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# Lies, Damn Lies & Impairments

Retail Banking Credit Impairments

# Agenda

- Why retail banking

- Credit risk assessment

- Issues in practice

- Examples

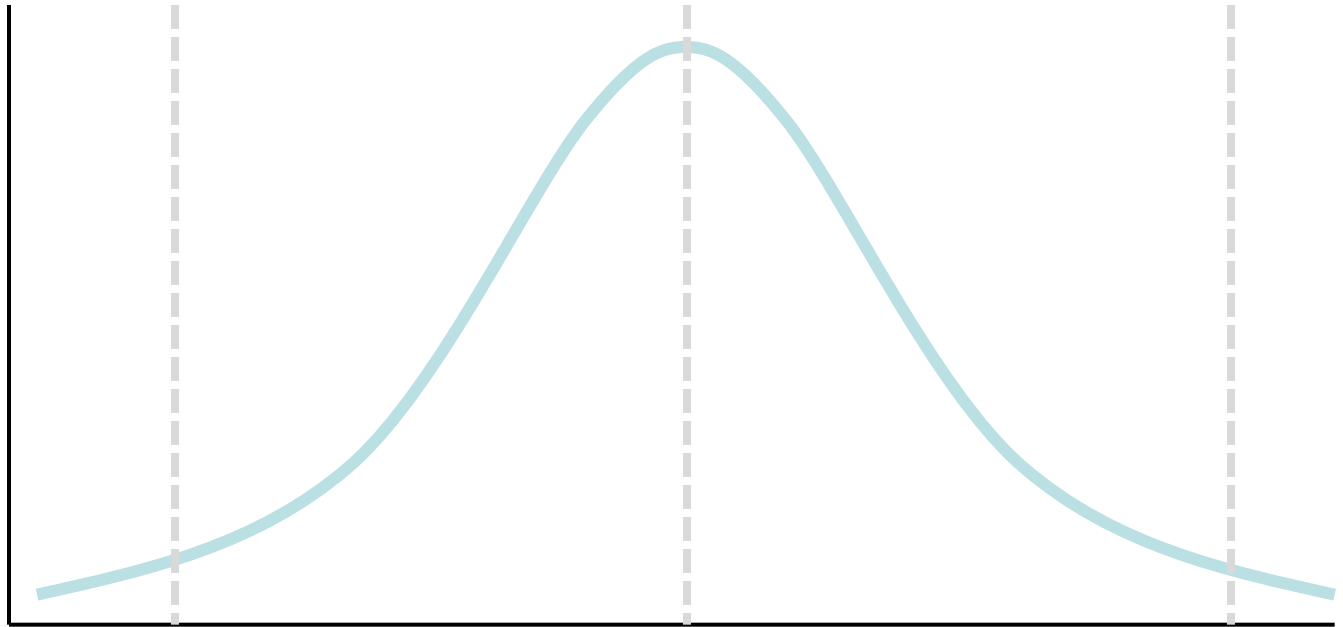- Areas for further research

# Why retail banking

- Retail credit risk under published relative to corporate credit
    - Except credit scoring
- Credit underdeveloped in actuarial circles
    - Similar to casualty/non-life
    - South African experience
    - Banking exam

# Credit Risk Assessment



**Incurred Loss**

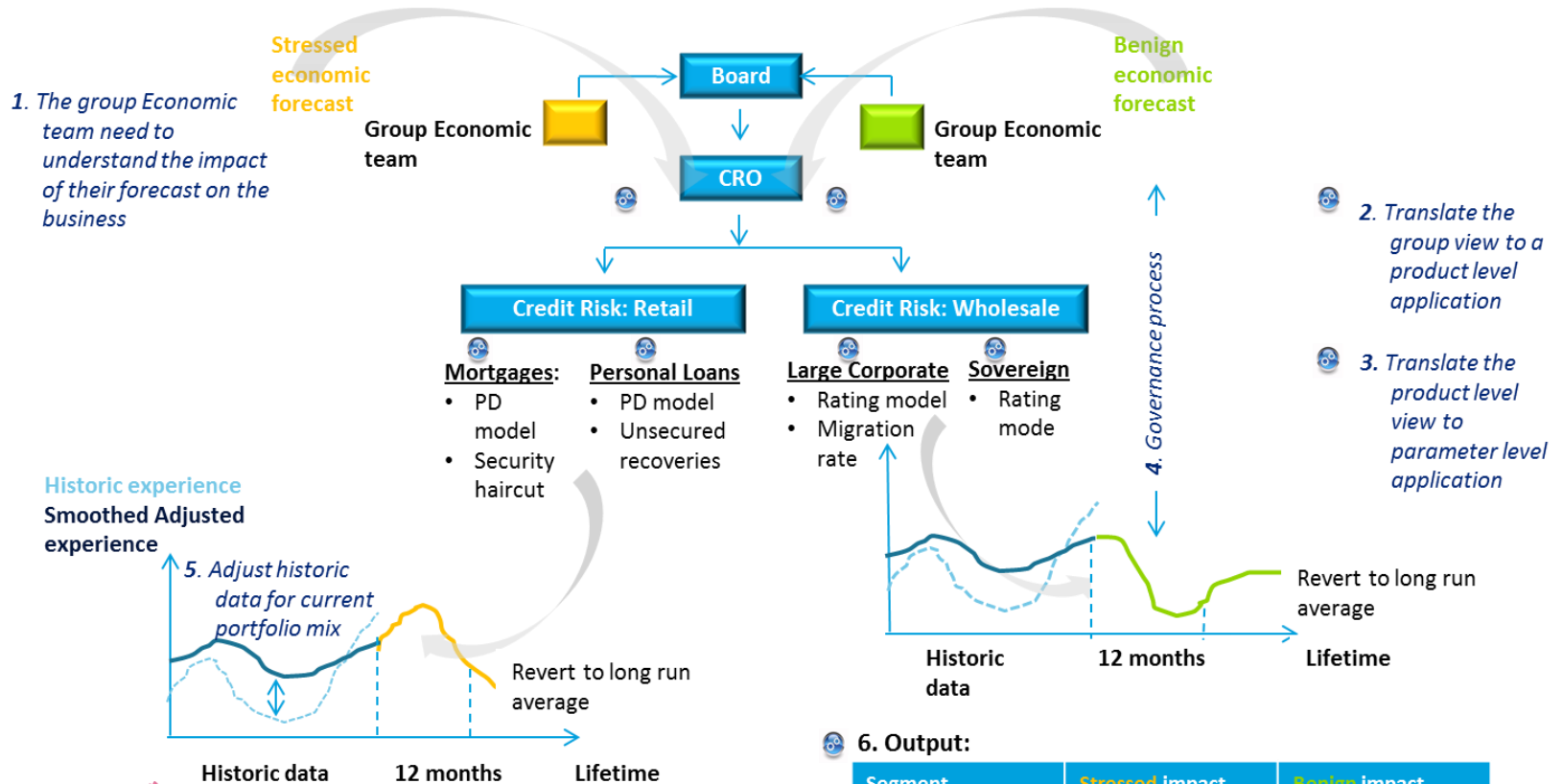**Expected Loss**

**Unexpected Loss**

Outstanding known claims reserve / IBNR

Prospective claims reserve

Capital VAR estimate
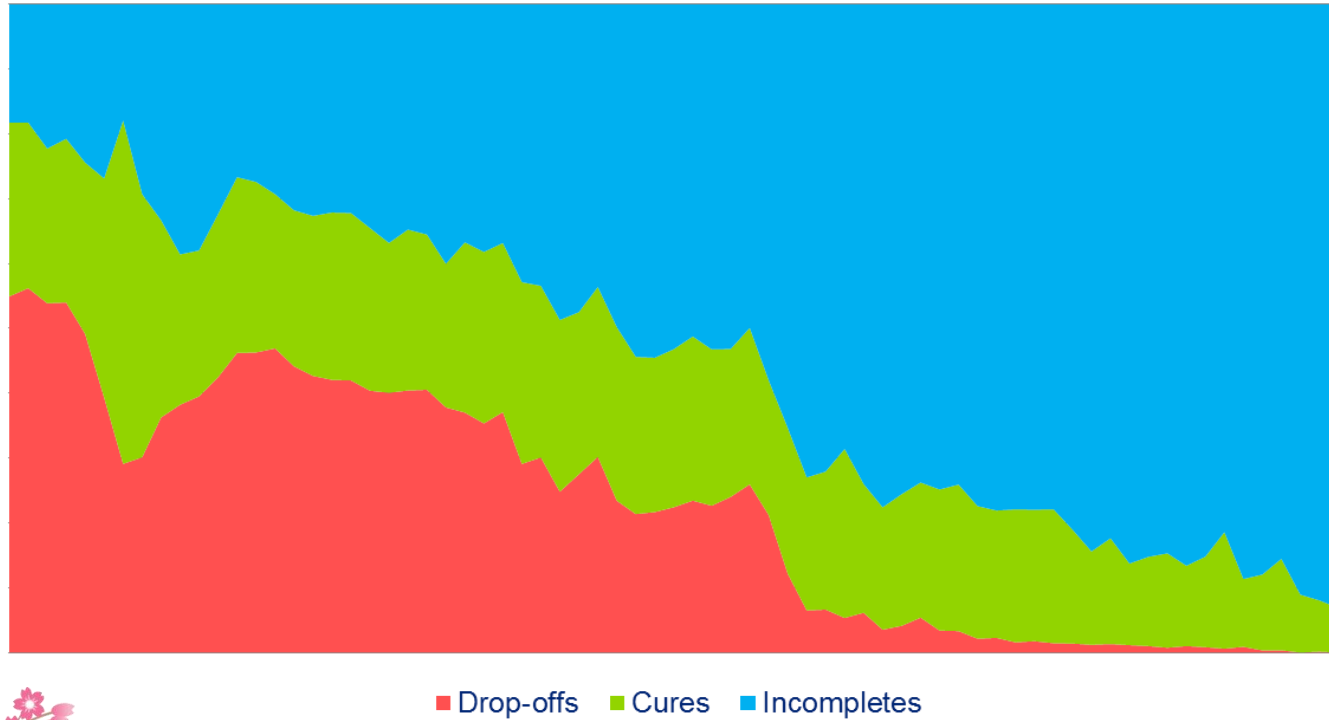
# Impairment Forecast Process

1. The group Economic team need to understand the impact of their forecast on the business

**Stressed economic forecast**

**Benign economic forecast**

**Board**

**Group Economic team**

**Group Economic team**

**CRO**

**Credit Risk: Retail**

**Credit Risk: Wholesale**

**Mortgages:**
- PD model
- Security haircut

**Personal Loans**
- PD model
- Unsecured recoveries

**Large Corporate**
- Rating model
- Migration rate

**Sovereign**
- Rating mode

**4. Governance process**

2. Translate the group view to a product level application

3. Translate the product level view to parameter level application

**Historic experience**
**Smoothed Adjusted experience**

5. Adjust historic data for current portfolio mix

Revert to long run average

Historic data    12 months    Lifetime

Revert to long run average

Historic data    12 months    Lifetime

6. Output:

| Segment | Stressed impact | Benign impact |
|---|---|---|
| Mortgages | + 20 | - 15 |
| Personal Loans | + 15 | - 10 |
| Large Corporate | + 10 | - 5 |
| Sovereign | + 5 | - 2 |

# Need for Extrapolation



Distribution of the default book over time

Drop-offs   Cures   Incompletes

# Forecasting

**Development**

|  | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| **Origin 1** | | | | | | |
| **Origin 2** | | | | | | |
| **Origin 3** | | | | | | |
| **Origin 4** | | | | | | |
| **Origin 5** | | | | | | |
| **Origin 6** | | | | | | |
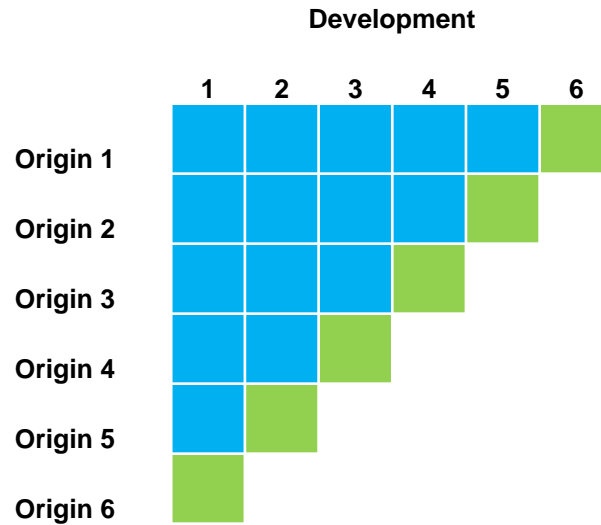
Change in mix

Change in process

Change in economy
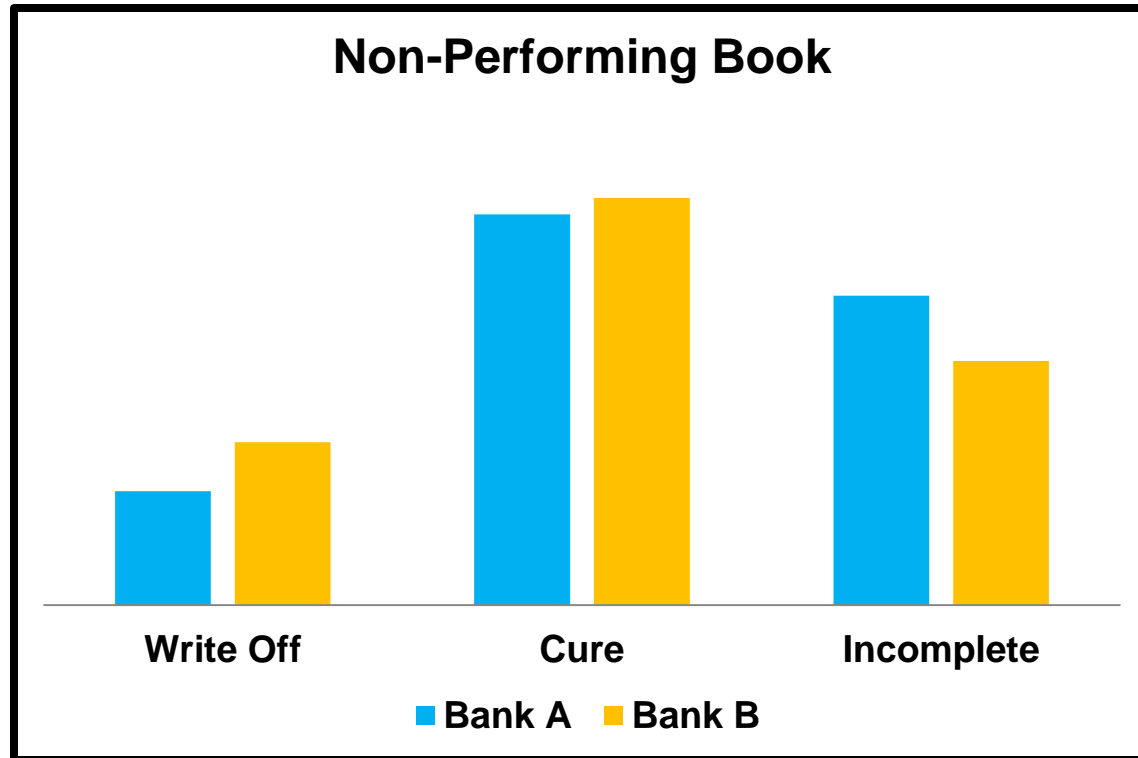
Change in time to workout

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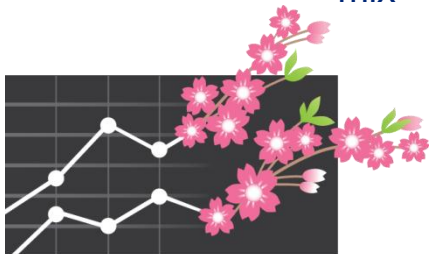
# Example: Over-reliance on a single parameter

- For non-performing loans impairments are set equal to:
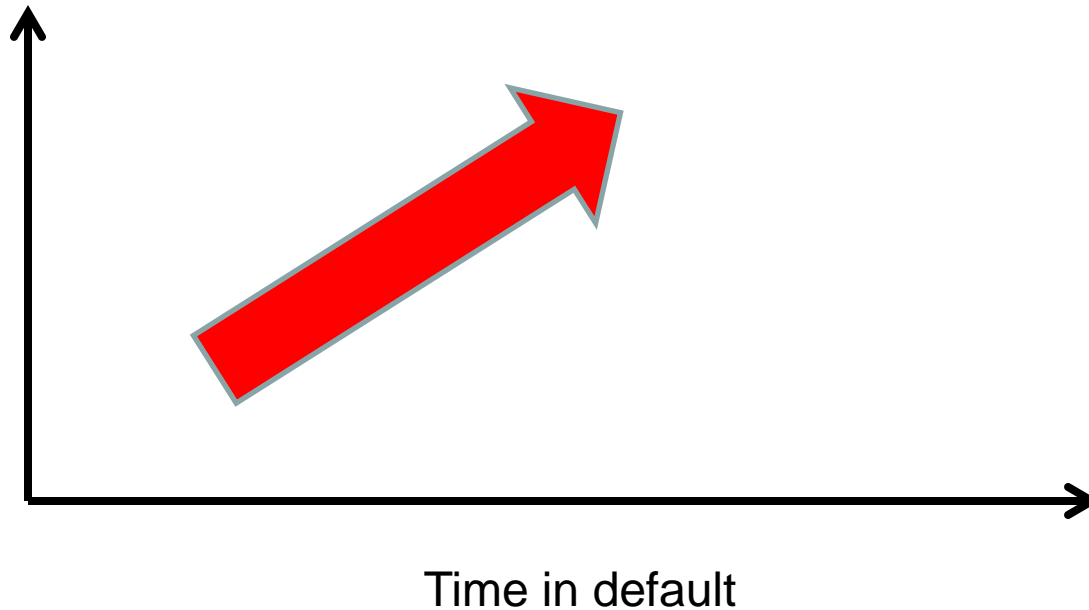  - probability of write off * loss given write off
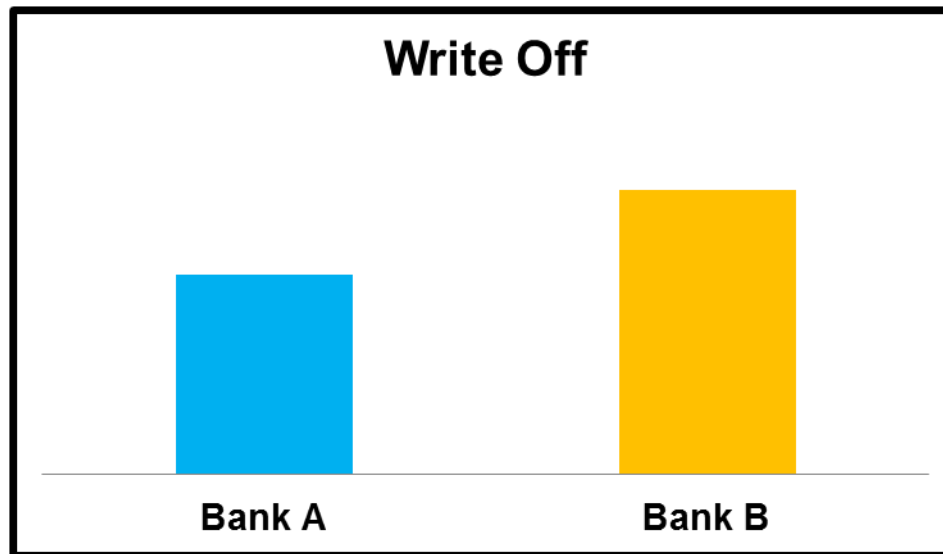
# Example: Over-reliance on a single parameter

# Example: Conditional probabilities

- For non-performing loans impairments are set equal to:
    - probability of write off * loss given write off



Time in default

# Common actuarial techniques

- ## Exposed to risk
  - Historical trend analysis

- ## Actuarial control cycle
  - Analysis of change & back-testing
  - Model control environment

- ## Statistical & predictive modelling
  - Frequency * Severity
  - Scoring
  - Regression analysis
  - Hazard rates
  - Survival models
  - Migration matrices

# Areas for further research

- What are suitable risk measures for a credit risk portfolio?

- Impact of the economic cycle

- Stress testing

- Predictive modelling

- Portfolio optimisation

# Contact

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