Risk Based Capital in Banking (Basel II)
APRIA Conference

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• What Basel II means for risk based capital at Westpac

• Implications of Basel II, and future work to do
What is Basel II?

- A new set of financial regulations being introduced worldwide
- New rules allow for different approaches to the determination of regulatory capital for banks with different risk management sophistication
- Regulatory capital for large banks is intended to map to credit risk of loan portfolio
- There is also an explicit charge for operational risk

- Basel II is organised into three self-supporting pillars
  - Pillar 1: Minimum Capital Requirements
  - Pillar 2: Supervisory Review Process
  - Pillar 3: Market Discipline
Westpac has been accredited under Basel II

- On 10 December 2007, APRA accredited Westpac for
  
  - Advanced Internal Ratings Based Approach Credit risk
  
  - Advanced Measurement Approach Operational Risk
What did Basel II mean for risk based capital at Westpac?

**Reinforcement of risk-based capital’s role in Westpac’s Risk Management approach, with some changes…**

### Scope and size
- Broadening of the application of the model
  - Credit Risk
  - Operational Risk
  - Market Risk
  - Interest Rate Risk in the Banking Book
  - …
- Net reduction

### Risk estimate settings
- Greater alignment between economic and regulatory capital
- Special treatment some risk classes

### Use
- Continuing to more deeply embed capital into risk management and decision making framework

### Control and Governance
- Greater operational and compliance requirement
- New oversight structures
  - Credit Risk Estimates Committee

### Monitoring and Reporting
- Introduction of more detailed external reporting on regulatory capital
- Renewed focus on some metrics (eg: EL)
Risk sensitive capital was already a critical piece of Westpac’s Risk Management architecture

| How much risk is Westpac willing to take? | Board approved Risk Appetite Statement |
| How do we govern our risk taking activities? | Chief Risk Officer  
BRMC, GRRC, CREDCO, MARCO, OPCO  
Group Risk, Business Unit Risk |
| How do we define and measure risk? | Risk rating system and risk estimates  
Risk sensitive Economic Capital model |
| How do we control what risks we accept? | Clearly delegated authorities (eg: CALs)  
Policies and procedures (eg: sector credit)  
Assurance: Portfolio + Model Review, Audit |
| How do we ensure that we’re acting with our risk appetite? | Risk forecasting and reporting  
Concentration limits (individual, and sector)  
Portfolio management  
Scenarios and stress testing |
| How do we ensure we’re being rewarded for the risks we take on? | Pricing to cover assigned risk capital  
Hurdle rates  
Economic profit based incentives |
Basel II increases the RWA (and capital) weighting to non-credit risk

- There are 3 primary differences in the drivers of RWA under Basel II compared to Basel I:
  - RWA are highly sensitive to risk grade changes
  - Off balance sheet items carry a higher risk weighting
  - Non-credit risk related RWA have increased from 1% under Basel I to 12% under Basel II

<table>
<thead>
<tr>
<th>Changes in risk weighted assets ($m)</th>
<th>Loans</th>
<th>Basel II RWA on balance sheet</th>
<th>Basel II RWA off balance sheet</th>
<th>Total RWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortgages</td>
<td>159,992</td>
<td>26,961</td>
<td>1,434</td>
<td>28,395</td>
</tr>
<tr>
<td>Other consumer</td>
<td>17,219</td>
<td>9,900</td>
<td>2,016</td>
<td>11,916</td>
</tr>
<tr>
<td>Business</td>
<td>119,125</td>
<td>85,657</td>
<td>38,590</td>
<td>124,247</td>
</tr>
<tr>
<td>Provision for impairment</td>
<td>(1,660)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total credit risk</strong></td>
<td><strong>294,676</strong></td>
<td><strong>122,518</strong></td>
<td><strong>42,040</strong></td>
<td><strong>164,558</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>88%</td>
</tr>
<tr>
<td>Equity risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total non-credit risk</strong></td>
<td><strong>22,405</strong></td>
<td><strong>22,405</strong></td>
<td></td>
<td><strong>12%</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>294,676</strong></td>
<td><strong>122,518</strong></td>
<td><strong>64,445</strong></td>
<td><strong>186,963</strong></td>
</tr>
</tbody>
</table>

But overall (for Westpac) our capital ratios increased on the move to Basel II.

- Transition to Basel II leads to a significant rise in capital ratios
- Sources of that change:
  - 26% reduction in risk weighted assets, adding 209bps to Tier 1
  - Changes in capital deductions reducing Tier 1 by 9%, or 62bps

Basel II has brought regulatory capital closer to Westpac’s economic capital approach…

<table>
<thead>
<tr>
<th>Regulatory Credit Capital</th>
<th>WBC Economic Credit Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B1 risk weights</strong></td>
<td></td>
</tr>
<tr>
<td>Governments</td>
<td>0%</td>
</tr>
<tr>
<td>Banks</td>
<td>20%</td>
</tr>
<tr>
<td>Mortgages</td>
<td>50%</td>
</tr>
<tr>
<td>Corporate</td>
<td>100%</td>
</tr>
</tbody>
</table>

**B2 risk functions**

\[ \text{Correlation (R)} = 0.12 \times \left( \frac{1 - e^{-50PD}}{1 - e^{-50}} \right) + 0.24 \times \left( 1 - \frac{1 - e^{-50PD}}{1 - e^{-50}} \right) \]

Maturity adjustment \( (b) = [0.11852 - 0.05478 \times \ln(PD)]^2 \)

Capital requirement\(^{22} (K)\)

\[ = \left[ \text{LGD} \times N \left( \frac{G(PD) + \sqrt{R} \times G(0.999)}{\sqrt{1 - R}} \right) - PD \times \text{LGD} \right] \times \left\{ \frac{1 + (M - 2.5) \times b}{1 - 1.5 \times b} \right\} \]
…Though differences remain

- Different goal
  - Target debt rating vs. protecting depositors

- Different scope
  - Concentration risk
  - Inter risk diversification

- Some different approaches and assumptions
  - Specialized lending
  - LGD treatment (downturn LGD vs. PD/LGD correlation)
Westpac has introduced a more risk-sensitive Operational Risk Capital Model as part of Basel II

**Elements of Westpac’s Operational Risk Capital Model**

The operational risk capital amount is sensitive to the frequency and impact of:

- Westpac’s internal losses
- Westpac’s risk and control assessments
- External losses
- Extreme events
With Basel II Westpac is continuing to embed risk based capital into its risk-management and decision-making framework.

**Unexpected loss distribution**

- **Performance management and Incentives**
- **Decision making and pricing**
- **Capital adequacy**
- **Concentration management**
- **Expected loss (critical benchmark)**
- **Portfolio management**
- **Risk appetite articulation**
- **Provisions**
Basel II brings a far greater operational and compliance requirement

**APS 110 Capital Adequacy**
**APS 111 Measurement of Capital**
**APS 112 Standardised Approach to Credit Risk**
**APS 113 Internal Ratings-based Approach to Credit Risk**
**APS 114 Standardised Approach to Operational Risk**
**APS 115 Advanced Measurement Approaches to Op Risk**
**APS 116 Market Risk**
**APS 117 Interest Rate Risk in the Banking Book**
**APS 120 Securitisation**
**APS 150 Basel II Transition**
**APS 210 Liquidity**
**APS 220 Credit Quality**
**APS 221 Large Exposures**
**APS 222 Associations with Related Entities**
**APS 231 Outsourcing**
**APS 232 Business Continuity Management**
**APS 240 Risk Management of Credit Card Activities**
**APS 310 Audit & Related Arrangements for Reporting**
**APS 330 Public Disclosure of Prudential Information**

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**Governance**
- APRA approval, notifications and explanations
- Board review
- Mgmt understanding and use
- Independent assurance of policies, practices

**Risk Rating System**
- Risk differentiation
- PD/LGD/EAD policies
- Use test
- Specialised lending requirements
- Ongoing review

**Credit approval**
- Independent party
- Current information
- Need to document judgment and track overrides
- Annual rating refresh

**Credit Risk Estimates**
- PD = long-run ave of 1-yr
- LGD/EAD LR default w.ave
- Ongoing review
- Consider practices, history, current + future environment
- Use judgment
- Min 5 yrs for retail
- Factor in seasoning
- Stress testing

**Credit data**
- Keep customer info, performance, default data
- Use data in review of policies and estimates

**Calculations**
- Maturity caps/floors
- Risk mitigation rules
- EL vs. provisions

RWA → Minimum capital requirements
And promises far greater market transparency

**Westpac APS 330 disclosure, Table of Contents**

1. Disclosure under Basel II  
2. Risk Appetite  
3. Controlling and Managing Risk  
4. Scope of Application and Capital Review  
5. **Credit Risk**  
6. Securitisation  
7. Market Risk  
8. Operational Risk  
9. Equities  
10. Interest Rate Risk in the Banking Book  
11. Funding and Liquidity Risk  

**CHAPTER 5. CREDIT RISK: Quantitative Tables**

- Credit exposures by type  
- Credit exposures by industry  
- Credit exposures by geography  
- Credit exposures by residual maturity  
- Impaired and past due loans by industry  
- Impaired and past due loans by geography  
- Reconciliation of changes in provisions  
- Exposures by standardised/advanced approach  
- Breakdown standardised portfolios  
- Breakdown specialised lending portfolios  
- Breakdown IRB portfolios, by risk bands:
  - Outstandings  
  - Committed undrawn  
  - EAD  
  - PD  
  - LGD  
  - Expected Loss  
  - B2 RWA  
- Write-offs and recoveries by IRB portfolio  
- Comparison of estimates and actuals
The implications of Basel II are profound

- Establishes/institutionalizes good risk management practices

- Greater capital risk-sensitivity and risk transparency should reward prudent institutions

- Establishes common language and conceptual framework

- Increased focus on benchmarks such as EL is very useful

- Should create better trust in risk data and processes
There’s still much work to do…

- Learn to manage potential pro-cyclicality in provisions and capital

- Ongoing mis-alignment of accounting requirements to regulatory requirements

- Increased requirement for operational excellence in risk… process capability

- Ensuring increased disclosure achieves “market discipline” goal (not confusion!)

- Factors outside B2: Liquidity risk, etc

- Not declaring victory:
  - The price of freedom is eternal vigilance (Thomas Jefferson)
Questions?