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## Capital controls in Brazil: Effective?

Marcos Chamon <sup>a,\*</sup>, Márcio Garcia <sup>b,\*\*</sup>



<sup>a</sup> Research Department, International Monetary Fund, 700 19th Street, NW, HQ1-9-612-C, Washington, DC 20431, USA

<sup>b</sup> Department of Economics, PUC-Rio, Rio de Janeiro, Brazil

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### ABSTRACT

A large theoretical literature emerged in recent years analyzing the positive and normative effects of capital controls, begging for empirical studies to validate it. No emerging market experimented as actively with controls on capital inflows as Brazil did since late 2009. This paper analyzes the impact of those measures. These policies had some success in segmenting the Brazilian from global financial markets, as measured by the spread between onshore and offshore dollar interest rates, as well as ADR premia relative to the underlying local stocks. The measures adopted from late 2009 to mid-2011 did not translate into significant changes in the exchange rate, suggesting limited success in mitigating exchange rate appreciation. However, the exchange rate strongly depreciates after a tax on the notional amount of derivatives is adopted in mid-2011. The last of the three restrictions studied may have depreciated the Brazilian real in the range from 4 to 10 percent. That strong response may have been driven by complementarities with the previous measures, as well as an unexpected easing in monetary policy.

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\* Corresponding author. Tel.: +12026235867.

E-mail addresses: [mchamon@imf.org](mailto:mchamon@imf.org) (M. Chamon).

\*\* Corresponding author.

E-mail address: [mgarcia@econ.puc-rio.br](mailto:mgarcia@econ.puc-rio.br) (M. Garcia).

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## 1. Introduction

Emerging markets have experienced a strong recovery in capital inflows in the aftermath of the systemic sudden stop in late 2008 to early 2009. Flows reached levels comparable to their pre-crisis peak, driven by a combination of relatively favorable fundamentals in emerging markets and low interest rates in advanced economies. These flows should, in principle, bring numerous benefits, helping finance investment opportunities that may otherwise be missed, smoothing shocks to consumption and facilitating technology transfers in the case of FDI. But they may also bring risks. One concern is that massive inflows can lead to a strong appreciation of the exchange rate and loss of competitiveness of the tradable sector. Given large adjustment costs, a strong but temporary appreciation may cause lasting damage to industries which may not recover even after the flows abate and the exchange rate returns to its equilibrium level. Large inflows can also complicate macroeconomic management by further stimulating an already overheating economy, particularly if efforts to control inflation through higher interest rates attract more inflows. On the prudential side, there are concerns that flows may be associated with risky external liability structures, and more generally that the flows may not be directed to productive uses, and end up fueling consumption booms and asset price bubbles instead.

Emerging markets have been aware of these risks from previous surge episodes, but the Global Financial Crisis has heightened these concerns. Recent papers have shown that capital controls may play a useful role in managing the macroeconomic and prudential risks associated with flows (e.g. [Ostry et al., 2010, 2012](#); [Korinek, 2011](#); [Engel, 2013](#); [Rey, 2013](#)). There has been a marked change in the conventional wisdom among policy makers, with the IMF recognizing capital controls as a valid component of the policy toolkit under appropriate circumstances ([IMF, 2012](#)).

Brazil has been one of the leading countries in this effort to manage inflows, and one of the most vocal against the loose monetary policy in advanced economies that were pushing capital towards emerging markets (the Brazilian finance minister at the time, Guido Mantega, coined the term “currency wars”). It sought to limit inflows in the aftermath of the crisis, adopting taxes on portfolio inflows in October 2009. Over the following two years, Brazil adopted a series of other measures to discourage inflows, starting gradually to dismantle them in 2012.

In this paper, we document that these efforts had some success in segmenting Brazil's domestic financial market from the global one, and analyze the impact of these measures on the exchange rate. We use daily data and estimate the changes around the dates in which capital controls/restrictions were imposed. The controls on capital inflows further segmented the Brazilian from global financial markets, as measured by wedges between onshore and offshore prices of similar fixed and variable income assets. The response of the exchange rate is more nuanced. There is little effect in the aftermath of the first several measures. While the exchange rate seems to revert from an appreciation trend following some measures, we do not find significantly strong effects even on specifications that consider longer time windows around the measures. But the exchange rate seems to respond strongly to the last restrictions adopted, beginning with a tax on the notional amount of derivatives. This pattern is robust across different specifications and time horizons used in the estimation. Our estimates point to a response in the range of a 4 to 10 percent depreciation, depending on the size of the time window in which we measure the effect, even after controlling for other variables that affect the exchange rate. Our preferred estimates are on the top of that range, implying a 10 percent depreciation of the exchange rate. This strong response may be the result of a cumulative effect of the several restrictions. That is, the response may have been large because the last measures finally closed the main remaining channels to bypass the inflow taxes. That result may also have been supported by the unexpected beginning of a monetary policy easing cycle. Unfortunately, the estimates are based on a snapshot around the capital controls events. Therefore, we cannot determine the particular channels or interactions driving the change in the exchange rate.

Our results are much stronger than those typically found in the capital controls literature, which may be largely driven by the broad and extensive nature of the measures adopted in Brazil. There is a vast literature on the effect of capital controls on the exchange rate. [Magud et al. \(2011\)](#) provide an excellent survey and meta-analysis of that literature. The evidence on the effectiveness of controls on reducing the volume of flows, and hence exchange rate pressures, is mixed. The evidence tends to be

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