Life after Basel: Rethinking the Feedback Loop

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Scoreplus

What is scoring?

- 1980s: Statistical rank-ordering of application risk
- Now: Overall analytic approach to credit risk management
  - But weak links to financials
  - Focus on Basel measures
- 2010: Analytic basis for financial portfolio management
  - Linked to budget process
  - Part of overall structured approach to portfolio management

Get return on Basel investment

Structure of Presentation

Why Track?
Tracking Principles
The Credit Committee

Today’s Control Structure

Strategic Management
Analysis and Technology
Line Management
Scorecards Strategies
Operations
Tracking

Centralised Control... but evolves slowly
Future: Feedback Loop

Example 1: Scorecard correction

- **Default by Loan Term**
  - **Interpretation**:
    - Expected PD is average PD of all cases in group
    - Loan term not adequately taken into account by score
    - Statistical test to show that conclusion is reliable
    - Correct Scores (Delta scores):
      - 2 years: 15 → 31
      - 3 years: 12 → 12
      - 4+ years: 10 → 1
    - Improved good/bad discrimination

Example 2: Network Pricing Behaviour

- Use tracking to understand portfolio drivers

Structure of Presentation
**Tracking Principles**

- Actual vs. Expected
  - Match outcome vs. assumptions underlying policy
- Report Early (... and Often)
  - Timely policy modification
  - Speed of change is key to competitive positioning
- Understand Portfolio
  - Develop conceptual picture of dynamics of portfolio
- Reliability of Rating Tools
  - Can we believe the numbers?
- Regulatory Requirements

**Portfolio Dynamics**

**Example: Credit Card Limit Increase Experiment**

- Immediate take up by some customers
- Longer build up of balance by others
- Delinquency initially comes down
- Then builds up over time
- No more limit increase for 6 months – then "normal" drift

- Longer term result:
  - Limits: + 30%
  - Outstandings: + 9%
  - Delinquency: + 12%
  - Balance to Limit: - 16%

**Actual vs. Expected**

- Policy is based on assumptions
- Are assumptions met?
  - Policy Environment
  - Policy Application
  - Subsequent Performance
- Are consequences what we expected?
- Adjust assumptions
- Set expectations for future

**Timely Policy Modification**

**Lifecycle Curves**

- Index Numbers

  - Index Number = Default Rate from August/Default Rate from May
  - With same months on books

**Faster Response -> Competitive Edge**
Rating Tool Accuracy

Are PDs accurate?
- Are PD estimates reliable?
  - Through the Cycle = long run average
  - Point in Time = what we expect to happen next year
- Based on
  - historic performance
  - management understanding
- Key to reliable portfolio projections
- ... and profit maximisation

Key Basel Requirement – and business sense

Present vs. Future

Present
- Model Focus
- Rank-ordering of risk
- Score only
- Number of cases
- Scores
- Measure total portfolio

Future
- Portfolio and Policy Focus
- Accuracy of Estimates
- PD and other
- Financials – Return on Capital
- PD (and EAD, LGD)
- Concentrate on marginal cases

Technical Feedback -> Management Feedback

Goal: Accelerate Policy Evolution

Example: Timeline from new lending policy
- Jan 2006 - Loan solicitation policy for credit card holders
- Mar 2006 - Response rate
- Mar 2006 - Population profile
- Jun 2006 - Balance Levels
- Jun 2006 - Early delinquency
- Jan 2007 - Revenue
- Jun 2007 - Full delinquency
- Dec 2007 - Attrition
- Dec 2008 - Secured Loan Cross-sell

3 year full evaluation
- But get intermediate feedback

Can credit risk move as fast as marketing?

Report Design Criteria

- PD – not score
  - If scores didn’t exist we wouldn’t bother inventing them
- Focus on financials
  - Marginal Cases
  - RAROC measurement
- Policies are more important than rating tools
  - Need to make policy assumptions explicit
- Experiments -> Organisational learning
  - Test new approaches
- Statistical Tests
  - Can you believe your eyes?

Information Design <-> Structure of Policies
Measuring Results of Experiments

Maximum Limit utilisation

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<th>PD</th>
<th>&lt; 30%</th>
<th>30 – 59%</th>
<th>60 – 94%</th>
<th>95% +</th>
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<tr>
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<td>+0%</td>
<td>+1%</td>
<td>+3%</td>
<td>+5%</td>
</tr>
</tbody>
</table>

- Measures difference in contribution after 9 months
- Limit increase vs. no limit increase
- Contribution = revenue – bad debt cost
- Evaluate for each cell – not on total population

Build profit-maximising policies

Statistical Tests

Why? What?

- Fast results = small samples
- Small samples = Uncertainty
- Statistical tests measure certainty
- Margin for error around expectations
- Confidence intervals
- Conclusion; Deviations could occur by "accident"

Can you believe your eyes?

Structure of Presentation

Why Track?

- Scoring Tracking
- Tracking Principles

The Credit Committee

Credit Policy Debate

Strategic Objectives

Analysis & Tracking

IT Environment

Economy & Market

Credit Policy Debate

Policies

Budget

Expected Results

Credit Process Model: Manage Portfolio
The Credit Committee: Formulating Operational Policies

- Economic Outlook
- Market Analysis
- Portfolio Tracking Results
- Credit Committee
- Point in Time Assumptions
- Portfolio Budget
- Operating Policies (cutoffs...)
- Expected Tracking Outcomes

Control Mechanism for Policy Formulation

Role of Credit Committee

- Central instance for overall credit policy
- Crystallizes company strategy into operational policies
- Also responsible for credit infrastructure
- Challenge: common language for technicians and managers
- Example: Assumptions on scorecard performance

Dialogue: Technicians <--> Policy Managers

Scores -> PD relationship

Example of Dialogue

Technical Presentation

Management Presentation

Population PD

13.0%

Credit Policy: Example

Set scorecard cutoff for personal loans

- Tracking Results
  - Population Profile
  - Actual vs. Expected PD
  - Scorecard Model Performance
  - Policy Rule Evaluation
- Economic Outlook
  - Interest Rates
  - Unemployment
- Market Analysis
  - Competitors
  - Product Ideas
- Operating Policies
  - Scorecard Cutoff
  - Pricing Policy
  - Lending Limits
  - Policy Rule changes
- Portfolio Budget
  - New Lending
  - Outstanding Balances
  - Expected Losses
  - Return on Capital
- Expected Tracking Results
  - See above

Tracking -> Learning -> Change
What is a good policy?

- Based on portfolio analysis and experience
- Quantified targets
- Measurable Results - Set standard for performance
- Coherent - Think through overall consequences

**Policy Elements**
Sources of Business
Recruitment Strategy
Acceptance Cut-off
Pricing
Override Procedures

**Targets for Tracking**
Population Profile
Override Level
Acceptance Rate
Default Rate
EVA/Contribution Level
Attrition Rate

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Leveraging the Feedback Loop

**Strategic Management**
**Statistical techniques**
**Line Management**
**Scorecards**
**Operations Strategies**
**Tracking**

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Information culture:
... the competitive difference

**Management**

**Analysis**

**Systems**

**Operations**

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Increasing returns to effective management

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What is a good policy?