

Measuring and Forecasting Financial Stability

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**Comments on „Distress in European Banks: An Analysis Based on a New
Data Set“**

Distress in European Banks: An Analysis Based on a New Data Set

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The Paper is about...

▪ **The Paper:**

- develops an early warning system for bank distress at the individual bank level
- for a sample of European Union (EU) countries

▪ **Empirical Strategy:**

- BankScope database on 5,708 banks
- EU-25
- time period: 1996-2008, yearly data
- The information on bank distress comes from The NewsPlus/Factiva searches (a bank is in distress when there are negative news in the media)
- several versions of the logit model (random effects logit model for panel data)

IMF Early Warning System Models

▪ Currency crises:

▪ Macro-based EWS models

- The Developing Country Studies Division DCSD probit model (Berg/Patillo, 1999)
- „Crisis signals“ model (Kaminsky/Lizondo/Reinhart, 1998)

▪ Balance-sheet based risk analysis

- Allen/Rosenberg/Keller/Setser/Roubini (2002)

▪ Banking crises:

▪ Macro-based EWS models

- Multivariate logit model (Demirgüç-Kunt/Detragiache, 1998)
- „Crisis signals“ model (Kaminsky/Reinhart, 1999)

Disadvantages of logit/probit models for banking crises

- projection with macro-based EWS models (Demirgüç-Kunt/Detrage) for developed countries (Germany) is unlikely
- regulatory changes (during the last 30 years efforts were made to upgrade bank capital standards; the industrial countries have introduced regulatory changes after crises)
- new crises are going to be different (one should take into account new developments and changes in risk in the banking system)
- using a 1/0 dummy variable as a definition of banking crisis does not allow to capture „distress“ in banking system and makes the prediction of „distress“ for developed countries (Germany) difficult
- logit/probit models do not perform well out of sample
- more research is needed on micro-based EWS models

- **Papers on banking distress in Germany which use a unique micro database on bank distress events**
 - Kick, T. and M. Koetter, 2007, „Slippery Slopes of Stress: Ordered Failure Events in German Banking“, *Journal of Financial Stability*, 3(2), pp. 132-48.
 - Koetter et al. (2007), „Accounting for Distress in Bank Mergers“, *Journal of Banking and Finance*, Vol. 31, No. 10, pp. 3200-17.

The Advantages of the Paper

- Although the topic of the paper is not novel the paper has a number of advantages
 - It focuses on developed European countries in difference to the majority of papers on banking crises
 - It is based on micro-data and not only on macro data
 - It has an advantage for predicting bank distress in developed countries
 - It allows to distinguish between banking crisis and bank distress as the majority of papers focus only on banking crises
 - It captures the period of actual crisis
 - The paper uses standard variables but the implementation is easy from the practical point of view

- Methodology
 - Random effects logit model is used to exploit the panel structure of the data
 - There are a number of robustness tests (more than 15...)

Comments (I)

- The model should be an early warning model but it uses only yearly data (mostly balance-sheet data)
- It is surprising that macroeconomic variables are insignificant
- The explanation is that contagion dummy captures macroeconomic effects
- It is not clear what contagion dummy measures
 - Since the network effects between the banks are not analyzed in the paper how can we be sure that there is contagion?
 - The contagion dummy is defined as 1 when another bank in the country of similar size was in distress in the last 12 month
 - Does contagion measure macroeconomic effects?
 - It can be the case that banks are exposed to the same macroeconomic shocks but there is no contagion.
 - Why contagion happens for banks of equal size but not for banks of different size?

Comments (II)

- The authors add Z-Score (the balance sheet measure of distance to default) to the mainline specification
- Z-Score is itself a measure of bank distress. One could do the robustness tests with the Z-Score as dependent variable
- It is surprisingly that it has no effect on predicting bank PD

- The authors also add stock market information
- The authors use information on stock prices for 222 EU banks and calculate ratios of stock indices relative to the FTSE-100 (Financial Times Stock Exchange) market index
- The same argument: Why not to use stock market information as dependent variable?

Comments (III)

- To justify the prediction of the logit model one tries to minimize Type I error (distressed banks are not identified) and Type II error (healthy banks are identified as distressed)
- For the 10 percent cutoff point: The model correctly classifies 55.7 percent from distress events and 99.7 from non-distress events
- The model fails to predict a lot of distress events
- What is the predicting power of the model out-of-sample?