



Strategic Analysis

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Greece: Getting Out of the Recession

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Summary

The Greek government has agreed to a new round of fiscal austerity measures, consisting of a sharp increase in taxes on income and property, and more reductions in pensions and other welfare-related expenditures. In our approach, policies aimed at reducing the government deficit will cause a recession, unless other components of aggregate demand increase enough to more than offset the negative impact of fiscal austerity on output and employment.

We argue that the troika strategy of increasing net exports to restart the economy has failed, partly because of the low impact of falling wages on prices, partly because of the low trade elasticities with respect to prices, and, partly because of other events that caused a sharp reduction in transport services, which used to be the biggest export industry of the Greek economy.

A policy initiative to boost aggregate demand is urgently needed more than ever, and we propose a fiscal policy alternative based on innovative financing mechanisms, which could trigger an increase in confidence that would encourage restarting private investment.

Introduction

It has been more than a year since the last Memorandum of Understanding (MOU) was signed between Greece and its international lenders in August 2015. To secure the receipt of 10.2 billion euros a number of key legislative acts have been rapidly pushed through Parliament, including significant labor market reforms; direct and indirect tax increases; government expenditure cuts in pensions and other social protection programs, public investment, and consumption; and privatization of public enterprises and assets. These “structural reforms” will supposedly ensure achieving the projected—and required—primary budget surpluses until 2018.

As is customary, only a partial payment of 7.4 billion euros has been approved so far, with release of the remaining 2.8 billion euros subject to the troika’s progress evaluation report in the fall of 2016. These funds are aimed at repaying maturing government debt and reducing the large accumulated arrears

to the private sector. (The government recently announced that in July 2016, 1.1 billion euros had been used to decrease its arrears, including tax refunds, even though the tranche of 7.4 billion euros assumed a payment in arrears of 1.8 billion euros.) The remainder of this year's tranche of 2.8 billion euros will be approved once the Greek government fulfills the remaining labor market reforms, i.e., changes in collective bargaining agreements, executive and managerial changes in the banking sector, and completing the organizational structure and staffing of the sovereign asset fund so as to accelerate public asset sales and the privatization of public enterprises. The government, therefore, is again at work hoping to complete these MOU obligations for the timely receipt of the remaining funds to pay other maturing debt, including interest and another partial payment (1.7 billion euros) toward its accounts and tax refunds in arrears. Decreasing the government's arrears accounts and indirect tax refunds due the private sector is crucially important for boosting domestic private demand and production, as we will show later.

The last 12 months have witnessed a further, continuous deterioration of the Greek economy. Nominal GDP and residents' disposable incomes and wealth lost more ground—the result of higher taxes, more part-time work, and stubbornly high unemployment—more children have fallen into poverty, and the Greek Statistical Agency reports deteriorating indices of the population's health and delivery of basic health care and other needs. To be sure, some signs of a job recovery have been emerging this year. The job growth is significant, but so is the rate of job separation. Despite the monthly gains in employment, job leavers and the extraordinary number of involuntary part-time workers are still high making the challenge of reversing the scourge of unemployment a truly Herculean task, especially when the public purse remains under severe strain. The unemployment rate in June 2016 (the latest ElStat statistics available) was reduced to 23.4 percent from 24.9 percent in the corresponding month of last year. Thus, as we will argue, the increase in net employment does not yet instill confidence that a robust recovery is under way.

The bank closures at the end of June 2015 marked the beginning of a period of capital controls, which limited the ability of the public to access bank deposits and, more important, imposed additional administrative rules on monetary transfers to other countries, increasing the burden on firms and forcing many of them to change their domicile to other countries of the EU (e.g., Cyprus, Luxemburg, and Bulgaria), with obvious consequences for the ability of the government to collect taxes on such businesses, not to mention worsening unemployment due to the elimination of jobs. The liquidity constraints have weakened the ability of many firms to pursue aggressively the marketing of their products abroad, negatively affecting exports. According to the latest statistics from ElStat for the first six-month period (January–June) of 2016, exports of goods totaled 11.97 billion euros versus 13.07 billion euros for the corresponding period in 2015, representing a drop of 8.1 percent. Even if all petroleum products are

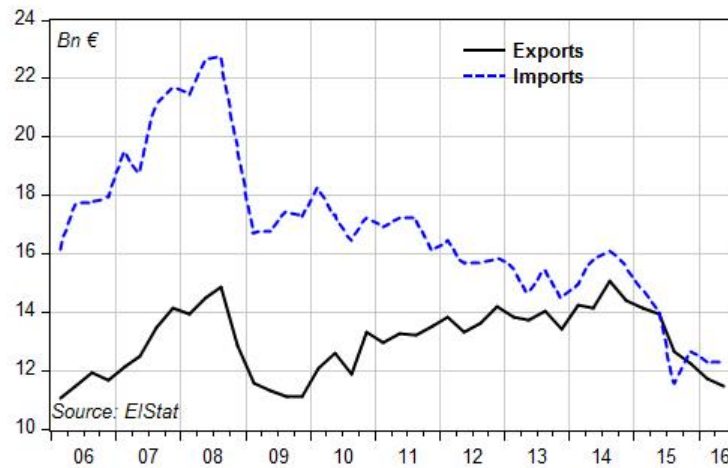
excluded, a decline of other exports of goods is observed. The collapse in export revenues, especially from transportation and other services, may also be linked to capital controls, as well as to other adverse effects from the migration crisis. Greek households and businesses seem, by now, to have learned how to survive under capital controls, but the impact on the economy thus far has been large. The government recently relaxed these controls to entice households to increase their bank deposits by reducing their holdings under the proverbial mattress, and to repatriate funds from deposits in foreign banks. Banks are also offering increased interest rates to those opening new time deposit accounts in an attempt to strengthen their balance sheets, in order to offset the draining of reserves in light of the continuing nonperforming loan problem and increased lending activity. The response from depositors to date has been rather disappointing. The relaxation of the controls, in general, aims to assist firms by expanding the limits affecting export/import transactions. The silver lining of capital controls and the consequent use of electronic forms of payment was to bring more product and labor markets into the official domain and statistical reckoning. This may, to some extent, be part of the reason for the improvement in the unemployment rate as well as the smaller than anticipated GDP contraction rate recorded in 2015.

In the simulations of the new scenarios discussed below, we expect the economic conditions to worsen, as the additional austerity measures of the new MOU take hold in the second half of this year. If no corrective action is taken to offset them, we expect the economy to suffer another two years of severe recession, and then to experience a very modest growth rate in 2018. As usual in these reports, we provide simulations of alternate and feasible scenarios that could turn the economic conditions around and put the Greek economy on a significantly higher-growth path. But first, let us examine the current conditions in some detail.

The austerity myth of rising Greek exports

As we have argued elsewhere (Papadimitriou, Nikiforos, and Zezza 2014, 2015, 2016), the principle aim of fiscal austerity and labor market reforms—imposed on Greece as conditions for financial support—was to turn a current account deficit into a surplus large enough to more than offset the impact on the economy of fiscal consolidation. This result should have been achieved through two channels. The first channel, in the short term, would be due to the effect of fiscal austerity on income and production—that is, cutting public expenditure and increasing tax rates would generate a fall in domestic demand and domestic production, lowering the demand for imported final and intermediate goods and services, thereby improving the current account balance.

Figure 1. Greece. Trade in goods and services



As Figure 1 shows, the first channel operated effectively. Excluding the dramatic fall in global demand in 2008 as a result of the Great Recession, imports have fallen a further 32.5 percent (26 percent when measured at constant prices) from the previous peak in the first quarter of 2010. The drop is attributed mostly to low domestic demand as a result of fiscal austerity, and in part—and up to 2014—to an improvement in price competitiveness, as measured by the relative price of imported goods against domestic goods. We estimated that these relative prices increased around 12 percent between 2010 and the beginning of 2014. For services, relative prices of foreign imports increased by 5.5 percent against domestic prices between 2010 and the end of 2015. After 2014, the decline in the price of oil has also contributed to the decrease in imports.

The second channel, in the intermediate term, would have seen the improvement in the current account due to the assumed positive effects gained from “labor market reforms” and “internal devaluation.” Downward pressures on wages and general labor costs, achieved through “reforms,” were supposed to improve price competitiveness, boosting exports and in turn improving the current account balance over a longer-term horizon.

Figure 2. Greece. Labor costs

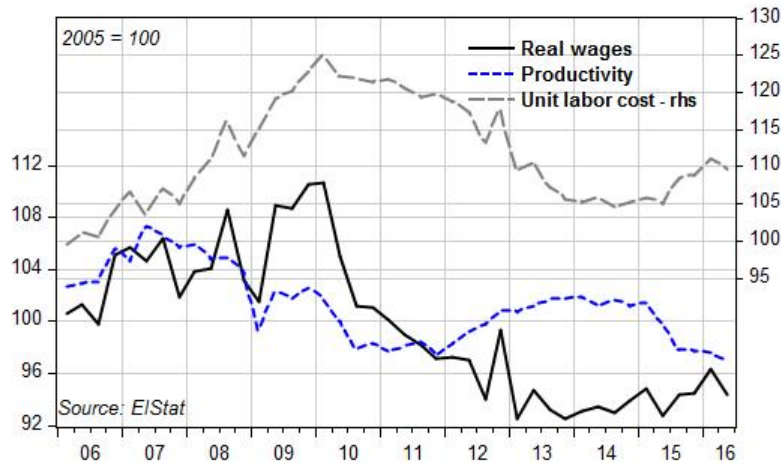
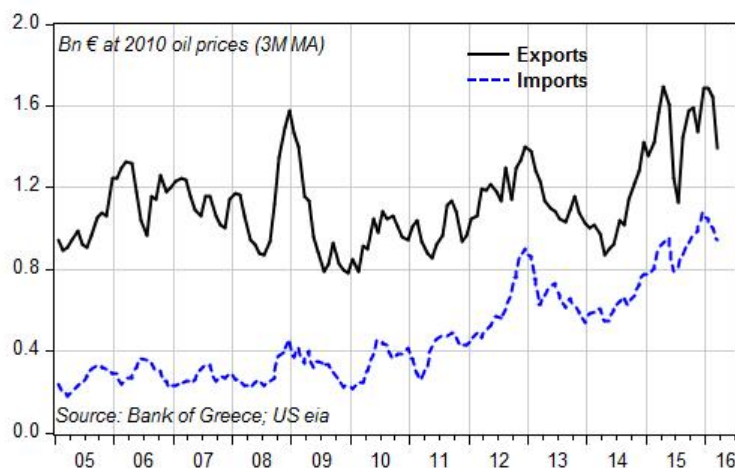


Figure 2 demonstrates the dynamics of real wages, productivity, and unit labor costs,¹ showing that the internal devaluation, indeed, was effective in lowering both nominal and real wages. Real wages were moving in line with productivity up to the 2009 recession, and after peaking in 2010 they have been falling by as much as 16 percent, attained in the first quarter of 2013, and kept falling slightly less than prices up to the second quarter of 2016, recovering a mere 2 percent against their 2013 low. The decline in productivity started earlier, in 2007, and was less dramatic; productivity recovered after the last quarter of 2011 but has been falling since the beginning of 2015. Unit labor costs fell as well, by as much as 16 percent in the third quarter of 2014—a result of the rapidly falling nominal wages and the recovery in productivity—but then began to recover as a result of the decline in productivity, which has not been offset by an equiproportional fall in the nominal wage.

Relative to this dramatic fall in wages and unit labor costs, the decline in prices has been slow. The consumer price index is now only 6.4 percent lower than its peak in 2012, and a similar order of magnitude is obtained for any price index in which oil plays no significant role. Price competitiveness has increased, at least up to 2015, for Greek exports of goods and services, since competitors in the destination markets have not experienced analogous levels of price deflation. Consequently, our measures of relative prices for Greek exports have fallen by 22 percent and 20 percent, respectively, between 2010 and present (it should be remembered, however, that the decrease in oil prices has played a large role in the decline in the relative price of exports of goods).

¹ Measured respectively as: (1) compensation of employees per worker, deflated with the consumption deflator; (2) real GDP per worker; and (3) the ratio of employee compensation to real GDP. Such measures do not represent a precise measure of average wages, or unit labor costs, since the employment measure includes the self-employed, who represent more than 30 percent of the labor force, while their earnings are not included as “compensation of employees.”

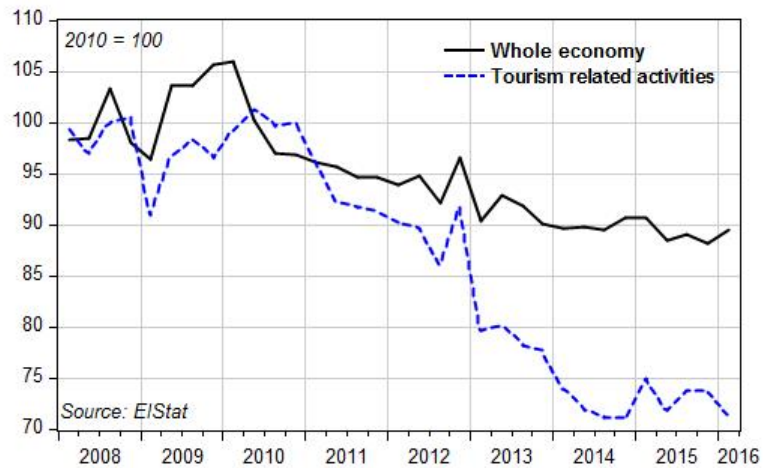
Figure 3. Greece. Trade in oil products



Imports of crude oil and exports of refined oil have also grown in relevance for Greece, and therefore another nontrivial component of the recent fall in both exports and imports of goods in nominal terms can be attributed to the price of oil: the trade deficit in petroleum products decreased from 9 billion euros to almost 3 billion euros between 2008 and 2015. In Figure 3 we report an estimate of trade in oil for Greece, obtained by deflating exports and imports with a 2010 index of the price of oil per barrel. The chart clearly shows an increase in the specialization of Greece in transforming imported crude petroleum products in order to export them once they are refined, with an upward trend starting around 2009. This process has implied an increase in the vulnerability of Greek export revenues to volatility in the price of oil. The price of oil is now (August 2016) 58 percent against its most recent peak in June 2014, and already 45 percent higher than the bottom value of 30 dollars per barrel reached in February 2016. This has implied a large fall in revenues from exports of oil products for Greece—as well as an even larger reduction in the value of oil imports. While movements in oil prices generate changes to both exports and imports, the latter component prevails, so that, should oil prices move up, this would contribute to deterioration in the trade account.

To be sure, as reported in Figure 1, there was an improvement in exports from 2009 to 2014, but this was from a combination of many factors not related to the internal devaluation policy imposed by Greece's international lenders. These factors include the recovery of global demand after the Great Recession of 2007–9, increased specialization in petroleum refining discussed above, the shift of exporters to new markets (documented in Papadimitriou, Nikiforos, and Zezza 2014), and increased tourism due to conflicts and uncertainty in countries that are competitors in tourism.

Figure 4. Greece. Real average wages



Tourism-related activities were expected to play a major role in establishing a current account surplus. In fact, labor cost indices for tourism have fallen more (up to 2015) than for the economy as a whole, primarily due to the precarious nature of this sector’s employment.

In Figure 4 we report an estimate² of the real average wage in tourism-related activities, compared to the whole economy. In this sector, real wages hit a low at the end of 2014, falling as much as 30 percent below their peak in 2010, compared to a 9 percent drop for the economy as a whole over the same period. More recently, real wages seem to have stopped falling, in part due to the ongoing deflation and higher demand for trained workers, but they have not recovered: in the first quarter of 2016, real wages in the tourism industry were only 0.7 percent higher than the bottom level reached in 2014, while real wages for the economy as a whole fell an additional 1.2 percent.³ Price competitiveness may have played a role in the dynamics of tourism revenues, at least up to 2015.

² Our estimate is based on compensation of employees for a much broader industry, which also includes retail and wholesale trade, etc. The indices in Figure 4 are computed from the ratio of “compensation of employees” to the number of “salaried employees,” which we have adjusted for seasonality.

³ Wages in Figure 4 are computed from national accounts. Using the 2012=100 index of wages published by E/Stat for the whole economy, nominal wages peaked in the first quarter of 2010, and reached a low in the second quarter of 2015, at 29 percent below their peak value. In the last year, nominal wages have recovered by a modest 4.6 percent.

Figure 5. Greece. Exports of services

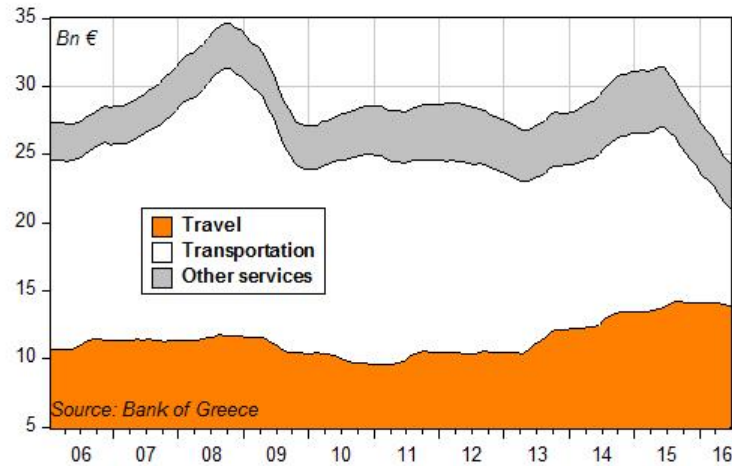
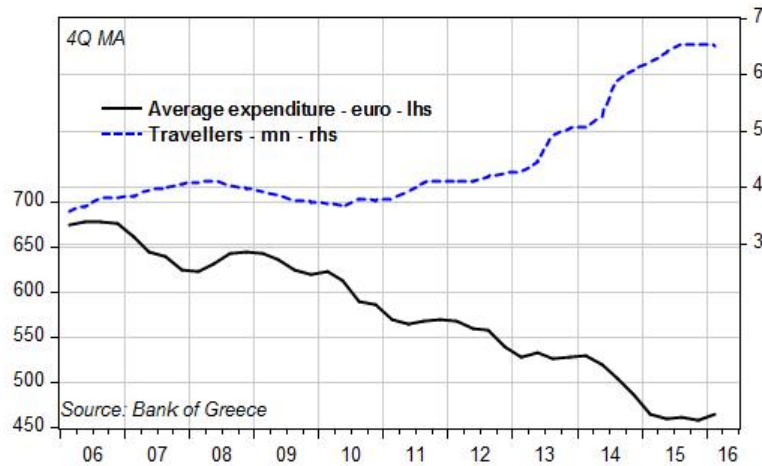


Figure 5 shows the major revenue components from the key categories of exports of services.⁴ A clear upward trend in revenues from tourism is emerging, starting around 2010. However, a much larger share of the revenues is attributed to transport activities, which have collapsed since capital controls were introduced in June 2015. The fall in revenues from transportation activities was larger than the increase in revenues from tourism in 2015. The slow upward trend in revenues from tourism is the result of two opposite trends: first, as Figure 6 shows, an upward trend in the number of inbound travelers that almost doubled between 2009 and 2015, increasing steadily from 14.9 million to 26.1 million; and second, a declining trend in the average expenditure of travelers, which fell by 22 percent over the same period.

The increase in tourism may therefore be due, at least in part, to a price effect: as the average cost of vacations to Greece goes down, more tourists choose the country as their destination. This sector may therefore be specializing in low-cost tourism, with a lower than expected impact on revenues. On the other hand, the latest data show a deceleration in the growth rate of arrivals and a flattening of the average expenditure.

⁴ The figure reports 12-month moving averages at annual rates.

Figure 6. Greece. Inbound travellers and their average expenditure



The other major determinant of the fast improvement in tourism may be attributed to political instability in competitor countries (e.g., Turkey and Egypt) that is unlikely to be reversed in the short term.

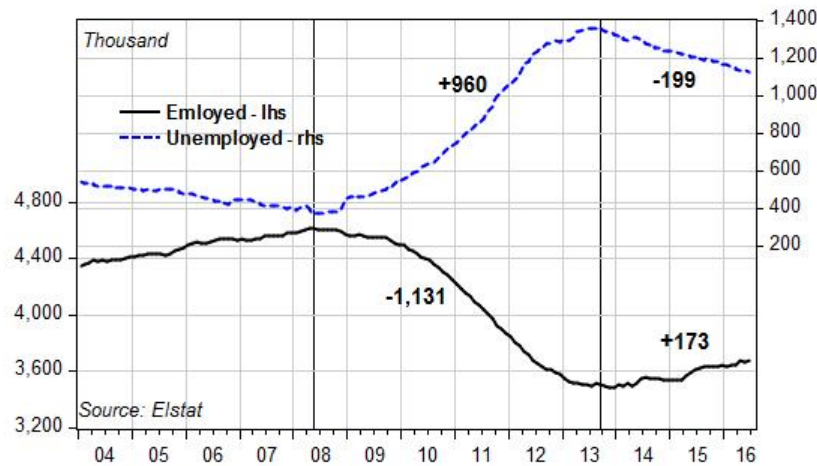
However, the improvement in price competitiveness of the tourism industry seems to have stopped since 2014. As shown in Figure 4 above, real wages have stopped falling, and the deflator for the value added of the tourism and related industries has also stabilized. It is possible that the fall in wages and labor cost has reached its limit: you cannot expect workers to survive without some level of a wage, although proposals for “voluntary unpaid employment” have been put forward in countries (like Italy) with a high unemployment rate for the young.

Although no further rehabilitation in the exports of services can be expected from additional improvements in price competitiveness since the value of price elasticity increases with time, Greece could expect to benefit from an increase in tourism and related activities as an increasing number of foreigners exploit the relative price advantage.

Employment and unemployment

The good performance of the tourism and tourism-related sector is having an impact on employment. Figure 7 shows the number of employed and unemployed persons in Greece, with the two vertical lines denoting the bottom level of unemployment, in May 2008, and the top level, in September 2013. Over the 2008–13 period, the Greek economy lost more than one million jobs, with an increase in unemployment of close to one million people. The difference between the increase in unemployment and the jobs lost is due to the number of discouraged workers and net migration effects. The active population decreased by

Figure 7. Greece. Employment and unemployment



310,000 persons during the 2008–13 period, with an additional loss of 111,000 persons recorded since then (as of June 2016).

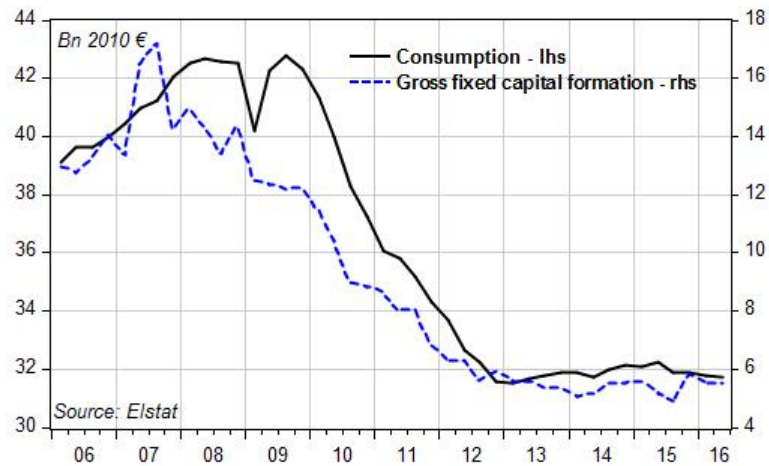
The large majority of newly created jobs are in the tourism industry, followed by wholesale and retail trade activities. The largest increase is in the “salaried employees” category, while “senior officials and managers” have dropped considerably and about half of the new jobs are part time, where the employees either could not find a full-time job or work full time but are paid less than for their full-time work. These labor conditions are consistent with the lower average wages in the tourism industry, a sign not at all encouraging if a recovery in domestic demand and exports is expected to be driven by this industry.

Domestic demand

Domestic private investment and consumption have remained very low, as demonstrated in Figure 8. Real investment is fluctuating around 5 billion euros, down from its peak of 17 billion euros in 2007. Looking at the gross saving of nonfinancial corporations, as reported in the accounts of institutional sectors, the positive signs coming from an increase between 2010 and 2013 have been reversed, with gross saving in 2015 falling 2 billion euros below its level in 2014. The latest available figure for the first quarter of 2016 shows a further decline, and as long as this measure of internal finance is relevant for investment prospects, there are no signs for optimism.

Turning to consumption, we note that it remains flat, still down 29 percent from its last peak in 2009. Some commentators writing in various bank research reports (e.g., Piraeus Bank 2016) argue that consumption will not decrease further despite the new round of austerity that will take effect in the coming

Figure 8. Greece. Consumption and investment



months. It is suggested that households will try to maintain their living standards even when their disposable income declines by decreasing their saving ratio.

We view it differently, however, since it is difficult to expect households to go deeper in their (negative) saving rate or borrow when consumer credit for the average household has mostly dried up. In Figure 9, we report the two available measures of net lending published by ElStat, based on its estimates of household disposable income and expenditure, and by the Bank of Greece, based on changes in financial assets and liabilities. Since the two measures are the results of different surveys, they exhibit discrepancies

Figure 9. Greece. Household net lending

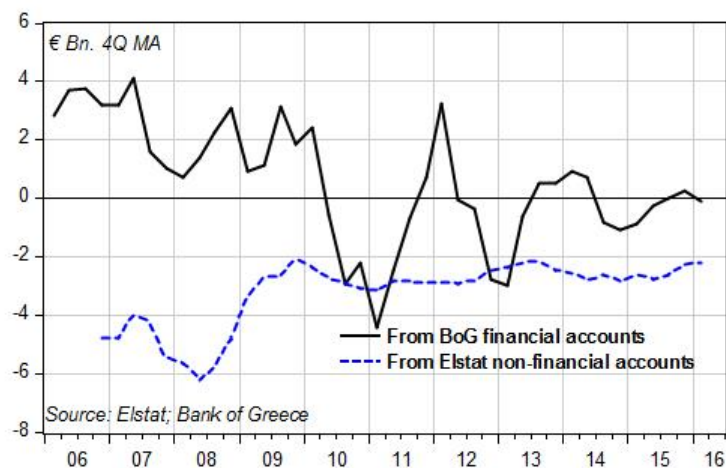
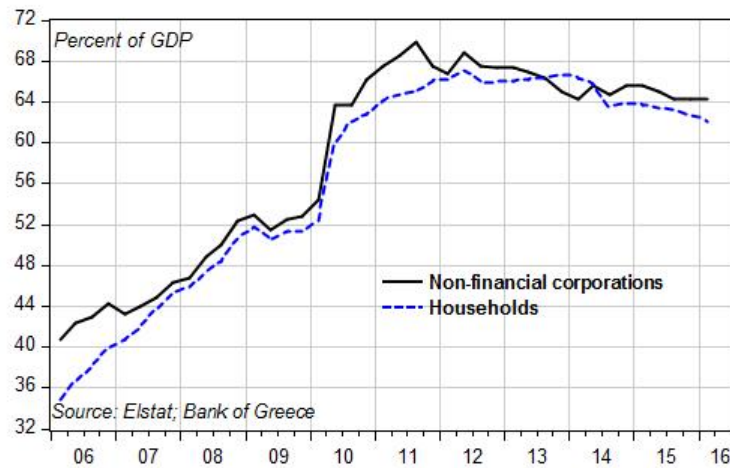


Figure 10. Greece. Private sector loans outstanding



that, in the case of Greece, have often been considerable,⁵ with the central bank usually reporting a more optimistic measure of the financial position of Greek households. In any case, both measures report that households' expenditures exceed their disposable income, and therefore an increase in the propensity to spend implies either an increase in borrowing—unlikely to happen—or an even faster disposition of financial assets.

As Figure 10 shows, households instead continue deleveraging or go bankrupt. Despite the continuing fall in GDP over the last five years, the outstanding loans of the private sector decreased from a gross stock of debt equivalent to 67 percent of GDP at its peak in 2012 to just above 62 percent at the end of 2015.

Similarly, Figure 10 shows a decline in the gross indebtedness of nonfinancial corporations, obtained by adding up short-and long-term loans (the debt in securities has practically disappeared). Nevertheless, the overall level of gross indebtedness is still very high relative to GDP, confirming the fragility of the financial condition of the Greek economy and its still shaky banking sector, as evidenced by the increasing number of nonperforming loans.

Fiscal policy

The government reported a net primary surplus for 2015, but, in fact, the accounts for the general government ended up with a primary deficit of 6 billion euros for the year, down from a small surplus of

⁵ The discrepancies may arise because of different reasons: underestimation of household disposable income, problems allocating real and financial flows to institutional sectors, etc.

700 million euros in 2014. The primary deficit was almost entirely offset by the net government transfers to the capital account—amounting to 5.4 billion euros—that were needed for the latest bank recapitalization, which occurred in the last quarter of 2015.⁶

Other major items of expenditure either remained flat (social contributions) or decreased in 2015. Final consumption expenditure dropped by almost 2 percent at current prices, while interest payments went down by 500 million as compared to 2014.

On the revenue side, an increase of 400 million euros in indirect tax payments, together with an increase in social contributions of the same magnitude, was just enough to offset the drop in revenues from taxes on income and wealth, which were 800 million euros lower in 2015 as compared to 2014.

It is worth remembering that an increase in nominal tax revenues, on the face of a decline in nominal income, is tantamount to an increase in the ex post tax rates.

Recently released figures from the quarterly nonfinancial sector accounts for the first quarter of 2016 show a further decrease in some components of government outlays, most notably, fixed investment, which is 51 percent of what it was in the same quarter of 2015. Government consumption also dropped, by about 2 percent. At the same time, and somewhat unexpectedly given the fall in real output, both direct and indirect tax revenues increased, by 9 percent and 15 percent, respectively, over the same quarter of 2015. Social contributions also rose, perhaps explaining part of the increase in the “compensation of employees” discussed above. The fall in household disposable income—at 1.7 percent over the same quarter of 2015—must have been affected by the fiscal policy stance in this period.

The latest *State Budget Execution Bulletin*, published by the Ministry of Finance, for the period January–August 2016 sheds some additional light on the finances of the Greek government.⁷ State Budget Net Revenue for the period stands at 32 billion euros, around 1.2 billion euros above its level for the first eight months of 2015. Still, revenues lag behind the 2016 budget estimates by 0.6 billion euros. On the expenditure side, the overall budget expenditure was 1.1 billion euros above its 2015 level (33 billion euros against 31.9 billion euros) but, more important, 3.5 billion euros below its 2016 budget target. More specifically, ordinary budget expenditure has slightly increased compared to 2015 by half a billion euros (30.8 billion against 30.3 billion) but is 2.5 billion euros below the 2016 budget estimates. Public investment

⁶ The general government account shows an outflow of 7.8 billion euros in the last quarter of 2015 but an inflow of 4 billion euros that is not recorded as outflows from other sectors, and therefore must be the result of simply summing up the transactions of the central government to those of local governments, rather than a customary consolidation of the accounts.

⁷ Available at: minfin.gr/sites/default/files/financial_files/STATE_BUDGET_EXECUTION_BULLETIN_AUGUST_2016_preliminary.pdf.

has also increased by the same amount (0.5 billion euros), but it is also around 1 billion euros below its budgeted target level.

In summary, the *State Budget Execution Bulletin* shows that the government has managed to increase its revenues but not as much as the budget was prognosticating. This discrepancy is more than offset on the expenditure side, where there is a slight increase over the previous year, but at the same time there is also a very significant lag compared to the targets of the 2016 budget.

It should be mentioned that the numbers in the *Bulletin* should be treated with caution because it is possible that some of the government expenditures have been pushed back to a later date. It is therefore doubtful that by the end of the year expenditures will be that far below its estimated budget level.

As is customary in these Strategic Analysis reports, we first simulate a baseline scenario incorporating basic assumptions about the present and likely future trajectories of key variables. Once we obtain the baseline scenario we then use it to form other alternative plausible scenarios. For our baseline we assume that the government will implement the measures contained in the latest (2015) MOU (see Reuters 2016; Piraeus Bank 2016), which are expected to yield a cumulative increase in government revenues as detailed in Table 1 below.

Table 1. New fiscal measures (millions of euros)				
	2016	2017	2018	2019
VAT reforms	255	437	437	437
Tax reforms	298	382	456	456
Personal income tax reforms	1,700	1,700	1,700	1,700
Excise duty tax reforms	597	597	610	610
Pension reforms	1,206	1,903	2,571	2,708
Other reforms	-221	-234	-247	-260
Total measures	3,835	4,784	5,526	5,650
<i>Source: Piraeus Bank (2016)</i>				

We observe that the bulk of the austerity measures are expected from the increase in revenues from direct taxes and changes in reducing benefits of the pension system. Given that direct tax receipts in 2015 were 16.5 billion euros, an expected increase of more than 10 percent is indeed a very bold assumption, given the likely recessionary impact of the new round of fiscal austerity.

Moreover, social contributions were 24.4 billion euros in 2015, so the austerity plan will be reducing this expenditure by 10 percent from 2018 onward, in direct opposition to what would logically be assumed of an ageing population: the number of retirement-age Greeks as a share of the total population is growing steadily at an annual rate just below 1 percent.

Although the achievement of such targets in light of the new austerity seems unlikely, especially on the basis of their impact on income and sales, we will nevertheless use the projections in Table 1 as the source of our new baseline scenario.

No recovery in sight

Our new baseline projections include data available up to the second quarter of 2016, with the exception of sector accounts, which are available only up to the first quarter of 2016. Monthly data have been updated to May 2016, or August 2016 for some readily available variables such as stock market prices and exchange rates.

As usual, we adopt “neutral” assumptions as much as possible for projecting the exogenous determinants of the Levy Institute’s macroeconomic model for Greece. We assume, for instance, that the stock market index will stop falling—it is now at its lowest level ever—but not increase. A similar assumption is made for housing prices, which have fallen by 42 percent since their peak in 2008, although this decline has slowed recently.

We further assume that price deflation will continue in 2016 at a rate of 1 percent, with prices stabilizing afterward and monetary policy maintaining interest rates at their current very low level.

We also expect that Greece will keep receiving capital transfers from European institutions to the tune of 10 billion euros per year, which will be used to meet existing debt commitments. In this case, the impact of such transfers to the real economy will be minimal, as it has been in the last few years.

In more detail, the government, according to the schedule available from the *Wall Street Journal*,⁸ has three tranches of debt coming to maturity, as shown in Table 2 below.

	Treasury bills	IMF; ESM; ECB	Total
2016	4.7	6.1	10.8
2017	6.5	9.2	15.7
2018	0	6.0	6.0

Given that the government has an additional growing debt in arrears, new loans from the troika of 10 billion euros per year will barely be enough to roll over the existing debt coming to maturity, so that fiscal austerity needs to generate an overall government surplus—and not merely a primary surplus—in order to reduce the existing level of the debt. As it will emerge from our simulations below, such a policy

⁸ Available at: graphics.wsj.com/greece-debt-timeline/

would be devastating for a country that has already experienced an extraordinarily long and deep recession, with a sharp increase in unemployment and poverty. Debt forgiveness, more than debt restructuring, is needed, as we have argued in Nikiforos, Papadimitriou, and Zezza (2016).

In our baseline, we assume that fiscal policy will meet the targets on fiscal revenues, as well as reduce expenditure as detailed in Table 1 above. In addition, we assume that the government will be able to increase public investment by 1 billion euros in 2017 and pay back 1.6 billion euros in arrears in 2016, along with an additional 1 billion euros in both 2017 and 2018.

Our model shows that, conditional on our assumptions, and if the government is indeed able to raise taxes and cut pensions as prescribed in the MOU, the economy will experience another recession in 2016, with real GDP falling by 0.7 percent. In 2017 the increase in public investment, coupled with the disbursement of arrears, will just be sufficient to compensate for the impact of the new taxes and lower pensions that will be fully operational. We expect exports, and especially exports of services, to recover somewhat starting in 2017, bringing the economy back to a growth rate of only 0.2 percent in 2017, and 1.4 percent in 2018.

It is worth keeping in mind that some components of aggregate demand—notably, exports of transportation services—dropped considerably in the second half of 2015 against the first half of that year, and have remained relatively stable at the new, lower level. The recession we project, therefore, is not simply the result of the new austerity measures. More specifically, exports of transportation services have fallen by 47 percent in the last three quarters compared to the same period a year earlier. At annual rates, this amounts to a drop of more than 6 billion euros. The primary reason for this drop seems to have been the imposition of capital controls at the end of June last year. Data from the Bank of Greece show a very sharp break in the revenues from transport services starting in July 2015. In addition, part of the fall in revenues may be attributed to a global slowdown in transport activities, as documented by the Baltic Dry Index (BDI), which in the first quarter of 2016 was 63 percent below its previous peak in 2015. However, the correlation between the BDI and the value of Greek revenues from transportation services is rather low, and therefore does not explain all of the slowdown in this item in the balance of payments.

We anticipate that the government will be able to meet its commitments in terms of the primary surplus, and even realize a primary surplus above target. The primary surplus in 2016 will be 4.4 billion euros, and it will increase further in 2017 and 2018.

Despite our expectation of a large reduction in the value of imports, the strong fall in exports of services (primarily transport services) implies a deterioration in the current account balance in 2016. The

current account balance will improve from 2017, mainly because exports will stop falling, and increase relative to 2016, while imports will be lower given the drop in real GDP and disposable income.

In our first alternative scenario we estimate the possible impact of significant payments toward government accounts in arrears in 2017, as well as additional government investment. To this, we turn next.

Scenario 1: The impact of government arrears and public investment

In order to meet the targets agreed to in 2015 for the government primary surplus, a large part of government expenditure has not yet been paid, generating a growing amount in arrears. The government has now promised to pay back as much as 3.5 billion euros, using the MOU tranches of funds by the end of 2016 and an additional 2 billion euros by the end of the second quarter of 2017.

What would be the impact of the government extinguishing this part of its debt in arrears? The answer is not straightforward, since our model is based on national account statistics, which record government expenditures at the time they are incurred, while the payment in arrears would be a financial transaction where the government is reducing its debt with the private sector, and the private sector is receiving liquid assets in exchange for its credits toward the government. Moreover, it is not clear to what extent—after the payments toward the arrears—the recipients will increase their expenditure or just run down debt.

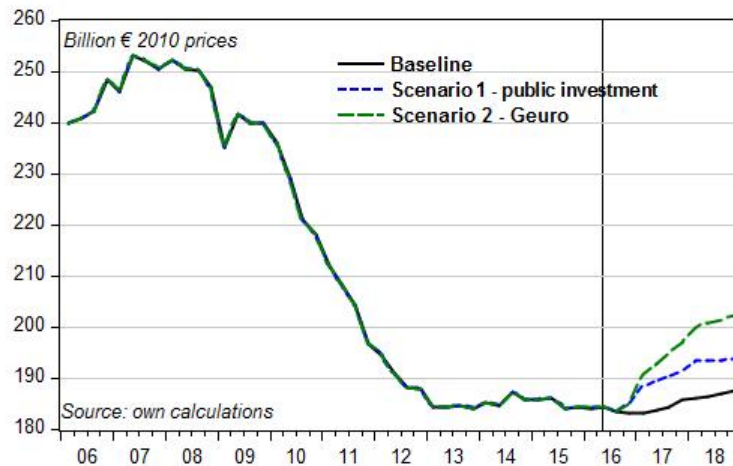
For the purposes of our simulation, we have chosen to assume that the value of the arrears will be spent or saved as if it were a (temporary) increase in disposable income. It must be noted, however, that this additional liquidity does not constitute a permanent increase in income, and therefore its effect on expenditure and saving will fizzle out rather quickly.

While in the baseline we assumed 1.6 billion euros in arrears to be paid back in 2016, in this scenario we assume that 3.5 billion euros will be paid back in 2016, and that 2 billion euros will be repaid in 2017.

In addition, we assume that the government increases public investment by 2 billion euros in 2017, and by 4 billion euros in 2018, relative to the baseline.

The effects of this scenario on real GDP are depicted in Figure 11, against the baseline projections.

Figure 11. Greece. Real GDP under alternative scenarios



Using these assumptions, the economy returns to a more robust growth rate from 2017. As Figure 11 shows, the recovery is substantial, but—being mainly based on public investment—it is not enough to generate a rapid increase in employment.

Scenario 2: Creating jobs with a fiscal currency

In our second and final scenario, we update our analysis on the possible impact of a fiscal expansion financed through the emission of a fiscal currency, the Geuro, that the government can start issuing to avoid the fall in nominal wages and pensions, and to finance employment programs. This scenario is built on top of our previous scenario—that is, we are assuming a fiscal boost in addition to the increase in public investment projected in scenario 1.

We assume that starting from the first quarter of 2017, the government introduces a nonconvertible “fiscal currency” along the lines discussed in our previous reports (Papadimitriou, Nikiforos, and Zezza 2014, 2015, 2016). 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 2016).

To calibrate the projection, we use the same parameters adopted in January 2016, although we adjust the volumes to match the most recent data on government outlays and revenues. 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 is available (from the second quarter of 2015 to the first quarter of 2016), government revenues from “taxes on production and imports” were 28.7 billion euros, “taxes on income and wealth” an additional 17

billion euros, and “social contributions” amounted to 24.8 billion euros, for a total of 70.5 billion euros. This implies that annual demand for Geuros for tax purposes alone would be equivalent to up to 14.1 billion euros.

The main purpose for the introduction of the Geuro would be the gradual implementation of a program of public benefit work, where new jobs are provided—for the production of public goods—to people willing to work for a minimum wage, set at a level that is noncompetitive with employment in the private sector yet sufficient for obtaining a decent standard of living. Our estimates are obtained from Antonopoulos et al. (2014) and based on an assumed monthly gross wage of 586 euros, with an annual gross expenditure of 7.5 billion euros for 550,000 workers, including all other expenses (intermediate products, social contributions, etc.).

We propose to pay public benefit 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 can be financed by paying 10 percent of wages in the public sector in Geuros (for an estimated annual amount of 2.1 billion euros) and 5 percent of pensions and other social benefits in Geuros (for an estimated annual amount of 1.7 billion euros).

Adopting these measures, net government payments in euros will decrease by roughly 3.9 billion euros, while Geuro emission to fill the gap in financing the public benefit work program would amount to 3.6 billion—well below the expected demand arising from the possibility of using Geuros for tax payments. We therefore assume that additional government expenditure can be financed using Geuros, for a maximum of 2 billion euros per quarter from the beginning of 2017 to the end of our projection period.

Since it is not feasible to put such a large-scale employment program in place immediately, we assume the size of the public benefit work programs will increase incrementally by 25,000 people each quarter, with an overall increase in employment of 200,000 by the end of the projection period. This implies a much smaller expenditure in Geuros than what is feasible, so we also assume that additional public investment is financed through Geuro emission, at 800 million/year, and that pension payments are increased by 10 percent, for an additional expenditure of about 3.2 billion/year.

We have simulated this scenario using our macroeconomic model, with the results reported in Table 3.

Using the assumptions above, the model shows that the additional expenditure in Geuros will be well below the amount of Geuros that can be used for tax payments; or, to put it differently, that the potential demand for Geuros for tax purposes will largely exceed the supply, so that there is no reason to

fear any inflationary pressures arising from Geuro emission. This argument applies for those who believe that an increase in the money supply generates a proportional increase in the price level: should this theory be realistic—which we doubt—our calculations show that the end-of-the-year increase in the money supply will be negligible. On the contrary, if the fiscal expansion financed through Geuro finance is unable to increase the domestic supply of both capital and consumption goods—due to the wreckage of the Greek industrial base caused by the prolonged recession—our results will be optimistic, and the impact on imports may be larger. This possible outcome can be alleviated by directing at least part of the fiscal expansion toward strengthening the productive capacity of Greek firms, or to encourage the creation of new businesses.

Table 3. Greece: Key indicators under alternative scenarios

	2015	2016	2017	2018
Baseline				
Real GDP (growth rate)	-0.3	-0.7	0.2	+1.4
Gov. total surplus (% of GDP)	-7.3	-0.8	-1.7	0.0
Gov. primary surplus (% of GDP)	-3.4	+2.6	+1.6	+3.3
Current account (% of GDP)	-0.8	-2.0	+0.5	+1.3
Scenario 1: Additional arrears and investment				
Real GDP (growth rate)	-0.3	-0.4	+3.0	+1.9
Gov. total surplus (% of GDP)	-7.3	-0.7	-1.8	-1.0
Gov. primary surplus (% of GDP)	-3.4	+2.6	+1.4	+2.2
Current account (% of GDP)	-0.8	-2.1	-0.3	+0.8
Scenario 2: Geuro ELR				
Real GDP (growth rate)	-0.3	-0.4	+5.2	+3.7
Gov. euro total surplus (% of GDP)	-1.9	-0.7	+0.8	+1.9
Gov. euro primary surplus (% of GDP)	-3.4	+2.6	+4.0	+5.0
Gov. Geuro surplus (% of GDP)	0.0	0.0	-1.3	-1.6
Current account (% of GDP)	-0.8	-2.1	-0.8	-0.1

As reported in Table 3, a Geuro plan like the one described here will not jeopardize the current targets in terms of the government primary surplus in euros, nor will it bring about a significant 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 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, in Table 3, may be pessimistic in that respect. 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 was not growing faster than the additional output generated domestically by the stimulus.

Conclusion

The Greek government is fulfilling most of the conditions—increasing taxes and reducing public pensions and other expenditures—imposed by its international lenders as agreed in the current, third MoU. The Eurogroup will most likely approve the disbursement of the second tranche of 2.8 billion euros at its meeting in October. As reported in the Greek media, recent voices have echoed Berlin’s intention to delay beginning negotiations for debt relief despite the promise made by European leaders last year to do so once the conditions were met and of which the government is so proud. On the positive side, Greek bonds may finally be included in the European Central Bank’s quantitative easing policy.

Our contention in this report is that 2016 is unlikely to end with improvement in the Greek economy’s GDP growth rate, despite the government’s pronouncements. Our simulations show, however, that if the arrears accounts are cleaned up and an increase in investment occurs, the government’s projection of 2.7 percent GDP growth in 2017 may come to pass. This, of course, is not a cause for celebration, since employment will not increase dramatically. Our second scenario, however, can provide robust growth from 2017 and beyond, together with very significant gains in employment. It has worked in other countries, and it can work in Greece.

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