

# What is the brazilian experience on managing the interest-exchange rate nexus?

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## Introductory remarks

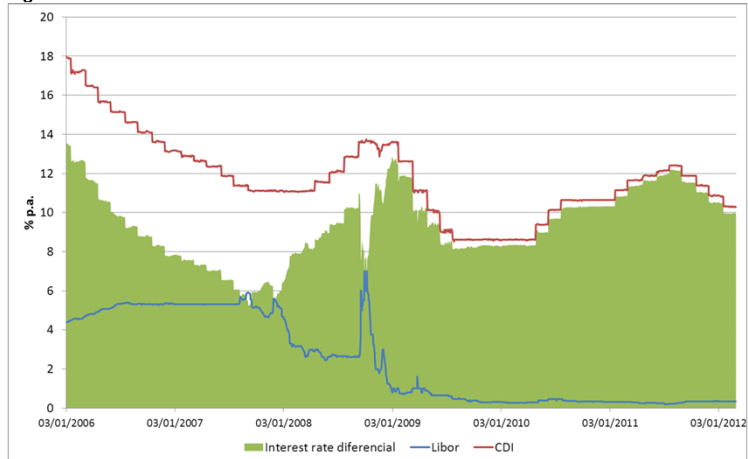
- Uncovered Interest Rate Parity (UIP)
  - $i^d = i^x + \Delta e^*$
- The carry trade
  - $i^d > i^x + \Delta e^*$
  - $R = \{i^d - i^x\} + \Delta e$
  - Two kinds of operations
    - Canonical carry trade: Funding currency (debt) x target currency (asset)
    - Derivatives carry trade: Short x long position
- The task of policy: neutralize carry trade
  - 1) Converge the interest rate to the internacional standard
  - 2) Impose a comprehensive capital account regulation

## Brazilian interest rate aberration

PLR3

PLR5

Figure: Interest rate differential between Brazilian and international interbank rate\*

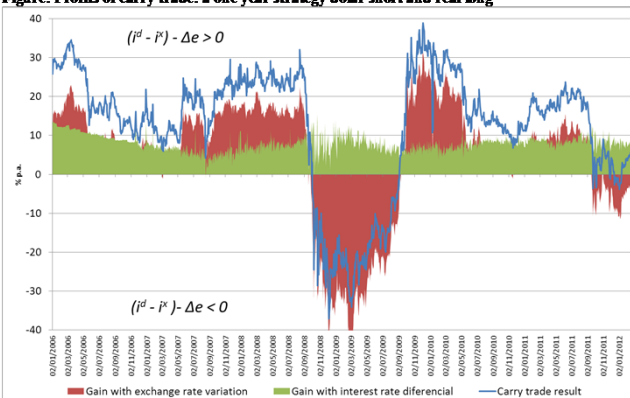


Source: Brazilian Central Bank and Federal Reserve. Authors' calculations.

\* CDI (Interbank Deposit Certificate) is a daily annualized interest rate based on 252 days. Libor is a daily annualized one month euro-dollar deposit rate.

## Profits of carry trade (a one year strategy dollar short and real long)

Figure: Profits of carry trade: a one year strategy dollar short and real long\*



Source: Brazilian Central Bank and BM&F Bovespa. Authors' calculations.

\* The gain on interest rate corresponds to the CDI minus the "coupon cambial", the gain on exchange rate corresponds to the exchange rate variation in one year. The result of the carry trade is the sum of the two gains. The series used for the coupon is the benchmark D1XUS\$ 1 year (% p.a.) and for the exchange rate, the PTAX. The CDI (Interbank Deposit Certificate) is a daily annualized interest rate based on 252 days.

### Slide 3

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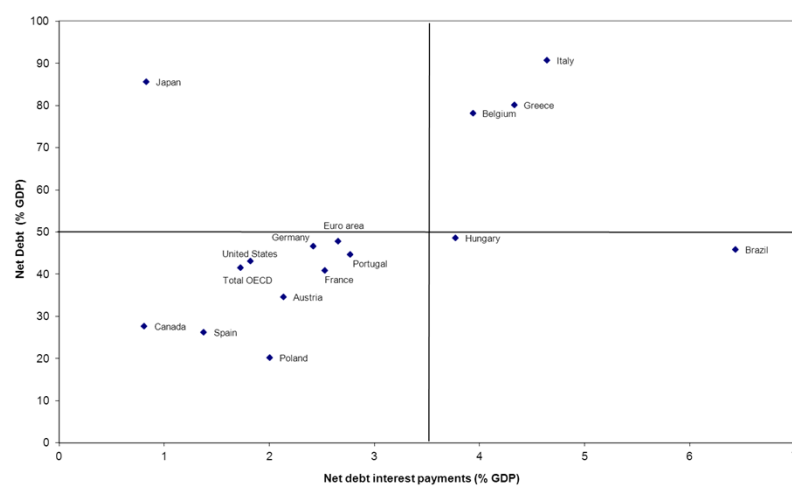
**PLR3** corrigir fonte  
Pedro Linhares Rossi ; 19/03/2012

**PLR5** Gráfico: tirar título e notas?  
Pedro Linhares Rossi ; 19/03/2012

## What's wrong with the Brazilian interest rate?

- Fiscal dominance?
- Higher inflation?
- Exchange rate volatility?
- A matter of political economy!
  - Institucional issues and of power relations.

**Figure: Net debt and net debt interest payments of the public sector (average 2004-2008)**

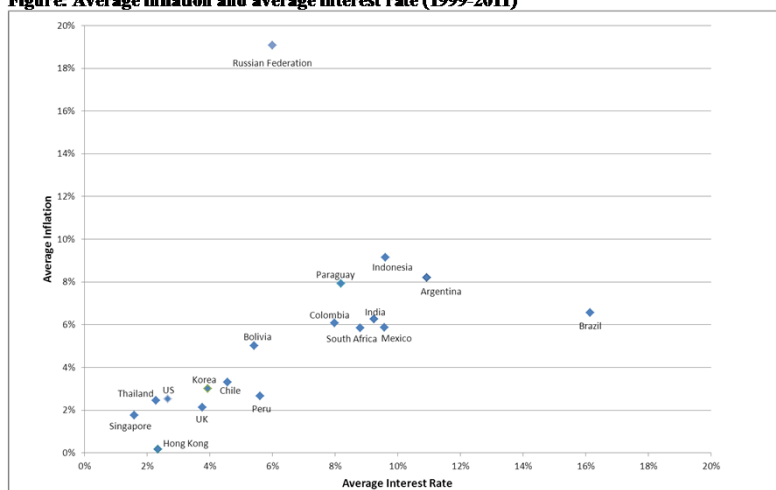


Source: OECD. Authors' calculation.

## What's wrong with the Brazilian nominal interest rate?

- Fiscal dominance?
- Higher inflation?
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**Figure: Average inflation and average interest rate (1999-2011)**

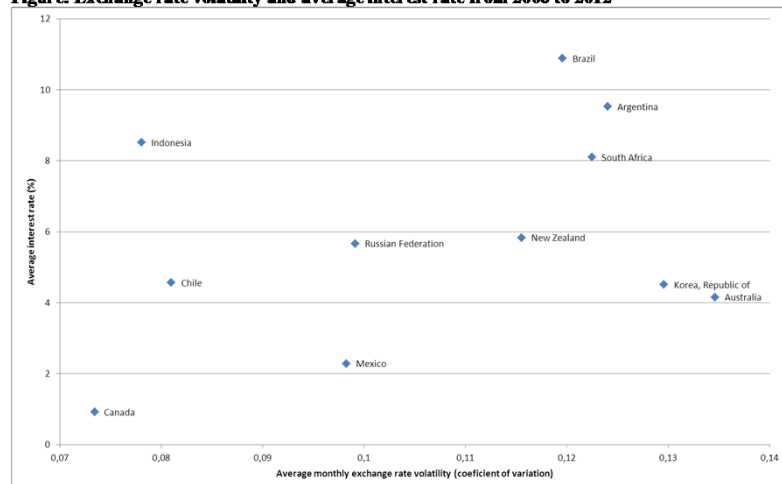


Source: IFS-IMF. Authors' calculation.

## What´s wrong with the brazilian nominal interest rate?

- Fiscal dominance?
- Excessive inflation?
- **Exchange rate volatility?**
- A matter of political economy!
  - Institucional issues and of power relations.

**Figure: Exchange rate volatility and average interest rate from 2006 to 2012**

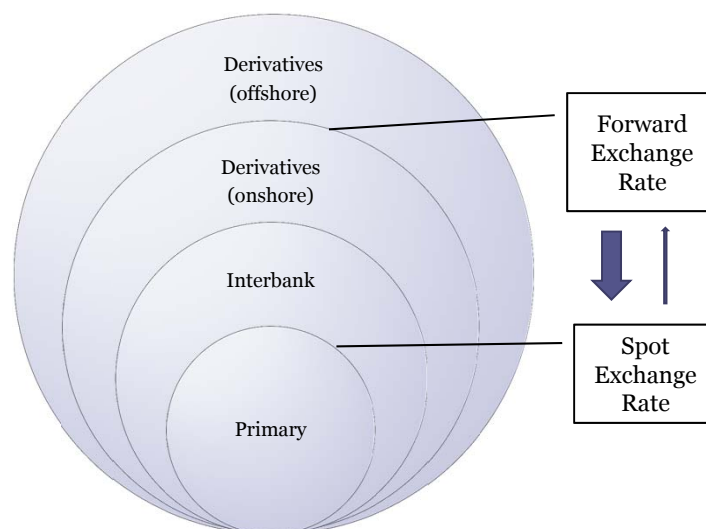


Source: IFS-IMF. Authors' calculation.

## What's wrong with the Brazilian nominal interest rate?

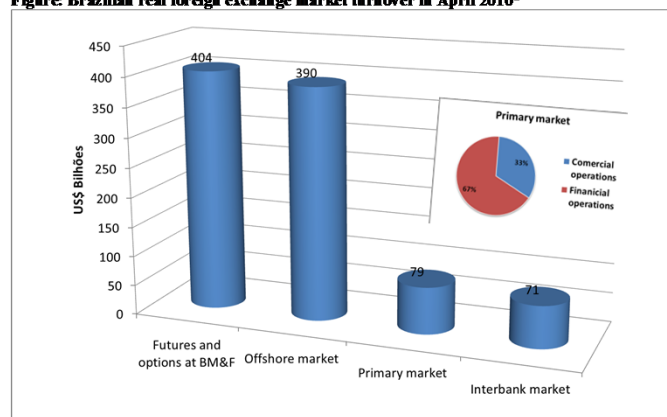
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## Brazil's foreign exchange markets: hierarchy



## Brazil's foreign exchange markets: size

**Figure: Brazilian real foreign exchange market turnover in April 2010\***



Source: BIS, BM&F, Brazilian Central Bank and Cetip. Authors' calculation.

\* For the interbank market it was considered the volume of the "clearing" at BM&F and added to the interventions of the Central Bank amounting to US\$ 3 billion. For this month there was no swap performed by the Central Bank.

## Primary market: flows and regulation

Type of flow	Carry Trade	Regulation / Exchange rate policy
Trade	<ul style="list-style-type: none"> <li>Anticipation of exports value</li> <li>Secondary markets for export invoices "mercado de performances"</li> </ul>	<ul style="list-style-type: none"> <li>Anticipation restricted to one year</li> <li>None</li> </ul>
Financial <ul style="list-style-type: none"> <li>Debt: securities and loans</li> <li>Equity</li> </ul>	<ul style="list-style-type: none"> <li>Canonical</li> <li>Disguised carry trade in stock market</li> </ul>	<ul style="list-style-type: none"> <li>6% of IOF in all debt securities</li> <li>6% of IOF in foreign loans of less than 5 years</li> <li>None</li> </ul>
Investment (FDI)	Disguised carry trade	None

## Interbank market: flows and regulation

Type of flow/ Intervention	Carry trade	Regulation / Exchange rate policy
Interbank lines	<i>Arbitrage</i> (covered interest rate parity or <i>cupom cambial</i> )  a) $(i^d / \Delta e > i^x)$  b) $i^d - i^x > e_f / e_s$	Prudential: reserve requirements (60%) in sold positions in spot market over US\$ 1 bi.
Central Bank	-	Spot purchases and sales

## Derivatives market: onshore

Type of operation / Intervention	Carry trade	Regulation / Exchange rate policy
Mainly future contracts	a) $(e_t^f / e_{t+1}^s) = Y$  b) $Y = e_t^s / e_{t+1}^s * \{i^d - i^x\}$  c) $Y > 0$ :  $\{i^d - i^x\} > e_{t+1}^s / e_t^s$	- 6% (IOF) in required margin at BM&F - 1% tax on net positions of agents short/sold in dollar
Central Bank intervention	-	Reverse SWAP (buying dollar forward) SWAP (selling dollar forward)

## Derivative markets: offshore

Type of operation	Carry trade	Regulation / Exchange rate policy
Mainly Non Deliverable forwards (NDF) negotiated by non-residents	Excess demand for long position in Real (off shore) (flow to BM&F)	None: beyond the jurisdiction.

## Further steps in exchange rate policy

- A Proposal for a foreign exchange market reform:
  - Primary: Improve monitoring and control on FDI and trade financing.
  - Interbank: reduce the role banks in the formation of spot exchange rate.
  - Derivatives : Gradual transference of liquidity from derivatives markets to spot markets.
  - Central Bank: implicit targets