Central Banks as Dollar Lenders of Last Resort: Implications for Regulation and Reserve Holdings

Mitali Das Gita Gopinath Taehoon Kim

Jeremy C. Stein

ECB Conference on Money Markets 2023

November 2023

Discussion by Evgenia Passari

Central banks hold large volumes of dollar-denominated reserves

- Invoicing of international trade [Gopinath & Stein (2018)].
- Financial development and risk sharing [Maggiori, 2017].
- Intervention and exchange rate management [Neely, 2000].
- Global reserve and anchor currency status of USD [Gourinchas, 2019; Mukhin, 2022].
- Central banks' concern with currency mismatch in private-sector liability composition [Bocola & Lorenzoni (2017); Das, Gopinath, Kim & Stein (2023)].
 - \longmapsto **Implications** of collective reserve-accumulation decisions of central banks?
 - → Could individual central banks' **incentive** to stockpile USD **clash** with that of a **global central planner**?

The paper

Empirical exercise

Stylized fact: Firms globally run sizable currency mismatches in their capital structures, borrowing in USD above operating exposures. [Du & Schreger (2022)].

→ Empirical exercise: Are central bank's USD **reserves** meaningfully **correlated** with **dollar-denominated bank borrowing** of corporate sector?

Hypotheses:

- Firms' dollar-denominated bank borrowing approximates corporate sector's currency mismatch.
- Firms' currency-mismatched capital structures exacerbates banking crisis risk.
- Banking system's vulnerability fuel central bank's motive to act as dollar lender-of-last-resort and accumulate dollar reserves.

The model

2-period model of **optimal reserve accumulation** for a small open-economy central bank facing risk of banking crisis [Gopinath and Stein (2018)].

- Utility-maximizing households save in home-currency-denominated safe assets, USD-denominated safe assets and home-currency equity and consume home goods.
- Banks (non-financial firms) minimize the sum of expected funding and mismatch costs.
- **Central bank** has 3 policy tools to mitigate bail-out risk: (i) reserve accumulation (ii) regulation of banking sector's equity capital (iii) regulation of deposit mix of banking sector. Tradeoffs:
 - Reserve-carrying costs and deadweight costs of taxation.
 - Tight bank-capital regulation harms banking-sector profitability and social welfare.

The model

Locally chosen reserves and capital vs global planner:

Global equilibrium when reserves and capital are locally chosen:

- Central banks set regulatory and reserve-holding policies to max individual welfare; potential overaccumulation of dollar reserves.
 - Central banks do not internalize that their actions exacerbate global scarcity of USD safe assets, depressing dollar rates.
 - Firms engage in **further currency mismatch**.

Equilibrium with global planner:

 Relative to decentralized outcome, a global planner might prefer higher bank capital requirements and reduced dollar reserves.

Contribution

- Small open-economy version: matching of cross-sectional empirical findings.
- Equilibrium with global planner: new externality.
 - Model's normative nature; importance for policy-making.
- Contributes to literature on precautionary view of central-bank's reserve-accumulation motives.
 - Reserves hoarding as mitigation mechanism against future shocks.
- Implications of normative analysis for **regulators**: International **cooperation** on top of Basel Process:
 - Separate mechanism to keep in check over-accumulation of USD reserves by central banks.

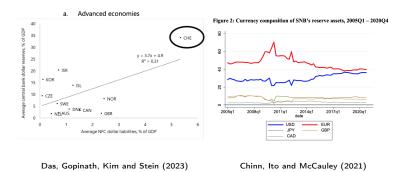
Issues to consider (I)

Alternative interpretation of empirical exercise

- Central banks accumulate USD reserves to stabilize their currency or to prevent it from further strengthening.
- Case in point: the Swiss experience.
 - In 2011 the Swiss franc kept rising in value being perceived as the last-remaining safe heaven currency with Europe battling a sovereign crisis, the yen being artificially devalued and uncertainty around US economic policies.
 - The swiss franc's **strength** was an **issue** for Swiss **companies** that considered moving operations out of the country.
- Different incentives of USD-reserve accumulation: mercantilist vs precautionary view.

Issues to consider (I)

Alternative interpretation of empirical exercise (cont.)



The Swiss National Bank (SNB) has decreed that it will target an exchange rate of SFr1.20 to the euro, a policy that it will apply with "the utmost determination" by being "prepared to purchase foreign exchange in unlimited quantities".

The Economist, September 10th. 2011

Issues to consider (II)

Measurement of private sector's currency mismatch

- Hard-to-measure variables of interest.
- Cross-border dollar bank loan data could create **different distortions** in the assessment of private sector's currency mismatch across country groups.
 - Developed markets: Firms' dollar-denominated bank borrowing could overstate corporate sector's currency mismatch; developed-market firms could be better hedged [Alfaro, Calani, and Varela, 2021].
 - Emerging markets: Firms' cross-border dollar-denominated bank borrowing could relatively understate total dollar-denominated bank borrowing wrt. developed-market firms (total USD lending more tightly correlated with cross-border USD lending in developed-markets panel).

→ **Positive** correlation bias between USD reserves and firms' currency mismatch in developed-market panel and **negative** correlation bias in emerging-market panel.

Issues to consider (III)

Model: missing ingredients

 \longmapsto The model focuses on one channel: precautionary view of USD reserve accumulation but the reality is more complicated.

- FX mandate of central banks? Incentives of net exporters and desire to smooth currency fluctuations?
 - * Different tradeoffs.
 - The **most important holders of dollar reserves** are not necessarily the central banks of countries with banking sector vulnerabilities.
 - Developed-markets country panel includes a number of creditor nations and net exporters.

Issues to consider (III) Model: missing ingredients (cont.)

- \longmapsto Firms' response to policies: possibility of regulatory arbitrage.
 - As banks (firms) are forced to engage in activities designed to minimize dollar funding they can still take on excessive risk [Huang, Panizza and Portes (2018)].
- Moral hazard problems, political frictions and coordination issues arising from risk-sharing solution.

[USD-denominated reserves housed and allocated via supra-national institution].

Overall

 \longmapsto Very important topic, rich model, significant contribution to the literature.

- Concept of centralized reserves monitoring and allocation could be an important tool for systemic risk management.
- Model provides a valuable toolkit to start thinking about these issues.
- Is empirical section necessary given data collection challenges?
- Room for enriching the model / follow-up research questions: could a model nest different central banks' incentives?