

# Parallel Session 9: Rating Methodology

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**New Developments in Structured  
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# **Choice of Rating Technology and Price Formation in Imperfect Credit Markets**

**H. Brandt, E. Dockner,  
R. Jankowitsch, S. Pichler**



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## Summary of the model

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- **Oligopolistic market**
- **Rating technology  $\Rightarrow$  DPs estimates**
- **DPs estimates  $\Rightarrow$  credit spreads**

 **TWO-STAGE GAME**



## Summary of results

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**Key decision variable: *cost of the rating technology***

- **Banks only choose high accuracy rating systems if additional cost is small enough**
- **Does not automatically lead to a better state for both lenders and borrowers**
- **General improvement only when costs are even smaller!**



## Spread as a function of DP only

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- **Cross-selling effects: banks may have an aggressive pricing policy that does not directly reflect their DP estimate.**
- **Spread can depend on the gains from other businesses with the same borrower.**
- **Particularly true for big clients.**



## Rating agencies

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- **Change profits into credibility: does the model apply to rating agencies?**
- **Another rating technology: PDs from rating agencies. Internal ratings highly correlated with public ratings. Zero cost for lender.**





# Bayesian Inference for Issuer Heterogeneity in Credit Rating Migration

A. Kadam, P. Lenk



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## Motivation

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- **Discrete time Markov chain approaches often include heterogeneity of the issuers**
- **Continuous time Markov chains give better estimates**
- **Idea: include heterogeneity in a continuous-time setting**



## Bayesian estimation techniques

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- **Good when data is sparse**
- **Subjective beliefs: more important than ever!**



## Rating Momentum

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- **In this model, transitions depend on the current state of the process**
  
- **In reality, transitions depend on current and past states**



## Sensitivity to Industry Sectors

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- **Heterogeneity can be important even between two sub-sectors of a given sector**
  
- **If the algorithm is efficient enough, it would be interesting to reproduce the analysis with additional sectors**



## ABS Transition Matrices

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- **Additional factors: key agent, vintage**
- **The transition matrix is time-dependent**



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