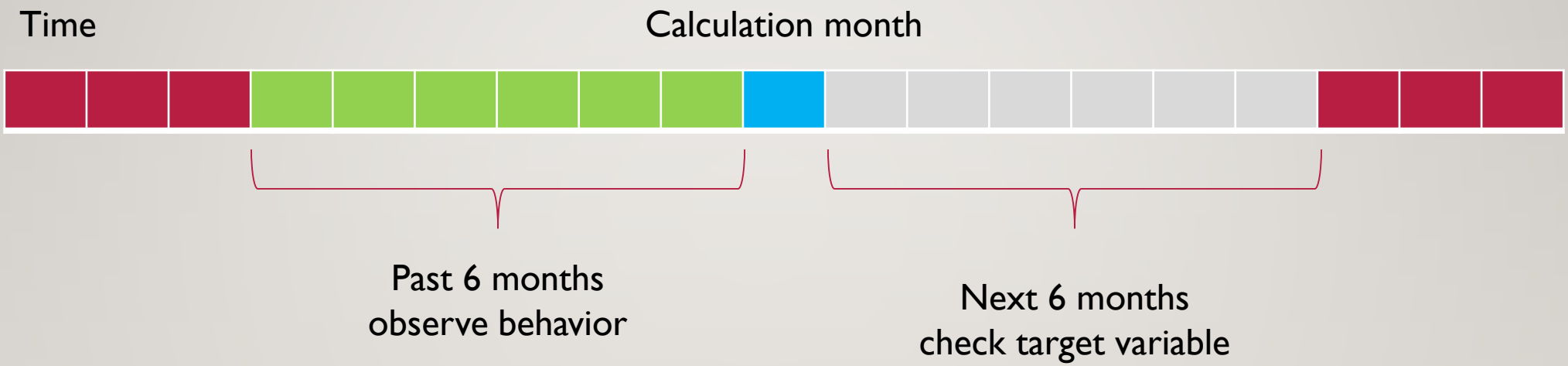
CREDIT RISK MODEL - BEHAVIOR SCORECARD

- Car loan
- Data driven provisioning
- Predict which accounts will be default within 6 month
- Target most accurate required provision prediction
- Input: customer data, car data, loan data and historical repayment data between 2002-11-30 and 2008-02-29

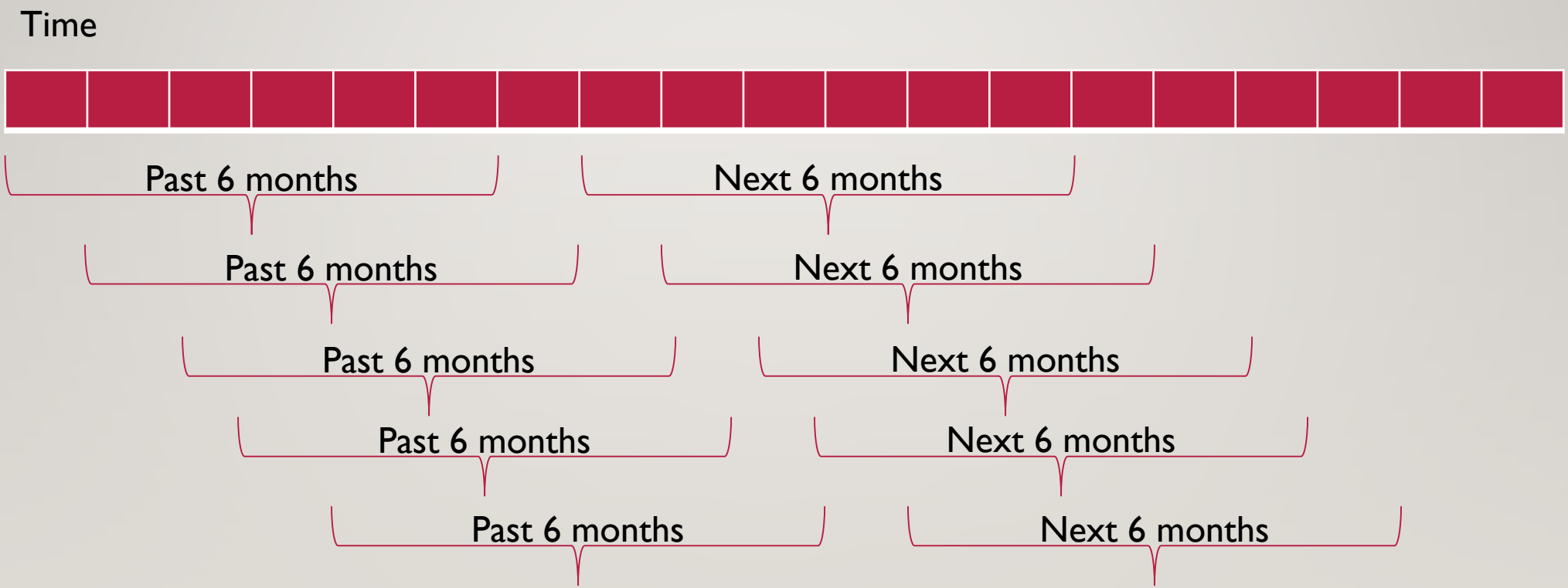
BEHAVIOR SCORECARD – DATA PREPARATION



Target: default in the next six months

Input: behavior in the past 6 months

BEHAVIOR SCORECARD – DATA PREPARATION



BEHAVIOR SCORECARD – TEST ENVIRONMENT

Random training – test – validation partition

Risk of overestimating the model performance

All records belonging to the same customer should go to the same partition!

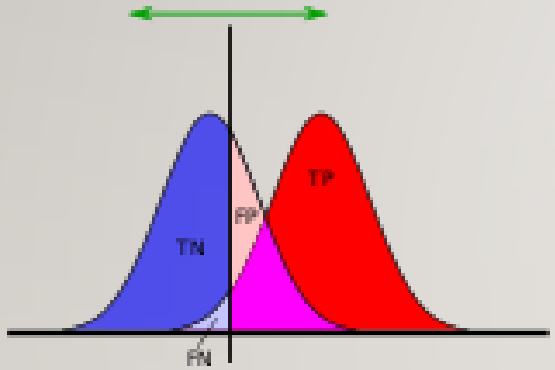
BEHAVIOR SCORECARD – OVERVIEW

1. Payment behavior data preparation – sliding window (data augmentation)
2. Customer, car and loan data preparation
3. Join the tables
4. Prepare test environment – all records belonging to one customer should go into the same partition
5. More data preparation - handle categorical variable with too many categories

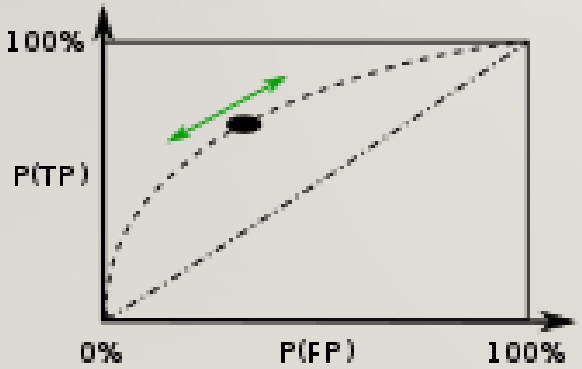
BEHAVIOR SCORECARD – OVERVIEW

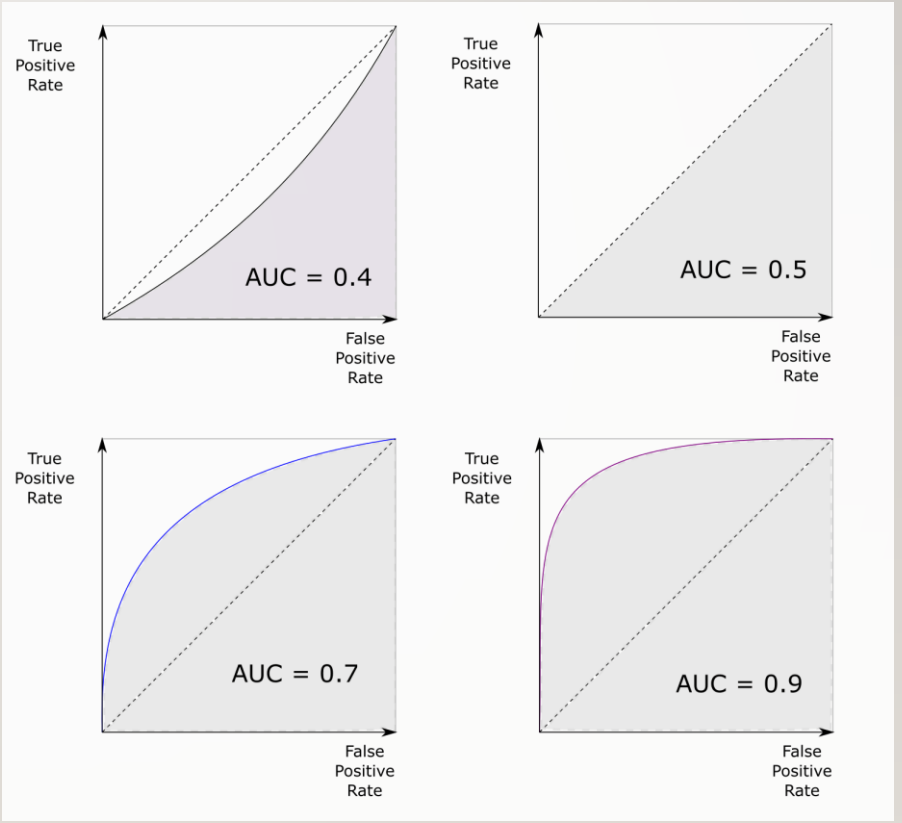
6. Build model
7. Evaluate model
   - ROC, AUC
   - Kolmogorov-Smirnov
   - Lift
   - ROI
8. Save model
9. Prepare scoring script

MODEL EVALUATION – ROC, AUC
BINARY CLASSIFIER



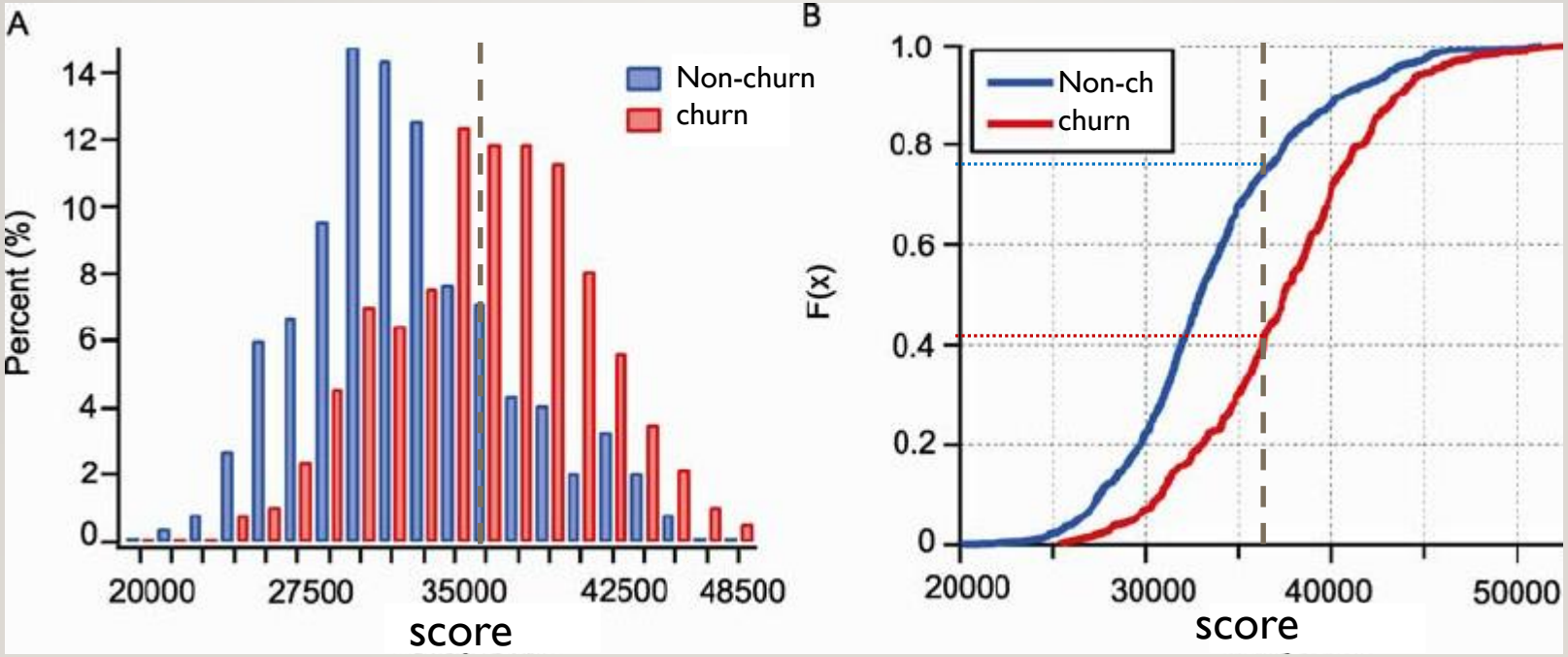
TP	FP
FN	TN





MODEL EVALUATION – KOLMOGOROV-SMIRNOV INDEX

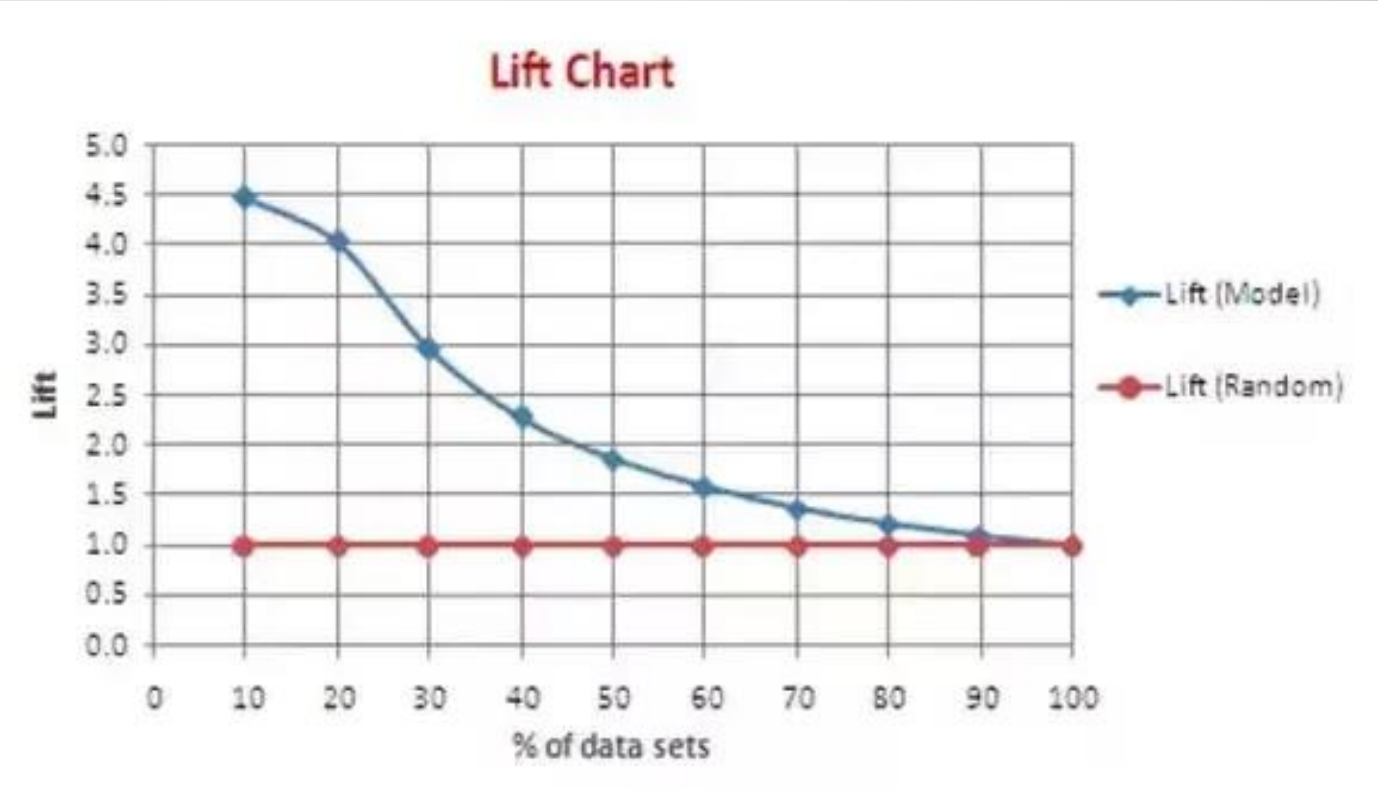
Kolmogorov-Smirnov test



MODEL EVALUATION - LIFT

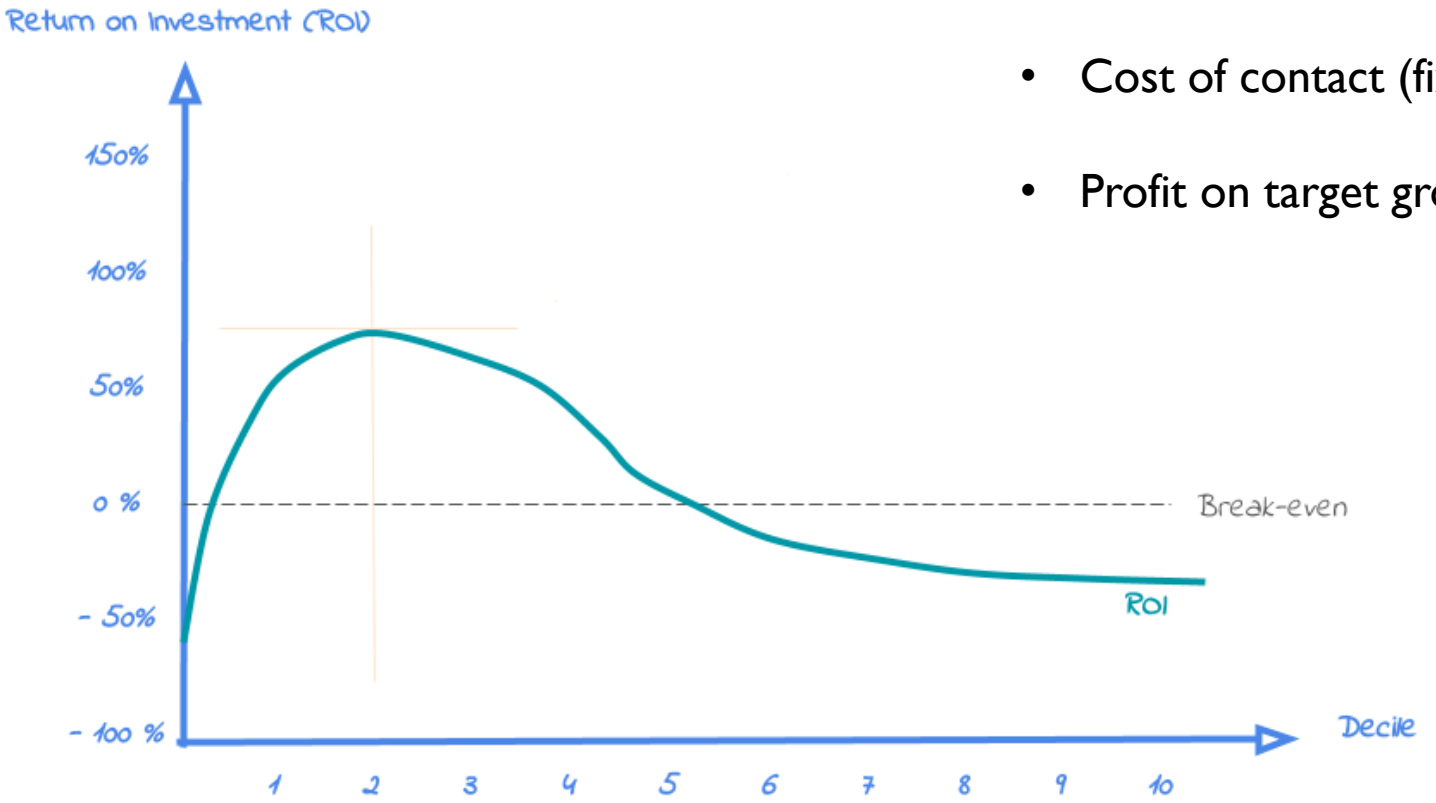
Lift chart

Ratio between the hits in the top of the data predicted by the model and the result using random scores



MODEL EVALUATION – RETURN ON INVESTMENT

ROI



- Cost of contact (fixed)
- Profit on target group