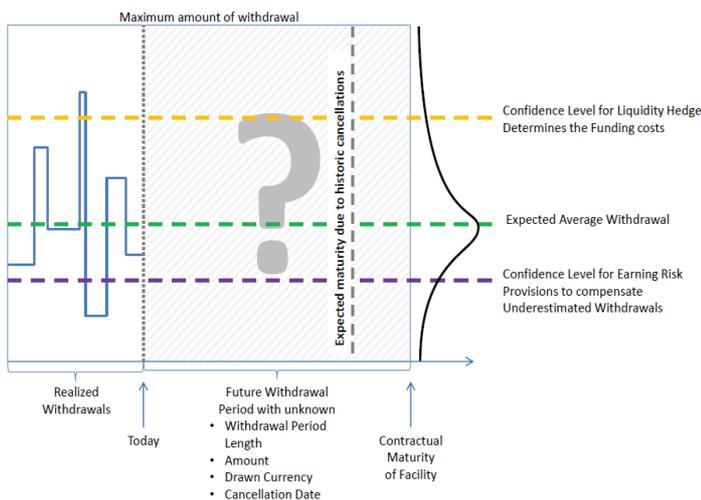


Modeling and Forecasting Customer Behavior for Revolving Credit Facilities

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Forecasting the withdrawal under revolving credit facilities to minimize liquidity and income risk is the aim of this study.

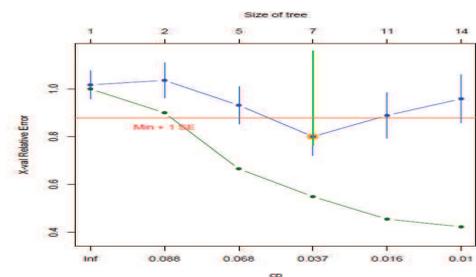
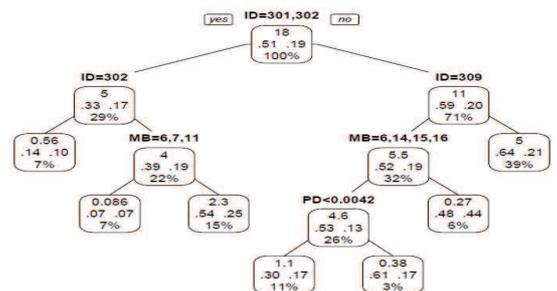
Historical data provide information about characteristics and withdrawal patterns of borrowers. Possible explanatory variables are for e.g. a customer's rating, a credit line limit, a lifespan of the credit facility, the economic sector of the customer, etc.

Data for this study is provided by one of the largest German banks. It contains historical data related to the RCF customers and their behavior.

Data mining, the process of automatically discovering patterns in large data sets, includes a predictive modeling approach. Models suitable for the continuous multivariate target variable are built.

As we are interested in the mean relative withdrawal and its standard deviation simultaneously, we utilize the multivariate regression tree method to analyze and model the data.

The aim is to find the "best predictive tree", i.e. the tree which offers the most accurate and stable prediction for the customer's behavior. Thus the chosen tree size is based on the minimal cross-validation error.



Conclusions

We investigate the behavior of revolving credit takers based on the multivariate regression tree models with an aim to forecast it. This approach is chosen, as the multivariate target variables can be analyzed and the tree with the best predictive properties is selected.

The type of financing and the risk category of the consumer are of particular importance for the behavior of the loan takers. The probability of default seems to influence their behavior, too.

The cross-validation error indicates that the predictive power of the model for the given data could be improved.

References

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