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Causal Nexus Between Economic Growth, Exports and Government Debt: The case of Greece

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Abstract

This paper examines the relationship between economic growth, exports and government debt of Greece over the period 1960-2011. We investigate this relationship using the vector error correction models (VECM) and we employ Granger causality technique in order to explore the presence of causality among these variables. The results show that both short and long run relationships exist among these variables. Specifically, the results show that there is a unidirectional Granger causality that runs from exports to economic growth as well as from economic growth to government debt, whereas there is no short run causal relationship between exports and government debt. In the long run, the results show that there is a unidirectional Granger causality that runs from economic growth to government debt.

Keywords: ***Economic Growth, Exports, Government Debt, Vector Error Correction Model, Causality.***

1. Introduction

The relationship between economic growth and exports has drawn the attention of researchers both theoretically and empirically. A series of empirical studies have been conducted to investigate the role of exports and economic growth and to examine the hypothesis whether a causal relationship exists between these two variables.

Exports are regarded as an engine which promotes economic growth and hence increases the rewards of factors of production. Moreover, exports open opportunities for investments in the economies of all countries and as a result a high level of income and saving is created leading again to growth. The importance of exports and its impact on economic growth raises the question about the nature of the relationship between these two macroeconomic variables. However, it leaves out some other relevant variables such as government debt, inflation, exchange rate, etc. that could have significant relationship with the two aforementioned variables.

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Bivariate causality studies provided conflicting empirical results for several countries. This situation may be due to the misspecification of the causal model used in these studies because of the omission of an important third variable such as government debt. The omission of government debt could seriously bias the empirical causality results between exports and economic growth on countries where the research was conducted.

The economic situation in Greece has undergone many difficulties during the last years due to bad management of public money, the increase of corruption, the bribery of public servants and the violation of law. On the examined paper, in all fiscal years since 1960, the government's revenue was smaller than its expenditure, causing fiscal deficits that are covered by borrowing from both internal and external sources.

Government debt may have a positive or a negative impact on economic growth depending on its uses. This could affect the economy positively when the government uses it for investment-oriented projects such as infrastructure, power, and the agriculture sector. However, it could have a negative impact when it is employed for private and public consumption. In general, a lower level of total government debt affects the economic growth positively, but this relationship becomes negative at high levels. The specific turning points are 35-40 percent for the debt-to-GDP ratio and 160-170 percent for the debt-to-exports ratio. The lower the first ratio (the higher the second ratio) the better is the impact on economic growth [1].

In Greece, government debt (percent of GDP) was at low levels until 1990. The government debt-GDP ratio started to grow steadily from 1991 to reach 160.8% in 2011.

The objective of this study is to investigate the impact of exports in shaping the economic growth for the case of Greece with the inclusion of government debt as a third variable. Cointegration analysis based on Johansen procedure is used for this purpose. Also, causal relationship between these variables is applied using Granger causality test. The data used in this study cover the period from 1960 until 2011.

This paper is organized in five sections. Section 2 presents a literature review. Section 3 presents correlations between economic growth, exports and external debt. Section 4 provides data source and methodological framework. The empirical results are presented in Section 5 and finally the concluding remarks are contained in section 6.

2. Literature Review

Empirical studies related to external debt and economic growth are numerous in the literature for both developed and developing countries. Theoretically, it is expected that if the marginal product of capital should be higher than the world interest rate for developing countries, then these countries would benefit from external borrowing. In such a case, external debt helps a country to exploit and improve its dynamics.

Perasso [2] using data from twenty indebted countries for the period 1982-1989 investigated the relationship between economic growth and external debt. The study showed that appropriate domestic policies have stronger impact on increasing investment and growth in highly indebted countries than decreasing debt-servicing obligation.

Cohen [3] investigated the relationship between external debt and investment in a sample of 81 developing countries for 1980's using O.L.S method. The study shows that there is a little effect of level of stock of debt on investment.

Cunningham [4] investigated the relationship between debt burden and economic growth for sixteen heavily indebted countries for the period 1971-1987. The study shows that growth of a country's debt burden has a negative effect on the economic growth.

Chowdhury [5] investigated the relationship between indebtedness and economic growth for Bangladesh, Indonesia, Malaysia, Philippines, South Korea, Sri Lanka and Thailand for the period of 1970-1988. The results of Granger causality tests showed that External debt does not affect the GNP growth rate for the five countries, while there is a bi-directional relationship between debt and growth for Malaysia and Philippines.

Amoateng and Amoako-Adu [6] examined the causality relationship among exports, external debt and economic growth for 35 African countries using Granger causality test. The results showed that there is a unidirectional causal relationship between debt service and economic growth.

Elbadawi *et al.* [7] used cross-sectional data for ninety-nine countries to investigate the relationship between external debt and economic growth. The authors ended up in the view that current debt inflows as a ratio of GDP have influenced the economic development unfavourable.

Fosu [8] examined the relationship between economic growth and external debt of sub-Saharan African countries for the period 1970-1986, using O.L.S method. The study reveals that on average a high debt country faces about one percentage reduction in the GDP annually.