



Heterogeneity in the debt-growth nexus: Evidence from EMU countries



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ABSTRACT

The objective of this paper is to examine whether the threshold beyond which a public debt change may have a detrimental effect on economic growth changes across euro area countries during the 1961–2015 period. In contrast with previous studies, we do not use panel estimation techniques, but implement a time-series analysis for each country based on the growth literature. The results suggest that in all the countries but Belgium a debt increase begins to have detrimental effects on growth well before the SGP debt ceiling (a debt ratio of around 40% and 50% in central and peripheral countries, respectively) is reached. So, although austerity policies should be applied in EMU countries – since according to our results debt reduction barely exerts any significant beneficial impact on EMU countries' growth – they should be accompanied by structural reforms that can increase their potential GDP. Moreover, as our results suggest that the harmful impact of a debt change on growth does not occur beyond the same threshold and with the same intensity in all EMU countries, a focus on average ratios and impacts may be unsuitable for defining policies. Specifically, our findings suggest that the pace of fiscal adjustment should be lower in Greece and Spain than in the other countries.

“At the present stage of development in Economics it is probably an advantage to have different groups looking at the same problem from different viewpoints, so that their conclusions can be compared and possibly then form the basis for a new compressive model”

1. Introduction

Nine years after the onset of the Great Recession, recovery remains tepid and bumpy in the European Economic and Monetary Union (EMU), and the prospects remain uncertain. The recent economic crisis led to an unprecedented increase in public debt across euro area countries,¹ raising serious concerns about its impact after a debt crisis that even called into question the stability of the euro. Troubled sovereign borrowers received financial rescue packages which were conditional on fiscal austerity and on the implementation of

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¹ On average, public debt reached levels about 100% of Gross Domestic Product (GDP) – its highest level in 50 years – by the end of 2013.

structural reforms to improve competitiveness.

In the light of the events of the last few years, there is widespread agreement about the potentially adverse consequences for the economies of EMU countries of their unparalleled levels of public debt. However, few macroeconomic policy debates have generated as much controversy as the current austerity argument [see Alesina and Ardagna (2010), Alesina, Barbiero, Favero, Giavazzi, and Paradisi (2015), Guajardo, Leigh, and Pescatori (2011) or Jordà and Taylor (2016)] and, as Europe stagnates, the disagreement appears to be far from over. The core of the debate revolves around identifying the right stabilization policies to implement or, in a context of low economic growth, establishing the right pace of adjustment: austerity measures may prove positive in the long run, but they are likely to have negative effects on demand and production during the adjustment period [see Cottarelli and Jaramillo (2013), Delong and Summers (2012), or Perotti (2012)].

Overall, the theoretical literature finds that there is cause to take into account the effects of very high debt on capital stock and growth, since it tends to point to a negative link between the public debt-to-Gross Domestic Product (GDP) ratio and the steady-state growth rate of GDP (see, for instance, Aizenman, Kletzer, & Pinto, 2007). The conventional view is that while debt can stimulate aggregate demand and output in the short run [see Barro (1990) or Elmendorf and Mankiw (1999)], in the long run it may crowd out capital and reduce output (Salotti & Trecroci, 2016). Moreover, the literature provides a variety of reasons to explain why the higher the level of public debt, the more negative its effects. Greiner (2014) points out that growth-impeding long-run effects are caused by changes in market participants' expectations at high levels of public debt, leading to an increase in interest rates and a decrease in investment; Teles and Mussolini (2014) stress that, as uncertainty rises, additional fiscal flexibility for productive government spending is reduced, with a negative effect on growth; whilst Cochrane (2011) emphasizes that the higher the levels of public debt, the greater their negative effects due to a climate of uncertainty in which economic actors expect future confiscation, in the form of either increasing inflation or distortionary taxation.

Against this background, the analysis in this paper will focus on the short-run effects of debt changes on economic growth in EMU countries with the objective to bring some light to the current austerity debate in a context of unprecedented debt levels. Therefore, we pose the following research questions: Does the effect of changes in the debt-to-GDP ratio on the short-run growth rate depend on the level of debt and the sign of the debt change? What is the debt-to-GDP threshold beyond which expansionary fiscal policies (a debt increase) have a negative impact on euro area economies' rates of growth? Does the short-term effect of a debt variation on economic performance differ across euro area countries? If a heterogeneous nexus between debt and growth is found, should stabilization policies to consolidate public finances or the pace of adjustment within euro area countries differ?

These are important policy questions that need to be answered, but the results from the empirical literature in the EMU context do not provide a conclusive response since, despite the severe sovereign debt crisis, few papers have examined the relationship between debt and growth for euro area countries and the scant literature so far has mostly disregarded country heterogeneity in this relationship. Checherita-Westphal and Rother (2012) analyse the empirics of the debt-growth nexus using a standard growth model and panel data techniques and find that, during the 1970–2008 period, the turning point beyond which government debt negatively affects growth is 90–100% of GDP. Baum, Checherita-Westphal, and Rother (2013), who focused on the 1990–2010 period, detected a similar threshold by employing a dynamic approach (while the short-run impact of debt on per capita GDP growth is positive and significant, it decreases to zero beyond debt-to-GDP ratios of 67%, and at ratios above 95% additional debt has a negative impact on output growth). In contrast, Dreger and Reimers (2013)'s analysis is based on the distinction between sustainable and non-sustainable debt periods. Their results show that the negative impact of the debt-to-GDP ratio on growth in the euro area is limited to periods of non-sustainable public debt; instead, debt will exert a positive impact on growth given that it is sustainable. The three former studies are synthesized and extended by Antonakakis (2014). Like them he uses a panel approach, but in addition to debt non-linearities he also examines the role of debt sustainability in economic growth in the euro area.

Overall, the empirical literature mentioned above supports the presence of a common debt threshold across (similar) countries like those in the euro area favouring that so far the policy debate mostly ignored country heterogeneity in fiscal rules implementation. However, on the one hand, some recent literature has stressed that the effects of fiscal consolidation on economic activity, not only differ between core and peripheral countries (Anderson, Hunt, & Snudden, 2014), but also across peripheral economies (Aldici, Belke, Giovannini, & Gros, 2016). On the other hand, the latest literature on the debt-growth relationship suggests that the presence of a tipping point does not mean that it has to be common across countries.

Indeed, the review paper by Panizza and Presbitero (2013) triggered a new wave of studies analysing the heterogeneous growth effects of public debt.² According to Mitze and Matz (2015), whilst a “first generation” of empirical cross-country studies predominantly predicted an inverted U-shape relationship between public debt and economic growth, with a negative impact on growth particularly in highly indebted countries, more recently a “second generation” of empirical contributions has challenged those findings on various grounds, including uncontrolled sample heterogeneity. The “first generation” of papers include the works by Reinhart and Rogoff (2010), Pattillo, Poirson, and Ricci (2011), Lof and Malinen (2014) and Woo and Kumar (2015); whilst the “second generation” include Ghosh, Kim, Mendoza, Ostry, and Qureshi (2013), Markus and Rainer (2016), Chudik, Mohaddes, Pesaran, and Raissi (2017), Pescatori, Sandri, and Simon (2014) or Eberhardt and Presbitero (2015).

² See, e.g., Eberhardt and Presbitero (2015), who investigate the debt-growth relationship in 118 developing, emerging and advanced economies and find some evidence for nonlinearity, but state that there is no evidence at all for a common threshold level in all countries over time; Egert (2015), who presents empirical evidence suggesting that 90% (the threshold suggested in the seminal paper by Reinhart & Rogoff, 2010) is not a magic number since it may be lower and nonlinearity may change across different samples and specifications, or Gómez-Puig and Sosvilla-Rivero (2015), who examine the bi-directional causality between debt and growth in a sample of eleven EMU countries and find that public debt has a negative effect over growth from an endogenously determined breakpoint and above a debt threshold that differs depending on the country.

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