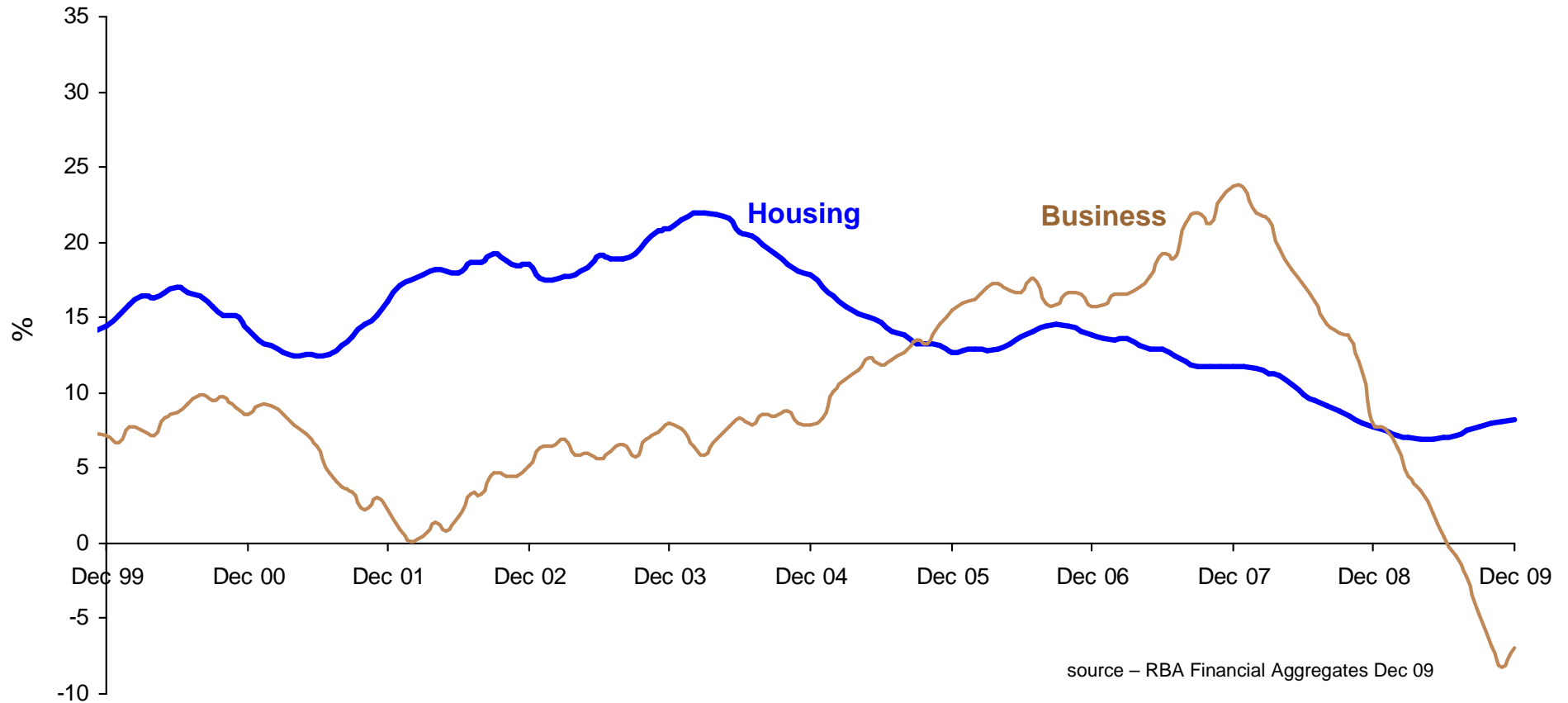
2009 Analysis of Change in Capital



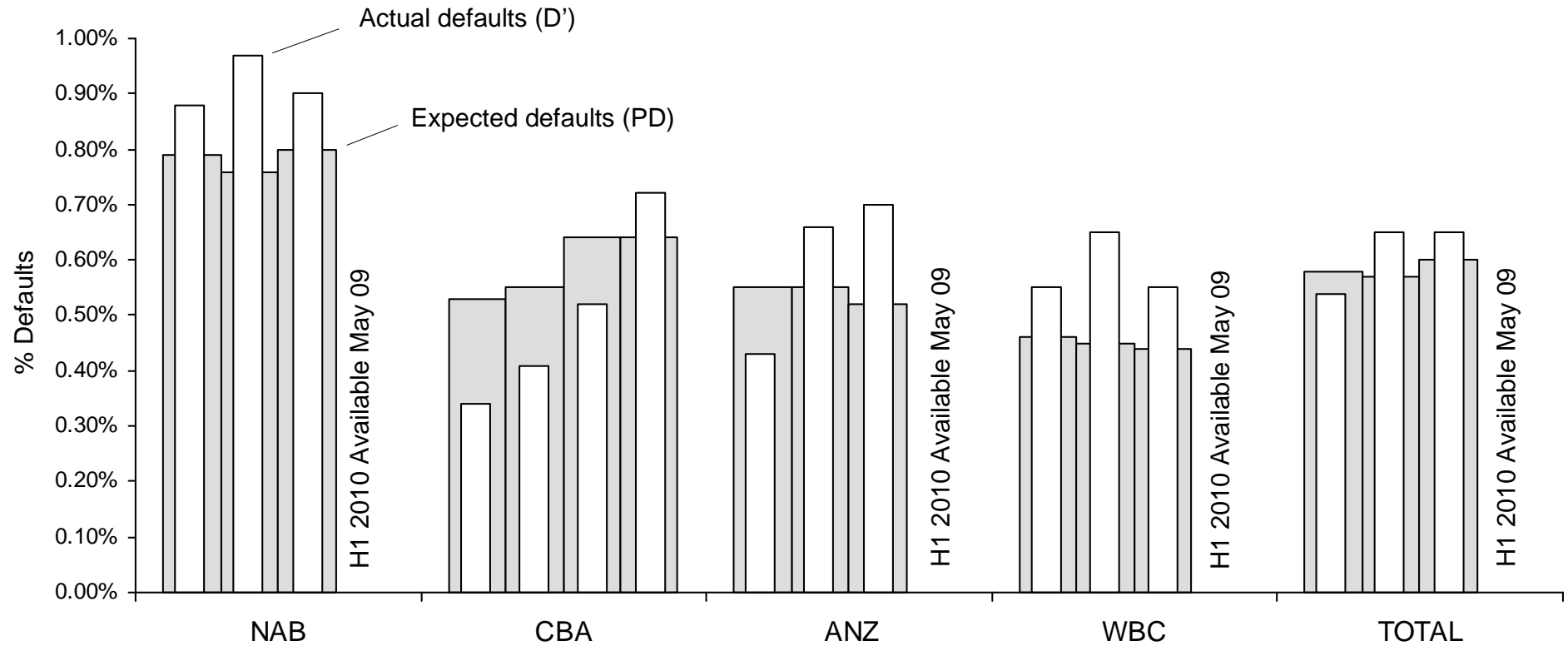
Home Lending Leverage – Too High?



System Credit Growth Trends

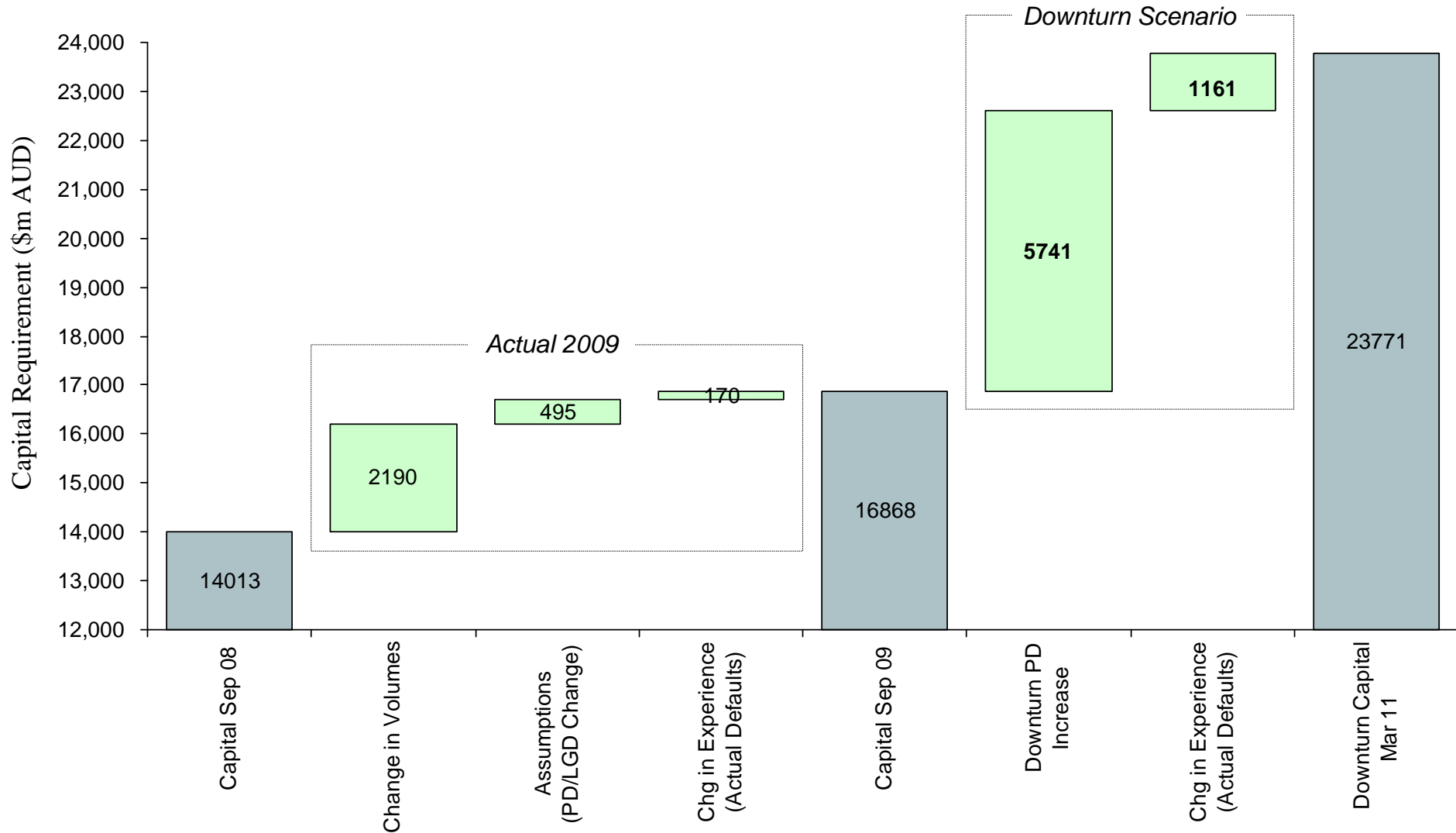


Peer Comparisons



| | NAB | | | CBA | | | | ANZ | | | WBC | | | TOTAL | | |
|----------|------|------|------|------|-------|------|-------|------|------|------|------|------|------|-------|------|------|
| | 9/08 | 3/09 | 9/09 | 6/08 | 12/08 | 6/09 | 12/09 | 9/08 | 3/09 | 9/09 | 9/08 | 3/09 | 9/09 | 9/08 | 3/09 | 9/09 |
| EAD(\$b) | 198 | 201 | 208 | 248 | 275 | 306 | 321 | 186 | 195 | 202 | 183 | 207 | 227 | 815 | 879 | 942 |
| LGD(%) | 20 | 20 | 20 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 20 | 20 | 20 | 20 | 20 | 20 |

Downturn Scenario – 1.50% Default Rate



So What?

- APS330 provides some useful home lending system wide data across a good sample size
- System seems susceptible to pro-cyclicality
- Home lending leverage looks too high
- Peers comparisons quite variable
- Sector is well capitalised for any downturn, but raising funds can be problematic in a crisis
- Where to now? ... towards a national “early warning” monitoring system for credit risk

Appendix - The Model

| | |
|---|--|
| Equation 1 - Unexpected Loss Capital Requirement (non default only) | $C_{UL} = LGD_{ND} \cdot \left[N \left(\frac{G(PD) + \sqrt{15\%} \cdot G(0.999)}{\sqrt{1-15\%}} \right) - PD \right] \cdot EAD_{ND} \cdot 106\%$ |
| Equation 2 – Expected Loss Capital Requirement | $C_{EL} = \text{MAX} [(LGD_{ND} \cdot PD \cdot EAD_{ND} + LGD_D \cdot EAD_D) \cdot 106\% , \text{Provisions}]$ |
| Equation 3 – Derivation of Actual (D') and Expected (PD) Defaults | $D' = 1 - EAD_D / EAD$ <p>And where PD is the value : $C_{UL} + C_{EL} = 8\% \cdot RWA_{CR} + EL_{CR}$</p> |
| Equation 4 – EAD Utilisation | $EAD_{UTILISED} = EAD_{ND} \cdot [39/40 - (e^{-125 \cdot PD}) / 4] + EAD_D$ |
| Equation 5 – Credit Risk Leverage | $L = (EAD_{UTILISED} + C) / C$ |