Strategic fiscal policies and leadership in a monetary union

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A B S T R A C T

We consider the strategic interactions between fiscal and monetary policies in a monetary union when a fiscal authority enjoys a strategic advantage. In particular we depart from the standard literature on strategic interactions in monetary unions in that we solve a three-stage game, where the two national fiscal authorities do not play simultaneously. We find that there is always an incentive for the leader fiscal authority to play a three-stage game, which leaves the other fiscal authority worse off under demand shocks. This choice leads to more (less) volatile union-wide fiscal stance for demand (supply) shocks compared to the standard narrow-coordination case. This volatility is positively related to demand shocks' asymmetries.

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1. Introduction

Fiscal policy in monetary unions has been a key concern for policymakers, not only in the context of the recent Eurozone crisis, but also because it can play a key role in macroeconomic stabilization. For example, it can provide an efficient response to asymmetric shocks in the absence of wage and price flexibility or high labor mobility (e.g., Alves and Afonso, 2008). The conduct of national fiscal policies in a multinational common currency area, however, poses a number of challenges, some of which pertain to the strategic behavior of national fiscal authorities. An extant literature uses game-theoretic frameworks to analyze such policy interactions, especially since the launch of the Economic and Monetary Union (EMU) in Europe. Such models typically assume that national fiscal authorities act simultaneously in a non-cooperative game that represents the decentralized case. It is typically assumed that each fiscal authority does not face uncertainty about the behavior of the other fiscal authorities and/or each fiscal authority knows the structural parameters of the other economies (e.g., Buti, 2003).[1] This implies a minimum degree of consensus among national fiscal authorities on their objectives and constraints (Beetsma et al., 2001), or, in the context of the EMU, implementation of the annual Broad Economic Policy Guidelines (BEPGs) of the monetary union member-states (e.g., Van Aarle et al., 2002; Lambertini and Rovelli, 2004a). As the standard decentralized case of fiscal policy interactions relies on the assumption of

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[1] Ferre (2012) examines the effect of uncertainty about one country's compliance with the Stability and Growth Pact (SGP).

information sharing among the national fiscal authorities, there are authors that refer to this case as the 'narrow coordination' case (Von Hagen and Mundschenk, 2003; Ferre, 2008), where the 'broad coordination' case is the centralized one captured by a cooperative Nash game.[2] This paper relaxes the assumption that national fiscal authorities pursue a simultaneous-move game by introducing the possibility that one country (or group of countries) enjoys a strategic (informational) advantage over the other, which renders the country as the leader.

A leadership advantage can originate from various sources. First, an unequal distribution of power among a monetary union's member-states may exist. Power is defined as the ability to influence decisions (Baldwin and Wyplosz, 2004). Moreover, some countries may enjoy a pivotal role in the design of fiscal policy (see, e.g., Feldstein, 2013; Wyplosz, 2014).[3] Second, specific structural and/or institutional features may allow one country to assume leadership. Actually, as Daniels and VanHoose (1998) suggest, a solid rationale for a Stackelberg/leadership policy regime requires appealing to a structural or institutional feature. In this paper we introduce a structural heterogeneity across the members of the monetary union to allow for a leader–follower fiscal game. In particular, we assume that one fiscal authority relies on automatic fiscal stabilizers along with discretionary fiscal policy to stabilize the economy in the face of shocks while the other relies exclusively on discretionary fiscal policy. Typically, automatic fiscal stabilizers operate through taxes (e.g., labor, income, consumption, and social security contributions), unemployment benefits, and age and health-related social expenditures (Veld et al., 2013). There is also evidence that the effectiveness of automatic stabilizers is related to government size (see, e.g., Gali, 1994; Afonso et al., 2010). According to Veld et al. (2013), cross-country differences on the effectiveness of automatic stabilizers reflect the degree of progressivity of the tax system, the importance of unemployment benefits and the size of government. Moreover, such differences may reflect different models of welfare (state) capitalism in Europe, following the classification by Esping-Andersen (1990).

The vast majority of the literature on strategic interactions in monetary unions considers the policy game between the common central bank and the national fiscal authorities assigning a leadership role to the latter (see, e.g., Beetsma and Bovenberg, 1998; Andersen, 2005, 2008; Uhlig, 2003; Ferre, 2008, 2012; among others).[4] Fiscal policy is generally considered more sticky relative to monetary policy, as it involves sluggish budgetary decision processes that make the fiscal stance much harder to reverse than monetary policy (Beetsma et al., 2001). Furthermore, under fiscal leadership the monetary authority is able to commit (Andersen, 2008), retaining the benefits of an independent monetary policy (Uhlig, 2003). We follow the stickiness argument to assign a leadership role to one of the fiscal authorities. In particular, we assume that the fiscal authority leading the game is the one with the more sluggish discretionary fiscal policy. Fatas and Mihov (2010) find that countries with strong automatic stabilizers have less need to use discretionary fiscal policy. On the contrary, countries that do not have strong automatic stabilizers rely more on discretionary fiscal policy. Thus, the country with the automatic stabilizers has a strategic advantage over the country that relies solely on discretionary fiscal policy. The latter would be more flexible in its decision-making process, reacting to changes in the leader's fiscal stance. Thus, we assume that first plays the fiscal authority with the automatic stabilizers, then the fiscal authority that relies exclusively on discretionary fiscal policy, and, finally, the monetary authority.

The ordering of moves along with an appropriate framework to model policy interactions plays a prominent role in the analyses of the policy mix and macroeconomic outcomes in monetary unions (Beetsma and Giuliodori, 2010). In this paper we present a sequence of moves that departs from the typical case of narrow coordination among national fiscal authorities in monetary unions. We assume a fiscal strategic advantage based on structural heterogeneities among member-states (differences in the balance between automatic stabilizers and discretionary policy). A question that emerges is whether this leadership advantage makes the leader fiscal authority better off and therefore whether the potential leader has the incentive to pursue the three-stage game. We focus on the comparison of the two possible fiscal games, namely the leader–follower and the simultaneous-move one, with the latter corresponding to the standard case of narrow coordination. To analyze the incentives for the two fiscal authorities toward these two fiscal games, we follow Ferre (2008) who explores the fiscal authorities' incentive to cooperate and Lambertini and Rovelli (2004b) who analyze leadership incentives between a fiscal and a monetary authority in a closed economy. Moreover, we examine the implications of the leader–follower game for the monetary union, focusing on the volatility of the union-wide fiscal stance. We use a simple static two-country monetary union model mainly based on Ferre (2008). The stabilization of the average fiscal stance in the monetary union emerges as an important policy concern, especially in the aftermath of the Euro-zone sovereign debt crisis.

The structure of the paper is as follows. Section 2 presents a brief review of the literature, Section 3 presents the model and relates it to the literature, Section 4 solves the three-stage game, Section 5 analyzes the national fiscal authorities' welfare and incentives, Section 6 explores the impact of the leader–follower fiscal game on the volatilities of union-wide fiscal stance and nominal interest rates and, finally, Section 7 concludes.

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[2] We follow a similar terminology in this paper referring to the simultaneous-move case that involves the non-cooperative Nash game as the narrow coordination case.

[3] Chortareas and Mavrodimitrakis (2016) assume a fiscal strategic advantage in a model that considers the ability of monetary policy to fully stabilize pure demand shocks in a monetary union.

[4] In a recent paper, Libich et al. (2015) explore a game of dynamic, as opposed to static, leadership between a fiscal and a monetary authority, allowing for costs to the leader authority as the revision opportunity may arrive later in the game and payoffs accrue over time.