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Monetary and macroprudential policy with foreign currency loans[☆]

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ABSTRACT

In a number of countries a substantial proportion of mortgage loans is denominated in foreign currency. In this paper we demonstrate how their presence affects economic policy and agents' welfare. To this end we construct a small open economy model with financial frictions, where housing loans can be denominated in domestic or foreign currency. The model is calibrated for Poland - a typical small open economy with a large share of foreign currency loans (FCL). We show that the presence of FCLs negatively affects the transmission of monetary policy and deteriorates the output-inflation volatility trade-off it faces. The trade-off can be improved with macroprudential policy but the outcomes are still worse than under this same policy mix applied to an economy with domestic currency debt. We also demonstrate that a high share of FCLs is harmful for social welfare, even if financial stability considerations are not taken into account. Finally, we show that regulatory policies that discriminate against FCLs may have a negative impact on economic activity and discuss the redistributive consequences of forced currency conversion of household debt.

1. Introduction

Foreign currency loans (FCL) have become highly popular in many emerging and some advanced economies since the early 2000s. In the European Union their presence is particularly sizable in Bulgaria, Hungary, Romania, Poland, and even Austria. In 2013 FCLs accounted for approximately 60% of loans to the non-banking sector in the former three countries, in Poland this share was close to 30%, and in Austria slightly below 20% (SNB, 2013). If one considers only mortgages, the share of FCLs was even higher. For instance, in Poland, over 50% of mortgage loans outstanding in 2013 were denominated in foreign currency.

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Foreign currency loans offer some advantages to borrowers, in particular lower interest rates and possibly longer maturities. At the same time, however, they constitute an important source of systemic risk in the economy. Sharp depreciations of the exchange rate bring about a surge in servicing costs expressed in borrowers' income currency, which may, in most extreme cases, lead to mass defaults and systemic banking crises (Yesin, 2013). FCLs have also been recognized to affect the transmission of monetary policy. In particular, the impact of domestic interest rates on the economy may be weaker when borrowers are able to substitute domestic currency loans (DCL) for FCLs. The impact of foreign currency lending on the economy has repeatedly gained attention of policymakers including microprudential (regulatory), macroprudential and monetary authorities (Dübel and Walley, 2010; ESRB, 2011; Lim et al., 2011; Dell'Ariccia et al., 2016). In many countries lending in foreign currency to households has been restricted by the financial supervision over the last few years.

This paper analyzes the role of FCLs to households through the lens of a dynamic stochastic general equilibrium (DSGE) model. As such it connects two important streams in the literature: the modeling literature on financial frictions and the empirical literature on the relationship between FCLs and macroeconomic policy.

From the modeling perspective we build on the seminal papers of Kiyotaki and Moore (1997) and Iacoviello (2005), who developed a workhorse DSGE model with credit constraints and housing that serves as collateral. Models based on this framework have been successfully applied in the past to analyze a number of issues, like the impact of macroprudential policy on the business cycle or spillovers from the housing market to the economy (e.g. Gerali et al., 2010; Iacoviello and Neri, 2010). This framework fits also our needs since it contains the key ingredients given our research questions, i.e. mortgage loans and the possibility to introduce regulatory policy in the form of LTV requirements. We modify this setup in several directions. In particular, we extend it to a small open economy setting and introduce FCLs.

Regarding the main topic at hand, our study relates to the literature on foreign currency lending and its connections with monetary and macroprudential policies. This literature has a strong empirical flavor. As regards the links to monetary policy, the relationship between interest rates, exchange rates and FCLs is crucial. As documented in Magud et al. (2014), both fixed exchange rate regimes or high interest rate differentials increase the share of foreign currency loans. The latter finding has been confirmed in several other studies including Egert et al. (2007), Rosenberg and Tirpák (2009) and Brzoza-Brzezina et al. (2010), and is crucial to understand how FCLs can weaken the monetary transmission. Especially the last paper deals explicitly with this problem. Based on a panel of four Central European countries, the study shows that after a monetary policy tightening, more than 50% of eliminated DCLs can return to the economy as FCLs.

Much less research has been conducted on the link between macroprudential policy and FCLs. The main question of interest so far has been whether appropriately designed regulation is able to reduce the share of FCLs in the economy. For instance, Lim et al. (2011) show that some regulatory actions targeted at limiting the amount of FCLs have been efficient in the past. However, to our knowledge, the impact of FCLs on the effectiveness of macroprudential policy has not been analyzed so far.

This paper's contribution to the literature is twofold. First, we provide a formal framework for modeling FCLs for households in a macroeconomic environment.[1] To this end, we construct a microfounded small open economy model where agents can borrow both in domestic and foreign currency. Second, we use this model to answer several important questions either not tackled by the literature, or touched upon only in econometric frameworks. These are: (i) How does the presence of foreign currency denominated mortgages affect monetary and macroprudential policy transmission, and how does it impact the output-inflation volatility trade-off? (ii) What are the implications of foreign currency lending for household welfare? (iii) What are the macroeconomic effects of using regulation to discriminate against FCLs? (iv) What are the consequences of currency depreciation and a subsequent conversion of FCLs to DCLs imposed by the government?

To answer these questions we construct a model that contains the most important ingredients needed. This means that we abstract from several features that, while allowing for a deeper investigation of the FCL problem, do not seem crucial given our questions. In particular, the steady-state share of FCLs is exogenous in our model. We motivate this choice by the observation that the presence of this type of loans is mainly determined by institutional arrangements and sources of aggregate risk (see Kolasa, 2016), which can be treated as given. It also allows us to easily compare the economies that differ only in the share of FCLs. Moreover, we abstract away from possible household and bank defaults that may follow massive exchange rate depreciations as we want to focus on a standard business cycle environment. In other words, this paper does not deal with systemic risk or other financial stability issues. It is also worth noting in this context that, at least in Europe, defaults on mortgage debt are rare in normal times.[2]

Our main findings are as follows. First, FCLs negatively affect the transmission of monetary policy but do not significantly impact on the effectiveness of macroprudential policy. The presence of foreign currency denominated household debt also deteriorates the inflation-output volatility trade-off, even if monetary policy is complemented with macroprudential policy in a coordinated manner. Second, we find that FCLs increase welfare when domestic interest rate shocks are strong and decrease it when international risk premium (exchange rate) shocks dominate. In a rich stochastic environment, a large presence of FCLs is found to be welfare reducing. Third, eliminating the described inefficiencies through regulation discriminating against FCLs may have a short-term contractionary impact on the economy. Fourth, we simulate a scenario under

[1] A number of papers have analyzed foreign currency lending in the corporate sector, see e.g. Elekdag and Tchakarov (2007), Gertler et al. (2007) or Kolasa and Lombardo (2014).

[2] There are very few papers that allow for household and bank bankruptcies in a quantitative business cycle framework. Notable exceptions include Elenev et al. (2016) and Mendicino et al. (2016), but none of them looks at the role of FCLs.

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