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Unravelling the 'Mystery' Between Public Expenditure and Growth: Empirical Evidence from Greece

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It is beyond any shadow of a doubt that both public and private actions (complementing one another) are equally important towards sustained economic growth. This paper by adopting a pro-state framework investigates empirically amidst others the hypothesis that social expenditures contribute positively towards economic growth. Greece's experience serves as a platform on which the analysis is conducted. The evidence obtained bolsters up the notion that the state through various forms of public spending can affect economic growth in a positive way.

Key words: *Social expenditure, Economic growth, Greece, OLS.*

JEL *Classification:* *O11, C22.*

I. INTRODUCTION

Budget deficits, excessive government debt and high taxes have become an almost universal focus of concern. Some decades ago, governments worried much less about these matters. Management of the public finances was looked upon as a pedestrian exercise. Fiscal policy was judged primarily in terms of its success in dampening economic fluctuations and maintain full employment. Keynesian economics, from which the era of fiscal activism drew its intellectual sustenance, has decline in prestige. Fiscal activism has given way to fiscal balance and fiscal consolidation.

In recent years, this counter-cyclical function of public finances has been downplayed. Economic policy has been dominated by the so-called conventional wisdom, according to which, any state intervention will have detrimental effects on the economic performance of a country. As a result, minimum state intervention is the proscribed recipe by the think tanks of prestigious economic bodies such as the OECD, CEPR etc.

Within the EU region all member states are expected to conform to a set of rules and regulation (i.e. Maastricht Treaty) should the benefits of the ever so desired economic union are to be reaped. The governments of all EU countries have been imposed upon a set of criteria heavily influenced by the notion that budget deficits absorb national savings, which in turn raise interest rates and as a result productive investment is crowded out. As one can discern, in view of the emerging policy orientation, there is no way can any government indulge in public expenditures as means of enhancing its economic performance.

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In Greece, as in every other EU member state, economic environment has been dominated by the deflationary bias and prude finances implied by the principles of the emerging economic doctrine. Thereby, public expenditures have been considerably squeezed to facilitate the process towards EMU, posing at the same time a serious threat to employment creation and hence, economic growth.

In this study we will join those who argue that public expenditure has the potential to trigger economic growth.

The rest of this study is organized as follows: Section II touches on the theoretical consideration of public expenditures and growth. Section III draws on Greece's experience by unfolding some past economic behaviour on the road to EMU while section IV empirically tests the relationship between growth and the main components of public expenditure. Finally section V concludes.

II. SOME THEORETICAL CONSIDERATIONS: A BRIEF EXPOSITION.

In Europe, government spending relative to GDP rose from 32 per cent in 1960 to under 45 per cent in 2005 (Table 1). Most of the increase occurred during the 1970s and early 1980s. Since then, the upward trend has been halted, though the early 1990s saw a renewed surge in spending. A similar pattern of behaviour can be observed in the US.

Table 1
Government Spending (% GDP)

	(about 1937)	*1960*	*1970*	*1984*	*1990*	*2000-05*
EUR	29.0	32.2	37.4	50.0	48.1	42.0
Japan	25.4	17.1	19.4	32.9	32.3	30.6
US	8.6	27.0	31.6	35.6	36.8	32.8
France	29.0	34.6	38.9	52.5	50.6	41.5
Greece	n/a	n/a	22.4	40.3	51.7	33.8
Germany	42.4	32.5	38.5	47.6	45.3	42.1
Netherlands	19.0	33.7	42.4	59.6	55.0	43.4
Ireland	n/a	28.0	39.6	51.3	40.0	23.5
Italy	24.5	30.1	34.2	49.4	53.2	43.2
UK	30.0	32.2	37.2	45.3	40.3	37.4

Source: European Economy; OECD; IMF

Within the academic literature it has been extensively argued that any state intervention intended to contend with market failures (i.e. monopoly power; distorted prices that fail to reflect the social cost fully) will further exacerbate the problem rather than provide any solution to it (Agarwala, 1983; Stiglitz, 1998; Kruger, 1990). In other words, the state is a source of distortions, that should not interfere with the functioning of the markets.

The chief concerns put forward by the majority of public choice theorists revolve around the concepts of rent-seeking and crowding-out. According to Olson, (1965), Kruger, (1974), (1990), and Tullock, (1980), growth is inhibited by any state intervention, as it is a source for rent-seeking. In the same line of argument, they also maintain that additional inefficiencies arise responsible for redistributing existing output rather generating additional output.

In contrast, a growing body of literature attempts to redress the balance by suggesting that the state can actually, through implementing appropriate policies, nurture productive activities and reduce unproductive ones (Amsden, 1989; Epstein and Gintis 1995, Bruton 1991).

Even though, public spending on infrastructure, education, and defence, has been regarded as essential, conventional approaches tend to disregard it as a key factor responsible for crowding-out[1]. The stance taken in this study is a 'state-friendly' one, in that both public and private actions (complementing one another) are equally important towards sustained economic growth.

Despite the fact that even the crowding-out literature, has recognized a limited but significant effect of public investment on growth, social programmes have been rendered unproductive, with the exception of education. Thereby, most of the studies conducted have exclusively focused on education as a factor that impacts on growth through its effect on human capital (Landau, 1983; Barro, 1991; Roubini and Sala-I-Martin, 1991; Birdsall, Ross and Sabot 1995).

In the same line of argument, other social expenditures such as health, housing and transfers contribute towards productivity as well as play an important role in stabilizing aggregate demand. A study conducted by the World Bank in 1994 on the effects of illness on productivity exemplifies the significance of having a healthy work force. On the basis of the evidence generated, workers in developing countries were absent from work on average three times as much as workers in the United States. The end result of such events can actually have detrimental effects on the national income of those countries where needed most[2].

Social expenditures can also be thought of as a mechanism that promote social cohesion through poverty reduction, social conflicts, and income disparities between various groups, regions etc. Creating a stable environment conducive for investment in human and physical capital is essential should economic systems experience high levels of economic growth.

Despite the fact that existing growth theories link defence and other related expenditures to political stability and growth, a point has to be made regarding the sources of potential conflicts. This article argues that conflicts may arise due to failure of governments to address poverty and regional disparities. In effect, such expenditures may actually chock-off growth rather than promote it.

III. REFLECTIONS ON ECONOMIC MANAGEMENT AND BUDGETARY ADJUSTMENT IN GREECE

The post-war economic record of Greece is characterised by a remarkable dualism. After a dynamic period in terms of economic performance, the Greek economy started exhibiting a gradual decline in most of its key economic indicators. More specifically, from the mid-70s onwards, the economy entered a new economic cycle, the main characteristics of which were a rather poor economic growth, increasing unemployment, an alarming increase in the inflation rate, and an increase in both public deficit and public debt. As a result, major structural imbalances and macroeconomic instability crept in making it difficult for the economy to function properly.

The emerging economic environment implied by the changes in the structure of the Greek economy appeared to have been the gravitational point around which many scholars as well as politicians directed their effort to pin point the culprit for the mediocre economic performance. The relationship between government intervention and economic performance often was expressed via the relationship between budgetary crisis and economic crisis. Is budgetary crisis, the result of government intervention, that caused the economic crisis in Greece or the economic crisis that caused the budgetary imbalance? Is the increase in public expenditure, public deficit and public debt the main causes of macroeconomic instability in Greece? Addressing the aforementioned questions toped the agenda of the incumbent government, bringing the issues of both budgetary instability and poor growth in the epicentre of public dialogue.

It is beyond any shadow of a doubt that healthy public finances mirror the effectiveness of economic management. It reflects the dynamic interaction between the state and the private sector as well as the adopted economic policy. The balance or the lack of balance in the budget can be looked upon as a complex situations arising from the interdependence between the macroeconomic management, the macroeconomic structure and the structure of the productive system. Consequently, gaining an insight into the situation of the budgetary balance, presupposes an analysis of a more intricate mechanism of operation of the economy. It would flawed to simply render responsible the government for whatever budgetary failure in so far as the private sector plays an equally instrumental role in shaping the budget balance as well.

Over the years, reams of academic paper have been used in an attempt to shed some light on the relationship between budgetary instability and economic crisis. The bulk of these studies hold budgetary imbalances responsible for the dismal monetary and real picture of the economy. More specifically, proponents of the orthodox–neoliberal-approach, (Alogoskoufis, 1992; 1994, Kollintzas, *et al*, 1992, Bitros, 1992) sustained that the sole culprit for the poor economic performance in Greece was the uncontrollable government spending and the ensuing augmentation of public deficits. It should be stressed that the budgetary situation of the country up to 1980 was rather bad with insolvency looming before the very eyes of the politicians (Stournaras, 1991, Argitis, 2000).

The dynamic environment that the postwar economic model implied for the Greek economy came to a halt in the 1970s (Vaitsos and Giannitsis, 1987, Fotopoulos, 1993). Economic stagnation and crisis in the productive system that followed were translated into low productivity and dwindling competitiveness of the Greek industry in Europe as well as internationally. As a result the macroeconomic environment was disrupted immensely, giving way to an era of poor economic performance. The ongoing macroeconomic instability was further exacerbated by the first and most importantly the second energy crisis as well as the accession of Greece to the European Community (EC). The impact of the new economic venture acted as a catalyst to the economic life of the Greek citizens. More specifically, growing uncertainty, poor psychology and pessimistic expectations permeated the Greek economy adding to the already intense economic and political environment.

Upon reflection, the Greek experience in the 1970s as well as in the 1980s suggest that none of the macroeconomic objectives were actually achieved. On the contrary, the new economic orientation as this was reflected by the policies adopted had adverse effects, contributing to even poorer economic performance.

Most of the aforementioned macroeconomic problems that Greece have been contending with, appeared to have rolled over the following decades as well. Even now where more and more countries have been desperately trying to deflate their economies in attempt to gain acce to the ever so desirable European and Monetary Union (EMU) the same questions are awaiting to be answered. Improving productivity as well as becoming more competitive have been given top priority as these are thought to play an instrumental role attaining long-lasting macroeconomic stability.

Moreover, the new macroeconomic orientation as this is implied by the dominance of the neoliberal nexus, has incapacitated any healthy policy-mix aiming at improving and ultimately generating the right environment conducive to economic growth and social cohesion[3].

Both the consolidation programs in 1986-1987, and 1991-1993 as well as the convergence one, focused primarily on balanced budgets sidelining the state as that was though to be the culprit for causing inefficiencies in the economic system. The reduction in public deficit and public debt was achieved mainly through huge cuts in public expenditure. As a result, the feeble state of the Greek economy got even worse, unable to recover, experiencing alarming high levels of unemployment and a major slowdown in economic activity.

IV. EMPIRICAL ANALYSIS

Prior to embarking upon the empirical analysis it is essential that a brief exposition of the behaviour of the variables under scrutiny takes place. A close look at the figures (see figures in Appendix) suggests that expenditure on health and education follow a relatively upward trend while defence spending fluctuates rather widely indicating the unstable political environment that Greece has been experiencing over the last decades. Social security spending appears to project a rather disappointing picture implying, especially over the last two decades, diminishing social spending burdening the already crippled welfare system. Finally, a comparison between public and private investment reflects the economic policy orientation adopted by alternate governments. More specifically, public investment in view of the emerging EU policy orientation has been looked upon with a lot of scepticism, in that it may be held responsible for inhibiting economic growth.

The Model

For the econometric analysis, time series data for Greece, from 1974 to 2004 were used. Standard OLS estimation methodology was employed to estimate economic growth as a function of string of public expenditure variables. European Economy, (OECD, IMF) were the main provider for the data.

The model that was estimated can be formulated as follows:

$$g = f(\overset{+}{pri}, \overset{?}{ge}, \overset{+}{pbi}, \overset{+}{ped}, \overset{+}{phe}, \overset{+}{ssc}, \overset{?}{def}, \overset{+}{nx})$$

The inclusion of private investment (*pri*), and net exports (*nx*) was deemed essential, as both of the aforementioned variables, in the empirical literature, serve as significant factors that influence positively economic growth (see for example, Barro, 1991; Levine and Renelt, 1992; Sala-I-Martin, 1991). Hence the positive expected signs.

In view of the mixed results obtained by a number of empirical studies attempting to gauge the impact of government expenditure (denoted as *ge* in this model) on growth, a question mark has been used to account for the uncertainty involved in predicting the right sign[4]. Moreover, to keep collinearity to its minimum we have subtracted from government expenditure the rest of the government expenditures.

Public investment (*pbi*) is expected to influence growth positively, hence the positive sign. It should be stressed however, that amidst a number of studies done in this area, no strong direct relationship between growth and public investment has been established[5].

Despite the lamentably little currency that social expenditures have received in the empirical literature, on the basis of the exposition at an earlier stage in this study expenditure on education (*ped*) health (*phe*) and social welfare (*ssc*) are all expected to contribute positively to economic growth. Hence the positive signs.

In view of the conflicting evidence surrounding the impact of defence spending (*def*) on economic growth we have opted out not to make any predictions as to the sign that this variable will bear[6]. Hence the question mark.

It has been envisaged that this study will provide some additional insight into the underlying relationships and hopefully will provide the impetus for more studies to follow.

Table 2
Definitions of Variables

g	gross domestic product (growth rate)
pri	private investment to gdp
ge	adjusted government expenditure to gdp (government expenditure less the other government expenditures)
pbi	public investment to gdp
ped	education expenditure to gdp
phe	health expenditure to gdp
ssc	social security expenditure to gdp
def	defence expenditure to gdp
nx	sum of exports and imports to gdp

Estimation Results

The following equation serves as a platform on which an attempt to make some economic sense of the estimated coefficients will be made.

Table 3
Estimated Equation for Greece

$$g = \underset{(2.1)}{0.02} + \underset{(4.56)}{0.26}pri + \underset{(2.32)}{0.01}ge + \underset{(6.23)}{0.20}pbi + \underset{(1.87)}{0.36}ped + \underset{(2.12)}{0.23}phe + \underset{(1.92)}{0.03}ssc - \underset{(1.32)}{0.41}def + \underset{(3.16)}{0.03}nx$$

$R^2 = .82$
$DW = 1.81$
t-statistics are given in parentheses

On the basis of the results generated, a general comment that one can make about the underlying model, is that it appears to be well specified, providing reliable estimates. More specifically, 82 percent of the variation in the dependent variable is explained by the variation of the explanatory ones, while the DW statistic suggests that the model is free of serial correlation.

As table 2 shows, the results to a certain extent appear to be in line with the existing theoretical and empirical literature. More specifically, the coefficient on private investment (*pri*) is statistically significant at the 5 percent level reflecting the general consensus in that it contributes positively to growth. Similarly, the coefficient on net exports (*nx*) is statistically significant bearing the expected sign.

Turning now to the government expenditure variables, the emerging picture deserves some additional attention. In particular, the coefficients on public investment (*pbi*), health expenditure (*phe*), and government expenditure (adjusted) (*ge*) are all statistically significant at the 5 percent level of significance reflecting a positive relationship to growth. Education expenditure (*ped*), and social security (*ssc*) even though they are of the expected sign, they exhibit significant relationships at a different significance level i.e. 8 percent level of significance. Finally, defence expenditure, (*def*) is the only variable that is insignificantly related to growth, bearing a negative sign.

Interpretation of Results

Initially, this study reconfirms earlier evidence concerning the instrumental role that private investment plays in conditioning growth. The striking feature however, of the evidence emerged from this study is the overwhelming support of those who look upon government expenditures as means of stimulating growth. Health and education might be vital to growth as highly educated and skilled labour that enjoy healthy and active lives are bound to be more adaptable to the ever so changing economic environment. Expenditures on the aforementioned variables in conjunction with social security expenditure could actually form a driving rather than a retarding force (as suggested by some studies) towards enhancing growth, ensuring at the same time a more functional welfare system. As for defence the findings are rather surprising in a sense that defence transpires to be totally uncorrelated to growth. Such a result calls for expenditures to be directed away from defence and instead, channelled through a more productive system such as public investment that contributes positively to growth.

V. CONCLUSIONS

On the basis of the evidence obtained it can be argued that in the case of Greece, social expenditure has a positive impact on economic growth. More specifically, channelling money towards health and education contributes significantly to the well being of the citizens, making it thus possible for the economy to grow. As for defense spending, no significant relationship to economic growth has been established. Such an outcome bolsters up the notion that resources should be redirected from unproductive uses to more efficient sectors of the economy. Curtailing profligate spending and devising ways to deal with tax evasion can benefit the economy greatly as more revenue will be generated and therefore channelled towards productive public investment.

On the whole, it would be utterly unrealistic to blindly subscribe to the dogmatic resonance of the neoliberal approach questioning the efficacy of public spending. It is imperative that policies are redirected towards more social spending which in conjunction with income policies will provide the platform on which the macroeconomic objectives can be achieved.

Notes

1. Barro, (1990) and Easterly, (1989) have found that initially, increments to public capital accelerated growth but after some point public capital reduced growth by generating distortions in the private sector.
2. Similarly, expenditures on health enhance quality of life and most importantly raise life expectancy. In a study carried out by Behrman (1993) it was reported that for additional life expectancy growth would increase by 0.15 percent over the next 25 years.
3. For instance the policies implied by the Maastricht Treaty as well as the Stability and Growth Pact.
4. See for example, Barro, 1990; Roubini and Sala-I-Martin, 1991.
5. See for instance. Barro, 1991; Levine and Renelt, 1992.
6. For more on military expenditure and growth see for example, Benoit, (1978); Barro, (1991); Deger and Smith, (1983).

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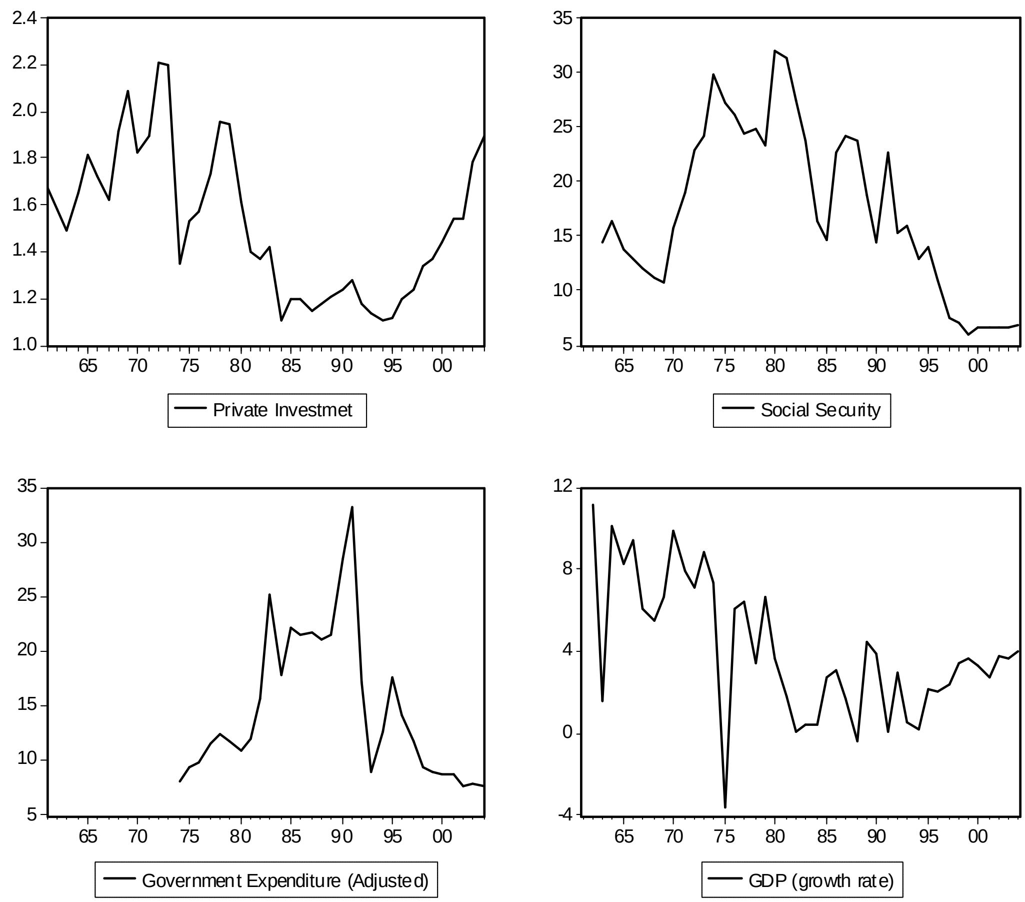
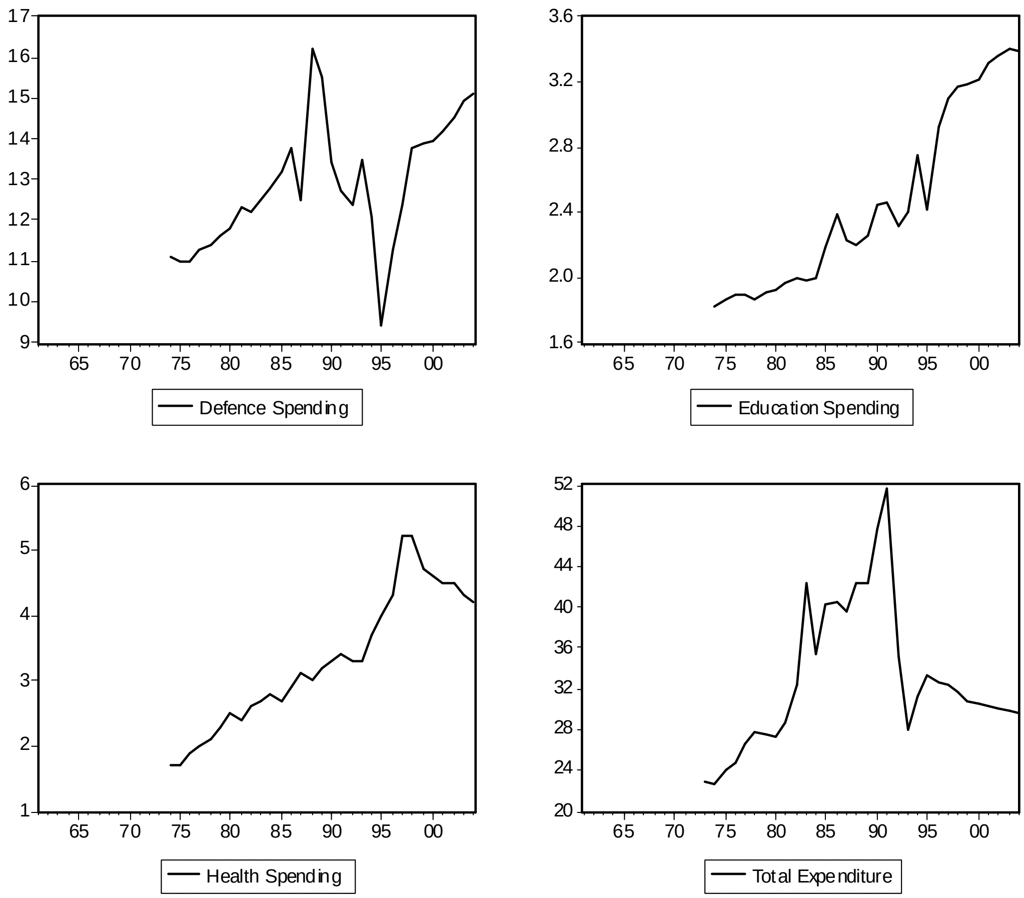
APPENDIX

Figures



Figures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Health Spending
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