Discussion ‘Optimal Exchange Rate Policy in a Growing Semi-Open Economy’

by Bacchetta, Benhima and Kalantzis

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Nice paper. Very clear and neat. Very good starting point to think about an important issue.

**Motivation**

Very large increase in reserves in emerging markets together with positive NFA: China (3.2 trillions in 2012).

Why?

How does it relate to exchange rate policy?
Motivation

Ask the layman: China manipulates exchange rates by increasing reserves to boost net exports. Threat to global financial stability and jobs in the West.

Ask the academic: Increase in reserves reflects higher savings in China. If exchange rate undervalued, still need to understand why Chinese consumers do not consume these cheap goods. Needs to understand Chinese savings.

Most existing models of global imbalances (except few: Jeanne (2012), Bacchetta et al. (2012), Benigno and Fornaro (2012)): Bank of China just an intermediary.

Key merit of the paper: make the link between the two approaches. Derive optimal Chinese reserve policy if high growth in China in presence of household credit constraints. Mapping with exchange rate policy.
What am I gonna do?

- Sketch the main intuitions of the model and the main findings

- Discuss robustness and potential extensions

- Discuss some empirical implications: real exchange rate and real interest rate in China
The model

‘Small’ endowment economy. Two goods: traded and non traded. $p_t =$ relative price of non-traded $= RER$

Two agents: borrowers (low output) and savers (high output). Alternate every period à la Woodford (1990)

Two financial frictions:

- credit constraints: borrowers can borrow up to a fraction of discounted future output

- capital controls = semi open economy = wedge between domestic and world interest rate. Domestic real interest rate $r_t \neq r^*$
The model

Capital controls: gives a role to Bank of China to manipulate interest rates through reserve policy

Credit constraints: not enough debt (liquidity) issued in autarky; gives a role to Bank of China in providing domestic liquidity

Exchange rate: reserve policy pins down domestic real interest rate, current account/net foreign assets and thus real exchange rate $p_t$. 
Findings

Credit constraints generate need for liquidity. Under autarky, people cannot borrow enough (and savers cannot save enough). Interest rate is low.

With transitory growth, credit constraints become tighter. Even larger need for liquidity.

Open economy: accumulates NFA to overcome liquidity constraints.

Semi-open economy: done through accumulation of reserve with a twist. World interest rate not necessary optimal, country might want to manipulate domestic interest rate and accumulate faster to provide larger amount of liquidity (for parameters values considered).
Findings

Along the transition (catch-up period): perfect mapping between net foreign asset/reserve accumulation and real exchange rate dynamics $q_t$ as in Jeanne (2012).

Positive NFA accumulation requires the prices of non-tradable to fall and exchange rate is depreciated along the transition.

Quantitatively open and semi-open economies gives similar exchange rate paths.
Interest rate $r$

Net savings

Autarky interest rate

tighter constraints / growth catch up

Metzler diagram in the transition: autarky
Net savings

growth catch up

World interest

Autarky interest rate

CA surplus

Interest rate $r$

Net savings

Metzler diagram in the transition: open economy
Metzler diagram in the transition: semi-open economy
Robustness and potential extensions

No assets in positive supply. Output is a fully non-tradable asset. No domestic capital.

Robustness of the results to the presence of domestic capital (or ability of households to sell claims on output). Relevance for China? Inability of households to finance directly firms/issue claims?

Domestic capital/claims on output can be used to overcome the constraint.

Dynamic of NFA also potentially affected by the presence of domestic capital
Metzler diagram: Low investment response to growth catch-up
Metzler diagram: High investment response to growth catch-up
Robustness and potential extensions

With domestic capital, optimal reserve policy might face a new trade-off.

Provide liquidity at the cost efficient capital allocation.

Thus, in a world where liquid assets and domestic capital are substitutes.

≠ Bacchetta and Benhima (2012)
Robustness and potential extensions

Consumption smoothing and intratemporal substitution across goods

One parameter governs both: the IES $1/\sigma$.

Non-separable preferences between traded and non-traded (CES) will allow to disentangle the two.

Arguably $1/\sigma \leq 1$. Elasticity traded/non-traded $\leq 1$.

Larger real exchange rate $q$ depreciation.
Empirical implications

Interest rates dynamics following integration? Data issues for China.

RER exchange rate dynamics following integration: depreciation and then appreciation.

But depreciated currency due to non-traded goods?

Or Traded good prices? More mercantilist approach.

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rer_{china/us}^{t} = (tot_{t}) \left( \frac{p_{t}^{US}}{p_{t}^{china}} \right)
\]

with \( p_{t}^{i} \) = relative price of non-traded in \( i = \frac{CPI_{t}^{i}}{PPI_{t}^{i}} \)
Cumulative real depreciation of RMB relative to the US: relative non-traded prices and TOT.
Empirical implications: further thoughts

Is the reserve policy optimal (in the sense of this paper)? What is the objective function of the Bank of China?

Here, provider of domestic liquidity

Alternative stories?

- mercantilist approach (Benigno and Fornaro (2012) and Korinek and Serven (2012))

- precautionary motive to self-insured against sudden stops: Jeanne and Ranciere (2011)...

Ways to disentangle the stories empirically? Using prices (exchange rates and interest rates)? Or cross-country variation?
Conclusion

Provide a simple framework to understand optimal reserve management and exchange rate policy. Reserve policy used to provide domestic liquidity

Important starting point to think about a very important issue.

Objectives of the Bank of China?

Empirical implications and confrontation to data?