



## **Prospects and Policies for the Greek economy**

*D. B. Papadimitriou, M. Nikiforos, G. Zezza*

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### **Summary**

In this report we discuss alternative scenarios for restoring growth and increasing employment in the Greek economy, evaluating alternative policy options through our specially constructed macroeconomic model (LIMG). After reviewing recent events in 2013, which confirm our previous projections for an increase in the unemployment rate, we examine the likely impact of four alternative policy options: (1) external help through Marshall-type plan capital transfers to the government; (2) suspension of interest payments on public debt, while using the resources for increasing demand and employment; (3) introduction of a parallel financial system that uses new government bonds; (4) adoption of an Employment of Last Resort (ELR) program financed through the parallel financial system. We argue that the effectiveness of different plans crucially depends on the price elasticity of the Greek trade sector: since our analysis shows that such elasticity is low, our policy option for an ELR program seems to provide the best strategy for a recovery with immediate effects on the standard of living of the Greek population, while containing the effects on foreign debt.

### **1. Introduction**

The latest announcements from Brussels, Frankfurt and Berlin proclaim the worst of the Eurozone crisis to be over, and even praising Greece for having finally turned the corner. Surprisingly, they must be neither observing the recent economic developments nor the narrowing of the country's policy options. The negotiations between Greece and its international lenders are continuing with the latter insisting that the targets of deficit reduction, privatization and structural changes be met absolutely, if the next bail out tranche—it was supposed to have been released last September—were to soon be disbursed. Despite its spectacular failure for more than three years now, the goal of a decrease in the debt to GDP ratio has been likened to chasing a mirage as the

recent level of 175 percent testifies, especially, if one considers that this ratio was about 125 percent at the onset of the crisis four years ago. And this, prior to any “rescue” from the country’s lenders and even after the world’s highest debt “haircut” in 2012 (Papadimitriou 2013a).

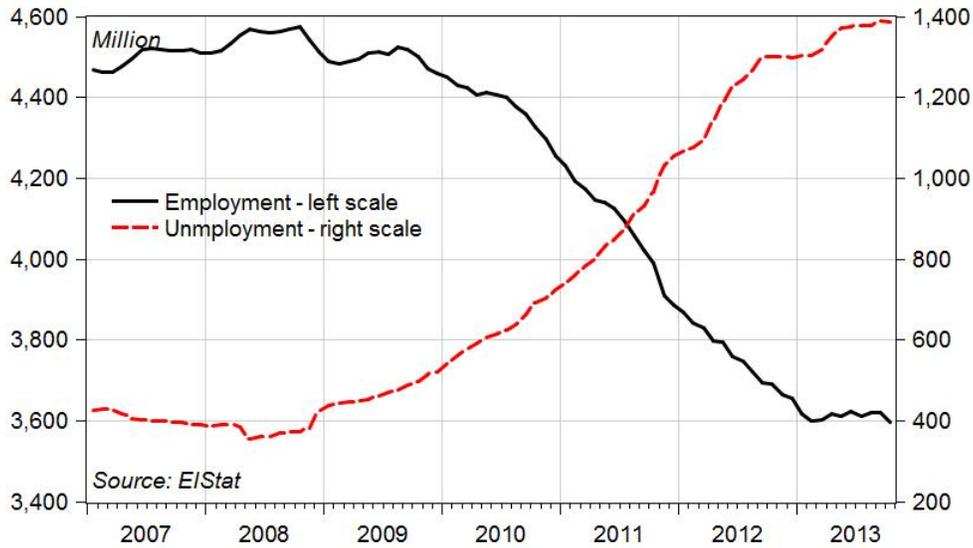
The country’s economic conditions are still stubbornly negative, save for the government’s celebrated small budget primary surplus that will not be actually known before April 2014 when Eurostat publishes its report. Employment creation statistics –as we shall show later –are not encouraging especially if one reckons how many jobs were created and lost during the past summer, the height of the tourist season. A recent report by the Bank of Greece –as reported by Reuters— showed that bank lending to the private sector in December 2013, decreased sharply by 3.9 percent, much faster than in the rest of the Eurozone where the comparable decline was 2.3 percent. Despite the lowest ever ECB benchmark interest rates and the government’s efforts urging banks to boost lending to companies, borrowing costs in Greece are high –both consumer and corporate average real interest rate for new loans have hit 8.3 percent in November 2013 –the highest rate since Greece became a member of the EMU (Reuters 2014). With the economic collapse, the result of harsh austerity, and both the depletion of savings to cope with economic hardship and the increasing tax burden, and the flight of funds to banks outside the country that ensued, Greek banks with a large number of non-performing (red) loans and fewer depositors than in earlier times, remain capital-inadequate restricting lending to the only “credit worthy,” and thus incapable of helping pull the economy from its continuing downward spiral (Papadimitriou 2014). Moreover, the economy is succumbing to recently reported price deflation making the recovery, the government projects it will begin this year, a pure fantasy.

## **2. Recent developments in the Greek economy**

We begin our analysis with the scourge of unemployment which continued rising in concert with our earlier findings (Papadimitriou et al. 2013a) based on simulations from the especially constructed macroeconometric model for the Greek economy (LIMG) (Papadimitriou et al. 2013b).

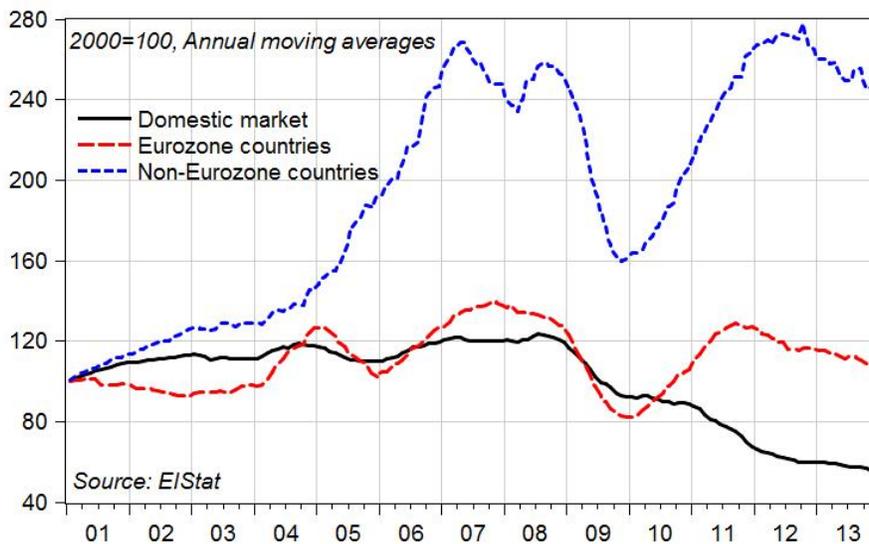
Employment, on a seasonally adjusted basis, increased very slowly from its trough of 3.6 million persons in February 2013 (Figure 1), only to fall again in October 2013. The ranks of the unemployed increased by 84,128 individuals over the same period raising the seasonally adjusted total of unemployed persons to an all time high of 1,387,500 with a significantly higher unemployment rate for women (31.3% in the third quarter of 2013) than that of men (23.8%). The largest increase in jobs between the first and the third quarter of 2013 was in the “Accommodation

**Figure 1. Greece. Employment and unemployment**

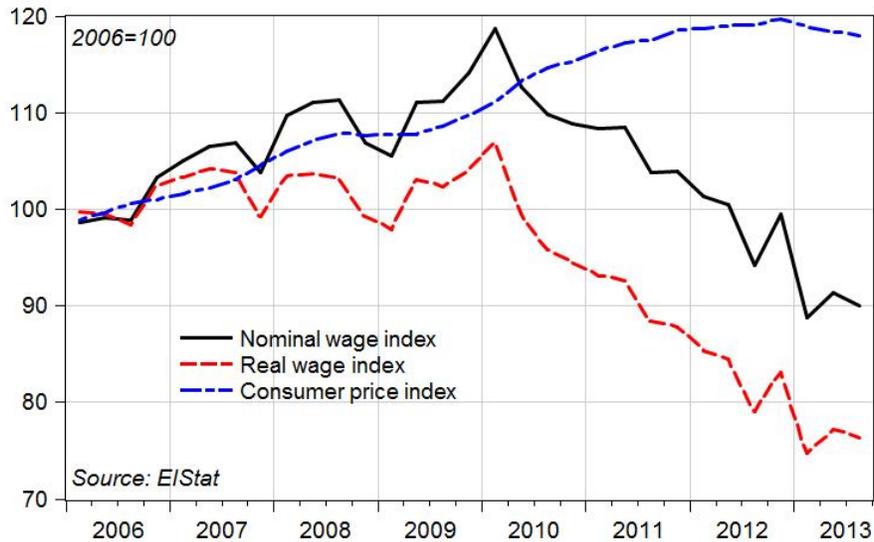


and food service activities” sector, showing an increase of 50,800 salaried employees. In the same sector, during the same period there was, however, a decrease of 1,900 employers that may reflect an increase in the average size of the surviving firms. These latter figures are not seasonally adjusted. It is important to note that employment in this category that includes tourism—a very crucial sector for the country—is still below 9,300 persons in the third quarter of 2013 as compared with the same quarter of 2012.

**Figure 2. Greece. New orders indices in industry**



**Figure 3. Greece. Wage and price indexes**



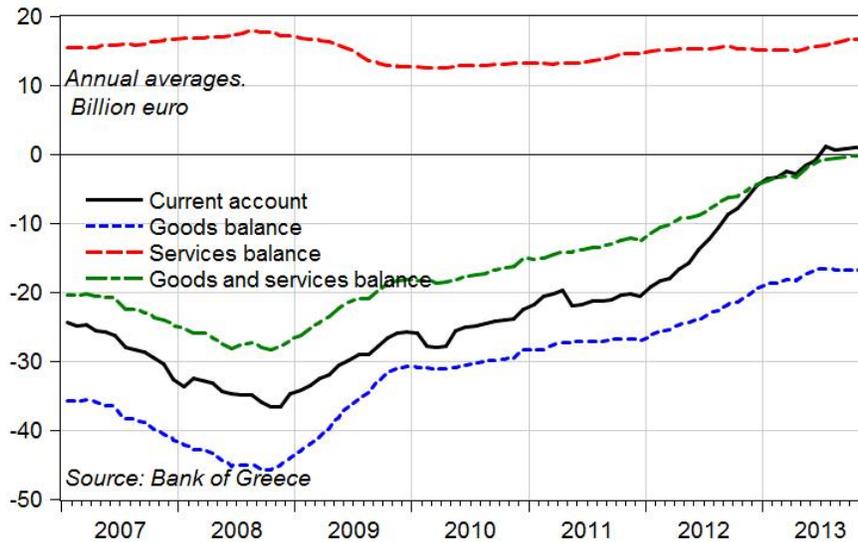
The economy's deterioration can also be seen by the index of industrial production which in November 2013 was 6 percent below that of the corresponding month in 2012 denoting a large decrease in contrast to improved figures registered for September and October 2013. The annual average of this index (2005=100) peaked at 103 at the end of 2007, but then started an uninterrupted free fall that continued through November 2013 reaching 68. Another interesting short-term indicator of economic activity is shown in Figure 2: the new orders index in industry. As shown, the performance of the Greek industrial sector, absent the demand from the rest of the world, especially from the non-Eurozone countries would have been much worse. The numbers also show that new orders have not been increasing but in recent months remained stable, or declined.

### **3. The impact of internal devaluation**

The new orders index in Figure 2 is useful for evaluating the effects of Troika's strategy for increasing competitiveness in the Greek economy's export sector through a fall in unit labor costs.

The theory of "expansionary austerity" when viewed within the framework of our model's financial balances approach, requires that – in order for growth to remain stable as the government reduces its deficit – the external balance must improve while the private sector balance is unaffected. In a recent talk at a Levy Institute conference in Athens (2013), Yves Mersch, a member of the Executive Board and General Council of the ECB, stated clearly, that

**Figure 4. Greece. Current account components**



“...as Greece is undergoing a simultaneous deleveraging in its public and private sectors, sectoral accounting tells us that its external sector must go into surplus. The key for growth is to ensure that this happens as much as possible through higher exports rather than import compression. The best way Greece can achieve this is by improving its price competitiveness. (...)

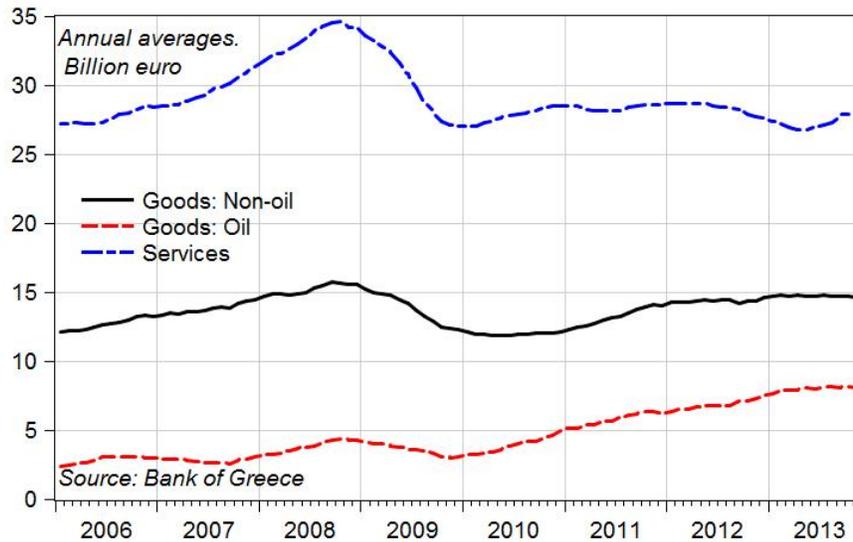
To facilitate an export-led recovery, this trend [decreasing competitiveness] has to be corrected and there is no way this can be achieved in the short run other than by adjusting prices and costs. I know the difficulties that such adjustment creates and the criticisms that are leveled against it. But we are in a monetary union and this is how adjustment works. Sharing a currency brings considerable microeconomic benefits but it requires that relative prices can adjust to offset shocks.” Mersch (2013)

In concert with the Troika imposed strategy, both nominal and real wages<sup>1</sup> have fallen by 23 percent from their peak in the first quarter of 2010 and 27.8 percent respectively as illustrated in Figure 3. “Internal devaluation” has been, then, very effective, in terms of reducing wages. On the other hand, its impact on prices has been limited. As Figure 3 shows, the CPI index followed an increasing trend irrespective of the declining wages, up to the beginning of 2013, when prices started falling.

While it is true that prices began falling later than wages limiting the improvement in

<sup>1</sup> The nominal wage index is published by ElStat while the real wage index is obtained by deflating the nominal wage index by the CPI index also published by ElStat. The latter has been seasonally adjusted in Eviews and converted to quarterly frequency.

**Figure 5. Greece. Exports by major categories**



competitiveness, the impact on exports remains in doubt. Trade in goods as reported in Figure 4, show the gap denoting the trade deficit to be slowly closing due to decreasing imports and rising exports, even though exports have traverse their trend and began falling in the most recent months. Since the pre-recession peak in October 2008, the measures of trade in goods in Figure 4<sup>2</sup> illustrate a significant reduction in the trade deficit, from 45.8€ billion to 16.9€ billion in November 2013, emanating from a decrease in imports of 18.8€ billion and a rather small increase in exports of only 2.7€ bn.

Figure 4 also shows that net trade in services –the major contribution to Greek receipts from the rest of the world—has improved only marginally in recent months, and it is still below its pre-crisis level.

In the last few months, a major benefit to the current account has instead occurred by the reduction in net interest payments made abroad, so as to generate a small overall surplus.

Given the assumed importance of the export sector in the Troika strategy, it is useful to distinguish the performance of its main categories. In Figure 5, total exports of goods, differentiated in major categories are shown from the latest data provided by the Bank of Greece.

The data clearly show that exports of services –the major source of credit in the balance of trade –has not recovered yet to its pre-crisis level. All of the improvement in exports is due to oil

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<sup>2</sup> All data are computed as annualized moving averages over the last 12 month, on data from the Bank of Greece.

related products, which increased by 3.7€ billion between October 2008 and November 2013, while non-oil exports having recovered from their fall during the two-year period (2008-2010) are in November 2013 still 1€ billion below what they were in October 2008.

The Eurostat database on trade allows for a further decomposition of exports by partner country. This shows that the increase in exports of oil is mainly due to intra-industry trade (exports to Kuwait and Libya increased in the last few years) or to stronger demand from non-Euro neighbor countries (Turkey, Bulgaria) while exports to the Euro area have fallen.

The data in Table 1, obtained from the Eurostat trade statistics, confirm the analysis of the composition of Greek exports, described above. While in the Euro years before the recession exports to Europe increased on average by 8 percent per year while exports to non-EU countries increased by 6.7 percent, this was reversed with the recession. Exports to Europe have fallen at an annual rate of 0.2 percent between 2007 and 2012, while exports to non-EU countries have risen on average by 23 percent, with the share of exports to non-EU countries growing from 36.6 percent to 55.9 percent of total exports. The largest increase in is the “Mineral fuels” category, which increased from 2.4€ billion in 2007 to almost 9€ billion in 2012. Exports to non-EU countries other than oil related products also increased, but only by 1.7€ billion between 2007 and 2012.

	To EU27			To other countries			TOTAL		
	2000	2007	2012	2000	2007	2012	2000	2007	2012
Food and live animals	11.3	11.2	9.6	3.6	3.2	3.5	14.9	14.4	13.1
Beverages and tobacco	2.1	1.3	1.3	2.6	1.4	1.0	4.7	2.7	2.3
Crude materials, inedible, except fuels	2.9	2.5	1.5	2.6	1.7	3.1	5.6	4.2	4.6
Mineral fuels, lubricants and related m.	3.7	4.5	6.1	10.0	12.4	32.5	13.8	16.9	38.5
Animal and veg. oils, fats and waxes	2.1	1.8	1.2	0.3	0.3	0.2	2.4	2.1	1.4
Chemicals and related products, n.e.s.	5.2	9.5	6.4	2.9	3.3	2.6	8.1	12.8	9.0
Manufactured goods	13.5	14.3	8.2	6.7	6.5	6.0	20.2	20.8	14.2
Machinery and transport equipment	7.4	7.9	4.6	5.1	4.1	3.9	12.5	11.9	8.5
Miscellaneous manufactured articles	13.7	8.0	4.1	4.2	2.7	2.1	17.9	10.7	6.2
Other n.e.c.	0.0	2.4	1.2	0.0	1.0	1.0	0.0	3.4	2.2
<b>TOTAL</b>	<b>62.0</b>	<b>63.4</b>	<b>44.1</b>	<b>38.0</b>	<b>36.6</b>	<b>55.9</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

*Source: Eurostat*

The largest increase in exports to EU countries between 2000 and 2007 was in the “Chemical and related products” and in manufacturing. Notwithstanding the fall in competitiveness in the Greek economy compared to the core Euro countries in these years, the early 2000s saw an improvement in the exporting ability of Greece in more technology-intensive sectors. This pattern

was reversed from 2008 to present, and if we subtract the increase in exports of oil-related products, exports to non-EU countries have fallen by 900€ million between 2007 and 2012, in all sectors with the exception of food and live animals showing a small increase.

We can therefore safely conclude that the improvement in Greek exports has nothing to do with competitiveness achieved through wage deflation, since it is related to trade with non-Euro countries, especially with a strong Euro compared to the U.S. dollar, and concentrated in oil-related products that increased in price during most of the period reported in Figure 5. To be sure, the increase in exports in oil-related products is beneficial in the short term, but the country becomes vulnerable to fluctuations of oil prices, and provides a minimal stimulus on job creation and growth.

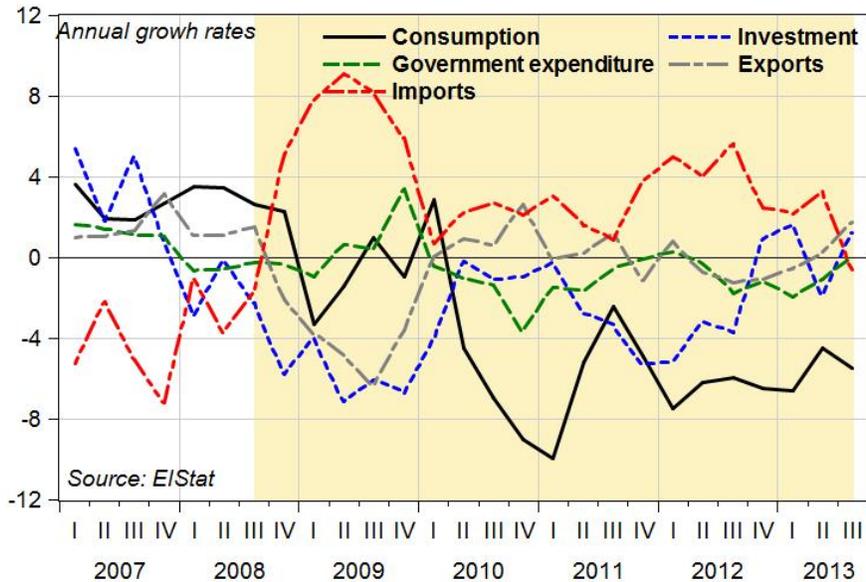
We have analyzed the structure of Greek exports further that has improved our understanding and existing measures of foreign demand and competitiveness of the country. In our previous report (Papadimitriou et al. 2013), we focused on the performance of Germany and the Eurozone as they relate to Greece. Greek exports to the Eurozone, which were almost 61 percent in 1990, were down to 29.8 percent in 2012. Exports to non-Euro area and nearby faster-growing countries like Turkey are expected to become more significant and relevant for overall Greek trade. Our new expectations have lead us to revise our projections for growth and inflation of Greece's trading partners, as illustrated in Table 2.

	<i>Real GDP of major trading partners</i>	<i>GDP deflator index</i>	<i>Deflator of domestic demand</i>
2012	0.14	2.73	3.49
2013	1.97	1.78	2.05
2014	1.67	2.54	2.53
2015	2.23	2.68	2.67
2016	2.46	2.73	2.76

*Source: Authors' calculations on data from Eurostat and IMF (WEO October 2013). Major trading partners based on 2011 exports are: Bulgaria; Cyprus; France; Germany; Italy; Macedonia; Netherlands; Romania; Singapore; Spain; Turkey; United Kingdom; United States*

Stronger growth in Greek trading partner countries like Turkey, Bulgaria and the United States, notwithstanding, will not compensate for the sluggish growth in the Eurozone countries predicted by the IMF for 2014. The IMF (2013, Table 13) projects exports of goods and services to grow by 5.5 percent in 2014, while our estimates, combined with the projections in Table 2, imply

**Figure 6. Greece. Contributions to real GDP growth**



growth for exports by about 2.6%. It is, therefore, still unlikely that exports alone will be the key driver to restart the motor of growth for the Greek economy.

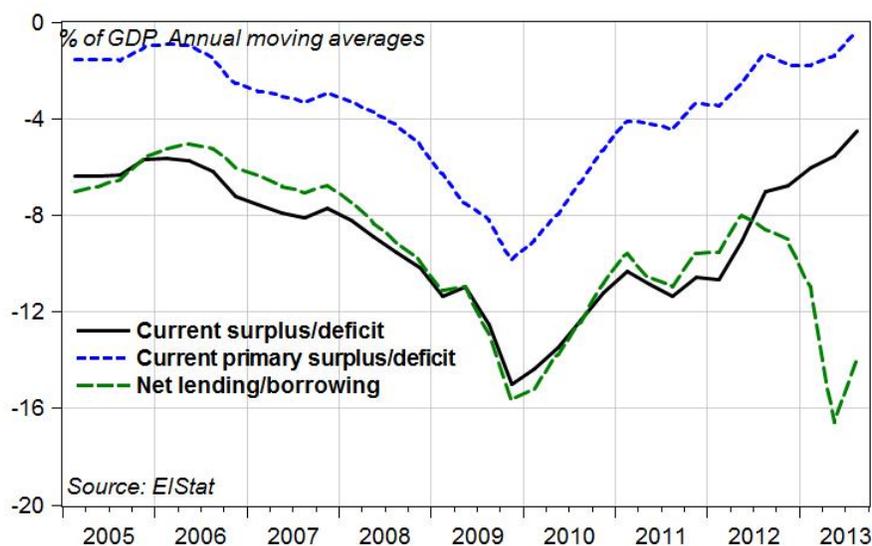
#### 4. Real GDP and its components

We analyze the dynamics of the components of real GDP, using the latest figures available (third quarter of 2013) as depicted in Figure 6. As shown, the major positive contribution to GDP growth was the fall of imports, noted with the sign reversed, while consumption is still the primary factor of aggregate demand contraction. Investment has been unstable, falling recently and, then, recovering somewhat, but given the projected path for domestic demand, it is inconceivable to expect that investment will be increasing by 8.4 percent, as the IMF (2013, Table 13) is predicting. Consumption continues its unprecedented fall, although at a slower pace, in line with expectations derived from the behavior of real wages reported in Figure 3.

All indications point out that the IMF (2013) optimistic projections of the Greek economy's reversal to a growth rate of 0.6 percent in 2014 from its six-year slide to be very unlikely to come to pass.

Provisional figures for the third quarter of 2013 are mainly in line with our analysis. Investment has been falling in real terms by 12 percent in the first three quarters of 2013 as compared to the first three quarters of 2012. The main difference between our analysis and the

**Figure 7. Greece. General government surplus/deficit**



preliminary figures for the third quarter 2013 is that the latter reports an increase of 8.8 percent in real exports of services in 2013q3 over the same quarter of 2012, a figure we believe to be too high given the increase in other indices of tourism activity.

## 5. Fiscal policy

The government is claiming that it will achieve a primary surplus of over 1€ billion in the 2013 year. However, based on our analysis of the macroeconomic sectoral accounts, which are less discretionary than cash balances—where expenditure and revenues can be moved more easily from one period to the next—the claim will, in all likelihood, turn out to be wishful thinking unless increased austerity was put in place the last quarter of 2013 as assumed in our baseline scenario below.

According to the sectoral accounts published by ElStat, the general government current deficit<sup>3</sup> is slowly being reduced by the implementation of more austerity—albeit at a slower pace than what was hoped for by government plans—and reached 4.5 percent of GDP<sup>4</sup>, or 8.3€ billion, in the third quarter of 2013. The same measure net of interest paid out followed suit reaching a primary deficit of 0.4 percent of GDP, or 0.7€ billion as illustrated in Figure 7.

According to the Flow of Funds published by the Bank of Greece, the government received

<sup>3</sup> Measured as government saving less investment.

<sup>4</sup> Data refer to the last four available quarters, i.e. from the last quarter of 2012 to the third quarter of 2013.

a large loan (19.5€ billion) from abroad in the second quarter of 2013 of which a large portion (11.5€ billion) – according to the sectoral accounts – was transferred to the banking sector in the same quarter for strengthening banks’ balance sheets. When including capital transfers of 23.6€ billion paid by the government to the banking sector over the last four quarters – part of which is not considered for meeting the troika deficit target criteria – the overall deficit – labeled net lending/borrowing in Figure 7- amounts to 25.9€ billion over the last four quarters, or an extraordinary 14 percent of GDP (down from 16.6 percent in the previous quarter).

It is worth noting, however, that the current deficit in the first three quarters was lower by 4.8€ billion compared to the same period in 2012. To achieve troika’s target for government deficit, as detailed in IMF (2013), further contraction in government outlays will be necessary, implementable in the last quarter of 2013.

These facts and assumptions form the basis for our baseline projection updating our previous analysis in Papadimitriou et al. (2013a).

## **6. Projected impact of austerity**

Our revised projections are based on the changes in general government operations as outlined in IMF (2013, Table 7 p.51), which assume a fall in primary expenditure of about 8€ billion in 2013, as compared to 2012, of which 5.4€ billion is a reduction in social benefits, 2.7€ billion in compensation of employees and 0.6€ billion in intermediate consumption.

IMF is also projecting a fall in government revenue in 2013, as compared to 2012, of about 1€ billion in direct taxes, 2.1€ billion in indirect taxes and 1.9€ billion in social contributions. These targets have almost been achieved according to preliminary data on the first three quarters of 2013. Our model shows that meeting the Troika targets require some further contraction of government outlays in the last quarter of 2013, notably in social benefits. In addition, we assume that the direct tax rate – measured as the ex-post tax revenue over the tax base – remains at a historically very high level it has reached in the third quarter of 2013 (116 percent of GDP, against an average of 8.2 percent of GDP between 2001 and 2008) an hypothesis which is difficult to materialize, although data on the cash balance of the general government show an increase in revenues (Ministry of Finance 2013b). Our projections are conditional on this assumption, but should tax revenues fall short of the target, the effective government deficit will be higher than what we project. Again, it is plausible that some of the cuts in government expenditure implemented in the last part of 2013 are reverted in 2014, and this will imply a higher government deficit for that year, and a higher real GDP

growth rate.

Our other assumptions are as neutral as possible. We use the IMF World Economic Outlook projections for growth and inflation of Greece's trading partner economies (see Table 2). We further assume that price deflation is lower in 2014 and followed by price stabilization in 2015; interest rates on government debt (ex-post) stabilize at the current low level; the exchange rate of the euro will not appreciate against the U.S. dollar; and finally the private sector deleveraging continues at a slower rate. The latter assumption decreases the negative effect on domestic demand in our model.

The results for the key economic indicators, we obtain, are reported in Table 3.

To reach the deficit/GDP target, fiscal policy has to continue being contractionary in the last quarter of the year. Our model finds that, in doing so, the government will achieve more or less a primary surplus by the end of 2013, and no stronger austerity measures being necessary in 2014. However, given the large fall in the second part of 2013, keeping government expenditure constant at its lowest level in 2014 will imply a further decline in the average annual expenditure in that year as well, compared to the annual average in 2013.

	2012	2013	2014	2015
Real GDP (%)	-6.75	-3.90	-2.65	0.04
Government expenditure on goods and services (%)	-4.56	-9.19	-3.52	0.37
Government surplus/deficit (% of GDP)	8.96	13.06	2.95	3.35
Government current surplus/deficit (% of GDP) (1)	6.79	4.36	3.35	3.74
Government primary balance (% of GDP)	-1.77	-0.01	1.37	1.03
Government debt (% of GDP) (2)	169.67	195.44	205.84	208.02
External balance (% of GDP) (3)	-2.69	-2.85	-1.16	-0.28
Real exports of goods and services (%)	-2.11	2.30	2.95	1.46
Real imports of goods and services (%)	-13.76	-8.15	-6.82	-1.61
Unemployment rate (%)	24.23	27.40	27.93	28.29
<i>Notes: (1) Net of capital transfers; (2) Cumulated government deficit, based on gross liabilities; (3) Net lending/borrowing</i>				

Exports, in nominal terms, are projected to increase for the year (2013), as the increase in exports in later months compensated for their decline in the first half of 2013. As demonstrated in Figure 8, our baseline projection, in concert with troika's plan, shows that the external balance will improve, the result of the dramatic fall in imports which is a consequence of the depressed internal demand and start deteriorating again as soon as GDP begins growing in 2015.

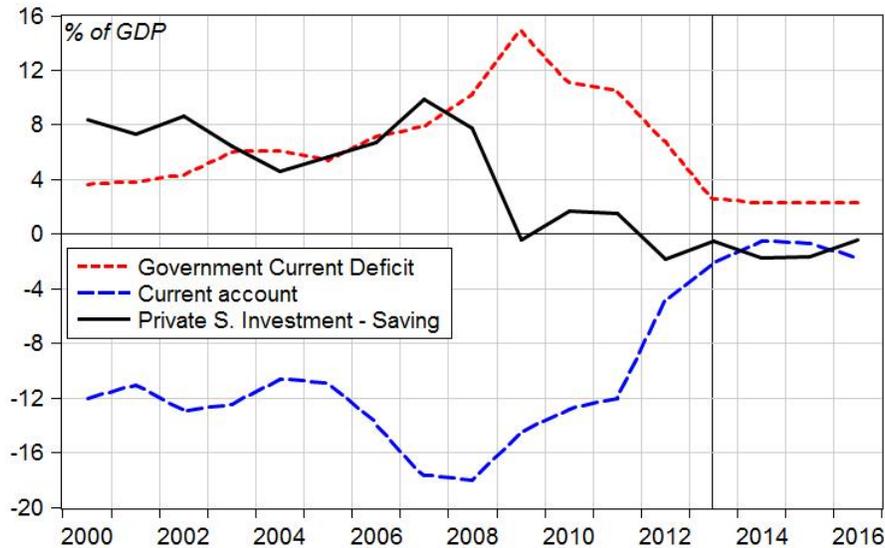
The government will achieve its deficit targets, but show a spectacular failure in restoring employment and growth in our projected horizon.

In Table 4 we compare our current projections, conditional on the austerity plans discussed above, to other projections currently available for the Greek economy.

Given the persistent contraction in private domestic demand, and the insufficient improvement in net exports, we again argue, that the best strategy for Greece would be a Marshall-type plan provided by the Eurozone institutions that will create jobs quickly, and avert the inevitable risks of implementing policies contrary to the Eurozone Treaties. Even though the omens are clear, the prospects for a dramatic shift in European policy are grim, especially after the results of the German elections.

<b>Table 4. Real GDP projections for Greece 2013-2015</b>			
	2013	2014	2015
Current Levy projections	-3.9%	-2.6%	-0.0%
1. Ministry of finance	-4.0%	0.6%	n.a.
2. IMF	-4.2%	0.6%	2.9%
3. OECD	-3.5%	-0.4%	1.8%
4. Citibank	-3.4%	-1.9%	-0.4%
5. Oxford economics	-4.6%	-1.0%	1.3%
6. PWC	-3.8%	0.2%	2.5%
<i>Sources: (1) Ministry of Finance (2013c); (2) IMF World Economic Outlook Database, October 2013 (shared by the EC); (3) OECD Economic Outlook n.94, November 2013; (4) Citi Research Economic Outlook and Strategy, January 2014; 5) September 2013. From <a href="http://www.ey.com/GL/en/Issues/Business-environment/Eurozone-country">http://www.ey.com/GL/en/Issues/Business-environment/Eurozone-country</a>; 6) From <a href="http://www.pwc.co.uk/economic-services/global-economy-watch/gew-projections.jhtml">http://www.pwc.co.uk/economic-services/global-economy-watch/gew-projections.jhtml</a></i>			

**Figure 8. Greece. Baseline  
Main Sector Balances**



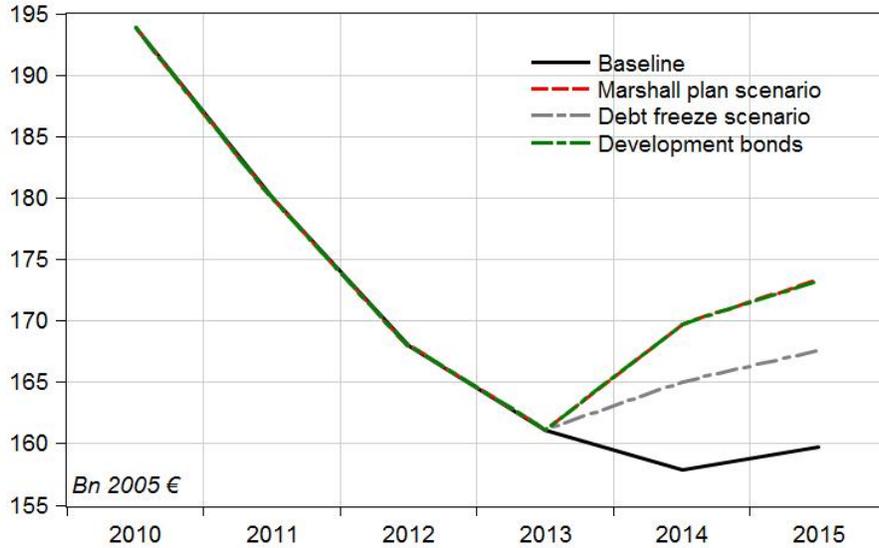
## 7. Policy scenarios requiring external funding

### 7.1 A Marshall plan

The first alternative policy scenario we consider is an update of our proposal for a *Marshall-type plan*, discussed in Papadimitriou et al. (2013a). The proposal implies an increase of government consumption and investment funded from special funds from the European Investment Bank (EIB) or any other institution of the EU. The amount of this exogenous fiscal stimulus aid –discussed in many Eurozone meetings—is assumed to be 30€ billion used at a rate of about 2.5€ billion each quarter beginning with the first quarter of 2014. This will be an inflow on the country’s capital account, improving the overall external balance with no increase in government deficit or debt, since the transfer will not be repaid.

The effect on the level of real GDP is reported in Figure 9, while Figure 10 demonstrates the effects on the unemployment rate. The initial impact of the stimulus will get real GDP back to strong growth in 2014, albeit the immediate impact on employment will be modest, as employment tends to lag output growth. We estimate that after three years this non-employment specifically targeted policy will create approximately 130,000 jobs.

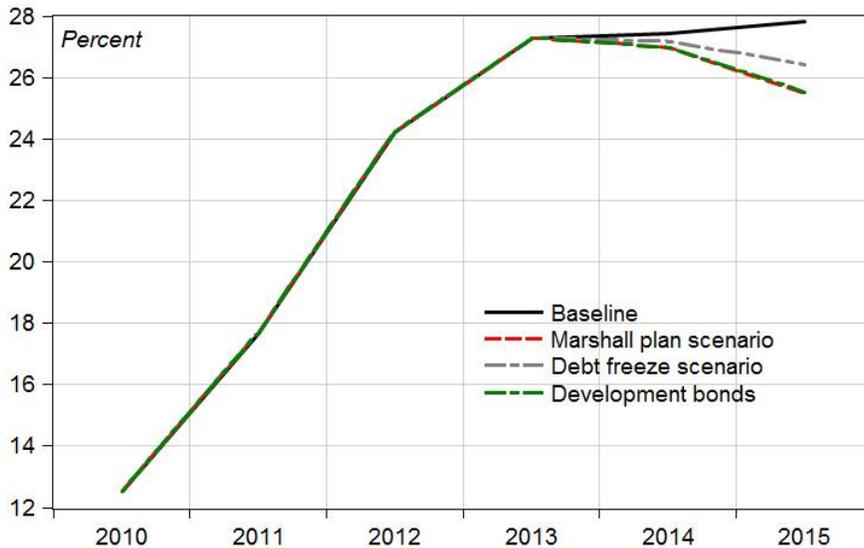
**Figure 9. Greece. Alternative scenarios  
Real GDP**



Since this program is not requiring additional government expenditure, but increases tax revenues as income increases, government deficit is projected to be 3€ billion smaller than in our baseline in 2014, or 0.5 percent of GDP as compared to 2.2 percent in our baseline. The external balance will also improve, reaching 0.5 percent of GDP in 2014.

Under this policy we assume that the Greek government will keep its commitments on

**Figure 10. Greece. Alternative scenarios  
Unemployment rate**



foreign and domestic debt, paying interest at the same rate projected in the baseline. Part of this plan may be implemented in 2014 using EU funding. The government recently announced the approval of a stimulus program for road repair and construction amounting to an expenditure of about 7.5€ billion over the next year and a half. This is in concert with our Marshall-type plan simulation that can be used to assess the likely impact of such plan. We need bear in mind that we, instead, assume an expenditure of 15€ billion over the next 6 quarters. It must also be remembered that, if workers who were employed in the program are laid off, as the program and the funding come to an end, the economy will be dealt a negative impact, notwithstanding the benefits of the increase in public capital provided by the program.

### *6.2 Freezing the public debt and suspending interest payments*

Since the required action from EU institutions to finance a Marshall-type plan intervention seems to lack political will, we consider, instead, whether sufficient funding for decreasing unemployment and restoring growth can be obtained by changes in the manner of how public debt is managed. Thus, we assume that all public debt gets *frozen*, all interest payments on existing debt are suspended, and creditors are persuaded to roll over maturing debt during the three-year (2014-2016) simulation period. It is, therefore, necessary to estimate the amount of interest payments that the public sector is expected to pay, both to foreigners and domestic creditors.

The general government gross debt was 339.6€ billion in the third quarter of 2013, somewhat above 183 percent of GDP<sup>5</sup>. A growing share of such debt – 80 percent in 2013q3, or 270€ billion - is held by the foreign sector, mainly by Eurozone institutions that have refinanced the country's maturing debt since the sovereign debt crisis began in 2009. The Bank of Greece holds approximately 18€ billion in government securities, and other assets – representing about 5 percent - with the remaining held by domestic financial institutions. The country as a whole has net foreign debt estimated at 238€ billion as of the end of the third quarter of 2013, implying that the private sector has a small net credit position – approximately 32€ billion - against the Rest of the World.

These figures help us evaluate the dynamics of actual and prospective interest payments under alternative assumptions about debt management. According to sectoral account statistics, during 2012, the country as a whole paid out 6.9€ billion in interest and received payments of 2.6€ billion while the general government paid overall 9.7€ billion. The cumulative interest paid by the

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<sup>5</sup> According to the Bank of Greece, subtracting financial assets held by the government, net public debt in 2013q3 amounted to 213.8€ billion.

general government between 2008q1 and 2013q3 was 67€ billion, while the country as a whole had a net outflow in interest payments of 40€ billion. The ex-post implicit interest rate on government debt can be estimated, for 2012, at 4 percent, dividing interest payments for the year by the opening stock of gross debt. However, the government paid out about 5.6€ billion in the first three quarters of 2013, compared to 7.7€ billion on the same period in 2012. This leads us to assume in our baseline that the ex-post interest rate on government debt will be lower than in the past, expecting the interest payment to amount around 7.4€ billion in 2013: 6€ billion to foreign creditors, and the remaining 1.4€ billion to domestic creditors.

In the simulation exercise, we assume all interest payments from the government will be suspended, and the equivalent funds are used for increasing public investment and supporting direct job creation. We further assume that creditors agree to roll over maturing debt –its sustainability becoming more secured when growth is restored than in an economy struggling to lift itself from continuing contraction—and that the value of public liabilities will not drop irrationally in the market so as to have, but a small effect on consumption from expected capital losses<sup>6</sup>. The suspension in interest payments implies a fall in the income of bondholders, but since the same funds will be spent on public investment and consumption, generating more income to low or no-income workers in contrast to that of the bondholders, the net effect for the private sector will be positive<sup>7</sup>.

Based on these assumptions, this policy option of freezing interest payments has many similarities with the policy option of the “Marshall-type plan:” the sources for additional government spending will come from a reduction in net interest payments made abroad – which is the same as an increase in payments received from abroad – both of them improving the current account balance. Results for the path of output are illustrated in Figure 9. Notice, however, that this policy option is less effective than the Marshall-type plan, since it involves a smaller overall funding.

### *6.3 Financing growth and employment with European Development Bonds*

Finally, we consider an alternative option where the Marshall-type plan is not a capital

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<sup>6</sup> Our assumption that interest payment will be suspended will, of course, make public bonds less attractive than other financial assets, causing a fall in their market price, with a net capital loss to the bondholders. However, this should be of second-order, as households spend around 4 cents for one Euro of their aggregate financial wealth, and public bonds are only a fraction of such wealth.

<sup>7</sup> We are considering here only payments made to domestic bondholders. Suspending interest payments made abroad will reduce income of foreigners, but we are concerned more with the freeing of resources for domestic expenditure with a sensible multiplier effect.

transfer, but rather a new loan made available via European Development Bonds, at a very low interest rate, say of 1 percent. We assume a loan in three annual tranches of 10€ billion, to be repaid over 20 years. It turns out, according to our simulation, that the additional cost of repaying the loan is small enough that the path for output and unemployment is not different from that in the Marshall-type plan, as Figures 9 and 10 show clearly. Financing the stimulus, however, by development bonds increases public debt and reinforces the monitoring by troika or another European institution in addition to creating more difficulty for debt refinancing in the open market.

## **8. A parallel financial system for solving the Greek crisis**

In the next two policy options we consider an alternative approach that has received attention in Greece and elsewhere, i.e. the introduction of a parallel financial system without exiting the Eurozone, but allowing the country adopting a national currency for all domestic transactions to relax austerity conditions (Lordon 2013)<sup>8</sup>. The possibility for a country to adopt such policy is not strictly forbidden by the Eurozone Treaties unless the country insisted that the bonds issued under the parallel system were the only means of financing with existing euro obligations be run off. Most proposals that have circulated suggest a suspension of one or more Treaties, which is not implausible given that Treaties have already been violated several times in the past with no serious consequences for the survival of the Euro<sup>9</sup>.

The (temporary) introduction of a parallel financial system (currency) has been suggested by those who believe that an exit from the Euro, if it is not well-coordinated, it will generate a major financial crisis to the Eurozone and the rest of the world<sup>10</sup>. The argument is based on the idea that if (a) exit is the result of democratic Parliamentary deliberation, during the on-going deliberation all deposits in the exiting country would fly to a country expected to strengthen – Germany – engendering a domestic financial crisis and unequal redistribution of income and wealth, and (b) even though an exit could be achieved over a bank holiday avoiding a bank run in Greece, speculation might start betting against other larger countries which may be expected to follow, such as Portugal, Spain or Italy, generating a much larger financial crisis and causing a disorderly collapse of the Eurozone.

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<sup>8</sup> We will not discuss a similar proposal for the Eurozone, namely the introduction of a “southern Euro” adopted by Mediterranean countries, while the “core” will retain the existing Euro. See Mayer (2012b), Arghyrou and Tsoukalas (2010) among others.

<sup>9</sup> Athanassiou (2009) provides an analysis of the legal aspect of withdrawing from the Euro. See also Thieffry (2011).

<sup>10</sup> See Eichengreen (2010) and Knowles (2011) among others.

A very recent contribution discussing a parallel currency for Greece is Richter et al. (2013). The authors stress that the introduction of a parallel currency would be a temporary policy, designed to make the return to the Euro achievable within a given time frame. One of the key assumptions to achieve this goal is that existing financial assets – as bank deposits - will not be redenominated in the new currency. The new currency would be managed by the Bank of Greece --with the agreement of the ECB--that should set a target devaluation rate against the Euro over a two-year horizon, and make this target credible offering forward contracts for exchanging the new currency into Euro at the target rate. The authors do not propose further shifts in policy, and rely on the devaluation of the new currency – and its impact on trade – for recovering growth. They suggest a 50 percent devaluation to obtain significant effects, based on the results from an econometric model.

Another proposal that attracted considerable attention came from Thomas Mayer of the Deutsche Bank (Mayer 2012a)<sup>11</sup>, who suggested the introduction of government IOUs to settle debt between the government and its creditors, suggesting that such IOUs could circulate as a local currency. Goodhart and Tsomocos (2010) also proposed government IOUs as the way to introduce a parallel currency. A “fiscal currency” is also advocated by Théret and Kalinowski (2012) suggesting that parity with the euro is maintained to make the new currency more readily acceptable. Ruparel and Persson (2012) discuss the possibility of a parallel currency along with a Euro exit, and since they believe it would require European support for the Greek banking system, they suggest it will not be a likely outcome. Parentau (2013) suggests a financing system based on “tax anticipation notes”, avoiding the word currency.

Bossone and Sarr (2011) propose to create a parallel currency by changing the exchange rate between bank deposits and euro, and thus devaluing households liquid assets in Euro terms, a proposal which – in our view – would exacerbate the recession in the short term while waiting for benefits from the devaluation. Analysis from the research centers of private banks tends to overstress the problems related to any change in the current Eurozone settings. This is the case for Porter (2010) who states in a Credit Suisse report that “An EMU member trying to redenominate into a new currency would inflict prohibitive damage on itself and other members”.

Some very conservative and uninspiring proposals, as Bagus (2011), discuss the introduction of a parallel currency as a less traumatic step towards the end of the Euro, but still advocate austerity

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<sup>11</sup> We could not find an English version of Mayer (2012a), and our analysis is based on Mayer (2012b) and Boesler (2012) among others.

and structural reforms in the new regime.

Feldstein correctly foresaw the consequences of austerity in his 2010 article in the Financial Times, and suggested a temporary Greek withdrawal from the Euro. His idea that existing obligations would remain in Euro is – in our view – infeasible as it would bankrupt households and other institutions with Euro denominated debt and no access to receipts in Euro (Papadimitriou 2010).

Schwartz et al. (2013) also suggest that the introduction of a parallel currency, which in their proposal should float freely against the Euro, would be a policy option that may let Greece join the Euro again when the recession is over, without causing the financial turmoil of a complete exit of Greece from the Euro agreements.

Finally, a well-balanced proposal is in Rusek (2012). In his view, the new currency should circulate only domestically. It could be introduced by redenominating a portion of existing bank deposits, as well as government payments, in the new currency. All contracts between two residents should introduce a minimum share to be serviced in the new currency, and taxes will be collected in both Euro and the new currency, while all payments to and from non-residents will remain in Euro. The government should balance its account in Euro, but would be allowed to target a deficit in the new currency.

All proposals as summarized above are different from each other, so no consensus seems to be emerging yet on the “best policy”. We will attempt a synthesis by focusing on the key issues<sup>12</sup>:

**1) Should the new currency be freely convertible in Euro?**

**Pros:** a convertible currency would be more reliable, and therefore demand for the new currency should stabilize

**Cons:** convertibility may lead to capital flight and ineffectiveness of monetary policy conducted in the new currency

**2) How should the new currency be backed?**

By gold and/or international reserves. Some authors have suggested this possibility, which of course goes along with full currency convertibility that will enhance confidence in the new currency. On the other hand, in our view this approach would limit the actions of the Central Bank, prevent the government from running expansionary policies and, last but not least, be implausible given the size of the current net asset position of Greece;

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<sup>12</sup> See Schuster (2013) for a comparative survey of proposals relative to the Eurozone.

By future Euro revenues from tourism and external trade. Some authors propose convertibility into Euro, or convertibility at a future date, based on the expected Euro receipts from trade, and especially from tourism. This option, again, would limit the fiscal space for government action;

By tax revenues. In this case the government issues the new currency (or “fiscal certificates”), coordinating with the Central Bank, making it clear that it will accept the currency at par for tax payments. When taxes become due, the government can satisfy its needs for liquidity by issuing new IOUs. This option is more likely to be effective if government IOUs are not convertible into Euro (although Euro should be convertible into the new currency IOUs, if needed).

As pure fiat money. No authors suggest explicitly this approach, which implies a strong trust in the ability of the new currency to act as a store of value, i.e. not to depreciate. For practical purposes, if the government is willing to accept the currency for tax payments at par, this proposal would not be different from the previous one, but would allow banks to make loans in the new currency, while in the previous regime the currency would be a liability of the government.

### **3. How much of the new currency should be created?**

Only a few authors address this point explicitly, and the appropriate amount will depend on our point (2) above. If convertibility with the Euro would be maintained, the maximum amount of the new currency should be determined from the target exchange rate, or as a ratio to the Euro value of reserves. For “fiscal certificates”, a simple option would be to pay existing government obligations with residents in new currency bonds, and therefore, the amount of new currency bonds to be issued will be equal to the existing debt of the government to the private sector. A more expansionary policy will set the desired amount of the new currency in circulation as an instrument to achieve the desired level of employment, for an inflation rate target.

### **4. Which transactions should be denominated in the new currency?**

Most of the proposals in the literature suggest that all transactions among residents will be immediately denominated in the new currency. These will include wages and prices for domestic goods. Foreign goods will need to be purchased in Euro, and sold on domestic market either in Euro or in the new currency. A few authors suggest that wages could be paid in both currencies, either adopting a fixed share, or letting the agents contract individual

outcomes

**5. Will financial assets held by domestic resident be converted in the new currency?**

Authors have widely different opinions on this matter, ranging from no conversion, so that all bank deposits (but also household mortgages) remain in Euro, to full conversion, to a mixed solution. It should be clear that if debt obligations remain in Euro when the debtor has no access to Euro revenues, a devaluation of the new currency against the Euro would lead to a default of the private sector. Switching all Euro bank deposits to the new currency, when the latter is expected to devalue, will imply a loss of purchasing power for foreign goods, but little effect of purchasing power for domestic goods, as long as prices are kept under control.

**6. Will foreign debt be redenominated in the new currency?**

It is in the power of a sovereign government to change the currency denomination of contracts signed under the law of the issuing country, even when they involve non-residents. However, most of Greek foreign debt has now been issued under British law, and an attempt to conversion will imply complex legal problems. It will require an international agreement in order to avoid a complete default on existing foreign debt.

In our view, a policy based on a parallel financial system (currency) should aim at restarting the Greek economy as soon as possible without exiting the euro. Given the current macroeconomic situation of the country, and in particular the unprecedented unemployment rate, creating jobs and sustaining demand for domestic firms should be by far more important than the credibility of the new currency. We, therefore, do not favor the idea of pegging the new currency either to international reserves or to a future Euro exchange rate, and in addition we believe that – given the size and relevance of exports for the Greek economy – solutions which rely only on a devalued currency for restoring growth and employment may prove to be ineffective in the short-run and will not reverse the current process of disruption in the physical and human capital. In the next policy option, we investigate the plausible effects of introducing a new parallel financial system in a “soft” way<sup>13</sup>, by simply paying existing government obligations to the private sector in liquid IOUs, while in another policy option we investigate the consequences of using fiscal and monetary policy in the new financial system to implement a direct job creation program to achieve full employment. But before turning to the new policy approaches, we need to assess the plausible impact of increased

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<sup>13</sup> See Papadimitriou (2013b) for a description on the structure and workings of this sort of parallel financial system

competitiveness on the Greek balance of trade and on the effectiveness of devaluing a parallel currency to stimulate net exports.

## **9. Is a devalued currency the solution to Greek problems?**

Our previous analysis has shown that without a U-turn in fiscal policy the prospects for Greece imply a continuous fall in output and employment, while abandoning the austerity programs will provide some relief, but at a very slow pace. Increasing modestly government expenditure will help create jobs, but at an insufficient pace, given the current number of people looking for a job (1.388 million as of October 2013). At the current rate of net job creation an employment level assumed to be at full employment will take approximately fifteen years (Papadimitriou 2013a).

Some of the proposals examined above suggest the introduction of a new, parallel currency, while continuing austerity measures to reduce government deficit and debt. The main idea behind such proposals is therefore that Greece should restore its external competitiveness through the adoption of a new currency – let's call it drachma - which will lower the Euro price of Greek exports, while increasing the drachma price of imports, and thus stimulating the economy both through increased sales abroad and by import substitution domestically. The impact of these effects will depend on the price elasticity of Greek trade, which should therefore be carefully investigated.

Restoring competitiveness is also one of the main objectives of the Troika plan, which however aims at achieving this result by “internal devaluation”, i.e. lowering unit labor costs, and hoping that lower wages will imply lower prices for Greek products and increased external competitiveness. So far, the sizable reduction in wages has not been followed by a proportional reduction in prices, and has therefore only generated increased profit margins, and since these have not implied higher investment expenditure, the net effect has been to contribute to the massive drop in domestic demand.

Our macroeconomic analysis does not show very significant price effects on Greek trade. After adopting our improved measure of foreign demand for Greek exports, we estimate the price elasticity of exports of goods to 0.5, implying that a fall of 1 percent in export prices – everything else equal – implies an increase of exports of goods of 0.5 percent. Our estimate for the elasticity of imports of goods is somewhat higher, at 0.6, and therefore the Marshall-Lerner condition<sup>14</sup> is barely satisfied: improved price competitiveness implies only a small improvement in the value of trade in

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<sup>14</sup> The Marshall-Lerner condition requires that the sum of price elasticities of exports and imports be greater than one for the trade balance to improve after devaluation (or a change in prices equivalent to devaluation).

goods. The price elasticity for trade in services is also low or difficult to establish, according to our estimates.

If our estimates are correct, they imply – first of all – that even though the internal devaluation will succeed in lowering export prices, its effects on the trade performance will be insufficient for Greece to recover. In addition, the introduction of a parallel currency – or an exit from the Euro – coupled with continued tight fiscal policy will not be sufficient for an economic recovery.

We can conclude that the evidence of price competitiveness on Greek exports is very weak. Greece has managed to increase its exports, during the recession period, to countries outside the European Union, notwithstanding the relatively strong value of the Euro. Policies aimed at generating export-led growth through increased price competitiveness are therefore unlikely to succeed.

## **10. Introducing a parallel financial system via government bonds**

Given Greece's export sector results, the introduction of a parallel financial system in Greece should not be primarily aimed at restoring price competitiveness, but (a) to restore liquidity in domestic market, re-enabling investment and normal operation of profitable businesses, and (b) providing liquidity for expansionary fiscal policy, without exiting the euro and keeping the existing agreements on Greek public debt. These financial arrangements are well-known instruments of public finance and have been used by state governments in the US, most recently in California. Similarly, as detailed in a UBS report, they were used by the Greek government in 2010, in the amount of 5.5€ billion with zero coupon, known as “pharma bonds,” to settle arrears to the pharmaceutical industry which was threatening to stop selling medicine in the country unless paid. These financial instruments were bonds, and had all the characteristics of normal bonds, negotiable on the Athens Stock Exchange and were *pari passu* with other Greek debt. To many economists these were akin to quasi-money since they could be deposited with a bank, which could then pledge them as collateral for cash (Weisenthal 2012)

The new financial system will entail the issuance of government zero-coupon bonds (no interest payment similar to cash), perpetual (no repayment of principal, no redemption and so no increase of debt) and transferable. They could be electronically deposited to bank accounts of firms and individuals through a sophisticated and secured system or given as certificates in small and large denominations to facilitate their use in small and large transactions with a starting nominal exchange

rate of one against the euro. These bonds would be backed by tax receipts, in the sense that while the government would use them to settle debt between it and its creditors, they would be accepted *pari passu* in settlement of private sector tax liabilities. Indeed, we would expect that the government would require that a given share of future tax payments be in these bonds, in order to generate demand and trust for the new parallel financial system.

The new bonds – which we may call Geuro following Mayer (2012a) - should be convertible only in one direction, from Euro to Geuro to avoid speculative attacks, limit their use to domestic markets, and reduce the possibility of transfers to euro deposits out of the country. In this scenario, the Geuro will be a new form of liquid government liability<sup>15</sup>, and since the Euro will remain in circulation, existing contracts in the private sector will not need to be denominated in Geuro, although firms and workers may contract on whether to switch to Geuro for part or all of wage payments. Since Geuro will not be convertible, all foreign trade will still require Euro, and therefore the impact on imports of an increase in Geuro denominated income should be contained, as long as Geuro and euro are used for domestic and foreign transactions respectively not considered as perfect substitutes.<sup>16</sup>

In the current scenario, the introduction of the Geuro is not linked to an expansionary fiscal policy, which we will address in the next scenario. Instead, we assume that the government introduces Geuro (a) to extinguish its debt with the domestic sector; (b) to pay for unemployment benefits, and (c) to pay for a portion of wages for public sector employees. At the same time, the government would announce that, starting on the next fiscal year, a share of personal taxes and social contributions equal to some percent will have to be paid in Geuro.

Running simulations for the impact that a parallel currency will have on the economy's performance measured by growth in GDP, public sector deficit or surplus and current account balance using our macroeconomic model requires a number of assumptions which cannot be tested against history, since the parallel currency scenario is created *de novo*. A possible modeling strategy could be to duplicate in Geuro existing behavioral relationships in euro. For instance, under

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<sup>15</sup> "Liquid" in the sense that, since it is accepted for tax payments, it should be accepted as payment by any seller – worker or merchant - who needs to pay taxes.

<sup>16</sup> Should the Geuro keep its parity with the Euro, and become widely accepted for payments in domestic markets, the private sector would be able to reduce its purchases of domestic goods in Euro and increase purchases of foreign goods, with an effect on trade similar to a standard increase in domestic income. In other words, the use of Geuro bonds for domestic transactions will decrease the demand for euros freeing up more euros for payment of imports of essential goods, i.e., petrol and medicines until domestic production develops in these sectors. For these reasons, in our simulations, we prefer to adopt the conservative assumption of perfect substitutability between the Geuro and euro implying that the impact on Greek trade of an expansionary fiscal policy in Geuro may be overstated.

this strategy private sector demand in Geuro would depend on disposable income and wealth in Geuro, and total private sector expenditure would be the sum of its Geuro and euro components. This strategy, however, would not be realistic, since it would imply the separation between the “new Geuro world” and the euro world, while it should be the case that the increase in purchasing power obtained from additional Geuro income will also generate additional euro expenditure.

We, then, prefer to treat the Geuro as a perfect substitute for euro expenditure, since the government will accept it *pari passu* for tax payment obligations. Furthermore, this implies that there is no reason for setting separate prices in private transactions between Geuro and euro. Armed with these assumptions we run a set of projections, to which we turn next.

As a first step, it is necessary to calibrate the amount of Geuro to inject into the economy, and the amount of Geuro that the government expects to collect through taxation, as well as the possible velocity of circulation of Geuro in private transactions.

The government collected 19.6€ billion in taxes on income and wealth in 2012, and 26.5€ billion in social contributions, for a total of 46.1€ billion. We adopt the assumption that 50 percent of taxes on income and wealth, and 40 percent of social contributions, would be paid in Geuro as soon as the program is implemented. These percentages will determine the amount of euro withdrawn from circulation. In Table 5 we report the decomposition of government liabilities held by domestic residents. The table shows that a large share (14€ billion) of government debt takes the form of long-term loans from the financial sector. These loans could be converted to Geuro, providing liquidity to the banking sector, which we assume would stimulate credit to households and businesses.

<b>Table 5. Government liabilities held by the domestic private sector.</b>					
<i>Million Euro, End of September 2013</i>					
	Short-term securities	Long-term securities	Short-term loans	Long-term loans	Total
Households	2,021	129			2,150
Non-financial corporations	780	268		163	1,211
Financial corporations	7,280	11,200	159	14,021	32,660
<b>Total (a)</b>	<b>13,188</b>	<b>16,889</b>	<b>159</b>	<b>14,184</b>	<b>44,420</b>
a) <i>Total is not equal to the sum of the corresponding column, because we omit government liabilities which are held by other public institutions</i>					
<i>Source: Bank of Greece, Quarterly financial accounts</i>					

The amount of liquidity available for the household and the non-financial corporate sector at the end of the third quarter of 2013 was 177€ billion<sup>17</sup>, or about 96 percent of GDP. Given these figures, the injection of 14 billion in Geuro<sup>18</sup> through the financial sector should be sufficient, as the Geuro begins circulating for domestic payments to satisfy the private sector average holding of these new assets without creating inflationary pressures.

In 2012, the government paid out 38.5€ billion in social benefits,<sup>19</sup> and 24€ billion as compensation to employees, for total payments of 62.5€ billion. Its debt outstanding held domestically is reported in Table 5. Given these figures, the Geuro could be used to convert in (non-interest bearing) Geuro the stock of loans obtained from the financial sector (about 14€ billion), paying 25 percent of social benefits in Geuro and 25 percent of public sector wages in Geuro.

In this way, interest-bearing debt will drop by 14€ billion, and euro denominated government outlays will be lower by an estimate of 18€ billion. A government obsessed with debt and deficit reduction may stop here, and use the Euro proceeds to reduce its deficit, and buy back a (tiny) fraction of its debt held by foreigners. If this were the outcome, this policy would be slightly contractionary at the macro level, since it will not increase aggregate demand (there is no reason in this context for a Geuro depreciation), while it will reduce income payments to the financial sector that will no longer be earning interest on its loans.

The only source of additional aggregate demand may come from the increase in liquidity for the financial sector, which could put an end to the credit crunch. However, the availability of credit will not produce effects, if the household and non-financial sectors are not willing to borrow. In our first simulation we assume a moderate increase in borrowing, relative to our baseline, of 2€ billion per year. The projected impact on GDP is very small, relative to our baseline. The simple introduction of a parallel financing mechanism – the Geuro – will not be effective on employment

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<sup>17</sup> Households held 27.4€ billion in “currency and sight deposits” and 129€ billion in other deposits with the domestic financial sector. The figures for the non-financial corporate sector were 12€ billion and 9€ billion respectively.

<sup>18</sup> Note that Geuro average holdings as a form of payments is a stock concept, while Geuro required for tax payments is a flow concept. However, we assume that – as the government destroys Geuro received as tax payments – it issues new Geuro for the same value, for a given fiscal stance.

<sup>19</sup> All figures from ElStat, quarterly sector accounts. We refer here to “Social benefits other than social transfers” in kind.

without a fiscal stimulus. These results are summarized in Table 6 for the “Geuro scenario”.

<b>Table 6. Alternative scenarios</b>			
	<b>2014</b>	<b>2015</b>	<b>2016</b>
<i>Baseline</i>			
GDP	174.8	177.6	181.7
Gov. surplus/deficit	-3.9	-4.2	-4.0
Current account balance	2.4	1.9	-0.1
<i>Geuro scenario</i>			
GDP	174.8	178.1	182.3
Gov. surplus/deficit	-3.3	-3.5	-3.2
- in Euro	4.6	4.5	4.6
- in Geuro	-7.9	-7.9	-7.8
Current account balance	2.4	1.3	-0.9
<i>ELR scenario</i>			
GDP	188.0	193.3	198.5
Gov. surplus/deficit	-11.2	-10.4	-9.5
- in Euro	3.3	4.0	4.7
- in Geuro	-14.4	-14.4	-14.2
Current account balance	-0.2	-4.1	-7.4
<i>ELR + Debt freeze scenario</i>			
GDP	188.0	193.3	198.5
Gov. surplus/deficit	-5.7	-4.8	-3.7
- in Euro	8.7	9.6	10.5
- in Geuro	-14.4	-14.4	-14.2
Current account balance	5.2	1.5	-1.6

If, on the contrary, the government would use the new funds to increase public investment and consumption, domestic demand could grow by a maximum of 6.6 billion euro each quarter, if interest payments on debt outstanding are frozen as in our Scenario 2. Should the government honor its debt obligations, our estimate of 1.8 billion euro paid out in interest each quarter will leave 4.7 billion euro for increasing government demand on average for each quarter. Assuming that Geuro income generates an impact on domestic demand similar to euro income, the outcome in terms of output and jobs will be smaller than in our Scenario 2, while the projected worsening of the trade balance may be smaller – since Geuro cannot be used to purchase foreign goods - albeit by an amount which is difficult to estimate.

## 11. Direct job creation financed by a parallel currency

Our previous scenario shows that the introduction of a parallel financial system despite its beneficial effects on increasing GDP, it will not provide a short-term strong response to the high unemployment problem in Greece, if the government does not adopt a policy directly targeted at job creation. In our Scenario 4, we consider what is likely to happen if the government would use the parallel system for an Employment Guarantee Program also known as ELR. The general details of such proposals are detailed in Antonopoulos et al. (2014). In summary, the government would provide a job at a minimum wage for the production of public goods to anyone able and willing to work.

The wage level should be low enough to make private employment more attractive, but high enough to ensure a decent standard of living. A monthly gross wage based on the post-Troika established monthly minimum of 586€ for 550,000 workers implies annual payments for about 7.5€ billion<sup>20</sup>. The monthly wages, taxes and some portion of intermediate consumption expenditure would be paid in Geuro. It is important to recognize that the employment of the 550,000 ELR workers will eventually result in additional indirect employment (approximately 156,000 indirect jobs) and increased output (Gross Value Added) of about 12 billion Geuro from the effects of a sensible fiscal multiplier. Moreover, government revenue will also increase by about 4 billion Geuro estimating the net cost of the program to be no more than 3.5 billion Geuro. Should the monthly gross wage is set at the pre-Troika minimum of 751€ the corresponding net cost of the program is estimated at no more than 4.5 billion Geuro (ibid).

We simulate the model assuming that the ELR program is implemented, financed by issuing Geuro. Results are reported in Table 6 for the “ELR scenario”. As mentioned, about 550,00 jobs will be created within one year, and GDP improves by 7 percent in 2014 over our baseline projection. As for any fiscal stimulus, overall government deficit increases, but our estimate for euro/Geuro government outlays and receipts show that the government would still have a sizable euro surplus. The problem with this scenario, as for any similar fiscal stimulus which does not receive financial support from abroad, is in the deterioration of the balance of payments, which goes back to a deficit, albeit manageable. In this scenario we are assuming that the Greek government will keep honoring its debt obligations. If, on the contrary, we assume the same “debt freeze” policy discussed previously, the euro outflow out of the country will sensibly be reduced. We show our

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<sup>20</sup> The total cost of the program takes into account direct and indirect costs. For details see Antonopoulos et al. (2014)

projections for this scenario in Table 6, as “ELR plus Debt freeze scenario”. The reduction in interest payment in government outlays implies that the overall budget deficit is not too far from our baseline, and the reduction in interest paid abroad implies a sensible improvement in the current account as well.

This mix of policy could thus prove to be sustainable in the medium term, while providing immediate support to employment and domestic demand.

However, the damages suffered from the small Greek industrial structure during the current recession are similar to the effects of a major war. As the ELR program starts providing purchasing power to the unemployed, additional intervention may be needed to strengthen domestic supply to meet the increase in domestic demand, or else the impact on imports may be higher than what we estimate. An industrial policy to help recreate productive capacity will be needed in key sectors, until confidence on profitability of the Greek market is restored for domestic investors.

## **Conclusions**

This strategic analysis on the prospects and possible avenues of Greece exiting from the continuing crisis offers alternative scenarios for restarting the motor of economic growth and increasing employment. Most, if not all, short-term indicators of economic activity show the performance of the Greek industrial sector to be very weak, absent the demand from the rest of the world, both from the Eurozone and non-Eurozone countries. The dramatic fall in unit labor costs—the strategy imposed by the Troika aimed at increasing exports through internal devaluation—has not brought about the anticipated effects on a sufficient scale, as the statistics on the balance of trade confirm despite the minimal growth of exports—primarily in the highly unstable oil related goods—and the falling imports due to the deepening recession. The strategy has brought, instead, deteriorating living standards and a precipitous decline in domestic consumption, the most important stabilizing driver in an economy.

To be sure, exports are important, but domestic demand is more crucial. Even China, the giant export-guided economy has recently taken the necessary steps to increase and stabilize its domestic demand. And this should be the economic policy emphasis for Greece. To this end, we explore the impact of four alternative policy scenarios: (1) a Marshall-type plan financed from funds of European institutions; (2) temporary suspension of interest payments on public debt without increasing the outstanding debt, until growth is restored and output returns to the pre-crisis level, and using the equivalent amount to increase demand and employment; (3) introducing a parallel

financial system that issues new government bonds in Geuro that function as parallel currency; and (4) changing the fiscal policy stance via the parallel financial system to implement a targeted employment policy along the lines of guarantee public service employment for a sizable portion of the unemployed labor force. Our analysis shows that the effectiveness of the offered plans is crucially dependent on the price elasticity of the Greek trade sector that is determined to be low. We have argued, in this report, that since policy options (1) and (2) although economically feasible lack the necessary political will, the only option that could provide a relatively quick restoration of the lost standard of living of a large fraction of the Greek people is a public benefit employment program financed through a parallel financial system with contained effects on foreign trade.

What we can clearly observe now is that the harshness of the continuing fiscal consolidation measures in Greece shows no convincingly visible signs of a “light at the end of the tunnel.” While Brussels, Berlin and Frankfurt, with no Greek representation, debate secretly what they should do with the country’s controversial bail out program Greece should begin considering alternative options in exiting the crisis.

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