



The case for fiscal rules[☆]

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ABSTRACT

This paper estimates the effects of fiscal institutions on fiscal policy outcomes, addressing issues related to measurement and endogeneity in a novel way. Recently developed indices, based on partially ordered set theory, are used to quantify the stringency of fiscal rules. Identification of their effects is achieved by exploiting the exogeneity of institutional variables (checks and balances, government fragmentation, inflation targeting), which are found to be relevant determinants of fiscal rules. Our two-stage least squares estimates for (up to) 74 countries over the period 1985–2012 provide strong evidence that countries with more stringent fiscal rules have higher fiscal balances (lower deficits), lower interest rate spreads on government bonds, and lower output volatility.

1. Introduction

Over the last decades, a growing number of countries have introduced or strengthened fiscal rules to reduce their governments' deficit bias, increase confidence in fiscal policy, lower costs of public borrowing, and to ensure the sustainability of public debt. Yet the effectiveness of fiscal rules in achieving these goals is still subject to debate, not least because empirical studies on the effects of fiscal rules are confronted with two major obstacles: measurement and endogeneity. The present paper addresses both issues in a novel way.

Fiscal rules are typically characterized by numerous properties in terms of both legislative acts and informal agreements, which are often ordinal in nature and not comparable with each other. This makes it difficult to construct a single measure of fiscal rules that can be utilized to estimate their effects on outcome variables such as the fiscal balance. Previous studies have used either dummy variables indicating the existence of fiscal rules (e.g., Candelon et al., 2010; Galí and Perotti, 2003) or aggregated a subset of the information on fiscal institutions into one composite index (e.g., ACIR, 1987; Alesina et al., 1999; Debrun et al., 2008), which involves the assignment of (cardinal) values and weights to mainly ordinal properties. The unavoidably high degree of subjectivity involved may explain the partly conflicting results in the literature, the lack of a widely accepted measure of fiscal rules, and the absence of a broad agreement on their effects.

In the present paper, we are the first to make use of a novel dataset

by Badinger and Reuter (2015), who employ partially ordered set (POSET) theory to derive indices of the stringency of fiscal rules for a sample of 81 countries over the period 1985–2012. The virtue of the POSET approach is that it is well established in the natural and technical sciences, builds on rigorous mathematical concepts, takes the ordinal nature of the data seriously, fully exploits the information contained in the data, and reduces the need for subjective choice to a minimum.

Fiscal rules will typically be endogenous in many empirical applications of interest, e.g., due to reverse causality since governments may have an incentive to change fiscal institutions in response to changes in fiscal performance (Poterba, 1994). In fact, according to IMF (2009), fiscal conditions themselves are the best predictors of the likelihood of a country having fiscal rules. Moreover, there could be unobserved, omitted variables (such as voter tastes) affecting both fiscal outcomes and fiscal rules. Finally, even the most carefully constructed measures of fiscal rules cannot be expected to capture countries' fiscal institutions entirely and accurately; as a consequence, measures of fiscal rules are likely to be prone to classical measurement error.

Recent studies indicate favorable effects of fiscal rules on fiscal balances (e.g., Dahan and Strawczynski, 2013; Hallerberg et al., 2009; Fabrizio and Mody, 2006; Neyapti, 2013), interest rates (e.g., Iara and Wolff, 2014), or output volatility (e.g., Fatás and Mihov, 2006). Yet in spite of their suggestive findings, previous studies are subject to some

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shortcomings. Given the lack of comprehensive data on fiscal rules (till recently), most results have been obtained for a single or a small group of countries; moreover, a large variety of measures for fiscal rules constructed from different sources (dummies or composite indices) have been used. This makes generalizations and comparisons of the results difficult. The POSET measures of fiscal rules used in the present paper, which are derived by Badinger and Reuter (2015) from the recently released (IMF, 2012) database, take up these issues by providing commonly defined measures of the stringency of fiscal rules for a large sample of countries. Finally, the endogeneity of fiscal rules has not been addressed in a comprehensive and systematic manner so far. One notable exception is Debrun et al. (2008), who study the effect of fiscal rules on fiscal policy outcomes (overall and cyclically adjusted primary balance, debt level); they use the lagged fiscal rule index and a dummy for the commitment form of fiscal governance (centralized vs. decentralized) as instruments, but find virtually no difference between the least squares and instrumental variable estimates.

The contributions of the present paper are: (i) presenting the first application of the new POSET measures of fiscal rules by Badinger and Reuter (2015), (ii) carefully addressing the endogeneity of fiscal rules when investigating their effects, and (iii) thereby identifying instrumental variables which can be used in future studies even with large country and time samples. Through these steps we address the major shortcomings in the literature (as mentioned above) and (iv) afterwards analyse the effects of fiscal rules in the light of the new setting and (v) compare the results with traditional econometric approaches. The present paper considers the effects of fiscal rules on fiscal balances, government bond interest rate spreads, and output volatility, carefully addressing endogeneity concerns by first testing for (arguably exogenous) determinants of fiscal rules. In particular, a country's system of checks and balances, its government fragmentation, and an indicator variable for inflation targeting regimes turn out to be relevant instruments, which are then used in a two-stage least squares (2SLS) approach to estimate the effects of fiscal rules on the aforementioned outcome variables.

Our estimates for a panel of up to 74 countries (the number depending on data availability) over the period 1985–2012 yield several interesting results: (i) fiscal rules in fact turn out endogenous. (ii) Countries with more stringent fiscal rules have higher fiscal balances and lower interest rate spreads on government bonds. (iii) Fiscal rules are negatively related to output volatility, although their stabilizing effect materializes indirectly by reducing fiscal policy volatility. (iv) The 2SLS estimates are always larger (in magnitude) than the LS estimates; this finding is consistent with endogeneity due to classical measurement error or reverse causality, where fiscal rules are introduced or strengthened in times of bad fiscal performance.

The remainder of this paper is organized as follows: Section 2 reviews the arguments for fiscal rules and motivates the empirical analysis. Section 3 describes the empirical setup and identification strategy. Section 4 presents the estimation results. Section 5 concludes.

2. Fiscal rules and fiscal policy

Several rationales for constraining fiscal policy makers' discretion by fiscal rules have been put forward in the literature. One key argument resembles closely the one originating from the 'rules vs. discretion' framework in the field of monetary policy, originating from the seminal work by Kydland and Prescott (1977). Specifically, Bianchi and Menegatti (2012) show that fiscal policy, much like monetary policy, is subject to a time inconsistency problem creating a deficit bias that can be eliminated by the use of fiscal rules.

Further arguments stem from the political-economy literature, which identifies several incentive structures resulting in a deficit bias:

- (i) *Common pool theory*: Many decision makers are involved in the budgetary process and each of them may be lobbied by or depend

on specific interest groups. As a consequence, the likelihood of spending and large deficits increases with the number of decision makers. Egger and Koethenbueger (2010) find strong evidence for such 'pork barrel spending' using German municipality level data; Roubini and Sachs (1989) and Alesina and Perotti (1995) document public spending pressures associated with political fragmentation for OECD countries.

- (ii) *Information asymmetry*: Decision makers have more information on the true fiscal position than voters, which can be used for (promising) spending increases or tax cuts before elections, creating a political business cycle (see, e.g., Brender and Drazen, 2005; Shi and Svensson, 2006).
- (iii) *Impatience and short-sightedness*: Governments tend to discount future events (e.g., future public spending) or future election periods at a higher rate than voters because politicians may lose their office in the short-run (see, e.g., Woo, 2005; Van der Ploeg, 1984; Rogoff and Bertelsmann, 2010).
- (iv) *Political competition*: Governments, anticipating the possibility of being replaced in the future, have an incentive to reduce the room for fiscal maneuver for future governments by accumulating debt (Persson and Svensson, 1989; Alesina and Tabellini, 1990).
- (v) *Spillovers and outside pressure*: Government on the sub-national level or in monetary or fiscal unions may fail to internalize all spillover costs (such as higher interest rates on debt) into their decision making. Moreover, fiscal policy can interfere with and lead to sub-optimal outcomes of monetary policy, e.g., in inflation targeting regimes (Dixit and Lambertini, 2003; Combes et al., 2014).

For all these reasons, unconstrained fiscal policy is likely to result in excessively high deficits and debt levels, distorted trust, lack of confidence in the sustainability of public finances, and hence in higher costs of borrowing. While fiscal rules do not eliminate the incentives underlying the deficit bias, they do limit the room for maneuver of fiscal policy makers and the opportunities to act in a biased way.

Another rationale for binding the budgetary process, unrelated to the deficit bias, has been put forward by Fatás and Mihov (2003, 2006). They argue that fiscal constraints lead to lower volatility of discretionary fiscal policy, lower output volatility and thereby enhanced economic growth, which may result in a virtuous circle that boosts sustainability (Fatás and Mihov, 2010).

This reasoning is related to several policy makers' arguments against the use of discretionary fiscal policy as a macroeconomic stabilization tool: due to lags in recognition, preparation of, the decision on and implementation of discretionary fiscal policy measures, they often result in a potentially destabilizing pro-cyclical policy stance (Duisenberg, 2003).

Finally, the introduction of fiscal institutions (like fiscal rules) has also been recommended based on the more general role of institutions in reducing transaction costs (see, e.g., North, 1992).

According to this reasoning and provided that fiscal rules reduce (the room for exploiting) the deficit bias and fiscal policy volatility, one would expect fiscal rules to affect fiscal policy outcomes – the more so, the more stringent they are. In particular, countries with more stringent fiscal rules should have (i) a higher fiscal balance (a lower deficit), (ii) a smaller risk premium on government bonds, and (iii) lower output volatility. These hypotheses will be tested in the following.

3. Estimation framework

For an empirical assessment of the effects of fiscal rules on our outcome variables of interest, we consider panel data models of the form

$$y_{i,t} = \alpha + \gamma FR_{i,t} + x_{i,t}\beta + \mu_i + \varepsilon_{i,t}, \quad (1)$$

where y is the dependent variable, FR is a measure of the stringency of

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