MONETARY POLICY AND GLOBAL BANKING

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Discussion by
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Monetary Policy and Global Banking

- Global banks are affected by monetary policy and economic conditions in multiple countries.

- Allows for smoothing of local shocks while opening a channel for the international transmission of shocks.
  - E.g. Cetorelli and Goldberg (2012), Peek and Rosengren (2000)

- Bräuning and Ivashina examine the impact of interest rate differentials between countries on the behavior of global banks.
  - Foreign/domestic lending
  - Foreign/domestic reserves
  - Currency swap activity

- They offer an interpretation of their results based on:
  - Limits to arbitrage in the hedging of exchange rate risk
  - Capital constraints of global banks
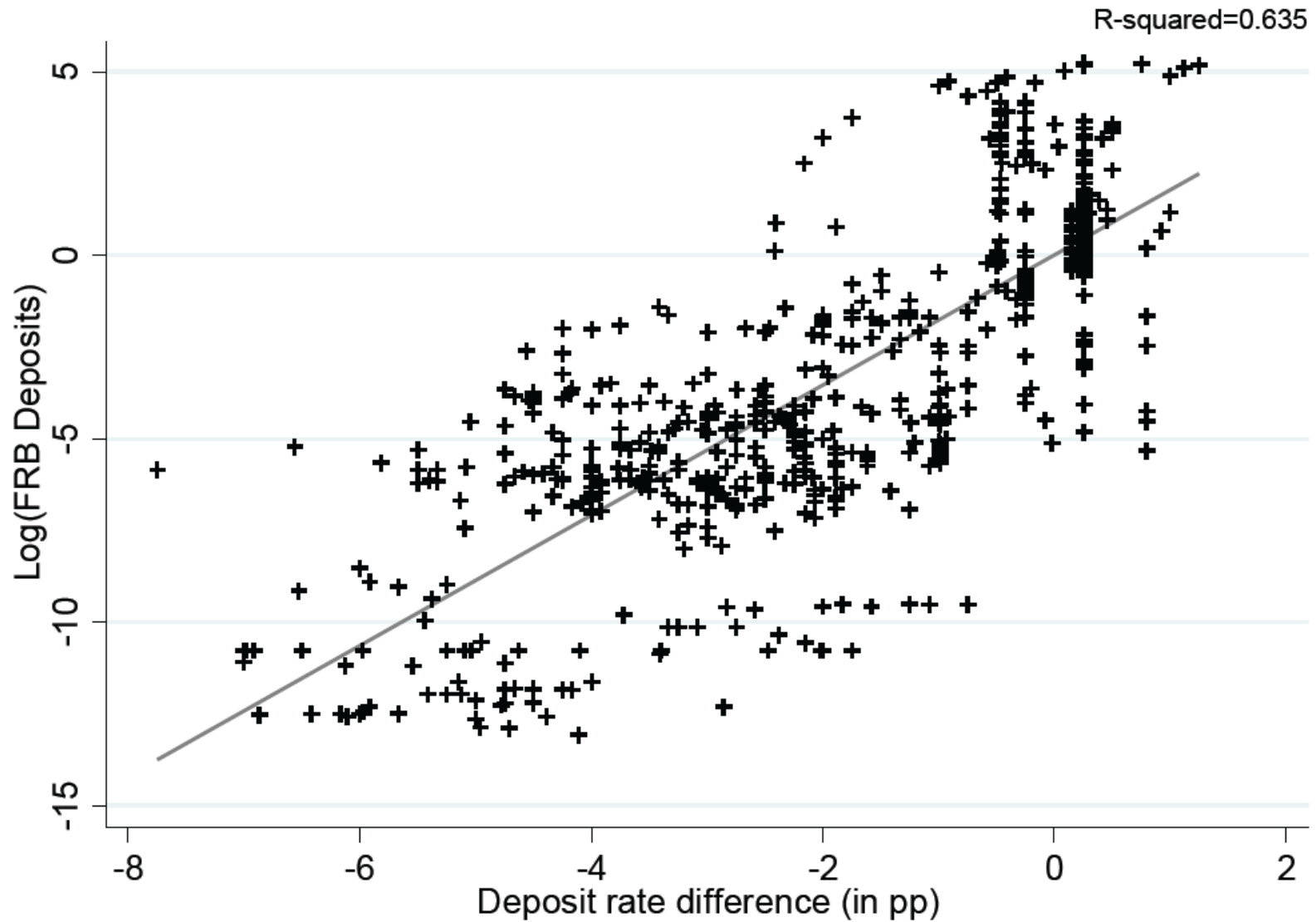
Empirical Results

Key interest rate: Interest on Excess Reserves (IOER)

- IOER difference $\Delta r^f = r^f - r^d$ = IOER in foreign country/currency
    - IOER in country/currency where bank is headquartered
        - US, Eurozone, UK, Japan, Switzerland, Canada

Main findings:

1. **Larger IOER difference → *higher* reserves in the foreign country** of the global bank, when the foreign country is the U.S. (chart).

Higher IOER diff. with US implies higher reserves at Fed

R-squared=0.635

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   - Higher IOER difference can reflects tightening of foreign monetary policy or loosening of domestic monetary policy.

   - Holds with bank and time fixed effects (so not only driven by common or US developments).

   - Also holds for other currency areas w.r.t. claims on the official sector (data on reserves of global banks only available for the US).

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Main findings:

1. Larger IOER difference → *higher* reserves in the foreign country held by the global bank, when the foreign country is the U.S.

2. **Larger IOER difference → *reduced* lending in the foreign country**

   o Holds at bank level for total and C&I loans in the US (call reports) and for syndicated loans in all currencies (Dealscan)

   o Holds at the loan level for syndicated loans.

   o Effects are very large; e.g. 1 p.p. higher IOER difference reduces total loans by **48** percent in call reports.

Interpreting the Results: The Mechanism

Model of a global bank:

- Fixed bank capital: K

- Domestic deposits only: D, at convex cost $d(D^d)$

- Assets:

  - Domestic loans L^d yield $g(L^d)$

  - Foreign loans L^f yield $h(L^f)$

    - g and h are concave reflecting downward sloping loan demand

  - Domestic reserves R^d yield r^d

  - Foreign reserves R^f yield r^f

- **Capital constraint**: $L^d + L^f \leq K / \alpha$ (spot exchange rate = 1)

- **Hedging** with swaps: $S = L^f + R^f$ at cost $C(S) = (X^f - 1)S$

Interpreting the Results: The Mechanism

- Assumption that hedging cost $C(S)$ is increasing and convex.

    - Reflecting limits to arbitrage (Ivashina, Sharfstein, Stein)

    - Do these friction apply at the level of the bank or at the level of the market or both? The model is one of a single bank.

- The frictionless benchmark: absence of arbitrage opportunities implies ***covered interest parity (CIP)***

$$r^f X^f = r^d$$

which implies

$$C(S) = (\Delta r)S$$

- Optimal hedging: $C'(S) = \Delta r$

    - But with CIP this simply states that $\Delta r = \Delta r$ so then hedging and the mix of foreign and domestic reserves are <u>indeterminate</u>.

    - Otherwise, hedging frictions determine the mix of reserves.

Interpreting the Results: The Mechanism

Prediction on Lending:

$$h'(L^f) - g'(L^d) = C'(S) = \Delta r$$

An increase in Δr implies that marginal return on foreign loans must rise relative to domestic loans.

Since total loans are fixed by the capital constraint ($L^d + L^f = K / \alpha$ foreign lending must fall (and domestic lending must rise).

- True even under frictionless hedging (covered interest parity)!
- Thus, empirical results on loans are a test of the capital constraint, but do not provide evidence supporting hedging frictions.
  - Adds to existing evidence on bank capital-lending nexus.

Interpreting the Results: The Mechanism

<u>Prediction on Reserves</u>:

- Increase in Δr implies reduced L^f.

- Reduced L^f lowers S, reducing the marginal cost of hedging under limits to arbitrage.

- Foreign reserves increase until $C'(S) = \Delta r$ is restored.

This is *not* true under CIP, when foreign and domestic reserves are perfect substitutes, and the mix of reserves is not determined.

Thus, the empirical results on reserves are a **joint** test of the capital constraint and the impact of hedging frictions.

- Are the effects stronger in the crisis & post-crisis periods?

CIP Violations relative to 3 Month Libor (from Du, Tepper, Verdelhan)
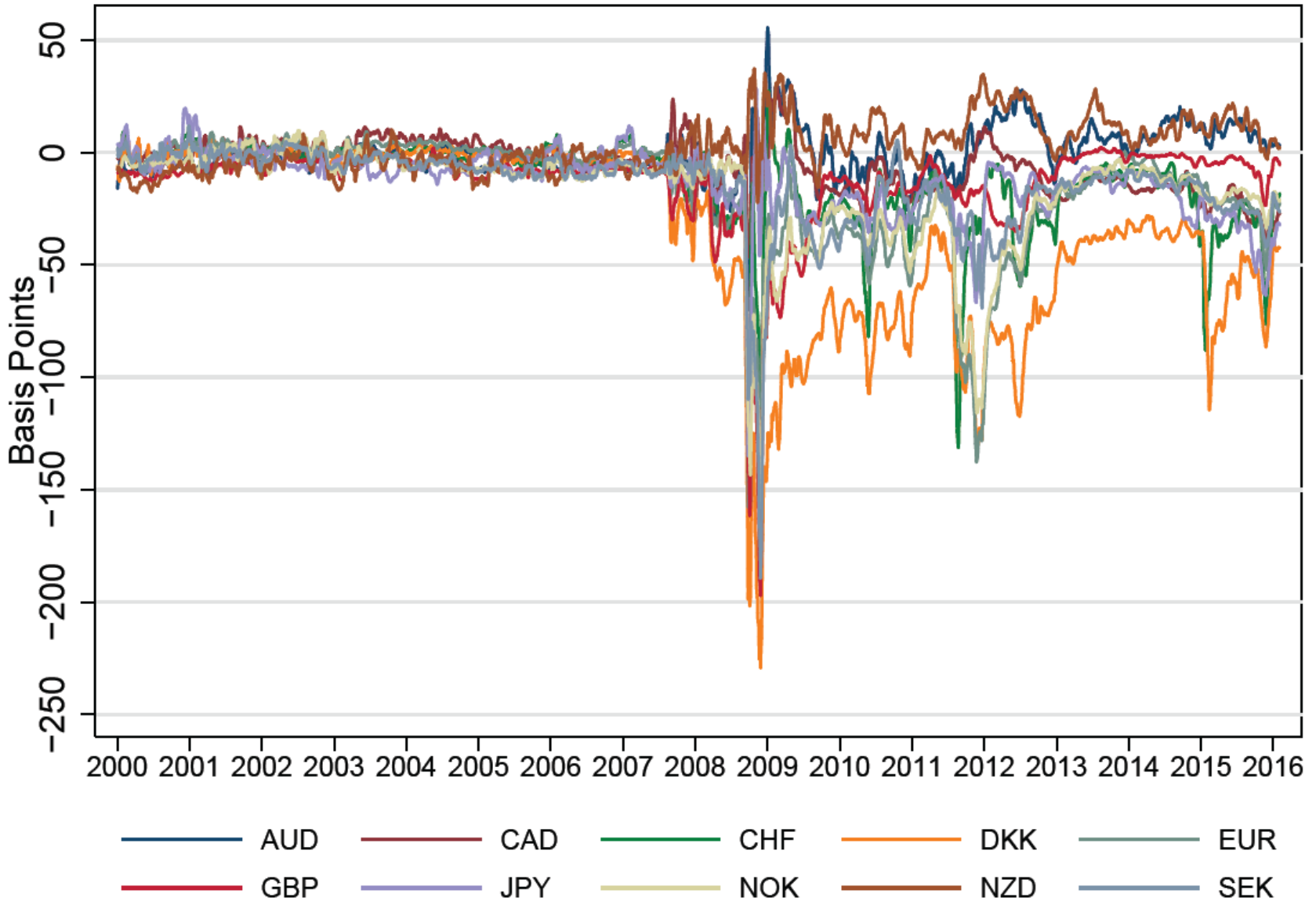
Is there an alternative interpretation?

Paper is admirably concerned with identification, but is less concerned with the reason for changes in the IOER, treating them as exogenous monetary policy shocks.

- Suppose domestic monetary policy loosening is due to a weak economy, with a fragile banking sector.

- Due to lower capital and/or reduced risk appetite, domestic banks might contract lending both at home and abroad

- …and increase their holdings of safe assets, including foreign and domestic bank reserves.

- Domestic loosening means increase in IEOR difference, so this outcome would be consistent with the evidence in the paper.

Check within Eurozone: is the effect of the IOER difference larger for banks from peripheral countries?