



# Government efficiency, institutions, and the effects of fiscal consolidation on public debt



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## ABSTRACT

We study the evolution of the ratio of public debt to GDP during 132 fiscal episodes in 21 OECD countries in 1981–2008. Our main focus is on debt dynamics during 40 consolidation periods. To define these periods we use data on the evolution of the underlying cyclically adjusted primary balance, and as such avoid biases that may be induced by one-off budgetary measures. The paper brings new evidence on the role of public sector efficiency for the success of fiscal consolidation. First, we confirm that consolidation programs imply a stronger reduction of the public debt ratio when they rely mainly on spending cuts, except public investment. Government wage bill cuts, however, only contribute to lower public debt ratios when public sector efficiency is low. Second, we find that a given consolidation program will be more effective in bringing down debt when it is adopted by a more efficient government apparatus. Third, more efficient governments adopt consolidation programs of better composition. As to other institutions, consolidation policies are more successful when they are accompanied by product market deregulation, and when they are adopted by left-wing governments. By contrast, simultaneous labor market deregulation may be counterproductive during consolidation periods.

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## 1. Introduction

The sharp increase in public debt ratios and growing concern about the sustainability of public finances since the recession in 2008–09 have imposed the need for a significant fiscal adjustment and credible debt reduction strategies in most OECD countries.

Many countries have gained experience with fiscal consolidation programs in the past two or three decades. Analysis of the effects of fiscal consolidation has also been high on the agenda of many researchers since seminal works by [Giavazzi and Pagano \(1990\)](#) and [Alesina and Perotti \(1995\)](#). Most of these researchers have tried to explain the probability of success in debt or deficit reduction (e.g. [Afonso and Jalles, 2012](#); [Alesina and Ardagna, 1998](#); [Ardagna, 2004](#); [Guichard et al., 2007](#); [Larch and Turrini, 2011](#); [McDermott and Wescott, 1996](#); [Schaltegger and Feld, 2009](#); [Tagkalakis, 2009](#)). Others focus on the evolution of economic growth, private consumption, or private investment during and after consolidation periods (e.g. [Alesina and Ardagna, 2012](#); [Alesina et al., 2002](#); [Ardagna, 2004](#); [Giavazzi and Pagano, 1996](#); [Hjelm, 2002](#); [IMF, 2010a](#)).

This paper contributes to the literature by studying directly the evolution of the ratio of public debt to GDP during and after fiscal consolidations. We embed this study in an empirical analysis of 132 fiscal episodes in 21 OECD countries in 1981–2008. To the best of our knowledge, only one study has investigated the dynamics of the public debt ratio during consolidation periods before (see [Heylen and Everaert, 2000](#)). Given that ultimately it is the evolution of public debt that matters most in a

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consolidation context, this scarcity of available studies is surprising. A particular advantage of our approach is that it allows to empirically exploit the whole variation in outcomes after consolidation programs. In our view, changes in the public debt to GDP ratio by for example  $-10$ ,  $-1$ ,  $+5$  or  $+25$  percentage points are very different outcomes, which are worth being explained, rather than being restricted to either 'success' cases or 'failures'. Compared to Heylen and Everaert (2000) we make progress along several lines. First, we include more recent fiscal episodes. Second, we also test more recent hypotheses on the success or failure of fiscal consolidation. We take Alesina and Perotti's well-known composition hypothesis as our starting point, and also control for the influence of the international macroeconomic environment and of any preceding devaluation. More recent hypotheses concern the influence of labor and product market institutions and institutional reform, and the ideological orientation of the government. As we document in this paper, the literature has not come up with unambiguous answers concerning the effects of these institutions. Moreover, they have hardly been studied simultaneously. Most importantly, we put forward a new hypothesis emphasizing the role of public sector efficiency. We show that the level of public sector efficiency matters for the effects of any given consolidation program, as well as for the characteristics of the programs (size, composition) that governments adopt. We study all hypotheses simultaneously within one common framework, and with one dataset. Third, when defining fiscal episodes, we take the IMF (2010a) criticism seriously and focus on the evolution of underlying cyclically adjusted primary budget balances. The influence of one-off measures is excluded when we select fiscal episodes and test composition effects. Finally, our analysis allows to distinguish short-run effects of fiscal adjustment policies on the debt to GDP ratio, i.e. effects during the adjustment period, from more persistent longer run effects.

The structure of this paper is as follows. In Section 2 we define 132 fiscal episodes in 21 OECD countries since 1981. Among these, 40 are classified as consolidation episodes, 29 as expansions. The others are 'neutral' periods. In Section 3 we review some of the existing hypotheses on the determinants of the success or failure of fiscal consolidation, in particular those where institutions are important, and we refer to the results of related empirical studies. In addition, we launch a new hypothesis on the role of public sector efficiency. In Section 4 we derive our empirical specification for the evolution of the ratio of public debt to GDP, and discuss our estimation methodology. Section 5 contains the results of our empirical work. We conclude our paper and summarize our main results in Section 6.

## 2. Fiscal episodes in the OECD, 1981–2008

The fiscal consolidation literature commonly determines consolidation and expansion periods using a criterion based on swings in the cyclically adjusted primary balance in percent of GDP (further *CAPB*). In a recent study, IMF (2010a) criticizes this method. Although the *CAPB* corrects for interest expenditures and business cycle fluctuations, it may sometimes give wrong signals about actual policy changes. Periods in which no specific consolidation measures were taken, were sometimes classified by researchers as consolidations. Also, periods with a deteriorating *CAPB* despite severe consolidation measures were sometimes not selected (IMF, 2010a). An important element is the influence of one-off budgetary measures. When one-off measures are taken, they may typically imply a temporary improvement of the reported *CAPB*, followed by a subsequent deterioration when their effect disappears. From the reported *CAPB*, one might erroneously conclude that a fiscal consolidation year was followed by an expansion year, whereas in reality there was no deliberate policy at all. A second problem is that traditional cyclical adjustment methods may sometimes suffer from measurement errors. They may for example fail to remove swings in tax revenue that are associated with (cyclically affected) asset price movements.

Instead of the *CAPB* as a selection variable for consolidation and expansion periods, we use the underlying cyclically adjusted primary balance in percent of potential GDP (*CAPBu*). The latter corrects the *CAPB* for one-off transactions and budgetary measures. *CAPBu* data are published by the OECD. Annual data are available since 1980. On the basis of these data, we then distinguish three kinds of fiscal episodes. Each episode is a period of flexible duration in which the *CAPBu* consistently moves in the same direction. Following Heylen and Everaert (2000), a consolidation period is a period of at least two consecutive years when the *CAPBu* improves by at least 2 percentage points. Besides the requirement that the *CAPBu* improves in each single year of the consolidation period, there should be an improvement by at least 0.25 percentage points in the first year of the consolidation period and at least 0.10 percentage points in the final year. With the latter conditions, we hope to exclude years of mere stabilization. Similarly, we define an expansion period as a period of at least two consecutive years when the *CAPBu* deteriorated by at least 2 percentage points. Periods that do not fit our definition of expansion nor consolidation, are labeled 'neutral'. Applying these criteria to 21 OECD countries in 1981–2008 yields 40 consolidations, 29 expansions and 63 neutral periods. Table 1 shows the different consolidation and expansion periods and their changes in the *CAPBu*. We also display the associated change in the gross government debt to GDP ratio (*GD*) up to two years after the end of the period. We list all neutral periods in a companion working paper (see Heylen et al., 2011, their Table 1).

The definition of fiscal episodes is not uniform in the literature. Heylen and Everaert (2000), Guichard et al. (2007) and recently Alesina and Ardagna (2012) also define episodes of flexible duration. Most others, however, specify periods of a fixed number of one or two, and sometimes three years during which the change of the *CAPB* exceeds a chosen number (e.g. Alesina and Ardagna, 1998; Alesina and Perotti, 1995; Larch and Turrini, 2011; Tavares, 2004; von Hagen et al., 2002). An important advantage of our flexible duration approach is that it allows to study homogeneous episodes as well-defined cases. Each episode ends with a change in policy. Among the 40 consolidation episodes that we define, 37 are followed by 'neutral' policy. Clearly, this facilitates consistent estimation of policy effects. If one defines episodes as periods of for example one or two years, the next episode may be of a different kind, but it may also be of the same kind. It may then be more difficult to study longer run debt dynamics.

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