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# Market and funding liquidity stress testing of the Luxembourg Banking sector

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# Discussion

- **This is a very stimulating paper…**
- **The authors provide a useful framework for liquidity stress testing applied to Luxembourg banking sector.**
- **Liquidity shocks are represented by stochastic simulations of haircuts and run-off rates.**
- **The model appropriately accounts for the impact of liquidity shocks on banks liquidity buffers by allowing for two-round effects.**
  - First-round effects take into account the banks' reactions, as they try to restore their baseline buffer (through repos with the central bank, sale of liquid securities or drawing liquidity from parent banks).
  - Second round-effects incorporate the impact on market prices of the whole banking system's reactions. Accordingly, these second-round effects are able to mitigate or even to offset individual bank's reactions, as asset prices are affected by the collective search for liquidity.

# About the model

- **The "stress" variable is treated as exogenous.**
  - This may be a caveat as the stress is likely to increase with liquidity shocks and with the magnitude of the banks' sales on the markets.
  - However, I understand that endogenizing the stress variable would significantly increase the complexity of the model.
  - Besides, in the particular case of Luxembourg (given its interconnectedness and dependance on foreign parent groups), it is certainly possible to consider that global financial stress is exogenous.
- **In real life,**
  - liquidity shocks can adversely affect the default risk of banks.
  - Deposit runs could also occur in the most severe cases, raising the needs for liquidity.
  - These two possibilities are not taken into account in the approach. This can be seen as a shortcoming, duly acknowledged by authors in the paper, since the increase in default risk can further restrict the access to liquidity,as observed at the beginning of the present crisis.
- **A question:**
  - You assume that banks are unable to finance themselves in the market affected by the shock (last paragraph, page 10). Implications of this assumption, especially in the case of the systemic shock to interbank loans?. Is it a kind of "simplifying" assumption or would the results be very different if it was lifted?

# About the empirical applications

- **Stress on financial markets is often represented by variables like the VIX or corporate bond spreads.**

  - Here you choose a variable representing the distribution of related-party loans volatility. The rationale for this choice is that these loans are much more important in banks' buffers than stocks or non-related party loans.
  - However, this choice may be questionable, as this index of financial market stress is considered as representing risk aversion, which is a global phenomenon, generally observed on all financial markets across the board. If agents are risk-averse inone market, they will be so on others…
  - So maybe, there is not such an obvious reason to pick up a market, related to the specific assets in the banks' portfolio.

# About the empirical applications

- **The results obtained across the board could be misleading as they highly depend on the composition of each bank's liquidity buffer and therefore on the haircuts that would be applied in case of crisis.**

  - That is why the simulations made on the individual selected banks are really interesting. They evidence the **diversity of situations as the results are quite contrasting across banks**. In the case of the systemic shock to interbank loans, the retail bank is shown to suffer much more than the others, as it loses nearly half of its liquidity buffer after taking into account the second-round effects, compared to roughly 40% for the 2 other banks.

- **However, in addition to presenting the results for one selected bank, it would be interesting to have results by categories of banks;**

  - for example, calculating average impacts of liquidity shocks on average for retail banks.

# About the empirical applications

- **It would also be useful to have some kind of "backtesting" of the model.**
  - For example, some figures of what happened to liquidity buffers of the Luxembourg banks during this crisis. Is it in line with the model's simulations?
- **Indeed, in his paper on Dutch banks, Jan Willem van den End (2008) used exactly the same model.**
  - He showed that the actual fall in liquidity buffers in the present crisis was much smaller than that simulated by the second round effects of his model.
  - In fact, it was even smaller that the first round effects, but close to it.
  - He tries to interpret the failure of the model to replicate the crisis.
  - He concludes that liquidity injections by central banks in the money market are likely to account for the difference between simulations and actual developments.
  - Indeed, central bank interventions are able to greatly mitigate second-round effects. In this case, it is very difficult to disentangle effects during actual crises and compare them to the model's simulations.

# Minor points and possible avenues for further work

- **I understand this is a preliminary version. In a further version, results could be displayed a bit more clearly.**
  - For example, results in part ii page 21 are presented as a figure, but it is hard to see the "largest losses" which are referred to in the text. Moreover, the text mentions figures on the differences between Bb1, Bb2 which are not directly readable on the graph.
- **Caution : stigma of access to central bank facilities,**
  - in the euro area, the risk of stigma is largely mitigated by our set up.
- **Food for thoughts & further work**
  - In the motivation part of the paper, reference to interbank market infrastructure.
  - Additional work to do to capture more subtle inter-linkages between banks: as providers of hedging services to one another via the derivatives markets for example.
  - And more still to extend the scope of this work beyond the banking system to encompass other significant financial firms such as money market funds, SIVs and conduits, insurance companies and other providers of financial leverage.