

# Life after Basel: Rethinking the Feedback Loop

*Credit Scoring and Credit Control  
Conference X  
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Scoreplus

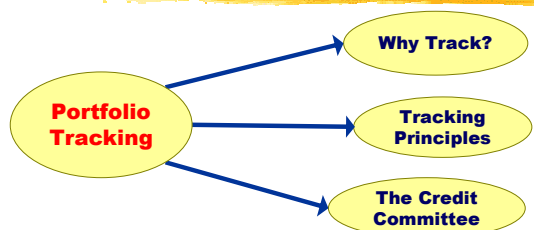


## What is scoring?

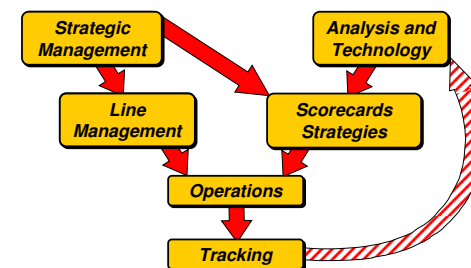
- ◆ 1980s: Statistical rank-ordering of application risk
- ◆ Now: Overall analytic approach to credit risk management
  - ◆ But weak links to financials
  - ◆ Focus on Basel measures
- ◆ 2010: Analytic basis for financial portfolio management
  - ◆ Linked to budget process
  - ◆ Part of overall structured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

**Get return on Basel investment**

## Structure of Presentation

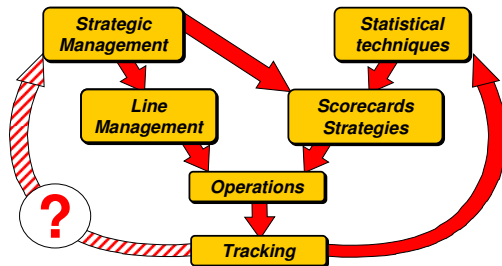


## Today's Control Structure



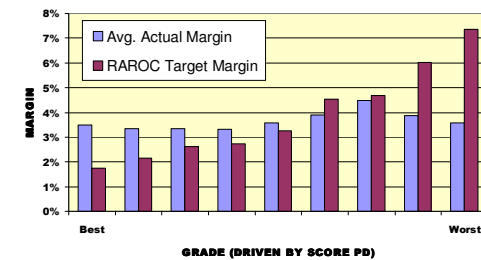
**Centralised Control... but evolves slowly**

## Future: Feedback Loop



**The Management Challenge**

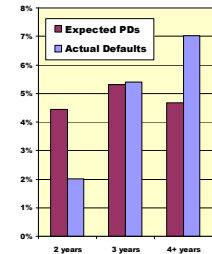
## Example 2: Network Pricing Behaviour



**Use tracking to understand portfolio drivers**

## Example 1: Scorecard correction

### Default by Loan Term

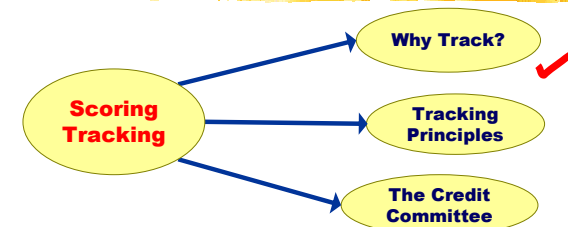


### Interpretation

- ◆ 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**

## Structure of Presentation



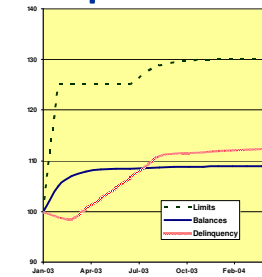
## Tracking Principles

- ◆ 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

## Portfolio Dynamics

### Example: Credit Card Limit Increase Experiment

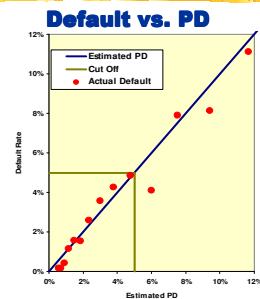


- ◆ Immediate take up by some customers
- ◆ Longer build of balance by others
- ◆ Delinquency initially comes down
- ◆ Then builds up over time
- ◆ No more limit increase for 6 months – then “normal” drift
- ◆ Longer term result:
  - ◆ Limits: + 30%
  - ◆ Outstandings: + 9%
  - ◆ Delinquency: + 12%
  - ◆ Balance to Limit:- 16%

Anticipate reactions to changes in policy

## Actual vs. Expected

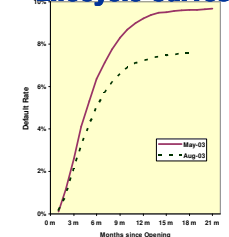
- ◆ Policy is based on assumptions
- ◆ Are assumptions met?
  - ◆ Policy Environment
  - ◆ Policy Application
  - ◆ Subsequent Performance
- ◆ Are consequences what we expected?
- ◆ Adjust assumptions
- ◆ Set expectations for future



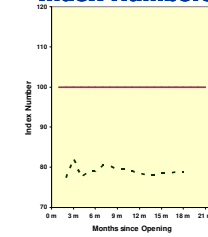
Tracking must be used to be useful ...

## Timely Policy Modification

### Lifecycle Curves



### Index Numbers

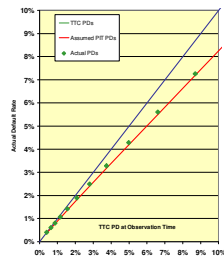


- ◆ Index Number = Default Rate from August/Default Rate from May
  - ◆ With same months on books

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

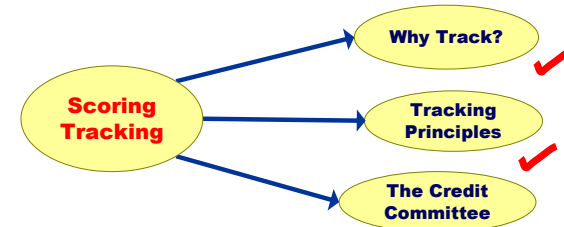
### Maximum Limit utilisation

	< 30%	30 – 59%	60 – 94%	95% +
8% +	-5%	-15%	-21%	-24%
PD 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**

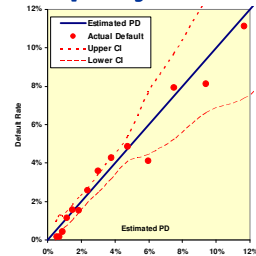
## Structure of Presentation



## Statistical Tests

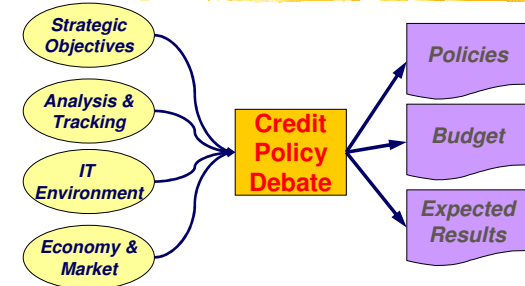
### Why? What? Has delinquency increased?

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



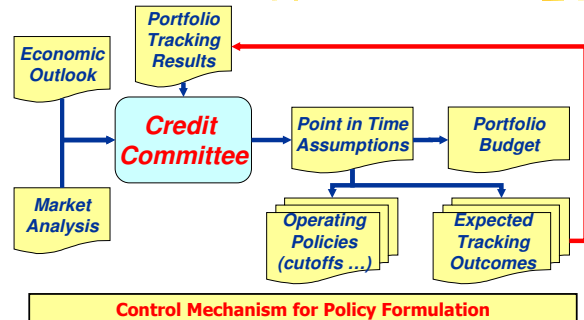
**Can you believe your eyes?**

## Credit Policy Debate

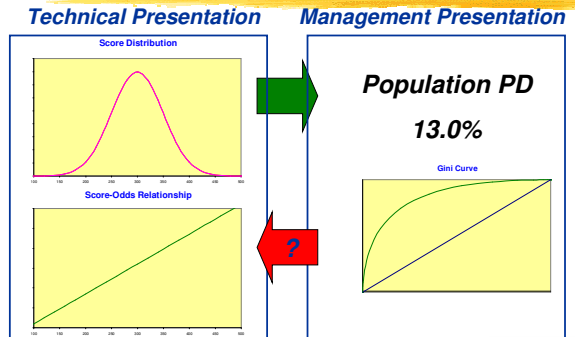


**Credit Process Model: Manage Portfolio**

## The Credit Committee: Formulating Operational Policies



## Scores -> PD relationship Example of Dialogue



## 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**

## 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

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

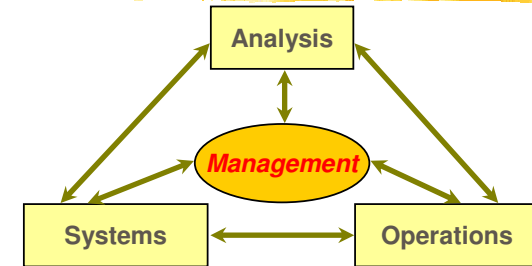
### Targets for Tracking

Population Profile  
Override Level  
Acceptance Rate  
Default Rate  
EVA/Contribution Level  
Attrition Rate

**Keep it Simple**

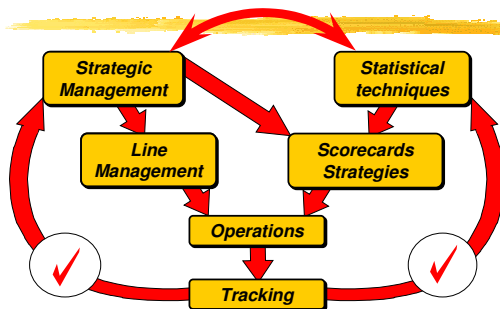
## Information culture:

... the competitive difference



**Increasing returns to effective management**

## Leveraging the Feedback Loop



**Tracking: the key to confidence**