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Multiyear budgets and fiscal performance: Panel data evidence☆

Razvan Vlaicu [a,*], Marijn Verhoeven [b], Francesco Grigoli [c], Zachary Mills [d]

[a] University of Maryland, Department of Economics, and Department of Government and Politics, 3114 Tydings Hall, College Park, MD 20742, USA
[b] The World Bank, Poverty Reduction and Economic Management, 1818 H Street, NW, Washington, DC 20043, USA
[c] IMF, Fiscal Affairs Department, 1900 Pennsylvania Ave., NW, Washington, DC 20431, USA
[d] The World Bank, Public Sector and Governance Unit, 1818 H Street, NW, Washington, DC 20043, USA

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ABSTRACT

In the last two decades more than 120 countries have adopted a multiyear budget process (Medium-Term Framework, or MTF) that enables the central government to set multiyear fiscal targets. This paper analyzes a newly-collected dataset of worldwide MTF adoptions during 1990–2008. It exploits within-country variation in adoption in a dynamic panel framework to estimate MTFs' impacts on aggregate as well as sectoral measures of fiscal performance. We find that on average multiyear budgeting improves budget balance by about 2 percentage points with more advanced MTF phases having a larger impact. Higher-phase MTFs also reduce health spending volatility, while only the top-phase MTF has a measurable impact on health sector technical efficiency.

1. Introduction

It is generally accepted that fiscal performance is a key factor in a country's long-run growth.[1] Understanding the determinants of fiscal performance has thus become a central topic of research. A recent strand of literature has emphasized the role of *budget institutions* in affecting fiscal performance. Budget institutions are the formal rules and procedures according to which budgets are drafted, approved, and implemented. They can take the form of either (i) laws establishing ex ante constraints on the government's conduct of fiscal policy, such as balanced budget and debt ceiling provisions, or (ii) bargaining rules between the executive and the legislature, such as line-item executive veto or legislative amendment rules.

In the last two decades the majority of the world's nations have adopted laws instituting multiyear fiscal targets, known as *Medium-Term Frameworks* (*MTFs*). First introduced in a small set of developed countries to contain expenditure overruns in the 1980s, MTFs spread rapidly during the 1990s and 2000s. From 11 countries in 1990 the number of adopters grew to 132 at the end of 2008; see Fig. 1. MTFs translate macro-fiscal objectives and constraints into broad budget aggregates as well as detailed expenditure plans by sector. The rationale of this budget institution is to enable the central government to more adequately incorporate future fiscal challenges into the annual budgets, thereby reducing an undue emphasis on short-term goals.

The key public finance problem that multiyear budgets are designed to overcome is dynamic fiscal inefficiency. This can manifest itself as strategic obstruction of future political opponents (Alesina and Tabellini, 1990), electoral manipulation through budget cycles (Drazen, 2000; Brender and Drazen, 2005), dynamic common pool (Velasco, 1999), or time-inconsistent voters (Bisin et al., 2011). Through dynamic distortions government spending and borrowing deviate from the social planner level, resulting in suboptimally high deficits and debt.[2] Dynamic inefficiency seems particularly inherent in a *yearly* cycle of budget

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* Corresponding author.
E-mail addresses: vlaicu@econ.umd.edu (R. Vlaicu), mverhoeven@worldbank.org (M. Verhoeven), fgrigoli@imf.org (F. Grigoli), zmills@worldbank.org (Z. Mills).

[1] See, e.g., Fischer (1993), Easterly and Rebelo (1993), Easterly et al. (2008).

[2] To the extent that MTFs increase budget transparency and accountability they may also alleviate static public finance distortions such as free riding (Weingast et al., 1982), rent seeking (Persson et al., 2000; Besley and Smart, 2007), and clientelism (Keefer and Vlaicu, 2008).

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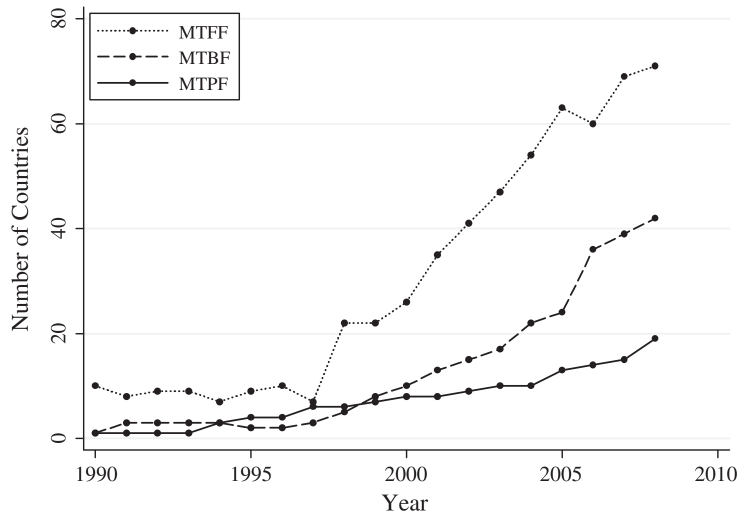

Notes: Authors' calculations based on a sample of 181 countries for 1990-2008. More solid lines indicate more advanced MTF phases.

Fig. 1. MTF growth worldwide, 1990–2008.

planning and implementation. Wildavsky (1986, p. 317) makes this point as follows:

> "Multiyear budgeting has long been proposed as a reform to enhance rational choice by viewing resource allocation in a long-term perspective. One year, it has been argued, leads to short-sightedness, because only the next year's expenditures are reviewed; overspending, because huge disbursements in future years are hidden; conservatism, because incremental changes do not open up large future vistas; and parochialism, because programs tend to be viewed in isolation rather than in comparison with their future costs in relation to expected revenue."

At the basis of an MTF is a commitment by the budget actors to a medium-term, typically two to four years, fiscal trajectory.[3] Thus, it can be seen either as an ex ante constraint on the government, similar to a balanced budget requirement (Alesina and Perotti, 1996), or as a "contract approach" to centralizing the budget process through a broad-based political agreement (von Hagen and Harden, 1995).[4] While the theoretical underpinnings of multiyear budgeting are well understood, the empirical evidence on its impact is scarce. The main obstacle has been the shortage of data on MTF adoption. An additional impediment has been the elusiveness of plausible sources of exogenous variation in country-level institutions in general (Acemoglu, 2005) and budget institutions in particular.[5]

When an MTF is implemented well we should observe (i) spending that is limited by resource availability (aggregate fiscal discipline), (ii) predictable budget allocations across sectors (sectoral stability), and (iii) cost effective public goods delivery (technical efficiency). We classify MTFs into three *phases*: Medium-Term Fiscal Framework (MTFF, which establishes the aggregate resource envelope), Medium-Term Budgetary Framework (MTBF, which focuses on the allocation of spending across sectors, programs, and agencies), and Medium-Term Performance Framework (MTPF, which sets within-sector performance targets). The three MTF phases are "nested": an MTPF contains an MTBF, which in turn contains an MTFF.[6]

This paper is the first large-sample empirical study of the MTFs' impacts on fiscal performance. We collect and analyze adoption data for a panel of 181 countries over the period 1990–2008, the most comprehensive dataset on worldwide MTF adoption to date. We provide a system for classifying MTFs into three phases, based on their level of sectoral disaggregation, and estimate the effects of each phase on aggregate as well as sectoral measures of fiscal performance.

The rich time variation in the data allows us to model the dynamics of the fiscal adjustment process as well as address potential endogeneity of MTF to fiscal performance. We use a Difference Generalized Method of Moments (D-GMM) approach to estimate dynamic panel data models of fiscal performance. These models are designed for "small T large N" panels and, when correctly applied, generate valid internal instruments that hold the promise of overcoming identification issues in the absence of valid and/or strong external instruments, a typical hurdle with country-level data.[7]

Our empirical results show that multiyear budgeting improves fiscal discipline by about 2 percentage points of budget balance (surplus/deficit) to GDP, on average. The effect is larger for the more advanced phases. We also find that an MTBF and an MTPF improve sectoral stability, by reducing the volatility in per capita health spending (in purchasing power parity dollars, PPP$), and that an MTPF also contributes to health sector technical efficiency, measured as technical efficiency scores from a stochastic frontier model of public health delivery. We probe the credibility of these estimates by carrying out a detailed analysis of instrument strength and instrument validity and by exploring sensitivity to alternative specifications. We keep the empirical model simple and transparent by restricting the number of moment conditions through a parsimonious lag structure and collapsed instruments.

Our results are more supportive of MTF effectiveness than the conclusions of prior work. Bevan and Palomba (2001), Le Houerou and Taliercio (2002), Holmes and Evans (2003), and Oyugi (2008), based on case studies of about a dozen African countries, conclude that the budget process has generally not improved after the adoption of an MTF, while Boex et al. (2000) and Oxford Policy Management (2000) raise questions of adequate implementation. Wescott (2008) and Filc and Scartascini (2010), using data from Central and Latin America, found mixed results and emphasized the importance of piloting MTFs in areas where they are likely to deliver the largest payoffs.[8]

[3] See Auerbach (2006) for a political economy model of optimal budget window length.

[4] As opposed to a "delegation approach" where one actor, typically the executive, receives enhanced powers.

[5] Fabrizio and Mody (2006), discussing the country-level literature, notice that "Identifying an 'instrument,' or a variable that influences the fiscal institutions but is not itself influenced by budgetary outcomes, is a hurdle that no one has yet crossed." (p. 703). One way to circumvent econometric identification issues has been to study similar institutions operating at sub-national levels of government. The state-level literature does propose instruments that help identify budget institutions' impacts; see, e.g., Knight (2000).

[6] This taxonomy borrows from that of Castro and Dorotinsky (2008), although the nesting concept is an innovation of our dataset.

[7] The D-GMM approach was first proposed by Holtz-Eakin et al. (1988) and later developed by Arellano and Bond (1991). Recent refinements include Windmeijer (2005) and Roodman (2009).

[8] Drawing on extensive operational experience, Schiavo-Campo (2009) puts forward conceptual arguments for a gradual introduction of these institutions and emphasizes the potential downsides of instant reform.