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Cost of borrowing shocks and fiscal adjustment ☆

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ABSTRACT

Do capital markets impose fiscal discipline? To answer this question, we estimate the fiscal response to a change in the interest rate paid by 14 European governments over four decades in a panel VAR, using sign restrictions to identify structural shocks. A jump in the cost of borrowing leads to an improvement in the primary balance although insufficient to prevent a rise in the debt-to-GDP ratio. Adjustment mainly takes place via rising revenues rather than falling primary expenditures. For EMU countries, the primary balance response was stronger after 1992, when the Maastricht Treaty was signed, suggesting an important interaction between market discipline and fiscal rules.

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> *… The [Irish] Government has today decided that an overall [fiscal] adjustment of €15 billion over the next four years is warranted … The key reasons for the significant increase from the figure announced in Budget 2010 are lower growth prospects … and higher debt interest costs. (Statement by the Irish Government, 26 October 2010).*[1]

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Disclaimer: The views expressed are solely those of the authors and do not necessarily reflect those of the ECB.

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[1] http://www.finance.gov.ie/viewdoc.asp?DocID=6552&CatID=1&StartDate=01+January+2010.

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1. Introduction

During the European sovereign debt crisis, sharp rises in yields on government bonds have been met with promises from governments to accelerate and expand their fiscal consolidation plans. To the extent the promises are acted upon, this behavior can be interpreted as a form of market-imposed fiscal discipline. Against this background, we examine empirically, over a long time series and across several European Union (EU) countries, the proposition that governments systematically respond to increases in their cost of borrowing by improving their fiscal positions.

In doing so, the paper addresses an issue that, to date, has received little attention in academic research. As pointed out by Bayoumi et al. (1995), analyses of whether fiscal authorities are subject to market discipline should address two questions. First, do markets adjust the terms at which they lend to governments when fiscal positions change? Second, do governments adjust their fiscal positions when their cost of borrowing changes? A great deal of research has investigated the first question in isolation.[2] However, the hypothesis of market-induced fiscal discipline implies simultaneous responses of government bond market prices and fiscal policies, thus suggesting that the price and quantity of public debt are jointly determined. Yet, the causation from the cost of public debt service to fiscal policy decisions has, until recently, received little attention in the empirical literature, although a few recent papers have contributed to reducing this gap.[3] This paper aims to bring some balance to the joint determination of fiscal variables and the cost of government borrowing by empirically assessing the budgetary response to exogenous interest rate changes in a dynamic context.

To motivate our empirical analysis, we present simulations of a simple model, in which the government of a small open economy optimally commits to a state-contingent path of government spending, distortive taxes, and debt. The government is able to issue debt on capital markets, paying the world interest rate plus a risk premium. In this setup, an exogenous rise in the risk premium demanded by investors for holding this debt generates a tightening of the budgetary path.[4] The optimal speed and composition for budget tightening is dependent on several structural features of the economy, including the initial debt ratio, the cost of adjusting fiscal instruments, and the presence of fiscal rules.

The model based simulations are then confronted with empirical estimates of the response of fiscal variables to exogenous changes in the government's cost of borrowing. We use a vector autoregressive (VAR) model for a panel of 14 European countries and annual data from 1970 to 2011. The empirical

[2] Since the work of Evans (1985), there has been a large empirical literature on the effect of fiscal policy on long-term interest rates. Some more recent studies include Faini (2006), Ardagna et al. (2007), Attinasi et al. (2009), Laubach (2009), Schuknecht et al. (2009) and Afonso and Rault (2011).

[3] For instance, Theofilakou and Stournaras (2012) estimate a fiscal rule for a panel of European countries and find evidence in favor of including government bond yields in governments' reaction functions. Their methodological approach is different from that used here, as they estimate a single equation model. In a recent contribution to this literature, Dell'Erba et al. (2015) study whether market pressure has acted as a trigger for fiscal consolidation in a sample of OECD countries over a 30 year horizon. In contrast to our approach, which uses changes in the primary balance as a summary metric of the fiscal response and treats fiscal contractions and expansions symmetrically, Dell'Erba et al. (2015) focus on specific multi-year fiscal adjustment episodes. Mauro et al. (2013) assess the interaction between the sovereign cost of borrowing and the level of public debt in a panel of 55 countries over up to two centuries and find that the primary balance response to changes in government debt slightly increases when sovereign bond yields are higher. Similar to our paper, Debrun and Kinda (2013) model the trade-off between primary balance adjustment and higher debt service in response to a cost of borrowing shock; on this basis, they estimate the primary balance response to higher interest expenditures in a single-equation, dynamic panel setting for advanced and emerging countries.

[4] Cost of borrowing shocks might originate from various sources, including for instance a change in global risk aversion, shifts in the supply and demand of foreign sovereign debt securities on account of additional countries gaining access to global financial markets, or idiosyncratic vulnerabilities that lower the perceived creditworthiness of certain issuers. The exact source of the cost of borrowing shock is immaterial for the budgetary response of the fiscal authorities, as predicted by the model. In any case, the cost of borrowing shock raises the interest payments and, via this channel, introduces a trade-off between fiscal tightening and debt sustainability concerns. The key challenge in the empirical part is then to separate such shocks from other disturbances (for instance to real activity and inflation) that endogenously affect both the budgetary position and sovereign borrowing costs.