



Bubble thy neighbour: Portfolio effects and externalities from capital controls[☆]



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ARTICLE INFO

Article history:

Received 5 June 2015

Received in revised form 22 December 2015

Accepted 28 December 2015

Available online 8 January 2016

JEL classification:

F3

F4

F5

G0

G1

Keywords:

Capital controls

Externalities

Spillovers

Signalling

Mutual funds

Brazil

ABSTRACT

We use changes in Brazil's tax on capital inflows from 2006 to 2013 to test for direct portfolio effects and externalities from capital controls on investor portfolios. We find that an increase in Brazil's tax on foreign investment in bonds causes fund managers to significantly decrease their portfolio allocations to Brazil in both bonds and equities. Fund managers simultaneously increase allocations to other countries that have substantial exposure to China and decrease allocations to countries viewed as more likely to adjust their capital controls. Much of the effect of capital controls on portfolio allocation appears to occur through signalling – i.e., changes in investor expectations about future policies – rather than the direct cost of the controls. This evidence of significant externalities from capital controls suggests that any assessment of controls should consider their effects on portfolio flows to other countries.

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1. Introduction

Some economists and policymakers have recently become more supportive of controls on capital inflows, particularly if they are aimed at limiting the appreciation of overvalued currencies and reducing financial fragilities resulting from large and volatile capital flows. This

support has been bolstered by a series of theoretical models showing different situations in which capital controls can improve welfare, as well as by several empirical papers showing that even if capital controls cannot significantly affect the total volume of capital inflows, they can improve a country's liability structure and reduce some measures of financial fragility.¹ Even the IMF, formerly an avid promoter of capital account liberalization, has started supporting the use of capital controls in certain circumstances (see Ostry et al. (2011); International Monetary Fund (2011)).

The evidence used in support of capital controls, however, has largely focused on the direct benefits to the country implementing the controls and ignored any externalities on other countries. If controls reduce certain capital inflows for the host country, do they simply

[☆] The authors would like to thank Ferdinand Dreher for excellent research assistance as well as Giovanni Dell'Ariccia, Marcos Chamon, Márcio Garcia, Rex Ghosh, Anton Korinek, Iikka Korhonen, Helen Popper, Eswar Prasad, and seminar participants at the 2012 AEA Annual meetings, the Hong Kong Monetary Authority, the International Monetary Fund, Mainz University, Tilburg University and Tufts for helpful comments and suggestions. The authors would also like to thank all of the investors that spent considerable amounts of time being interviewed to provide background information for this paper. Further thanks to Apolline Menut at MIT for research assistance. The views expressed in this paper are those of the authors and do not necessarily reflect those of the ECB or of the Eurosystem.

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¹ For recent examples of these theoretical papers, see Korinek (2010), Jeanne and Korinek (2010) or Costinot et al. (2011). For examples of these empirical papers, see Ostry et al. (2010) and Forbes et al. (2015). For surveys on the effects of capital controls, see Magud et al. (2011), Cline (2010), Ostry et al. (2010), Forbes (2007), Henry (2007) and Prasad et al. (2003).

shift these flows and the corresponding challenges to another country in a “bubble-thy-neighbour” effect? Only two recent theoretical papers (Korinek, 2011; Costinot et al., 2011) consider these multilateral effects of capital controls and model how controls in one country can affect welfare in other countries. They show that these externalities could be positive or negative—depending on the model’s assumptions. Due to concerns about the possibility of negative externalities, Jeanne (2012) proposes a framework for multilateral oversight of capital controls. Despite this recent theoretical and policy-related work, however, there has been little empirical evidence of whether the use of controls on capital inflows generates meaningful externalities on other countries.

This lack of empirical assessment of any externalities resulting from capital controls is surprising given the related evidence in other areas, such as on trade diversion and financial market contagion. An important focus of the trade literature has been how trade restrictions can create “trade diversion” as well as trade creation.² Similarly, the literature on financial contagion has documented that portfolio investors respond to wealth, valuation, liquidity and information shocks in one country by adjusting portfolio allocations in the country where the shock occurs as well as in other countries.³ There have not been analogous attempts so far to document if capital account restrictions can create “capital flow diversion” or related portfolio adjustments.

This paper attempts to fill this void by testing for any portfolio-allocation effects of capital controls on the country instituting the controls as well as for any externalities on other countries. Previous empirical analyses of capital controls focused on effects on macro-economic variables—such as the exchange rate, total volume of inflows, interest rates, or liability structures.⁴ A major challenge with this approach is that it is difficult to isolate any effect of capital controls from any aggregate trends in net capital flows driven by global factors.⁵ For example, Fig. 1 graphs quarterly portfolio flows to Brazil and all emerging market economies (EMEs) as a percentage of portfolio liabilities. The vertical bars in the graph show periods when Brazil increased its capital controls (stripped bars) or decreased them (solid grey bars). Not surprisingly, the patterns indicate that Brazil’s controls were increased around times of large overall portfolio inflows to EMEs and to Brazil, and decreased around periods of declining inflows. A simple regression of net portfolio flows (whether to EMEs or just Brazil) on Brazil’s capital controls would therefore be subject to endogeneity and could suggest that adding controls is correlated with increased capital inflows.

This paper takes a fundamentally different approach by analysing how capital controls affect country allocations in investor portfolios. More specifically, we use the Emerging Portfolio Fund Research (EPFR) database, which has detailed information on fund-level investments by country, to assess how equity and bond funds adjust their country allocations in response to changes in capital controls. We do not attempt to explain overall portfolio flows to EMEs. Instead we take these overall flows available to the funds as given and instead focus on explaining how managers allocate these flows within the set of EME countries and relative to a benchmark according to different factors (such as relative economic outlooks, benchmark weights, and changes to capital controls). This paper is the first portfolio-level analysis of how investors respond to capital controls and the first to focus on portfolio shares—instead of aggregate portfolio

flows. The chosen approach can, as discussed in more detail below, mitigate the problem of endogeneity.

We focus on the type of control which has gained the most support in the academic literature and policy arena—of moderate, market-based controls on capital inflows in a country which previously had a relatively open capital account. We do not explicitly analyse situations in which capital controls are in place for an extended period of time (such as China), although our results have implications for externalities in these situations.

In our empirical analysis, we focus on changes in Brazil’s capital controls from 2006 through 2013. Brazil had a fairly open capital account during this period, but on several occasions added, removed, or raised a tax on certain types of foreign portfolio inflows. Focusing on one country has the disadvantage that the analysis may not generalize to other countries’ experiences with controls—or to different types of controls within the same country. We focus on this specific example, however, for two reasons. Firstly, one challenge with the cross-country analysis of controls is that different countries have adopted very different types of controls, with different levels of enforcement, different goals, and at different levels of financial development. Imposing the assumption in a cross-country study that these very different experiences have the same effect would bias estimates towards finding no effect of controls (which is a common result). Secondly, the introduction of capital controls in countries with small equity and debt markets is less likely to have measurable externalities on portfolio investors. Since this is the first paper assessing empirically if these externalities can exist, we want to begin by analysing a setting more likely to have some type of multilateral effects. Since Brazil is the largest equity and debt market in Latin America, and a large component of most emerging market indices against which portfolio investors are benchmarked, it is a logical place to start.⁶ If there is no evidence of externalities in this setting, it is unlikely that there would be economically significant externalities from smaller countries implementing capital controls.

Our results show that changes in Brazil’s capital controls have a significant effect on the share of funds’ portfolios allocated to Brazil. More specifically, increases in capital controls cause fund managers to reduce the share of their portfolios allocated to Brazil, and decreases in controls have the opposite effect. These portfolio reallocations occur gradually over a period of about three months. The results also suggest that capital controls affect fund managers through a signalling effect and not just the immediate, direct cost. Increased taxes on foreign investment in fixed income not only caused fixed income investors to decrease their exposure to Brazil, but also caused equity investors to decrease their exposure to Brazil’s equities. Capital controls appear to be interpreted by fund managers as signalling a government that is less supportive of foreign portfolio flows, possibly indicating an increased probability of future policy changes that negatively affect foreign investors. This result supports the seminal work by Bartolini and Drazen (1997), which models how capital controls can provide signals of future government policies and thereby lead to changes in capital flows.⁷ Moreover, the results in our paper indicate that only changes in direct taxes on foreign portfolio investment—a clear capital control that is closely watched by investors—significantly affects portfolio allocations. Changes in other macroprudential regulations that are intended to have similar effects do not have consistently significant effects on portfolio allocation. This result supports the evidence in Chetty et al. (2007) that when tax

² For example, see the seminal work of Viner (1950).

³ See Bekaert and Harvey (1995), Claessens and Forbes (2001), and Forbes and Rigobon (2002) for evidence of contagion at the country level, or Bekaert et al. (2011) for evidence in country-industry portfolios and Forbes (2004) for evidence at the firm level. See Broner et al. (2006), Curcuru et al. (2011), and Jotikasthira et al. (2010) for evidence at the fund level.

⁴ One noteworthy new exception is Alfaro et al. (2014) which analyzes the impact of Brazil’s capital controls on firm-level data.

⁵ As has been well documented in the literature, aggregate capital flows to emerging markets are driven by a number of factors—of which the most important seem to be aggregate global variables such as changes in risk and U.S. interest rates. For evidence, see Forbes and Warnock (2012) and Rey (2014).

⁶ Brazil’s share of JPMorgan’s EMBIG benchmark index ranged from 7.25% to 19.66% over our sample period from January 2005 to December 2013.

⁷ More specifically, they model how investors have imperfect information about a government’s intention and therefore use current investment policies to infer the course of future policies. Their paper highlights a different scenario of signalling in which removing controls on capital outflows leads to larger capital inflows. Also related are several studies showing that foreign exchange intervention can affect exchange rates through signalling future changes in monetary policy (i.e., Sarno and Taylor, 2001; Kaminsky and Lewis, 1996; Dominguez and Frankel, 1993).

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