Discussion of

Arbitrage Capital of Global Banks
by Alyssa Anderson, Wenxin Du, Bernd Schlusche

Capital and Liquidity Interaction in Banking
by Jonathan Acosta-Smithy, Guillaume Arnould,
Kristoer Milonas, Quynh-Anh Vo

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General comment: Important topic, interesting evidence

• Allen and Gale (2017): “with capital regulation there is a huge literature but little agreement on the optimal level of requirements. With liquidity regulation, we do not even know what to argue about.”

• The literature: mainly theoretical
  • Calomiris, Heider, and Hoerova (2015)
  • Diamond and Kashyap (2016)
  • Allen and Gale, (2017)
  • Carletti, Goldstein, and Leonello (2018)

• How does liquidity regulation work in reality?
  • Anderson, Du, and Schlusche (2020)
  • Acosta-Smithy, Arnould, Milonas, and Vo (2020)
Arbitrage Capital of Global Banks

by Alyssa Anderson, Wenxin Du, Bernd Schlusche
Summary of the Paper

Research question 2:
- Effect of MMF reform on global banks?
- Finding: reduction in their arbitrage positions, no effect on loan provision
- Contrast with Chernenko and Sunderam (2014), Ivashina et al. (2015) and Correa et al. (2016)

Research question 1:
- Liquidity regulation discourages maturity transformation with wholesale funding
- What do banks do with wholesale funding now?
- Finding: near risk-free arbitrage positions
Comment 1: Smoking gun for regulation

- “One key feature of the post-crisis liquidity regulations (e.g. LCR) is that they significantly discourage the use of short-term wholesale funding for liquidity and maturity transformation”.
- Yet no direct evidence: liquidity regulation causes the transformation of the use of wholesale funding
- Alternative explanations: QE, negative rates
  - Explore cross-bank exposure to LCR (Sundaresan and Xiao, 2019)
- Money is fungible: not clear wholesale funding is used for arbitrage
  - Explore contemporaneous changes in the asset side and liability side
Comment 2: Large quantity impact vs. Muted price impact

WHOLESALE FUNDING FROM MMFS

<table>
<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMF</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Others</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Comment 2: Missing price impact

**Figure 2:** Volume-weighed average arbitrage profits

- Limit-to-arbitrage theory: lower arbitrage capital, larger violation of law of one price
- However, we see no such effect. Why?
Comment 3: Heterogeneity across US and foreign banks

Figure 1: Wholesale funding outstanding and MMF holdings by region

- Foreign banks were more adversely affected. Why?
Other comments:

- Limit to arbitrage predicts that a higher **level** of arbitrage profits in the post period
- But the paper tests whether the **sensitivity** of arbitrage profits to arbitrage capital becomes higher in the post period

\[ \Delta \pi_t^{IOER} = \alpha + \beta Y_t^{IOER} + \gamma Post_t + \delta Post_t \times Y_t^{IOER} + \epsilon_t. \]

- Two themes in one paper, consider separate into 2 papers
Conclusion

• An important question: how does MMF reform affects global banks?

• Interesting finding: no effect on lending to real economy, but less arbitrage

• Remaining questions to explore:
  • Caused by liquidity regulation? smoking gun
  • Why no price impact?
  • US banks vs. foreign banks
Capital and Liquidity Interaction in Banking

by Jonathan Acosta-Smithy, Guillaume Arnould, Kristoer Milonas, Quynh-Anh Vo
Summary of the Paper

- Research question:
  - Does higher capital requirements lead to more or less liquidity transformation for banks?
- Finding

- Policy implications: simplify regulatory requirements for banks (regulate capital is enough)
Overall comment

• Important topic
  • New regulation may introduce new regulatory arbitrage
  • Implementation (LCR, NSFR) is nontrivial
  • Reporting is burdensome
  • What if we can achieve it with existing capital regulation?

• Suggestions:
  • Further sharpen the empirical evidence
  • Discuss quantitative implication
Comment 1: Rule out alternative explanations

- Main finding: capital requirement increases liquidity holding

\[ \text{LiqMeasure}_{i,t} = \beta_1 + \beta_2 \text{CapReqMeasure}_{i,t} + \beta_3 \text{controls}_{i,t-1} + u_i + time_t + \epsilon_{i,t} \] (9)

- Alternative explanation: higher perceived risk
  - Regulator tightens capital regulation
  - Banks want to hold more liquidity

- Suggestion
  - Zoom in the short window with unexpected large capital requirements changes
  - The idea: the economic fundamental vary smoothly in a short window but capital requirement changes discretely
Comment 2: Policy implication

![Graph showing the relationship between liquidity ratio c and capital ratio k. The graph indicates a non-linear relationship with a peak at a certain capital ratio, followed by a decline as capital ratio increases.]
Comment 2: Policy implication

• Table 5: 1% capital requirement increases liquid assets by 0.6%.

• LCR increases US banks’ holding HQLAs by 8% of the assets from 2012 to 2015 (Sundaresan and Xiao, 2019)

• This implies that capital requirement has to increase by 8/0.6 = 13%

• Table 4: when capital ratio is above 10%, increase in capital requirement leads to decrease in liquidity ratio

• This implies that it is impossible to use capital requirement to achieve the same level of liquidity requirement, as least in the U.S. setting!

• Other consideration: maybe feasible for banks which are subject to lower liquidity requirement
Conclusion

• Very interesting paper!

• The theoretical argument is convincing
  • Skin in the game vs risk substitution

• Interesting finding: when capital ratio is below 10%, an increase in capital requirement increases liquidity holding

• Remaining questions:
  • Rule out alternative stories to make the estimates more convincing
  • Whether it works depends on the magnitude of sensitivity