

Chapter 24

Is There a Threshold Effect of Public Debt on Economic Growth?

Seher Gulsah Topuz

Eskisehir Osmangazi University, Turkey

Taner Sekmen

Eskisehir Osmangazi University, Turkey

ABSTRACT

In this chapter, the relationship between public debt and economic growth is examined for OECD countries. In order to determine this relationship, the data between 2002 and 2016 is analyzed using panel threshold regression methods. The findings of the study suggest that the relationship between public debt and economic growth is linear. The public debt threshold is estimated at 99.75% for OECD countries but it is statistically insignificant. While the public debt to GDP ratio is both below and above this threshold, the effect of public debt on economic growth is negative and statistically significant. There is no evidence of the existence of a non-linear relationship between public debt and economic growth. These findings are expected to guide policymakers in the implementation of fiscal policies.

INTRODUCTION

The financial crisis in the United States spread to other countries and turned into a global financial crisis. Following the bailout and financial stimulus packages implemented during the crisis, these developments led to an increase in public debt in the several developed countries. This rapid increase in public debt, called also as debt trap, can have negative reflections on the macroeconomic performance of countries with some factors such as inflation, interest rates and increasing uncertainty. The incorrect policies applied to eliminate this negative economic situation can bring about permanent financial problems. Even though most policy makers have strong belief that high public debt reduces economic growth, the

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existence and direction of such relationship has been discussed both theoretically and empirically by several economists for a long time.

According to the traditional view between debt and growth, while debt increases total demand and output in the short term; it is possible to reduce output in the long-term due to the crowding out effect of debt on capital (Kumar & Woo, 2010, p. 5). Thus, the negative relation between the two variables is explained in the literature by the crowding out effect of debt on investments (Friedman, 1978). On the other hand, this effect is also presented as quite small back-of-the envelope calculations (Panizza & Presbitero, 2013, p. 175). Increase in productive expenditures in countries with high debt-to-GDP ratios causes an increase in the marginal product of the capital and hence interest rates which can have a crowding out effect (Teles & Mussolini, 2014, p. 8). The crowding out effect arises from government's increasing interest rate on debt used by state to finance its expenditures, which makes private sector access to credit difficult. Under these circumstances, it can be said that the increase in public debt will harm economic growth (Diamond, 1965, Gale & Orszag, 2003; Baldacci & Kumar, 2010). There are other alternative channels in the literature that show the negative impact of the debt on economic growth as well as the crowding out effect. The increase in public debt may lead to the formation of an inflationary environment in high-debt countries (Sargent & Wallace, 1981). It can be considered that the negative effect of higher public debt, which increases uncertainty or causes inflation and financial pressure, may be higher (Cochrane, 2011). For this reason, it can be said that debt have a negative effect on the economy in the short-term (Panizza & Presbitero, 2013, p. 177). On the other hand, uncertainty over macroeconomic variables such as high and volatile inflation and interest rates, depending on the level of external borrowing, may give rise to divergent implications on economic activity. An unstable economic environment reduces the efficiency and productivity of the capital by distorting the effective resource allocation and leads to adverse effects of economic growth (Presbitero, 2006, p. 8). When economic growth and the public-debt relationship are evaluated in the short-term, especially if households assume non-Ricardian behavior and the economic output is far from potential output, fiscal policies can have a temporary positive impact on economic growth through demand-side incentives (Preima et al., 2015, p. 2).

Two different opinions about the effect of public debt on economic growth actually lead to the idea that it may be non-linear as opposed to the generally accepted negative linear relationship between the two variables, and this idea continues to be questioned with increasing interest. Reinhart and Rogoff (2010) study is the main work that increases the interest of economists in questioning the validity of the non-linear relationship with the influence of the economic conditions created financial crisis. The Reinhart and Rogoff's (2010) study, which focuses on determining the long-term macroeconomic effects of high-level public debt and external borrowing, is one of the pioneer work examining the non-linear relationship between public debt and economic growth by calculating the threshold value of public debt. These authors who use comprehensive data set of 44 developed and developing countries prove that the high level of public debt affects negatively economic growth. These findings of the authors indicate that the debt threshold is 90%, and that the public debt stock over this level has a negative impact on economic growth. On the other hand, in the "normal" debt levels, the linkage between public debt and economic growth is founded as not stronger. Reinhart and Rogoff's (2010) study increases curiosity, which is the nonlinear relationship between variables, and researches continue with different samples and methods on the accuracy of the threshold value obtained after this study. The results supporting non-linear relationship between public debt and economic growth are obtained in some studies (Kumar & Woo, 2010; Cecchetti et al., 2011; Chudik et al., 2017; Dreger & Reimers, 2013; Kontbay, 2013; Baum et al., 2013; Gómez-Puig & Rivero, 2015; Checherita-Westphal & Rother, 2012), while it is argued that

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