2020 EBA Policy Research Workshop

Discussion of "The Importance of Technology in Banking during a Crisis" by Nicola Pierri and Yannick Timmer

Cyril Pouvelle

Autorité de Contrôle Prudentiel et de Résolution

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Outline

The issue and the paper

- The issue: what is the potential impact of higher technology intensity in lending on financial stability?
- Important contributions of this paper:
    - Interesting combination of different data sets on regulatory data on BHCs, bank executives' background, loan-level datsets and text mining;
    - Robust empirical strategy through various robustness tests and instrumental variable estimates exploiting the historical location of technical schools

This paper

- Main findings:
  - Positive impact of technology adoption in lending on financial stability through better monitoring and screening;
  - Significant and negative relationship btw. IT adoption and NPL ratio during the GFC over a panel of US banks: a 1-standard deviation higher pre-GFC IT adoption is associated with 16 bps lower NPL to assets ratio in the years between 2007 and 2010;
  - Banks led by more tech-oriented executives experienced lower NPLs during the crisis

Literature review

- The literature review could be better structured and expanded:
  - Research question might be better addressed in the literature review to include papers finding links between digitalisation and financial fragility through accumulation of intangible capital (see Carbo-Valverde, 2017);
  - What about the role played by IT adoption in herding behaviours, common exposures and standardisation of strategies?

Theoretical model

- Need for a theoretical model to better understand the channels through which IT adoption has an impact on NPL flows in crisis;
- Are the main transmission channels through better incentives, better screening, or reduction in moral hazard and adverse selection?

Empirical model

- Choice of the main dependent variable:
  - Use the ratio of PCs per employee within a branch as the relevant measure of branch-level IT adoption: only a quantitative measure of IT adoption, a bit crude. What about quality and technology frontier?
  - How are we sure that the ratio of PCs per employee is not linked to the bank's business model?
  - Correlation calculations with other IT measures not completely convincing
  - Lack of a descriptive statistics table to see the dispersion of the IT adoption measure and assess the size of its quantitative effect of NPL flows

Empirical model

- Specification of the model
  - Need for more information on the structure of the panel data set: number of banks and number of time periods. Depending on the structure, consider using GLS estimator rather than fixed-effect OLS
  - Need to present the results of prior tests to convince the reader that there is no spurrious correlation: unit root tests? Hausman test for endogeneity?
  - Why no genuine business model (retail vs. wholesale) variable in the bank controls?
  - Interpretation of results whereby it is tech-orientation that matters and not managerial quality or risk-taking incentives might be an overclaim
  - R-squared of some regressions most often very low: are we missing something?

Policy implications

- Would be interesting to add some policy implications in terms of prudential supervision and banks' profitability assessment

Conclusion

- Solid and interesting paper relying on a rigorous empirical strategy;
- More work should be done to explain the transmission channels between IT adoption and NPL flows;
- Additional effors needed to convince the reader that the impact of IT adoption of NPL flows is quantitatively significant.