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The effectiveness of forex interventions in four Latin American countries

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ABSTRACT

Many central banks actively intervene in the forex market, although there is no consensus on its impact on the exchange rate level and volatility. We analyze the effects of daily forex interventions in four Latin American economies with inflation targets – namely, Chile, Colombia, Mexico and Peru – by fitting GARCH-type models. These countries represent a broad span of intervention strategies in terms of size and frequency, ranging from pure discretional to rule-based interventions. We find that only first interventions, either isolated or the initial one in a rule-based series, are able to reduce exchange rate volatility, whereas their size plays a minor role.

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1. Introduction

Foreign exchange (forex) interventions are sales or purchases of foreign assets (typically US dollars – USD hereafter – but also other major currencies) aimed at impacting on the level and/or volatility of the exchange rate. If a central bank considers that the exchange rate has deviated excessively from its equilibrium, it would sell (buy) local currency during periods of appreciatory (depreciatory) pressures. Currently almost all countries, including the main Latin American economies, sterilize their interventions through open market operations that eliminate their effect on the domestic money supply. Whereas non-sterilized interventions immediately impact on exchange rates through the monetary channel, sterilized interventions do not influence the exchange rate directly through the usual monetary mechanisms, but though indirect channels, namely, the signaling, the portfolio-balance and the international coordination

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channel (Sarno and Taylor, 2001). This indirect nature of the transmission channels is precisely the root of the lack of consensus in the empirical literature on the effectiveness of these interventions to influence on the exchange rate level and volatility.

In particular, the papers that analyze daily exchange rates, which is the most commonly used time frequency, provide two main views. First, most conclude that interventions do not alter the exchange rate level and can even increase exchange rate volatility. See, for instance, Baillie and Osterberg (1997), Dominguez (1998) or Edison et al. (2006). This outcome suggests that interventions might introduce market uncertainty. However, this could be the result of a simultaneity problem of daily data as intervention dates probably coincide with the response of central banks to an exchange rate volatility excess, so these two variables would be positively correlated. Thus, concluding that higher volatility as a result of interventions could be misleading (Kim et al., 2000). Endogeneity also lies behind some counterintuitive results regarding the effects on the exchange rate level which are consistent with 'leaning against the wind' strategies with, for instance, USD purchases appreciating the local currency (Baillie and Osterberg, 1997).

On a more positive note, other authors state that forex interventions can influence the exchange rate level and 'calm disorderly markets', thereby moderating exchange rate volatility (Hoshikawa, 2008; Kim and Pham, 2006).[1] In practice, central banks frequently perform this type of interventions. That is, monetary authorities would be also implicitly supporting the usefulness of interventions to manage the exchange rate level and volatility (Neely, 2008).[2]

In addition to this lack of consensus, relatively few central banks publish their daily forex interventions (Adler and Tovar, 2011). This is one of the reasons why most of this literature is country-specific. Indeed, most papers analyze the G3 and Australia,[3] whereas the empirical evidence is much sparser for emerging economies (EMEs hereafter) as authorities are more reluctant to provide official data on their operations. Although transparency is improving gradually, at present only a reduced number of countries – mainly from Latin America – release daily information, which explains why there are only a few empirical papers. For instance, Humala and Rodríguez (2010) focus on Peru, whereas Kamil (2008) and Rincón and Toro (2010) analyze Colombia, and Domaç and Mendoza (2004) study Mexico and Turkey.

In principle, forex interventions in EMEs have a different nature than in developed countries, so that their effects would differ. In particular, EMEs tend to intervene more often than developed countries, independently of their monetary policy regime. For instance, EMEs with inflation targets frequently intervene, although this monetary policy scheme is theoretically linked to a fully flexible exchange rate. This flexible way of implementing the inflation target comes as a result of their greater vulnerability to exchange rate swings (Berganza and Broto, 2012; Stone et al., 2009). A priori, it seems plausible that forex interventions in EMEs might be more effective than in developed countries (Disyatat and Galati, 2007).[4] However, the empirical evidence for EMEs is not conclusive either.[5]

Another relevant factor regarding forex interventions is their wide spectrum of characteristics in terms of frequency and size. For instance, in most developed countries such as Japan, the current policy is to intervene on a discretionary basis and only under exceptional circumstances, whereas in EMEs intervention strategies differ across countries and run from fully discretionary interventions (Brazil, Peru) to intervention rules (Chile). Including these features in the model specification may help to obtain additional information on the effect of interventions (Kim and Pham, 2006). Further, the presence of asymmetries has not yet been analyzed much in the literature (Baillie and Osterberg, 1997; Domaç and Mendoza, 2004; Guimarães and Karacadag,

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[1] These authors find that high frequency forex interventions of the Reserve Bank of Australia and the Bank of Japan, respectively, were effective in reducing exchange rate volatility, whereas low frequency and officially announced interventions mainly affected the exchange rate level.

[2] According to the surveys by Neely (2000, 2008), central banks disagree with the assertion that interventions increase volatility.

[3] See, for instance, Rogers and Siklos (2003), Kim and Sheen (2002), Edison et al. (2006), Kim and Pham (2006) for some empirical papers on Australia; Baillie and Osterberg (1997) and Dominguez (1998) for the G3, and Frenkel et al. (2005), Watanabe and Harada (2006), Kim and Sheen (2006), Hillebrand and Schnabl (2008) or Hoshikawa (2008) for Japan.

[4] According to these authors, this is due to: (i) the larger size of forex interventions relative to market turnover in EMEs; (ii) the greater leverage of central banks in the case of existence of some form of capital controls; (iii) the informational advantage represented by their lower level of sophistication.

[5] For instance, Disyatat and Galati (2007) find that interventions had no influence on the short-term volatility of the Czech koruna, whereas Domaç and Mendoza (2004) find the opposite result for Mexico and Turkey.

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