Greece's Sovereign Debt Crisis: Retrospect and Prospect

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ABSTRACT

This paper provides an analysis and assessment of the Greek sovereign debt crisis, and examines alternative solutions to the problem. In order to put the current fiscal predicament of Greece in perspective and discuss how the Greek debt crisis might possibly be resolved, the paper first provides a detailed account of how the sovereign debt of Greece was accumulated and then stabilized relative to GDP. It then proceeds with an account of how the international financial crisis led to a de-stabilization of Greece's sovereign debt, and with an assessment of the adjustment program currently in operation. We address the question of solvency, and whether the current program is sufficient for the resolution of Greece's debt crisis. The paper concludes with proposals for tackling the confidence crisis and speeding up the recovery of the Greek economy.

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Greece's Sovereign Debt Crisis: Retrospect and Prospect

1. Introduction

«Eurozone finance ministers on Sunday approved a €110bn ($146bn) package of emergency loans aimed at averting a sovereign default by Greece and preventing a confidence crisis spreading to countries such as Spain and Portugal» Financial Times, May 2, 2010.

«European leaders agreed a further bail-out for Greece worth €109bn, a third of which will come in the form of debt swaps or rollovers by private sector bondholders» Financial Times, July 22, 2011.

«European leaders reached a deal with Greek bondholders ... that would see private investors take a 50 per cent cut in the face value of their bonds, a deep haircut that officials believe will reduce Greek debt levels to 120 per cent of gross domestic product by the end of the decade» Financial Times, October 27, 2011.

Since the first few months of 2010, the Greek economy has emerged as the first casualty of a sovereign debt crisis that threatens to destabilize the euro area and put the fragile recovery of the European economy from the recession of 2009 at risk.

The Greek fiscal situation came to the center of international attention after the elections of October 2009. The fiscal deficit of Greece worsened significantly during the crisis, as was also the case in many

other economies in the euro area and the rest of the world. In addition, after many years of significant economic growth, in 2009 the Greek economy entered into a prolonged recession, the end of which is not yet visible.

The international financial crisis of 2008 hit the Greek economy at its Achilles heel: The refinancing of the high public debt, which was accumulated mainly during the 1980s. Although the fundamentals of the Greek economy had improved significantly in the twenty years to 2008, during preparations for entry into the euro area and since Greece's entry, public finances and international competitiveness had remained as persistent and significant problems throughout the period. Although there were short periods of significant improvement in the fiscal situation, there were many instances of relapse, especially around election years.

After a steep rise throughout the 1980s, public debt had stabilized at about 100% of GDP since the early 1990s. Greece had no problem refinancing its debt until the end of 2008. However, in the circumstances of the international financial crisis, the refinancing of the debt started becoming a problem, and spreads over the German benchmark rates started to widen. The problem became much more serious after the elections of October 2009. Greece found itself at the center of a wave of criticism by the international press, international organizations, rating agencies and the European Commission. Despite the fact that the fiscal situation in 2009 worsened throughout Europe and the rest of the world, in many countries much more than in Greece, Greece was the first sovereign to find itself in the middle of a confidence crisis.

There are three likely reasons for this. The first was the high level of Greece's public debt. Greece's public debt had stabilized since the early 1990s at roughly 100% of GDP, versus 70% for the average of the Euro area. The second reason was the announcement of a large deterioration of the projected deficit for 2009, by the government elected in October 2009. This took the markets by surprise and contributed to the confidence crisis. The third reason is related to the shortcomings of the fiscal program initially adopted by the newly elected government, which appeared to be leading to a further widening of the fiscal deficit rather than a contraction.

Under these circumstances, Greece faced a severe confidence crisis, a sustained speculative attack on its bonds, and the eventual setting up of a special European Support Mechanism, with the participation of the IMF. Since the end of April 2010 Greece has effectively been excluded from international financial markets.

The purpose of this paper is to provide an analysis and assessment of the Greek sovereign debt crisis, and to examine alternative solutions to the problem. In order to put the current fiscal predicament of Greece in perspective and discuss how the Greek debt crisis might possibly be resolved, the paper first provides a detailed account of how the sovereign debt of Greece was accumulated and then stabilized relative to GDP. We then proceed with an account of how the international financial crisis led to a de-stabilization of Greece's sovereign debt, and proceed to assess the adjustment program currently in operation. We address the question of the sustainability of Greek debt, and whether

the current program is sufficient for the resolution of Greece's debt crisis.

The paper is organized as follows: In section 1 we discuss the concept of debt sustainability or solvency, which is central to the Greek crisis. It is shown that solvency depends on four factors, only one of which is under the immediate control of a government in the short run: First, the government debt to GDP ratio, second, the real interest rate, third, the real GDP growth rate, and, finally, the ratio of the primary budget surplus to GDP. Of these, only the primary budget surplus can be used as a policy instrument by a small open economy in a monetary union. The other three factors are to a large extent exogenous or pre-determined. Having this framework in mind, in section 2 we provide a broad survey of developments in the Greek economy, since the restoration of democracy in 1974. In section 3, we examine macroeconomic policy during the same period, with an emphasis on fiscal policy and debt sustainability. We distinguish among four distinct historical phases: the preparation for EEC entry (1975-1980), the macroeconomic populism of the 1980s (1981-1989), the convergence period of the 1990s (1990-1999), and the period of euro participation before the crisis (2000-2008). Public debt exploded as a share of GDP mainly during the 1980s and was then stabilized relative to GDP until 2008. Thus, until 2008, lack of fiscal sustainability was an issue mainly during the 1980s, the period which caused Greece's sovereign debt to rise from about 25% to 100% of GDP. In section 4, we briefly discuss the macroeconomics of debt crises. Models of debt crises predict that such crises can occur very rapidly, both as a result of deterioration in fiscal fundamentals, but also as a result of shifts in the expectations of investors. Such models seem to

explain the evolution of the Greek sovereign debt crisis quite adequately. In section 5 we survey the evolution of Greek fiscal developments, since the onset of the 2008 financial crisis, the adjustment program set in place in the first half of 2010 and amendments to the adjustment program since. Greek public debt exploded in the aftermath of the 2008 crisis. In the three years to 2011 it rose to more than 150% of GDP. However, the Greek debt crisis is not only a solvency crisis. In many ways it is a liquidity crisis, caused by a collapse in confidence. In section 6 we look at the "orderly default" option as part of a solution for the Greek sovereign debt crisis and discuss the necessary and sufficient conditions for achieving sustainability, restoring confidence and resolving the Greek crisis. The final section sums up the conclusions.

2. Conditions for Fiscal Sustainability and Solvency

At the heart of Greece's sovereign debt crisis is the issue of fiscal sustainability or solvency. Thus, before we start discussing the Greek crisis, it is worth looking at the issue of public debt sustainability or solvency. This discussion will provide us with the necessary tools in order to assess the sovereign debt crisis faced by Greece.

2.1. Defining Fiscal Sustainability and Solvency

It is well known that governments need not balance their budgets at all times (see Romer 1996). Fiscal sustainability, or solvency, requires that the government ought to create and maintain primary surpluses the present value of which is (greater than or) equal to the original debt.

The intertemporal government budget constraint of a solvent government simply states that,

$$B_t = E_t \sum_{i=1}^{\infty} \left(\prod_{j=1}^{i} \frac{1}{1+r_{t+j}} \right) S_{t+i} \qquad (1)$$

E is the mathematical expectations operator, *B* is public debt (both at time t), *r* is the real interest rate and *S* the primary surplus of the government budget.

Equation (1) simply requires that the expected present value of future primary surpluses is equal to the initial public debt at time t.

A fiscal path that only satisfies (1), is sustainable, as the only restriction that the budget constraint (1) places on a government is that the present value of its expected future debt, as we move further and further into the future, tends to zero. This can be written as,

$$\lim_{n \to \infty} E_t \left(\prod_{j=1}^{n} \frac{1}{1+r_{t+j}} \right) B_{t+n} = 0 \qquad (2)$$

The intertemporal government budget constraint (1), which defines fiscal sustainability, does not prevent the government from staying permanently in debt, or even from increasing the amount of its debt. For example, if the real interest rate is positive, a constant value of *B*, meaning that the government never pays back its debt, clearly satisfies the intertemporal government budget constraint. Even an increasing level of debt satisfies the intertemporal government budget constraint, for as long as the growth rate of government debt is less than the real interest rate. Even a rate of growth of government debt which is higher

than the real interest rate satisfies (1) and (2), if it only lasts for a limited number of periods and is then followed by a policy of limiting the growth rate of the debt to a rate below the real interest rate.

From the viewpoint of equations (1) and (2), there is an infinite number of "sustainable" paths of fiscal or debt policy, many of which involve a quickly rising level of government debt for a finite and possibly large number of periods. To put it another way, governments can always claim that they intend to raise primary surpluses in the future to limit the growth rate of government debt.

A sustainable path of fiscal policy in the sense outlined above cannot be monitored credibly by investors in government bonds. If investors doubt government pronouncements about future fiscal action to limit the growth of the debt, then interest rates may have to rise (reflecting default probabilities), making the growth rate of the debt even higher, and thus making the debt situation worse. A confidence crisis may ensue, such as the one facing Greece and other Euro area economies.

Thus, sustainability in the sense of equations (1) and (2) cannot possibly be monitored or even measured adequately, since that would require governments that would be able to pre-commit to the entire future path of primary government surpluses.

In what follows, I will use a narrower but stronger definition of government solvency. I will define a *sustainable fiscal path* as one that at the very least *stabilizes the government debt to GDP ratio*. This definition is stronger than the previous one, and, more importantly, sustainability or solvency in this sense can be easily measured and monitored.

To define sustainability in terms of the public debt to GDP ratio, we start from the flow version of the intertemporal government budget constraint.

$$B_t - B_{t-1} = r_t B_{t-1} - S_t \qquad (3)$$

Equation (3) simply states that the government deficit leads to a rise in government debt. The government deficit consists of interest payments on the debt minus the primary government surplus (or if you like plus the primary government deficit).

Dividing through by GDP, we have,

$$b_t - b_{t-1} = \frac{r_t - g_t}{1+g_t} b_{t-1} - s_t \qquad (4)$$

b is the debt to GDP ratio, *s* the primary surplus to GDP ratio and *g* the growth rate of GDP.

From (4), the primary government surplus that is consistent with a constant sovereign debt to GDP ratio is given by,

$$\bar{s}_t = \frac{r_t - g_t}{1+g_t} b_{t-1} \qquad (5)$$

A primary surplus to GDP ratio which is at least as high as that implied by equation (5), is associated with fiscal sustainability or solvency. If it is lower, then the fiscal situation is unsustainable and the government is insolvent.

In what follows, we shall use equation (5) to assess the factors that affect fiscal sustainability.

2.2. The Four Factors that Affect Fiscal Sustainability and Solvency

From equation (5), one can see that there are four factors that determine whether a government is solvent:

- the predetermined (historical) debt to GDP ratio,
- the primary surplus as a share of GDP,
- the real interest rate on government bonds
- the growth rate of real GDP

These are the four factors that determine solvency and the sustainability of government debt.

These four factors are not independent of each other, and, with the exception of the primary surplus, they are outside the direct control of governments.

In an open economy, in the short and the medium run, the growth rate of GDP depends on the state of the economic cycle, on the determinants of domestic investment, and in particular the expectations of domestic firms and households about the future profitability of investment in physical and human capital, as well as on the determinants of domestic savings and the real interest rate. All these factors can be affected by government policy only indirectly. In the long run, the growth rate may well be exogenous, determined by population growth and technological progress.

With full capital mobility, for a small open economy in a monetary union, such as Greece's, the real interest rate is also largely exogenous and outside the immediate control of the government.

The historical sovereign debt to GDP is predetermined and cannot be changed, unless the government defaults. The debt to GDP ratio has been determined through an accumulation process (equation (3)) than was a function of past outcomes of the government budget.

The main element under the direct control of a government in the short run and in the medium run is the government primary surplus to GDP ratio. It is the main tool that can be used by a government to achieve solvency. Although it is not a perfect tool of policy, the government primary surplus can be changed through decisions on primary government expenditure and revenue. Tax and expenditure policy can affect solvency even in the short run.

Keeping in mind the four factors that affect solvency, we can now move to an historical account and interpretation of Greece's sovereign debt developments before the recent crisis.

3. Greek Macroeconomic Developments since 1974

For a number of years after World War II, and the civil war that only ended in 1949, Greece's macroeconomic performance was among the most impressive not only in Europe, but also in the rest of the world. This remained the case until the early 1970s.

Greece was affected negatively from the first oil shock of the 1970s, but recovered relatively quickly. Democracy was restored in 1974, after a seven-year dictatorship, and Greece applied to enter the EEC in 1975. However, following the second oil shock, admittance into the EEC in 1981, and the election of a socialist government in the same year,

Greece entered a period of stagflation and rapid public debt accumulation, which lasted throughout the 1980s.[1]

In 1990, after another change in government, Greece initiated a program of fiscal consolidation and structural reforms, in order to prepare itself for eventual participation in the single European currency. Greece was among the signatories of the Maastricht Treaty in 1991, and secured its participation in the Euro area in the year 2000. Economic growth recovered gradually during the 1990s, inflation was gradually contained and public debt was stabilized relative to GDP.

The period of Euro participation between 2001 and 2008 was a golden era for the Greek economy. Growth rates increased further, inflation remained subdued, although slightly higher than the Euro area average, and unemployment fell. The public debt to GDP ratio was stabilized and solvency was not a problem. However, the fiscal situation remained precarious, as underlying fiscal problems remained. The public debt to GDP ratio was stabilized at about 100%, which was much higher than the average for the Euro area. In addition, Greece's mechanisms of controlling primary government expenditure remained weak, in areas such as local authorities, social security funds and the health sector, while tax evasion undermined the effectiveness of the tax system. It is for these reasons that, when the international financial crisis deteriorated in 2008, the fiscal situation emerged as Greece's Achilles heel once more.

[1] I have examined the post-war macroeconomic experience of Greece until the early 1990s in a number of analytical papers. See Alogoskoufis (1995), Alogoskoufis and Christodoulakis (1991), Alogoskoufis and Philippopoulos (1992, 1998).

Greece's macroeconomic performance since 1975 is summarized in Charts 1-4, which present the growth rate, unemployment, inflation and the current account, together with comparable developments in the euro area.

Chart 1 presents Greece's growth rate between 1975 and 2008. In the period before 1974, between 1954 and 1973, Greece's growth rate was of the order of 7% per annum. This was 2 percentage points higher than the average growth rate of the OECD area. Economic growth started decelerating at the end of the 1970s, fell to almost zero during the 1980s and the beginning of the 1990s, and started recovering after 1994. Between 1974 and 1993 the average growth rate was only 2% per annum, while since 1997 it doubled to about 4%.

Greece experienced only short and shallow recessions since 1975. The longest recession was during the period of stagflation in 1981-3. The other two recessions, of 1987 and 1993 were short lived. After 1997, when it started becoming apparent that Greece would be able to participate in the euro area, economic growth picked up significantly and there was no other recession until the onset of the 2008 financial crisis.

As one would have expected, the slowdown in economic growth after 1979 was accompanied by a rise in unemployment. Chart 2 plots Greece's unemployment rate since the restoration of democracy. As can be seen from Chart 2 the unemployment rate climbed to 7% in the early 1980s, where it stabilized for a number of years. Since the early 1990s, unemployment rose again. It started falling long after the acceleration of GDP growth, at around 2000, and continued falling until 2008.

By and large, these developments reflect similar developments in European unemployment. In fact, the unemployment rate in Greece had been consistently lower than in the Euro area of 12, until 1999. Since then, it rose above the Euro area average, but by 2008 it had converged back towards the Euro area average. Despite robust growth, that exceeded the euro area average, unemployment in Greece remained above the euro area average since 1999. Many attribute this to the failure of Greece to implement labour market reforms and the deterioration of Greece's international competitiveness.

As we shall see below, unemployment rates in both Greece and the Euro Area rose sharply in 2009, due to the recession, and are currently forecast to continue rising until at least 2012.

We next turn to inflation. In the twenty years before 1974, average inflation in Greece was 4%, the same as in the rest of the OECD. In the next twenty years it rose to 16% on average, more than ten percentage points above the OECD average. It was only after Greece started to prepare for its eventual participation in the single European currency that inflation started converging. After all, the permanent reduction of inflation was one of the main economic reasons that Greece aimed to become part of the Euro area.

Inflation converged to the Euro area average during the 1990s, and has remained only slightly above that average since Greece became part of the Euro area in 2000.

These developments are depicted in Chart 3. The convergence of inflation was particularly rapid during the 1990s, as Greece abandoned

wage indexation and the policy of accommodating inflation differentials with its trading partners, through exchange rate depreciations and a loose monetary policy. The rapid convergence of inflation, and the associated convergence of nominal and real interest rates, has been one of the high points of Greece's adjustment efforts during the 1990s. However, inflation did not fully converge. It remained above the Euro area average by one percentage point during the first decade of Greece's participation in the Euro area. This resulted in a gradual erosion of international competitiveness, and has contributed to the external imbalances that Greece has been experiencing throughout this period.

In the period after 1973, Greece has suffered from periodic balance of payments crises. Such crises occurred in 1973-4, 1982-3, 1984-5 and 1989-90. Some of these crises led to devaluations, such as in 1983 and 1985, while in other cases, discrete devaluations were averted. Throughout the period, Greece has been following a crawling-peg policy of continuous small depreciations of the exchange rate, to accommodate inflationary differentials with its trading partners. In turn, this policy contributed to the maintenance of these inflationary differentials, through the wage-price spiral.

Greece's current account developments are depicted in Chart 4. The current account was in surplus at the end of the 1970s. It went into deficit in the beginning of the 1980s. The deficits were on average small and contained, and when crises occurred there were devaluations. However, the current account deficit increased significantly as economic growth picked up after 1996, and particularly since the introduction of the euro. After the introduction of the euro, the current account deficit

rose to about 12% of GDP, and exceeded 14% of GDP in 2007. This was mainly due to autonomous capital inflows, as confidence in the Greek economy rose. The loss of competitiveness certainly contributed, but cannot be considered as the main driving force of developments in the current account deficit. The swing in the capital account to a large surplus seems to have been the main factor after the introduction of the euro. In effect, the external constraint was released, and the balance of payments stopped acting as a significant constraining factor for macroeconomic policy.

These have been the main macroeconomic developments in Greece between the restoration of democracy in 1974 and the sovereign debt crisis of 2009. In order to explain these developments we have already alluded to policy choices. To fully understand them however, we must delve deeper into policy, in particular fiscal, monetary and incomes policy, and its interaction with domestic politics.

4. Politics and Macroeconomic Policy in Greece

One can usefully distinguish four discrete periods in Greek macroeconomic policy since the restoration of democracy in 1974. The first is the preparation period for EEC entry. It lasted between 1975 and 1980. The second is the period of macroeconomic populism, during the 1980s. The third is the convergence period of the 1990s, preparing Greece for entry into the euro area. The fourth is the period of euro area participation, from 2000 until 2008, when the international financial crisis broke out. Clearly, the international crisis ushered in a new fifth

period for Greek macroeconomic policy, which we shall review in section 5.

Politics played a significant role in these choices. The two parties alternating in power throughout this period were New Democracy (ND) and the PanHellenic Socialist Movement (PASOK). The Greek political system has traditionally been characterized by a deep polarization. However, in the 1990s there was political convergence around the target of entry into the Euro Area. The timing of Greek elections and the political affiliation of Greek governments are summarized in Table 1.

Macroeconomic policy in the first five years after the restoration of democracy was dominated by the goal of preparing Greece for EEC entry. The economy recovered quickly from the recession of 1974, unemployment was maintained at low levels, inflation decelerated and the current account was in surplus. Until 1981, the fiscal deficit was contained below 3% of GDP and public debt was only around 25% of GDP. The last part of this period was characterized by stagflation, caused by the second oil shock of 1979. Growth was reduced from 7.2% in 1978 to only 0.7% in 1980. Inflation almost doubled to 22.5% in 1980, from 13.2% in 1978. Unemployment doubled from 1.9% of the labor force in 1978 to 4% in 1981.

The decade of macroeconomic populism started after EEC entry in 1981. In electoral 1981, which was a year of world recession, the fiscal deficit rose from 2.6% of GDP in 1980 to 9% in 1981. The situation worsened by the policies followed by the newly elected PASOK government. Within a few years public debt had exploded, as deficits remained persistently high. High inflation also developed into a persistent problem for the

Greek economy, accommodated by a loose monetary and exchange rate policy. The economy stagnated, as economic growth fell to almost zero for most of the 1980s and unemployment increased further.

This decade of macroeconomic populism bequeathed Greece with two of the most significant problems that have since burdened its economy: high public debt and low international competitiveness.

4.1. The Explosion of Public Debt

Until the mid-1970s Greek governments followed a so-called «golden rule» of fiscal policy, allowing deficits only in the public investment program. Since 1978, this rule started being gradually abandoned, and the fiscal deficit exploded during the electoral 1981. After the socialists were elected in October 1981, fiscal deficits remained consistently high, and, as a result, public debt exploded.

The evolution of Greek public debt is depicted in Chart 5. As can be seen from Chart 5, public debt rose from about 20% of GDP in the early 1980s to almost 100% of GDP in the early 1990s. In addition, a large part of the debt remained «invisible», outside official figures, until 1993, when it was incorporated into official figures. In the 1990s, public debt was stabilized at slightly below 100% of GDP, as a program of fiscal adjustment was adopted in the context of the convergence programs of the Greek economy. Following the adoption of the euro, public debt rose above 100% of GDP in electoral 2000, and displayed a weak downward trend until 2007.

When the international financial crisis hit Greece in late 2008, the public debt to GDP ratio was at 99%, versus 70% for the average of the Euro

Area. The policies of the 1980s had in effect created a permanent burden for the Greek economy.

The main reason for the rise of the public debt to GDP ratio during the 1980s was *high primary government deficits*. The socialist governments of Andreas Papandreou followed an expansionary fiscal policy, financed through internal and external debt and inflows from the EEC. In the ten years between 1981 and 1990, the general government deficit was at almost 10% of GDP on average, something that has never happened before or since for such a long period.

The evolution of the government deficit to GDP ratio is depicted in Chart 6. It is impressive how the deficit of the general government widened during the 1980s. Originally, this was due to high primary deficits, which were the initial source of fiscal destabilization. After some time, *interest payments took over as an additional destabilizing source.* The debt to GDP ratio increased and interest payments on the high and rising debt kept rising relative to GDP. It is also worth noting that both nominal and real interest rates rose in the second part of the 1980s, because of gradual financial liberalization. This had an additional effect on the deficit, but made its financing easier, as Greek bonds became more attractive to international bondholders.

A second reason for the rise in the government debt to GDP ratio during the 1980s was the *slowdown in economic growth*, which had an adverse effect on the denominator of the ratio and affected the dynamic evolution of debt.

Apart from recorded deficits and the slowdown in economic growth, there was a third reason for the rise in the public debt to GDP ratio in Greece during the 1980s. That was *government guarantees* for loans of both private and public enterprises and organizations, as well as agricultural cooperatives. By 1989, these guarantees had risen to 32% of GDP. In the next three years, half of those loans could not be serviced and were taken up by the government, causing an additional increase in public debt.

The populist fiscal policies of the 1980s, and the inadequate adjustment since the 1990s, have contributed to Greece' high debt to GDP ratio when the financial crisis of 2008 erupted. In fact, the high level of the debt and the large re-financing needs associated with it, proved to be the «Achilles heel» of the Greek economy.

However, high public debt is not the only negative legacy of the 1980s. The policies of the 1980s led to stagnation, loss of international competitiveness, and a dramatic divergence of Greek living standards relative to the rest of the European Community.

4.2. Competitiveness, Economic Divergence and Convergence

The loss of competitiveness is related to the extension of the economic role of the inefficient Greek state and the interaction of incomes, monetary and exchange rate policies.

Greek inflation rose significantly in 1973. This was due to the first oil shock and the effective depreciation of the drachma, which remained pegged to the falling US dollar. Inflation reached its peak in 1974 and was contained in 1975-78. However, the second oil shock led to another

acceleration of inflation. This rise proved more permanent, because of the widening of fiscal deficits and the accommodative monetary, exchange rate and incomes policy.

This second inflationary episode led to a vicious wage-price spiral. This continued until 1986, when a two-year wage freeze was imposed, following a devaluation of the drachma. After 1988, there was an attempted catch-up of wages, which led to yet another acceleration of inflation and loss of competitiveness.

The rise in inflation in the 1980s can be explained as an ineffective attempt by the government of the time to use incomes, monetary and exchange rate policy, in order to improve living standards and reduce unemployment. At the end of the day, all that was left was inflation and loss of competitiveness. This should not have come as a surprise. Greece learned at great cost in the 1980s that it is not possible to improve competitiveness or fiscal imbalances through monetary means. All that is left at the end of the day is inflation.

This policy, along with the expansion of the role of the state, led the real economy to a dramatic divergence.

In Chart 7, we present data for Greece's GDP per capita, relative to the original 15 members of the European Union. As can clearly be seen, until Greece achieved entry into the EEC there was convergence. After EEC entry, there was divergence for almost twenty years. While in 1980, the year before EEC entry, Greece's GDP per capita was at 92,5% of the EU-15 average, in 1999, a year before entry into the Euro Area, it had fallen at only 70,2%: a dramatic divergence of more than 20 percentage points

in 20 years. Greece was diverging from the rest of the EU by almost a percentage point per annum, as growth rates were lower than the EU-15 average. This may have been the biggest cost of the policies that characterized the period of populism and the inadequacy of the reforms that started in 1990.

In any event, since 1990 there was a policy reversal. Attempts at fiscal adjustment, monetary and exchange rate stabilization, and liberalization of the economy were the main directions of this reversed policy. Despite their weaknesses, these efforts led to the drastic reduction of inflation, Greece's accession to the Euro Area and a new era of economic growth and real convergence.

However, as can be seen from Chart 6, after Greece's adoption of the euro, we had a repetition, on a smaller scale, of the fiscal destabilization that followed Greece's entry into the EEC. In addition, inflation remained higher by about one percentage point, that the Euro Area average. This led to a further erosion of Greece's international competitiveness.

To conclude, when the financial crisis hit the international economy, Greece was still plagued by fiscal imbalances and low international competitiveness. Despite efforts to address the situation since the 1990s, public debt had been stabilized at a high level relative to GDP, and the fiscal situation remained as one of the most serious problems of the Greek economy. In addition, the structural reforms that were introduced since 1990 in order to improve international competitiveness still had a long way to go.

5. The Macroeconomics of Debt Crises

Before we move on to discuss the onset of the Greek crisis, it is worth reviewing the macroeconomics of debt crises. Why is it that the same markets that comfortably held and continuously refinanced the debt of a sovereign state for years on end, suddenly lose faith and refuse to touch it?

To answer this question, one can start with the equilibrium relationship between the return of domestic bonds (deemed unsafe) and a safe bond. With risk neutral investors, in equilibrium, the relationship between the real interest rate of a domestic (Greek) bond and a safe (German) bond, would be given by,

$$(1-\pi)(1+r)=1+r^* \qquad (6)$$

π is the expected probability of default of the domestic bond, r the domestic real interest rate and r^* the safe interest rate. From (6), the probability of default is given by,

$$\pi=(r-r^*)/(1+r) \qquad (7)$$

Equation (7) gives us the equilibrium relation between the perceived probability of default of the domestic bond π, and the spread between the interest rates of the domestic and the safe bond $r-r^*$. The two are positively related: If the perceived probability of default is zero, then the domestic interest rate will be equal to the interest rate on the safe bond. As the probability of default increases, so does the spread and the domestic interest rate. As the probability of default approaches unity (100%), the spread, and the domestic interest rate approach infinity.

Macroeconomic models of debt crises emphasize that if there is a risk of default, debt markets will be characterized by multiple equilibria. Which equilibrium will prevail will depend on the expectations of investors about the probability of default (see Calvo 1988). There are equilibria in which investors expect repayment with a high probability, in which case the spread of the government bond in question over the safe asset is small, and equilibria in which investors expect default with a high probability, in which case the spread effectively becomes very large or even infinite. In the second type of equilibria the government in question may find that it cannot refinance its bonds and be forced to default, even though it never intended to do so.

There are a number of characteristics of these models which are relevant to the Greek crisis, and indeed other sovereign debt crises. First, small changes in the fundamentals may cause an economy to shift from a low-spread equilibrium to a high-spread equilibrium, or even to default. Second, such a change in the nature of the equilibrium is always unanticipated. In fact it occurs when expectations suddenly change. Third, a change in the nature of the equilibrium can take place even without changes in the fundamentals, just because the assessment of some investors about the probability of default changed, and these investors are not willing to hold the bonds of the country in question. These will force even investors who have not changed their beliefs to change their behaviour, as they may become worried about whether there will be enough investors in the future willing to hold the bonds in question.

The Calvo-type model of debt crises is very relevant to the Greek case. As we shall show below, the fundamentals of the Greek fiscal situation changed because of the international financial crisis and the recession that ensued, causing investors to question the ability of Greece to keep servicing its debt. This in turn brought about a liquidity crisis in the market for Greek bonds, and since there were few signs that Greece was prepared to adjust its primary surplus to achieve solvency, and no committed lender of last resort, Greece was cut off from the international bond market. It avoided an outright default because it could turn to a special European support mechanism that was devised in a rush.

6. The Greek Sovereign Debt Crisis

The key event which set the stage for the Greek sovereign debt crisis was the international financial crisis of 2008.

In 2008 the world economy entered its most severe crisis since the Great Depression of the 1930s. The crisis rapidly spread to the real economy in the US, the European Union and the rest of the world. The financial crisis affected trade and investment, consumption, jobs and living standards everywhere.

There is no doubt that the financial crisis started in the US economy - at the heart of the global financial system. Following the collapse of Lehman Brothers on September the 15th 2008, the global financial system entered a phase of severe deleveraging, malfunctioning credit markets, unprecedented write-downs in asset valuations, generalized risk aversion, and threats to the stability of the banking sector.

The initial responses of policy seemed to suggest that policymakers have learned important lessons from the mistakes that were made in the 1930s. Nonetheless, they also showed the limitations of macroeconomic policy. Macroeconomic policy could not avert a deep recession. Central banks did provide liquidity to avert a credit crunch, governments bailed out major financial institutions, protectionism was held at bay and international policy coordination included the emerging economies for the first time. Yet the recession in 2009 was deep and embraced almost the entire world.

6.1. The International Crisis and the Euro Area

The international financial crisis unveiled serious weaknesses in the functioning of the global financial and economic system. Serious regulatory and policy mistakes that had persisted for many years contributed to the severity of the problem. Economic risks had been seriously underestimated in the pricing of financial assets and asset bubbles had persisted for too long, supported by an abundance of liquidity. Macroeconomic and fiscal imbalances had developed in the global economy without any serious attempt to address them through coordinated action. The emerging economies had not been integrated adequately to the system of global economic governance.

In Europe policy makers initially failed to anticipate the full impact of the crisis on the European economy. The initial assessment at the beginning of 2008 was that the European economy would escape the worst. In the spring of 2008, the European Commission forecast was that the rate of growth in the Euro area would slow down to 1.7% in 2008 and 1.5% 2009, from 2.6% in 2007. This assessment was fully revised since the

summer of 2008. In its autumn forecasts, the Commission assessment was that the Euro area economy would have a growth rate of 1.2% in 2008 and 0.1% in 2009. In fact, the economy slowed down to 0.6% in 2008, and entered a severe recession in 2009. Euro area GDP fell by 4.1% in 2009.

These developments were not too dissimilar to what has happened in the rest of the industrialized world. The US experienced a smaller recession in 2009, as GDP contracted by 2.4%, and the recovery is expected to be stronger. The economy of Japan contracted by 5.2%, and non-Euro area economies in Europe (the UK, Denmark and Sweden) contracted by 4.9%. On the other hand, the rise of unemployment in the US has been sharper than in the Euro area, while the rise on unemployment in Japan has been lower.

As one would have expected, the crisis led to a severe worsening of public finances. This was due to the operation of automatic stabilizers, the cost of bailing out the financial sector and discretionary fiscal measures. The average fiscal deficit in the Euro area rose from just 0.7% of GDP in 2007 to 6.3% of GDP in 2009. This is much smaller than the fiscal deficit of the US which quadrupled to 11.2% of GDP in 2009, from 2.8% in 2007. The average Euro area fiscal deficit was also smaller than the UK deficit which exceeded 11% of GDP in 2009.

Public debt has been rising significantly as a result. In the Euro area it is rising from 66.2% of GDP in 2007 to a projected 88.5% in 2012. In the US general government debt is rising from 62.4% of GDP in 2007 to a projected 102.4% in 2011 and similar developments are taking place elsewhere.

The worsened fiscal situation worldwide remains a concern, even after the recession of 2009.

6.2. The Greek Sovereign Debt Crisis

It was against this background that the Greek sovereign debt crisis took place.

After two and a half years of significant adjustment, which reduced the general government deficit from 7.5% of GDP in 2004 to 3.6% in 2006, the Greek fiscal situation started deteriorating again from the middle of 2007. In 2009, the year of the global recession, the deficit of the general government exploded again to 13.6% of GDP.[2]

In October 2009, the incoming government claimed that the previous administration had concealed the extent of the deterioration of public finances in fiscal 2009. However, the new government did not appear willing or ready to proceed with fiscal adjustment. In fact, in its first few months in office, it further contributed to the deterioration of the fiscal situation, as government revenue collapsed and measures that increased government expenditure were adopted. In addition, the budget for 2010, drafted in November 2009, was not deemed credible by either the markets or the European Commission and the Eurogroup.

The first signs of a forthcoming sovereign debt crisis appeared in the spread of Greek government bonds over comparable German government bonds. In Chart 8, we present the relevant data. The spread which had remained quite low since Greece's participation in the Euro

[2] This figure was later revised to 15.4% of GDP after public enterprises were included in the accounts of the general government.

area, had started widening from early 2008, as the international financial crisis was gaining momentum. From about 30 basis points (0,3%) at the end of 2007, it doubled to about 60 basis points in the first half of 2008 and, after the collapse of Lehman Brothers, it rose further: to about 100 basis points in October 2008 and to 200 basis points in December 2008. In early 2009, after a reshuffle in the Ministry of Economy and Finance that was interpreted as signaling an electoral strategy of fiscal policy relaxation, spreads increased further. By March 2009 they had reached 285 basis points.

This episode was partly reversed, when the government managed to cover its annual financing needs in the first half of 2009. Spreads then started falling, and by September 2009 they had gone back to 130 basis points. The change in government in October, the announcement of a doubling of the projected government deficit for 2009 and the failure of the new government to present a credible plan of fiscal consolidation caused spreads to erupt. Initially the market waited for the budget plans of the new administration. Thus, spreads remained at 136 basis points in October and 162 basis points in November. When the new budget failed to convince the markets, spreads started rising sharply. From 235 basis points in December 2009, by April 2010 they had shot up to 477 basis points.

By early 2010, the Greek government was in panic. A full-scale confidence crisis had been ignited. The policy of trying to expose its predecessor had misfired, as Greece had lost all credibility, and the new government's continuous revisions of its fiscal plans failed to convince either the markets, or its European partners. Announcements by the

Eurogroup that it would stand by Greece also failed to convince bond markets, as they were short on substance. In February, European Union leaders vowed to take «determined and co-ordinated action» to protect Greece, but there was no respite. Greek bonds were continuously being downgraded by rating agencies. By late March, it became apparent that the Greek government would have severe difficulties refinancing maturing debt or raising new capital. It went cap in hand to its European partners, who had been working on a rescue mechanism that also involved the IMF.

The severe confidence crisis caused by this line of events led to the eventual setting up on May 2, 2010, of a special European Support Mechanism, with the participation of the IMF. Since that date, Greece has effectively been excluded from international financial markets.

At the end of April 2010 the Euro Area countries agreed to provide to Greece €80bn in bilateral loans, coordinated by the European Commission, with an additional amount of up to €30bn available from the IMF. A rolling quarterly review process of Greek efforts to address the fiscal situation before the installments are paid out was set up. Euro area countries contributed to the loan package according to the ratio of their contributions to the European Central Bank. Interest rates were set at about 5 per cent, higher than the cost of raising the funds in the markets.

At the same time, it was decided to create the European Financial Stability Facility (EFSF), that would be able to issue bonds or other debt instruments on the market, to raise the funds needed to provide loans to countries in financial difficulties. Issues would be backed by guarantees

given by the euro area member countries, and would amount up to €440 billion.

In July 2011, as it gradually appeared unlikely that Greece would be able to return to the markets in 2012, as originally envisioned, Euro Area countries agreed to additional official financing. They agreed "to support a new program for Greece and, together with the IMF and the voluntary contribution of the private sector, to fully cover the financing gap. The total additional official financing would amount to an estimated 109 billion euro." The maturity of official loans to Greece was extended and interest rates were reduced. The European Financial Stability Facility (EFSF) was also given new powers to make short-term loans, provide funds to recapitalize banks and in "exceptional" circumstances even buy back bonds of debt-laden governments.

The July 2011 program was amended and extended in October 2011, as private investors, under pressure from Euro area leaders, agreed to take a 50% cut in the face value of their bonds, instead of the 21% envisaged in the July agreement. In addition, Euro area countries agreed to leverage the resources of the EFSF.

In November 2011, the Greek prime minister resigned, after a call for a referendum on the latest bail-out misfired, and an interim coalition government was formed, under an internationally respected Greek central banker. This is the Greek saga so far.

6.3. The Greek Adjustment Program of 2010

Under the conditions of the original European bailout, the Greek government agreed to follow a drastic 5 year program of fiscal

adjustment and structural reforms. The initial measures aimed to reduce the budget deficit by five percentage points of gross domestic product in 2010 and another four points in 2011. Greece is required to reduce fiscal deficits below 3 per cent of GDP by 2014.

The Greek program had two main aims: first, to restore the sustainability of the Greek fiscal situation and, second, to improve the competitiveness of the Greek economy.

The 2010 adjustment program was revised twice, in the face of insufficient fiscal adjustment and another revision of Greece's fiscal accounts. The first revision followed the decision in the autumn of 2010 to include public enterprises in the general government accounts, while the second revision, in the spring of 2011, became necessary because of the failure of the 2010 budget to meet the program targets. A third revision is already under way, after the October 2011 decisions. Yet, the various revisions of the program so far, follow the structure to the original program and rely on similar policies. The program is structured in terms of drastic but gradual fiscal adjustment and reforms to improve the competitiveness of the Greek economy.

There are many who doubt that Greece can indeed get out of its fiscal predicament through the adjustment program agreed between Greece, the European Commission, the ECB and the IMF and its subsequent amendments.

Financial market analysts, prominent economists and influential newspapers such as The Economist, the Financial Times and The Wall Street Journal, have almost continuously been expressing serious

doubts, arguing that Greece's fiscal situation is unsustainable without default and exit from the euro area.

The fiscal adjustment effort was set to take place in conditions of falling real GDP and rising unemployment. According to the 2nd revision of the Greek Adjustment Program of May 2011, the deficit of the general government was projected to fall from 15.4% of GDP in 2009 to 2.6% of GDP in 2014. Yet, the debt to GDP ratio was projected to rise from 127.1% of GDP in 2009 to 153% of GDP in 2014. This is because of the negative differential between growth and the real interest rate, and the fact that Greece was to continue having primary deficits until 2011. It is only in the fourth and fifth year of the program that Greece was projected to have substantial primary surpluses. Although the program appeared front-loaded at first sight, in actual fact it also envisaged a steep fiscal adjustment effort at the end of the program period as well.

The main elements of the 2010-2011 Greek Adjustment Program are depicted in Table 2. A number of points can be made concerning the structure of the program.

First, the program foresaw a very large fiscal adjustment over five years. The adjustment in the primary deficit of the general government is equal to 16.4 percentage points of GDP. This is clearly unprecedented. The largest comparable adjustment that has been achieved to date, between 1989 and 1994, was equivalent to 9.7 percentage points of GDP over five years. From a primary deficit of 5.5% of GDP in 1989, Greece moved to a primary surplus of 4.2% of GDP in 1994. The second largest comparable adjustment took place between 2004 and 2006 and was equivalent to

3.2 percentage points of GDP. From a primary deficit of 2.6% of GDP in 2004, Greece moved to a primary surplus of 0.6% of GDP in 2006.

Second, the adjustment was concentrated in two sub-periods. 2010-11 and 2013-14. The 2010 adjustment was a correction of the excesses of electoral 2009, when government revenue collapsed and primary expenditure temporarily shot up. The adjustment of 2013-14 is set to take place in the context of an expected recovery from a prolonged recession. In addition, the 2010 adjustment was to some extent the easy part, as the 2009 fiscal year was burdened by one-off factors that increased the deficit.

Third, neither economic growth, nor interest payments on the rising debt to GDP ratio facilitate the adjustment. The adjustment of the primary deficit is taking place in the context of falling GDP, at least until the end of 2011. In addition, because of the increase of the debt to GDP ratio, interest payments are rising relative to GDP, causing a much smaller reduction in the general government deficit, compared to the primary deficit. As the original program of 2010 itself states (page 13), "fiscal consolidation measures from 2010 to 2014 … are well in excess of the reduction of the deficit over the same period." Unlike the more recent adjustment period of 2005-2006, when economic growth remained robust, Greece has to "swim against the tide" for the first three years of the program.

Fourth, although at first sight the fiscal adjustment effort appears roughly equally divided between the revenue and the expenditure side, it actually relies more heavily on the adjustment of primary expenditure. Once one allows for the projected increase in interest payments, the

program appears to be based 50% more on the containment of primary (i.e. non-interest) government expenditure than on the increase in total revenue. Total revenue is projected to increase from 37.3% of GDP in 2009 to 42.6% of GDP in 2014, an increase of 5.3 percentage points of GDP. Primary expenditure is projected to fall from 47.6% of GDP in 2009 to 36.5% of GDP in 2014. This is a much bigger reduction of 8.9 percentage points of GDP. Such an adjustment in primary expenditure could prove to be a positive feature of the program, but one has to note that it is unprecedented. In fact, in an ex post analysis of all previous fiscal adjustment programs in Greece, the largest contribution has been from the revenue side. One can only hope that "this time is different".

Fifth, the fiscal adjustment itself appears to exert a strong negative influence on GDP growth and thus, to a certain extent, defeats the purpose. Domestic demand was projected to fall by 7.7% in 2010 and 6.0% in 2011. The biggest negative contributions come from government consumption expenditure and gross fixed capital formation (investment). On the other hand, the external sector was projected to exert a rather strong positive influence on GDP growth: 2.3 percentage points in 2010 and 2.9 percentage points in 2011. To a large extent this is attributed to a sharp decline in imports of goods and services. A strong recovery in exports was projected from 2011 onwards.

The program is quite detailed in the measures that it envisages and its implementation takes place aided by close monitoring and strong conditionality. Despite this, there are a number of weaknesses in its design, and a number of risks concerning its implementation.

The main weakness of the program appears to be related to the fact that the fiscal adjustment itself contributes to a prolongation and deepening of the 2009 recession. Indeed, a three year recession is envisaged in the program itself, something that obviously contributes to a slower fiscal adjustment and worse public debt dynamics. In the forthcoming revision, the recession is expected to continue well into 2012. As a result, and despite the fiscal adjustment envisaged in the program, the debt to GDP will continue rising well into 2013 and possibly 2014.

To an extent the contractionary macroeconomic effects of fiscal adjustment are inevitable. However, a more effective mix of the envisaged fiscal adjustment, as well as a simpler and well defined tax policy could help. The policy on direct taxation envisaged in the program is an unnecessary disincentive to new investment in plant and machinery, as well as real estate, without significant benefits in terms of additional revenue. The program envisages ad hoc, indiscriminate and uncertain rises in direct taxes, which discourage investment and economic growth and thus hinder the recovery and make the necessary fiscal adjustment more painful. This policy on direct taxation may prove to be one of the main reasons why Greece may fail to recover soon enough, and may lead to a failure of the program as a whole.

It would help if the program envisaged a stable and credible tax regime that would be characterized by simplicity and clarity and would provide appropriate investment incentives. The program envisages significant increases in both direct and indirect tax rates. Yet, while revenue from indirect taxes is projected to rise from 11.1% of GDP in 2009 to 14.5% of GDP in 2014, revenue from direct taxation is projected to remain almost

constant relative to GDP. From 8.1% of GDP in 2009 it is projected to rise to only 9.1% of GDP in 2014. At the same time, the projected increases in direct and property tax rates, which yield minimal net new revenue, will have strong negative effects on business investment and investment in housing, as well as the creation of new enterprises. In addition, the tax regime appears to be undergoing major changes every three months, something which contributes to the confusion and is probably the biggest disincentive to investment and the recovery of the Greek economy.

Finally, the timing of the measures undertaken does not appear to be effective either. A lot of political capital is being spent on measures that have small and delayed effects on growth and competitiveness, like the liberalization of some professions, and too little on measures that have significant effects on the reduction of the fiscal deficit. This lack of appropriate priorities has already created reform fatigue, without significant effects on either fiscal adjustment or economic growth and employment.

7. Fiscal Sustainability and Debt Restructuring

«It is time to recognize that Greece is not just suffering from a liquidity crisis; it is facing an insolvency crisis too. Rating agencies have started to downgrade its public debt to junk level, while spreads on Greek sovereign bonds last week spiked to new highs. The €110bn bail-out agreed by the European Union and the International Monetary Fund in May only delays the inevitable default and risks making it disorderly when it comes.

Instead, an orderly restructuring of Greece's public debt is needed now» N. Roubini, Financial Times, June 28, 2010.

Many international analysts had been advocating that Greece ought to restructure its public debt, as, even if the stabilization program succeeds, it will be very difficult to persuade the markets that it has achieved fiscal sustainability. After all, the 2010 adjustment program itself envisaged that the public debt to GDP ratio will reach almost 153% of GDP in 2014, from less than 100% in 2008.

Proposals for a major debt restructuring abounded. In fact, a major restructuring is envisaged in the October 2011 decisions on Greece. Under the terms of the so-called Private Sector Involvement (PSI), institutional investors such as banks, pension funds and hedge funds are given the option of exchanging their holdings of Greek bonds maturing in 2011-2014 for new bonds of longer maturity, at a discount of 50%.

The restructuring analysis is based on the idea that Greek debt is unsustainable at the level of 150% of GDP, but somehow sustainable at, say, 120% of GDP.

This analysis is partial and obviously flawed. Fiscal sustainability requires that the government ought to create and maintain primary surpluses the present value of which is greater than or equal to the original debt. At a more practical level it requires a primary surplus that, as a minimum, stabilizes the debt to GDP ratio. This obviously depends on the initial debt to GDP ratio, but it also depends crucially on the growth rate of GDP relative to the interest rate on the debt.

In Table 3 we present the primary surplus required for fiscal sustainability, for various combinations of the GDP growth rate and the initial debt to GDP ratio. We assume an interest rate of 5%, which is the average interest rate on Greek debt.

As can be seen from Table 3, because of the recession in which the Greek economy has been trapped in the last three years, fiscal sustainability requires significant primary surpluses in relation to Greek GDP, irrespective of the initial debt to GDP ratio. For a nominal GDP growth rate of -5%, as is now the case in Greece, a debt restructuring that reduces the debt to GDP ratio from 140% of GDP back to 100% of GDP, only reduces the primary surplus required for sustainability from 14% of GDP to 10% of GDP. If on the other hand the nominal GDP growth rate were to be increased to 3% per annum, which only requires a weak recovery of the Greek economy, the primary surplus required for sustainability would fall 14% to 2.8% of GDP, even for a debt to GDP ratio of 140% of GDP. In such a case, debt restructuring would have an even smaller impact. A debt restructuring that reduces the initial debt to GDP ratio to 100% of GDP would in such a case result in a required primary surplus of 2% of GDP, instead of 2.8%.

To conclude, debt restructuring eases the fiscal burden on a country that is prepared to stabilize its debt to GDP ratio through appropriate primary surpluses, but it does not do away with the need for significant primary surpluses as long as the recession continues. The most efficient way to reduce the primary surpluses required for debt sustainability is not through a partial default, but through policies that contribute to higher growth and thus reduce the gap between the real interest rate and the

growth rate. If Greece could recover from the recession that has plagued it in the last three years, and achieve sustainable growth of say 2% per annum plus moderate inflation, then the primary surplus required for sustainability would fall by more than ten (10) percentage points of GDP. If the gap between the real interest rate and the growth rate remains where it is today, the 30% haircut of Greece's public debt to GDP ratio through the October 2011 agreement will only result in a fall of the primary surplus required for sustainability which is only a fraction of that (3 percentage points of GDP). The required fiscal adjustment would remain huge and possibly non-feasible.

At the end of the original program period in 2014, Greece was expected to have achieved a primary surplus of almost 6% of GDP. This, if sustained, and if the economy recovered as envisaged in the program, would have made Greece's fiscal situation sustainable. If Greece could maintain the primary surplus at 6% of GDP, the public debt to GDP ratio would have started falling by more than 5% points of GDP per annum. In fact, this is envisaged in the last year of the 2010 program, where an interest rate of 5% and nominal GDP growth of 3% per annum (2% real growth plus 1% inflation) are assumed. In the ten years to 2024, Greece's debt to GDP ratio would have fallen back to about 100%, under these assumptions. If Greece were to achieve real growth higher than 2% per annum, or if real interest rates were lower, the debt to GDP ratio would have fallen at a higher pace. The debt restructuring envisaged in the October 2011 agreement will cause Greece's debt to fall to a level much lower than 100% by 2024, but this will largely be a one off effect. As shown in Table 3, the dynamics of the debt are not affected that much by the agreed "haircut".

8. Some Tentative Conclusions

To conclude, in broad terms, the policy envisaged in Greece's adjustment program appears feasible. From now on, the main focus should remain the achievement of a sufficiently high primary surplus, which would initially stabilize the debt to GDP ratio and then cause it to start falling. Debt restructuring should remain voluntary, as envisaged in the private sector involvement (PSI) program.

The question on everybody's lips is whether the Greek program can succeed.

My answer is a qualified yes. The Greek program can succeed if Greece were to exercise long-term fiscal discipline as envisaged in the program and respect the rules of the stability and growth pact moving gradually into a small budget surplus. This will have to be maintained for a sufficient number of years. However, the program must undergo adjustments that will speed up the recovery of the Greek economy.

As I have already argued, Greece's crisis is not simply a debt crisis. It is a dual confidence crisis, due to the mismanagement of the expectations of international creditors and domestic consumers and investors. Thus, to resolve the crisis, confidence needs to be restored on both fronts. The main difficulty of the Greek program is that is has so far failed to address the confidence crisis that has led to its adoption. The Greek program ought to be modified to break this vicious circle. This must be the top priority of the new government.

The first sign of success will be the stabilization of the debt to GDP ratio. Under the 2010 program this is not envisaged before 2014. This is due to the prolonged and deep recession, which serves to further destabilize the debt to GDP ratio. The recession is set to continue into 2012. To address the dual confidence crisis, the Greek program ought to be revised in a way that enhances its credibility, and produces some early results.

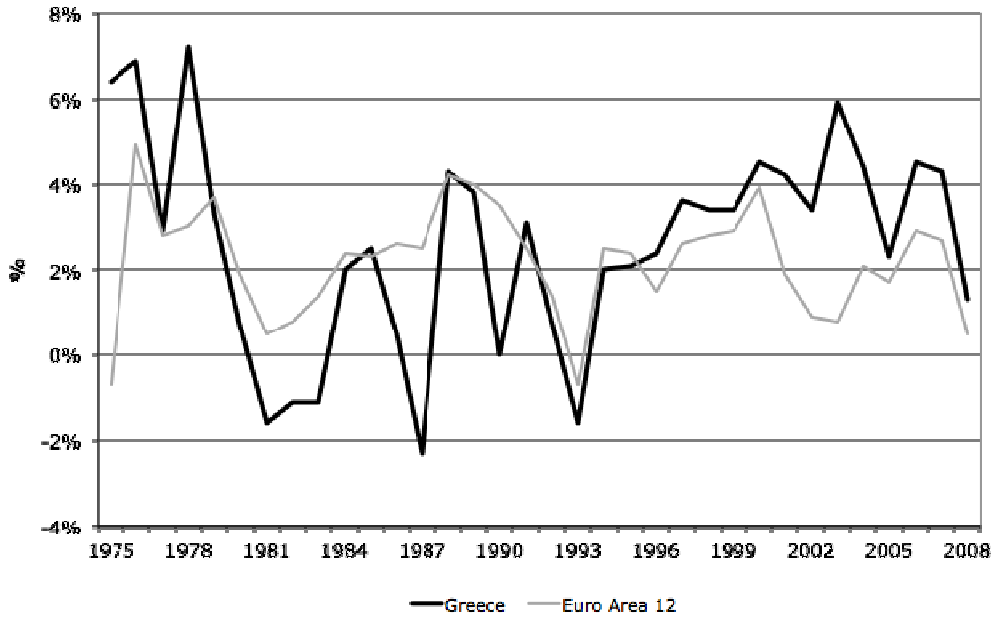
It should become a top priority to adjust policy in the program so that the recovery comes sooner than 2013. Greece can achieve the necessary fiscal adjustment with much lower business taxation, much lower property taxes and a much simpler income tax schedule for households. It is right and proper to rely more on consumption taxes, such as VAT and excise duties, in an economy where consumption is clearly excessive relative to the productive potential. A radical reform of the direct and property tax system, which will create expectations of no further changes, is probably the best tool for restoring the confidence of domestic investors, and thus help the Greek economy recover. The tax regime that was put in place at the end of 2009 is unduly complicated, contains significant disincentives to economic activity and investment, and is being revised far too frequently. All these elements work against both the recovery and the fiscal adjustment of the Greek economy.

So far, both Greece and its European partners have failed in restoring confidence. This does not mean that they cannot learn from past mistakes and eventually succeed. This would be good for both Greece and the rest of the world.

Appendix

Chart 1

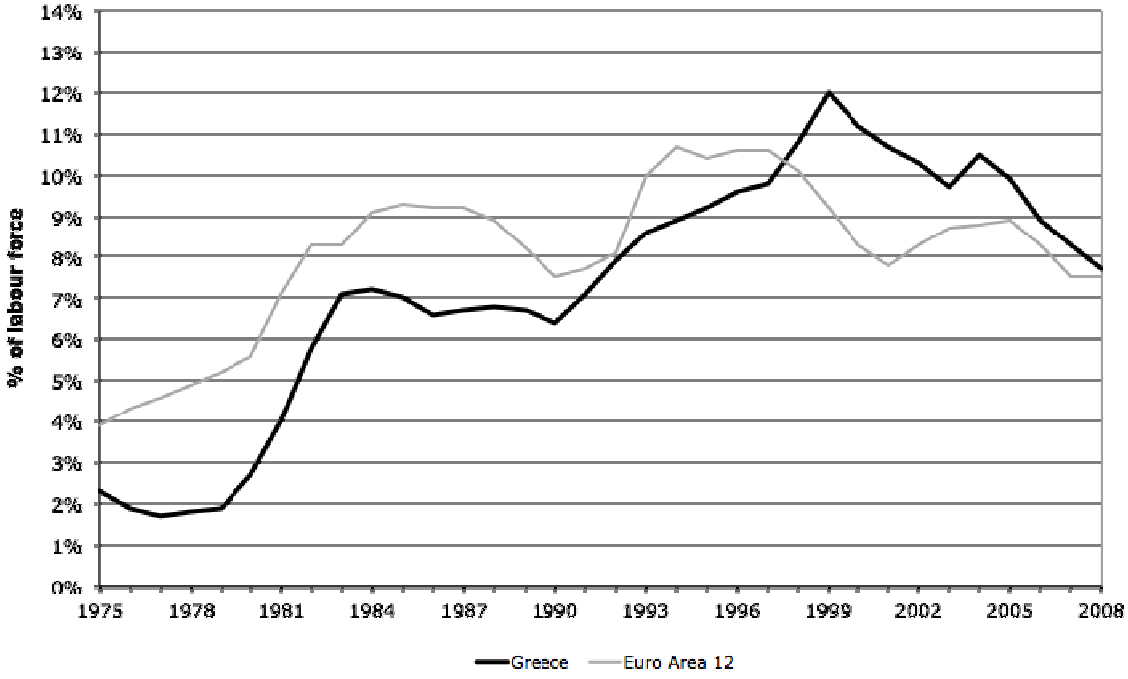
Growth Rate of GDP in Greece and the Euro Area



Source: European Commission (2010)

Chart 2

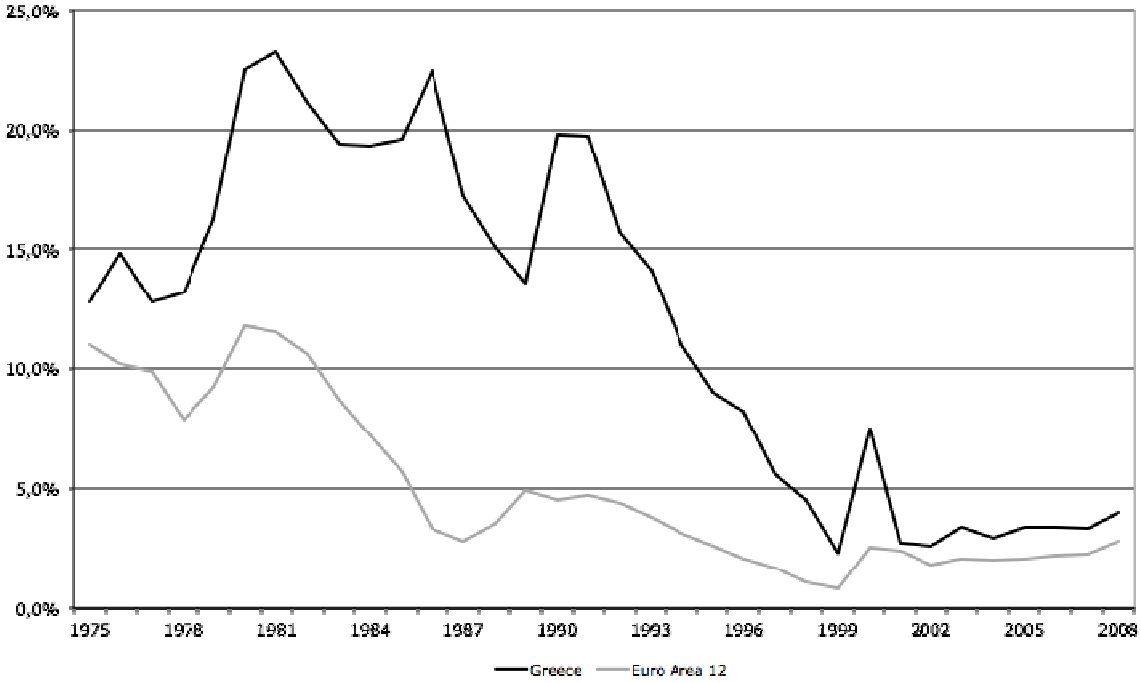
Unemployment Rates in Greece and the Euro Area



Source: European Commission (2010)

Chart 3

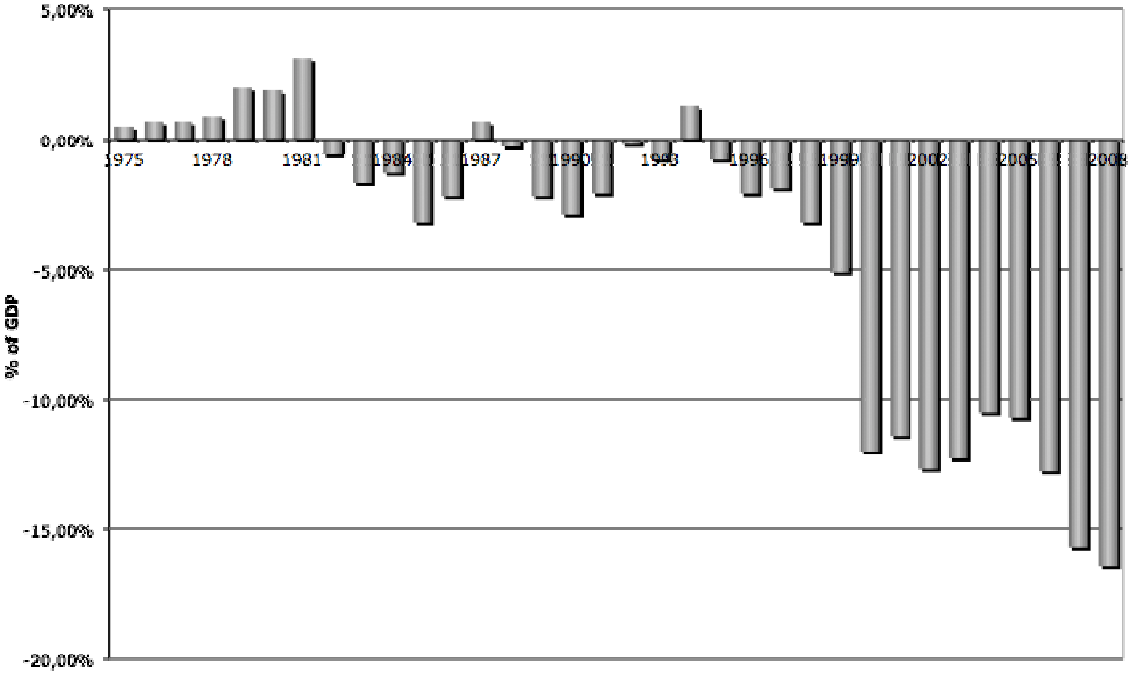
Inflation in Greece and the Euro Area



Source: European Commission (2010)

Chart 4

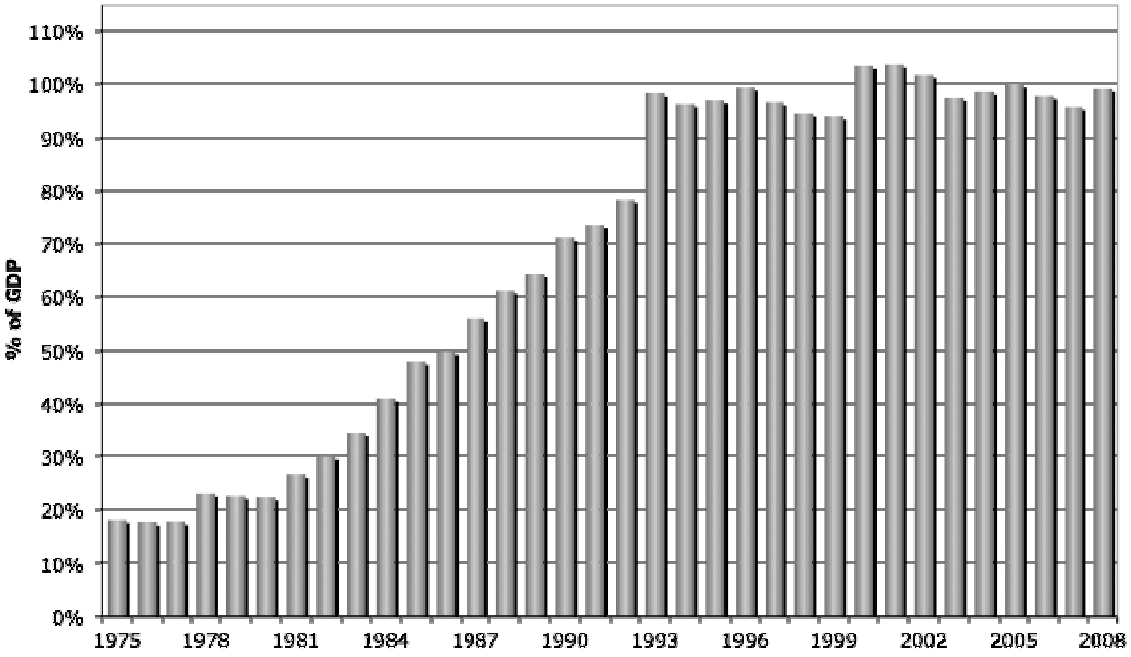
The Current Account of Greece



Source: European Commission (2010)

Chart 5

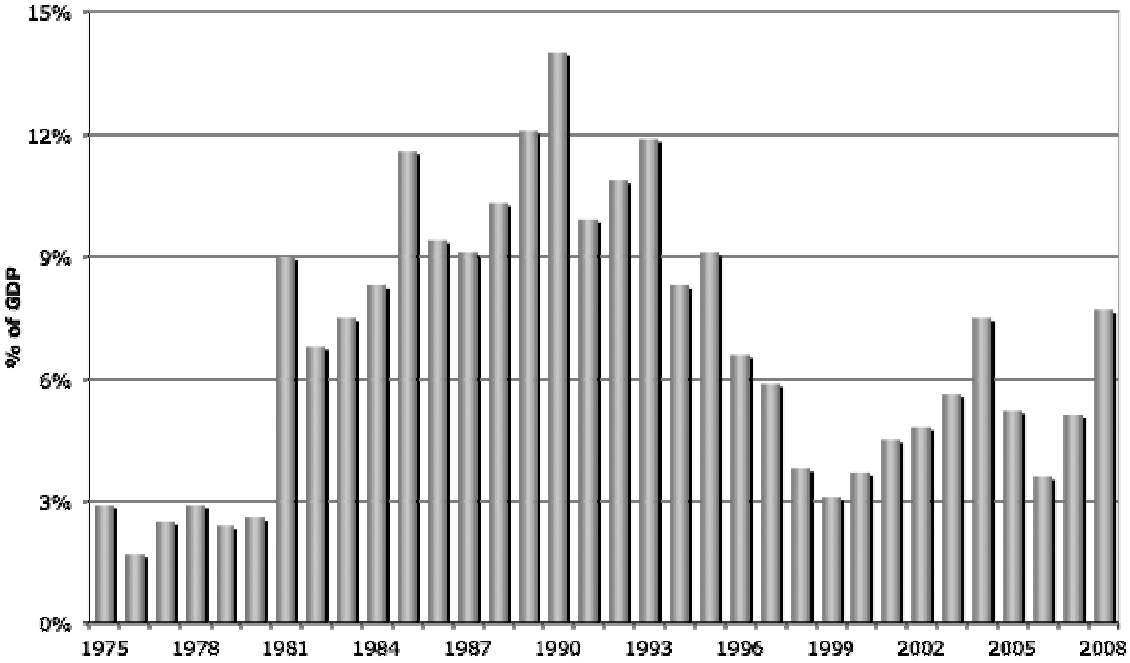
The Explosion of Public Debt



Source: European Commission (2010)

Chart 6

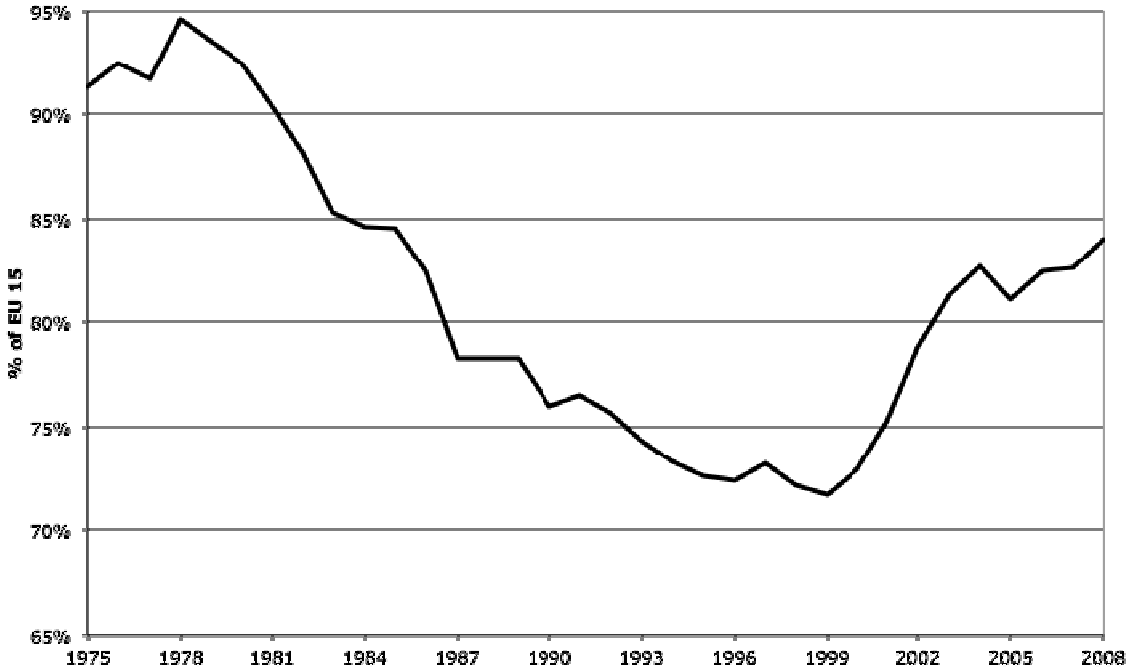
Deficits of the General Government



Source: European Commission (2010)

Chart 7

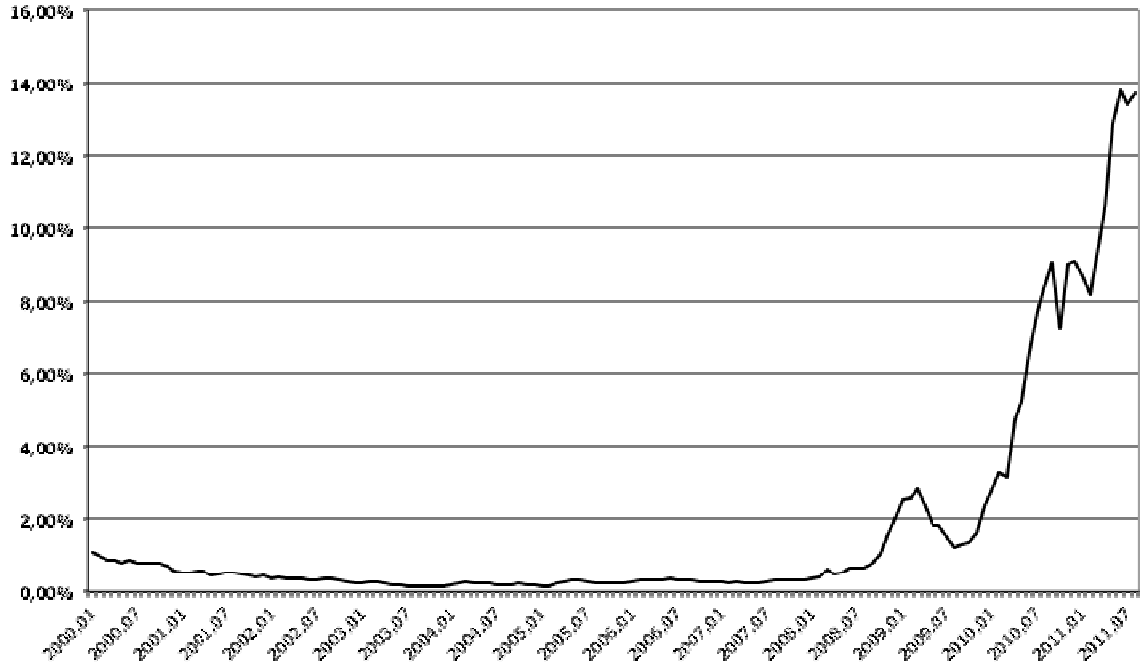
Greece's GDP per capita, relative to the EU-15



Source: European Commission (2010). GDP for Greece and the EU is measured in Purchasing Power Standards, which take into account purchasing power differences

Chart 8

Spread of Greek 10 year Government Bonds



Source: European Central Bank. The spread if the difference of the yield of 10 year bonds of Greece and Germany

Table 1
Elections and Governing Parties in Greece since 1974

Election	Incoming Government
1974, November	ND (Constantine Karamanlis)
1977, November	ND (Constantine Karamanlis)
1981, October	PASOK (Andreas Papandreou)
1985, June	PASOK (Andreas Papandreou)
1989, June	ND in Coalition (Tzannis Tzannetakis)
1989, November	National Unity (Xenophon Zolotas)
1990, April	ND (Constantine Mitsotakis)
1993, October	PASOK (Andreas Papandreou)
1996, September	PASOK (Constantine Simitis)
2000, March	PASOK (Constantine Simitis)
2004, March	ND (Costas Karamanlis)
2007, September	ND (Costas Karamanlis)
2009, October	PASOK (George Papandreou)

Table 2
Greece's Original Adjustment Program, 2010-2014
(2nd Revision of May 2011)

	2009	2010	2011	2012	2013	2014
Real GDP Growth	-2.4%	-4.5%	-3.0%	1.1%	2.1%	2.1%
Domestic Demand	-2.1%	-7.7%	-6.0%	-1.0%	0.8%	1.0%
Net Trade	2.2%	2.3%	2.9%	1.8%	1.3%	1.1%
Unemployment Rate	9.1%	11.5%	14.5%	15.0%	14.5%	14.0%
Inflation (HICP)	1.3%	4.7%	2.9%	1.0%	1.0%	1.1%
General Government Deficit	15.4%	10.5%	7.6%	6.5%	4.8%	2.6%
Interest Payments	5.2%	5.5%	6.8%	7.8%	8.3%	8.7%
Primary Expenditure	47.6%	44.0%	42.3%	41.2%	38.9%	36.5%
Revenue	37.3%	39.1%	41.5%	42.5%	42.4%	42.6%
Primary Deficit	10.3%	4.9%	0.8%	-1.3%	-3.4%	-6.1%
General Government Debt	127.1%	142.7%	156.7%	161.3%	160.1%	153.0%
Current Account Balance	-13.1%	-11.8%	-9.9%	-7.7%	-6.6%	-5.8%

Source: European Commission

Table 3

Primary Surplus Required for Fiscal Sustainability
For Different GDP Growth Rates and Debt to GDP Ratios

	60%	80%	100%	120%	140%	160%
5%	0%	0%	0%	0%	0%	0%
3%	1.2%	1.6%	2%	2,4%	2.8%	3.2%
0%	3%	4%	5%	6%	7%	8%
-3%	4.8%	6.4%	8%	9.6%	11.2%	12.8%
-5%	6%	8%	10%	12%	14%	16%

In the vertical axis we measure the rate of growth of nominal GDP, while on the horizontal axis we measure the public debt to GDP ratio. The nominal interest rate is assumed at 5%, which is the average interest rate on Greek debt.

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