

# Discussion of Caballero and Simsek

## "A Model of Fickle Capital Flows and Retrenchment"

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*\* The views expressed in these slides are my own and do not necessarily reflect the position of the IMF, its Management or Board.*

# Outline

## 1 Context and Contribution

## 2 Three sets of comments

- On the empirical relevance of retrenchment
- Understanding retrenchment: The role of nonbanks
- Back to the model

## 3 Wrapping up

## The Paper: Context

- **Global capital flows can be volatile**, destabilizing (macro and financial). Ongoing debate on cap flow management (IMF 2012).
- **The literature has focused on net flows**, foreign inflows, sudden stops, linking to macro fundamentals and global factors.
  - ▶ Push factors, Calvo et al 1996, Rey 2015, Cerutti et al 2015 etc.
  - ▶ Welfare analysis, Jeanne and Korinek (2010), Korinek (2009, 10)
- **Growing gross positions**, also in EMs, means resident outflows are increasingly important drivers of net flows.
- The Global Financial Crisis and incidence in AEs have highlighted **role of residents' retrenchment during stress events**.
  - ▶ Milesi-Ferretti Tille 2011, Forbes Warnock 2012, Broner et al 2013.
  - ▶ Cases of large AE episodes of destabilizing retrenchments (CH, DK).

# The Paper: Contribution

- Differential drivers and policy implications of resident and foreign flows not well understood.
- Newer research: **financial institutional perspective** on drivers of gross flows, risk, incentives, financial frictions, constraints as drivers
  - ▶ Gabaix Maggiori 2015, Tille Van Wincoop 2010, Krogstrup Tille 2018, Dell’Ariccia et al, Bruno and Shin 2015 etc.
- This paper contributes a **model of gross flows as liquidity insurance**: retrenchment supports domestic liquidity during crisis.
- Neat, elegant, enjoyable read. Rich on detail (too rich?), addresses:
  - ▶ Role of gross flows
  - ▶ Welfare analysis of policy measures. Coordination: No cap controls.
  - ▶ Role of location specific safe assets, search for yield.

# Key Model Mechanism

- **Infinity of identical countries** with banks investing in risky assets with risky asset return =  $R$
- **Random liquidity crises:** asset fire sales at return =  $p_s$  with  $\text{pr}=\pi$ 
  - ▶ **Fickleness assumption:** Foreign banks fire-sell assets at price  $p_s < \bar{R}$ .
  - ▶ **Retrenchment assumption:** Domestic banks snap up fire-sale bargains - **no uncertainty** as to future asset values.
- Implies a **higher return on foreign assets portfolio in crisis:**

$$p_s < \bar{R} = (1 - \pi)R - \pi p_s < R \quad (1)$$

- **Implications, findings:**
  - ▶ More liquidity comes back home than leaves during crisis:
  - ▶ NET FLOWS STILL MATTER! Retrenchment always props up fire sale prices compared to autarky.
  - ▶ Free capital flows optimal globally, but local incentive to deviate.

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# On the empirical relevance of retrenchment

- Milesi-Ferretti Tille 2010, Forbes and Warnock 2012, Broner et al 2013.
- Episodes during and after GFC:
  - ▶ **Switzerland, Denmark**, Chile, US, Japan. (role in safe haven flows?)
- Increasingly in focus in EMs, as a way of counterbalancing capital inflow volatility:
  - ▶ E.g Korea.
  - ▶ Net retrenchable assets matter for net capital flow response to crisis

# On the empirical relevance of retrenchment: Episodes in Denmark and Switzerland

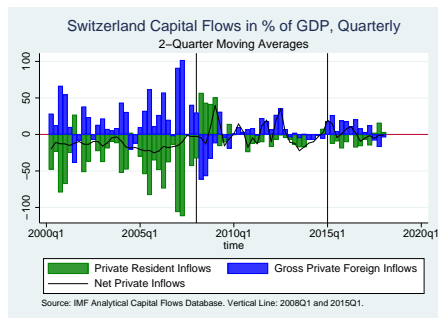


Figure: Switzerland

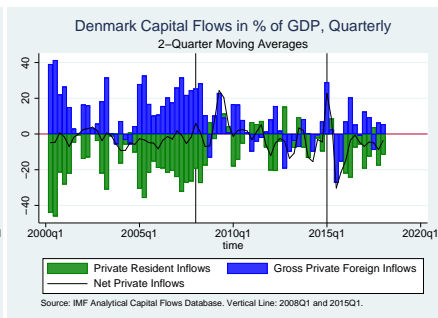


Figure: Denmark

These are examples of destabilizing retrenchments at ZLB.

In percent of GDP. Data: Financial Flows Analytics, IMF.



# On the empirical relevance of retrenchment: Episodes in Chile, Japan

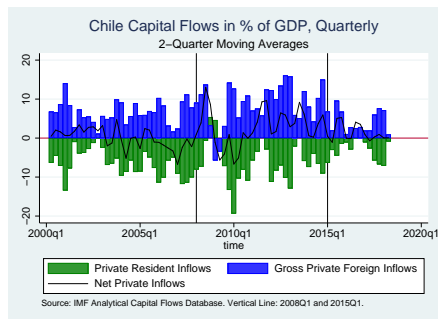


Figure: Chile.

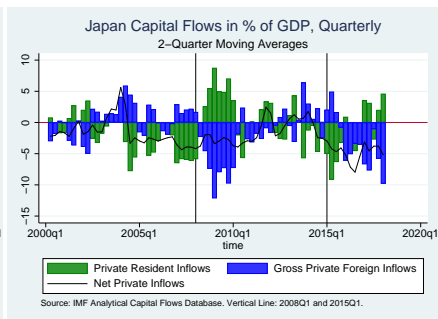


Figure: Japan

In percent of GDP. Data: Financial Flows Analytics, IMF.

# On the empirical relevance of retrenchment: EMs

- Association between net capital flow behavior and balance between retrenchable assets and fickle liabilities during EM episodes:
  - 1 The Taper Tantrum, Q2-Q3 2013.
  - 2 The EM volatility around Turkey/Argentina, Q2-Q3 2018.
- Sample of 34 EMs, quarterly flow and positions data.
- **Private capital flow behavior during episode** measured as standardized net capital flow during episode relative to previous quarters.
- **Fickle liabilities** and **net retrenchable assets** as gross liabilities and the NFA net of FDI respectively.
- Robustness: Restriction of sample to high capital mobility (works), liabilities and NFA including FDI, gross in- and outflows (all work less well), include GFC and AEs (works less well).

# On the empirical relevance of retrenchment: EMs

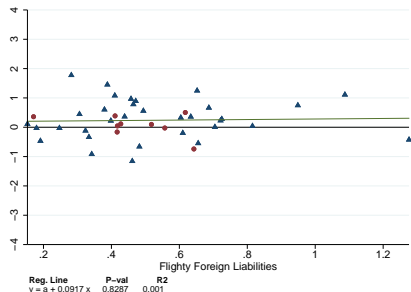


Figure: Capital flow episodes vs gross fickle foreign liabilities.

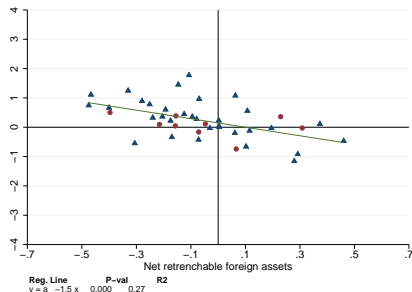


Figure: Capital flow episodes vs net foreign retrenchable assets.

In percent of GDP. Vertical axis displays change in standardized net capital outflows during episode relative to previous quarters. Episodes: The Taper tantrum (triangles) 2013Q2-Q3 and the Turkey-Argentina EM strains (circles) 2018Q2-Q3. Data: Financial Flows Analytics and the International Investment Position, both from the IMF.

## Understanding retrenchment: The role of nonbanks

- Model's focus on banks based on empirical regularity of retrenchments in bank flows (Milesi-Ferretti Tille 2010, Avdjiev etal 2017).
- Banks' role as intermediaries, dealers, market makers in FX derivatives markets may be key.
- Examples of **Switzerland, Denmark** again. Episodes driven by non-bank FX forward hedging through correspondent banks, in turn hedging positions in spot markets.
- Banks often required to cover FX exposure, less so non-banks. Off-balance sheet FX is huge (Borio etal 2017), hides actual positions.
- Research in progress (Hashimoto Krogstrup) lends support. New dataset on balance sheets of banks and non-banks suggests non-bank foreign exposures matters for cap-flow sensitivity to the VIX.

## Back to the model: Missing piece explaining retrenchment

- **Retrenchment & liquidity benefits in local crises are hardwired**
  - ▶ Fickle foreign liabilities.
  - ▶ Superior and certain returns in domestic fire sales (bargain hunting).
  - ▶ No access to foreign fire sales.
  - ▶ Symmetry
- Net stock/flow differences matter but setup leaves little room for analysis of drivers.
  - ▶ Asymmetry and safe havens vs risky currency
- Not aligned with empirics:
  - ▶ Retrenchments in global shocks, less in localized ones
  - ▶ Forbes Warnock, Broner et al.
- Missing piece: endogenous retrenchment, PB perspective.
  - ▶ Role of uncertainty, risk aversion and management of foreign exposures Krogstrup and Tille (2018), home currency bias Maggiori et al (2018), VaR frameworks (Adrian Shin 2014, Hoffman Stewen 2018).

## Model: The risky asset as the exchange rate

- **Role of the exchange rate**, by assumption (no local currencies).
- Model describes a fixed exchange rate world.
- Conjecture: Retrenchments are significantly related to currency risk (some evidence in Krogstrup Tille 2018 for banks).
- Reinterpret  $p_s$  as the exchange rate, safe assets as denominated in FX.
  - ▶ A local liquidity crisis triggers a depreciation of domestic currency.
  - ▶ Retrenchment from stronger currency investments prop up currency.

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## Wrapping up

- Very important topic and contribution to an evolving research agenda.
- Model highlights an important role for gross flows in providing liquidity insurance in country-specific fire sales.
- Many unanswered questions regarding the role and drivers of retrenchments.
- Important implications and open questions for capital flow management
  - ▶ Capital controls could reduce liquidity benefits of gross flows.
  - ▶ Role of domestic financial institutions in driving net capital flow sensitivity to risk shocks, role of regulation of banks/nonbanks?



## Smaller points

- **The characterization of the motive for gross foreign investment as liquidity insurance doesn't seem consistent with model.**  
Banks' expected return when investing abroad is higher than investing domestically. If this were not the case, banks would not invest abroad, even if this would smooth consumption profile across states, given risk neutrality between periods 1 and 2. This is hence not an insurance motive, which would require that banks invest abroad to smooth returns across states, even if the expected return were lower.
- **Some simplifying assumptions are not intuitive but have important implications for the results. These could be discussed.**
  - ▶ E.g. During growth states, banks also retrench, but cannot invest domestically and hence consume. This asymmetry is counterintuitive and at odds with empirics.