Discussion
"Capital Flow Management with Multiple Instruments" by Acharya and Krishnamurthy

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Sciences Po

- Mundell's trilemma: Flexible exchange rates should allow autonomous monetary in a world of free capital flows.
- Exchange-rate channel of monetary policy:
- If INR/USD policy-rate differential widens, INR appreciates
- Imported deflation and reduced competitiveness of domestic producers ease inflationary pressure

- Pre-crisis episodes of destabilizing carry trades in small open/inflation-targeting economies (New Zealand, Iceland,...) and post-crisis monetary spillovers have led to revisit this proposition
- As an interest-rate differential opens up, the capital flows received by the high-rate country may fuel a boom in credit and asset prices that may more than offset the competitiveness/imported deflation channel. Unstable flows: bust such as taper tantrum likely
- Dilemma not trilemma (Rey 2013). (Plantin Shin 2017 for a theoretical model of such destabilizing monetary spillovers)

- This paper studies the coordination of two types of public interventions available to manage these destabilizing flows:
- Ex-ante regulation of the price and quantity of short-term USD denominated debt issued by domestic institutions
- Ex-post intervention in the FX market to support INR

Main results:

1. Instruments are complements - the marginal effectiveness of each of them increases as the other is deployed
2. Controlling USD-denominated debt is not enough/counterproductive. Foreign investors may enter into INR-denominated carry trades and will still sell INR in case of rollover problem
3. The paper rationalizes a number of macroprudential measures taken by the RBI following the 2013 taper tantrum

Mechanism

Basically fire-sale externalities

- Each domestic borrower issues excessive short-term USD debt because it fails to internalize that the RBI will have to sell more USD in times of crisis to bail borrowers out. This requires building up higher reserves, which comes an opportunity cost to the RBI
- Excessive private consumption of a common resource (RBI reserves)
- The higher the reserves the worse the moral-hazard problem and the more important the need for macroprudential rules (price or quantity based, paper is agnostic)

Comments

Analogy with banking

- Complementarity between LOLR and prudential regulation/supervision. LOLR creates moral hazard that regulation addresses
- Liquidity may be "syphoned away" from the regulated sector to the shadow banking sector which piggy-backs on LOLR
- Farhi and Tirole just released an entire paper on these complementarities in banking "Shadow Banking and the Four Pillars of Traditional Financial Intermediation"

Model

The model is efficient: makes simply the points about complementarity of ex-ante and ex-post interventions as well as that on foreign/domestic debt arbitrage

- It is presented as an investment problem whereas I prefer to think of it as the problem of choosing an optimal funding mix
- Exogenous exchange rates and arbitrary profits on carry trades

Investment problem or funding problem: What is R?

- Baseline model. Domestic borrower has no choice but issuing USD debt to fund a project. R is the return on the technology in which he invests. Chooses investment size
- Could we instead think of R as the prevailing domestic borrowing rate for the borrower, or the RBI rate?
- The problem of the borrower is best interpreted as that of choosing an optimal funding mix for a given (unmodelled and irrelevant) investment
- Choice between domestic costing R and USD costing r with a risk of financial distress (Can get rid of I_0?)

Exogenous Xrates

- Exogenous exchange rate level that does not respond to expectations about what the RBI will do in the future
- Relatedly, somewhat arbitrary excess return on carry trades (Contentious but not unreasonable to have some. Why? Limits to arbitrage? Price pressure?)
- Here is a simple variation of the model that addresses that

Exogenous Xrates

- R the rate on INR and r that on USD.
- e_t the date-t Xrate (USD for 1 INR)
- As in the paper I suppose that the RBI sets $\tilde{e}_1$, random viewed from date-0 with c.d.f. Φ
- Cost c from being insolvent

Exogenous Xrates

Expected return on carry trade

$$\frac{E[\tilde{e}_1]}{e_0}(1+R)-(1+r)-c\Phi\left(e_0\frac{1+r}{1+R}\right)$$

- Setting this to zero pins down e_0 given $\tilde{e}_1$, R, r.
- e_0 increases when so does Φ in the sense of first-order stochastic dominance
- Then any model where e_0 increases in the carry-trade size L would pin down the carry-trade size from zero-profit...