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Deficit sustainability and inflation in EMU: An analysis from the Fiscal Theory of the Price Level

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ABSTRACT

Price determination theory typically focuses on the role of monetary policy, while the role of fiscal policy is usually neglected. From a different point of view, the Fiscal Theory of the Price Level takes into account monetary and fiscal policy interactions and assumes that fiscal policy may determine the price level, even if monetary authorities pursue an inflation targeting strategy. In this paper we try to test empirically whether the time path of the government budget in EMU countries would have affected price level determination. Our results point to the sustainability of fiscal policy in all the EMU countries but Finland, although no firm conclusions can be drawn about the prevalence of either monetary or fiscal dominance.

1. Introduction

The traditional view on price determination focuses on the role of monetary policy, usually neglecting the role of fiscal policy. Most analyses assume that the monetary authority is expected to set its control variable without facing any constraint, so that prices are determined by money supply and demand, in a conventional way. As a counterpart, the fiscal authority sets primary surpluses in order to assure fiscal solvency, for any path the price level could take. This scenario is refereed in the literature as the Ricardian or "monetary dominant" (MD) regime, and works as follows: monetary policy would be "active", being price determination its nominal anchor; whereas fiscal policy would adjust according to a Ricardian rule in a "passive" way, so that the budget surplus path would be endogenous.

However, a new approach has emerged in the 1990s, which allows fiscal policy to set primary surpluses to follow an arbitrary process, not necessarily compatible with solvency. Therefore, the budget surplus path would be exogenous, and the endogenous adjustment of the price level would be required in order to achieve fiscal solvency. In this context, fiscal policy becomes "active", with budget surpluses turning to be the nominal anchor; whereas monetary policy becomes "passive" and can only control the timing of inflation. This is the so-called non-Ricardian or "fiscal dominant" (FD) regime, and the literature

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developed on these assumptions is known as the Fiscal Theory of the Price Level (FTPL). The FTPL builds on the contributions of, among others, Leeper (1991), Sims (1994), Woodford (1994, 1995, 2001), and Cochrane (1998, 2001, 2005). This literature has been surveyed in Kocherlakota and Phelan (1999), Carlstrom and Fuerst (2000), or Christiano and Fitzgerald (2000); some critical appraisals can be found, e.g., in Buiter (1998, 2001, 2002), McCallum (2001, 2003), and McCallum and Nelson (2005).

But the role of fiscal policy in stabilization goes beyond the interactions between monetary and fiscal policies. Traditional macroeconomic analysis has mainly focused on the effectiveness of policy instruments depending on the exchange rate regime. More recently, the debate has turned to issues related to policy coordination, as well as the potential problems that could arise in monetary unions. Accordingly, some literature has emerged more recently on the implications of FTPL on inflation targeting in open economies and, in particular, for the case of monetary unions; see, e.g., Sims (1997), Woodford (1997), Bergin (2000), Canzoneri et al. (2002), and Ballabriga and Martínez-Mongay (2003).

This theory could be of particular interest for monetary unions since it might contribute to explain the different evolution of the price level across the member countries. Regarding the case of the European Union (EU), the fiscal limitations imposed to the member countries by the Maastricht Treaty, and later on by the Pact for Stability and Growth, should be interpreted as a way to assure a Ricardian regime. In this line, Woodford (1998, 2001) shows that a central bank committed to maintaining price stability cannot be indifferent as to how fiscal policy is determined.

In this paper, we will try to analyze to which extent the empirical evidence would support the assumptions of the FTPL, for the case of the EU countries participating in the Economic and Monetary Union (EMU). More specifically, we will try to investigate how fiscal sustainability is achieved: through the endogenous adjustment of the primary budget surplus (MD regime), or through the endogenous adjustment of the price level (FD regime).

So far, the empirical evidence regarding the FTPL is not too abundant. The first contributions, both of them for the case of the US economy, were those of Bohn (1998) and Canzoneri et al. (2001), who pioneered the two main approaches employed to test for the FTPL, namely, the so-called *backward-looking* and *forward-looking* approaches, respectively. So, Bohn (1998) obtains, by means of econometric techniques, a positive response of the primary surplus-to-GDP ratio to the (lagged) debt-to-GDP ratio. In turn, making use of VAR analysis, Canzoneri et al. (2001) find that a positive innovation in the primary surplus would cause a fall in debt. Accordingly, the results of both studies would not support the existence of fiscal dominance. The methodology of Canzoneri et al. was also applied by other authors. Komulainen and Pirttilä (2002) examine the influence of fiscal deficits on inflation for several transition economies, concluding that a FD regime cannot be always identified. However, for the case of Brazil, Tanner and Ramos (2003) find that some periods of fiscal dominance could be documented.

There are also some contributions that analyze the case of the EU. The first one was by Mélitz (2000), who shows that fiscal policy would have responded in a stabilizing manner to changes in the debt-to-GDP ratio for the EU-15 countries. Later on, Ballabriga and Martínez-Mongay (2003) estimate monetary and fiscal rules for the euro area, and conclude that the MD regime would have prevailed in these countries throughout the years before the formation of EMU (1979–1998). In a further contribution, Ballabriga and Martínez-Mongay (2005) re-examine fiscal rules extending the period of analysis until 2002, and considering the possibility of structural change; their main finding was that the sustainability of public finances would have prevailed in most EMU countries even before the Pact for Stability and Growth.

Afonso (2005) analyzes the relationship between the primary budget surplus and government debt, as percentages to GDP, using panel data for the EU countries over the period 1970–2003. His results give support to the Ricardian regime hypothesis throughout the sample period, as well as before and after both the Maastricht Treaty and the setting of the Pact for Stability and Growth. Finally, Creel and Le Bihan (2006) confirm for France, Germany, Italy and the UK, both using the primary surplus and its two separate components (cyclical and structural), the conclusions of Canzoneri et al. (2001), so that a MD regime would also apply to the experience of these countries.

In our empirical approach we will try to perform a systematic analysis of the relation between primary surplus and debt for the case of EMU countries, in the line of Bohn (1998). Additionally, this approach will provide us with an indirect test on the solvency of public finances in EMU countries. More specifically, we will start by estimating cointegration relationships between primary surplus and debt (both as ratios to GDP), on a country-to-country basis, for the EMU members over the period 1970–2005. However, since this method might not be able to fully distinguish between a FD and a MD regime (see below), we will try to avoid this problem by performing Granger-causality tests between primary surplus and debt. In addition, we will test for the eventual presence of structural breaks in the estimated relationships. Finally, in order to check the robustness of our results, we will present the impulse–response functions of debt to innovations in the primary surplus, following the approach of Canzoneri et al. (2001).

The paper is organized as follows. The underlying theoretical framework is briefly described in Section 2, the methodology and empirical results are presented in Section 3, and the main conclusions are summarized in Section 4.

2. Theoretical background: The interactions between monetary and fiscal policies

In general terms, the FTPL states that concerns about fiscal solvency can condition the policy of the central bank, even when the latter has been granted legal independence. An antecedent of this claim can be found in Sargent and Wallace's (1981) contribution, where the interaction of fiscal and monetary variables in the financing of deficits, through taxes and seigniorage, was already analyzed. In this way, in some cases monetary policy should "accommodate" the path of expenditures and revenues chosen by the