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The mechanics of a monetary union with segmented financial markets

Nuno Alves [*]

Banco de Portugal (DEE), Research and Economics Department, Av. Almirante Reis, 71, 1150-012 Lisboa, Portugal

Abstract

In this paper we characterize the transmission mechanism in a monetary union with segmented financial markets. We conclude that the impact of a monetary policy shock on the aggregate variables of the union depends on the degree of financial market segmentation. We also find that a monetary injection yields heterogeneous allocations across countries. In particular, a temporary monetary policy shock leads to permanent trade balance and current account effects. Further, the consumption correlation between countries is smaller than the output correlation. The degree of financial market segmentation and the endogenous distribution of liquidity in the monetary union are key to understanding this equilibrium.
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1. Introduction

With the introduction of the euro the study of the monetary transmission mechanism in monetary unions has been a growing subject of interest. An important dimension of this

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[*] Tel.: +351 213130936.
  E-mail address: njalves@bportugal.pt

inquiry is the assessment of the costs of sharing a single currency. These may arise either by the existence of heterogeneous frictions in the economies forming the monetary union and/or by the prevalence of idiosyncratic shocks in those economies. In addition, the costs of monetary unification are also a function of the behavior of the monetary authority. In the presence of several important frictions characterizing the monetary union, the optimal monetary policy becomes non-trivial, and the monetary authority faces inescapable trade-offs in pursuing its objectives.

This paper focuses on a particular friction that is arguably important to the transmission of monetary shocks in monetary unions: the existence of segmented financial markets. This segmentation may be related not only to different institutional settings but also to differences in the structural behavior by households. In the euro area available evidence points to the existence of a still significant degree of financial segmentation between the respective countries (see ECB, 2005).

There are several studies that relate, from an empirical point of view, differences in national financial systems to differences in allocations after monetary policy shocks (see, for example, Putkuri, 2003 and Cecchetti, 1999). However, theoretical analyses incorporating financial frictions in a monetary union context are scarce. A notable exception in this respect is Giovannetti and Marimon (2000), who model a monetary union with overlapping generations, cash-in-advance constraints and differences in the efficiency of the financial intermediaries across countries. They conclude that a single monetary shock may have asymmetric effects in the different countries. This result is also obtained in this paper, albeit with a substantially different theoretical construct.

In order to understand the impact of financial market segmentation in a monetary union's transmission mechanism, we build a two-country model where countries are differentiated by the degree of portfolio rigidity of households. This is a monetary union generalization of the closed-economy limited participation models of Lucas (1990), Fuerst (1992) and Christiano (1991). After characterizing the response of the monetary union to a monetary policy shock, we extend the analysis to the response of each economy individually. In this context, tracking the liquidity distribution within the union is crucial to understand the equilibrium following the shock.

The main conclusions of our analysis are the following. First, the effects of the single monetary policy on the monetary union's aggregates depend on the degree of financial market segmentation. This is a generalization of the closed-economy result that the real effects of monetary policy depend on the existence of portfolio rigidities. Second, with segmented financial markets, there is an asymmetric distribution of liquidity in the union after a monetary policy shock. This occurs despite there being a complete integration of financial markets (and thus full capital mobility). This liquidity distribution determines the relative real effects between the countries in the union. Third, a monetary policy shock leads to permanent trade balance and current account effects. The intuition for this result is rooted in the permanent heterogeneity in the liquidity distribution between countries after a monetary policy shock. Fourth, the heterogeneity in the consumption profiles in each economy implies that the consumption correlation between countries is lower than the output correlation. This finding is consistent with numerous cross-country studies, and applies in particular to recent evidence for the euro area (see Baxter and Crucini, 1995 and Giannone and Reichlin, 2006). Finally, our model also allows to characterize the non-linear interaction between the degree of financial market segmentation, the liquidity