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Capital market imperfections and the theory of optimum currency areas

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A B S T R A C T

This paper studies how within- and cross-country capital market imperfections affect the welfare effects of forming a currency union. The analysis considers a bank-only world where intermediaries compete in Cournot fashion and monitoring and state verification are costly. The first part determines the credit market equilibrium and the optimal number of banks, prior to joining the union. The second part discusses the benefits from joining a currency union. A competition effect is identified and related to the added monitoring costs that banks may incur when operating outside their home country, through an argument akin to the Brander-Krugman "reciprocal dumping" model of bilateral trade. However, in our framework, whether joining a union raises welfare of the home country is ambiguous; it depends on the relative strength of "investment creation" and "intermediation diversion" effects.

1. Introduction

Since the seminal contribution of Mundell (1961), the literature on optimum currency areas (OCAs) has proposed a variety of criteria for choosing if and when countries should elect to form or participate in a currency union. These criteria include similarity of inflation rates, the degree of factor mobility, the openness and size of the economy, the scope of production diversification, the degree of price and wage

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flexibility, the extent of integration in goods markets, the correlation between economic shocks across countries, the degree of fiscal integration, and the political will to integrate.[1] Although much of the early literature on OCAs took these optimality criteria as given, recent research has emphasized that some of them may be endogenous, as a result of the very existence, and induced effects, of a currency union. It has been argued that similarity of inflation rates, for instance, may be promoted by participating in a currency union, and that a high degree of convergence (or low dispersion) should not necessarily be viewed as a pre-condition for forming one.[2] Similarly, entry into a currency union may strengthen international trade linkages over time.[3]

By contrast, the present paper focuses instead on how within- and cross-country capital market imperfections may condition the welfare gains of joining a currency union. Somewhat surprisingly, there has been very little analytical research on this issue; most of the literature surveys referred to earlier do not even mention it as a relevant criterion for assessing the net benefits that countries might derive from forming or participating in a union.[4] This paper is an attempt to fill this gap, using a simple stochastic model where financial intermediation services are provided only by banks. Our focus is on understanding how monitoring costs, and the degree of competition in banking, affect the welfare gains associated with (and thus the desirability of participating in) a currency union. A key step in doing so is a comparison between expected surpluses before and after joining the union. As a result, we are able to identify the reasons why the welfare effect of this decision is ambiguous.

The remainder of the paper is organized as follows. Section 2 provides a brief review of the current literature on capital market imperfections and OCAs.[5] Section 3 presents the model and describes the functioning of the financial sector prior to joining a union. The model upon which our analysis is based extends the framework developed in Agénor and Aizenman (1998, 1999, 2005), which itself dwells on the costly state verification approach pioneered by Townsend (1979). However, in an important departure from these previous studies, we also endogenize the number of financial intermediaries. Section 4 considers the case where the country under consideration joins a currency union, and analyzes a key channel through which financial factors may affect the welfare gains (calculated from the point of view of an individual member country) from joining the union: an enhanced bank competition effect. We draw an important analogy between the added monitoring costs that banks may incur when operating outside their home country, and transportation costs, in a manner similar to the "reciprocal dumping" model of Brander and Krugman (1983). However, we also show that our results differ in important ways from that paper, in the sense that welfare effects are now ambiguous. Section 5 further discusses some of the assumptions underlying our analysis, the distinction between financial integration and the financial effects of joining a currency union, and considers some possible extensions. Section 6 summarizes our main results and offers some concluding remarks.

2. Capital market imperfections and OCAs

As noted earlier, there has been limited research on the role of capital market imperfections in the design and functioning of OCAs. In one of the few analytical studies available, Ching and Devereux (2003) examined the argument, first proposed by Mundell (1973), that a single currency area offers risk-sharing benefits when domestic capital markets are limited in their ability to provide consumption insurance. This argument goes against the "conventional" view, according to which a single currency area carries a welfare loss owing to the fact that the use of the nominal exchange rate to respond to country-specific shocks is precluded. They evaluate the costs and benefits of two monetary

[1] Ishiyama (1975) provides an early review of the literature. Subsequent surveys include Masson and Taylor (1993), Tavlas (1993), Lafrance and St-Amant (1999), De Grauwe (2007), Mongelli (2002) and Dellas and Tavlas (2009).

[2] See Hoffman and Remsperger (2005), Beechey and Österholm (2009), Maria Caporale and Kontonikas (2009), and Becker and Hall (2009).

[3] See Engel and Rose (2002), Barro and Tenreyro (2007), Gil-Pareja et al. (2008), and Gonçalves et al. (2009).

[4] Exceptions are Giovannetti and Marimon (2000) and Alves (2008). However, neither of these studies considers explicitly the role of *credit* market frictions, as we do here.

[5] To save space, we limit our discussion to the case of the Euro area. The evidence for developing countries is discussed in the working paper of this article, which is available upon request.