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International business cycles with domestic and foreign lenders ☆

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Abstract

We examine the international transmission of business cycles in a two-country model where credit contracts are imperfectly enforceable. In our economy, foreign lenders differ from domestic lenders in their ability to recover value from borrowers' assets and, therefore, to protect themselves against contractual non-enforceability. The relative importance of domestic and foreign credit frictions changes over the cycle. This induces entrepreneurs to adjust their debt exposure and allocation of collateral between domestic and foreign lenders in response to exogenous productivity shocks. We show that such a model can explain the comovement of output across countries.

JEL classification: E44; F34; F41

Keywords: International business cycle; Comovement; Asset prices; Borrowing constraints

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1. Introduction

The role of credit market imperfections in explaining business fluctuations has been the object of analysis of a large literature in the last two decades. More recently, a number of studies have analyzed open economy models with financial frictions, finding that these models can explain important features of international business cycles (e.g. Kehoe and Perri, 2002; Baxter and Crucini, 1995, and the papers cited below). One shortcoming of these studies is that they are silent on the different weight that credit imperfections can have according to the nature—domestic and foreign—of lenders. Since credit imperfections are thought to stem from lack of information of lenders on borrowers, it appears reasonable that these imperfections differ according to the origin of the lenders. Foreign lenders are likely to have limited experience of local firms and laws, presumably because of a short history in lending to local firms.[1] More importantly, once credit imperfections are tied to the nature of the lenders, it is plausible that the *relative* importance of foreign versus domestic imperfections changes over the cycle. If the absolute importance of credit imperfections depends on aggregate variables, a change in aggregate variables is unlikely to leave unaffected the relative importance of credit imperfections.

This paper shows that changes in the relevance of foreign versus domestic credit imperfections and the resulting effects on the decision of firms as to which lenders to choose (domestic or foreign) can explain important aspects of international business cycles. In particular, the focus is on the comovement of output across countries.[2] In the data, for instance, it is generally observed that following a positive productivity shock in one country, output in the country hit by the shock *and* abroad rise. Standard open economy RBC models (see e.g. Backus et al., 1992) cannot replicate this pattern of the data: these models predict that when country F (foreign) is hit by a positive technology shock, output in country H (home) falls, especially as a result of a shift of resources towards the most productive economy.

We consider a two-country open economy model. In the model economy, entrepreneurs in both countries face restrictions in borrowing from domestic and foreign financiers, as in Gilchrist et al. (2002) and Faia (2002). To this story, the model adds two new dimensions: (i) the relative importance of the credit frictions that entrepreneurs face in borrowing from domestic or foreign lenders changes endogenously over the cycle and (ii) entrepreneurs can adjust their relative debt exposure in order to maximize their borrowing capacity.

In the model entrepreneurs face a quantity borrowing constraint à-la Kiyotaki and Moore (1997), i.e. they cannot borrow more than the value of the hard assets they pledge as collateral. Lenders, on the other hand, face a transaction cost in liquidating the collateral of borrowers. This transaction cost proxies for the cost in recovering collateral during bankruptcy procedures or in redeploying assets in the secondary market at the liquidation stage, and prevents entrepreneurs from borrowing up to the full value of their hard assets. Crucially, the liquidation technologies of domestic and foreign lenders differ. Domestic lenders face a transaction cost that is proportional to the collateral value. Foreign lenders face diseconomies to scale in recovering collateral: the fraction of value they lose in liquidation increases as the collateral value increases. The assumption of

[1] Dell'Ariccia et al. (1999) argue that older banks may have a greater informational advantage if they have made loans to more borrowers than younger banks.

[2] For extensive evidence on the nature of this comovement, see Canova and Marrinan (1998).