'Indian capital control liberalisation: Estimates from NDF markets' by Hutchison, Kendall, Pasricha, Singh
Discussion

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October 1, 2008

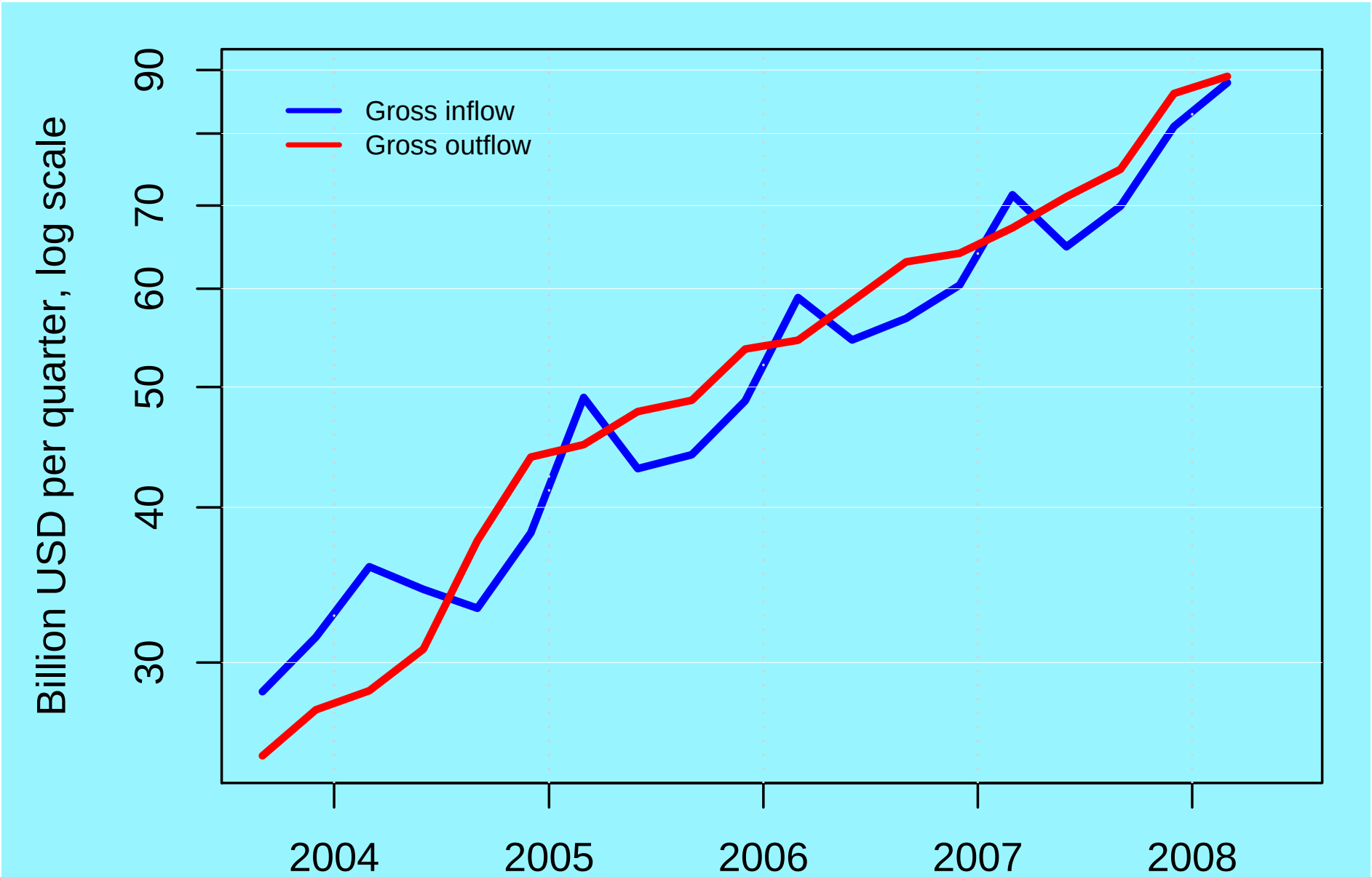
The question

- How different is the NDF-implied yield from the onshore interest rate?
- Standard finance intuition of arbitrage:
  - There is a no-arbitrage band
  - When the price hits the walls, it gets pushed back into the band.
- Indian capital controls reduce the effectiveness of this arbitrage

What might we expect?

- It is difficult for banks to do NDF-arbitrage
- Indian firms doing international trade through a web of partner firms/subsidiaries
- Rise of outbound FDI by Indian firms
- Movement towards *de facto* convertibility
- The arbitrage should get better through time

Growth of current account



Impediments to getting a fix on this

Hurdles in measurement:

- It is hard to know what is an interest rate in India
- It is hard to know what is the NDF rate
- Both markets: illiquidity and non-transparency
- Timezone difference between NDF trading and IST.

Econometrics part

$$\delta_t = \begin{cases} \kappa_n + \rho_n(\delta_{t-1} - \kappa_n) + \varepsilon_t & \text{if } z_{t-1} \leq \kappa_n \\ \delta_{t-1} + \varepsilon_t & \text{if } \kappa_n < z_{t-1} < K\kappa_p \\ \kappa_p + \rho_p(\delta_{t-1} - \kappa_p) + \varepsilon_t & \text{if } z_{t-1} \geq \kappa_p \end{cases}$$

Points to be discussed

- Structural break , unit root test and cointegration
- Inference
- Model specification
- Miscellaneous

Structural break , unit root test and cointegration

1. Structural break
   - Structural breaks tests made but not mentionned?
   - Multiple break tests needed. (Bai and Perron 1998)
2. Unit roots
   - Choice of the test ADF (1985): low power
   - If structural break is suspected, adequate unit root needed.
3. Cointegration
   MIBOR and NDF are I(1) and their differential I(0)?
   - Cointegration!
   - Threshold cointegration. Why don't use to a threshold VECM?

Inference

No inference is made on the threshold parameters!

1. Are there really threshold effects?
   - Tsay (1989)
   - Hansen (1999): cited... but no used!
2. Are these thresholds really asymmetric? really different between the periods?
   - Hansen 1997, 2000
   - Gonzalo and Wolf 2005
   - Seo and Linton 2006

Model specification

The model used is:

$$\delta_t = \begin{cases} \mu_n + \rho_n \delta_{t-1} + \varepsilon_t & \text{if } z_{t-1} \leq \kappa_n \\ \delta_{t-1} + \varepsilon_t & \text{if } \kappa_n < z_{t-1} < K\kappa_p \\ \mu_p + \rho_p \delta_{t-1} + \varepsilon_t & \text{if } z_{t-1} \geq \kappa_p \end{cases}$$

- Why constrain arbitrage to correct into the band? Balke et Fomby (1997):
  - BAND-TAR: $\mu_i = \kappa_i$ back to the band
  - EQUILIBRIUM-TAR: $\mu_i = 0$ back to the equilibrium.
- Is there really a random walk in the inner band? Test needed.

Miscellaneous

- Error on standard error on page 25 (negative)
- No mention of any diagnostic test on the regressions
- Indicate percentage of observations in each regime!

Thank you.