

Deposit Insurance Premiums and Arbitrage

Edward Kim and Marcelo Rezende

Discussant: Jean-Edouard Colliard, HEC Paris

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Motivation

- ▶ Since 2011 the Fed Funds Rate (*FFR*) has remained stubbornly below the interest on excess reserves (*IOER*).
- ▶ The cause is known: many institutions taken into account in the computation of *FFR* are not depository institutions, hence cannot access *FFR*.
- ▶ Yet, a puzzle remains: why is this not arbitrated away by banks? Borrow at *FFR* and lend at *IOER*.
- ▶ Cause for concern for monetary policy implementation.

The paper

- ▶ Quantifies the role of deposit insurance premia (DIP) as limit to arbitrage.
- ▶ Borrowing and lending \Rightarrow \nearrow balance sheet \Rightarrow \nearrow DIP.
- ▶ Nice identification strategy using RKD.
- ▶ Impact of a $+1bps$ DIP:
 - ▶ Excess reserves of affected bank drop by $\$4.4m$ (-80%).
 - ▶ Net position on FF market increases by $\$5.4m$ (+150%).
 - ▶ Corresponds well to the idea of reduced arbitrage.

The methodology (simplified)

- ▶ Given the risk X_i bank i , it pays a DIP $P_i = \max(5bps, sX_i)$.
- ▶ Assume the dependent variable y_i is determined by:

$$y_i = a + bP_i + cX_i + dU_i + \epsilon_i$$

with $U_i = eX_i + \eta_i$, (U_i unobservable)

- ▶ Run the following regression on all i s.t. $sX_i < 5bps$:

$$y_i = \alpha + \beta X_i + \epsilon_i$$

We obtain:

$$\mathbb{E}[\hat{\beta}_-] = c + de$$

- ▶ Then run the same regression on all i s.t. $sX_i > 5bps$:

$$\mathbb{E}[\hat{\beta}_+] = bs + c + de$$

- ▶ We obtain an unbiased estimator of b :

$$\mathbb{E} \left[\frac{\hat{\beta}_+ - \hat{\beta}_-}{s} \right] = b$$

Illustration

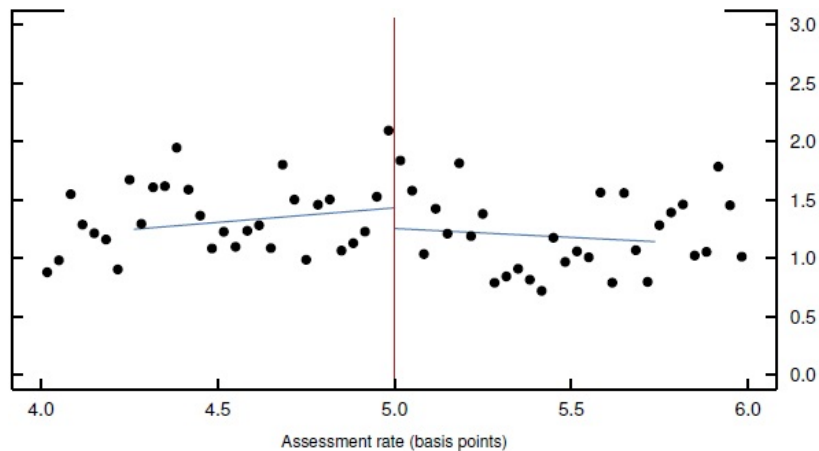


Figure 6: Assessment Rates and Excess Reserves

Conclusion - 1

- ▶ The deposit insurance premium is one of the few regulatory instruments for which we have a good theory.
- ▶ The DIP should be set to mimick the risk premium that depositors charge if they were uninsured, informed about the bank's risk, and sophisticated.
- ▶ This restores the link between bank risk-taking and funding costs, restores the Modigliani-Miller irrelevance, etc.
- ▶ The “Representation Hypothesis” (Dewatripont and Tirole, 1993).

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- ▶ What I learn from this paper: monetary policy implementation would be a lot easier as well.
- ▶ Conclusion: maybe policymakers should focus less on disputable quantity regulations (capital ratios, LCR, NSFR, LR, etc.) and more on well-founded price regulations (DIP)?

One criticism

- ▶ Assume the Fed Fund market is perfectly competitive.
- ▶ Assume doing \$1 of IOER arbitrage costs P_i (DIP) + O_i (operational costs), constant marginal costs.
- ▶ By arbitrage we will have:

$$IOER - FFR = \min_i [P_i + O_i]$$

- ▶ If bank i suffers a shock and gets larger P_i , it may be priced out of the arbitrage. Other banks will step in.
- ▶ We will observe large quantity reaction as in the paper, but it doesn't mean that P_i is large relative to O_i on average.
- ▶ Similarly, changing DIP computation (e.g., lower P_i for all i) may not have the same effect as reducing it for one i .

What to do?

- ▶ Difficult with this design to address general equilibrium effects.
- ▶ Maybe this is not an issue. Do we want to show that DIP explains a large share of $IOER - FFR$, or cross-sectional variations in arbitrage activities?
- ▶ Motivate better that this is not a competitive market, e.g., by reporting distribution of prices.
- ▶ In particular, show that a bank with $+1bps$ can increase rate by as much and still be in the market.

Should we change the computation of DIP?

- ▶ If we believe they adequately reflect the risk to the FDIC then no: if the arbitrage is a source of risk for the FDIC it's important it remains priced.
- ▶ If we believe they don't adequately reflect the risk then yes: unnecessary friction that harms monetary policy transmission (and economic activity).
- ▶ Intuitively I would believe the latter: I don't understand why other liabilities than deposits are included in the assessment base (since 2011), but maybe there's a good argument.

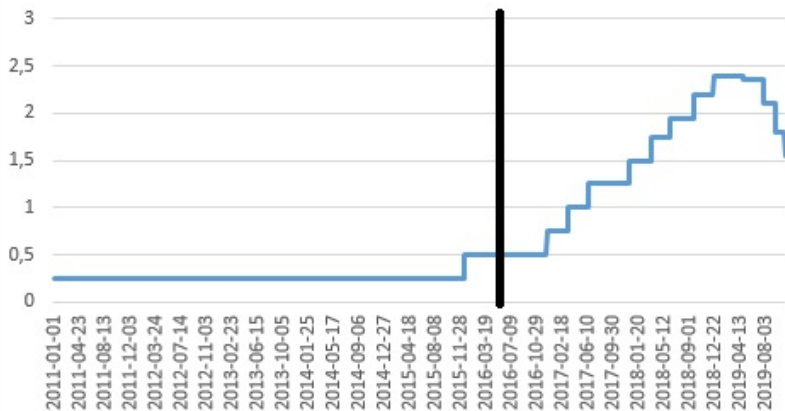
Is this harming the transmission of monetary policy? - 1

- ▶ It is not clear why having the FFR below the IOER is a problem.
- ▶ I agree it's unaesthetic. Then maybe one could compute the FFR as an average over depository institutions only.
- ▶ To see why it's not necessarily an issue, consider retail depositors:
 - ▶ They lend to the bank at 0.
 - ▶ The bank deposits at the CB at *IOER*.
 - ▶ There is an arbitrage of size *IOER*.
- ▶ Yet, nobody worries that depositors receive a rate below *IOER*, or that banks don't close the arbitrage.

Is this harming the transmission of monetary policy? - 2

- ▶ To me monetary policy transmission means that **changes** in policy rates are passed on to all the different rates in the economy.
- ▶ The **level** of these different rates relative to each other and relative to policy rates should ideally be left to market forces.
- ▶ Maybe you could also study what happens around changes of the IOER?
- ▶ Compute for instance the average rate at which bank i trades after the change minus before, and divide by change of the policy rate.
- ▶ Perfect pass-through of monetary policy means a ratio of 1. Can you show that banks with higher DIP have lower ratio?

IOER - 2011 - 2019



Conclusion

- ▶ Very nice identification and econometrics. Clockwork.
- ▶ Interesting and relevant economic mechanism.
- ▶ Economic interpretation not completely watertight.
- ▶ Policy implications still a bit unclear to me (not only this paper).
- ▶ People outside of this room may find the topic a bit narrow. Possibility to position the paper more broadly in the literature on limits to arbitrage/intermediary asset pricing?