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Household and firm leverage, capital flows and monetary policy in a small open economy

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The recent financial crisis has shown that financial imbalances related to the dynamics of credit and leverage developed in good times can significantly exacerbate the impact of downturns. In this context, the issue of whether central banks should explicitly target financial variables has gained momentum and is at the forefront of the current monetary policy debate.

This paper analyses these issues in the context of a small open economy DSGE model enriched with features characterising emerging European markets in the run-up to the financial crisis. First, credit frictions in the framework of Bernanke, Gertler and Gilchrist (1999) are present both at the entrepreneurial and at the household level, resulting in a premium on external finance in both sectors, linked to borrowers' leverage. Second, both households and entrepreneurs borrow from foreign lenders in foreign currency. Third, capital inflows are introduced in both sectors in line with Curdia (2006, 2007), assuming foreign lenders have a distorted perception of domestic borrowers' creditworthiness. In good times, waves of optimism lead to higher perceived creditworthiness of domestic borrowers, and, hence, to a relaxation of credit conditions which trigger a self-fulfilling virtuous circle of economic expansion. The dynamics of the model is then analysed in response to productivity and capital inflow shocks, which all involve an increase in foreign borrowing, but affecting different segments of the credit market. Whereas the technology shock affects the demand side of credit, foreign lenders' perception shocks involve the supply side.

This set-up is used to explore three main issues. First, the dynamic adjustment of the economy to productivity and capital inflow shocks is, scrutinised under different monetary policy regimes, ranging from a standard Taylor rule to rules involving explicit reactions to exchange rate movements and credit aggregates and a pegged exchange rate regime. Second, the interaction between credit frictions at the household and entrepreneurial sector is explored. Third, an analysis is made of the optimal monetary policy rule to be adopted by the central bank of a small open economy subject to productivity and capital inflow shocks and pursuing macroeconomic and/or financial stability objectives.

It is found that, first, regardless of the monetary authorities' preferences, the optimised coefficient on lagged interest rate reveal a quite high optimal inertia of the monetary policy rule. As in a small open economy changes in the nominal interest rate are mirrored by exchange rate fluctuations which affect the balance sheet of borrowers with foreign currency debt, they entail more volatility in financial variables, including credit growth. Therefore, even when the central bank is not concerned about financial stability, it is considered advisable to smooth the path of the monetary policy rate. Second, in case the monetary authority is not concerned with financial stability, it proves to be optimal to react only to inflation and output deviations. When financial stability considerations are included in the central bank's objective, the monetary authority holds it to be optimal to react to exchange rate depreciations with a positive coefficient, but not to credit market indicators. A tightening of monetary policies in response, for example, to capital inflow shocks results in further exchange rate appreciation, which strengthens borrowers' balance sheets and induces more foreign borrowing. This seems to suggest that in a small, open and dollarized economy, a central bank pursuing financial stability objectives but equipped with but one instrument, namely the nominal interest rate, cannot simultaneously achieve macroeconomic and financial stability.

Finally, as to the interaction between households and entrepreneurial financial variables, it is found that the extent of the co-movement crucially depends on whether the exchange rate is flexible or pegged, in the case of both technology and capital inflow shocks. Specifically, it is found that under a fixed (flexible) exchange rate regime, a negative (positive) correlation arises. The analysis reveals that sectoral capital inflow shocks spill over to the other sector mainly through their effect on domestic production via increased demand for domestic goods used for investment purposes and through balance sheet effects of currency appreciation.