Regulatory Opportunities in Banking
About Bankers

Profit measures have mostly been annual in nature.

Bankers have been exceptional in understanding the cost of money and hence the return on investment.

Transactional account data provides amazing insight into the life of the customer—assuming that anyone is paying attention.

Banks have traditionally spent on bricks and mortar infrastructure as well as people and systems.

Banks are under pressure from shadow banking and the emergence of fintech.

Improved understanding of lifetime value

Improved customer focus

Business model evolution/design thinking

Reality may be changing faster than perceptions.
Domains of risk management in a bank

**Credit Risk**
The potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms.

**Market Risk**
The possibility of an investor experiencing losses due to factors that affect the overall performance of the financial markets.

**Operational Risk**
The prospect of loss resulting from inadequate or failed procedures, systems or policies.

**Fraud Risk**
Know your customer, anti money laundering, anti terrorism funding, fraud.

**Customer Risk**
The risk of becoming irrelevant to your customer.

**Evolution Risk**
Move from a legacy bricks and mortar bank to a digital bank.
3 Lines of Defense

01. Business
Functions that own and manage risk

02. Risk
Functions that oversee or specialize in risk management & compliance

03. Validation
Functions that provide independent assurance.
3 Lines of Defense

Audit Committees will also play an essential and unique role in ensuring that banks have a high-quality estimates of ECL/CECL.

Auditors have a responsibility to objectively evaluate and challenge the reasonableness of accounting estimates.

The increase of judgement in estimates increases the reliance on experts. **Experts are defined as individuals with particular expertise and knowledge that may be relevant to the estimates at hand.**
3 Lines of Defense

Are foundational elements of high quality and fit for purpose?

- Accounting policies
- Operational procedures and systems of control
- Data and IT systems
- Estimation models
Risk of Material Misstatement

- Complexity of estimating expected losses
  - A high number of inputs and assumptions which are subject to judgement – e.g. forward looking assumptions

- Increased estimation uncertainty.
  - Multiple scenarios based on unstable patterns

- Potential magnitude of estimates relative to audit materiality
  - Scope to influence audit standards

- **Skills** required
  - Credit risk, modelling, economic forecasting, data, IT & programming
  - **Knowledge** of banking
- **Resources**
Typical Responses

- Completeness of solution
  - Key drivers of risk

- Integrity of controls

- Development of independent estimates
  - Problem of reconciliation to internal estimates

- Model performance
  - Back testing
  - Sensitivity analysis
  - Volatility of measures & approach (models & definitions)
Judgement

- Data deficiencies
- Modelling deficiencies
- Outcome deficiencies
- Forward looking estimates
- Segmentation
- Definitions
- Simplifying assumptions
Internal Controls (ECL)

- Completeness, Accuracy, relevance & reliability of information
- Appropriateness of accounting policies
  - Segmentation
  - Significant increase in credit risk
  - Definition of default and loss
  - Treatment of multiple defaults
- Development, validation & monitoring of models
- Adjustments and overrides
- Development of economic scenarios
- Reasonableness of estimates
- Disclosure
The following are extracts from a previous talk on common findings from the review of regulatory capital models at banks.
Background

- Models
  - Reconciliation
  - Data integrity standards
  - Use of external data
  - Approach to missing data
- Data
- Systems
  - Implementation
  - General and application controls
  - Scalability
  - Stability
- Disclosure
- Compliance
  - Asset categorisation
  - Minimum requirements
  - Stress test
  - Use test
- Business Processes
  - Origination
  - Management
  - Risk measurement & management
- Risk Governance
  - Responsibilities
  - Policy frameworks
  - Reporting
  - Quality assurance frameworks
- IFRS disclosures
- Pillar 3
- Regulatory returns
## Data Principles

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<tbody>
<tr>
<td><strong>1. Data definition</strong></td>
<td><strong>2. Reconciliation &amp; validation</strong></td>
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<tr>
<td></td>
<td>▪ Crude mortality rate, standardised mortality rate, central mortality rate</td>
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<tr>
<td>▪ Treatment of incomplete or missing data</td>
<td>▪ The fact that data is missing may in itself be a rating factor</td>
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<td><strong>3. Use of external data</strong></td>
<td><strong>4. Weaknesses in the data and methods to overcome them</strong></td>
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<td>▪ Appropriateness</td>
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Data Modelling

1. Correspondence
   - Consistency between numerator & denominator
   - Consistency between base population and applied population

2. Population stability
   - Population stability tests
   - Migration matrices
   - Graphs & distribution functions

3. Base period for calibration
   - Full economic cycle
   - Include period of stress

4. Weaknesses and methods to overcome them
Data Modelling

**Scorecard**

- **Financial factors** (e.g. income, total debt, net wealth)
  - Financial Score
  - Financial weight
  - PD Calibration

- **Qualitative factors** (e.g. profession, level of education)
  - Qualitative Score
  - Qualitative weight
  - Final Customer Score

- **Behavioural factors** (e.g. number of days past due, maximum amount of overdraft)
  - Behavioural Score
  - Behavioural weight
Data Modelling

Data
- PIT or TTC
- Default definition
- Documentation

Statistical engine
- Segmentation
- Model standards

Calibration
- TTC issues and policy

- Overall considerations different to causal modelling
- Discipline and documentation
- Basic compliance boxes not always ticked
- Less issues in retail than corporate
- Learnings from out-of-time and out-of-sample testing
- Use of expert input
- Lack of application of “best practice”
### Key Governance Issues

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<thead>
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<th>1. Strength of technical validation unit</th>
<th>2. Documentation</th>
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<tr>
<td>- Independence</td>
<td>- Adequate developmental evidence</td>
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<td>- Quality and depth</td>
<td>- Ability to recreate results</td>
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<td>- Evidence of challenge</td>
<td>- Version control</td>
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<td>- What is the message?</td>
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<th>3. Address all critical areas of compliance</th>
<th>4. Other</th>
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<td>- Are adjustments supported?</td>
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<th>5. Technical issues</th>
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<tr>
<td>- Are adjustments supported?</td>
<td>- Evaluate appropriateness of use?</td>
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<td>- Do the grades discriminate risk?</td>
<td>- Change management and governance</td>
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<tr>
<td>- How does actual compare with estimates?</td>
<td>- Consistency and relevance</td>
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<tr>
<td>- How do estimates compare both internal and external estimates</td>
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Questions
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Over 25 years of analytics experience
Ex partner at big 4 audit firm
Previous executive head of customer analytics at leading retail bank

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