

IS DEBT RESTRUCTURING NEEDED TO MAKE THE STABILITY AND GROWTH PACT (MORE) CREDIBLE?

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Abstract

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The emergence of the so-called PIIGS crisis which in 2009 became acute due to strongly diverging risk premiums, marked the beginning of a new phase for the European Monetary Union. Whilst the run-up to EMU had been characterized by an encouraging convergence of macroeconomic fundamentals of its member countries, it is now facing a serious threat in particular due to excessive levels of public debt. In 1997, the Stability and Growth Pact introduced a mechanism designed to prevent excessive public debt of the type currently observed; the fact of the matter, however, seems to be that levels of public debt has continuously grown from one economic cycle to the next. But the SGP apparently not only failed to fulfil its aim to keep the deficit and the debt level within its limits but also suffered from a severe loss of credibility; unless some profound action is taken it may further diminish, severely hampering the loose structure of the European Monetary Union. In order to regain some credibility, mitigate financial market's concerns and, hence, lower borrowing cost, a consolidation path is needed to returns to acceptable levels of debt in the foreseeable future. This process has already started and measures have been taken by several eurozone countries to speed up fiscal consolidation. The aim of the paper is to analyze whether or not the group of the PIIGS countries are likely to return to debt levels in accordance with the SGP criteria or if it might be necessary to undergo a process of debt restructuring or default. By analysing different scenarios where nominal interest rates on debt (r) and nominal growth rates (n) as well as gaps thereof ($r-n$), herein called the automatic debt dynamics, are varied, this paper comes to the conclusion, that debt restructuring or default is a likely outcome for some of the PIIGS; arithmetics is in particular playing against Greece. As disillusioning and disappointing this outcome might be for some observers, it could be the starting point for a more credible set of rules for the SGP, which the author deems to remain a crucial component in any institutional set-up within the eurozone.

Stability and Growth Pact, European Monetary Union, sovereign debt crisis, PIIGS crisis, debt restructuring, debt default

Sovereign debt crises are not a new phenomenon. Back in the 1990s, there was a whole series of them. For instance, in Mexico in 1994 and in South-East Asia in 1997. The Argentinean crisis in 2001/2002 is a more recent one. Most of these crises resulted in short-term, often dramatic consequences for the countries affected: drastic devaluation of the currencies in question, a rise in domestic interest rates

combined with a steep increase in inflation, frequently accompanied by a heavy decline in production and economic wealth in the nations affected. The occurrence of a currency crisis within a monetary union is, however, a complete new phenomenon. At the same time, however, what was also referred to as the European Monetary's (EMU) European Sovereign Debt Crisis dramatically demon-

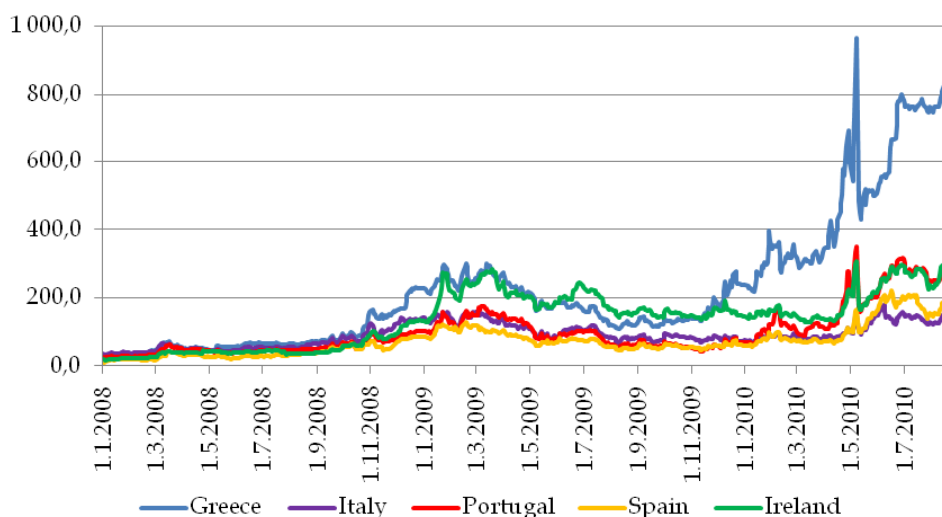
strated that the eurozone¹ is not in fact the homogeneous monetary zone for which it was held by many observers. The name for the crisis used here to refer to the crisis will hence correspond to the admittedly less charming title used in English-speaking regions, i.e. PIIGS² crisis, because the levels of public debt are and were particularly high and call for corresponding fiscal adjustments.

In 1997, the Stability and Growth Pact (SGP), the secondary legislative part of The Treaty of the European Union (Treaty of Maastricht), introduced a mechanism designed to prevent excessive public debt of the type currently observed. The Pact was conceived as a rule-abiding fiscal framework necessary to redress the lax state of public finances in several countries; the fact of the matter, however, seems to be that public debt has continuously grown from one economic cycle to the next. The SGP has hence apparently failed to fulfil its aim to co-ordinate national budget policies in the EMU whilst attempting to limit the public debt to 60.0 percent and the deficit to 3.0 percent of Gross Domestic Product (GDP). Disciplinary measures for budget violators, which have been neglected for many years by Europe's institutions, have temporarily been taken over by the financial markets in the form of high risk premiums (Graph 1) whilst high refinancing costs (Graph 2) are additionally weighing on the consolidation course among PIIGS.³ Portugal, Ireland and particularly Greece are paying very high yields – with above 5.0 percent in the case of Portugal and Italy and around 11.0 percent in the case of the latter. This is not sustainable in the long-run. Consequently, in order to

regain some credibility, mitigate financial market's concerns and, hence, lower borrowing cost, a consolidation path is needed to return to acceptable levels of debt in the foreseeable future. This process has already started and measures have been taken by several eurozone countries to speed up fiscal consolidation. The aim of the paper is to analyze whether or not the group of the PIIGS countries are likely to return to levels in accordance with the SGP criteria or if it might be necessary to undergo a process of debt restructuring or default. While standard economic literature does not provide a threshold of public-to-GDP that would clearly indicate a sovereign debt crisis or even a default, it goes without saying that a higher level of public debt increases the need for fiscal adjustment. For this reason and for reasons of simplifications, this paper regards a debt-to-GDP level of 60.0 percent as a desirable long-term target; this seems to be justifiable as a complete literature review of the controversial discussion about the pros and cons of the SGP and its criteria would clearly go beyond the scope of this work.

METHODOLOGY AND RESULTS

This chapter provides a number of tables and graphs to demonstrate a number of scenarios of PIIGS's fiscal situation applying different variables. In this context, it must be noted, that gross debt according to the Maastricht definition differs from the ESA95⁴ based general government gross financial liabilities concept of the OECD. As a consequence, unless stated otherwise, all tables, charts, and calculations in this paper are based on the European



Source: Bloomberg

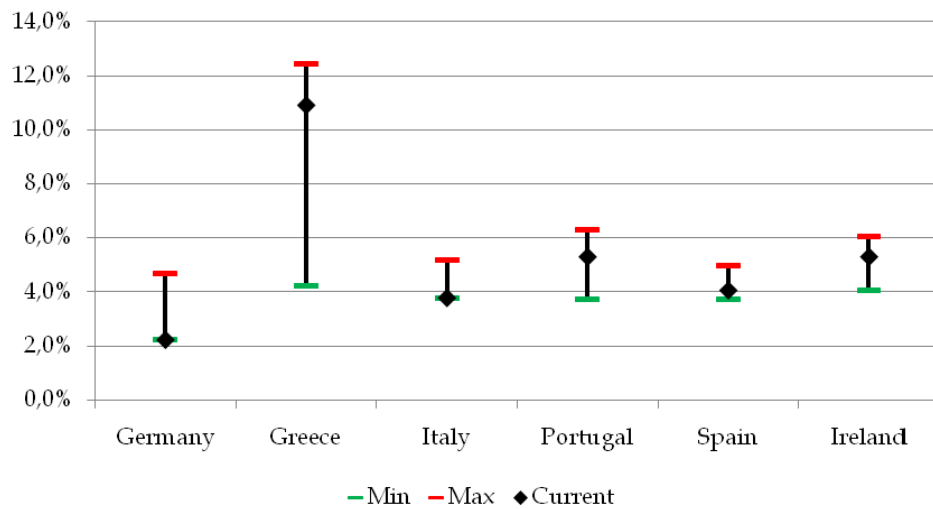
1: 10Y Yield Spread vs. Germany (basis points)

¹ Eurozone, euroarea and EMU will be used synonymously in the following.

² The PIIGS acronym stands for Portugal, Italy, Ireland, Greece and Spain.

³ See also de la Dehesa (2010).

⁴ European system of national and regional accounts.



Source: Bloomberg, own calculations. Period under review: Jan 2008–Aug 2010

2: 10Y Funding Cost for PIIGS vs. Germany (percentage points)

Commission's Ameco database, which is based on Eurostat data and also serves as the basis of the Excessive Deficit Procedure and the SGP.⁵

According to standard economic wisdom, the public-debt-GDP ratio grows at a rate equal to the gap between the nominal interest rate on public debt (r) and the nominal growth rate (n), assuming a primary balance of zero.⁶ Or, stated differently, in order to achieve a certain level of debt-to-GDP (target debt level) over time, and using variations of $(r - n)$, the „automatic debt dynamics“, the (constant) primary surplus required to achieve the desired target debt level (b^*) in a given period of time can be modulated, as shown in equation 1:

$$d_p = (r - n) \frac{b^* - b_0 \left(\frac{1+r}{1+n} \right)^T}{\left(\frac{1+r}{1+n} \right)^T - 1}$$

and

$$s^p = (r - n) \frac{b_0 \left(\frac{1+r}{1+n} \right)^T - b^*}{\left(\frac{1+r}{1+n} \right)^T - 1}$$

with

b_0 as the initial debt level,
 b^* as the target debt level and
 $s^p = -d^p$. (primary deficit).

From this equation, the following can be derived: Firstly, the debt ratio will be increasing infinitely if the (nominal) interest rate exceeds the (nominal) growth rate ($r > n$), unless the primary budget yields a sufficient surplus.⁷ The „automatic debt dynamics“ clarify and demonstrate the pivotal role of the borrowing cost for fiscal sustainability: If the growth rate exceeds the interest rate, the debt level will for any constant primary deficit always converge to the constant level of the debt ratio. Only with the interest rate being higher than the growth rate, the government is forced to generate primary surpluses. The greater this delta, the greater the primary budget surplus needed for keeping any given debt ratio stable. Consequently, by filling in the respective initial debt levels of the PIIGS (b_0), the common target debt level for each PIIGS country, which shall be 60.0 percent in relation to GDP according to our assumptions, as well as different assumptions for the time horizon (for reasons of simplification and to illustrate the main argument, only two time-varying scenarios have been chosen, with $T = 10$ (i.e. 2020) and $T = 20$ (2030), we can calculate different constant primary surplus needed to achieve a debt-to-GDP level of 60.0 percent by the year 2020 and 2030 respectively (Table I).

E.g., as can be seen from Table I, in the case of Portugal a constant primary surplus of 3.3 percent is needed in order to achieve a debt-to-GDP level of 60.0 percent by the year 2020 provided that the „au-

5 For instance, government bonds are to be valued at nominal values according to the Maastricht-definition, but at the market value or at issue price plus accrued interest according to ESA rules.

6 For a detailed overview see Barro (1979); for a similar approach see also Frisch (1997).

7 It must also be noted that price stability has been assumed, that is a inflation rate of below but close to 2.0 percent according to the European Central Bank. Inflation of more than 2.0 percent would have resulted in fundamentally different assumptions for the automatic debt dynamics. As this would go beyond the scope of this paper and no indication of above average inflation within EMU are currently observable, the author regards the assumptions made in this paper as conclusive in that respect.

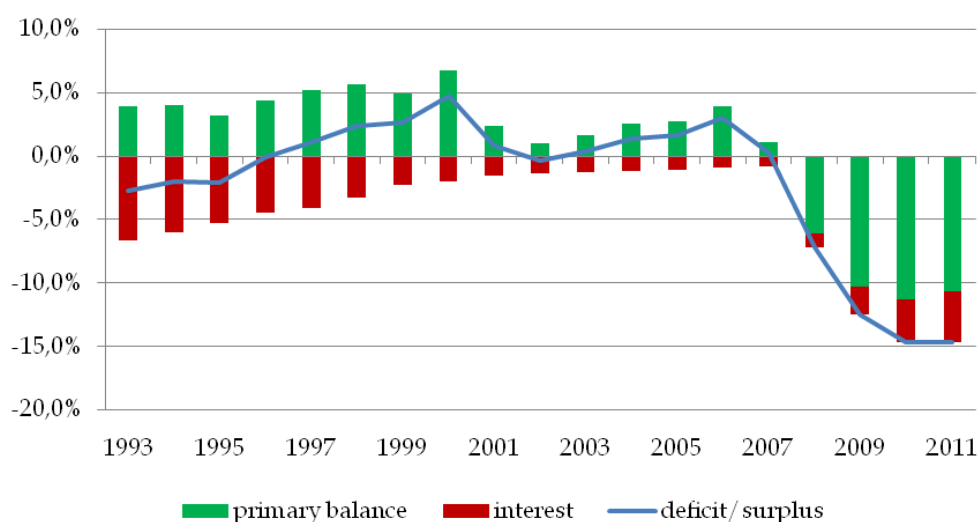
I: Primary surpluses (s^p) required to reach debt-to-GDP ratio of 0,60 (b_T) in 2020 / 2030 applying different „automatic debt dynamics“ ($r - n$)

2020					
b_0	Portugal	Italy	Ireland	Greece	Spain
$r - n$	0.846	1.167	0.829	1.25	0.663
0.01	0.033	0.069	0.031	0.078	0.013
0.02	0.040	0.078	0.039	0.087	0.019
0.03	0.048	0.086	0.046	0.096	0.026
0.04	0.055	0.095	0.053	0.106	0.032
2030					
b_0	Portugal	Italy	Ireland	Greece	Spain
$r - n$	0.846	1.167	0.829	1.25	0.663
0.01	0.020	0.039	0.019	0.044	0.010
0.02	0.028	0.048	0.027	0.053	0.016
0.03	0.035	0.057	0.034	0.063	0.022
0.04	0.042	0.066	0.041	0.073	0.029

automatic debt dynamics“ equals 1.0 percent. If the gap between interest rate and growth rate is higher, i.e. less favourable, the required annual primary surplus climbs up to levels of 5.5 percent (for $(r - n) = 4.0$ percent). In the case of Greece, arithmetics are even less favourable: If the target debt-to-GDP level should be reached only by the year 2030 and $(r - n)$ is set to be 4.0 percent, the annual primary surplus needed amounts to as much as 7.3 percent. If a debt-to-GDP level of 60.0 percent should be reached already by the year 2020, a primary surplus is needed of 10.6 percent. From Graph 1 we have learned that borrowing cost (r) in particular for Greece are cur-

rently excessively high (> 10.0 percent).⁸ At the same time, growth perspectives are hampered by the individual consolidation efforts of the PIIGS. Consequently, the assumption of „automatic debt dynamics“ of only 4.0 percent could be, at least in the case of Greece, a rather optimistic one. The same holds true, although to a lesser extent, for the rest of the PIIGS. Moreover, the growth rates observed in the past have partly been fueled by unhealthy developments in the real estate and financial sector, as is the case in Spain and Ireland, as well as strongly procyclical behaviour by fiscal authorities during the boom period, as is the case in particular for Greece. It remains to be seen, if growth rates achieved in the past are possible again in the near future; having said this, the scenarios for automatic debt dynamics may prove too optimistic.

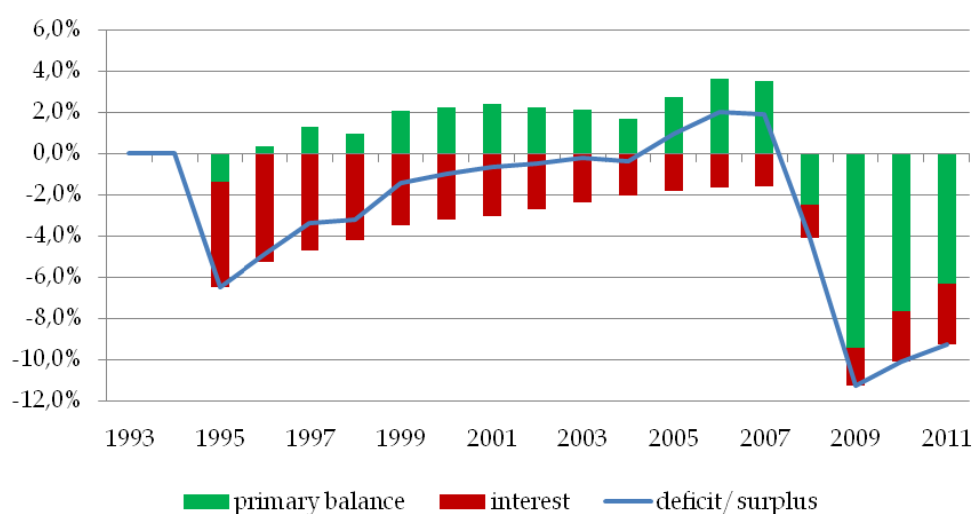
Furthermore, Graphs 3 to Graph 7 provide additional evidence that the PIIGS's primary surpluses resulting from our model and shown in Table I are rather optimistic assumption, to say the least. By decomposing the (total) deficit⁹ into interest payments and primary deficit/surplus, it can be shown that PIIGS are characterized by primary surpluses, if any, of well below the 5.0 percent threshold. In particular, Italy was - with a few exceptions - never able to generate primary surpluses in the period under review. Greece, on the other hand, shows primary surpluses only in the run-up phase of EMU, while primary deficits dominate the phase after the introduction of the single currency with levels close to -8.0 percent in the year 2009. Ireland and Portugal show a similar pattern: primary surpluses of up to 5 percent before but much lower primary surpluses or even primary deficits after the start of EMU. Only Spain managed to keep a positive trend in running primary surpluses; at least until 2007. Graphs 3 to



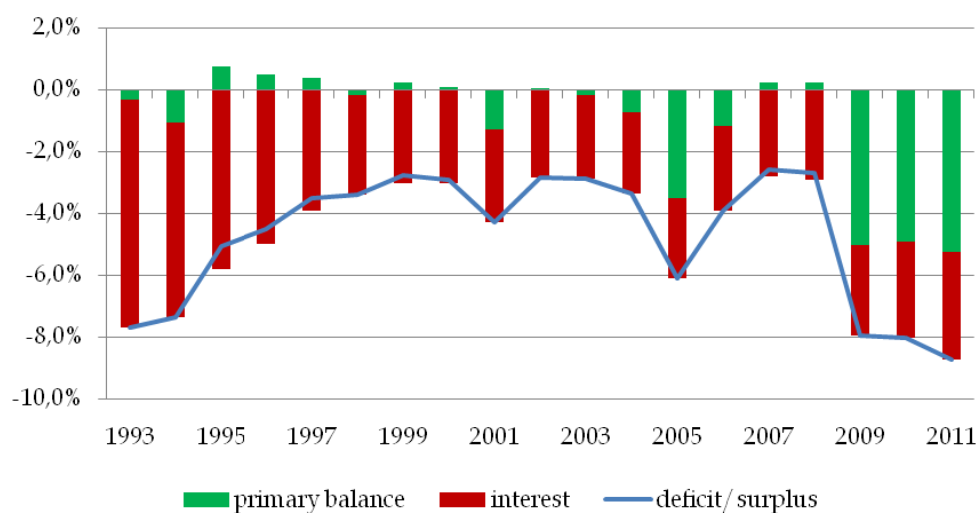
3: Decomposition of Ireland's Public Deficit, 1993–2011e (% of GDP)

⁸ Even the rescue package provided by eurozone and IMF announced in May 2010 worth roughly EUR 110bn aimed at preventing Greece from defaulting has an interest rate of approx. 5 percent.

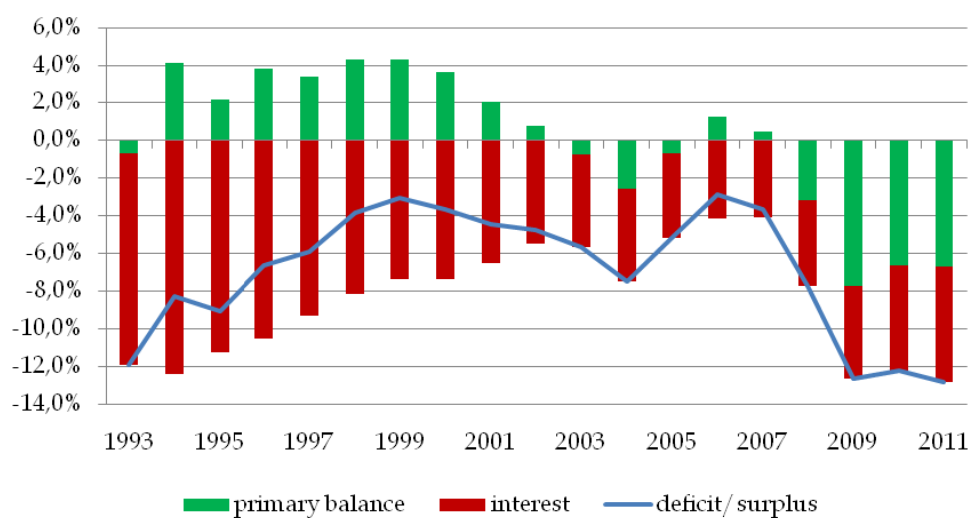
⁹ The total deficit (which is often just called the “deficit”) is spending, plus interest payments on the debt, minus tax revenues.



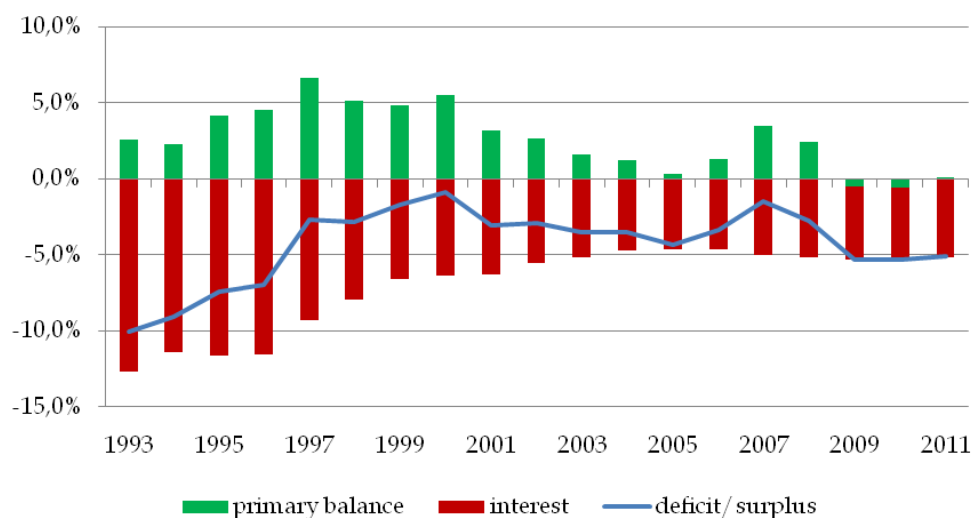
4: *Decomposition of Spain's Public Deficit, 1993–2011e (% of GDP)*



5: *Decomposition of Italy's Public Deficit, 1993–2011e (% of GDP)*



6: *Decomposition of Greece's Public Deficit, 1993–2011e (% of GDP)*



7: Decomposition of Portugal's Public Deficit, 1993–2011e (% of GDP)

Graph 7 also show the level of interest payment to date, which will climb up significantly in the next years.

In order to doublecheck our preliminary results and conclusions made so far, equation 1 can also be transform in the following way by assuming a constant deficit over time (equation 2):¹⁰

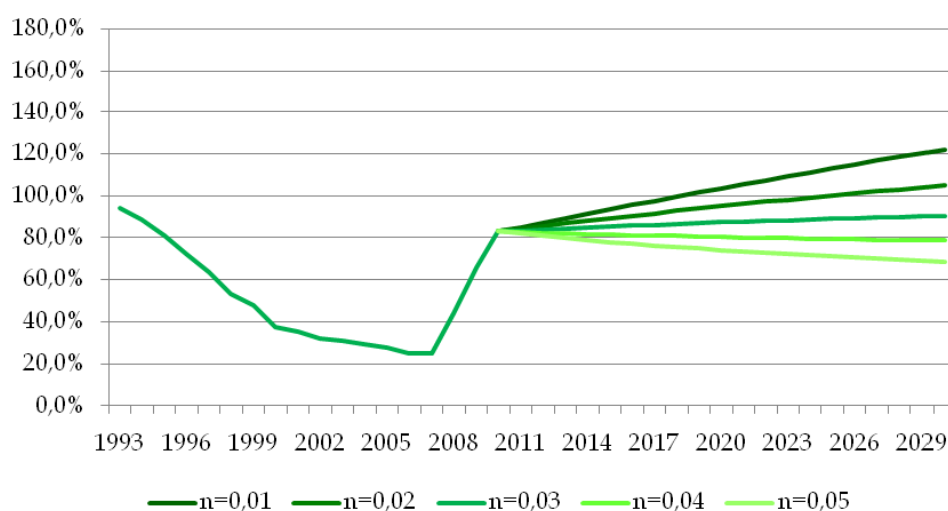
$$b_T = \frac{b_0}{(1+n)^T} + \frac{d}{n} \times \left(1 - \left(\frac{1}{1+n}\right)^T\right)$$

with
 $\lim_{T \rightarrow \infty}$

$$b_T = \frac{d}{n}$$

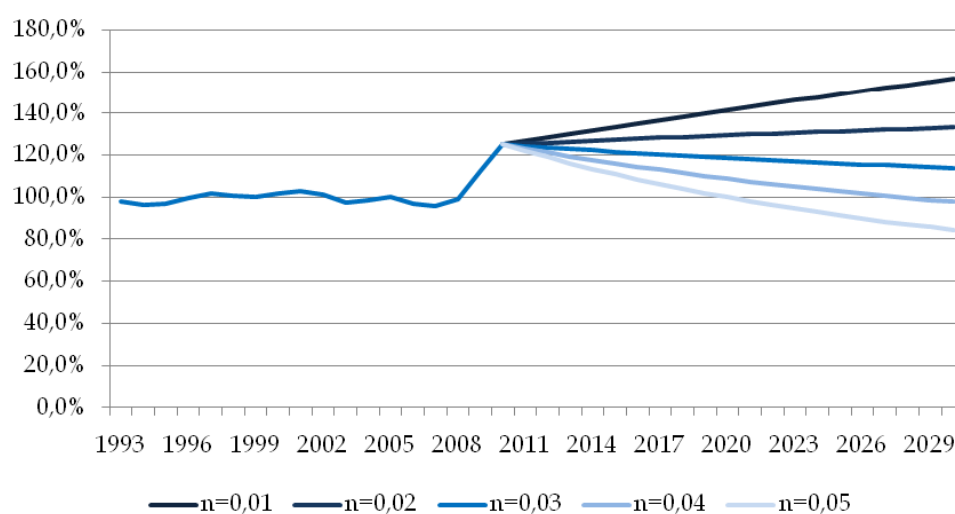
d as the (total) deficit.

By using this equation, the long-term interdependences between debt-to-GDP level, deficit-to-GDP and nominal growth of GDP can be demonstrated. To be more precise, the development of the debt-to-GDP ratio of each PIIGS can be shown over time using the individual initial debt levels as well as different scenarios of nominal debt, provided that the total deficit is being kept on a constant level of 3.0 percent, thus, being in compliance with the deficit criteria of the SGP for the entire period under review. Graph 8 to 12 show the development of each PIIGS's debt-to-GDP level until the year 2030. As can be seen, debt-to-GDP levels of most of the PIIGS are not likely to return to levels near 60.0 percent within the next 10 to 20 years. In particular, Greece's debt level will remain above the 80.0 per-

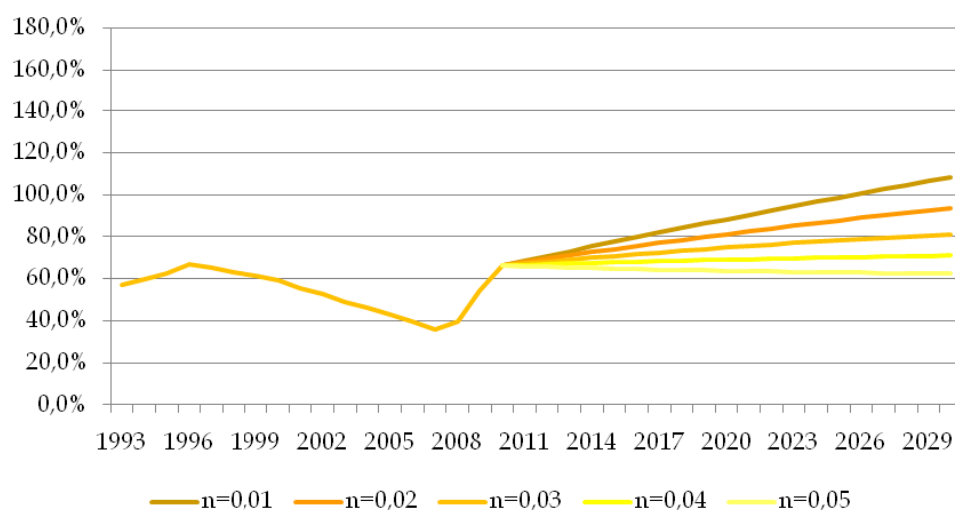


8: Ireland's Public Debt, 1993–2030e (percentage of GDP)

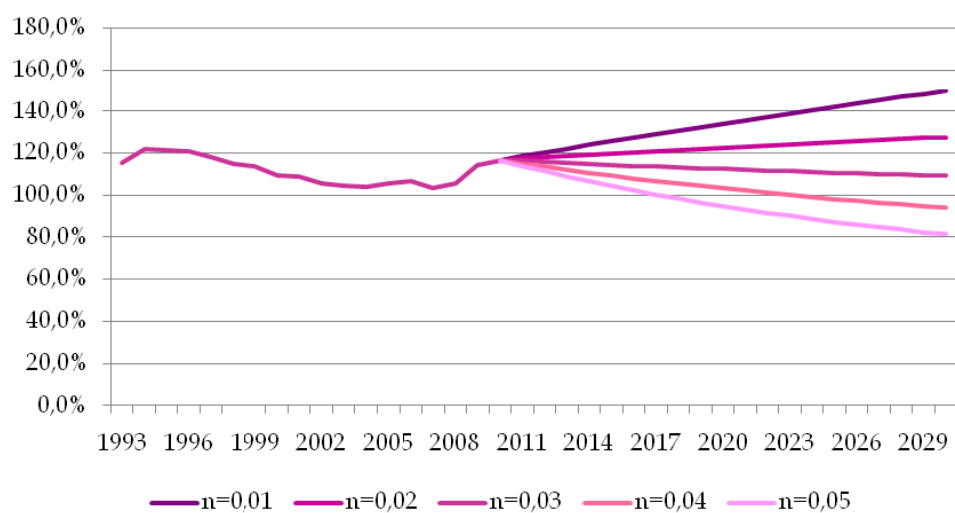
¹⁰ See Barro (1979) or Frisch (1997).



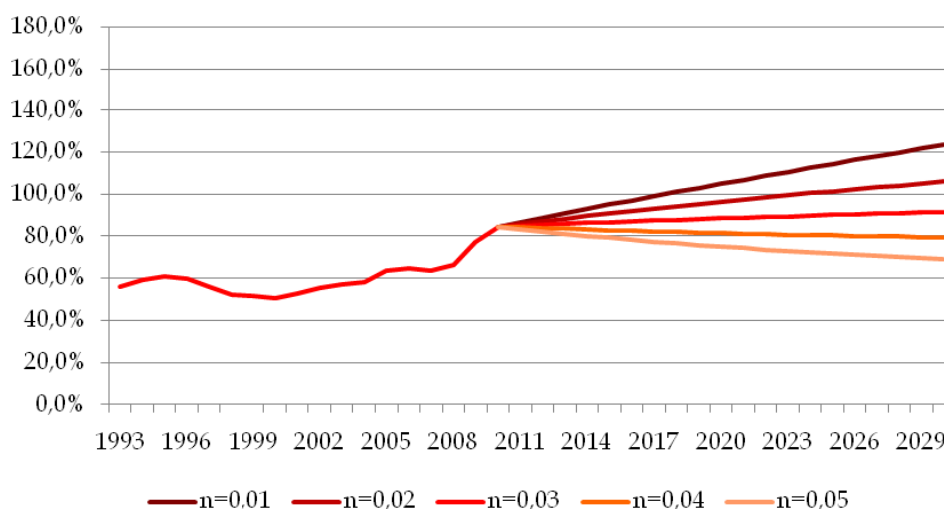
9: Greece's Public Debt, 1993–2030e (percentage of GDP)



10: Spain's Public Debt, 1993–2030e (percentage of GDP)



11: Italy's Public Debt, 1993–2030e (percentage of GDP)



12: Portugal's Public Debt, 1993–2030e (percentage of GDP)

cent mark even under the rather optimistic assumptions of a constant (total) deficit of 3.0 percent and a constant nominal growth rate of 5.0 percent ($n = 0.05$) in the entire period under review, i.e. until the year 2030. Moreover, if a (constant) growth rate of only 1.0 percent can be reached, the debt level will increase infinitely reaching a level of around 160.0 percent by the year 2030. Similar conditions are applicable for Italy. Ireland, Portugal and Spain might come close to the 60.0 percent over time but a constant growth rate of 5.0 percent is required to do so. If the growth rate will come in at a lower level, e.g. 1.0 percent, the overall debt level will increase to

levels of 120.0 percent by the year 2030 in the case of Ireland, around 110.0 percent in the case of Spain and more than 120.0 percent in the case of Portugal. It should be noted again that, for all PIIGS countries, a constant deficit of 3.0 percent has been implied which is a rather optimistic assumption taking into account the historic levels of the (total) deficit of the PIIGS, as can be shown in Graphs 3 to 7: Except for very few years, Portugal, Greece and Italy were constantly above the 3.0 percent limit, thus persistently breaching the SGP criteria, while Ireland and Spain managed to achieve small surpluses before the year 2007, i.e. before the financial crisis hit.

SUMMARY

The following observations stand out from the analysis above. The PIIGS were, with very few exceptions, constantly in breach with the debt and deficit criterion of the SGP. What is more, debt levels have continuously grown from one economic cycle to the next. As a result of the persistent violation of the SGP, capital markets have lost their confidence in PIIGS's ability to reduce its debt to sustainable levels, thus, demanding high risk premiums. As the origin of the problem lies in fiscal policy, confidence needs to be re-established: while it is necessary to send strong and coordinated signals about the ability of the PIIGS to put their fiscal situation in order, it remains questionable if the PIIGS can reduce their respective debt level „organically“, i.e. without facilitating a debt restructuring or default. While standard economic literature does not provide a threshold of public-to-GDP that would indicate a sovereign debt crisis or even a default, this paper suggests a debt-to-GDP level of 60.0 as a desirable long-term target.

The analysis of this paper highlights that even under optimistic assumptions regarding interest rates, growth rates, the automatic debt dynamics and (primary) deficits, a return to debt-to-GDP levels close to 60.0 percent will not happen anytime soon. In fact, most of the PIIGS will experience a worsening of its debt level if the automatic debt dynamics play against them, i.e. less favourable assumptions are being made for interest and growth rates. Consequently, some PIIGS might be forced to go through a debt default or debt restructuring process; arithmetics are in particular playing against Greece.¹¹ While having interest spreads within eurozone is per se not evil as this reflects the risk difference between various investments (something that has obviously been neglected in the past¹²), act-

11 For a similar view, see for instance Wyplosz (2010) and Buiters and Rhabari (2010).

12 Moral hazard effects might have played a major role; however, analyzing market inefficiencies was not the main aim of this paper.

ing too slow might increase the likelihood of further damage to the SGP, the PIIGS and the eurozone as a whole. However, the chance remains that debt restructuring alone, as proposed in this paper, will not significantly improve fiscal discipline within the eurozone – but at least time could be bought and, hence, it could turn out to be the starting point for a transition to a more effective framework of the SGP if accompanied with additional reforms.

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