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## Does debt really crack the whip? Evidence from a Panel of Selected OECD Countries

Murat KARAGOZ<sup>a\*</sup> Mehmet CAGLAR<sup>b</sup>

<sup>a</sup>*Yildiz Technical University, Istanbul, Turkey*

<sup>b</sup>*Yildiz Technical University, Istanbul, Turkey<sup>†</sup>*

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### Abstract

External debt and GDP relationship has long been a focus of interest. The outcome of time series analyses and a few panel data outcome of previous studies are contradicting. In an attempt of unifying we have tried a panel data model of 17 selected OECD countries. We have estimated pooled regression, fixed effects and random effects models. The result in this first round of estimation was in favor of fixed and ultimately random effects model. However, error terms of all these models turned out to be serially correlated. To overcome this problem several alternative dynamic models have been experimented. Overall result of study shows that for the OECD countries the foreign debt growth relationships is a positive one. Although there are some countries in the world that have a negative relationship, for the case of OECD at least, positive relationships are indicative of good policy administration.

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\* Corresponding author. Tel.: +90-212-683-6829.  
E-mail address: [mkaragoz@yildiz.edu.tr](mailto:mkaragoz@yildiz.edu.tr)

## 1. Introduction

External debt and GDP relationship has long been a focus of interest for many econometricians. Most of studies in this area depend on single country time series analysis. However, there are a few panel data studies as well. Unfortunately the outcome or findings of these studies are contradicting. Present study aims at a unifying analysis for the research in this particular area. We have tried a panel data model of 17 selected OECD countries. We have estimated pooled regression, fixed effects and random effects models. Diagnostic tests have revealed that the fixed effects model performs best. Furthermore, the outcomes have established that there is a positive and strong relationship between gross external debt and economic growth rate of countries.

A survey of previous studies held in the area of external debt GDP relationships is summarized in the Table below.

Table 1. A Survey of Studies Held in Growth-External Debt Relationship

Studies by Authors	Variables Involved	Methodology Used	Data	Conclusion
Ahmed, Butt and Alam (2000)	Real GDP Real Export External Debt Servicing	Granger causality	South and South-East Asian countries (8 countries) Annual 1970-1997	Not significant
Atique and Malik (2012)	Real GDP Growth Rate External Debt Net Total Investment to GDP Inflation Labor Participation Rate Corruption Perception index	Ordinary Least Square (OLS)	Pakistan Annual 1980-2010	Negative
Babu, Kiprop, Kalio and Gisore (2014)	Real GDP per capita Ext. Debt to GDP ratio Invest. Govern. Expenditure Terms of Trade Openness	Panel Fixed - Effects Model	East Africa Community Annually 1970 - 2010	Negative
Bashar, Dey and Rahman (2012)	Real GDP External debt	Time series econometric technique Granger's Causality test	Bangladesh Annual 1972-2010	Positive Bi-directional causality
Bilginoglu and Aysu (2008)	GNP Fixed Capital Investments Population Growth Rate External Debt (% GNP) Openness Share of Ministry of Education + Higher Education Institutions in Consolidated Budget	Ordinary Least Square (OLS)	Turkey Annual 1968 - 2005	Negative
Cevik and Cural (2013)	GDP External Debt Internal Debt External Debt (Public) External Debt (Private)	Vector Autoregression Model (VAR) Toda-Yamamoto Causality Technique	Turkey Quarterly 1989:01-2012:04	Positive
Cogurcu and Coban (2011)	Real GDP Export +Import / GDP Population Growth Rate Fixed Capital Investments / GNP External Debt Stock / GNP Share of Ministry of Education + Higher Education Institutions in Consolidated Budget	Johansen co-integration method Ordinary Least Square (OLS)	Turkey Annual 1980-2009	Negative
Eratas and Nur (2012)	GDP Growth Rate External Debt Stock / GDP	Common Correlated Effect	Emerging Market Economies (10 countries) Annual 1990-2010	Negative

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