BACK TO THE FUTURE: BACKTESTING SYSTEMIC RISK MEASURES DURING HISTORICAL BANK RUNS AND THE GREAT DEPRESSION

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This paper studies the performance of two well-known systemic risk measures (CoVaR & SRISK) over the pre-FDIC panics (1866 - 1933)

- Performance is measured at two levels:
  - Individual institution
  - Aggregate level

- The severity of systemic risk is proxied by the deposits declines during systemic episodes

- The results show that CoVaR & SRISK help identifying systemic institutions during distress periods but are not effective in predicting financial crises
The paper addresses a very relevant and timely question for policy makers:

- Will the current systemic risk measures be able to identify the next crisis?

Being able to answer this question is important because the financial system evolves in response to post-crisis changes.

Railroad boom & Pre-FDIC panics

Real Estate boom & Recent financial crisis

Next??
In the analysis at individual institution level the authors study: i) the relation between changes in deposits and the systemic risk measures; ii) cross-sectional rank correlations.

Policymakers are concerned about the type I error of the risk measures (i.e., those cases in which the systemic risk measure is high but the institution is not SI).

- Banks with rank 2 & 4 do not appear in the list!
- They are clear examples of type I error since they get among the highest CoVaR but they do not suffer the largest withdrawal of deposits.
Type I error is crucial because it has economic implications for the bank
- Policymakers assign higher capital buffers to the SIFI

The authors could analyze the performance of the systemic risk measures in regards to the type I error

They could use a ROC curve analysis to check the performance of their classification model at various thresholds settings

The Area Under ROC (AUROC) tells how much the model is capable of distinguishing between SIFI and non-SIFI
The authors study the performance of the systemic risk measures around NBER contractions not associated with financial panics.

- The results convey that systemic risk measures flag deposit declines whether it is a financial panic or not.

There is an overlapping between the pre-FDIC panics and NBER contractions:

<table>
<thead>
<tr>
<th>NBER</th>
<th>Pre-FDIC</th>
<th>NBER</th>
<th>Pre-FDIC</th>
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<tbody>
<tr>
<td>1873 – 1975</td>
<td>1873</td>
<td>1913 – 1914</td>
<td>1914</td>
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<td>1883 – 1885</td>
<td>1884</td>
<td>1918 – 1919</td>
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<td>1892 – 1896</td>
<td>1893</td>
<td>1920 – 1921</td>
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<td>1903 – 1904</td>
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<td>1923 – 1924</td>
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<td>1907 – 1908</td>
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<td>1926 – 1927</td>
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<td>1910 – 1911</td>
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<td>1929 – 1933</td>
<td>1931</td>
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COMMENT II: PRE-FDIC PANICS VS NBER CONTRACTIONS

- Results might be driven by the pre-FDIC panics
  - Thus, the authors should rule out from their analysis the coincident event to avoid confounding events
- If results still remained, they should discuss the implication of their finding
  - Are the systemic risk measures just capturing systemic risk?
COMMENT III: DEFINITION OF DEPENDENT VARIABLE

- Predictions on individual bank deposit losses correspond to Eq (8):

\[
\Delta \text{Dep}_i = \beta \text{SRM}_{it-l} + \sum_{k=1}^{p} \gamma_k x_{kit-l} + \eta_i + \nu_t + \mu_{it} \tag{8}
\]

- Where \( \Delta \text{Dep}_i = \frac{\text{Max deposit contraction of bank } i}{\sum_{j=1}^{N} \text{Max deposit contraction of bank } j} \)

- Is the standardization of the deposit withdrawn really needed?

- Let’s suppose two scenarios of an economy and two crisis

<table>
<thead>
<tr>
<th>Crisis</th>
<th>Bank</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Max D.C</td>
<td>(\Delta \text{Dep}_i)</td>
</tr>
<tr>
<td>I</td>
<td>A</td>
<td>25%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>II</td>
<td>A</td>
<td>5%</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0%</td>
<td>0</td>
</tr>
</tbody>
</table>

- Is Bank A less SI under scenario 2? NO
- Should Bank A get a comparable level of systemic risk in crisis I and II? NO
COMMENT IV: FINANCIAL CRISIS PREDICTION CHALLENGE

- The authors use individual institution systemic risk measures to study whether an aggregation of them have predicting power on financial crisis
  - The results show that they are poor predictors
  - This finding is consistent with previous literature (Rodriguez-Moreno & Peña, 2013)
  - Reasoning behind these findings:
    “aggregate risk facing the system is much higher than the simple sum of the individual risks attending financial institutions, products and markets”
    J. Caruana (2010)
- If this agg measures do not fit well the recent crisis, it is hard to think that they will fill well in other crisis
  - Maybe the authors should focus on the SIFI ranking challenge
MINOR COMMENTS

- Reporting the adjusted R-squared is highly recommended since the authors compare regressions with different number of explanatory variables.
- Caption of Figure 2 should indicate that flat points correspond to missing observations of deposits.
- The authors could elaborate more on whether banks under study operate just in NY and the kind of deposits they consider.
Thanks for your attention