Life after Basel: Rethinking the Feedback Loop

Credit Scoring and Credit Control Conference X
University of Edinburgh
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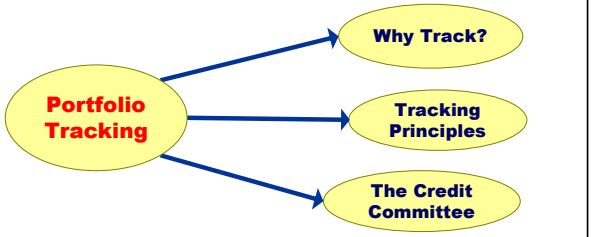
Scoreplus

→ data → information → profit

Structure of Presentation

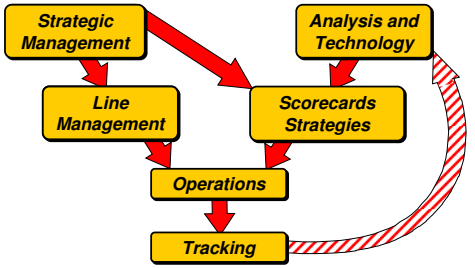


What is scoring?

- 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

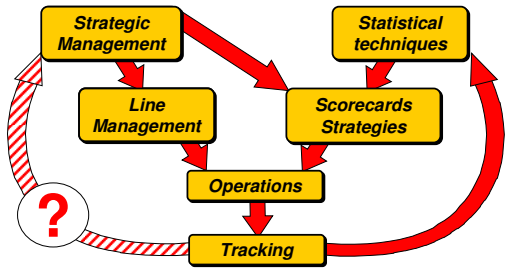
Get return on Basel investment

Today's Control Structure



Centralised Control… but evolves slowly

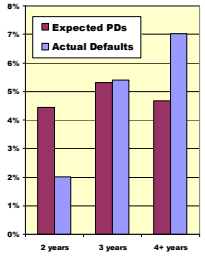
Future: Feedback Loop



The Management Challenge

Example 1: Scorecard correction

Default by Loan Term

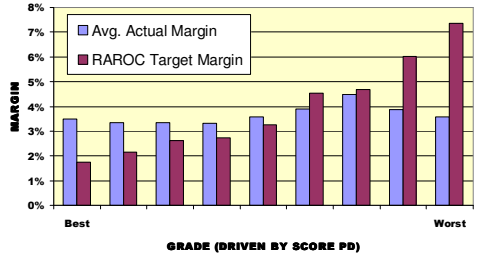


Interpretation

- 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

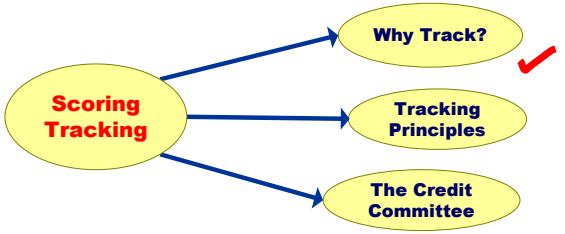
Improve tool —> Improve portfolio performance

Example 2: Network Pricing Behaviour



Use tracking to understand portfolio drivers

Structure of Presentation



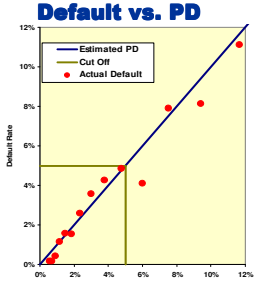
Tracking Principles

- 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

Tracking → Learning → Change

Actual vs. Expected

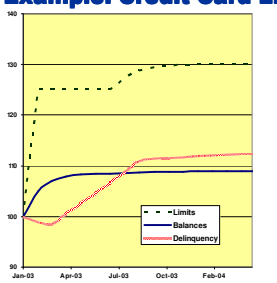
- Policy is based on assumptions
- Are assumptions met?
  - Policy Environment
  - Policy Application
  - Subsequent Performance
- Are consequences what we expected?
- Adjust assumptions
- Set expectations for future



Tracking must be used to be useful …

Portfolio Dynamics

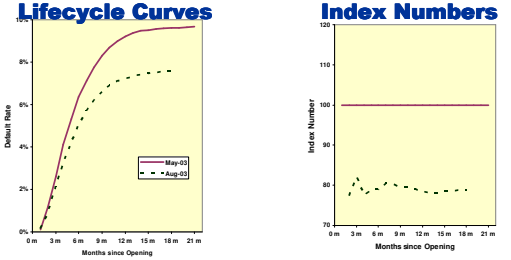
Example: Credit Card Limit Increase Experiment



- Immediate take up by some customers
- Longer build 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%

Anticipate reactions to changes in policy

Timely Policy Modification

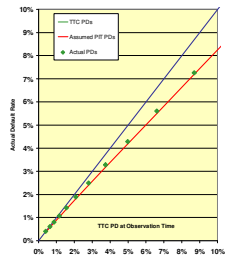


- Index Number = Default Rate from August/Default Rate from May
  - With same months on books

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

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?

Present vs. Future

Present	Future
Model Focus	Portfolio and Policy Focus
Rank-ordering of risk Score only	Accuracy of Estimates PD and other
Number of cases	Financials – Return on Capital
Scores	PD (and EAD, LGD)
Measure total portfolio	Concentrate on marginal cases

Technical Feedback -> Management Feedback

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

PD	< 30%	30 – 59%	60 – 94%	95% +
8% +	-5%	-15%	-21%	-24%
5 to <8%	+4%	+9%	+5%	-6%
2 to <5%	+2%	+12%	+17%	+19%
< 2%	+0%	+1%	+3%	+5%

- 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

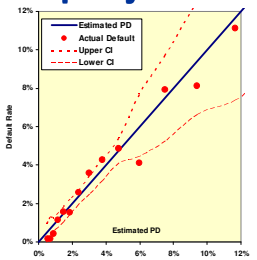
Build profit-maximising policies

Statistical Tests

Why? What?

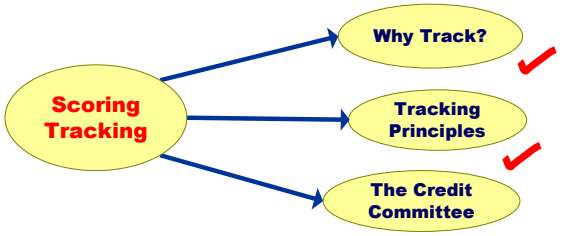
- Fast results = small samples
- Small samples = Uncertainty
- Statistical tests measure certainty
- Margin for error around expectations …
  - Confidence intervals
- Conclusion: Deviations could occur by "accident"

Has delinquency increased?

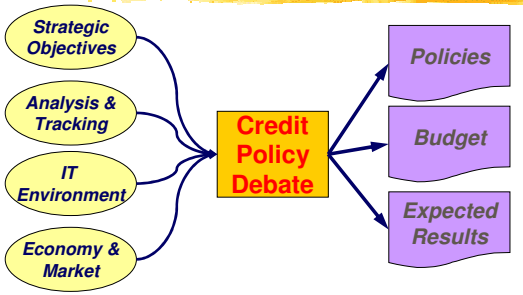


Can you believe your eyes?

Structure of Presentation

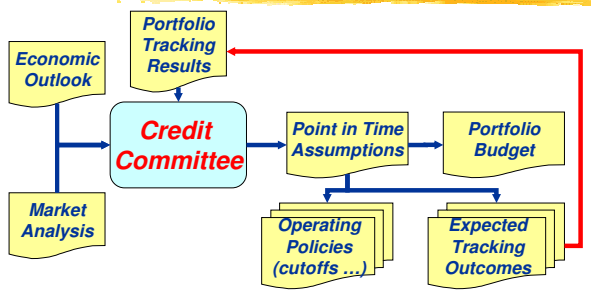


Credit Policy Debate



Credit Process Model: Manage Portfolio

The Credit Committee:
Formulating Operational Policies



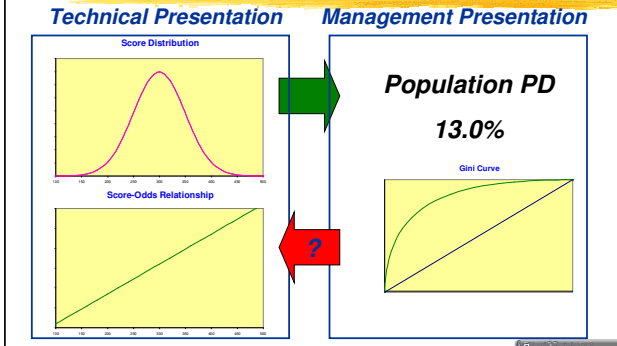
Control Mechanism for Policy Formulation

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



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
- Point in Time Assumptions
  - Reference PD
  - Scorecard Gini
- 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

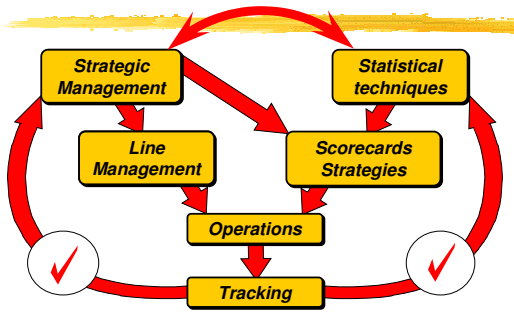
What is a good policy?

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

Policy Elements	Targets for Tracking
Sources of Business	Population Profile
Recruitment Strategy	Override Level
Acceptance Cut-off	Acceptance Rate
Pricing	Default Rate
Override Procedures	EVA/Contribution Level
	Attrition Rate

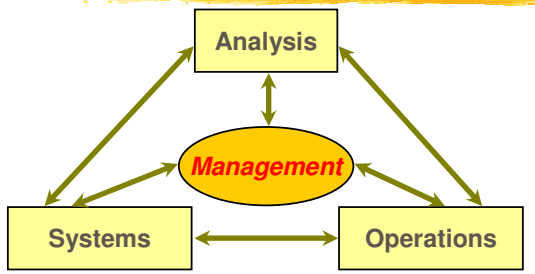
Keep it Simple

Leveraging the Feedback Loop



Tracking: the key to confidence

Information culture:
… the competitive difference



Increasing returns to effective management