

Discussion of
“Reserve Accumulation, Growth and
Financial Crises”

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Motivation

- **Two facts:**
 - ① Fast growing countries run current account surplus (Gourinchas and Jeanne)
 - ② Official and private capital flows go in opposite directions: Governments accumulate reserves while private sector accumulates debt (Aguilar and Amador; Alfaro et al.)
- Puzzling facts in standard models

This Paper

- **Goal:** Develop a model that can account for two facts
- **Key Ingredients:**
 - ① Growth externalities leads government to accumulate reserves to undervalue the real exchange rate
 - ② Borrowing constraints on the private sector prevent it from offsetting reserve accumulation

Outline

- ① Simplified Two-Period Model
 - Failure of Ricardian Equivalence
 - Role of working capital loans?
 - Role for policy
- ② Comments/Questions

Simplified Two-Period Model

Household solve:

$$\max_{\{c_1, c_2, b_2, m_1, m_2\}} \log c_1 + \beta \log c_2$$

$$c_1 - b_2/R = F(m_1) - p_m m_1 - T_1,$$

$$\theta p_m m_2 + b_2 + D \leq \kappa,$$

$$c_2 = F(m_2) - p_m m_2 + b_2 + T_2$$

D are working capital loans by the government

Government chooses reserves, taxes and working capital loans.

First period budget constraint:

$$FX_2/R = T_1$$

Second period budget constraint:

$$T_2 - D\varphi = FX_2$$

Working capital loans are financed with reserves:

$$D \leq FX_2$$

Assumption 1: (Full bailouts & no eff. cost) $\varphi = 0$ and $D = FX_2$

Remark 1: **Ricardian Eq. holds iff Assumption 1 holds**

Substituting government choices in household problem

$$c_1^T + \frac{FX_2 - b_2}{R} = F(m_1) - p_m m_1,$$

$$\theta p_m m_2 - (FX_2 - b_2) \leq \kappa,$$

$$\frac{FX_2 - b_2}{R} + c_2 = F(m_2) - p_m m_2$$

Only $FX_2 - b_2$ can be determined

Remark 2: Reserve accumulation is welfare reducing if iff

Assumption 1 does not hold

- Now consider dynamic knowledge spillovers $\frac{\partial TFP_2^T}{\partial m_1} > 0$, a non-tradable sector and labor reallocation.
- Remark 3: Ricardian equivalence **still holds** iff Ass. 1 holds

Two relevant cases:

- Case 1: (Partial Bailout) $D < FX_2, \varphi = 0$

Households become borrowing constrained and cannot offset increase in reserves.

→ This reduces p^N and increases labor allocated to the tradable sector.

→ Government boost tradable production at $t = 1$ which spillovers to $t = 2$.

- Case 2: (Costly bailouts) $\varphi > 0$
- Consumption smoothing leads households to consume less anticipating the inefficiency losses from bailouts
- This lowers p^N and boosts tradable production at $t = 1$ which spillovers to $t = 2$.

Comments/Questions

Workings of the Model

- It would be nice to disentangle mechanism: deadweight losses of bailouts versus borrowing constraints
- Why are reserves returned in the form of bailouts? This tends to restore Ricardian Equivalence.

Success of the Model

This paper nails down mechanism by which reserve accumulation causes faster growth for a model economy.

Question: Why do we see the **cross-country pattern** in the data? Why don't we see all countries undervaluing the real exchange rate ?

- Dispersion in cross-country learning by doing externalities ?
- Is “allocation puzzle” more severe for economies with large tradable sector?
- Political Economy?

Borrowing Constraint

- Borrowing ability tied to stock of knowledge $b_t \leq \kappa X_t$
 - Empirical motivation?
 - Double role of knowledge spillovers: growth and relaxing borrowing constraint. Why need of both?

Financial frictions versus capital controls

- Reserve accumulation can break also due to capital controls (Jeanne 2012)
- Which explanation is more empirically relevant?
- Allocation puzzle is more severe for countries with free capital mobility. This could be an argument for financial frictions argument.

Why reserve accumulation?

- Reserve accumulation is inefficient in the model because interest rate on reserves is lower than cost of borrowing
- Capital controls would provide same gain without pain
- **Why does the government in practice not rely *only* on capital controls?**
- Potential value of reserves:
 - Manage sovereign default crises (Bianchi, Hatchondo and Martinez (2012))
 - Reduces expropriation risk (Aguiar and Amador, 2011)
 - Low private incentives to provide liquidity in crises (Bianchi 2012)

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Comments on Quantitative Analysis

- Knowledge Spillovers: An increase of 1 percent in m increases TFP by 0.15 percent. Need more evidence on this.
- Relative importance of non-tradable sector converges to zero.
→ Consider economy that is catching up with the technological frontier rather than a business cycle model
- Transition dynamics start in financial autarchy. How critical is this? How critical is $\beta R = 1$? Financial socks?
- Welfare analysis: Korinek and Serven (2011) find negative welfare effects from undervaluation. Highlight key differences.

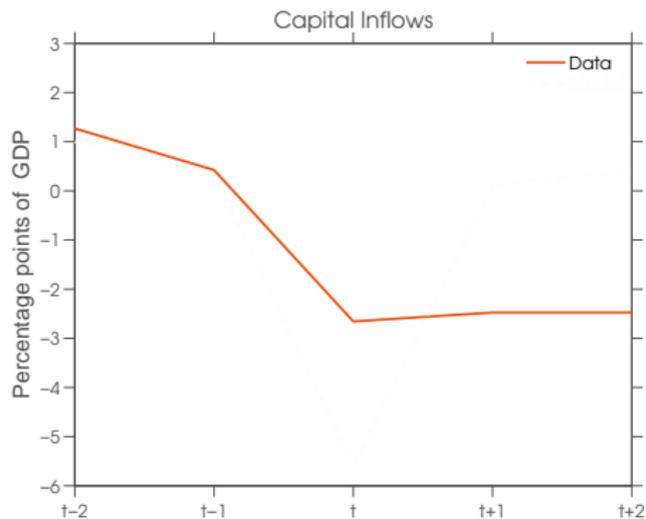
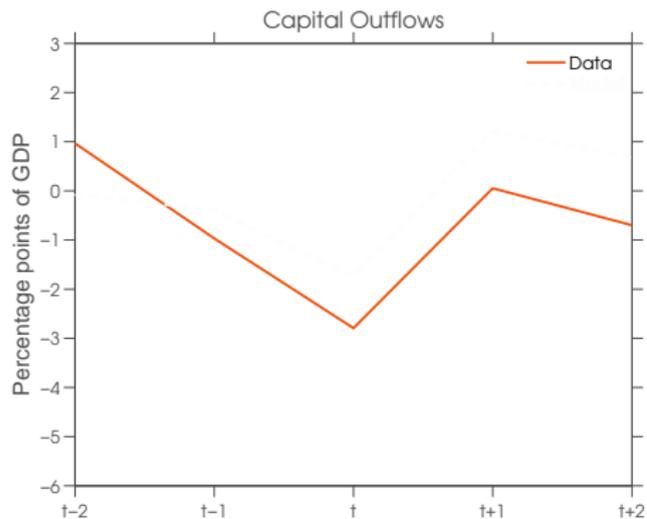
Computational Method

- Challenging numerical problem!
- Reserve policy is restricted to a parameteric function. It would be useful to show sensitivity in this direction.

Gross Capital Flows

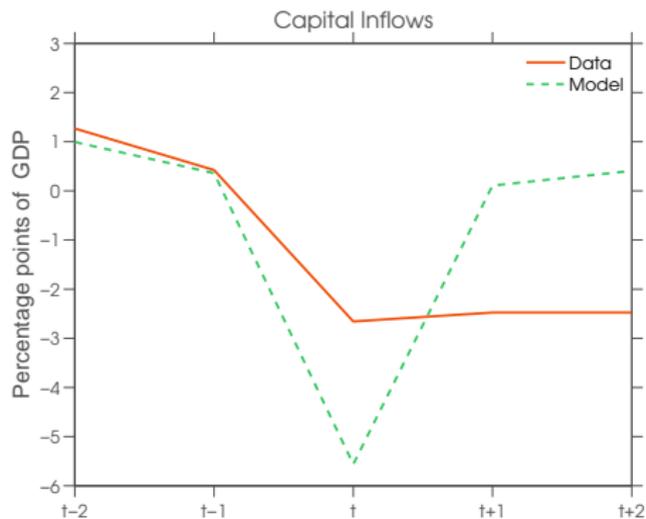
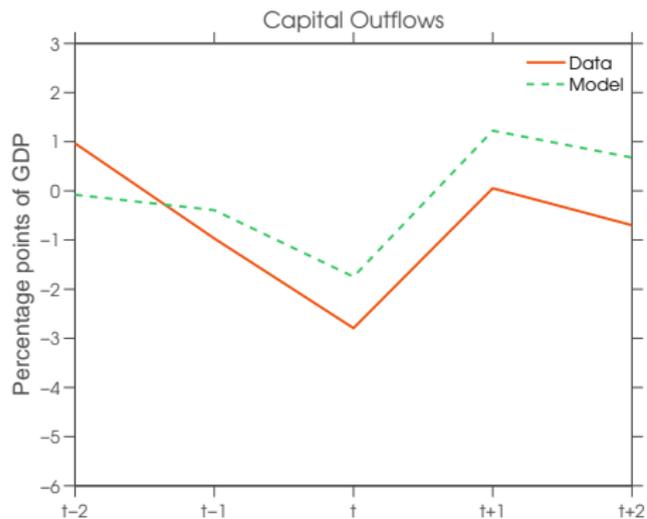
- Another key feature of capital flows: during Sudden Stops there is a sharp drop in **both** capital inflows and capital outflows (Broner et al (2012), Forbes and Warnock (2011))
- Can model explain these facts?

Gross Capital Flows around Sudden Stops



Gross Capital Flows around Sudden Stops

From Bianchi, Hatchondo and Martinez 2012



Data Source: Broner et al. 2012

Final Remarks

- Very nice paper!
- Key contribution: incorporate private and official capital flows into open economy model with optimizing government and agents
- More work needed to establish quantitative significance and successful account of cross-country facts
- Open question: Why are reserves a more effective policy than capital controls to undervalue the real exchange rate?