The Cost of Foreign Exchange Intervention
Can Reserve Accumulation be Counterproductive?

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Overview

1 Motivation
   - Trend in Reserve Accumulation
   - Reasons for Reserve Accumulation

2 Research Question

3 Basic Assumptions and Stylized Facts

4 Model

5 Conclusions
Central Banks intervene regularly on the foreign exchange market, typically through sterilized sale and purchase of international reserves.
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Figure: Reserves as a Share of GDP (%)
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**Figure:** Reserves as a Share of GDP (%)

Source: Author’s Calculations based data from World Bank World Development Indicators
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Why is this being observed?

- Reserve holdings allow central banks to lean against the trilemma or widen the policy space constrained by the trilemma.
- A rise in reserve holdings often lowers the cost of private debt and equity capital (Feldstein, 1999).
- To some extent, reserve holdings have substituted for capital controls (Ilzetzki et al., 2017).
- Holding of international reserves equal to at least the value of short term external debt reduces the annual probability of a country experiencing a share reversal in capital flows, which can precipitate and external debt and/or currency crisis, by 10 percentage points (Rodrik, 2006).
- Reserves of foreign exchange are built to provide insurance against speculative currency attacks.
But what is the Cost of this Self-Insurance?

- Direct Quasi-Fiscal Cost Associated With Foreign Exchange Intervention
- Indirect Cost of Foreign Exchange Intervention
- Political Cost Associated with Mitigating the Cost of Foreign Exchange Intervention
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- Direct Quasi-Fiscal Cost Associated With Foreign Exchange Intervention
- **Indirect Cost of Foreign Exchange Intervention**
- Political Cost Associated with Mitigating the Cost of Foreign Exchange Intervention
Main Purpose: To theorize and identify potential indirect costs of foreign exchange intervention.

Research Question: One of the best predictors of financial crises can be shown to be excessive credit growth. In particular, gross flows of capital can serve as a source of significant instability, even if net flows do not reflect an imbalance in the balance of payments. Is it possible, then, that higher reserve holdings encourage higher capital inflows and create instability and crisis, ceterus paribus?

Contribution:

- There is very limited literature that studies this question, and the few studies that study it focus on micro-level risk taking.
- A Minskyian model that incorporates stylized facts of balance of payments/financial crises.
- A cross-country empirical investigation of this phenomenon based on my model.
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Basic Assumptions

- Global financial cycle in capital flows, asset prices, and credit growth that is correlated with monetary policy in the core countries, regardless of specific domestic macroeconomic conditions.
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- International monetary system in which a national currency, the US dollar, is the reserve currency.

- One of the best predictors of financial crisis is excess credit growth and or gross capital inflows.
Figure: Reserve Accumulation and Crises in Emerging Markets

- **Algeria**
- **Argentina**
- **Colombia**
- **Costa Rica**
Figure: Reserve Accumulation and Crises in Emerging Markets

- Sri Lanka
- Turkey
- Uruguay
- Zimbabwe

Counterproductive Reserve Accumulation?

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Figure: Reserve Accumulation and Crises in Advanced Economies

- Greece
- Italy
- New Zealand
- Portugal

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Central banks accumulate foreign exchange reserves to protect against currency/sovereign debt/financial crises

Increased gross flow of capital into an economy increases likelihood of currency/sovereign debt/financial crises

Accumulation of foreign exchange reserves reduces the probability of a currency/sovereign debt/financial crises

Reduced perception of risk encourages gross inflow of capital into an economy

Reduced probability of crisis makes investment in country less risky, ceterus paribus
Moral Hazard Problem

...no ex-ante announcement by policy makers can convince the public that ex-post (that in the midst of a generalized financial turmoil) the government would cross its arms and let the financial system proceed towards its debacle.

(Corsetti et al., 1999)
Basic Dynamics: Total Lending

$\text{TL} \rightarrow t$

$\delta \rightarrow t$

$e \rightarrow t$
Basic Dynamics: Total Lending

Counterproductive Reserve Accumulation?
The International Monetary System has moved to a configuration in which central banks are increasingly accumulating reserves through foreign exchange intervention. Reserve accumulation could theoretically create conditions of moral hazard that attract increased gross flows into the economy, and thereby could create increased financial instability. This is not to suggest that countries should not accumulate reserves: they provide a very important buffer against the effects of volatile gross capital flows. Some of these effects can be mitigated by other policy tools to manage the external account, like capital controls or policy coordination.
Conclusions

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Figure: Trend in Capital Account Openness

Chinn–Ito Index of Capital Account Openness

Source: Author’s Calculations based on Chinn-Ito (2006)