

Discussion of

“Capital Account Policies  
and the Real Exchange Rate”

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# Capital Account Policies

- Reserve accumulation and capital controls have taken center stage in policy debates
- Widespread view that China uses reserve accumulation policy to depreciate the exchange rate
- How can **reserve accumulation** be used to achieve a **persistent deviation of the real exchange rate**?

- This paper: Develops simple framework to answer this question

Key ingredient: **capital controls**

Mechanism: By closing capital flows from the private sector, the government determines current account, and real exchange rate

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## Simplified Two-Period Model

Households solve:

$$\max_{\{c_1^T, c_1^N, c_2^T, c_2^N, b_1, b_1^*\}} \log c_1^T + \log c_1^N + \beta(\log c_2^T + \log c_2^N)$$

subject to

$$c_1^T + c_1^N p_1^N + b_1 + b_1^* = y^N p_1^N + y^T - T_1,$$

$$c_2^T + p_2^N c_2^N = y^N p_2^N + y^T + b_1 R^d + b_1^* R^* - T_2,$$

Given an international interest rate  $R^*$ , government chooses reserves  $b_1^g$  and domestic debt  $d_1$  subject to budget constraints given by:

$$b_1^g = d_1 + T_1$$

$$b_1^g R^* + T_2 = d_1 R^d$$

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**Result 2 (Balassa-Samuelsson):** A boom in the tradable sector generates an appreciation of the RER

What if the governments attempts to prevent RER appreciation at  $t=1$  using **capital controls**?

Set  $b^* = 0$ . In equilibrium, government determines trade balance and real exchange rate:

$$TB_1 = y^T + \Delta y^T - c_t^T = b_1^g, \quad p^N = \frac{y^T + \Delta y^T - b_1^g}{y^N}$$

**Result 3 (RER manipulation):** By setting  $b_1^g = \Delta y_T$ , governments prevents appreciation.

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Now suppose the government uses taxes on capital inflows to resist an appreciation of the real exchange rate

Euler Equation becomes:

$$c_2^T = \frac{1}{1 - \tau} \beta(R^*) c_1^T$$

and the tax on inflows is given by

$$\tau = \frac{2 - 2p^N}{2 - p^N}$$

where  $p^N$  is the price of non-tradables that the government seeks to implement (for  $\beta = 1$ ,  $R^* = 1$  and  $y^T = y^N$ ).

**Result 4 (Taxes on Capital inflows):** There is a one-to-one positive relationship between the real exchange rate and the tax on capital inflows

## Comments (I)

- Many economies accumulate reserves but have less of a restricted capital account
- Allocation puzzle (Jeanne-Gourinchas; RESTUD forthcoming):
  - It is mostly driven by official flows
  - It is more severe for countries with more flexible capital account
- A “reserve paradox”: Excluding China: **Why are countries where reserves are less effective accumulating more reserves...?**

## Comments (I ctd)

- Other mechanism that make reserve accumulation non-neutral
- Suppose households face borrowing constraints. In simplified model presented, imposing  $b^* \geq 0$ , make reserve accumulation fully effective without capital controls
- Whether borrowing constraints are sufficiently binding to make reserve accumulation effective is more of an empirical and quantitative matter.
- The paper does provide evidence, however, that capital controls drive an important excess return on domestic bonds in China...

## Comments (II)

- Reserve accumulation becomes irrelevant once the appropriate tax on capital inflows is put in place (Results 1 and 4).
- **Why does the government in practice not rely *only* on capital controls?**

## Comments (II ctd)

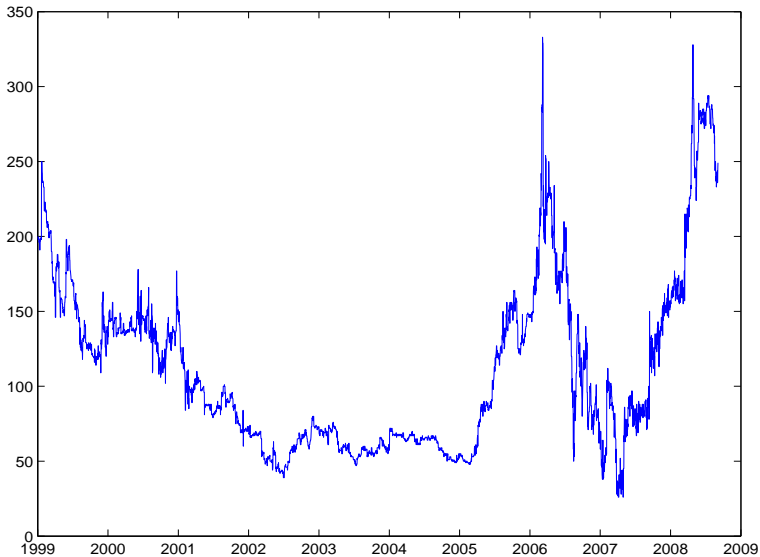
- Previous questions suggests other relevant role for official reserves:
  - Defense against currency attacks (Obstfeld AER, 1986)
  - Reduce expropriation risk (Aguiar and Amador, 2011)
  - Manage sovereign default crises (Bianchi, Hatchondo and Martinez WP, 2012)
  - Empirical evidence on predictive power of financial crises (Frankel and Saravelos, WP 2010)
  - Implementation issues?
- Might be interesting to think about this in models where capital account policies are optimal in the first place (Bianchi, AER 2011; Jeanne-Korinek, AER PP 2011; Korinek WP, 2010)

## Comments (III)

### Empirical Test of the Model for China

- Calculation of excess return on domestic bonds do not consider risk of Chinese assets relative to US Fed Funds rate
  - But Chinese sovereign bonds are subject to significant risk premium
- Chinese government also restricts purchases of foreign assets by domestic households. In general, economies also finance reserves with external debt (Rodrik, 2006)
  - This would drive excess returns down and appreciate the real exchange rate...

# Spread on Chinese Government bonds



## Final Remarks

- Excellent paper in topic with huge policy relevance
- Clean and elegant model with clear-cut implications
- For all of us: Many issues to be explored further
  - Other channels that make reserves effective
  - Optimal mix of private and public assets