



Strategic Analysis

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How long before growth and employment are restored in Greece?

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Summary

The Greek economy has not succeeded in restoring growth, nor it has managed to restore a climate of reduced uncertainty, which is crucial for stabilizing the business climate that promotes investment. On the contrary, a new round of austerity measures that has agreed upon will imply another year of recession for 2016.

After reviewing some recent indicators for the Greek economy, we project the trajectory of key macroeconomic indicators over the next three years. Our model shows that a slow recovery can be expected from 2017, at a pace which is well below what is needed to alleviate poverty and reduce unemployment. We analyze next the impact of a public investment program financed by European institutions, of a size which is feasible given the current political and economic conditions, and we find that, while such a plan will help stimulate the economy, it will not be sufficient to speed up the recovery. We finally revise our proposal for a fiscal stimulus financed through the emission of a complementary currency targeted to job creation. Our model shows that such a plan, calibrated in a way that avoids inflationary pressures, will be more effective, without disrupting the targets the government has agreed upon in terms of its primary surplus, and without reverting the improvement in the current account.

1. Introduction

The year just ended wasn't a good year for Greece even though it started with a promising beginning. A left government was swept to power with a promise to end austerity, implement a multi-pronged development program and turn the economic fortunes of the country's citizens around. Furthermore the government believed that it could become the catalyst in altering the way the Eurozone was run. Alas, it became clear very soon that what the new government had in mind it was idealistic based on unrealistic expectations in persuading the European elite of the necessity for Europe to change course. It took more than seven months of back and forth negotiations with the end result for the government to abandon its plan to end austerity but instead to continue the course as the previous governments had embraced. The Berlin-based neoliberal dogma would once again reign supreme demanding adherence to

free market structural reforms and fiscal consolidation that will produce prescribed levels of primary budget surpluses.

The long negotiation process came at significantly high economic and social costs including the troika's engineered severe illiquidity that caused the government become unable to fulfill its payments obligations and thus increasing its payments in arrears and raiding the funds of local governments and other trust funds to pay IMF and ECB interest and principal payments worsening their own liquidity as well. During the endless negotiations Greek residents fearing the banking system's collapse increased their demand for fund withdrawals moving their money either abroad or hiding it at home leading eventually to bank closures and the imposition of capital controls as was the case in Cyprus in 2014-5. The capital controls brought about a further halt to domestic consumption and imports, affected exports negatively in goods and services by the changed tourist attitudes especially when tourist arrivals had begun at an all time high.

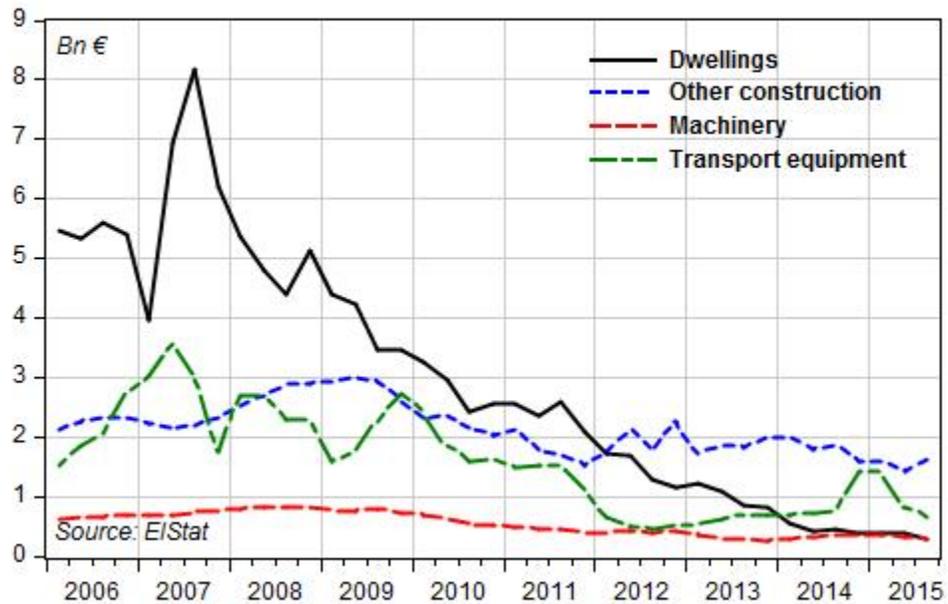
When the two sides finally agreed they produced a new Memorandum of Understanding (MOU) requiring more belt tightening—social benefit and other public sector cuts—higher VATs, privatization of public enterprises and more structural market reforms. No one knows exactly what will these measures deliver to the country and its residents, but reasonable projections for 2015 and the next three years can be made and we will show the omens for a significant economic recovery are not encouraging. To be sure, there have been some small positive signs –increased tourism activity, a small reduction in the unemployment rate, a smaller budget deficit than originally anticipated—but there are also many negative trends—domestic demand, investment, net exports pushing the economy toward recession –that unless they are reversed they will reinforce people's pessimism that the Greek economy is not on the mend and toward the road to recovery.

In what follows, we will show that if the economic plan agreed upon in the last MOU is followed the Greek economy will experience an anemic growth starting, perhaps, in the latter part of 2016. Sole reliance on market forces will not deliver the pre-crisis levels of real GDP and the commensurate employment levels in the relevant time. Consequently, alternative scenarios based on changing the fiscal policy stance that would accelerate the recovery must be considered. To such options, we turn next beginning first with an analysis of the Greek economy's current conditions by evaluating the available statistical data highlighting some problems which make it difficult, if not impossible, to provide reliable estimates of how the economy is really performing. Despite the simulation difficulties using our stock-flow consistent macroeconomic model especially developed for the Greek economy, we will provide our own projections of the MOU outcomes for the period 2015-2018. In the final part of this report we will show outcomes from simulations of alternative scenarios.

2. The role of investment

Projections published by research centers on how real output will grow in Greece, in 2015 and the coming years, are changing week by week. Shortly after the bank crisis in July 2015, some centers expected a contraction in real GDP of 3 percent or more. More recent projections assume that the further contraction in the fiscal stance in 2016 will be at least partly balanced by an increase in investment in the same year, while exports will slowly contract. The same projection shows a dramatic drop in investment of

Figure 1. Greece. Gross fixed capital formation by asset



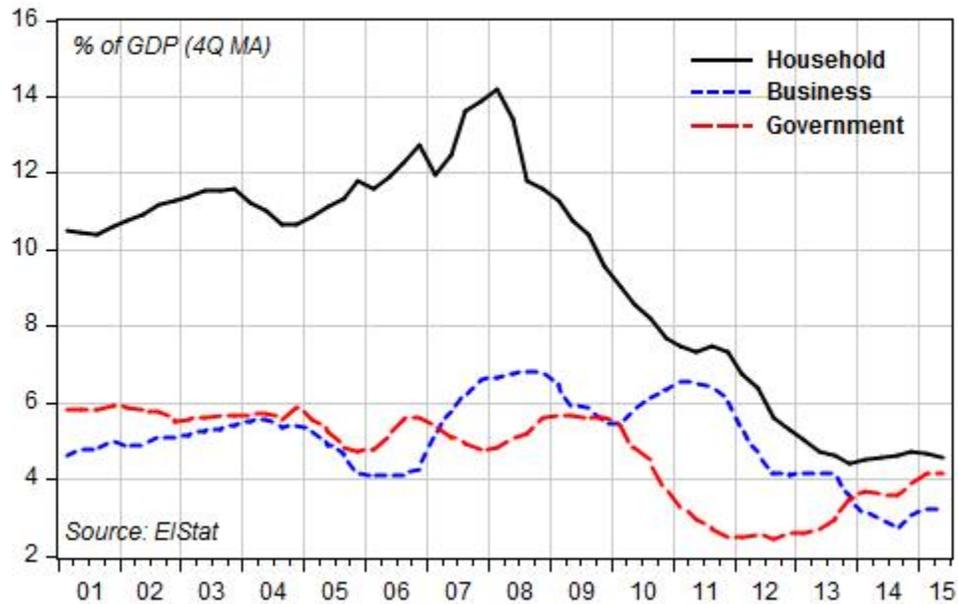
16.5 percent in 2015, which may be due in part to the impact of bank closures in July, and in part by the fact that a surge in investment and imports at the end of 2014, and beginning of 2015, probably due to acquisition of military transport equipment which will not be repeated in 2015 or 2016¹. As Figure 1 shows, investment in transport equipment jumped up to about 1.4 billion Euro at the end of 2014, to fall back to a more modest level of 0.8 billion Euro in the second quarter of 2015.

Residential investment, as Figure 1 also shows, was a major driver of economic growth before 2007, and has been falling ever since. The later years in Figure 1 show only a moderate decline, relative to the collapse since the end of 2007, but residential investment has nonetheless dropped a further 8 percent in real terms in the last four quarters. The other components of investment –machinery and other construction—that are more directly linked to the productive capacity of the manufacturing sector, have historically been less significant in the Greek economy, and do not appear to be able to offset the precipitous drop in residential investment, with the exception noted above of the spike in transport equipment probably due to military expenditure.

The investment experience of each of the main sectors –households, business and government—of the economy are reported in Figure 2. These statistical trends have been computed from the quarterly non-financial sector accounts published by ElStat, allowing us to compute net investment, i.e. the net increase

¹ Government investment in the six months from October 2014 to March 2015 was 900mn higher when compared to the same period the year before as reported in sector accounts. Investment in “Transport equipment + weapons systems” in this six months period increased by 1348 million euro over the corresponding period one year before, as reported in the National accounts.

Figure 2. Greece. Gross fixed capital formation by sector



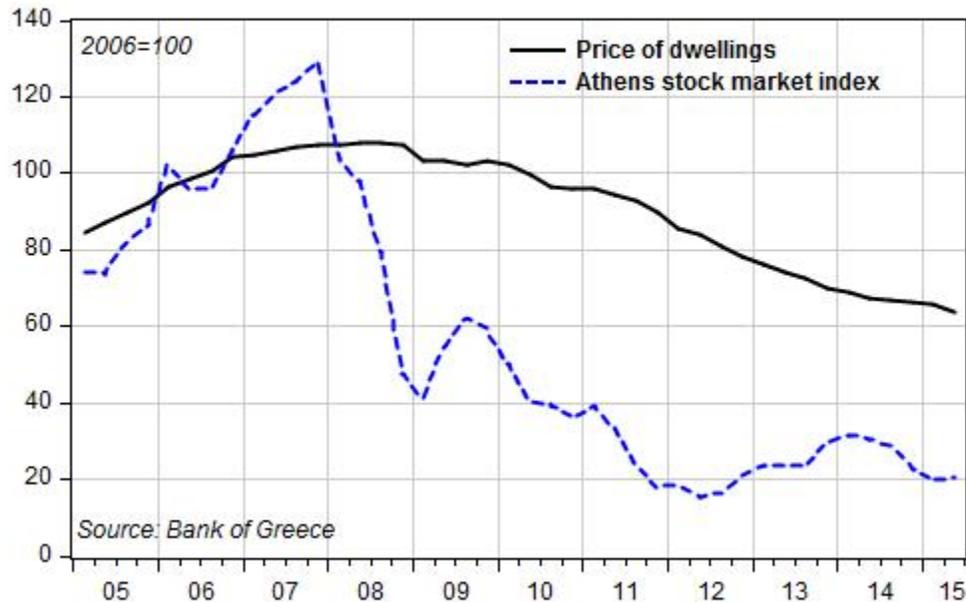
in the stock of capital, taking out depreciation (consumption of fixed capital, in the terminology of national accounts).²

The crucial relevance of residential investment in the Greek economy denoted by the household fixed capital formation is depicted clearly in Figure 2. It was recently reported that residential investment, as of the end of Q3 in 2015, decreased by 34.3 percent that in its turn reduced GDP by 0.4 percent (Rousanoglou 2015).

Our analysis also casts some serious doubts on the ability of EIStat to correctly identify payments and receipts made by the household and business sectors. According to the non-financial sector accounts, the corporate non-financial sector consumption of fixed capital always exceeded gross fixed capital formation, so that net investment has always been negative, the only exception being a few quarters in the period before the 2007 crisis when investment was particularly strong. In sum the aggregate net investment for the private sector as a whole, denotes more reasonable values, dropping from a peak of 10 percent of GDP in 2008 to a current negative value of 6.8 percent of GDP. In other words, overall private investment has been insufficient, from 2011 to the present, to compensate for the depreciation of the existing capital stock, which has been falling in real terms, and continues to fall.

² Figure 2 reports moving averages over the last four quarters of the data, to smooth out seasonal effects. Data prior to 2006 have been estimated by the authors on the basis of previously published time series. We consolidate the corporate non-financial sector with the financial sector, where the figures for investment in the latter are negligible.

Figure 3. Greece. Price of assets



3. Are these investment trends likely to be reversed in the near future?

A measure of the price of dwellings published by the Bank of Greece that we normalized as a 2006-based index is reported in Figure 3. The figure clearly shows that the declining trend in the price of housing has not stopped—the decline has been reported to be more than 40 percent since the pre-crisis levels—and recent fiscal measures aimed at increasing taxation on properties may contribute to the continuing decline of the housing market. Exploratory econometric analysis of the relation between the real investment in housing and the price of dwellings suggests a possible long-run elasticity close to 2.5, i.e. for a decline in 1 percent in the price of dwellings we should expect a further drop of 2.5 percent in residential investment.

Non-residential investment has been more volatile but is less relevant for the Greek economy. If the stock market gives any indication of the expected profitability of Greek non-residential investment³, its recent trend is not suggesting any improvement. Indeed, the common stock prices of commercial building and management companies in the Athens Stock Market follow the declining price trend of the banking sector.

Further suggestions on the potential for investment from the private sector are available from the analysis of financial accounts. Gross and net profits of non-financial corporations should provide both a potential source of finance, and an indication of current profitability. In fact, one of the aims of austerity was to increase profitability in the Greek economy through wage compression. In Figures 4a to 4c we

³ Some simple econometrics suggest a long-run elasticity of real non-residential investment to our measure of stock market prices of 0.7, i.e. an increase in the stock market price of 1 percent implies a long-run increase in real non-residential investment of 0.7 percent.

Figure 4a. Greece. Households: saving and investment

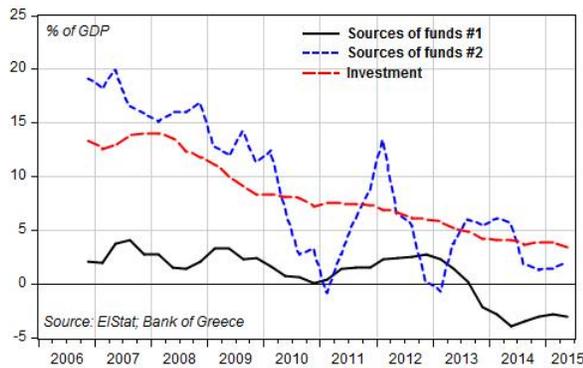


Figure 4b. Greece. Non-financial corporations: saving and investment

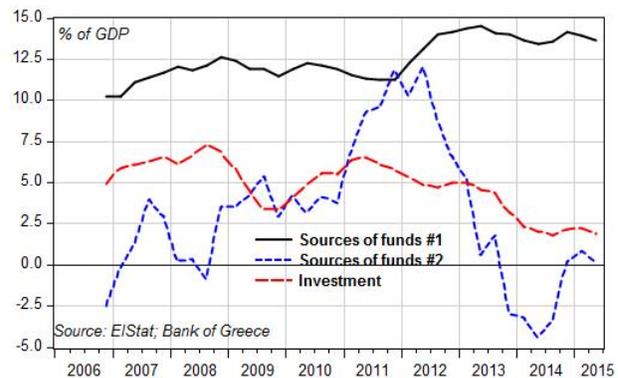
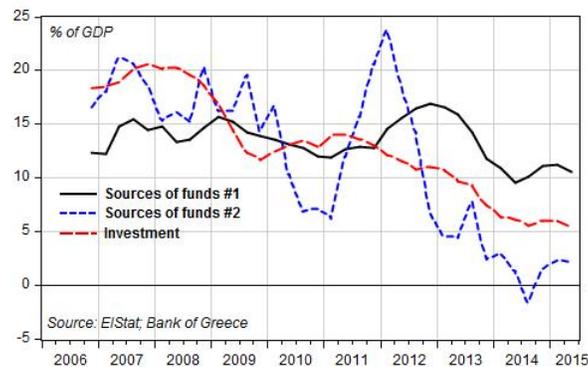


Figure 4c. Greece. Non-financial sector: saving and investment



report two measures of the sources of funds for investment for the household sector, the non-financial sector, and the two sectors combined.

The first measure⁴ (Figure 4a) of the sources of funds is taken from the non-financial accounts published by ElStat. It shows, for the household sector, a declining trend in saving relative to GDP, and a wide gap between saving and investment, which implies that households have been borrowing on a large scale to finance capital expenditure. According to this measure, aggregate household saving turned negative at the end of 2013, and are now a negative 3 percent of GDP. An alternative measure can be obtained from the financial accounts⁵, published from the Bank of Greece, using financial sources. The second measure looks more plausible in level, possibly suggesting that (a) ElStat is underestimating household saving (Figure 4a), and/or (b) non-financial accounts fail to allocate properly the streams of receipts and expenditure between the household sector and the non-financial corporate sector (Figure 4b). In any case, our second measure is still signaling a trend reduction in the sources of funds for investment for the household sector.

⁴The first measure is given by saving plus net capital transfers received.

⁵The second measure of sources of funds is given by Net lending from the financial accounts, plus gross investment from the non-financial accounts.

Figure 5a. Greece. Household. Loans outstanding

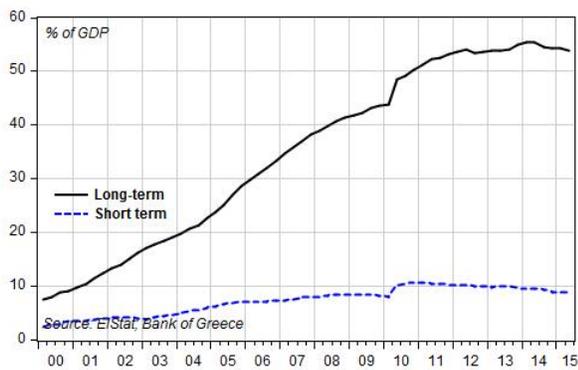
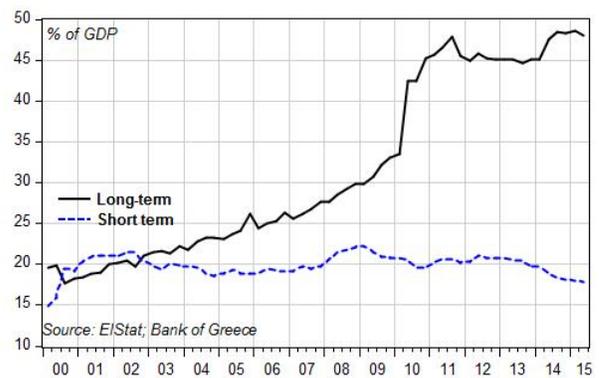


Figure 5b. Greece. Non-financial corporations. Loans outstanding



The data for the non-financial corporate sector show a marked improvement in profits after 2011, but again this measure may suffer from the shortcomings of non-financial accounts. The second measure of the sources of funds, derived from the financial accounts, show instead that an increase in sector saving which started at the end of 2010 has been reversed.

Combining the household and the non-financial corporate sector should solve the issues with non-financial accounting, and provide a more reliable comparison between private sector saving and investment. This is depicted in Figure 4c, which shows again that austerity has failed to improve aggregate profits, and sources of funds for capital expenditure of the domestic private sector have been falling steadily in the last period.

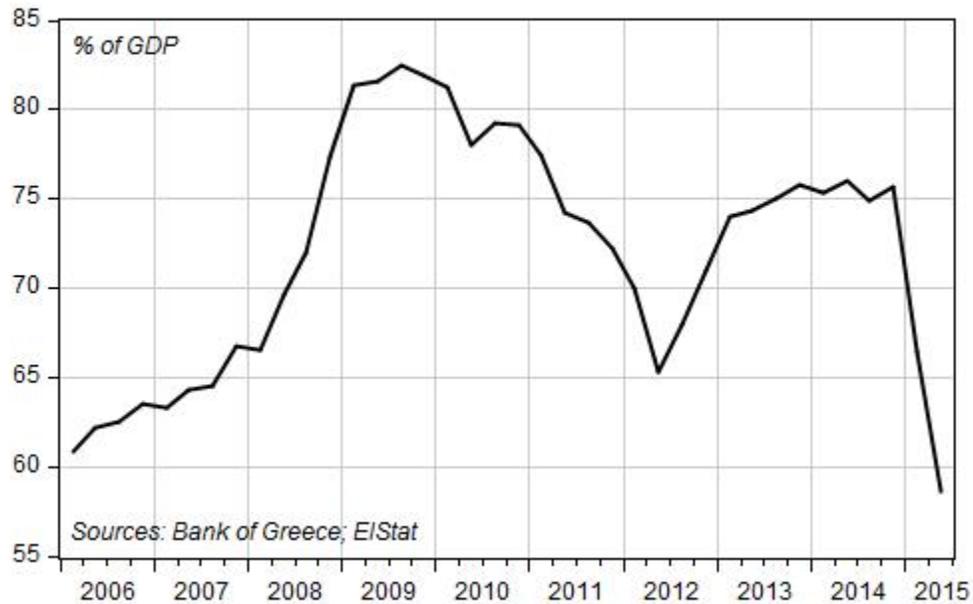
Borrowing is usually considered a major driver of private investment. In Figures 5a and 5b we report the stock of loans outstanding for the household and the non-financial corporate sector, respectively. The figures shows how the decline in GDP implied an acceleration of the debt to GDP ratio for both sectors, which brought the combined non-financial private Greek debt to over 100 percent of GDP. The debt seems to have stabilized recently for both sectors, but its high level makes it implausible that household or business would be willing to borrow even more or if they wanted that the banking sector would be able to provide them with loans. On the contrary, a large share of debtors may be or become bankrupt, especially since the new MOU imposes further austerity for at least the next three years worsening their capacity to expand production by borrowing and will put further strain on the balance sheets of the banks.⁶

4. What impact from bank closures?

Banks were closed from the beginning of July for three weeks, with strict capital controls implemented during this period, limiting the amount of cash that could be withdrawn from ATMs. Banks closure was the climax in a period of uncertainty started with the change in government, in January 2015. It was clear at the time that a SYRIZA-led government would obtain the majority in the coming elections,

⁶ According to the most recent available data from the ECB and the IMF, the Non-Performing Loans of the Greek Banks stood at 35% of Gross Loans of the Greek Banks in the first half of 2014. This number is surely much higher at the moment - probably close to 50% - and is the most important obstacle for a successful recapitalization of the banking system: see Avgouleas and Papadimitriou (2015) for a proposal.

Figure 6. Greece. Household: deposits outstanding



but unclear how the new government would tackle the negotiations, and the possibility of the adoption of measures which could hit depositors in the form of bank “bail-ins.” The uncertainty led to a quick flight of household bank deposits to foreign accounts or the proverbial “under the mattress” forms of safekeeping.

The stock of household deposits outstanding, scaled by GDP is shown in Figure 6. Household deposits peaked at 195 billion euro in August 2008, and the first precipitous drop was due to the Great recession of that period, together with the Greek economic crisis bringing deposits down to 127 billion in 2012 – a drop of 35 percent – when they started a slow recovery. The new drop began in August 2014, when negotiations with the troika became strained, and uncertainty of the country’s continuing membership in the euro became an issue that led deposits to decline to 136 billion euro accelerating their decline in the first months of 2015, bringing them down to their current (September 2015) level of 102 billion.

No figures are available yet for the third quarter of 2015 from the quarterly financial accounts, but figures for the first two quarters of 2015 show that the decrease in domestic deposits was largely matched by an increase in deposits held abroad, in the order of 10 billion euro per quarter. Monthly data available from the Bank of Greece show that the reduction in saving and time deposits has continued, albeit at a slower pace, in the third quarter of this year. Even in July, with banks closed for most of the month, deposits fell by about 1 billion euro.

The impact of the July bank closures on economic activity can be tentatively assessed from the recently published national accounts data for the third quarter of 2015. They report a record drop in imports, which have fallen by 2.6 billion euro— on seasonally adjusted data – relative to the previous quarter. Export of services also dropped considerably, by 1.2 billion euro, while exports of goods were not

severely affected. Some additional detail can be obtained from the balance of payments statistics published by the Bank of Greece, which shows that most of the contraction in the exports of services came from the “Transportation” sector, while tourism (“Travel”) registered a modest increase in revenue (of 200 million euro) against the same quarter of 2014, but not large enough to compensate for the loss in the other export categories. The major components of domestic demand in the national accounts have not fallen as dramatically: consumption was 426 million euro lower with respect to the previous period (1.3%) and fixed investment only 250 million euro lower (5%). GDP accounts report a large drop in inventories, at 852 million euro against the previous quarter, that could be interpreted as business satisfying part of the demand for foreign goods by running down their stock of inventories.

As a result, GDP did not fall dramatically – as expected – in the third quarter of 2015 (344 million against the previous quarter). Since it is difficult to believe that, while bank closures severely constrained imports, the effects on consumption and investment were minor, we expect the preliminary figures for domestic demand and GDP to be revised downwards in the “final” GDP estimates to be published later this year.

If we can take the turnover index of retail trade as an indirect measure for domestic consumption, such index has fallen by 3.2 percent in the third quarter of 2015, compared to the previous quarter. Using this value to evaluate the fall in consumption in the third quarter of 2015, this would add approximately 500 million euro to the drop in domestic demand, bringing the fall in national income close to 3 billion euro, an amount not so different from the estimate of the loss of bank closures earlier reported in the press⁷.

5. Fiscal policy and the new Memorandum of Understanding

Our simulations are based on a preliminary assessment on reduction in government outlays, and increases in government revenues in concert with the required measures contained in the new MOU. Most of the measures of this 3rd MOU have been passed by the Greek Parliament and the few remaining affecting changes in the social pension system and increases in taxation for farmers will be strongly debated but undoubtedly passed by the end of the first quarter of 2016.

Recent reports suggest a reduction in government outlays in 2015 of about 540 million euro, and more substantial increase in revenues of almost 1.5 billion euro, while most of the expected adjustment would be coming in 2016; with a decrease in pensions and other social benefits paid of 1.3 billion euro, and a further increase in tax revenues of 2.5 billion euro.⁸

A more recent estimate is available, *on a cash basis*, from the General Government budget presented to Parliament in December. The government is now estimating a decline rather than an increase, in tax revenues: direct taxes are expected to be 1.5 billion euro lower than in 2014, and indirect taxes are expected to be roughly in line with the revenue in 2014. All of the improvement in government revenue is expected

⁷ Worstall (2015)

⁸ For example Eurobank, Greece Macro Monitor, Draft budget 2016 (Eurobank, 2015)

to arise from the Agreement on Net Financial Assets (ANFA)⁹ and the ECB Security Market Program (SMP), as the government expects to get close to 3.9 billion euro in 2015 (see Investec, 2015, p.3, which reports expected payments of 2 billion euro for 2015, plus 1.9 billion euro unpaid from 2014). The agreement on net financial assets expired in June 2015, and it will be honored conditionally on the Greek government meeting the requirements of the new MOU.

Summing up, should the Greek government not obtain the ANFA funds, government deficit (and the associated primary surplus) will be 3.9 billion euro short of government estimates.

For 2016, the government is forecasting a sensible increase in tax revenues against 2015: almost 900 million euro in additional direct tax payments; 1.2 billion euro in additional indirect tax payments; and 1.2 billion euro in revenues from licenses, for a total increase in regular revenues of about 2 billion euro (since other components of government revenues, namely ANFA and non-regular income, are expected to fall in 2016).

On the expenditure side, the new government projection is not expecting a significant reduction in 2016, with the exception of social insurance payments, which are expected to drop by 500 million euro against 2015.

6. 2016: Another recession year

In our Strategic Analyses reports, using the Levy Institute's stock-flow consistent model for Greece, we always begin with baseline projections. Our new baseline is based on the recently published, still preliminary data for the non-financial and financial sectoral accounts for the second quarter of 2015, and the preliminary data on GDP components for the third quarter.

As usual, we adopt "neutral" assumptions as much as possible for projecting the exogenous determinants of the model. We assume for instance that the fall in the stock market index will stop in the last quarter of 2015, after a fall of 21 percent in the third quarter against the previous quarter.

We further assume price deflation to continue in 2016 at the current rate of 2 percent, with prices stabilizing afterwards and monetary policy will maintain interest rates at their current very low level.

Our preliminary simulations to obtain a baseline confirm our concerns, discussed above, on the consistency of the published figures for GDP components in the third quarter of 2015. In our baseline, we have however aligned the model simulation for the third quarter of 2015 to the preliminary estimates from ElStat. Our baseline is optimistic also in accepting rosy projections on GDP for the trading partners of Greece, which drive up our projections for the exports of goods and contribute substantially to a recovery from 2017 onwards.

In our "optimistic" baseline we assume that the government will get ANFA-SMP funding as expected in 2015. We project government outlays as estimated in the latest government budget, and increase both direct and indirect tax rates to project the fiscal austerity program expected to be implemented by the government.

⁹The ANFA and SMP revenues are revenues related to the profits earned on the ECB's Securities Market Programme (SMP) Greek holdings and the income earned on Greek bonds held in national central banks portfolios (ANFA Agreement on Net Financial Assets).

7. Can we expect a robust recovery?

Our baseline projections show that, when the cuts in government expenditure, and the increases in tax rates are completed, the economy will start recovering in 2017, mainly because of an expected increase in exports of both goods and services.

Table 1. Greece. Baseline projections

	2014	2015	2016	2017	2018
<i>Real GDP component (growth rates)</i>					
GDP	0.7	-0.8	-1.2	1.8	2.0
Private sector demand	1.4	-2.5	-1.4	1.9	3.0
Government expenditure	-0.2	-1.6	-3.8	0.7	0.0
Exports of goods and services	7.4	-4.8	-0.1	5.3	4.7
- Exports of goods	3.5	0.6	3.6	4.9	4.5
- Exports of services	12.3	-10.9	-3.9	5.7	5.0
Imports of goods and services	7.8	-8.3	-4.1	4.4	5.7
- Imports of goods	8.4	-7.7	-2.8	4.2	5.4
- Imports of services	5.1	-12.3	-7.8	5.7	7.2
<i>Government accounts (% of GDP)</i>					
Gov. expenditure	24.0	24.0	23.5	23.0	22.3
- Gov. consumption	20.0	20.2	20.0	19.6	19.0
- Gov. investment	3.9	4.0	3.5	3.4	3.3
Social benefits	19.5	19.8	19.1	18.6	18.2
Gov. revenues	34.8	36.9	33.4	33.3	33.1
- Net indirect taxes	14.8	15.1	15.6	15.7	15.7
- Direct taxes	9.7	9.8	9.7	9.7	9.7
- Social contributions	13.5	13.0	13.2	12.6	12.1
Current surplus/deficit	-1.1	-1.2	0.2	0.5	1.0
Primary surplus/deficit	0.4	2.0	3.3	3.5	3.9
Total surplus/deficit	-3.6	-1.9	-0.7	-0.4	0.1
<i>External balance (% of GDP)</i>					
Exports of goods and services	32.7	30.5	31.0	32.6	33.9
Imports of goods and services	35.2	29.9	28.7	29.1	29.9
External balance (current)	-3.0	-1.5	1.1	2.3	2.9
External balance	3.7	6.6	5.3	6.4	6.9

According to our estimates, only a small part of the improvement in Greek exports will be generated by the improvement in price competitiveness due to the extraordinary fall in both nominal wages and unit labor costs since 2010. Our estimates show that the price elasticity of Greek exports is small, while

the income elasticity is high, a result in line with evidence from other countries, which show a reduction in price elasticities of trade, compared to earlier periods. Our optimistic projections for growth in Greek exports are therefore mainly due to the adoption of the optimistic projections by the IMF on growth of real income among the major trading partners of Greece.

Table 1 reports the details of our baseline projections. As discussed above, we expect the bulk of the new austerity measures to have an effect in 2016, and no additional cuts in government expenditure – or increases in tax rates – to be implemented afterwards. Austerity will keep driving down domestic demand, as it did since austerity started, with net exports not growing sufficiently to offset the depressed levels of investment and consumption.

There is some uncertainty on the net inflows the government will receive from abroad. We assumed that they will still be relevant, albeit with a reduced amount as compared to recent years. Such net capital transfers will improve substantially both the government total surplus and the overall current account balance.

A note on our measure of the primary government surplus is necessary. The measure we report is given by the overall government net lending/borrowing position, less interest paid. It therefore includes all capital transfers received by the government from European institutions, some of which are not taken into account (as well as some government payments on capital account) in the “official” measures of the primary surplus adopted to set the targets in the Memorandum of Agreement.

As stated above, the government is relying on large capital transfers from abroad to meet its targets, and should such payments be postponed or canceled the targets will not be met and the government may face again severe liquidity constraints to meet its current expenses.

An export-led recovery for the Greek economy will therefore be very fragile, and the baseline projections will be subject to a downward revision, if the major European economies – which constitute the bulk of foreign markets for Greek exports of goods, and originate most of the tourism flowing to Greece – will not grow as expected by the IMF. ECB President Mario Draghi recently reported¹⁰ that potential output growth in the Eurozone is now estimated at 1 percent, which is lower than the most recent values the IMF has published for the effective real output growth¹¹.

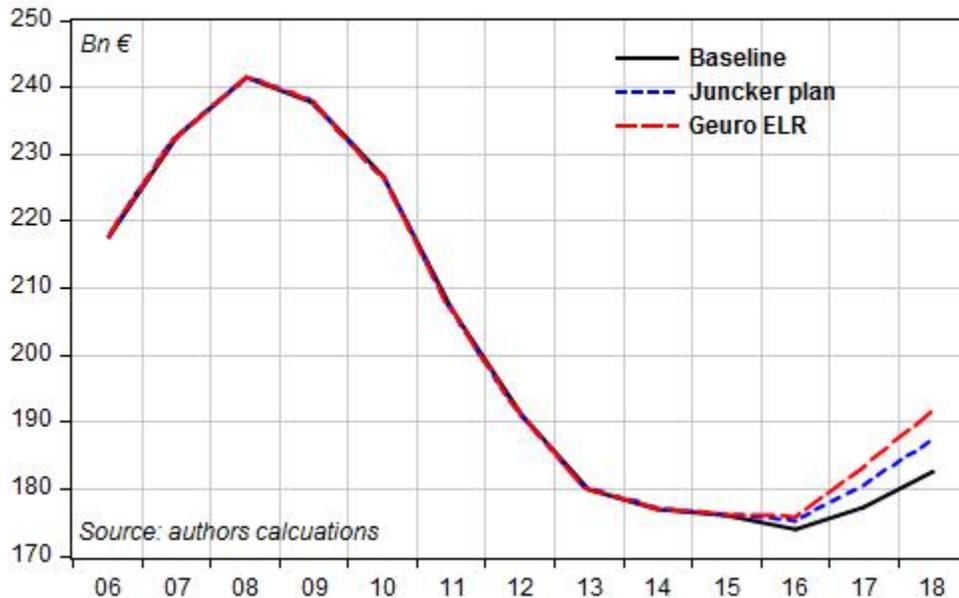
Under our optimistic baseline projections, the Greek economy will not be growing fast enough to recover the lost ground – and eliminate unemployment – in a reasonable period of time. Back-of-the-envelope calculations show that the growth rate required to bring real GDP back to where it was in 2006 by 2025 is 3.25 percent every year from 2017 onwards, while a growth rate of 2.1 percent from 2017 onwards will close the gap to real GDP in 2006 by 2030.

It follows that, under optimistic assumptions about an export-led recovery, in the absence of additional policies Greece will remain below its real 2006 income level for the next 15 years.

¹⁰ Draghi, ‘Monetary policy and structural reforms in the euro area’, Dec.14, 2015
<https://www.ecb.europa.eu/press/key/date/2015/html/sp151214.en.html>

¹¹ The October 2015 World Economic Outlook database estimates real GDP growth in the Euro area to be above 1.6 percent in 2016 and 2017, and slightly lower than 1.6 percent in the following years

Figure 7. Greece. GDP under alternative scenarios



A stimulus is urgently needed, and in the following sections we provide different scenarios that project levels of growth and primary budget surpluses. The first is a scenario we call the Juncker scenario that assumes annually increasing investments forthcoming from European funds while the second updates our proposal for a job creation program financed through the introduction of a new fiscal instrument that helps reduce the impact on the balance of payments that a euro-financed fiscal stimulus of the same size would generate.

8. A Juncker plan scenario

In this scenario we assume that, starting from the third quarter of 2016, the government implements an investment plan financed through European funds, for an amount of 1 billion euro in 2016, 2 billion euro in 2017 and 3 billion euro in 2018.

The projected impact on GDP is displayed in Figure 7, while more details are provided in Table 2, which compares this scenario to the baseline and the next, final scenario.

According to our model, a small-scale investment plan will help speed up the recovery, but will still not be sufficient to improve the labor market conditions sufficiently over the simulation horizon.

As Table 2 shows the Juncker scenario improves real GDP growth in 2016, but not to a significant extent, so that the economy is still contracting. Growth accelerates in the following years, with respect to the baseline, as the size of the stimulus grows.

Table 2. Greece. Key indicators under alternative scenarios

	2015	2016	2017	2018
Baseline				
Real GDP (growth rate)	-0.8	-1.2	1.8	2.0
Gov. total surplus (% of GDP)	-1.9	-0.7	-0.4	0.1
Gov. primary surplus (% of GDP)	2.0	3.3	3.5	3.9
Current account (% of GDP)	-1.5	1.1	2.3	2.9
Juncker plan scenario				
Real GDP (growth rate)	-0.8	-0.4	2.9	2.8
Gov. total surplus (% of GDP)	-1.9	-0.5	0.0	0.7
Gov. primary surplus (% of GDP)	2.0	3.4	3.9	4.4
Current account (% of GDP)	-1.5	1.0	1.8	2.3
Geuro ELR scenario				
Real GDP (growth rate)	-0.8	-0.1	4.1	3.8
Gov. EURO total surplus (% of GDP)	-1.9	-0.9	-1.1	-1.1
Gov. EURO primary surplus (% of GDP)	2.0	3.1	2.8	2.6
Gov. Geuro surplus (% of GDP)	0.0	-0.6	-1.2	-1.3
Current account (% of GDP)	-1.5	0.8	1.2	1.2

A new public investment plan will certainly be effective in stimulating the economy, but since it is not targeted to job creation, the response of employment will be slow. Our estimates suggest that employment react only with a lag to increases in output and, although our estimates show a healthy growth rate of almost 3 percent after 2016, the number of jobs which will be created by an investment plan alone will not be large enough to bring down unemployment. We therefore consider our final scenario to which we turn, next.

9. A quasi-full-employment program

In the next and final scenario we assume that, starting from the second quarter of 2016, the government introduces a non-convertible “fiscal currency” along the lines discussed in our previous reports (Papadimitriou, Nikiforos and Zezza 2014, 2015). What we have in mind is similar to the complementary currency that has been very successfully operating in Switzerland along with the Swiss Franc since 1934 when it was first introduced to offset restrictive fiscal policy (Papadimitriou 2015).

To calibrate the projection, we slightly modify the parameters adopted in May 2015. We propose that the government allow the use of Geuro for up to 20 percent of tax payments. In the last year for which data is available (from July 2014 to June 2015), government revenues from “Taxes on production and imports” were 28 billion euro; “Taxes on income and wealth” an additional 17 billion euro, and “Social contributions” amounted to 23 billion euro, for a total of 68.3 billion euro. This implies that annual demand for Geuro for tax purposes alone would be up to 13.7 billion euro.

The main purpose for the introduction of the Geuro would be the gradual implementation of a program of employer-of-last-resort (ELR), where new jobs are provided – for the production of public goods – to anyone willing to work for a minimum wage, set at such a way to be non-competitive with employment in the private sector, but sufficient for reaching a decent standard of living. Our estimates, obtained from Antonopoulos et al. (2014) and based on an assumed monthly gross wage of 586 euro, implies an annual expenditure of 7.5 billion euro for 550,000 workers.

We propose to pay ELR jobs both in euro and Geuro. Adopting a proportion of 50 percent, this implies an additional annual expenditure in Euro of 3.75 billion, which can be financed by paying 20 percent of wages in the public sector in Geuro (for an estimated annual amount of 4.3 billion euro) and 10 percent of pensions and other social benefits in Geuro (for an estimated annual amount of 3.5 billion euro).

Adopting these measures, net government payments in Euro will decrease by roughly 4 billion euro, while Geuro emission would amount to 11.5 billion, below the expected demand arising from the possibility of using Geuro for tax payments.

Should income stay the same, if all Geuro are used by the private sector to pay taxes back to the government, Geuro would disappear from circulation, and the government will register a net decrease in its Euro revenue exactly equal to the fiscal stimulus. The whole point is, instead, that income will be increased, and therefore aggregate tax payments will be higher. We have therefore simulated this scenario using our macroeconomic model with the results reported in Table 2.

Obviously the number of ELR beneficiary workers can be scaled down to either 200,000 or 300,000 as provided in Antonopoulos, et al, with still very significant results in real growth rates and employment levels higher than the corresponding rate and number of workers in either the baseline or the Juncker scenarios.

As reported in Table 2, a Geuro plan as the one described here will not jeopardize the current targets in terms of the government primary surplus in Euro, and will also not imply a deficit in the current account. There are reasons to believe that the introduction of the Geuro will have a smaller impact on imports, with respect to a fiscal stimulus of the same size in Euro. However, we have not introduced any arbitrary assumptions on the elasticity of imports to expenditure in Geuro, and therefore our projections for the current account, in Table 2, may be pessimistic. If this is correct, an even bolder plan could be put in place for creating jobs financed via the complementary currency, as long as the flow of net new liquidity is not growing faster than the additional output generated domestically by the stimulus.

10. Conclusions

In this report we have argued that Greece can be on the mend and on the road to recovery if appropriate economic policy is implemented. What we have shown is that doing business as usual – baseline scenario—will not deliver the desirable and people’s expected results. Even investments from abroad –European funds-- unless they are very significant in the order of 10 or more billion euro real growth and employment will take much too long to gain the lost ground. Any scenario will take long, but the issue should be how long and what is necessary to shorten the 10-15 year horizon that would be required to regain what is lost, say achieve the 2006 GDP and employment levels, if the current policy is

followed. Only our third scenario of introducing a fiscal and complementary currency can put the economy on a faster rate of growth and employment without at all jeopardizing Greece's membership in the Eurozone. The complementary currency as is the case in Switzerland will not seek to replace the euro – which will be catastrophic—but circulate within the economy alongside with it.

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