Discussion of “Systemic risk procyclicality in the European financial system” by Cincinelli, Pellini, Urga

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Disclaimer: The views expressed here are all mine and not necessarily of the Bank for International Settlements.
Summary

- This is a comprehensive study of leverage and systemic risk in the European financial system
- Extensive dataset on banks and NBFIs from 2006 to 2019:
  - 129 banks, 287 finance service firms, 181 real estate finance service firms
  - Variables include total assets, quasi-market leverage, accounting leverage
- Systemic risk measures: $\Delta CoVaR$, $MES$ and $SRISK$
- Key findings:
  - Leverage is procyclical for banks
  - Leverage of NBFIs is procyclical during financial crises
  - NBFIs, in particular the real estate finance service firms, increase systemic risk
Comment 1 - procyclicality of leverage

- Leverage of dealer banks is procyclical (Adrian and Shin, 2010, 2014)

- The main reason behind is the market risk constraint (eg Value-at-Risk)
Comment 1 - procyclicality of leverage

- Although the regression results are statistically significant, the scatter plots suggest that the results seem to be driven by only small subsamples.

- Following Adrian and Shin (2010, 2014), maybe the authors can split the sample and focus on the banks and NBFIs that are more subject to VaR constraint.
Comment 2 - procyclicality of systemic risk

- When it gets to systemic risk, the definition of procyclicality is tricky
  \[
  \Delta \text{Systemic Risk}_{i,t} = \alpha_0 + \beta_1 \text{Systemic Risk}_{i,t-1} + \beta_2 \Delta \text{Size}_{i,t} + \sum_{i=1}^{N} \text{Financial Institutions}_t + \\
  \sum_{t=2006:1}^{2019:4} \text{Time}_t + \varepsilon_{i,t}
  \]

- $\beta_2$ measures the correlation between a firm’s asset growth and its contribution to systemic risk

- But why that is a good measure of procyclicality? What does it mean by “procyclicality”?

- It is different from leverage, in which case there is a clear micro-foundation
Comment 2 - procyclicality of systemic risk

- Borio, Furfine and Lowe (2001): A financial indicator is said to be “procyclical” if it tends to amplify business cycle fluctuations

- It is important to define the business cycle, or in the context of financial stability, the financial cycle

- Measures of global financial cycle
  - Price-based: global factor based on asset prices by Miranda-Agrippino et al (2020)
  - Quantity-based: the ratio of gross capital inflows to GDP by Aldasoro et al (2020)
  - Additional (immediately available) measure: the BIS global liquidity indicator (GLI)


- I suggest the authors to regress the systemic risk measures on these financial cycle proxies, in order to have a meaningful discussion of procyclicality of systemic risk
Comment 3 - how leverage affects procyclicality of systemic risk

- Investigate the impact of banks’ and NBFIs’ leverage on the procyclicality of systemic risk

\[
\Delta Systemic \ Risk_{i,t} = \alpha_0 + \beta_1 \Delta Size_{i,t} (Leverage_{i,t-1} \leq \gamma) + \beta_2 \Delta Size_{i,t} (Leverage_{i,t-1} > \gamma) + \sum_{i=1}^{597} Financial \ Institutions_i + \sum_{t=2006:1}^{2019:4} Time_t + \varepsilon_{i,t}
\]

- Use the leverage of banks (or NBFIs) as a state variable and see how procyclicality of systemic risk varies across states

- Smooth transition regression: LSTAR model (van Dijk, Terasvirta and Franses (2007), Christiansen, Ranaldo and Soderlino (2011))