



When does financial integration matter for fiscal policy in a currency union? A welfare-based approach

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ABSTRACT

We use a two-country new open economy macroeconomics model describing a currency union with imperfect financial integration. We assume that household preferences are biased towards the goods produced within the country. We use this setup to show how the degree of financial integration and the home bias affect the welfare efficiency of fiscal policy. This is particularly important for the implications of a fiscal policy launched by a member of the euro zone where the home bias is in a decreasing trend due to higher goods market integration and where there are explicit efforts to enhance financial integration. The results show in particular how the effects of an increasing financial integration on the impact of a fiscal policy can be mitigated or amplified by a decreasing home-product bias. Moreover, under certain conditions, the degree of financial integration has no effect on the welfare efficiency of fiscal policy despite its non-negligible effects on the components of welfare.

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1. Introduction

Advancing financial integration has been one of the major objectives of the European Community. Indeed, the degree of international financial integration matters to the European monetary authority as it considers the imperfect integration as an obstacle to the transmission of monetary policy in the Euro area. However, when it comes to fiscal policy, the question of whether financial integration matters to fiscal authorities is not that straightforward. This question is particularly important since fiscal policy is the only policy instrument available to member countries.

Papers which analyze the role of international financial integration on the impact of fiscal policy in a currency union framework are rather few. The traditional literature of the 70s and 80s are rarely interested in currency unions. These models analyze the relation between fiscal policy and financial integration mainly under fixed and flexible exchange rates. The interest in currency unions is stimulated especially after the Maastricht Treaty which initiates the process of monetary and financial integration in Europe. However, most of the work regarding currency unions assumes that the existence of a common currency leads automatically to full financial integration. This assumption is not empirically verified, especially in the European Monetary Union. Indeed, although the existence of a common currency has allowed an important

increase in financial integration between the members in the European Monetary Union, not all the conditions are met in Europe in order to achieve full financial integration. The ECB report on financial integration indicates that there is still progress to be made on asset markets integration in Europe (ECB, 2007).¹

The new open economy macroeconomics (NOEM), initiated by Obstfeld and Rogoff (1995, 1996), provides an analytical framework which allows to take account the empirically observed dissociation between financial integration and monetary integration and the main characteristics of the European economies such as the imperfect competition in goods markets and the sluggish adjustment of prices in the short run.

The relation between fiscal policy and financial integration has been analyzed in a NOEM setup by Sutherland (1996) whose setup inspired also Senay (1998), Pierdzioch (2004a, 2005) and Cenesiz and Pierdzioch (2006). Mainly, they analyze the impact of financial integration on consumption and income volatility triggered by a fiscal shock among others. They analyze this relation in a flexible exchange rate framework providing only numerical solutions. The limited number of research in the NOEM considering fiscal policy in a monetary union assumes, generally, full financial integration.² Pierdzioch (2004b) relaxes this

¹ According to the definition given by the European Central Bank (ECB), the market of a given set of instruments and services is fully integrated if all potential market participants face the same rules, have equal access to the market and are treated equally when they take action in the market.

² See for example Carré and Collard (2003).

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assumption in a two-country dynamic general equilibrium model. He shows numerically, that a higher degree of financial integration has little influence on consumption and output volatility following a fiscal shock if financial markets are incomplete. However, the effect of financial integration increases when financial markets are complete.

Assuming that financial markets are incomplete as implied by the empirical observations, the present paper reconsiders the effect of financial integration on the impact of fiscal policy to give conditions under which financial integration may matter for fiscal policy in a currency union. For this, we extend the fixed exchange rate version of Obstfeld and Rogoff (1995, 1996) analyzed by Caselli (2001) and Coutinho (2005) in several ways. First, we adapt their fixed exchange rate setup to a currency union framework. Second, we introduce imperfect financial integration following Sutherland (1996). Finally, unlike most of the NOEM research,³ we introduce home-product bias in the consumer preferences. Indeed, biased preferences exist in Europe but the degree of this bias is decreasing. Several factors such as the increasing degree of goods market integration and emergence of multinational firms selling the same good in different countries lead to a lower degree of home bias in household preferences. Furthermore, some public measures, such as the obligation for the European administrations to call for public tender at the union level, eliminate the home bias in public spending.

Although we offer a numerical example, our model has the advantage of allowing for analytical solutions in contrast to most of the NOEM models analyzing the relation between financial integration and fiscal policy. Moreover, we provide a welfare-based evaluation of fiscal policy efficiency and the financial integration effects in contrast to most of the NOEM models on financial integration in which the analysis of policy efficiency is limited to the impact on output. Finally, we consider not only a permanent home fiscal expansion but also a temporary fiscal policy which seems more realistic since the European authorities are generally reluctant for a permanent increase in taxes and public spending.⁴

The results show, first, that an increase in the degree of financial integration and a decrease in home bias have opposite effects on consumption and output in the short run whereas their long run effects go in the same direction. Hence, the effects of an increasing financial integration on the short run consumption and output following the fiscal policy are mitigated by a decreasing home-product bias. Some of these effects may even disappear if the home bias is entirely eliminated. Second, we show that the degree of financial integration does not necessarily affect the welfare efficiency of fiscal policy in both countries despite its non-negligible effects on the components of welfare. Indeed, the effects of the financial integration on the welfare impact of fiscal policy depend not only on the degree of home-product bias but also on the intertemporal elasticity of substitution and on the intratemporal elasticity of substitution between the products which increases with a higher goods market integration.

The paper is organized as follows: Section 2 describes the setup while Sections 3 and 4 analyze the short and the long run effects of an increasing financial integration and a decreasing home-product bias in preferences on the volatility of the key macroeconomic variables following a fiscal expansion. Section 5 analyzes the effect of an increasing financial integration on the welfare impact of fiscal

policy in the presence and absence of a home-product bias. Section 6 concludes.

2. The setup

The currency union consists of two equally sized identical countries, Home and Foreign, inhabited by a continuum of infinitely lived agents with perfect foresight. Agents in home country are indexed by $j \in [0, \frac{1}{2}]$ while foreign agents are indexed by $j \in (\frac{1}{2}, 1]$. Each agent produces a single differentiated good that is an imperfect substitute to other goods and consumes a bundle of all available home and foreign goods.

2.1. Household preferences

All agents in the union have identical preferences so that we will focus on the representative agent in each country. The preferences of the representative home agent j are given by the following utility function:

$$U_s^j = \sum_{t=s}^{\infty} \beta^{s-t} \left[\frac{(C_t^j)^{1-\rho}}{1-\rho} + \chi \log \frac{M_s^j}{P_s} - \frac{\kappa}{2} (y_s^j)^2 \right] \text{ with } \rho, \kappa, \chi > 0 \text{ and } 0 < \beta < 1. \quad (1)$$

Eq. (1), where β denotes the subjective discount factor, implies that a representative domestic agent j derives utility in period $s=t$ from private consumption C_t^j and from individual real money balances defined by M_t^j/P_t where P_t is the aggregate home currency price index. The intertemporal preferences of the agent are expressed by the coefficient ρ which corresponds to the inverse of the intertemporal substitution elasticity of consumption between different periods. The last component represents the disutility the agent bears from supplying the labour necessary to produce y_s^j .

For simplification purposes, we assume that public spending is pure waste. Relaxing this assumption does not alter the results since the aim of the analysis is to compare the effects of fiscal policy under alternative financial integration degrees regardless of the sign of these effects.

The consumption index in Eq. (1) is a CES type aggregation of home and foreign goods. We assume that both private and public agents have a higher preference over the goods produced within the country with respect to imported goods. This feature can be formulated by the following consumption index for the domestic country, analogous to the one proposed by Ghironi (2000):

$$C_t = \left[\omega^{\frac{\theta-1}{\theta}} C_{H,t}^{\frac{\theta-1}{\theta}} + (1-\omega)^{\frac{\theta-1}{\theta}} C_{F,t}^{\frac{\theta-1}{\theta}} \right]^{\frac{\theta}{\theta-1}} \text{ with } \theta > 1 \quad (2)$$

where θ is the elasticity of substitution between goods produced in the union. The parameter ω indicates the degree of home-product bias in preferences. We assume that $\omega > 1/2$. This implies that home agents prefer the goods produced within their country. The consumption bundles of home and foreign goods, denoted by C_H and C_F respectively, are CES aggregators over all available goods with the same substitution elasticity θ .

The overall price index corresponding to Eq. (2) is defined as the minimum expenditure required for consuming one unit of the composite consumption good C and is given as:

$$P_t = [\omega P_{H,t}^{1-\theta} + (1-\omega) P_{F,t}^{1-\theta}]^{\frac{1}{1-\theta}} \quad (3)$$

where P_H and P_F denote respectively the home and foreign price indexes.

Foreign preferences are expressed similarly so that foreign agents prefer foreign goods to home goods, with the same degree of bias

³ Warnock (1998) and Ghironi (2000) are among the first to introduce a home bias in a NOEM model. Pierdzioch (2005) analyzes in a NOEM model, the relation between financial integration and home bias under flexible exchange rates. He illustrates numerically the impact of financial integration and home bias on the effect of a permanent fiscal policy and productivity shock on the volatility of home consumption and output.

⁴ The European economic stimulus plan, announced on 26 November 2008, asks the member countries to limit their stimulus plan to a duration of two years and to respect the implications of the stability and growth pact afterwards.

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