An empirical investigation of social protection expenditures on economic growth in Greece

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1. Introduction

The relationship between welfare state expenditures and economic performance has been a rather intriguing issue, not only for professional academics but for politicians as well. From the moment that the concept of welfare state comprises a field of class struggle and compromises, it is inevitable that every aspect of it will be engaged in all political debates. From an economist’s side of view, the nexus of social policies aiming to alleviate income inequalities, poverty and social exclusion constitutes a variable capable to affect –in one way or another- economic performance. Especially, since after the Second World War, this “variable” has been obtaining a greater and greater significance, depicted in the tendency for increasing public expenditures as a percentage of GDP in western democracies.

This paper aspires to illuminate two phenomenally different issues which at the end seem to have a connection. The first one is to investigate the aggregate social expenditure trend and then its structure. The decomposition of aggregate social expenditures and the provision of qualitative evident regarding each social protection function are important in order to comprehend the weaknesses of the Greek social protection nexus. This is the topic of section 2. In section 3, this paper deal with an empirical investigation of the statistical relationship between the growth rate of the Greek economy to social protection expenditures. Despite the fact that the method used (OLS) is not technically the best one, we derive some statistical significant results, which can be interpreted under the light of the information drafted from Section 2. Namely, it is the nature and the structure of the social protection policies in Greece that are responsible for such a relationship between economic growth and social protection expenditures.


The trend of aggregate social protection expenditures

The study of aggregate social expenditure trends in Greece from the 1980s and afterwards may reveal a lot of characteristics of the Greek welfare state structure, but on the other hand it may conceal inequalities and injustices prevailing among different categories of the population or even within them. What is rather interesting is that despite the exogenous and endogenous constraints posed on the Greek economy, the general trend of social expenditure is increasing, although in a slower pace after the beginning of 1990s. The endogenous constraints could be
summed up into the overwhelming public debt and deficits (beginning in the 1980s and continuing until present days), the double-digit inflation until the beginning of 1990s, the public sector enlargement which crowded out private investment and contributed to the accumulation of deficits and more. Exogenous constraints have been posed by the dynamics of globalization and the need to enhance competitiveness in a new international division of labor (Genschel; 2004), but mostly by the need for “Europeanization” (Featherstone; 2003); the adjustment of fiscal imbalances and the stabilization of inflation rates became a top priority, from the moment that the compliance with the Maastricht criteria became the unique goal of Greek economic policy in the mid-1990s. Therefore, social policy should be adjusted in the new conditions. Another important exogenous pressure was the predominance of neoliberal ideas in the political arena, which made their appearance in Greece one decade after they did in the Anglo-saxon world. The “welfare state retrenchment” (Pierson; 1996) has been one of the neoliberal dogmas that dominated economic and social policies in the US and Europe after the early 1980s.

As we mentioned above, the general trend of welfare state spending in Greece does not reveal such a “retrenchment”. However, staying only to the aggregate data, it is not possible to illuminate structural changes in the Greek social policy that did, however, occur in these decades.

Moreover, it would be unwise not to count in the historical and social background of Greece entry in the 1980s. Until then, the Greek welfare state can be characterized as residual and rudimentary, while income inequalities and social exclusion were prevalent in the society. The radical shift in the political field, with the electoral victory of the socialdemocratic Panhellenic Socialistic Movement (PASOK) for first time in Greece’s modern history (with the exception of a small interval in 1963-1965) inaugurated an extended implementation of social policy, covering the “non-privileged” parts of population. It is important to mention, that while the rest of “western” European countries developed a welfare state during the 1960s and 1970s, in the middle of the “golden age of capitalism”, the Greek welfare state at that time remained stagnant and weak. It is a paradox that when the rest of the western European countries started rolling back their welfare states under the pressure of the economic crisis of the early 1980s (after the two oil shocks in the 70s), Greece’s shift of political environment impelled an opposite trend; the
development of welfare state in Greece was necessary at that time, but it had to encounter the “unlucky coincidence” of having to deal with a severe economic crisis.

As it is evident in Figure 1 social expenditures as a percent of GDP have grown substantially from 1980 to 2006. We use two sources of data, those of OECD covering the period 1980-2005 and those of Eurostat for social protection (ESSPROS), for the period 1990-2006. As it is obvious, there are discrepancies between the two series, but this seems quite logic, since the two organizations define social protection expenditures in a different manner. OECD data include only the expenditure on social protection made by the government and public organizations. Eurostat data, on the other hand, include both explicit and implicit expenditure, on benefits in kind and in cash, made not only by government and social insurance funds, but also by employers and other private entities, as well (Matsaganis; 2006, p.149, note). For this reason, Eurostat data exceed OECD data. However, we observe that the trend of social expenditures as a percentage of GDP is similar, independently of the source.

**FIGURE 1**

![Graph showing social expenditures as a percentage of GDP]

Sources: OECD database, 2009  
ESSPROS-Eurostat database, 2009

According to the OECD data that cover the 1980s, we see that in 1980 the social protection expenditure were covering only the 10.2% of GDP, while between 1981 and 1982 we observe the highest increase, something that follows the succession of the conservative government of New Democracy (ND) by PASOK. At the
end of the first term of PASOK in office (1981-1985), social expenditures had reached 16% of GDP, representing an increase by 57% as a percentage of the country’s total output. During 1981-1985 and especially until the summer of 1982, PASOK exercised an expansionary income policy, targeting in narrowing wages inequality. As a result of this income policy (the introduction of ATA, a partial wage indexation scheme, constituted a significant such development), was that “earnings in the non-agricultural sector rose by 27% in 1982, that is 5.5% in real terms, while the increases in the manufacturing sector reached 37.5% ... (see OECD, 1983: 17-18)” as mentioned by Tsakalotos (1991).

However, in the second term in office, PASOK had to face serious macroeconomic imbalances and the failure of the heterodox economic policies of “gradual adjustment” and “stabilization through development”. Since October 1985, PASOK makes a right turn in its economic policy, initiating a macroeconomic stabilization program. The main target was to reduce budget and external deficits and inflation, mainly through tighter income policies. This contractionary policy is reflected in the trend of aggregate social expenditures. From 16% in 1985, the spending on welfare state reduced at 14.6% (a 8.75% decrease) in 1988 and 15.5% in 1989 (a 3.12% decrease). But yet, the increase in 1981-1985 was so substantial that the decrease in social expenditures of 1985-1989 was impossible to overwhelm the rise of expenditures in the first term. Thus, while in 1980 social expenditures were estimated at 10.2% of GDP, in 1989 they were 15.5%.

After a small interval of political instability in 1989-1990, New Democracy came into power in 1990 (a short-living government though, until 1993) launching a neoliberal economic program based on the two pillars of privatizations and liberalization of markets. The shrinking of public sector, the enforcement of competition, deflation and the decrease of deficits were the major goals of the newly elected right-wing government. Especially from 1992, the government pursued a bold economic policy, ensuring full liberalization of process, deregulation, tight control of government enterprises, social security reform, privatization and infrastructure investment (Alogoskoufis; 1995). This neoliberal economic policy could not have been reflected in the social policy arena; hence, looking at the data of social expenditures, we observe a significant fall during 1990-1991 in an attempt to “rationalize” public expenditures. In the same period, total government outlays fall
substantially, not only as a reply to the hike of the previous year, but as a signal of the ND government’s intention to cope with fiscal imbalances.

After 1993, PASOK regained the power and the country was placed on the track of compliance with Maastricht criteria. Until 2006 that exist available aggregate data for social protection expenditure in Greece however, there has been notified an undisrupted increasing trend. OECD and ESSPROS data agree both on this evolution of social protection layoffs. An interesting feature of the period 1993-2005 is that this increase in social expenditures did not coincide with the evolution of total government expenditure; while the latter is 47.55 of GDP in 1993, it diminishes to 42.2% in 2006 (AMECO-Eurostat database). In the table below, we see that there is a negative correlation and covariance between the time series of social protection expenditures and total government expenditure. Of course, there is no causal relationship for these negative results, but still it makes evident the magnitude of the different trends that these two expenditures followed in 1993-2005.

Table 1

<table>
<thead>
<tr>
<th>Correlation and Covariance between social protection and total government expenditures as GDP % (1993-2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
</tr>
<tr>
<td>Covariance</td>
</tr>
</tbody>
</table>

Sources: Government expenditures from AMECO-Eurostat database, 2009
Social protection expenditures by OECD database, 2009
This implies that the decrease in public expenditure was not generated in terms of cuttings in welfare state expenditure, but mostly through privatizations, shrinking the public sector and squeezing government consumption and investment. The most possible explanation for this increase in social protection spending is that the social conditions of Greek population were far behind comparing to the one of EU citizens. Unemployment remained high and always near 10% during all this period, while more than the 20% of households were below poverty threshold. Therefore, a decrease in welfare spending would have deteriorated this situation. However, an important issue is that these well-being conditions persist, despite the high level of spending in social protection, underlying the ineffectiveness of the Greek welfare state.

**The structure of social protection expenditures**

In this section we will focus on how social expenditures are structured in Greece and try to shed light on some issues that aggregate expenditure trends may not interpret. An important information arising from Matsaganis (2006), is that only the 16.3% of total benefits are non-contributory in 2001 and are financed by taxation (the National Health System is financed in this way). The rest 83.7% (2001) of total benefits is financed by employers’, employees’ and state contributions. Moreover, the 4.7% (2001) of total benefits are considered as means-tested benefits, meaning that they are awarded after a test of claimant’s income. According to European Commission (2008), mean-tested benefits in Greece for 2005 were estimated at 7.8% of total benefits, while at the same time the EU-15 average was 10.7%. This social assistance benefits are a targeted policy to mitigate poverty, inequalities and social exclusion for very specific categories of population. However, this percentage is low comparing to the other countries of EU, although there is an increasing tendency. The countries with the highest percentage of means-tested benefits are mostly those of liberal welfare regimes (Ireland, UK) and those with the lowest are countries with socialdemocratic welfare states (Sweden, Denmark). Mean-tested benefits are opposed to the universality of social benefits which are the cornerstone of socialdemocratic welfare states, but since there exists a general tendency for the latter to water down some of its elements, it seems that there is an increasing trend for more benefits to be imposed to means tests.
Another distinction between social benefits is between those in cash and those in kind. According to OECD Glossary of Statistical Terms, social benefits in cash “consist of current transfers payable in cash to households by government units or non-profit institutions serving households ... to meet the same needs as social insurance benefits, but which are not made under a social insurance scheme incorporating social contributions and social insurance benefits”. Benefits in kind, on the other hand, consist of individual goods and services provided as transfers in kind to individual households by government units (including social security funds) and non-profit institutions serving households.

At the table below, we can see the evolution of benefits in cash and benefits in kind in Greece from 1980 to 2005.

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Benefits in cash</td>
<td>471</td>
<td>2058</td>
<td>5,183,10</td>
<td>10,332</td>
<td>17,226,60</td>
<td>26,646,20</td>
</tr>
<tr>
<td>Benefits in kind</td>
<td>229,7</td>
<td>892,1</td>
<td>1953,1</td>
<td>4,840,90</td>
<td>8,547,70</td>
<td>14,028,40</td>
</tr>
<tr>
<td>Total</td>
<td>700,7</td>
<td>2,978,70</td>
<td>7,217,40</td>
<td>15,529,40</td>
<td>26,105,00</td>
<td>40,807,30</td>
</tr>
<tr>
<td>% of Benefits in cash in total</td>
<td>67.2%</td>
<td>69%</td>
<td>71.8%</td>
<td>66.5%</td>
<td>66%</td>
<td>65.3%</td>
</tr>
</tbody>
</table>

Source: OECD; Social Expenditures database, 2009

From European Commission (2008) data for 2005, we derive that the 65.6% of benefits in cash were not means-tested, while 34.4% were submitted in test of the resources of the claimants. From the benefits that were means-tested, the majority were benefits in kind (60.3%) and the rest were benefits in cash.

In Table 3, we see a decomposition of social expenditures as a percentage of GDP, based on data from OECD.

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</tr>
</thead>
<tbody>
<tr>
<td>Old Age</td>
<td>4.6</td>
<td>7.2</td>
<td>9.3</td>
<td>9.2</td>
<td>10.1</td>
<td>10.8</td>
<td>10.5</td>
<td>10.4</td>
<td>10.4</td>
<td>10.8</td>
</tr>
<tr>
<td>Survivors</td>
<td>0.8</td>
<td>1.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Incapability benefits</td>
<td>1</td>
<td>1.8</td>
<td>1.2</td>
<td>0.8</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Health</td>
<td>3.3</td>
<td>4.5</td>
<td>3.5</td>
<td>4.5</td>
<td>4.7</td>
<td>5.3</td>
<td>5.2</td>
<td>5.4</td>
<td>5.1</td>
<td>5.6</td>
</tr>
<tr>
<td>Family</td>
<td>0.3</td>
<td>0.3</td>
<td>0.7</td>
<td>1</td>
<td>1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>ALMP</td>
<td>0.2</td>
<td>0.2</td>
<td>0.4</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>
It is evident from the first two rows ("old age" and "survivors"), which stand for pensions that the greatest part of social protection expenditures is channelled into pensions. The other significant sector of social protection, according to the data, is health services absorbing above 5% of GDP in the 2000s. Incapability benefits (some of which are considered as pensions), family allowances, unemployment benefits and housing comprise a very small part of the national product. An interesting element, is however the very small expenditure on active labour market policies (ALMP), despite the general trend after the beginning of the 1990s and mostly after OECD's Job Study in 1994 to use ALMPs as an instrument to increase employment and fight unemployment. The expenditures for ALMPs correspond to spending for training of unskilled workforce, subsidies to employers in order to increase labour demand and other policies offering incentives to individuals to raise labour supply.

**Pensions**

The social protection expenditures in Greece are based heavily on pensions. This is a typical characteristic of the continental/conservative welfare state regime (Esping-Andersen; 1994), which has been observed in a more intense manner in the southern European welfare regimes (Ferrera; 1996). The large majority of the welfare system relies on contributory and earnings-related benefits. Matsaganis (2006) estimates pensions to cover almost the 90% of total benefits in 2001, indicating that the system of social protection in Greece is strongly assiduous in this kind of transfer payments. From the data of the Social Budget (Ministry of Employment and Social Protection; 2006), we derive the conclusion that pensions are estimated in the 52.2% of the total Social Insurance (the latter including pensions, healthcare, welfare, administrative costs, property income expenditures and other expenditures). Exactly for this reason, we see that pension expenditures as a GDP% fluctuate in the same as aggregate social expenditures as GPD% do in Figure 1. A steady growth is observed, except for the period 1997-1998 and 2000-2001, were pensions increased significantly due to early retirement programs. In the period 2001-2003, a slight decrease takes place as a result of the attempt to balance fiscal deficits and solve social insurance problems.

<table>
<thead>
<tr>
<th>Unemployment</th>
<th>0.2</th>
<th>0.3</th>
<th>0.4</th>
<th>0.4</th>
<th>0.4</th>
<th>0.4</th>
<th>0.4</th>
<th>0.4</th>
<th>0.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>0.1</td>
<td>0.2</td>
<td>0.4</td>
<td>0.5</td>
<td>0.7</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Other</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.3</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Total</td>
<td>10.2</td>
<td>16</td>
<td>16.5</td>
<td>17.3</td>
<td>19.2</td>
<td>20.6</td>
<td>20</td>
<td>19.9</td>
<td>19.9</td>
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</tbody>
</table>

Source: OECD; Social Expenditures Database, 2009
A useful tool for studying the pension system imbalances is the ratio between insured people and pensioners. The lower this ratio is, the harder the demographic and fiscal problems for social insurance funds, since it implies that less persons should pay contributions for more people receiving benefits. The data are disappointing and are surely related to the high unemployment and its rather long duration (especially of young people), the contribution-evasion by firms and the early retirement programs. In the following graph we can see the evolution of this ratio from 1990 until 2006, for both basic and supplementary pensions.


At the following graph we observe the evolution of pension expenditures in mil. of euros from 1980 to 2006 (Ministry of Employment; 2008)
At the beginning of 1980s, when the Panhellenic Socialist Movement (PASOK) took over its first term in office, pension expenditures increased sharply as a percentage of GDP. One of the first measures that the new government took was to raise significantly the lowest pensions, to incorporate to the social security system population groups that were in need but had never paid any contributions (such as the Greek repatriates from Eastern Europe and the Soviet Union) and to extend social security benefits to both rural and urban populations. Moreover, IKA that was since its establishment the main organization for carrying out social security policy absorbed a number of smaller, bankrupt funds that could not otherwise have survived. However, despite the rise in pensions that was remarkable for many professions, no structural change occurred in social policy. The social security system remained fragmented and although many categories of non-privileged citizens became better-off, inequalities in benefits even within the same profession, remained as a special feature. From the moment that the social security system in Greece comprises a PAYG scheme, any increase in benefits should be accompanied by a proportional increase in contributions; since, this proportionality was not maintained, it was inevitable to generate deficit problems to the funds. This fact, in combination to important demographic changes that were connected to the massive leave from the agricultural sector to the industrial one, deteriorated the already large deficits. Moreover, contribution evasion by private and also public corporations was
regarded as an instrument to reduce the indirect labor cost and therefore was not encountered by the government.

One important explanation for this expansion of pension spending during that period was, according to Gravaris (2006), the employment policy to cope with unemployment issues throughout this stagflation era. The target of this policy was to reduce labor supply by increasing outflows from the labor market. An instrument for that was the relaxation of eligibility criteria, rendering retirement easier for some categories of the labor force. This relaxation of retirement terms was not equable among workers, but it was mostly enjoyed by these categories that could stress higher political pressure or were closer to the state apparatus. This policy on the one hand increased significantly the ratio of pensioners to workers and the spending for pension as a percentage of GDP, but at the same time it generated large inequalities in the social security system not only among different professions but also within the same professions. As Gravaris concludes “the distortions inflicted upon the social insurance system had not been caused by the generosity of the pensions that were actually paid but by the use of social insurance policy as a means of attaining the goals of a specific employment policy” (2006, p.61).

Entering the 1990s, the political setting changed rapidly. PASOK lost the elections after accusations for political and economic scandals and the conservative party of New Democracy (ND) came into power. At the same time, exogenous pressures especially from the European Community and secondarily by IMF and OECD, were imposed to the newly elected Greek government to cope with the huge budget deficits and the inefficiencies of the pension system.

ND government had to face the serious imbalances of the social insurance system. Two major laws were passed in the period 1990-1993 (Laws 1902/90 and 2084/92) targeting at the reduction of replacement rates, the curtailment of benefits especially for those entering labor market after 1/1/1993, the increase of contributions and the setting of 65 years old as the eligible retirement age both for men and women. The principle of reciprocity between benefits and contributions governed the logic of the reform; however, it led to severe social confrontations since it posed heavy weights on the shoulders of workers and the future generations of pensioners. More specifically, up to then minimum pensions were set as equal to the 80% of the day wage of an unskilled worker, namely the monthly minimum pension was equal to 20 day wages of an unskilled worker. With the 2084/92 law, this
connection between wages and pensions was disrupted and minimum pension were estimated through an algorithm based on the average monthly GDP per capita of 1991. The result was that minimum pension after this law corresponded only to the 48.5% of the 20 day wages of unskilled workers!

The detrimental results of this reform with respect to benefits and contributions were concerning a very wide range of professions, especially those insured in IKA and the gap between low and high pensions grew significantly. In fact, the number of people increased dramatically by the middle of 1990s, while the same holds for pensioners living under the poverty threshold (Petmesidou, 1996). In this connection, a wide coalition was formulated among those with harmed interests, both workers and pensioners. Trade unions and pensioners’ associations reacted to the reforms and the result was massive strikes and social upheaval. This attempt to reform the social insurance system generated a slightly positive fiscal outcome for the social insurance funds, but still left inefficiency problems untouched, while it impaired the social well-being of large parts of the population.

The ND government did not manage to complete its four year terms in office and 1993 PASOK was reelected; however until 1996, no major policies were taken up in terms of social issues. The year 1996 and the undertaking by Simitis of prime minister duties signified important changes in a range of policy areas. The concepts of “modernization” and “Europeanization” (Featherstone, 1998) became prevalent in the new government’s rhetoric and significant reforms were planned in order to put Greek economy on the truck of convergence with the Maastricht criteria for entering the European Monetary Union. The first important measure taken was the establishment of a social solidarity allowance (EKAS) for the pensioners above 60 years old who where receiving a low pension. That was a non-contributory means-tested benefit, aiming to raise the income of a large part of pensioners who were living below the poverty threshold. According to Petmesidou (2000) and as mentioned in Venieris (2006, note 9), 70% of the pensioners in non-privileged funds were receiving a pension of 50% below the poverty threshold in Greece. This implies, that the implementation of EKAS was a rather radical policy, especially in country were social policy was mainly based in contributory schemes. In 1997, OGA was converted into a contributory social insurance fund, replacing the previous flat rate minimum pension for the part of population engaged in agriculture.
In 1998, a new law intended to regulate some fiscal and administrative difficulties encountered by some funds. For this reason, a number of similar funds were amalgamated or even if the case of amalgamation was not feasible, they were abolished. The most important amalgamation was the one of the self-employed workers social insurance fund (TEBE) with the one of merchants (TAE) and the one of public transport motor vehicle owners (TSA), giving birth to the Social Insurance Fund for Self-Employed Workers (OAEE), with 800,000 insured workers.

After a period of inactivity and a strikingly failed attempt for reform of the social insurance system in spring of 2001, the pressures from the European Commission towards the Greek government increased. For the European Commission, the pension system in Greece comprised a “bomb” in the foundation of the overall stabilization and developmental program and the convergence with the other EU members since “the stability of public economy in the long run, depends on the reconstruction of the social insurance system (in Venieris 2006, p. 84-85). The failed attempt to radically reform the pensions system in 2001 signified that an overall reform, rousing social conflicts, would be condemned to fail. A gradual adjustment to the EU prescriptions would be the only way to yield positive results.

That was exactly what the 2002 reform in the pension system (Reppas Law) by PASOK government aimed. With this law, the state contribution to IKA (10% of total contributions) is abolished and is replaced by an annual subsidy of 1% of GDP. However, this subsidy is estimated much less than the previous contribution of the state in the context of the tripartite contributory system. Moreover, concerning the eligible retirement age, this law converted the 35 years of paying contributions to 37 for those insured after 1983 and set for both men and women that were firstly insured after 1993 the 65 years old as the eligible retirement age. This law, also, curtailed the early retirement for mother with minor children, by setting a common retirement age for all of them the 60 years old and 25 years of insurance, independently of when they were firstly insured. As far as it concerns the level of pensions, Reppas Law predicted that pensions should reach the 70% of pensionable income until 2017. However, as pensionable income this law considers the average income of the last 5 years of working (with the potential of choice among the best 5 years in the last 10 years). Furthermore, as a minimum pension was set the 70% of the minimum wage of a married full-time worker. Finally, the establishment of
Professional Insurance Funds is enacted, thus putting more weight to the second pillar of social insurance.

Health / Sickness Expenditures

Healthcare expenditures comprise a mostly in-kind benefit for most of the people and almost absolutely non-means-tested. Only 1128.9 mil. Euros out of the 14407.7 mil. in 2006 were corresponding to cash benefits, whereas the rest 13278.9 mil. were corresponding to benefits in kind. This is logic due to the nature of this function of social protection. Benefits regarding health are mostly hospital treatment and medicines, therefore it is expected that benefits in kind prevail. Moreover, the share of non-means-tested benefits reveals a crucial feature of the Greek healthcare system; only 30.9 mil. euros were absorbed for means-tested benefits, while the rest 14376.8 mil. were devoted to non-means-tested ones. This makes clear that on the contrary to the pension system which is a contributory-based one, the character of health care in Greece in universalistic and approximates a Beveridge-style system.

Figure 5

<table>
<thead>
<tr>
<th>Year</th>
<th>Health / Sickness Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>0</td>
</tr>
<tr>
<td>1992</td>
<td>2000</td>
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<tr>
<td>1994</td>
<td>4000</td>
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<tr>
<td>1996</td>
<td>6000</td>
</tr>
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<td>1998</td>
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</tr>
<tr>
<td>2002</td>
<td>12000</td>
</tr>
<tr>
<td>2004</td>
<td>14000</td>
</tr>
<tr>
<td>2006</td>
<td>16000</td>
</tr>
</tbody>
</table>

Family / Children Expenditures

Family and children allowances are consisted of non-contributory benefits and occupational family allowances (Matsaganis; 2006). Eligible people for receiving family allowances are all employed individual with children under the age of 18 or under 22 years old if they study. There are two sources for this benefits. The first one
is the Greece Labor Force Employment Organization (OAED), through the Account for the Distribution of Family Allowances (DLOEM). This allowance is paid annually and is financed by employers’ and employee’s’ contribution (1% each) (Davaki; 2006). The second one is through the Agricultural Insurance Organisation (OGA), and includes the so-called “lifetime-pension for mothers of many children”, “the large family benefit” and the “third child benefit”.

In the figure below, we can see the evolution of family expenditures from 1990 to 2006.

![Figure 6](Image)

In the year 2006, until which there exist available data, these expenditures were estimated in 3.095 million Euros. From these, 2079.5 million were concerning cash benefits (1603.4 mil. were no-means tested and 476 mil. were means-tested) and 1015.6 million benefits in kind (out of which 479.6 mil. were means-tested and 539 mil. no-means-tested). Out of the total, 2139.4 million were not submitted in means-test and 955.6 mil. were means-tested.

The largest part of expenditures was channeled to family and children allowances (1.129 mil or 36.5% of the total). Other important expenditures financed “child day care” (351.1 mil), the “income maintenance benefit in the event of child birth” (322.9 mil) and the “birth grant” (86 mil.).

**Unemployment Expenditures**

The social expenditure on the protection of unemployed are usually thought to be consisted mainly by unemployment benefits. Of course this is a large part of it but
it is not the largest. It possesses a basic position however, since the “passive labor market policies” have a higher direct effect for the alleviation of the unemployed than ALMPs have. As the relationship of this kind of benefit with minimum wage has been strongly highlighted as a decisive factor of unemployment (OECD; 2004, Layard et al; 2006), the tendency is to try to diminish this ratio (replacement ratio). This is exactly what has taken place in the case of Greece after 1990. In the following graph, it is clear that the replacement ratio has followed a steadily decreasing trend, in an attempt to vanish labor market rigidities, in the cost however of the impoverishment of unemployed people.

**Figure 7**

![unemployment benefit/ minimum wage ratio graph](https://via.placeholder.com/150)

In the following graph we see the evolution of expenditures for protection from unemployment. Despite the decrease until 2001, we see a keeping increase after that year. In 2006, the amount for this expenditure was estimated at 2.315,1 mil. The highest portion was corresponding to expenditures for vocational training (1122.4 mil. euros), while the full- and part-time unemployment benefit was estimated at 705 mil. euros, according to ESSPROS data.
3. Empirical Investigation of Social Expenditures’ effect on Economic Growth

The object of this section is to try to investigate the relationship between social protection expenditures on the growth of the Greek economy for a period from 1988 to 2006. For this reason, we use regression analysis over a time series of data to test if the levels of aggregate social expenditures have a systematic effect on the GDP growth rate of Greece.

Variables

Gathering data for these variables was not an easy task. This is mostly due to the fact that the most well-known and often-used databases (i.e. OECD or IMF) do not contain long series of these variables; therefore, we resorted to the data of National Budgets of Greece by the Ministry of Finance, after making the necessary adjustments to correct from broken series, generated by the often revisions of the data.

Based on the empirical literature we use a model with six independent variables: private investment, government investment, social protection expenditures, trade balance, employment growth rate and government expenditures. The variables referring to expenditures, investment and trade are expressed as shares of GDP.

The growth rate of employment may be likely to generate a substantial part of economic growth. The sign however of this variable is not certain to be positive. The
doubts on the sign arise from the fact that a high rate of employment growth may contribute to the lowering of capital-labor ratio (including both private and public infrastructural capital). Moreover, the sign of the effect of employment growth on GDP growth depends also on the skills of the new entrants in the labor market. If the skilled workers are proportionally more than the unskilled, then the GDP growth is expected to be positively influenced, whereas if unskilled workers are proportionally more, then the effect is ambiguous. It is important to distinct here employment growth from population growth, since the latter would reduce GDP per capita, although it could increase the size of labor force, allowing for economic growth, without tightening the labor market.

*Private investment* is a variable that could not have been omitted in a model interpreting GDP growth. The data used here refer to the ratio of private gross capital formation to GDP and are expected to have a positive effect on GDP growth.

*Government investment* may be another factor contributing to output growth, although smaller than private investment.

*Total government expenditure over GDP* is another independent variable used in order to proxy the public sector’s size and its effect on economic growth. In order to avoid misspecification due to multicollinearity, the government capital formation and the share of social expenditures covered by the national budget\(^1\) have been subtracted from total government expenditures. Estimating the relative size of the government in economic activity may be susceptible of a number of proxies. Many researchers (Landau; 1983, Romer; 1989, Easterly; 1990) have used the ratio of government consumption expenditures over GDP to estimate the public sector’s size. However, here we will accept that the ratio of total government expenditures to GDP may perform better as a proxy of the share of public sector in economic activity (Levine and Renelt; 1992). As far as it concerns the sign of total government expenditures in the estimation model, this is ambiguous according to economic theory. Governments may provide growth-promoting public goods and design taxes to close the gap between private and social costs. Moreover, this kind of expenditures may be devoted to public utilities and infrastructures yielding increasing returns to

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\(^1\) The largest part of social protection expenditures is financed by semi-autonomous social insurance funds, which resources come mostly by the contribution of employers, employees and the state, in the context of the tripartite-contribution system. The healthcare expenditures are financed by the state through taxation. Moreover, after 1992 the state is obliged to support the budgets of social insurance funds. In general, the participation of the national budget in social expenditures is estimated at approximately 20% for 2006 (Ministry of Employment; 2006)
the economy. On the other hand, governments may waste funds, funnel resources to endeavours that do not encourage growth, and impose taxes and regulations that distort private decisions. Aggregate measures of government size will not capture the potentially important implications of how total government expenditures are allocated. Furthermore, even if government funds are always spent on growth promoting goods, there may be complex, non-linear tradeoffs between the beneficial effects of government services and the deleterious implications of distortionary taxes (Barro; 1990 and Easterly; 1990).

Trade balance as a percentage of GDP is another variable that we use. A large literature has emerged in the late 1980s and throughout the 1990s about the effect of economic openness on economic growth (Riviera-Batiz and Romer; 1990, Grossman and Helpman; 1991). International trade may generate proliferative positive results on growth, since except for being a factor affecting aggregate demand it may generate increasing returns to scale through technology transfer. The variable chosen to estimate the effect of trade on economic growth in this model is the net exports as a percentage of GDP.

The ratio of social expenditures to GDP is left as the last variable included in the model. This is actually the variable that we are interested in, since it may constitute an aggregate measure of welfare state. Despite some disagreements on whether quantifying the welfare state in terms of an expenditure variable is legitimate (Siegel; 2007), most of the studies include this independent variable as a proxy of the welfare state (Korpi; 1985, Friedland and Sanders; 1985, Castles and Dowrick; 1990). The sign of the coefficient estimate of social expenditures in this model cannot be predicted intuitively because these expenditures generate two opposite motions. The one enforcing the positive outcome on growth is based on a multitude of mechanisms. The first one is related to the effect that social expenditures impose on the disposable income. Social transfers in cash and kind increase households’ income raising aggregate demand and thus yield a boosting push on total output. Moreover, social expenditures create a “safety net” towards risk; more specifically, policies that protect from exclusion and alleviate the cost of failures encourage the risk-taking necessary to engage in the inventive activity that leads to new ideas and new techniques of production. This would show up in the rate of technical progress, namely the total factor productivity growth, leading to increases of GDP growth rate (Atkinson; 1999). Another positive effect of social
expenditures on economic growth stems from their effect on human capital. Social transfers improve the live quality of workers and thus increase their productivity. On the other hand, there is an opposite motion rendering the size of social expenditures a detrimental factor for output growth. This has to do firstly with the disincentives provided by welfare state mostly in terms of employment and savings (Lindbeck and Snower; 1986, Feldstein, 1974). Social expenditures such as unemployment benefits may increase the reservation wage for the outsiders of labour markets and therefore reduce labour supply and subsequently economic growth. Moreover, the payment of pay-as-you-go state pensions may reduce capital formation and hence the growth of output by an amount which depends on the growth rate of capital. Finally, social expenditures pose a heavy burden for the state budget and hence deepen fiscal deficits. The need to finance these deficits imposes to the government the purchase of bonds, which results in raising interest rates and thus in slowing-down economic activity (crowding-out effect).

**Estimating the model**

The equation that we want to estimate under the OLS method is the following

\[
gdp_{gr} = b_0 + b_1 \cdot empl_{gr} + b_2 \cdot trade + b_3 \cdot I_{pr} + b_4 \cdot I_g + b_5 \cdot govexp + b_6 \cdot socexp
\]

After running the first regression on STATA and testing for multicollinearity, heteroscedasticity, omitted variables, functional form and autocorrelation, it does seem that there exists a problem of autocorrelation, as it is expected since we encounter an estimation of a model with time series. More specifically, we present concisely the tests that we carried out.

First we carry out the variance inflation factor method to test for the severity of multicollinearity. A common rule of thumb is that if \( VIF(b_i) \geq 5 \) then multicollinearity is high and there exists serious problems for test hypotheses. However, other econometricians expand this rule of thumb up to \( VIF(b_i) \geq 10 \) (Kutner et al.; 2004). By accepting the most “flexible” rule of thumb, it appears that our variables do not face a problem of multicollinearity.
Then we perform the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity with fitted values of the dependent variable. We are lucky to see that

\[ \text{Prob} > \text{chi2} = 0.0041 \]

which implies that the we can reject the hypothesis that the variance of the error term is not constant in a 95% level of statistical significance.

As far as it concerns the “omitted-variables” test, we performed the Ramsey RESET test and we found that in a level of statistical significance 95%, the null hypothesis of “no omitted variables in the model” is accepted since

\[ \text{Prob} > F = 0.0047 \]

Now, concerning autocorrelation, a Breusch-Godfrey LM test was carried out and the following results were derived:

Breusch-Godfrey LM test for autocorrelation

<table>
<thead>
<tr>
<th>lags(p)</th>
<th>chi2</th>
<th>df</th>
<th>Prob &gt; chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.007</td>
<td>1</td>
<td>0.9343</td>
</tr>
</tbody>
</table>

H0: no serial correlation

The null hypothesis is rejected since the p-value is very large. Therefore, we run a Prais-Winsten regression in order to derive BLUE estimates for the independent variables. The results of this regression are the following (p-values in brackets):

\[
gdp_{gr} = 4.63 + 0.36*empl\_rate + 0.11*trade + 0.44*I + 0.08*I - 0.19*govexp - 0.31*socexp
\]

(0.02) (0.04) (0.08) (0.02) (0.45)

(0.09) (0.04)
Explaining the results

We observe that for a level of statistical significance 95%, the coefficients of trade, government expenditures and government investment are not statistical significant. However, trade and government expenditures are significant in a level of statistical significance 90%.

The insignificance of government investment seems rather surprising but there exists a possible explanation. Given the fact that private investment has a strong positive relationship with output growth, we can suppose that this insignificance of government investment suggests that its level is much smaller comparing to the private one (which is true) and that the returns of government investment are less important than those from private investment projects (which is also true it is considered that private sector’s main criterion for investments is profits, whereas government may have other criteria, as well).

Government expenditures minus government investment and social protection expenditures (those aggravating the national budget) may fail to pass the 95% level of statistical significance, but it succeeds in the 90%. The important issue here is the negative sign of the estimated coefficient. This can be justified in the same manner as Dalamagas (2000) did for government consumption’s effect on economic growth for Greece. An explanation can be that an increase in government consumption needs to be financed by more taxes and an increase in distortionary taxation will decrease growth. Moreover, an increase in government expenditure may not be complementary to private investment, but on the contrary it can generate a crowding-out of the private sector due to a higher income tax rate. This increase in taxes leaves individuals with less disposable income, thus decreasing the incentive to invest and work more.

Trade succeeds to be a statistical significant variable only in the 90% level of confidence. The negative sign of the coefficient implies that large trade deficits faced for years by the Greek economy weaken GDP growth as it is expected.
Private investment and the employment growth rate are statistical significant variables in a level of 95% and have positive effect on GDP growth, as it is expected.

Now, let us focus on the relationship between social expenditures and economic growth and try to derive some conclusions out of that. First of all, as it seems this relationship is statistical significant in a level of 95%. The important feature is the negative sign of the coefficient. It implies that for a 1% increase in social expenditures economic growth in Greece slows down by 0.31%. There may be several explanations for this outcome. The most usual is that social expenditures generate a heavy burden on the chronic fiscal imbalances, deteriorating this situation. This channel may destabilize the price level, raise the interest rates and create an unfriendly environment for private investments. If this effect is significant, it is very plausible to offset any positive result generated by social protection expenditures. This may be the case for the Greek economy.

However, this argument not only is superficial but it does not take account of the structure of social expenditures and the way that the Greek welfare state is organised. Of course, we should recognise that a more integrated analysis would require a decomposition of social expenditures in the model in order to test the relationship of every each one of them with economic growth. Such an analysis was not possible to be performed in this paper. Intuitively though, it can be argued that the negative relationship between social expenditures and economic growth is mostly due to the inefficiencies of the Greek welfare state, downgrading the positive effects it could have generated. Namely, it is not as much a matter of deteriorating fiscal imbalances as it is of the incapability of welfare state to ensure the challenging of poverty, income inequalities and social exclusion in Greece.

Let us try to be more specific and enforce the argument invoked above. As Papatheodorou and Petmesidou (2006) argue, pensions as a social transfer has a smaller effect on alleviating inequality than the rest of social transfers, although, as the authors notice, inequality does decline significantly because of them. This is explained because “pensions” are based on the employment background, the contributions that each employee has paid and the income that he has received during his employment. It is a reciprocal payment, not a redistributive one. The rest of social benefits though are non-contributory and are received by individuals independently of their employment background and their contributions. For this reason they tend to reduce inequality in a more effective way than pensions do. In
2001, according to the same study, the total social transfers in Greece contributed to a 28.7% decline of inequality (in terms of the Gini index), a percentage that was one of the lowest in the EU-15 (exceeding only Spain’s and Portugal’s). The reason for that is that the composition of social transfers is dominated by pensions (93.5% of the total social transfers in 2001) that exhibit a limited redistributive function comparing to the rest social transfers. Moreover, social transfers in Greece comparing to the rest of EU-15 are inefficient in reducing poverty, since the effect of social transfers on reducing poverty is the lowest together with Portugal (Heady et al.; 2003, Matsaganis et al.; 2002).

4. Conclusions

The aim of this paper was double. On the one hand to provide an image of the Greek welfare system through an analysis of social protection expenditures and on the other hand to attempt to estimate a relationship between these expenditures and Greek economy’s growth. Social protection expenditures in Greece correspond to a relatively small part of GDP comparing to other countries of EU-15 (Greece exhibits a larger share of GDP only comparing to Spain, Portugal and Ireland). In 2006, the share of social protection expenditures in GDP was 24.2, while the EU-27 average was 26.9 and the EU-15 average was 27.5 (ESSPROS). A decomposition of aggregate social protection spending indicates that pensions absorb the largest part of this share. By examining some qualitative fact concerning the social insurance system in Greece, we saw that it is fragmented and dominated by clientilistic practices; therefore it promotes injustices and inequalities, even within the same profession. The fact that social protection expenditures are negatively related to economic growth, in our point of view, reflects these inefficiencies of the Greek welfare system. Fiscal imbalances were existent even when social protection expenditures were a very small fraction of GDP and consequently it would be unwise to blame a residual welfare state for these.

In this context, what is necessary is not a retrenchment of the Greek welfare state but a reform of it. Social protection expenditures should be planned in such a way targeting income inequality, poverty and social exclusion. We strongly believe that if this will be the case then they may have a positive effect on economic growth.
References


