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The Simple Arithmetic of Greek Social Spending, Public Wages, Government Deficits and Sovereign Debt

1. Introduction

This paper presents some stylized facts of Greek government spending on public wages and social benefits (pensions included). These two accounts are very important because they affect millions of people who can determine who is going to be elected and form a government. Since 2009, this part of the electorate has changed governments on average every two years producing five prime ministers three of them elected and two appointed by parliament. Pensioners and public employees were a critical mass of voters who swung from party to party on the promise of higher pensions and higher public wages. Up to 2009 these promises were fulfilled. However, they were entirely financed by borrowing from abroad but after 2009 this was not possible anymore because nobody wanted to lend money to a country with huge public deficits and unprecedented accumulation of sovereign debt. Greece was practically a defaulted country.

Pensions and public wages had to decrease. There were two ways to implement such a policy: the hard way (higher economic cost) and the easy way (lower economic cost). The hard way was through an outside enforcement mechanism such as the International Monetary Fund (IMF), the European Central Bank (ECB), and the European Commission (EC) forcing Greece to sign an agreement of reducing social spending and public wages[1]. The easy way would have been if Greece by itself had decided to make even bigger sacrifices right from the beginning for about 5 years which would have resulted in long run gain as shown below. The latter option was politically unacceptable. The former policy, despite the rhetoric from all ruling political parties, was much easier to implement. Since 2009, all Greek governments wanted foreign involvement because they would then be able to put the blame on them for the austerity measures[2]. The political cost of the easy way out was too high.

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[1]For all practical purposes, these institutions were not asking for a reduction in government spending but for a balanced budget. The Greek government opted more for higher taxes rather than for reducing public wages and pensions. This has had additional harmful economic effects.

[2]The alternative option to default on government debt and get out of the eurozone was a minority in the Greek political spectrum. However, for some parties, which thrive on people's immiseration, this was the best option. For equally rational political reasons, some politicians in Europe wanted Greece to default and exit the eurozone, I have explained all these in my book; see Papanikos (2014a). But Greeks they do not want to leave the eurozone. They want more

This paper examines the above issues using a descriptive and a narrative approach. It is organized in seven sections including this introduction. Section II presents some stylized facts on social spending and public wages. Section III associates this type of government spending with Greek economic growth record during the last two decades. Section IV measures the impact of this spending on government deficits and on accumulated Greek sovereign debt. Section V discusses how pensions can adjust according to their share to GDP, number of pensioners and the distribution of pensions to meet the short run challenge of a balance government budget without undermining the long term Greek prospects of economic growth. Some interesting results emerge from this analysis. Section VI presents selected scenarios of the long term GDP impact of different pension's share to GDP, holding constant the number of pensioners. The last section concludes.

2. Some Stylized Facts

This section uses Eurostat data (AMECO data base) on social expenditures, public wages[3], government deficits and sovereign debt. All data have been deflated using the GDP deflator with 2010 as the base year. The series on social spending includes government spending on social benefits other than social transfers in kind paid by general government made up of (a) social security benefits in cash (b) private funded social benefits, for example retirement pensions paid by an autonomous pension fund (c) unfounded employee social benefits (d) social assistance benefits in cash, for instance children's allowance, welfare affairs and services. The largest portion of this spending is pensions. According to the Greek Government report in 2015, the amount paid for pensions was 28.5 billion euro. As explained later, this is an account that the Greek government can save a lot of money on, and at the same time lift the negative effect on long-term economic growth. According to a European Commission report released in 2015, Greece's pensions' share to GDP is the highest of all 28 member-states and amounted to 16.2%.

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money from it! The structure of the Greek labor force and their attitudes towards the euro are explained in Papanikos (2014b).

[3]The number of public employees is not actually known. Attempts to register the number of people working for the government offices and government organizations have failed. However, data on public wages are available but they are most probably an underestimation of the actual public wages figure.

The problem will become worse in Greece and in Europe because of an aging population. Reforms are needed as explained by Börsch-Supan et al (2014).

Figure 1 shows real government spending on (a) social benefits (b) public wages and (c) the sum of the two. All figures are in billions of 2010 euro. Social spending doubled in the last two decades (1995-2015); from 17.5 billion euro (11% of GDP) in 1995 to 38.7 billion euro (over 20% of GDP) in 2012. In 2009, the Greek government spent 43.9 billion euro to pay for all kinds of social benefits. The issue of accountability is not discussed here but many reports and anecdotal (journalistic) evidence question the eligibility criteria of many beneficiaries.

Figure 1. Greek Social Spending and Government Wages
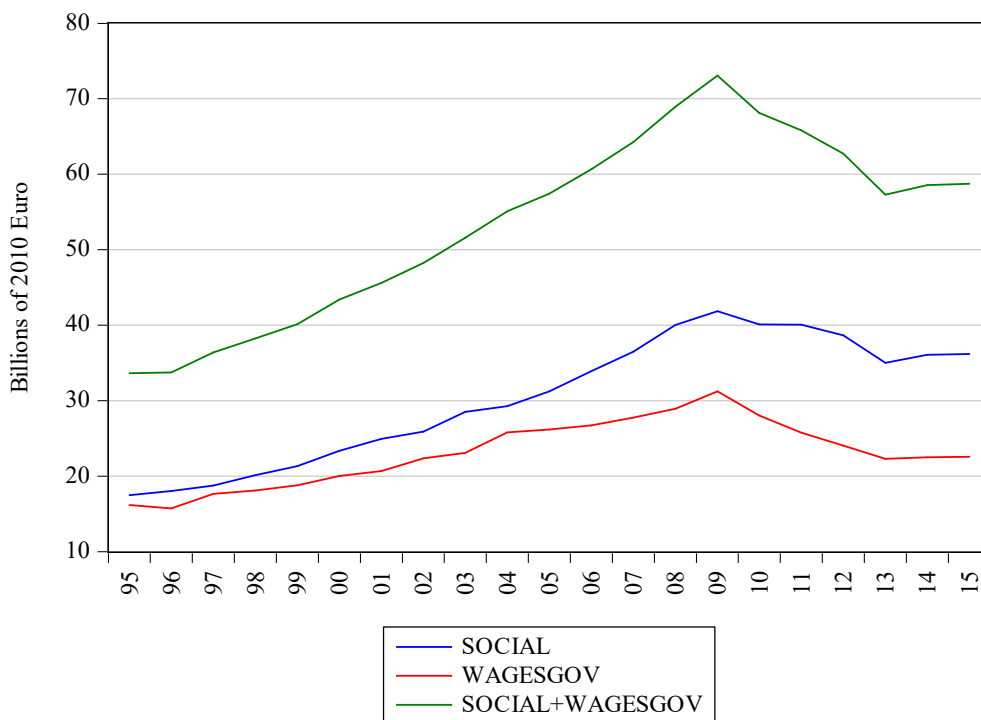
In the election year of 2009, politicians were promising more money for wages and pensions despite the fact that the government deficit skyrocketed. Debt-financing social policy is not sustainable particularly if it is entirely financed by borrowing money from abroad. Despite the crisis, social spending continued to hover around 20% of GDP from 2010 onwards. As mentioned, in 1995, Greece's social spending was only 11%; the second lowest in the entire

eurozone of the initial 12 member-states (see Table 1). In 2011 and 2012 Greece's social spending was the highest among the eurozone countries.

Table 1. Social Spending in the Eurozone Countries, 1995-2015

	GER	IRE	SPA	FRA	ITA	LUX	AUS	BEL	POR	FIN	NET	GRE
1995	0.172	0.106	0.132	0.176	0.156	0.136	0.199	0.156	0.107	0.213	0.143	0.110
1996	0.179	0.102	0.131	0.177	0.159	0.135	0.198	0.157	0.108	0.207	0.137	0.110
1997	0.180	0.103	0.127	0.178	0.163	0.138	0.192	0.155	0.106	0.191	0.127	0.110
1998	0.177	0.093	0.122	0.174	0.160	0.136	0.189	0.152	0.108	0.176	0.119	0.114
1999	0.179	0.081	0.119	0.172	0.162	0.128	0.189	0.149	0.108	0.170	0.112	0.117
2000	0.174	0.073	0.117	0.167	0.158	0.125	0.188	0.144	0.111	0.157	0.105	0.123
2001	0.176	0.079	0.115	0.168	0.156	0.134	0.187	0.146	0.114	0.153	0.104	0.126
2002	0.180	0.083	0.116	0.171	0.159	0.142	0.189	0.151	0.119	0.158	0.105	0.126
2003	0.184	0.083	0.115	0.173	0.161	0.152	0.192	0.153	0.131	0.161	0.108	0.131
2004	0.181	0.085	0.116	0.173	0.162	0.149	0.188	0.151	0.135	0.159	0.107	0.128
2005	0.179	0.089	0.115	0.175	0.163	0.148	0.185	0.150	0.140	0.158	0.103	0.136
2006	0.171	0.091	0.113	0.175	0.163	0.139	0.181	0.148	0.141	0.153	0.100	0.140
2007	0.160	0.097	0.115	0.174	0.164	0.132	0.176	0.147	0.141	0.145	0.096	0.146
2008	0.158	0.116	0.123	0.176	0.170	0.143	0.178	0.153	0.146	0.147	0.096	0.160
2009	0.173	0.143	0.144	0.192	0.185	0.165	0.192	0.167	0.164	0.173	0.107	0.175
2010	0.167	0.143	0.151	0.192	0.186	0.157	0.194	0.164	0.164	0.175	0.110	0.177
2011	0.157	0.137	0.153	0.191	0.186	0.156	0.187	0.164	0.170	0.172	0.111	0.195
2012	0.156	0.138	0.162	0.196	0.193	0.162	0.188	0.169	0.176	0.181	0.114	0.203
2013	0.155	0.131	0.165	0.199	0.199	0.159	0.192	0.174	0.185	0.190	0.118	0.190
2014	0.155	0.121	0.164	0.202	0.203	0.157	0.194	0.173	0.177	0.196	0.117	0.194
2015	0.156	0.112	0.158	0.201	0.205	0.149	0.196	0.172	0.172	0.201	0.115	0.195

Source: Eurostat (AMECO data base)

As a comparison, Figure 2 shows the parallel increases in social spending in Greece and Portugal. Both countries had very low social spending in 1995, the lowest in the eurozone. Up to 2006 Greece's and Portugal's spending increased in tandem but they were below the eurozone's average. In 2007, Greece's social spending surpassed for the first time the eurozone average. Portugal did so after 2011. In 2015 Portugal's social spending was below the eurozone's average. In 2015 Greece's social spending was the third highest rate in the eurozone after Austria and Finland.

Figure 2. Social Spending (% of GDP) in Euro of 12 Countries, Greece and Portugal
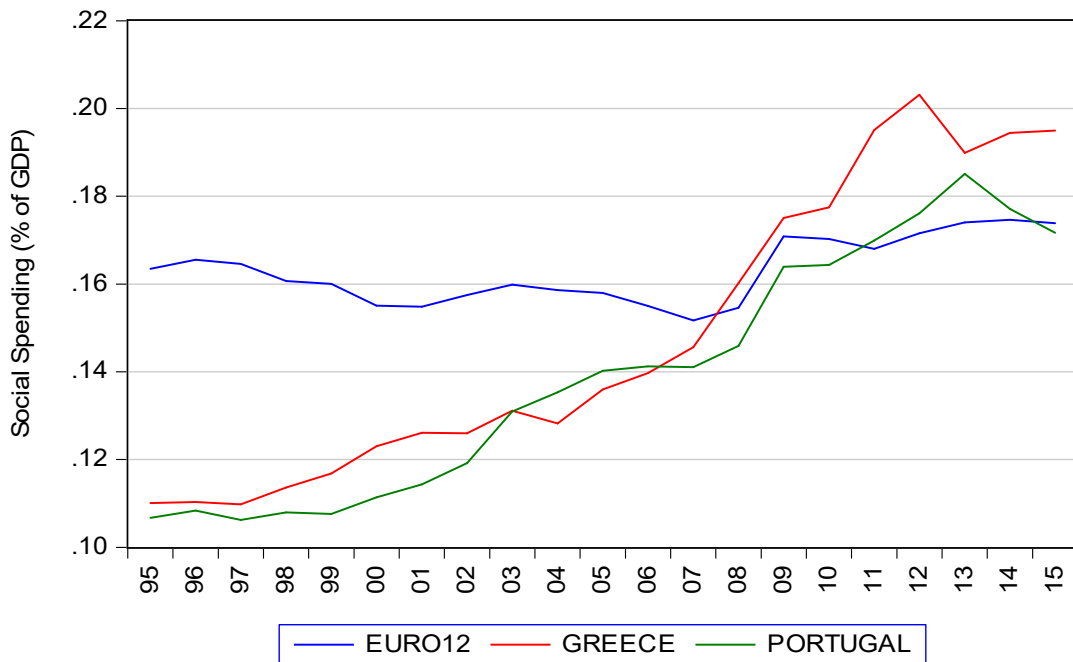
There is no doubt that such high rates of social spending and public wages are not sustainable with or without an economic crisis. Even though the economic crisis that hit Greece in 2010 was an external shock, its long persistence is entirely an internal Greek political affair. It is quite possible, and it has been documented in the literature, that high government spending on pensions and public wages might have a negative impact on economic growth, at least as this is measured by the official GDP[4]. This aspect is discussed in the next section of this paper.

3. Social Spending and Economic Growth

Social spending as a share of GDP cannot increase relentlessly. There must be an optimal share of social spending as a percentage of GDP after which higher percentages would retard GDP growth, at least the official one. Figure 3 is a scatter diagram of social spending as a percentage of GDP and economic growth. The relation is negative. Higher social spending shares

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[4]If public wages and pensions are financed by all kinds of taxes (direct, indirect, social insurance contributions etc) then many activities move from the formal sector of the economy to the informal sector of the economy. In this case, the official GDP growth declines even though the total (formal and informal) GDP might increase (Papanikos, 2015).

of GDP are associated with lower rates of GDP growth. Social spending above 15% of GDP is associated with a decrease in GDP. Rates below 15% are related to economic growth rates of above 2%, although quite dispersed. Similar to Figure 3 is the picture if total government spending on social benefits and public wages is used (see Figure 4).

**Figure 3. Greek Social Spending as a share of GDP and Economic Growth, 1995-2015**
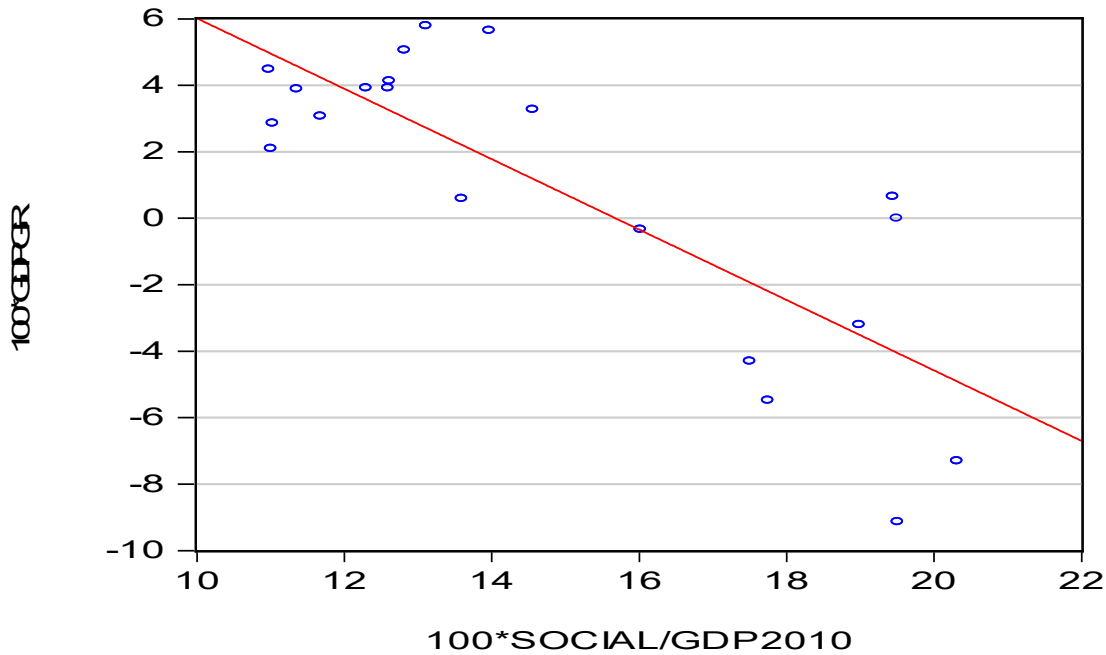
Note: The regression line is estimated as follows GDPGR = 16.61 (2.74) – 1.06 (0.18)GS/GDP. Standard Errors are reported in parentheses.

The negative impact on economic growth is very important from an economic point of view but it is irrelevant to the current generation of pensioners if this growth comes much later than their life expectancy. This is a real tradeoff between the economic interests of the current generation of pensioners and the economic interests of future generations. If the current generation of pensioners has the political power to elect government which promises higher pensions even at the cost of lower future economic growth, they will do so. It seems that this has been the characteristic trend of the last 15 years in Greece. This issue is demonstrated in section

five. In the next section, the unprecedented growth in public wages and pensions is related to unprecedented Greek government deficits and accumulated sovereign debt.

Figure 4. Government spending as a share of GDP and Economic Growth, 1995-2015
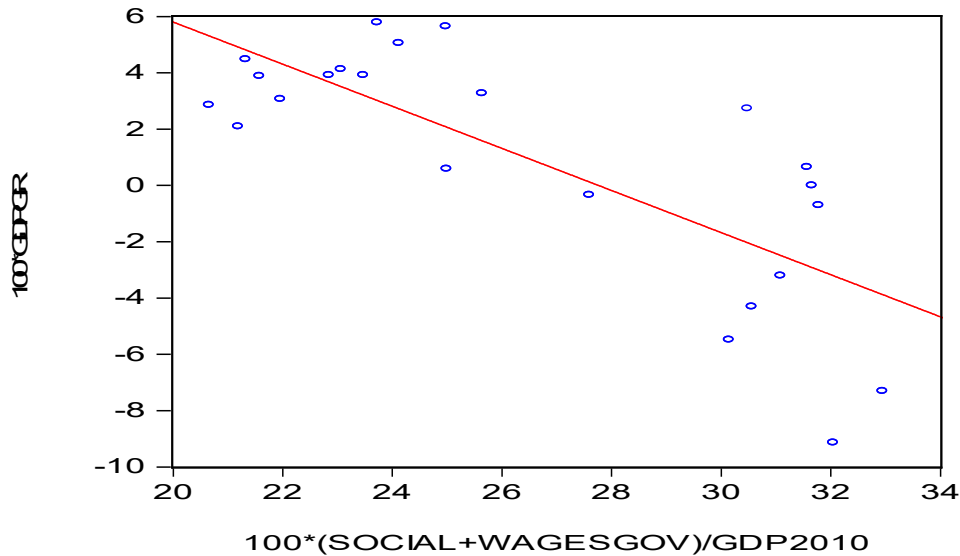
Note: The regression line is estimated as follows GDPGR = 22.91(3.63) – 0.84 (0.14) (GS+GW)/GDP. Standard Errors are reported in parentheses.

4. The Impact on Deficits and Debt

The previous section showed that high levels of public wages and social spending (pensions) are associated with a reduction in GDP growth. This is the economic aspect. However, as is the case with all government spending in representative democracies, how much should be spent on social security and other transfers of income as well as public wages, is a political decision. In democracies, this is decided through the political (voting) process. Ideally, voters elect the candidates (and political parties) who promise to allocate a particular amount on social spending in accordance with their preferences. This is also the case with wages of public employees. Economic analysis can only assist in informing the electorate on the economic consequences of the various rates of social spending. As a demonstration, this section discusses how different the Greek sovereign debt would have been if public wages and social spending (pensions) were increasing at the same rate as GDP, i.e. had the share to GDP remained constant.

As Table 1 shows, in some countries, this share of government spending even decreased; for example in Germany, Ireland, and Finland.

In Greece, the beneficiaries of social benefits make up a large part of the electorate. In the September 2015 elections, 5,566,295 people voted. In 2015 (July) the number of pensioners was 2,663,345 or 48% of the number of people who voted. They can thus determine which political party will win the election and this explains the tremendous increase in pensions. Essentially, it is votes for pensions. Thus, the intragenerational struggle is between pensioners and non-pensioners. If public employees are included, then the majority of Greeks would vote for political parties which will promise an increase in pensions and public wages.

Table 2. Social Spending, Public Wages, Government Deficits and Sovereign Debt (constant 2010 euro)

	SOCIAL+WAGESGOV	DEFICIT	Debt2010	SOCIAL+WAGESGOV-0.22*GDP2010	Accumulated Debt	Interest payment
1995	33.65	15.45	171.63	-1.28	-1.28	-0.13
1996	33.74	13.32	181.97	-2.19	-3.47	-0.32
1997	36.39	10.33	185.06	-1.15	-4.63	-0.36
1998	38.25	11.11	178.19	-0.75	-5.38	-0.41
1999	40.13	10.59	185.90	-0.08	-5.46	-0.41
2000	43.39	7.72	198.85	1.61	-3.85	-0.25
2001	45.60	10.81	211.27	2.10	-1.75	-0.10
2002	48.23	12.38	214.98	3.02	1.27	0.07
2003	51.58	17.02	220.08	3.75	5.02	0.24
2004	55.10	20.16	234.65	4.84	9.87	0.46
2005	57.42	14.22	246.57	6.87	16.74	0.73
2006	60.65	14.44	251.40	7.24	23.97	1.02
2007	64.28	16.82	258.48	9.12	33.09	1.44
2008	68.95	25.41	273.33	13.98	47.07	2.07
2009	73.09	36.23	302.93	20.48	67.55	2.69
2010	68.13	25.33	330.40	18.41	85.95	3.44
2011	65.83	21.04	353.18	20.64	106.60	4.51
2012	62.73	16.78	303.51	20.84	127.44	4.07
2013	57.30	22.94	326.13	16.75	144.19	3.29
2014	58.56	6.63	331.30	17.75	161.94	3.57
2015	58.73	14.02	332.04	17.92	179.86	4.11
		343		**180**		**30**

Figure 1 has shown the tremendous increases in social benefits spending and government expenditures on wages. Both constitute a huge part of the government budget. From 22% of

GDP in 1999, they exceeded 30% in 2009 and currently stand at 32% (2015). These excesses were paid by borrowing money from abroad which created huge government deficits and unprecedented sovereign debts.

Table 2 shows how better the Greek debt picture would have been, if social benefits and public wages increased at the same rate as GDP. In other words, if the share had remained the same as in 1999 (11.7% for pensions and 10.3% for public wages), the total accumulated savings would have been 180 billon euro. In addition, 30 billion euro would have been saved as interest payments. The debt would have been 210 billion euro less than the current 343 billion euro.

Pensions and public wages would have increased but their rate of growth would have had to be modest and not higher than the rate of growth of real GDP. Unfortunately, this was not the case because the number of pensioners and public employees had the political power to dictate much higher increases. This by itself not only increased public deficits and accumulated huge sovereign debt but retarded economic growth as demonstrated in the previous section.

5. Social Spending and Public Wages Will Decrease but How?

As mentioned in the previous section, the answer to this question is a political one. Currently pension reductions are a thorny issue in the negotiations between the Greek authorities and Greece's creditors such the ECB, the EC and the IMF. The arithmetic of pensions though is impeccable.

For political reasons, all previous governments wanted to keep public wages and pensions as high as possible and finance them through an increase in all kinds of taxes, especially indirect taxes and increases in social security contributions. This would have detrimental effects on households of low income and of course economic growth. Unfortunately, the political power of low income households is small or non-existent because millions of migrants who work legally or illegally in Greece do not vote.

The Greek government could adjust the pension system in such a way that (a) the pension's share of GDP decreases and (b) the lowest pensions increase at the cost of reducing higher pensions. The government can design these pension adjustments in such a way that aggregate demand can increase if the multiplier is higher for lower income households, as one should expect. The Greek Pension System is an easy to solve economic problem but it costs

many votes. From a political point of view, the following decisions must be made by Greek political authorities.

a) **The percentage of GDP to be allocated to pensions.** According to Eurostat, the Greek social benefits accounted for 19.5% of GDP in 2015 (34.3 billion euro). In 2000 the same figure was 12.3%. If the share had remained at the 2000 level, the total pension burden would have been 21 billion euro in 2015 (see Table 3), a save of 13.3 billion euro. This percentage distributes income between current and future Greek generations and of course it affects the size of GDP. A high percentage reduces the GDP and changes the distribution in favor of the current generation of pensioners. The unborn generations will pay for it, especially if pensions are debt-financed. If pensions are tax financed, then the current generation of tax payers bears the cost.

b) **The total number of pensioners to share the total pension fund.** This determines the average pension and the average retirement age[5]. In July 2015 the number of pensioners was 2,663,345 people receiving in total 2,378,208,352 euro per month[6]. The average pension was 892.94 euro. It is elementary arithmetic to calculate what the average pension should be to reduce the GDP pension burden to 21 billion euro by keeping the number of pensioners the same: 788 euro per month. Of course, reducing (increasing) the number of pensioners increases (decreases) the average pension.

c) **The distribution of pension payments.** This is tricky. If a Greek political party wants to help the poor (as many claim they do), it will choose a pension distribution with the lowest possible standard deviation. Currently, the range of monthly pensions is from less than 100 euro to more than 5000 euro. Suppose we want to have a range of no more than 300 euro or a standard deviation of about 50 euro per month. In this case, 99% of pensioners will receive a monthly pension between 638 and 938 euro and an average of 788 euro.

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[5]Raising the official pension age is not sustainable and social benefits must be reduced (Miyazaki, 2014).

[6] http://www.idika.gr/files/26%CE%B7_%CE%B5%CE%BA%CE%B8%CE%B5%CF%83%CE%B7_%CE%97%CE%9B%CE%99%CE%9F%CE%A3_final.pdf

Column (1) of Table 3 depicts the current situation of Greek pension expenditures. It also shows four more scenarios. In July 2015, the Greek government paid 2.37 billion euro in pensions for 2.66 million pensioners. Their pension ranged from less than 100 euro per month (less than 1% of the total) to over 2500 euro per month (less than 1% of the total). The average pension was 893 euro and the standard deviation 280 assuming that the distribution is approximately normal. The annual pension payments are 28.5 billion euro or 16.31% of GDP.

Table 3. Pension Allocation Scenarios

	Current July 2015 (1)	(2)	(3)	(4)
Political Decisions to be made				
% of GDP for Pensions	0.1631	0.126	0.126	0.126
Number of Pensioners	2663345	2663345	2663345	2000000
Standard Deviation of Pensions	280	212.2	50	280
Data-Results				
Current GDP (2015) in billion of euro	175	175	175	175
Total Annual Pension Payments (billion of euro)	28.5	22.05	22.05	22.05
Monthly Pension Fund (billion of euro)	2.4	1.8375	1.8375	1.8375
Annual Average Pension (euro)	10717	8279	8279	11025
Average Monthly Payment (12 Months)	893	690	690	919
Average Monthly Payment (14 Months)	765	591	591	788
Pension Spread Higher (99%)	1733	1327	840	1759
Pension Spread Lower (99%)	53	53	540	79

Greece joined the eurozone along with other 11 countries in 2002. That year social spending was 12.6% of GDP. Some countries, like Germany, after joining the eurozone, were able to reduce the share of social spending to GDP. If Greece kept the rate at the 2002 level, the situation today would have been like the one described in column (2). According to this scenario, the distribution of pensions is determined by keeping the minimum pension the same as in scenario (1). In this case the poor are not affected and the adjustment is made by the higher segments of the pension distribution. This will save 6.45 billion euro. This does not include the positive impact on GDP as we shall show in the next section. The third scenario is even better for the poorest pensioners. In this case, the standard deviation is reduced to 50 euro. The minimum

pension is increased from 53 euro per month to 540 euro. The average remains the same as well as the total pension cost but the higher pensions are reduced from 1327 to 840. This could be considered the best scenario for a left political party but it cannot be implemented because most of the political clientele of the so called left political parties in Greece belong to segments with higher than the average pensions of scenario (3).

Alternatively, the government can decide to reduce the number of pensioners. We should note that because of corruption, most of them are not legally eligible for a pension. Also, it can decide to fix the number of pensioners to two million people. This will determine the retirement age. If the number of pensioners is decreased by 25% to about 2 million pensioners, then the results are shown in Table 3 as Scenario (4). The standard deviation is the same as in scenario (1). In this case there is a political tradeoff between the rich pensioners and those whose retirement age is increasing. Both segments vote for the same political parties and therefore even this scenario is politically unacceptable.

Many scenarios can be designed based on the three political decision parameters. However, their implementation is almost impossible if it affects the upper classes of pension distribution. They exert huge political influence. The cost in terms of votes is enormous for any political party, left or right. For example, if the percentage of pension funds to GDP decreases by a proportional decrease in all pensions, this directly affects 2.6 million voters (pensioners) and indirectly their families. Not to mention the people close to retirement. They can control more than half of the Greek parliament! Decisions on the above three fundamentals of any pension system can be reached only the **hard way**: reduce pensions or default. This has been the story of the Greek pensions since 2010. There is an easy (economic) way out. The catchphrase is very simple: **no pension above 1000 euro and no pension below 600 euro.** The cost of GDP would have been less but no political party can implement it. The GDP cost is discussed in the next section.

6. The Long-term GDP and Pension Costs

This section builds on the assumption that there is a threshold rate of pension spending as a percentage of GDP which retards economic growth. Based on the descriptive data presented in Section 3 of this paper, this rate is estimated at 15.68% of GDP (see Figure 3). Rates above (below) this share are related with lower (higher) output growth and therefore lower (higher)

future monthly pensions. And this is the critical point. Are Greek voters willing to reduce the share of pension to GDP now which will imply lower monthly pensions for the next few years but much higher ones thereafter? From an economic point of view this is the best scenario but from a political point of view this may not be achievable through a democratic political process. If this time period is 10 years, half of the current generation of pensioners would not be around to benefit from it.

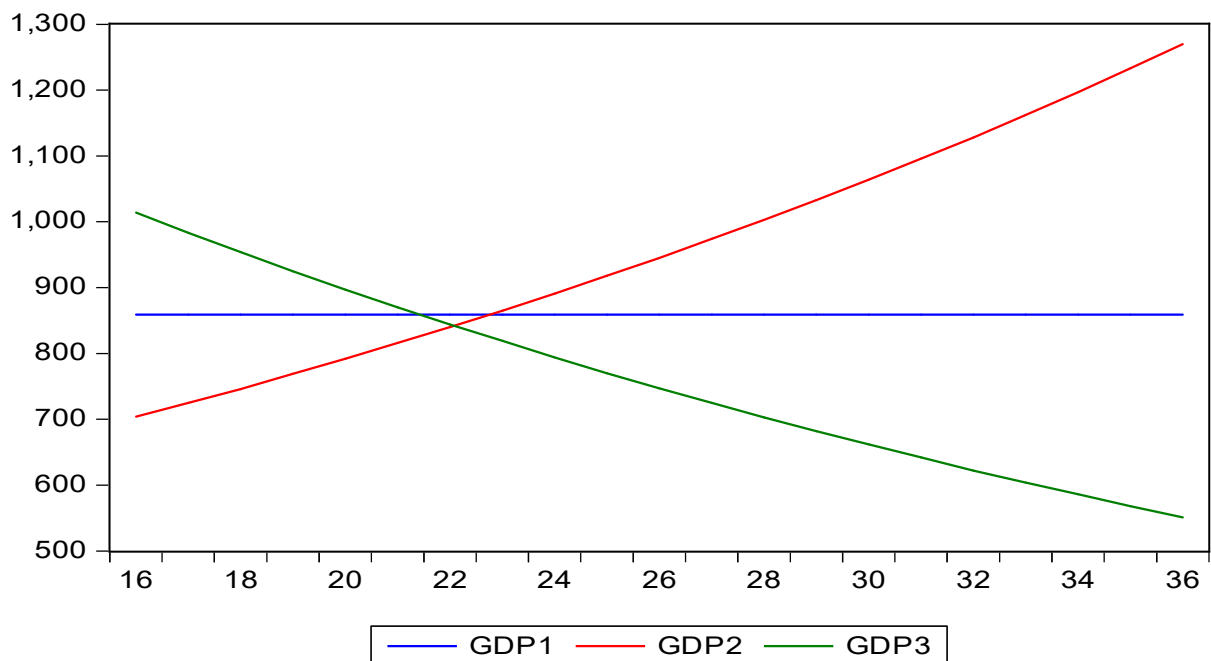**Figure 5. Three scenarios for GDP Growth and Monthly Pension Payments**

       Figure 5 shows three scenarios of pensions: zero growth scenario and ±3% growth. It is assumed that the number of pensioners and the distribution of pensioners remain the same. The straight line is the scenario of the 15.68% mentioned above which keeps the monthly pension constant at 859 euro per month. These are constant 2010 euro. The line that starts with a low monthly payment in 2016 (704 euro) is associated with a share of pensions of 12.85% of GDP and a long term rate of GDP growth of 3%. In this case, pensions are kept below the current threshold of 859 euro till 2023. Thereafter the monthly payments increase to 1270 euro in 2036. On the other hand, if a 18.51% share is selected, then pensions start at 1014 euro in 2016 and decrease at a constant rate reaching 551 euro in 2036.

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What looks good from an economic point of view might not be good from a political point of view. Pensioners would rather vote for higher pensions today than later even at a cost of lower GDP in the future. Even if one argues along the altruistic behavior of the current generation of pensioners towards their children and grandchildren, this excludes a large part of population who are childless. Thus, it is expected that any Greek government, which takes into consideration the political cost (loss of votes), will reform the pension system which will harm the poor households of Greece (migrants included) and the future Greek generations. However, the Greek youth have an important option (reaction) to this scenario: they vote with their feet. Thousands of Greeks are migrated to other countries where they can earn a much higher after tax income. This is expected to continue because according to the Intergenerational Foundation (www.if.org.uk) report, Greece is the worst country in the European Union for the youth of today[7].

7. Conclusions

Social benefits and especially pensions is a thorny political issue in Greece with very important economic and political implications. Pensioners and public employees constitute a great portion of the Greek electorate and they can shape the political agenda in favor of higher pensions and public wages which are financed by either foreign borrowing or taxes especially indirect taxes such as a Value Added Tax (VAT). Even though VAT affects negatively all Greek households, it is a preferable policy option for the pensioners and public employees. Thus, any Greek government which maximizes the probability of being re-elected will choose all kinds of taxes as a second best policy.

This will have detrimental effects on current and future generations of the working Greek population, especially those who work in the private sector. Their after tax income will decrease drastically which will become even worse because of the expected reduction in GDP, as was demonstrated in this paper. This reduction in expected GDP is the result of higher pensions forcing the Greek youth to migrate to countries with higher after tax income. Also, foreign investors are not willing to invest in Greece with such high taxes and social security contributions.

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[7] http://www.if.org.uk/wp-content/uploads/2016/03/IF-EU-Index-Press-Release_-Greece.pdf

Reforming the pension system is not an easy task. The political resistance of public employees and above average pensioners is very strong. The only politically viable solution is the threat to default and therefore the loss of pensions becomes a real one. This can only be realized if the so called institutions force Greek authorities to accept a drastic reduction on the average pension and the standard deviation of the pension distribution. The minimum pension should be equal to the poverty level income. The average should be determined by the fixing the share of pensions to GDP in such a way as to maximize long term economic growth.

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