

Hedger of last resort: Evidence from Brazilian FX interventions, local credit, and global financial cycles

RODRIGO BARBONE GONZALEZ,
DMITRY KHAMETSHIN, JOSÉ-LUIS PEYDRÓ
AND ANDREA POLO

Summary of Banco de España Working Paper no. 2014

We show that local central bank policies can attenuate spillovers from global financial cycles. We analyze global shocks triggered by the US monetary policy and Brazilian interventions in foreign exchange (FX) derivatives. We show that after U.S. Federal Reserve Taper Tantrum, Brazilian banks with larger ex-ante reliance on foreign debt reduced credit supply. However, a large FX intervention program supplying derivatives against FX risks – hedger of last resort – halved the negative effects. We obtain similar results in a larger panel dataset.

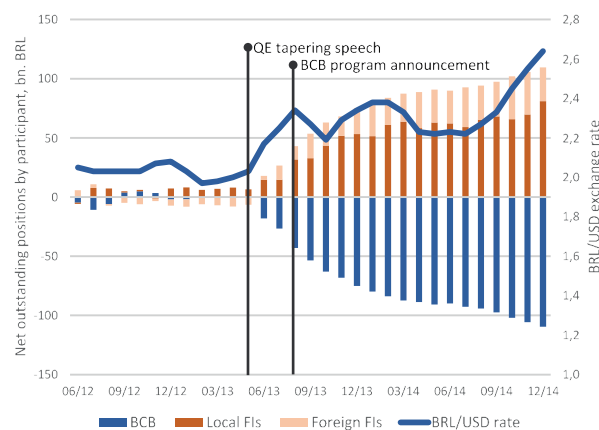
Recent research has demonstrated the importance of Global Financial Cycle (GFC) for local credit markets in emerging market economies (EMEs), and that the US monetary policy is one of the drivers of GFC (Rey, 2013; Gourinchas and Obstfeld, 2012; Jordà et al., 2013; Shin, 2016). We contribute to this literature by analyzing whether local central bank policies can attenuate the negative spillovers of GFC.

In particular, we analyze the reaction of credit supply in Brazil to tightening of the unconventional monetary policy in the US, as well as the ability of the local central bank (Banco Central do Brasil, BCB) to mitigate its negative effects by intervening in the FX derivatives markets. The main GFC shock we exploit took place following May 22, 2013, when the Chairman of the US Federal Reserve, Ben Bernanke raised the possibility of tapering its security purchases. The unexpected announcement of potential tightening of the unconventional monetary policy led to massive depreciation of the EMEs currencies. The BCB responded by setting up a program of sales of non-deliverable currency forwards to the private sector, and

later, in August 2013, by committing to increase the program's size and time span. By supplying FX derivatives, the BCB provided the markets insurance against further depreciation of the local currency, with the aim of satisfying the high demand for hedging, and therefore acting as a *hedger of last resort*. The August announcement of the program caused appreciation of the Brazilian Real relative to other EMEs currencies (Chamon et al., 2017). Fig.1 illustrates the magnitude of interventions and exchange rate fluctuations. The open positions of the BCB interventions reached almost 7% of the Brazilian GDP (or 30% of its International Reserves) in the peak of the program in 2015.

The literature on FX interventions has focused on sterilized interventions. The evidence on the effectiveness of these tools is mixed, with some recent results suggesting that interventions may stabilize exchange rates (Blanchard et al., 2015), and affect the provision of credit (Hofmann et al., 2019). In this paper, we focus on a different form of intervention in derivatives market. When borrowing from abroad, local banks frequently hedge FX risks off balance sheet. Large GFC shocks can disrupt the supply of hedging instruments by the global players. Hence, local banks relying on foreign debt may reduce their credit supply whenever rolling over of their positions in FX derivatives becomes too costly. The results of this paper suggest that public intervention in FX derivatives can be used as a policy tool.

Chart 1
**NET OUTSTANDING POSITIONS IN FX DERIVATIVES
AND BRL/USD EXCHANGE RATE**



SOURCE: BCB, own calculations.

For estimation of the effects of the GFC shock and BCB's intervention policy, we exploit three matched administrative registers: bank credit to firms, foreign credit flows to banks, and employer-employee. To isolate the supply side, we analyze how change in the composition of credit provided by different banks to the same firm is related to banks' reliance on foreign funding (Khawaja and Mian, 2008). We adopt a difference-in-difference methodology around two consecutive shocks related to the US tapering speech and the announcement of the BCB intervention program in the FX derivatives market.

We find that after the tapering speech by Bernanke, local banks with larger ex-ante foreign debt reduce credit supply to firms as compared to the other banks. One standard deviation in banks' foreign debt leads to 2.2pp lower quarterly credit growth. However, this reduction in credit is partially reversed following the announcement of the intervention by the BCB. Furthermore, we find that the employment at the firm level follows a similar pattern as for the firm credit, albeit economically the magnitude of this reduction is smaller.

In the last part, we analyze the effects of changes in the FX market conditions using a quarterly panel dataset over 2008-2015 and controlling for other macro variables, both local and related to the GFC. We show that despite large fluctuations in the FX market conditions, their effect on the supply of credit is smaller after the BCB intervention. Therefore, results suggest that the policy of supplying FX derivatives mitigates the spillovers of global financial conditions on EMEs local economy.

The strategy by the BCB to act as a hedger of last resort, however, has potential limitations. First, it works insofar as economic agents believe currency convertibility risk is negligible. This has not been an issue in Brazil, because of its large international reserves. Second, there are fiscal costs (or gains) since margin payments between the BCB and the market affect the country's fiscal balance. Third, hedger of last resort policy can hypothetically increase moral hazard and incentivize domestic banks to take up riskier foreign funding than they otherwise would.

REFERENCES

- Blanchard, O., G. Adler, I. de Carvalho Filho. (2015). "Can Foreign Exchange Intervention Stem Exchange Rate Pressures from Global Capital Flow Shocks?" IMF WP 15/159.
- Chamon, M., M. García, and L. Souza (2017). "FX interventions in Brazil: a synthetic control approach". *Journal of International Economics*, Vol. 108, pp. 157-168.
- Gourinchas, P. O., and M. Obstfeld (2012). "Stories of the twentieth century for the twenty-first". *American Economic Journal: Macroeconomics*, 4(1), pp. 226-65.
- Hofmann, B., H. Song Shin, and M. Villamizar-Villegas (2019). "FX intervention and domestic credit: Evidence from high-frequency micro data." BIS WP 774.
- Jordà, O., M. Schularick, and A. M. Taylor (2013). "When credit bites back". *Journal of Money, Credit and Banking*, 45(s2), pp. 3-28.
- Khawaja, A. I., and A. Mian (2008). "Tracing the impact of bank liquidity shocks: Evidence from an emerging market". *The American Economic Review*, 98(4), pp. 1413-1442.
- Rey, H. (2013). Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence. NBER WP 21162.
- Shin, H. S. (2016). "The bank/capital markets nexus goes global". Speech at London School of Economics and Political Science, 15 November 2016.