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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 returning to growth, nor has it managed to create an environment of reduced uncertainty, which is crucial for stabilizing the business climate and promoting investment. On the contrary, the new round of austerity measures that has been agreed upon implies another year of recession in 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 onward, at a pace well below what is needed to alleviate poverty and reduce unemployment. We then analyze the impact of a public investment program, financed by European institutions, of a size that is feasible given the current political and economic conditions. We find that, while such a plan would help stimulate the economy, it would not sufficiently speed up the recovery. Finally, we 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, would be more effective, without disrupting the primary surplus targets the government has agreed to, and without reversing the improvement in the current account.

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Introduction

The year just ended wasn't a good one for Greece, even though it started with promise. A leftist government was swept to power on a pledge to end austerity, implement a multipronged development program, and turn the economic fortunes of the country's citizens around. Furthermore, the new government believed that it could become the catalyst for altering the way the eurozone was run. Alas, it very soon became clear that what the government had in mind was based on unrealistic expectations of persuading the European elite that Europe must change course. It took more than seven months of negotiations, but the end result was that the SYRIZA-led government had to abandon its plan to end austerity and instead continue on the same path previous governments had followed. The Berlin-based neoliberal dogma would once again reign supreme, demanding adherence to the free-market structural reforms and fiscal consolidation needed to reach prescribed levels of primary budget surpluses.

The long negotiation process came at significantly high economic and social cost, including the troika-engineered liquidity crisis that caused the government to become unable to fulfill its payment obligations, thus increasing its payments in arrears and forcing it to raid local government funds and various trust funds (worsening their own liquidity positions in the process) in order to meet International Monetary Fund (IMF) and European Central Bank (ECB) interest and principal payments. During the drawn-out negotiations, Greek residents, fearing the banking system's collapse, increased their demand for fund withdrawals, either moving their money abroad or hiding it at home, leading eventually to bank closures and the imposition of capital controls (as was the case in Cyprus in 2014–15). The capital controls constrained domestic consumption and imports even further and negatively affected exports in goods and services, a result of changed tourist attitudes at a time when tourist arrivals were 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 these measures will deliver to the country and its residents, but reasonable projections for 2015 and the next three years can be made, and we will show that the outlook for a significant economic recovery is not encouraging. To be sure, there have been some small positive signs: increased tourism activity, a slight reduction in the unemployment rate, a smaller budget deficit than originally anticipated. But there are also many negative trends—in domestic demand, investment, and net exports—that, unless they are reversed, will reinforce people's pessimism that the Greek economy is not on 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 anemic growth starting, perhaps, in the latter part of 2016. Sole reliance on market forces will not see real GDP and the commensurate employment level return to pre-crisis levels in the relevant time. Consequently, alternative scenarios based on changes to the fiscal policy stance that would accelerate the recovery must be considered. To such options we turn next, beginning with an analysis of the Greek economy's current conditions by evaluating the available statistical data, highlighting some problems that make it difficult, if not impossible, to provide reliable estimates of how the economy is really performing. Despite these difficulties, we will provide our own projections of the MoU outcomes for the period 2015–18 based on our stock-flow consistent macroeconomic model developed specifically for the Greek economy. In the final part of this report we will show the outcomes of simulations of alternative scenarios.

The Role of Investment

Projections published by research centers on the growth of real output in Greece, in 2015 and subsequent 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 fiscal contraction in 2016 will be at least partly balanced by an increase in investment, while exports will slowly contract. The same projections show a dramatic drop in investment of 16.5 percent in 2015, which may be due in part to the impact of bank closures in July, and in part to a surge in investment and imports at the end of 2014 and the beginning of 2015, probably resulting from acquisitions of military transport equipment that will not be repeated in 2015 or 2016.[1] As Figure 1 shows, investment in transport equipment

jumped to about 1.4 billion euros at the end of 2014, falling back to a more modest level of 0.8 billion euros in the second quarter of 2015.

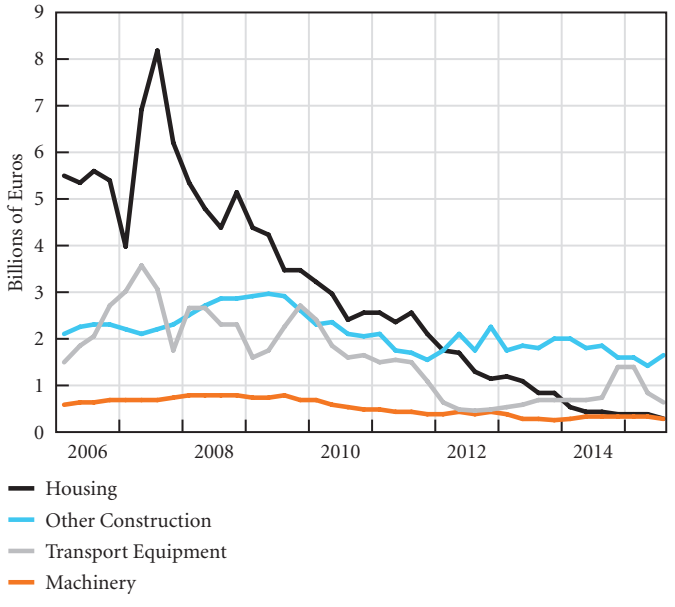
Residential investment, as Figure 1 also shows, was a major driver of economic growth before 2007, and has been falling ever since. The later years in Figure 1 show only a moderate decline, relative to the collapse following 2007, but residential investment has nonetheless dropped a further 8 percent 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 above-noted exception of the spike in the acquisition of transport equipment probably due to military expenditure.

The investment experience of each of the main sectors—household, corporate, and government—of the economy are reported in Figure 2. These statistical trends have been computed from the quarterly nonfinancial sector accounts published by ElStat, allowing us to compute net investment—that is, the net increase in the stock of capital, less depreciation ("consumption of fixed capital" in the terminology of national accounts).[2]

The crucial relevance of residential investment in the Greek economy denoted by household gross fixed capital formation is depicted clearly in Figure 2. It was recently reported that residential investment, as of the end of 2015Q3, decreased by 34.2 percent, which in turn reduced GDP by 0.4 percent (Rousanoglou 2015).

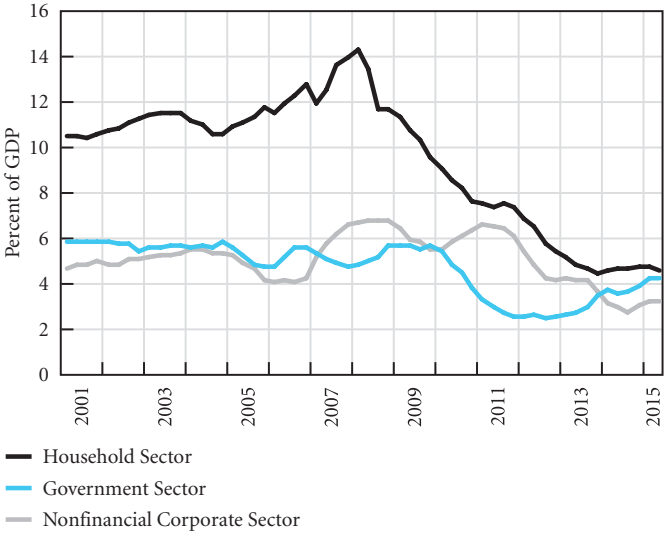
Our analysis also casts some serious doubts on the ability of ElStat to correctly identify payments and receipts made by the household and business sectors. According to the nonfinancial sector accounts, consumption of fixed capital of the nonfinancial corporate sector has always exceeded gross fixed 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, from 2011 to the present, overall private investment has been insufficient to compensate for the depreciation of the existing capital stock, which has been falling—and which continues to fall—in real terms.

Figure 1 **Greece: Gross Fixed Capital Formation by Asset**



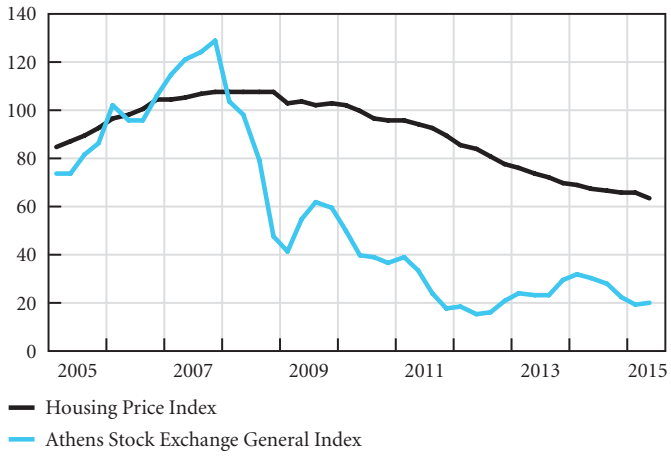
Source: ElStat

Figure 2 **Greece: Gross Fixed Capital Formation by Sector (Four-quarter Moving Averages)**



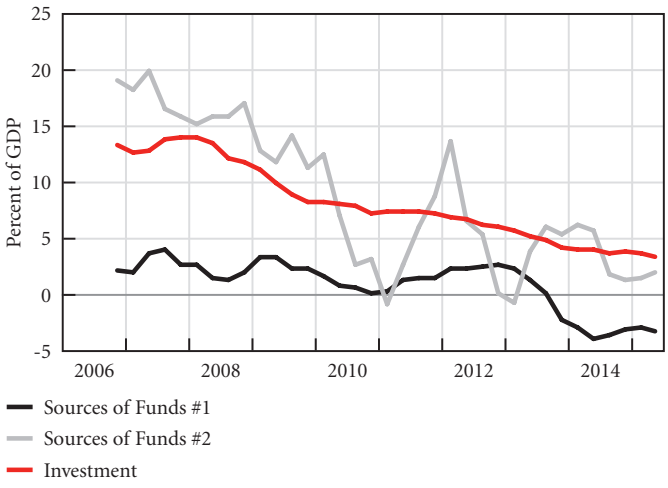
Source: ElStat

Figure 3 Greece: Asset Price Indices (2006=100)



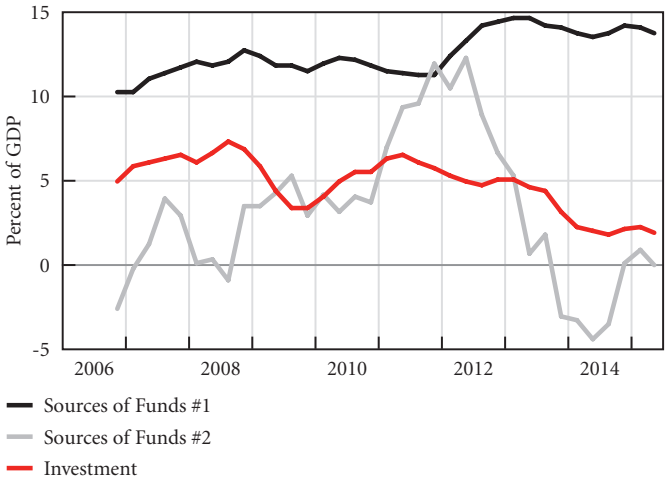
Source: Bank of Greece

Figure 4a Greece: Household Sector—Saving and Investment



Sources: ElStat; Bank of Greece

Figure 4b Greece: Nonfinancial Corporate Sector—Saving and Investment



Sources: ElStat; Bank of Greece

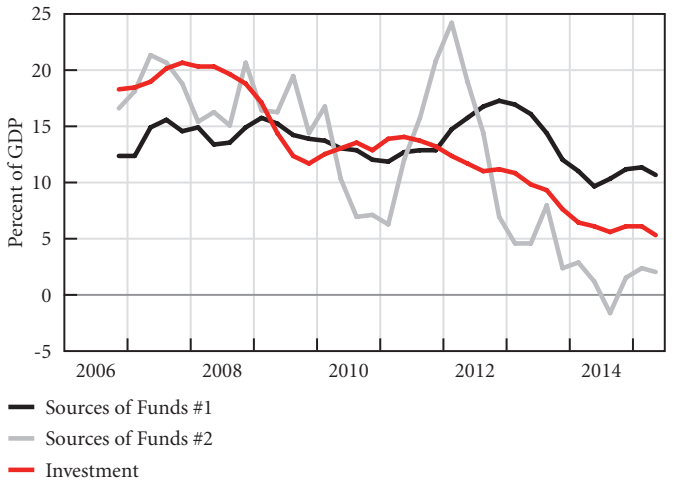
Are These Investment Trends Likely to Be Reversed in the Near Future?

A measure of housing prices 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 downward trend in the price of housing has not stopped—the decline from pre-crisis levels has been reported to be more than 40 percent—and recent fiscal measures aimed at increasing property taxation may contribute to the continuing decline in the housing market. Exploratory econometric analysis of the relationship between residential real investment and the price of housing suggests a possible long-run elasticity close to 2.5—that is, for a 1 percent decline in housing prices we should expect a further drop of 2.5 percent in residential investment. Nonresidential 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 nonresidential investment,[3] its recent trend does not suggest any improvement. Indeed, the common stock prices of commercial building and management companies listed on the Athens Stock Exchange 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 nonfinancial 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–c we report two measures of the sources of funds for investment for the household sector, the nonfinancial corporate sector, and the two sectors combined.

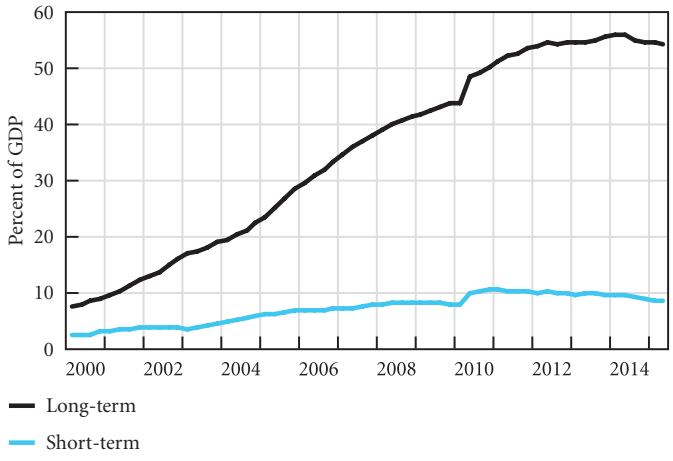
The first measure of the sources of funds is taken from the nonfinancial accounts published by ElStat.[4] It shows, for the household sector, a declining trend in saving relative to

Figure 4c Greece: Household and Nonfinancial Corporate Sectors—Saving and Investment



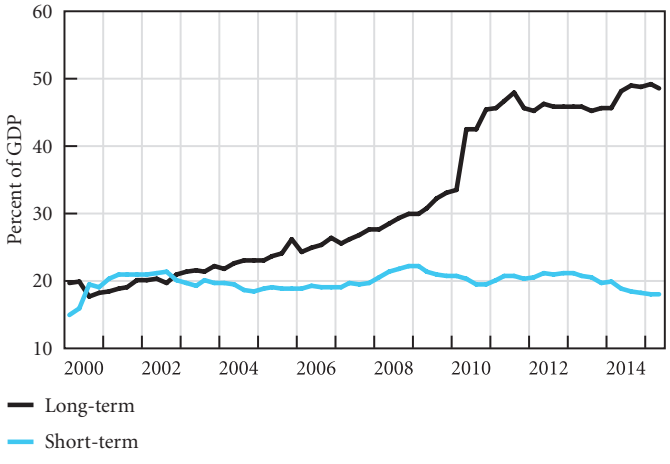
Sources: ElStat; Bank of Greece

Figure 5a Greece: Household Sector—Loans Outstanding



Sources: ElStat; Bank of Greece

Figure 5b Greece: Nonfinancial Corporate Sector—Loans Outstanding



Sources: ElStat; Bank of Greece

GDP and a wide gap between saving and investment, which implies that households have been borrowing on a large scale to finance capital expenditure (Figure 4a). According to this measure, aggregate household saving turned negative at the end of 2013 and is now minus 3 percent of GDP. An alternative measure can be obtained from the financial accounts published by the Bank of Greece, using financial sources.[5] The second measure looks more plausible in level, possibly suggesting that (1) ElStat is underestimating household saving (Figure 4a) and/or (2) the nonfinancial accounts fail to properly allocate the streams of receipts and expenditures between the household sector and the nonfinancial corporate sector (Figure 4b). In any case, our second measure still signals a trend reduction in the sources of funds for household sector investment.

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

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

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 sector and the nonfinancial corporate sector, respectively. The figures show how the decline in GDP implied an acceleration of the debt-to-GDP

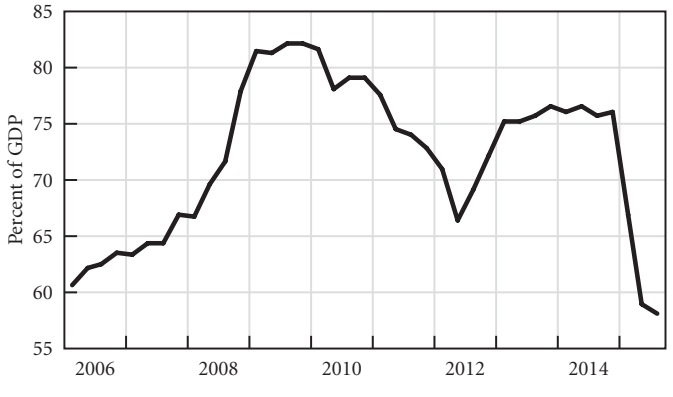
ratio for both sectors, which brought the combined Greek nonfinancial private debt to above 100 percent of GDP. The debt seems to have stabilized recently for both sectors, but its high level makes it implausible that households or businesses would be willing to borrow even more—or, if they wanted to, that the banking sector would be able to provide them with loans. On the contrary, a large share of debtors may be, or may 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 placing further strain on the balance sheets of the banks.[6]

What Was the Impact of the Bank Closures?

Banks were closed for three weeks beginning in late June 2015, with strict capital controls implemented during this period, limiting the amount of cash that could be withdrawn from ATMs. The bank closures represented the climax of a period of uncertainty that began with the change in government, in January 2015. It was clear at the time that a SYRIZA-led government would gain the majority in the coming elections, but it was unclear how the new government would tackle the negotiations with Greece's international creditors, and the possibility of the adoption of measures that could hit depositors in the form of bank "bail-ins." The uncertainty led to the quick flight of household bank deposits to foreign accounts or underneath the proverbial mattress for safekeeping.

The stock of household deposits outstanding, scaled by percentage of GDP, is shown in Figure 6. Household deposits peaked at 195 billion euros in August 2008, and the first precipitous drop was due to the Great Recession of 2008–09, together with the Greek economic crisis, bringing deposits down to 127 billion euros—a drop of 35 percent—in 2012, when they began a slow recovery. The latest fall-off began in August 2014, when negotiations with the troika became strained and uncertainty about the country's continuing membership in the euro became an issue, leading deposits to decline to 136 billion euros. Deposits accelerated their decline in the first months of 2015, reaching 102 billion euros in September of that year.

Figure 6 **Greece: Household Sector—Deposits Outstanding**



Sources: ElStat; Bank of Greece

No 2015Q3 figures are available yet 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, on the order of 10 billion euros 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. Even in July, with banks closed for most of the month, deposits fell by about 1 billion euros.

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 fell by 2.6 billion euros (on seasonally adjusted data) relative to the previous quarter. Exports of services also dropped considerably, by 1.2 billion euros, while exports of goods were not severely affected. Some additional details can be obtained from the balance-of-payments statistics published by the Bank of Greece, which show that most of the contraction in exports of services came from the "Transportation" sector, while tourism ("Travel") registered a modest increase in revenue (200 million euros) against the same quarter in 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 did not fall as dramatically: consumption was 426 million euros lower with respect to the previous quarter (1.3 percent) and fixed investment was only 250 million euros lower (5 percent). GDP accounts report a large drop in inventories (852 million euros) against the previous quarter, which could be interpreted as businesses satisfying part of the demand for foreign goods by running down their stock of inventories.

As a result, GDP did not fall significantly—as expected—in the third quarter of 2015 (344 million euros 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 downward in the "final" GDP estimates to be published later this year.

If we take the turnover index for retail trade as an indirect measure of domestic consumption, this index fell by 3.2 percent from the second to the third quarter of 2015. Using this figure to evaluate the fall in consumption 2015Q3, this would add approximately 500 million euros to the drop in domestic demand, bringing the overall decline in national income to nearly 3 billion euros—an amount not that different from the estimate of the cost to the economy of bank closures that was earlier reported in the press (Worstall 2015).

Fiscal Policy and the New Memorandum of Understanding

Our simulations are based on a preliminary assessment of reductions in government outlays and increases in government revenues in line with the required measures contained in the new MoU. Most of the measures in this third MoU have already been passed by the Greek Parliament, and the few that remain, regarding 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.

The details and the magnitude of the new fiscal austerity measures, however, are not at all clear. Recent reports (e.g., Eurobank 2015) suggest a reduction in government outlays of about 540 million euros and a more substantial increase in revenues of almost 1.5 billion euros in 2015, while most of the expected adjustment would occur in 2016, with a decrease in pensions and other social benefits of 1.3 billion euros and a further increase in tax revenues of 2.5 billion euros.

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 euros lower in 2015 than in 2014, and indirect taxes are expected to be roughly in line with the revenue in 2014. All of the improvement in government revenues is expected to arise from the Agreement on Net Financial Assets (ANFA) and the ECB Securities Markets Programme (SMP), from which the government expects to receive close to 3.9 billion euros in 2015.[7] The agreement on net financial assets expired in June 2015, and it will be honored provided the Greek government meets the requirements of the new MoU.

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

For 2016, the government is forecasting a sensible increase in tax revenues against 2015: almost 900 million euros in additional direct tax payments, 1.2 billion euros in additional indirect tax payments, and 1.2 billion euros in revenues from licenses, for a total increase in regular revenues of about 2 billion euros (since other components of government revenues, namely ANFA and nonregular 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 euros against 2015.

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 nonfinancial 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 price deflation to continue in 2016 at the current rate of 2 percent, with prices stabilizing afterward, 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, regarding 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 with the preliminary estimates from ElStat. Our baseline is also optimistic in accepting rosy projections of GDP for Greece's trading partners, which drive up our projections for the exports of

goods and contribute substantially to a recovery from 2017 onward.

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.

Can We Expect a Robust Recovery?

Our baseline projections show that, when the cuts in government expenditure and increases in tax rates are completed, the economy will start recovering in 2017, mainly because of an expected increase in the export of both goods and services. According to our estimates, only a small part of the rise 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 low while the income elasticity is high—a result in line with evidence from other countries, which shows a reduction in the 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 IMF's optimistic projections of real income growth 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, with no additional cuts in government expenditure—or increases in tax rates—to be implemented afterward. Austerity will keep driving down domestic demand, as it has since austerity began, 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 assume that they will still be relevant, albeit with a reduced amount as compared to recent years. Such net capital transfers will substantially improve both the total government 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 (in addition to some government payments on capital account) are not taken into account in the "official" measures of the primary surplus adopted to set the targets in the MoU.

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 again face severe liquidity constraints in meeting 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—

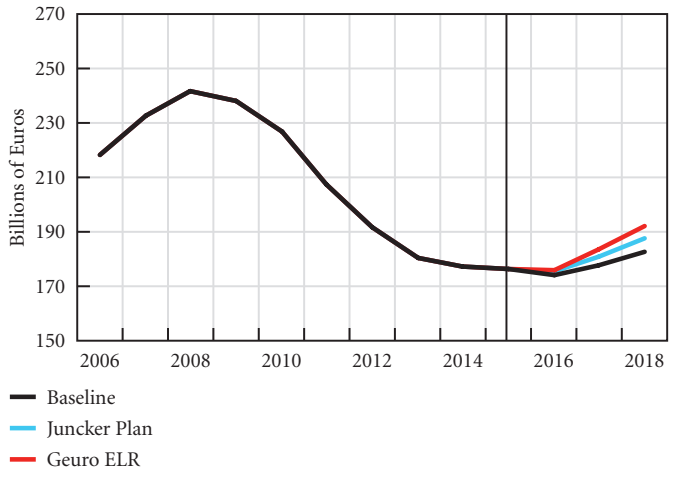
Table 1 Greece: Baseline Figures, Actual and Projected

	2014	2015	2016	2017	2018
Real GDP Components (% growth rate)					
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
Government Accounts (% of GDP)					
Government expenditure	24.0	24.0	23.5	23.0	22.3
Government consumption	20.0	20.2	20.0	19.6	19.0
Government investment	3.9	4.0	3.5	3.4	3.3
Social benefits	19.5	19.8	19.1	18.6	18.2
Government 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
External Balance (% of GDP)					
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

*Excludes net capital transfers from abroad.

Sources: ElStat; Bank of Greece; authors' calculations

Figure 7 Greece: GDP under Alternative Scenarios, Actual and Projected



Source: Authors' calculations

Table 2 Greece: Key Indicators under Alternative Scenarios, Actual and Projected

	2015	2016	2017	2018
Baseline				
Real GDP (% growth rate)	-0.8	-1.2	1.8	2.0
Government total surplus (% of GDP)	-1.9	-0.7	-0.4	0.1
Government 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
Government total surplus (% of GDP)	-1.9	-0.5	0.0	0.7
Government 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
Government euro total surplus (% of GDP)	-1.9	-0.9	-1.1	-1.1
Government euro primary surplus (% of GDP)	2.0	3.1	2.8	2.6
Government Geuro surplus (% of GDP)	0.0	-0.6	-1.2	-1.3
Current account (% of GDP)	-1.5	0.8	1.2	1.2

Sources: ElStat; Bank of Greece; authors' calculations

which constitute the bulk of foreign markets for Greek exports of goods and originate most of the tourism flowing into Greece—do not grow as the IMF expects. ECB President Mario Draghi (2015) recently reported 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 real output growth.[8]

Under our optimistic baseline projections, the Greek economy will not grow fast enough to recover the lost ground—and eliminate unemployment—within 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 onward, while a growth rate of 2.1 percent from 2017 onward would return real GDP to 2006 levels by 2030.

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

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 that we call the Juncker Plan, which 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 would help reduce the impact on the balance of payments that a euro-financed fiscal stimulus of the same size would generate.

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, in the amount of 1 billion euros in 2016, 2 billion euros in 2017, and 3 billion euros 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 would help speed up the recovery but would still not improve labor market conditions sufficiently over the simulation horizon.

As Table 2 shows, under the Juncker scenario real GDP growth improves in 2016, but not to a significant extent, so that the economy continues to contract. Growth accelerates in 2017 and 2018 with respect to the baseline, as the size of the stimulus grows.

A new public investment plan would 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 reacts 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 that would be created by an investment plan alone will not be large enough to bring down unemployment. We therefore consider a third scenario, to which we turn next.

A Quasi-full-employment Program

In our final scenario we assume that, starting from the second quarter of 2016, the government introduces a nonconvertible "fiscal currency"—the "Geuro"—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 alongside the Swiss franc since 1934, when it was first introduced to offset restrictive fiscal policy (Papadimitriou 2015).

To calibrate the projections, we slightly modified the parameters we adopted in our report of May 2015. We propose that the government allow the use of Geuros for up to 20 percent of tax payments. In the last year for which data are available (from July 2014 to June 2015), government revenues from "Taxes on production and imports" yielded 28 billion euros, "Taxes on income and wealth" an additional 17 billion euros, and "Social contributions" amounted to 23 billion euros, for a total of 68.3 billion euros. This implies that annual demand for Geuros for tax purposes alone could reach 13.7 billion euros.

The main purpose for the introduction of the Geuro would be the gradual implementation of an employer-of-last-resort (ELR) program, where new jobs are provided—for the production of public goods—to anyone willing to work for a minimum wage, set in such a way as to be noncompetitive 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 euros, imply an annual expenditure of 7.5 billion euros for 550,000 workers.

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

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

Should income stay the same—that is, if all the Geuros issued were used by the private sector to pay taxes to the government—Geuros would disappear from circulation, and the government would register a net decrease in its euro revenues exactly equal to the fiscal stimulus. The whole point is that, instead, income would increase, and thus aggregate tax revenues would 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. 2014) and still have very significant results in terms of raising real growth rates and employment levels higher than the corresponding rate and number of workers in either the baseline or the Juncker scenario.

As reported in Table 2, a Geuro plan such as the one described here would not jeopardize the current primary surplus targets in euros, nor imply a deficit in the current account. There are reasons to believe that the introduction of the Geuro would have a smaller impact on imports relative to a fiscal stimulus of the same size in euros. However, we have not introduced any arbitrary assumptions on the elasticity of imports to expenditure in Geuros, and therefore our projections for the current account (Table 2) may be pessimistic. If this is correct, an even bolder job creation plan financed via the complementary currency could be put in place, as long as the flow of net new liquidity was not growing faster than the additional output generated domestically by the stimulus.

Conclusions

In this report we have argued that Greece can be on the road to recovery if appropriate economic policy is implemented. What we have shown is that business as usual—our baseline scenario—will not deliver the desired and expected results. Even with investment from abroad (European funds), unless it is very significant (on the order of 10 billion euros or more), real growth and employment will take much too long to recover. Any scenario will take time, but the issue should be *how* long and what is necessary to shorten the 10-to-15-year horizon required to regain what's been lost—say, to 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 growth and employment on a faster track without at all jeopardizing Greece's membership in the eurozone. A complementary currency, as in the case of Switzerland, would not seek to replace the euro—which would be catastrophic—but circulate within the economy alongside it.

Notes

1. Government investment in the six months from October 2014 to March 2015 was 900 million euros higher compared to the same period the year before, as reported in sector accounts. Investment in "Transport equipment and weapons systems" in this six-month period increased by 1,348 million euros over the corresponding period one year before, as reported in the national accounts.
2. Figure 2 reports moving averages over the previous four quarters of data, to smooth out seasonal effects. The authors have estimated data prior to 2006 on the basis of previously published time series. We consolidate the corporate nonfinancial sector with the financial sector, where the figures for investment in the latter are negligible.
3. Some simple econometrics suggest a long-run elasticity of real nonresidential investment to our measure of stock market prices of 0.7; that is, a 1 percent increase in the stock market price implies a long-run increase in real nonresidential investment of 0.7 percent.
4. The first measure of sources of funds is given by saving plus net capital transfers received.
5. The second measure is given by net lending from the financial accounts plus gross investment from the nonfinancial accounts.
6. According to the most recent available data from the ECB and IMF, nonperforming loans stood at 35 percent of Greek banks' total gross loans in the first half of 2014. This number is surely much higher at the moment—probably close to 50 percent—and is the most important obstacle to a successful recapitalization of the banking system (see Avgouleas and Papadimitriou [2015] for a proposal to improve bank governance following recapitalization).
7. See Investec 2015 (p. 3), which reports expected payments of 2 billion euros for 2015, plus 1.9 billion euros unpaid from 2014. These revenues are related to the profits earned on the ECB's Greek holdings (SMP) and the income earned on Greek bonds held in national central bank portfolios (ANFA).
8. 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 three years.

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