Granular Banking Flows and Exchange-Rate Dynamics

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Disclaimer: views are my own and not necessarily those of the IMF.

Motivation

- A large share of capital flows is intermediated by banks
- We don't fully understand yet the banks' supply of cross-border dollar lending
  - Efforts focused on GE impacts of cross-border bank lending (Cesa-Bianchi, Ferrero, and Rebucci, 2018 ; Aldasoro, Beltran, Grinberg, and Mancini-Griffoli 2023)
  - Others identify FX markets' elasticity using variation from mutual funds (Camanho,Hau, and Rey, 2022), index rebalancing (Hau, Massa and Peress, 2010; Beltran-He, 2023)
- Inelastic banks could result in significant impacts on the exchange rate
- **This Paper:**
  Contributes to understanding of banks' cross-border dollar lending and impacts on FX, by identifying elasticity of demand for dollars

This paper

- **Theory:** Motivated by endogenous UIP under balance sheet constraints as in Gabaix-Maggiori (2015)

$$q_{it}^{j} = \phi^{j}\left(\mathbb{E}_t \Delta e_{t+1} - (r_t - \mathbb{E}_t r_t^{j}) + b_{ijt}\right)$$

- **Empirical Setting**
  - Uses micro data on cross-border dollar lending of banks operating in the UK since 1997
  - Leverages bank-level granular shocks and size-variation of initial FX cross-border exposures

$$z_t^{j} = q_{St} - q_{Et} = \sum_i \phi^{j}\left(S_{ijt} - \frac{1}{N}\right) b_{ijt}$$

  - Intuition: Granular shocks are likely uncorrelated to macroeconomic conditions
- **Main Findings:**
  - Inelastic bank demand for dollars and elastic relative supply from ROW
  - Heterogeneity across asset classes
  - Shows evidence of banks' balance sheet constraints impacting elasticity of demand

Comments

- Threats to identification
- Disentangling theoretical channel
- Additional refinements

Comment 1. Threats to Identification

- Threats to identification arise from
  1. Exogenous premium
  2. Endogenous premium
  3. Other currency demand shocks
  4. Measurement error of expectations and GE effects

Comment 1. Threats to Identification 1.1: Exogenous Premium

$$q_{it}^{j} = \phi^{j}\left(\mathbb{E}_t \Delta e_{t+1} - (r_t - \mathbb{E}_t r_t^{j}) + b_{ijt} + \lambda_{ijt}^{1}\mu_t + \lambda_{ijt}^{2}\tau_t\right)$$

- Exogenous premium is a threat to identification with time-varying exposures to premium
  - Risk-premium shock, μ_t (as in Farhi-Werning, 2012; Devereux-Engel, 2002)
  - CFMs (capital taxes and capital constraints as in Itskhoki-Mukhin, 2023)
- Need to show that GIV is not correlated with premium and CFMs

Comment 1. Threats to Identification 1.2: Endogenous Premium

- Alternative channel is currency risk exposures (as in Itskhoki-Mukhin, 2021)

$$q_{it}^{j} + q_{it}^{domestic,j} = \phi^{j}\sigma_{t}^{e}\left(\mathbb{E}_{t}\Delta e_{t+1} - (r_{t} - \mathbb{E}_{t}r_{t}^{j}) + b_{ijt}\right)$$

- Two concerns that could lead to amplification bias
  - Risk bearing capacity depends on underlying volatility of FX
    Estimates could be driven by periods of large volatility of FX
  - Banks cross-border dollar lending identified shocks correlate with domestic dollar lending
    Role of dollar strength needs to be assessed

Comment 1. Threats to Identification 1.3: Other Currency Demand Shocks

- Relative supply includes additional shocks from other passive investors and central banks

$$q^j_{ROWt} = -\phi^j_{ROW}\left(\mathbb{E}_t \Delta e_{t+1} - (r_t - \mathbb{E}_t r^j_t) + b_{ROWjt}\right) + n^\star_{jt}$$

  - Affected by macroeconomic and global conditions and move exchange rates (e.g., Hau- Massa-Peress, 2010; Pandolfi-Williams, 2019, 2020; Beltran-He, 2023)

  - Exposures of banks to these currency demand shocks are heterogenous

Comment 1. Threats to identification 1.4: Measurement Error of Expectations and GE Effects

- Estimation controls for observed FX and interest rate expectations
- Deviations of actual expectations from observed expectations are a potential threat to identification of the elasticity of demand

$$v_t = \mathbb{E}_t \Delta e_{t+1} - \widehat{\mathbb{E}_t \Delta e_{t+1}}$$

  - Estimates could capture GE effects through expectations
  - In line with timing and large persistence of the impacts on the FX (more than 8 months)

Comment 2. Disentangling Theoretical Channels

- This paper focuses on dollar-denominated cross-border bank-lending
- The paper could test these theories using data of banks total FX exposure
- Channels in the literature:
  - Balance Sheet Constraints (as in Gabaix-Maggiori, 2015)
    - Assumes balance sheet constraint only on FX cross-border position
    - Compatibility constraint
  - Currency Risk Exposure (as in Itskhoki-Mukhin, 2021)
    - Total exposure (including dollar lending to domestic)
    - Risk bearing capacity story

Comment 3. Refinements

- Optimal instrument following Gabaix-Koijen (2023)
  - Alleviates exogeneity assumption

- Heterogeneous risk-bearing of bank-intermediaries
  - Estimating weights in an iterative approach
  - Or acknowledging bank lending shocks come from variation in risk-bearing
    Implications for identification in line with comment 1.1 and 1.2

- Implications of complementarity/substitution across asset classes needs to be addressed
  - Expanding model and empirical setting to address imperfect substitution across asset classes
  - Understanding portfolio choices of cross-border bank lending using granular shocks
  - Important for dollar liquidity provision in times of distress