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Unpleasant debt dynamics: Can fiscal consolidations raise debt ratios?

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ABSTRACT

Using PESSOA, a medium-scale DSGE model for a small euro-area economy, we evaluate how fiscal adjustments impact short- and medium-term debt dynamics and output for alternative policy options, and budgetary and economic conditions. Fiscal adjustments may increase the public debt-to-GDP ratio in the short run, even for consolidations carried out in normal times in economies characterized by moderate indebtedness levels. Financial turmoils and hikes in the nationwide risk premia, coupled with high indebtedness levels and stiff fiscal measures, boost the output costs of fiscal consolidations and severely affect their effectiveness in bringing the public debt-to-GDP ratio down in the short term. In the medium run credible fiscal adjustments entail a decline in the public debt ratio, though at potentially very large output losses when carried out under unfavorable budgetary and economic conditions.

1. Introduction

The short-run impact of fiscal policies on the public debt-to-GDP ratio (hereinafter termed debt ratio) was not considered a key issue in developed countries until the inception of the Great Recession. Though fiscal consolidation has long been in the political agenda of European fiscal authorities, the existence of an apparently mechanical negative relationship between the consolidation effort and the debt ratio dictated the mild relevance of the topic. The change in the economic environment brought about by the Great Recession changed the panorama. In an attempt to offset the adverse effects of the 2008 Financial Crisis on aggregate demand and thus on output, fiscal stimulus programmes were adopted worldwide. The debt ratio in the European Union increased from 59 percent in 2007 to 80 percent in 2010, and a similar development was experienced in the Euro Area as a whole, though some peripheral countries presented larger increments. By that time it was already clear that public debt was approaching an unsustainable level in some economies according to market participants, as suggested by the hike in sovereign debt spreads and credit default swaps. Expansionary fiscal policies therefore gave way to harsh consolidation strategies, aimed at restoring sovereign credibility and bringing down public debt. The effectiveness of such policies was limited at best, with debt ratios maintaining an upward trend, particularly in countries characterized

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by high indebtedness levels and engaging in harsh and front-loaded consolidation strategies. The prime examples are Ireland, Greece, and Portugal—countries which registered sharp increases in the debt ratio between 2010 and 2012, despite the implementation of financial assistance programmes implying stiff consolidation measures. Such outcome triggered the debate, both in the economics profession and in the media, about the effectiveness of fiscal adjustments in turbulent periods.[1]

Whether fiscal adjustments are able to put a halt to an upward trend in the debt ratio or even to revert it depends solely on the interaction between the consolidation effort—specifically the decline in the primary deficit ratio—and the strength of the so-called snowball effect—the increase in the value of the outstanding debt ratio induced by the wedge between the nationwide real interest rate and real GDP growth.[2] A higher nominal interest rate raises interest outlays; a decline in GDP inflation boosts the real value of outstanding debt; and lower real GDP growth brings up the value of outstanding debt *vis-à-vis* the economy's real income.[3]

Using *PESSOA*, a medium-scale Dynamic Stochastic General Equilibrium (DSGE) model for a small euro-area economy encompassing non-Ricardian agents, nominal and real rigidities, and financial frictions, we study the dynamics of debt and output that follow credible fiscal consolidations for alternative policy options—namely different instrument mixes and consolidation paces—and budgetary conditions—*viz* initial indebtedness and fiscal effort levels. We address also the role played by changes in the economic environment, specifically temporary increases in the nationwide risk premia and financially induced crisis. It is worth emphasizing that our exercise does not aim at discussing whether fiscal adjustments should be pursued nor addresses the optimal debt target; we assume from the outset that fiscal authorities are forced to carry out a given fiscal consolidation plan.[4] Moreover, we address only the case wherein fiscal adjustments are fully credible, i.e. fiscal authorities commit to lower the debt ratio to a new target level, and this is immediately taken into account by all economic agents.

We show that the snowball effect—triggered by the decline in real GDP growth and inflation—can outweigh the consolidation effort and bring about an increase in the debt ratio in the short term. This outcome may hold under regular conditions—for consolidations carried out in normal times in economies characterized by moderate indebtedness levels—but it is substantially amplified by the initial outstanding debt ratio and the fiscal effort level. A higher initial outstanding debt ratio boosts the snowball effect. A larger effort level triggers a steeper decline in nominal GDP and thus a stronger snowball effect, whose short-run impact on the debt ratio may outweigh that of the stiffer adjustment. Fiscal consolidations performed in periods of crisis and preceded by hikes in the nationwide risk premia place a natural upward pressure in the snowball effect and thus in the debt ratio, forcing fiscal authorities to enlarge the fiscal package to comply with the new fiscal target. Stiffer consolidation measures, jointly with the unfavorable economic environment, entail larger output losses and pressure the debt ratio further upwards. In the medium run, credible fiscal adjustments successfully lower the debt ratio, though at potentially large output losses when carried out under unfavorable budgetary and economic conditions. Output losses can be mitigated if expenditure-side measures and back-loaded adjustments are used instead of revenue-side measures—which depress output for a protracted time period due to important distortionary effects—and front-loaded adjustments—which trigger more severe slumps. Expenditure-side measures and back-loaded adjustments generally entail, however, a larger short-run increase in the debt ratio.[5]

Our conclusions therefore hint that the hike in the nationwide risk premia and the decline in real GDP growth brought about by the Great Recession, coupled with high indebtedness levels registered throughout the turmoil and the stiff fiscal retrenchment that was carried out meanwhile, may have boosted the output losses of fiscal consolidations and severely affected their effectiveness in bringing the public debt ratio down *vis-à-vis* the pre-crisis period.

The article contributes towards the literature in at least two key dimensions. First, to our best knowledge, no other study explicitly addresses short-run debt dynamics in a medium-scale DSGE model. There are a few studies on the subject, but they rely solely on the equation for the law of motion of the debt ratio, an approach often requiring some assumptions as regards to the output effects of fiscal consolidations (e.g. Boussard et al., 2013; Eyraud and Weber, 2013). Moreover, the role of inflation is often ignored in these studies, though it affects the real value of (non-contingent) debt and thus the debt ratio. Second, the spectrum of our analysis—encompassing the main drivers of the law of motion of debt as well as their interactions—captures key changes in economic and budgetary features brought about by the Great Recession, which, to our best knowledge, have not yet been jointly addressed elsewhere. The literature focuses mostly on the role played by the size of fiscal multipliers on debt dynamics, leaving aside other relevant factors and their interactions.

1 See, for instance, the debate taking place at the Vox (http://www.voxeu.org).

2 The long-run effects of fiscal consolidation is a topic with completely different implications, which we do not discuss here. For the long-run benefits of fiscal consolidation see Rother et al. (2010), Mulas-Granados et al. (2010), Barrios et al. (2010) and Almeida et al. (2013b).

3 Fiscal consolidations leading to temporary increases in the debt ratio are often labeled in the literature as "self-defeating" fiscal consolidations (e.g. Boussard et al., 2013; Berti et al., 2013; Eyraud and Weber, 2013), though we avoid this wording throughout the article. It is our understanding that this expression appeals to the impossibility of bringing the debt ratio down at all, i.e. a defeat of consolidation measures due to unsustainable debt dynamics.

4 The consequences of avoiding or postponing a pressing fiscal adjustment is a completely different topic which lies outside the scope of this article.

5 Back-loaded fiscal adjustments may entail credibility issues, triggering hikes in the nationwide risk premia that adversely affect both the debt ratio and output. Under such environment, front-loaded consolidations may be preferred to back-loaded ones if credibility is at stake. Back-loaded adjustments could be made credible through the adoption of multiannual budget plans that enjoy a broad political support.