Credit Risk Management in Financial Institutions: Establishing Stable Management Systems over the Business Cycles

conceptual presentation

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CV

Professional Experience	
Since 03/2017	Senior Credit Risk Modeler ERSTE GROUP BANK AG, Vienna
09/2010 – 03/2017	Senior Credit Risk Modeler BAWAG GROUP AG, Vienna
07/2009 – 09/2010	Associate ITHUBA CAPITAL AG, Vienna
Education	
Since 10/2015	Technical University of Vienna Doctoral Program
10/2007 – 09/2010	University of Vienna Master's degree in Business Administration Master Thesis at Department of Economics Reviewer: Prof. Erich W. Streissler
09/2007 – 07/2009	University of Applied Sciences Wiener Neustadt Master's degree in business Consultancy
09/2004 – 07/2007	University of Applied Sciences Wiener Neustadt Bachelor's degree in business Consultancy

Agenda

1. Background
2. Problem Statement
3. Literature Excerpt
4. Expected Results
5. Research Design and Data
6. Outlook
7. Literature

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1. Background

- Financial Institutions provide loans to customers
- Each loan has a credit risk that has to be assessed
- Number of bankruptcies vary over business cycles
- Highly regulated topic (Basel , IFRS 9[1])
- Risk management is established not only to identify default risk but also to manage them
- Different methods and models of measuring credit risk
- How to measure and manage credit risks over the business cycles?

1) International Financial Reporting Standards

2. Problem Statement

- Requirement: Credit risks of loan portfolios have to be measured and funded by equity capital
- Supervisory rules (Basel) and reporting standards (IFRS) require different methods to measure credit risk over the business cycle, i.e. through the cycle vs point in time

1. Problem of business cycle dependency of credit risks: How do credit risks behave over the business cycle?
2. Problem of credit risk measurement: Which modelling, calibration and validation methods should be used?
3. Problem of managing the measured credit risks: Which credit risk measurement(s) should be used in which way in the credit risk management systems?

3. Literature Excerpt

- Shumway (2001): Incorporation of market-driven factors into bankruptcy prediction
- Pluto and Tasche (2005): Estimation of probabilities of default for credit portfolios with low number of defaults
- Cesaroni (2015): Procyclicality of credit rating systems: How to manage it
- Novotny-Farkas (2016): Interaction of IFRS 9 with supervisory rules (Basel) to enhance financial stability
- Sabela et al. (2018): Model prediction using financial ratios, market-driven and macroeconomic data to predict financial distress

4. Expected Results

1. Problem: How do credit risks behave over the business cycle?
   - Credit risks tend to be procyclical
   - Point in time risk view of IFRS 9 boost procyclicality while through the cycle risk view of Basel mitigate procyclicality
   - Expected credit loss under IFRS 9 versus expected and unexpected credit loss under Basel
   - Expected loss view for 12 months and lifetime of IFRS 9 versus expected loss only for 12 months of Basel

4. Expected Results

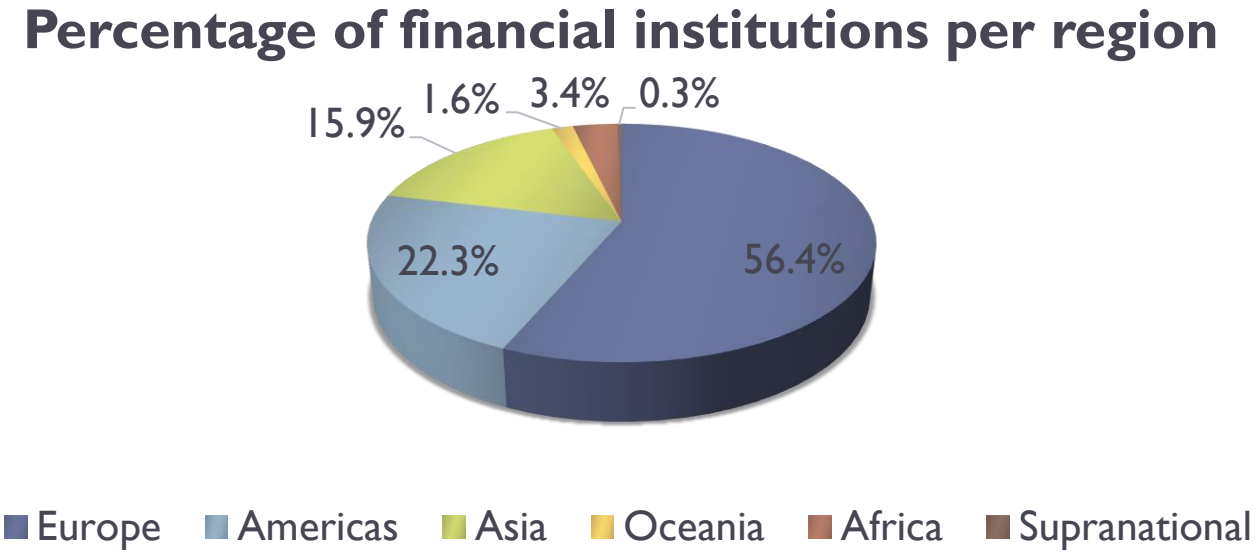
2. Problem: Which modelling, calibration and validation methods should be used?
   - Process: 1) Model estimation 2) calibration 3) validation
   - Models can be estimated under both approaches (IFRS 9 and Basel) or just one model is estimated and adjusted to the other approach
   - Macroeconomic data required under IFRS 9 and optional under Basel approach
   - Model should be used to reduce procyclicality

4. Expected Results

3. Problem: Which credit risk measurement(s) should be used in which way in the credit risk management systems?
   - Management tools are missing under IFRS 9, while they are available under Basel
   - Management in Financial Institutions uses typically IFRS 9 for pricing of loans and stress testing, Basel is used for regulatory purposes
   - Anticyclical management necessary under IFRS 9

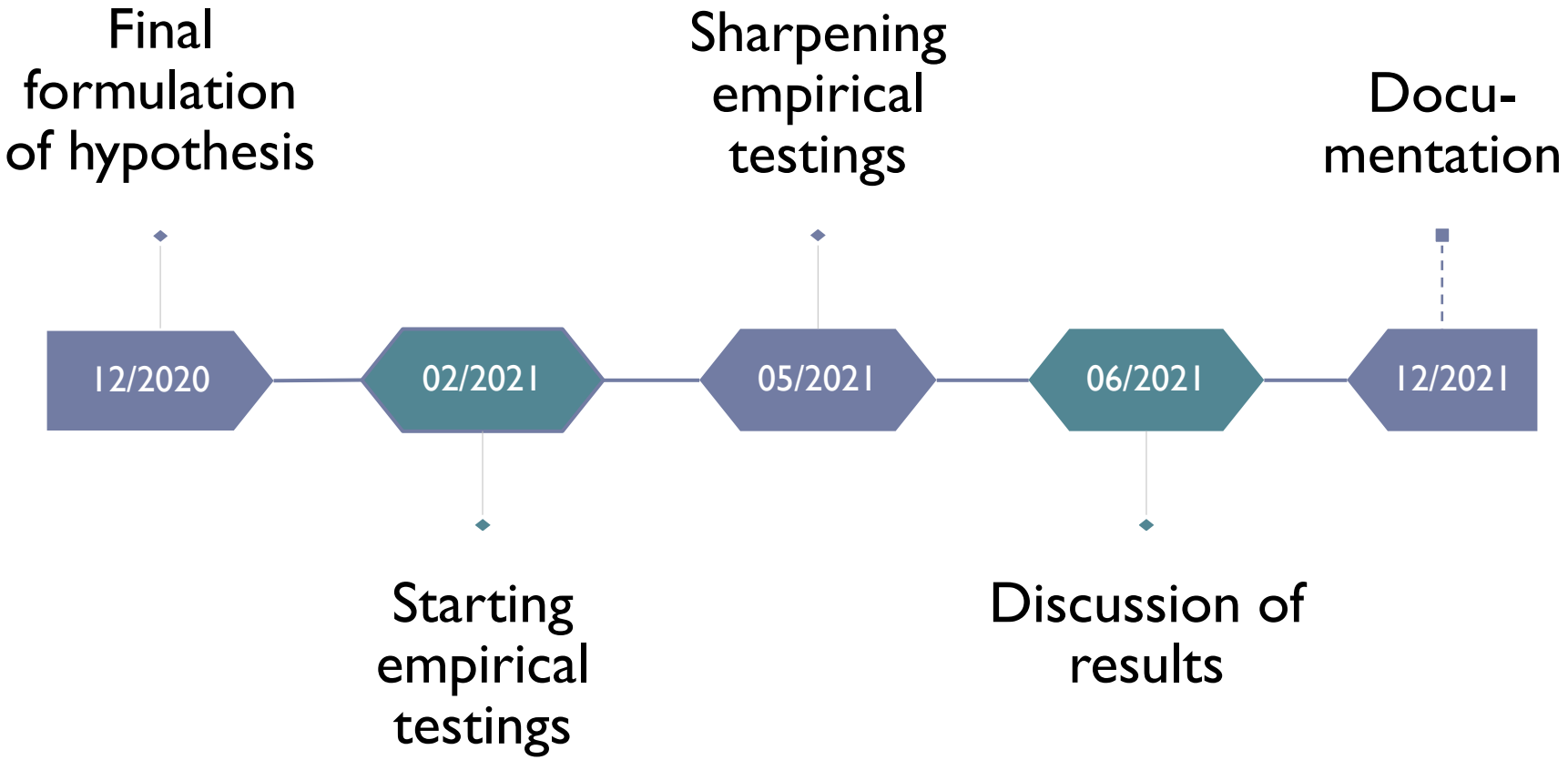
5. Research Design and Data

- Methods: Quantitative research using logistic regression
- Data: ~6300 global financial institutions (bankscope data and financial ratios between 2005-2015)
- Data: Rating information from S&P, Fitch, Moody's and macroeconomic data



6. Outlook

Further project milestones:



7. Literature

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Thank you!