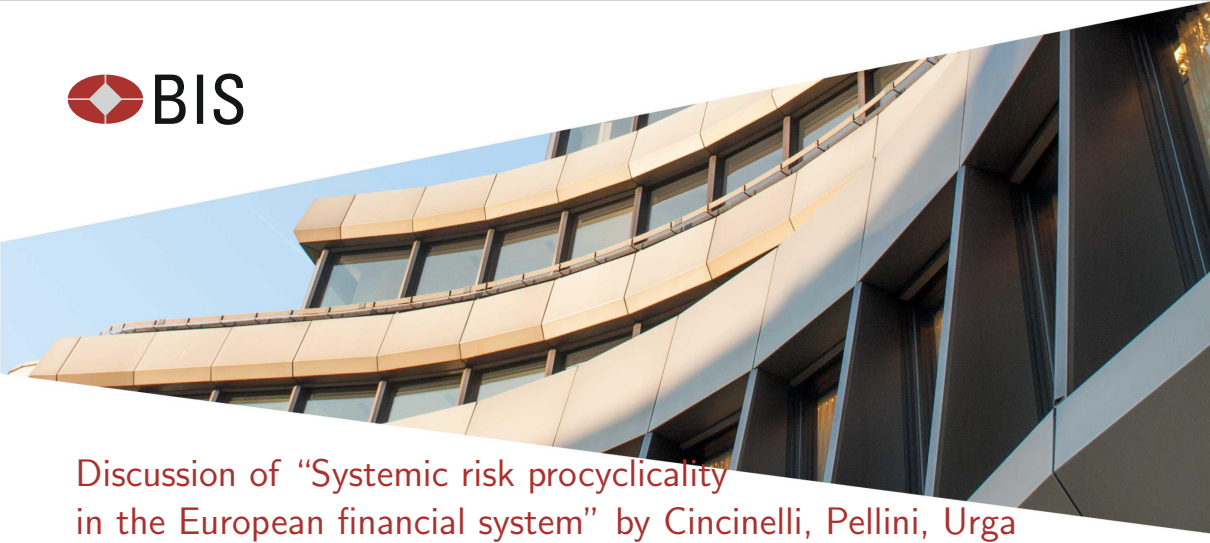


Discussion of "Systemic risk procyclicality in the European financial system" by Cincinelli, Pellini, Urga

Wenqian Huang (BIS)

FSB workshop on systemic risks in NBFI and policies to address them 9 June 2022

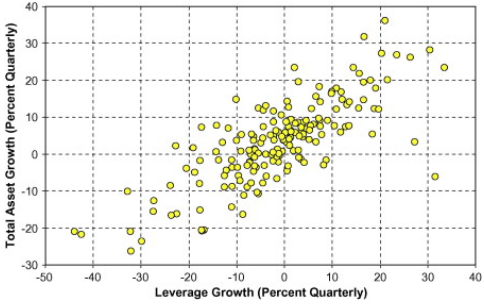
Disclaimer: The views expressed here are all mine and not necessarily of the Bank for International Settlements.

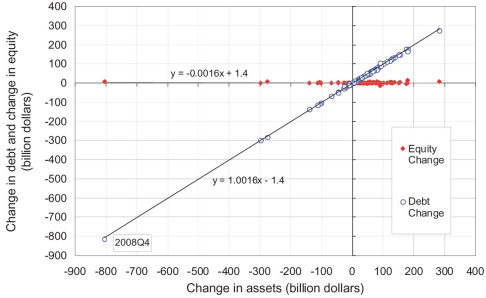
Summary

- 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)

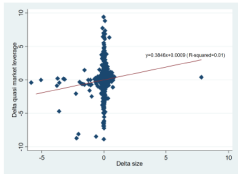




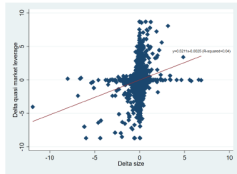
- The main reason behind is the market risk constraint (eg Value-at-Risk)

Comment 1 - procyclicality of leverage

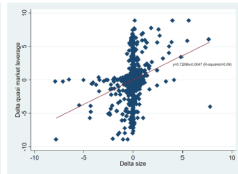
- Although the regression results are statistically significant, the scatter plots suggest that the results seem to be driven by only small subsamples



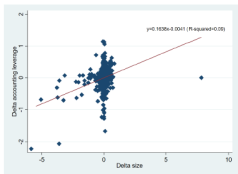
(a) Traditional Banks



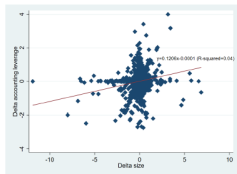
(c) Finance Services



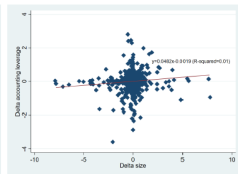
(e) Real Estate Fin. Serv.



(b) Traditional Banks



(d) Finance Services



(f) Real Estate Fin. Serv.

- 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

$$\Delta Systemic\ Risk_{i,t} = \alpha_0 + \beta_1 Systemic\ Risk_{i,t-1} + \beta_2 \Delta Size_{i,t} + \sum_{i=1}^{597} Financial\ Institutions_i + \\ + \sum_{t=2006:1}^{2019:4} Time_t + \varepsilon_{i,t}$$

- β_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)
- Measures of country-specific financial cycle: Aldasoro et al (2020)
- 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))