Macroprudential FX Regulations: Sacrificing Small Firms for Stability?

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Nontradable firms in emerging economies issue large amounts of dollar debt, exposing their balance sheets to exchange rate movements and credit default risk.[1] This is worrisome since by exposing their own balance sheets they are indirectly exposing the asset portfolio of banks that lend to them. Regulatory authorities have responded implementing macroprudential policies on banks' use of dollar funding as a source of bank lending, particularly to nontradable firms.[2]

However, the unintended distributional effects of these regulations on firms' financing are not well understood and have remained unexplored in the literature. I verify empirically that Macroprudential FX policies might increase financing disparities between small and large nontradable firms and propose a theoretical mechanism consistent with these findings.

EFFECTS ON FIRM SIZE

I take advantage of an unexpected and aggressive intervention by the Central Bank of Peru to increase the reserve requirement rate (a tax) on banks' FX liabilities in December 2014 (see figure 1 panels a and b).

I assemble a unique dataset combining confidential data on the universe of (1) loans granted by Peruvian banks to nonfinancial firms, (2) all formally registered firms and (3) the universe of banks' FX derivative contracts. I exploit the cross-sectional variation in bank exposure to this tax to identify the lending channel on nontradable firms. Simultaneously, I test whether firms borrowing from differently exposed banks respond heterogeneously to this supply shock depending on their size.

I find that the growth rate of new loans for small firms decreases significantly more than it does for large firms. Even after accounting for a potential switch to sol loans, this differential effect persists. Figure 1, panels c and d, show the cumulative reduction in the monthly growth rate of dollar and total loans, for a given marginal increase in bank exposure to the policy. The cumulative effect on dollar and total loans for the group of firms within the smallest firm size category (micro firms) becomes statistically significant four months after the announcement. After that time, firms start switching to sol loans. For the group of firms within the largest firm size category (large firms), the cumulative effect of the policy on dollar and total loans is negative but not significantly different from zero in any of the periods after the treatment.

I replicate my empirical strategy at the firm level to account for the possibility of firms borrowing in soles also from other banks, to avoid the burden of the regulation. I find that micro firms remain significantly negatively affected by the tax, while firms in larger size categories are able to exploit their multiple relationships with differently exposed banks to increase their debt in soles and remain unaffected by the tax. Additionally, I show that firms that are mostly affected by the policy are not hedged against exchange rate risk through FX derivatives.

I then show that the policy reduces the probability of issuing new loans in a given month the year after the policy announcement. Once again, this extensive margin effect is heterogeneous across size segments, with small firms being less likely to issue new debt than large firms.

Finally, I rely on firm-level survey data to provide suggestive evidence on potential real implications of the policy. I find that the policy is associated with a significant reduction in the annual investment growth of small firms, as well as the nominal value of their production. This is not true for large firms.

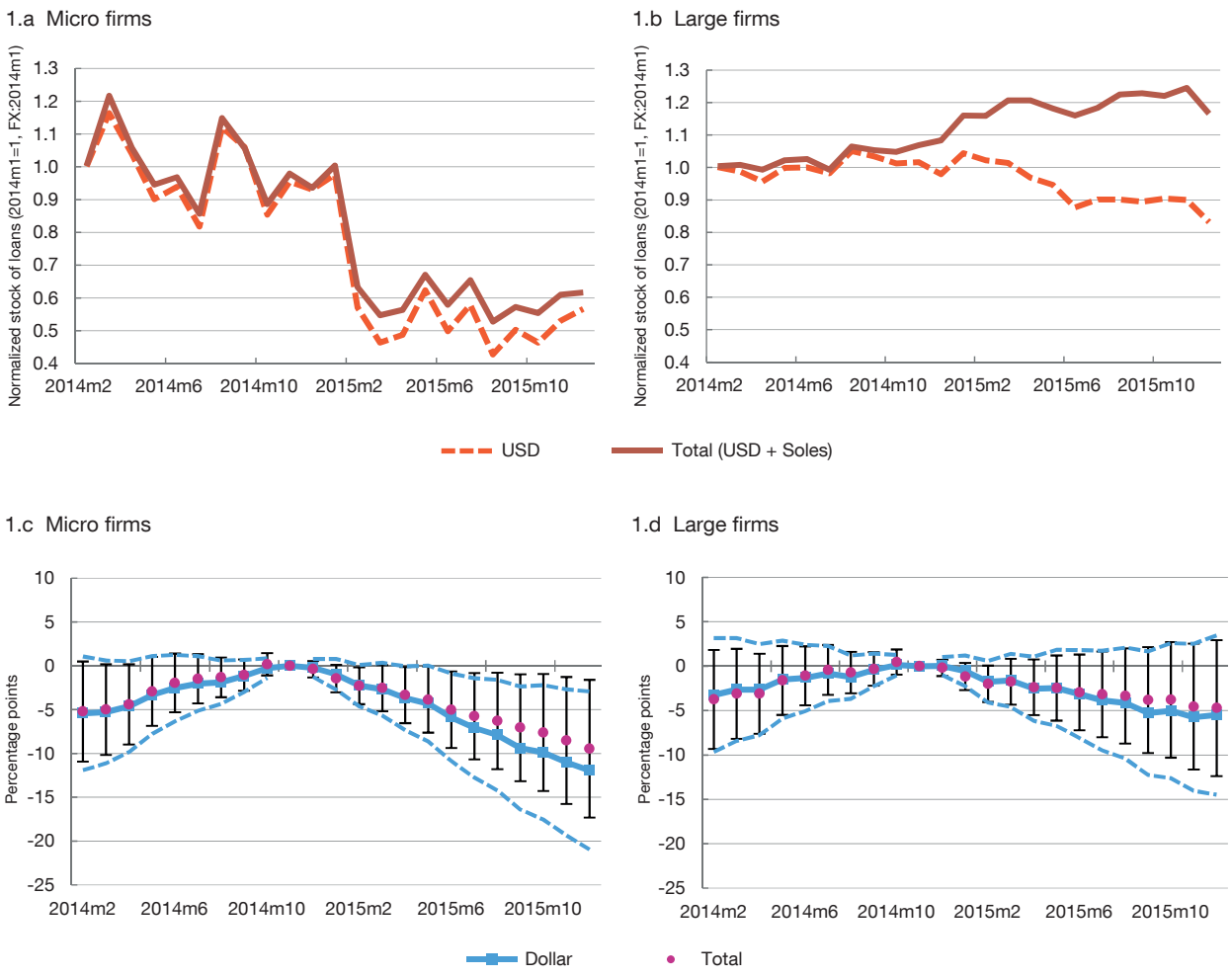
MECHANISM

Consistent with the previous empirical findings, I propose a mechanism leading to heterogeneous responses of

1 Bruno and Shin (2015); McCauley, et al. (2015).
2 Peru, Bulgaria, Croatia, and Romania are four of many examples. (See the IMF 2017 MaP survey).

Figure 1

Evolution of dollar and total loans and cumulative treatment effect: Micro and Large firms



NOTE: Figure 1 panels a and b show the evolution of the normalized stock of outstanding dollar loans of unhedged firms (dashed blue line) and, the evolution of the normalized stock of outstanding dollar + soles loans (red line) before and after the policy intervention. Panels c and d plot the cumulative effect of bank exposure on the growth rate of new dollar loans (blue dot) and new total loans (red dot) for micro and large firms, respectively.

nontradable firms' outcomes to a tax on banks' dollar lending. This mechanism is based on a credit market game as in Ranciere and Tornell (2016) and relies on the well documented empirical fact that dollar debt is cheaper than local currency debt, after correcting for expected exchange rate depreciation. Therefore, some firms might find it beneficial to expose their balance sheets to currency risk by issuing dollar debt.

Firm's optimal decision on debt denomination is driven by two opposing forces. If they denominate their debt in local currency, firms avoid insolvency risk. On the other hand, if firms issue dollar debt and take currency mismatch risk, they can take advantage of the cheaper cost of borrowing in dollars. For financially constrained firms (e.g. small firms), currency mismatch allows them to relax their borrowing constraints and increase their leverage and investment possibilities. Meanwhile, for unconstrained firms (e.g. large firms), the trade-off between leverage gains and insolvency risk is irrelevant.

A tax on lender's dollar funding ultimately increases firm's cost of borrowing in dollars. If dollar debt becomes more expensive, the firm could find it optimal to switch away from

dollar debt to more expensive but risk-free local currency debt. Alternatively, if the gains of taking on mismatch risk are still high enough after the tax, the firm could find it optimal to keep on issuing dollar debt, and pay the tax. In either case, firm's cost of borrowing increases after the tax is implemented. In an equilibrium where firms are small, borrowing constraints become tighter after tax. In that case, not only might the tax affect the currency composition of firms' debt, but it may also generate real effects in the economy. By contrast, in an equilibrium with large firms, issuing dollar debt is not a means to relax borrowing constraints; the tax only generates a change in the currency composition of firm's debt.

In a nutshell, I provide evidence of a potential trade-off between small firms' growth and financial stability that has not been studied in the literature. My results taken together show that policies aimed at achieving financial stability through the restriction of the bank lending channel in foreign currency might end up disproportionally hurting small firms' financing possibilities with potential real implications.

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