



Levy Economics Institute of Bard College

Strategic Analysis

July 2013

Greece

THE GREEK ECONOMIC CRISIS AND THE EXPERIENCE OF AUSTERITY: A STRATEGIC ANALYSIS

DIMITRI B. PAPADIMITRIOU, MICHALIS NIKIFOROS, and
GENNARO ZEZZA

Introduction

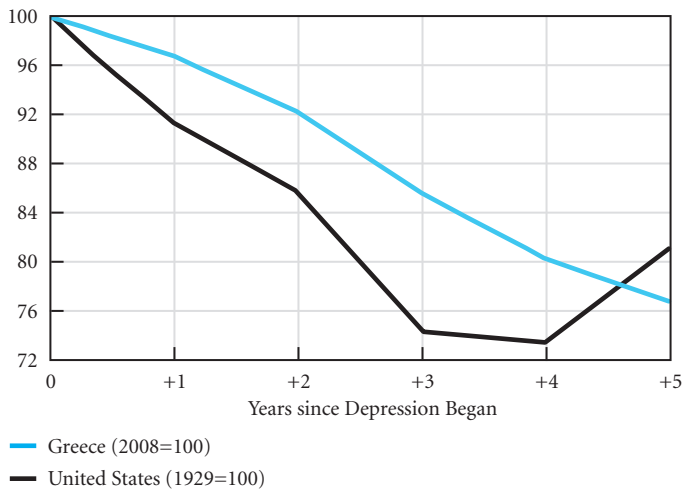
“Seen from Greece, the Great Depression looks good,” Floyd Norris (2013) observed in a recent column in *The New York Times*.

In 1934, five years into the Great Depression, the United States had experienced a loss of about 20 percent of GDP but its economic performance had begun to improve, reversing course and moving toward growth. In the case of Greece, which has lost more than 20 percent of GDP since the onset of the global financial crisis in 2008, GDP continues to decline (Figure 1). Unemployment in the United States began to decrease after the fourth year of the Depression, while in Greece it continues its upward trajectory, surpassing the highest US Depression-era level and showing no sign of reversing anytime soon (Figure 2). By 1934, personal consumption spending in the United States had started to recover, while in Greece it fell farther in 2012 than in any other year of the contraction. The most important difference between the comparable trajectories of these two economies is in government consumption spending (excluding investment in infrastructure). In the United States, such spending continued to grow during the '30s downturn, helping to arrest the economy's fall. In Greece, however, it has fallen severely, by 9.1 percent last year alone—one of the steepest declines in the country's continuing contraction (Norris 2013). And employment remains in free fall: over one million jobs have been lost since the peak in October 2008, a drop of more than 28 percent, while the “official” number of workers unemployed in March 2013 exceeded 1.3 million, or 27.4 percent of the labor force—the highest level in any industrialized country in the free world during the last 30 years (Figure 3).

The financial support provided by the European Social Fund and the Greek Ministry of Labour and Social Insurance as part of the Development of Human Manpower program is gratefully acknowledged.

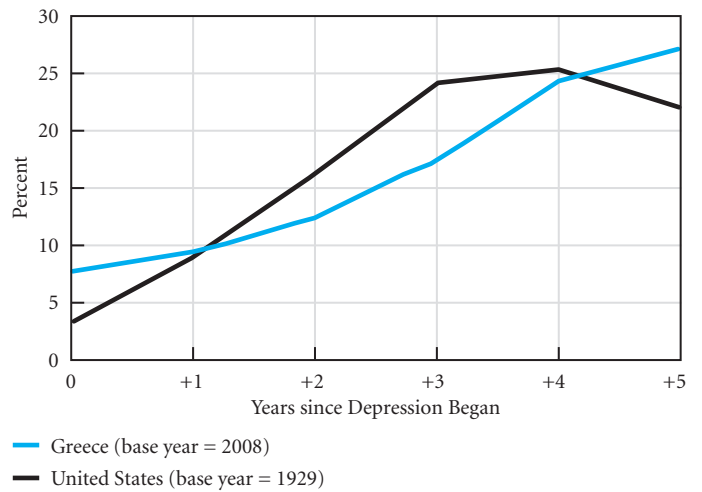
The Levy Institute's Macro-Modeling Team consists of President DIMITRI B. PAPADIMITRIOU, and Research Scholars GREG HANNSGEN, MICHALIS NIKIFOROS, and GENNARO ZEZZA. All questions and correspondence should be directed to Professor Papadimitriou at 845-758-7700 or dbp@levy.org. Copyright © 2013 Levy Economics Institute of Bard College.

Figure 1 Greece and the United States: Two Great Depressions—Real GDP Indices



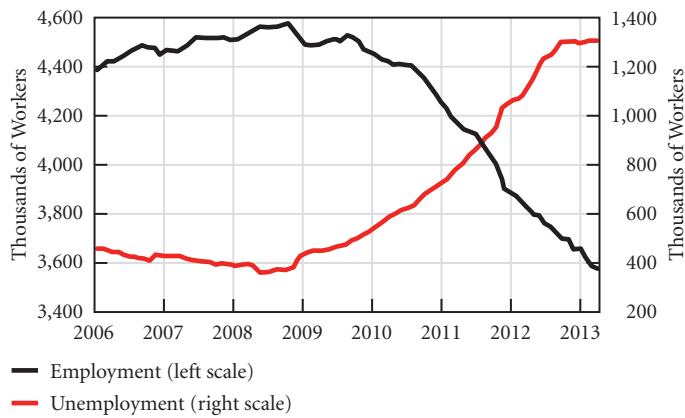
Sources: BEA; ElStat

Figure 2 Greece and the United States: Two Great Depressions—Unemployment Rates



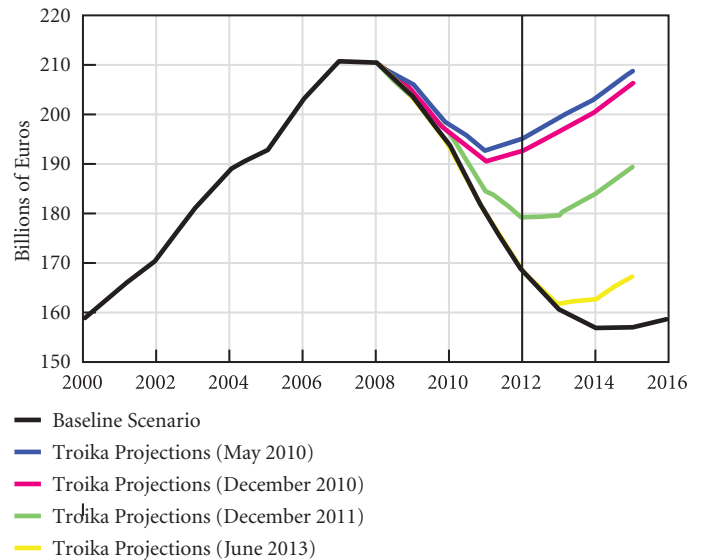
Sources: BEA; ElStat

Figure 3 Greece: Employment and Unemployment



Source: ElStat

Figure 4 Greece: Real GDP (2005=100)



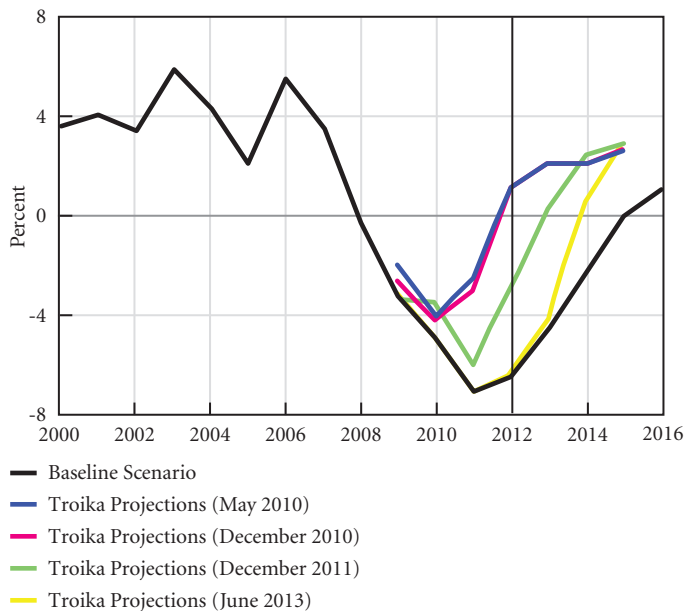
Sources: IMF; EC; authors' calculations

The current economic conditions in Greece are, by and large, the result of foolish policy based on a shaky economic theory that advocates “expansionary austerity,” along with labor market reforms, as the best recipe for medium- and long-term growth in countries that, like Greece, are running large government deficits and high levels of public debt as a percentage of GDP.

In this report we argue, on the basis of simulations drawn from the newly constructed Levy Institute macroeconomic model for Greece, or LIMG (see Papadimitriou, Zezza, and Nikiforos 2013), that prolonged austerity will result in a continuous fall in employment, since real GDP cannot grow fast enough to arrest, let alone reverse, the downward trend in the labor market. Our projections are therefore more pessimistic than those made by either the European Commission (EC 2013) or the International Monetary Fund (IMF 2013c) in its latest review of the Greek “economic adjustment” program. In a report issued in May, the IMF—a member, along with the

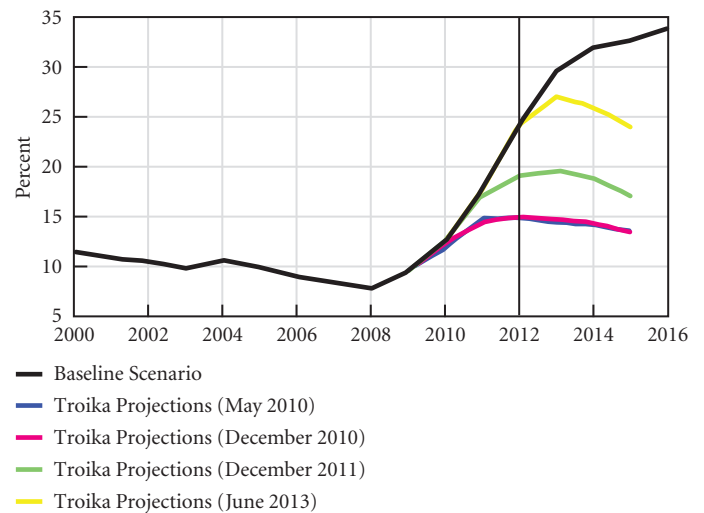
EC and the European Central Bank, of the group of international lenders known as the “troika”—acknowledged the serious errors in assumptions about projected annual deficits and debt-to-GDP ratios, growth of GDP, and unemployment rates emanating from the unrealistically low value of fiscal multipliers applied to spending cuts and tax increases (IMF 2013b). Figures 4 and 5 illustrate the troika’s successive erroneous projections for real GDP and real GDP growth, respectively; in each, a vertical rule denotes the last year for which we have historical data (2012) and the black line denotes our own baseline projections, should the current austerity policy be continued. Similarly, Figure 6 documents the successive projections of the troika as well as our own for the path of unemployment. With joblessness in Greece now above 27 percent—a stark indicator of the troika’s failure to accurately project the consequences of their own policies—it’s astonishing that EC and IMF officials continue to ask for more of the same. For example:

Figure 5 Greece: Real GDP Growth Rate



Sources: IMF; EC; authors’ calculations

Figure 6 Greece: Unemployment Rate



Sources: IMF; EC; authors’ calculations

Countries should press on with needed balance sheet repair and structural reforms. Long-standing structural rigidities need to be tackled to raise long-term growth prospects. Southern Europe needs to increase competitiveness in the tradable sector, especially through labor market reforms. . . . These measures will help reduce unemployment and rebuild competitiveness in the periphery. (IMF 2013a, 49)

Our baseline projection about loss of employment, shown in Figure 6, paints a completely different picture, with the present policy delivering an even greater unemployment rate—close to 34 percent—by the end of 2016. Despite the IMF’s mea culpa in its May report, both the IMF and the EC are still projecting a continuing recession for the first part of 2014 but a return to economic and employment growth in 2014 and beyond. This, of course, is impossible to achieve unless a coherent pattern of strong growth in the components of aggregate demand emerges well before the latter part of this year, given the normal lag between GDP growth and employment creation.

In the following section we investigate the determinants of aggregate demand, while in subsequent sections we analyze their plausible evolution over time, based on the troika’s projections

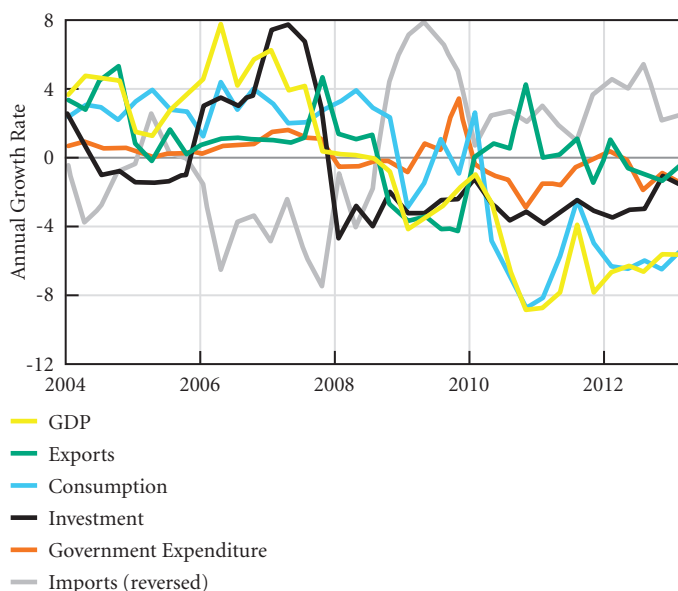
and our own evaluation; describe the assumptions on which our simulations are based; and offer policy proposals for the intermediate run. We should make clear, however, that these simulations are not short-term forecasts. Instead, we use the LIMG, which is based on a consistent framework of stock and flow variables, to trace a number of possible medium-term scenarios in order to evaluate strategic policy options.

Recent Developments in Aggregate Demand

Aggregate demand and its components have seen further declines since our last report (Papadimitriou, Zezza, and Duwicquet 2012). The last available data for real GDP growth show that during 2012 another 5.7 percent of output was lost, and the recent second estimate for the first quarter of 2013 continues the downward trend, with real GDP falling by 5.6 percent against the same quarter in 2012.

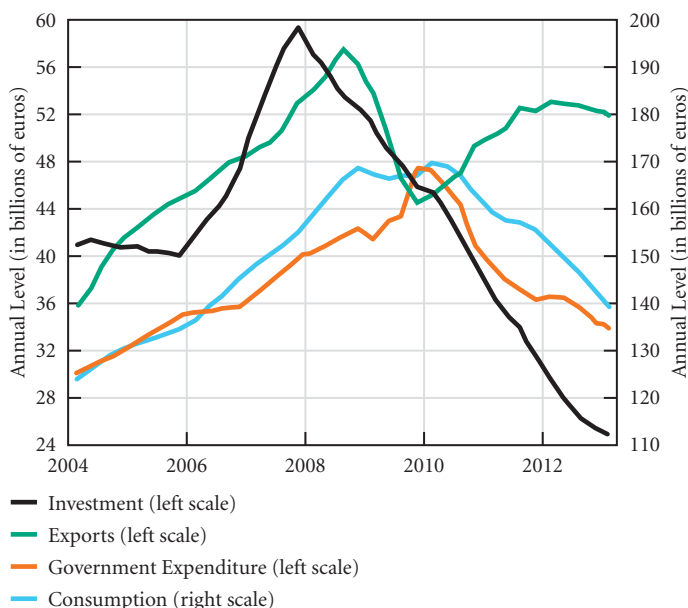
Figure 7 presents the contribution of each component of aggregate demand to the real GDP growth rate as of the first quarter of 2013. Each series is obtained by multiplying the annual growth rate of the respective component of demand by its share in GDP for the previous quarter, so that the real GDP growth rate can be obtained by summing up each line.

Figure 7 Greece: Contributions to Real GDP Growth



Source: ElStat

Figure 8 Greece: GDP Components



Source: ElStat

The growth rate of imports is shown in Figure 7 with the sign reversed, because of its negative impact on GDP growth. The annual level of each contribution in money terms is shown in Figure 8.

As shown starkly in Figures 7 and 8, the major determinant of growth before the downturn was consumption, which has since turned into the major GDP reducer, steadily declining in the last three years by more than any other component. Investment boomed for two years before the beginning of the crisis in 2007 but has since reversed course, declining at a rate of 3–4 percent. Real government expenditure was also a significant contributor to both aggregate demand and growth up to 2009 but has been declining procyclically since then under the heavy pressure applied by the troika to meet the deficit and debt targets agreed upon in exchange for the bailout programs. What had been the normal role for government to play during a downturn became antithetical to the troika’s prescriptions. The feedback loop from the steep decline in public expenditure has been leading the way to a deepening recession. Figure 7 clearly shows the path of GDP growth closely following that of consumption as the component with the heaviest weight in determining aggregate demand.

Exports, with their unstable trend before and after the crisis, have so far been unable to offset the drop in domestic demand. Indeed, they were decreasing, on an annual basis, in the last quarter of 2012. The feeble performance of exports demonstrates yet another failure of the troika’s policies and its insistence on the forced reduction in unit labor costs—by decreasing wages via government fiat—as a means of increasing competitiveness and achieving export-led growth.

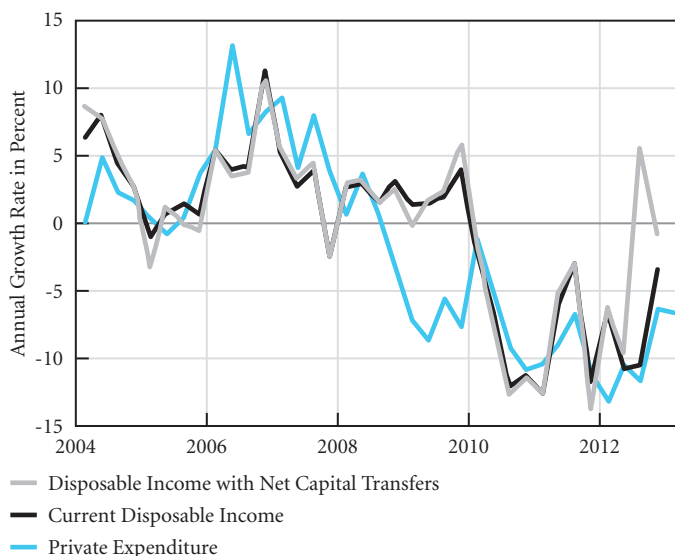
At the same time, this strategy has, naturally, been proven detrimental to domestic consumption, despite the (now discredited) theory¹ that provided the academic seal of approval for the troika policy—the claim that “expansionary austerity” via severe fiscal contractions would not have any discernible effects on output if they were obtained through cuts in public spending rather than increases in taxation, allowing market-based incentives to work properly. Finally, the large drop in imports, a result of the deep recession, contributed minimally to real GDP growth.

What is shown in Figure 8 is crucial for our simulated scenarios. Notice that, almost at the same time, exports grew as government expenditure started to contract at the end of

2009, but so far, the increase of almost 8 billion euros from their trough has been insufficient to balance the fall in government expenditure of 13 billion euros measured over the same period. When austerity began, in 2009–10, the economy was already experiencing a fall in investment that had started at the end of 2007, coincident with the beginning of the global Great Recession. In money terms, investment has fallen by almost 34 billion euros since its peak at the end of 2007 and in the first quarter of 2013 reached a record low of 25 billion euros. Contrary to the claim of the “expansionary austerity” theory estimating the fiscal multiplier to be close to zero, or even less than zero, the fall in government expenditure and investment has proven to yield a much larger output loss, rendering the value of the multiplier higher than 2.5. In concert with the drop of output and employment, consumption declined by almost 30 billion euros, as shown in Figure 8.

While it might be possible for exports to grow further, it is very unlikely that the increase in *net* exports could be strong enough to counter the fall of the other components of aggregate demand. We will next analyze the determinants of these constituent parts of GDP growth to set the stage for the model’s simulations.

Figure 9 Greece: Real Disposable Income and Private Expenditure



Sources: ElStat; authors’ calculations

Private expenditure

In an earlier report, we found that private expenditure—the sum of consumption and investment—was driven by the private sector’s disposable income and net financial wealth, together with the additional effects of access to borrowing and capital gains arising from the equities market (see Papadimitriou, Zezza, and Duwicquet 2012).²

The dynamics of real disposable income and private expenditure are illustrated in Figure 9. It is interesting to note that, when comparing Figure 9 with Figure 8, private expenditure grew faster (slower) than income when investment was buoyant (depressed). Figure 9 also traces the two different measures of real disposable income: with and without net capital transfers. The former experienced a large spike in the third quarter of 2012, reflecting a transfer of capital from the public sector to the banking sector to prop up a failing bank and prevent another crisis from occurring, but with no discernible stimulus to aggregate demand. Despite the apparent improvement of all three variables in 2012, their outlook still seems negative.

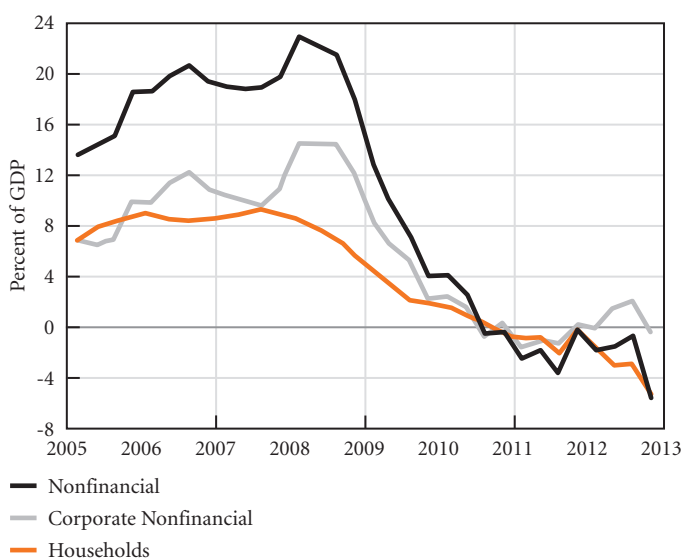
Net financial wealth of the private sector measured at cost³ has declined steadily since Greece entered the eurozone, and since foreign debt exceeded government debt in 2008, the private sector has become a net debtor, according to our measure.⁴ As

the austerity programs continue to contribute adversely to the net financial wealth of the private sector, some improvement may eventually come from any decrease in foreign debt resulting from improvement in the current account.

Our econometrics reveal that additional effects on private expenditure are obtained by the availability of credit, and by the willingness of firms and households to borrow. The latest data available (fourth quarter of 2012) for household and corporate nonfinancial borrowing are shown in Figure 10. The figure clearly illustrates that the rate of borrowing before the crisis was increasing, contributing to a rising debt-to-GDP ratio, with the household sector borrowing at an average rate of 8 percent of GDP over the 2005–08 period, while the corporate nonfinancial sector borrowing rate reached 15 percent and average borrowing for the entire private sector climbed to 23 percent in 2008, against an average nominal GDP growth rate of about 6 percent. Once the crisis hit, both sectors moved precipitously toward negative territory, reflecting liquidity constraints, deleveraging, and other effects commensurate with the downturn. The analogous levels of the stock of accumulated liabilities (debt) of these two sectors are reported in Figure 11.

Examining Figures 10 and 11 more closely, we notice that, together with negative borrowing, GDP also falls, pushing the

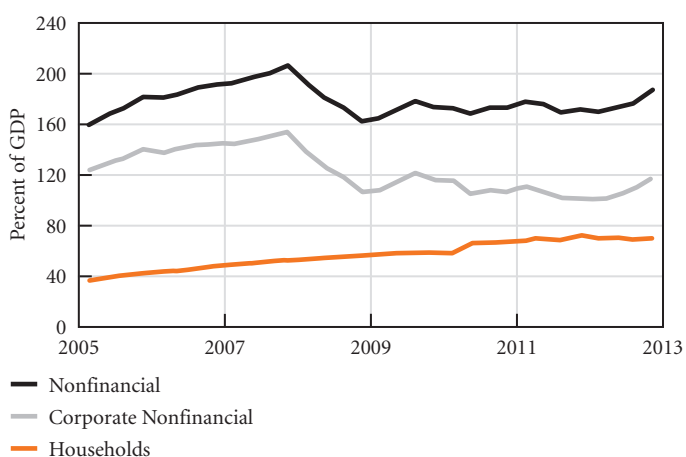
Figure 10 Greece: Private Sector Borrowing



Note: To eliminate seasonal fluctuations, data are presented as four-quarter moving averages.

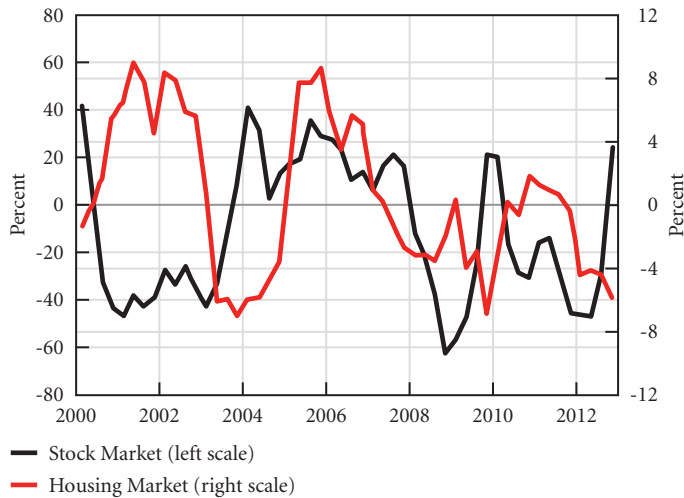
Sources: Bank of Greece; ElStat

Figure 11 Greece: Private Sector Gross Debt



Sources: Bank of Greece; ElStat

Figure 12 Greece: Relative Changes in the Price of Assets

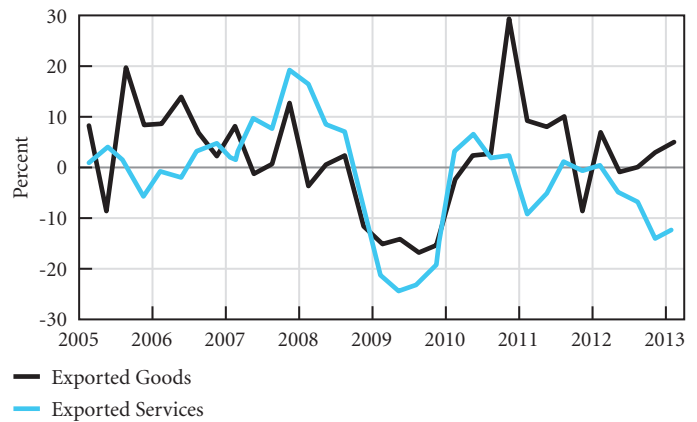


Sources: Bank of Greece; ElStat

stock of debt relative to GDP toward an increasing trend; most noticeably, in the corporate nonfinancial sector. This forms the basis of our assumption in running the model's simulations, in that the negative borrowing trend will continue as long as real GDP keeps falling.

The value of equities and housing are also drivers of investment and consumer spending. Our econometric analysis has shown that net capital gains from the equities market increase private expenditure at a faster rate than disposable income alone, while the evidence of the effects of net capital gains from the housing market on private expenditure is much weaker. Figure 12 illustrates two measures: net capital gains from the stock and housing markets obtained from the annual growth in price indexes, net of nominal GDP growth. The two trend lines correspondingly measure the net gain obtained each year from buying equities or (existing) houses against the gains obtained by investing in activities with a return equal to output growth plus inflation. Our measures show that housing prices increased considerably in the first part of the 2000s, when the stock market was not performing well, whereas both markets were subsequently profitable for a few years, then plummeted as the recession took hold. The crash in the stock market price index, from the previous peak of 163 in the third quarter of 2007 to 19 in the second quarter of 2012 (a fall of more than 88 percent), was so dramatic that the 63 percent increase witnessed between the second quarter of

Figure 13 Greece: Real Growth Rate of Exports



Source: ElStat

2012 and the first quarter of 2013 barely lifted the value of the market to where it was at the end of 1995. Although it is conceivable that the increase in the equities market will continue, from the combined effects of public enterprise privatizations and selected companies' depressed values, it is doubtful that the lack of liquidity in the banking sector now limiting the financing options of corporations will generate investment.

House prices, on average, continue to slide. Average prices have fallen dramatically from the previous peak of our calculated index at the end of 2005, reverting to their 2003 level. We see no reason for a reversal of this downward trend, but assume that housing prices will stop falling during our simulation period ending in 2016.

Net exports

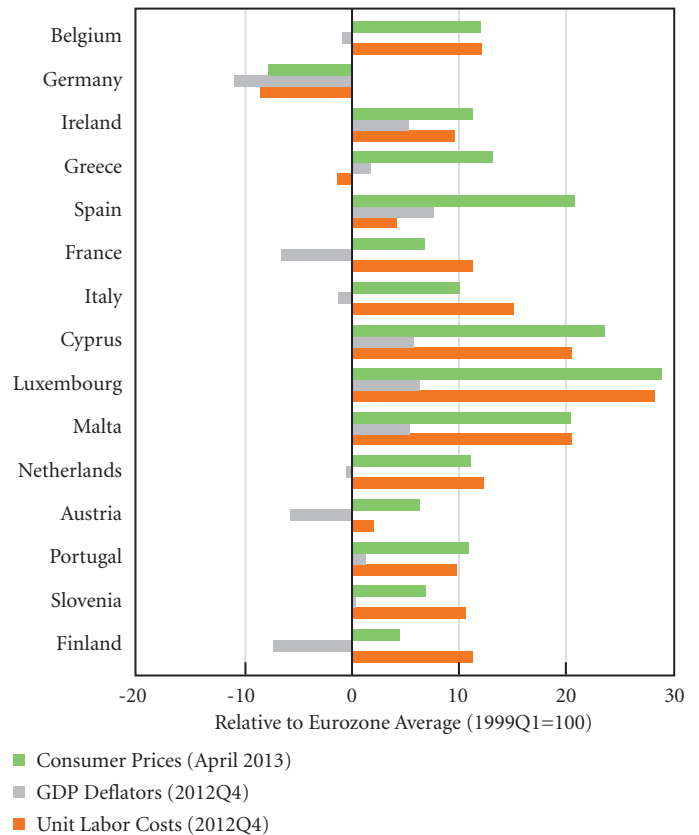
We saw in Figures 7 and 8 that net exports are augmenting real GDP growth mainly because of the drop in imports. Figure 13 breaks out the corresponding real growth rate of exported goods and services. The former increased very significantly in 2010, recovering some of the drop that occurred after 2008, but this does not indicate a stable trend, even though a small increase has been achieved since the second quarter of 2012. On the other hand, the growth rate of exports of services, which exceeded that of goods exports prior to the crisis, has been mostly negative, and has experienced yet another major decline since the beginning of 2012.

As discussed earlier, the strategy imposed by the troika aimed at increasing exports through an internal devaluation (i.e., a decrease in unit labor costs) has not brought about the anticipated effects, despite the reduction in relative unit labor costs achieved since 2010. The current levels of three harmonized competitiveness indexes based on consumer prices, GDP deflators, and unit labor costs are depicted in Figure 14. The indexes are contrasted on the basis of the first quarter of 1999, and are structured such that an increase in value implies a decrease in competitiveness. Greece had experienced one of the largest drops in competitiveness—measured by unit labor costs—before the start of the recession but has since reversed course, at least in terms of unit labor costs, showing the second-largest decrease after Germany, which systematically maintains lower values for all competitiveness indexes over the entire 1999–2013 period. Figure 14 also illustrates that, while relative Greek unit labor costs have declined, consumer prices have not followed suit.

Furthermore, while the eurozone debt crisis and worldwide fiscal austerity have, in general, dampened export growth, the countries that import the bulk of Greek goods and services are outside the euro area (about 7.5 percent of GDP in 2012), as shown in Figure 15. This figure provides a breakdown of Greek exports by destination country as a ratio of GDP. What emerges is that Greece has suffered a reduction in its exports to Germany, once its major foreign market, in addition to a decline in exports to other euro-area countries. Exports to the United States have remained stable but insignificant throughout, accounting for less than 1 percent of GDP. Thus, even a major increase in domestic demand among Greece’s trading partners would have a minor impact on the country’s aggregate demand and employment.

The composition of exports by technological content from 1990 to 2011, obtained from the STAN database of the Organisation for Economic Co-operation and Development (OECD), is shown in Table 1. We report the first value available (1990), the value before Greece’s accession to the eurozone (2000), the value before the recession (2006), and the last available data (2011). What emerges is that the strategy of reducing unit labor costs to boost competitiveness has been associated with relatively insignificant growth in exports with higher technological content, while exports of

Figure 14 Eurozone: Competitiveness Indexes, by Country



Note: The Harmonised Competitiveness Indicator based on consumer prices is not available for the eurozone as a whole and has been computed as the simple average of the indices for all euro-area countries except Slovakia, an outlier whose HPI increased by almost 100 percent between 1999 and 2013, against an average euro-area increase of 0.7 percent.

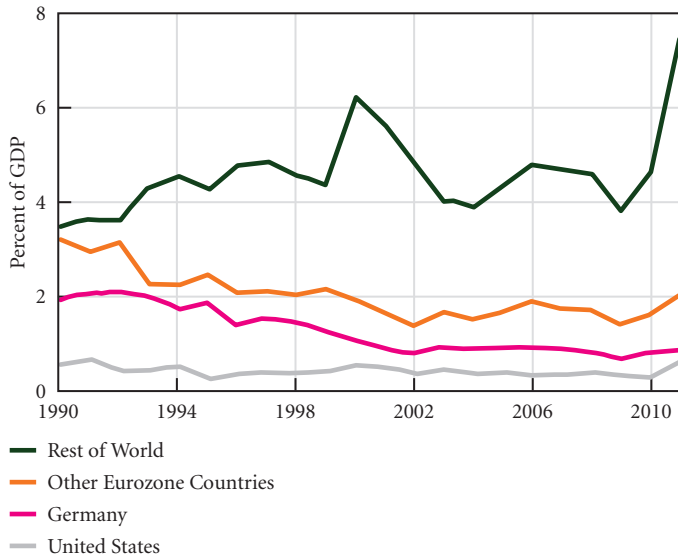
Source: Bank of Greece

Table 1 Greece: Exports of Goods (percent of GDP)

	1990	2000	2006	2011
Agriculture	1.17	0.96	0.75	0.87
High-technology Industries	0.15	0.69	0.8	0.83
Medium-high-technology Industries	0.6	1.03	1.19	1.26
Medium-low-technology Industries	2.23	2.56	2.62	5.21
Low-technology Industries	4.21	2.95	2.15	2.18
ICT Manufactures	0.12	0.47	0.42	0.37

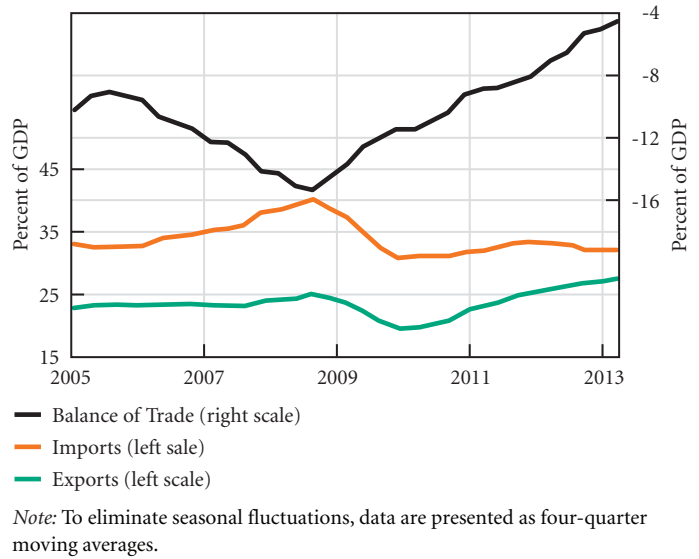
Source: OECD

Figure 15 Greece: Exports of Goods, by Destination



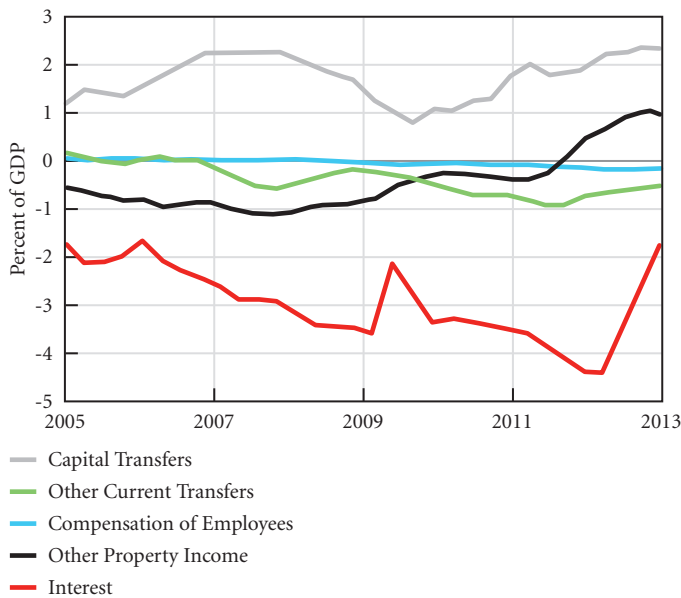
Source: OECD

Figure 16 Greece: Balance of Trade



Source: ElStat

Figure 17 Greece: Net Payments from Abroad



Source: ElStat

agricultural goods and those mostly in the medium-low-technology category show much higher growth increases.

Moreover, the recent large increase in the value of Greek exports is due to oil refinery operations, which are a sizable export component and positively affected by an increase in the price of oil. Overall, then, the current strategy of basing the Greek recovery on exports may be shifting production toward sectors with lower value added, and larger volatility for oil-related trade.

Goods imports have fallen significantly, from 34 percent of GDP in 2008 to about 24 percent in 2009, but no further decline in the import propensity has been generated through price adjustments, and imports are now at 23 percent of GDP in real terms (25 percent when both are measured in euros). Services imports, however, have not declined as much as goods imports but have fluctuated around 6 percent of GDP, with no visible impact from changes in relative prices.

The increase in the value of goods exports, and the overall decline in imports, result in an improvement in the balance of trade, as reported in Figure 16.

The current account balance and the financial account

The net payment flows from the rest of the world, other than those arising from trade, are shown in Figure 17. Greece was

transferring resources out of the country in the form of interest payments at about 5.8 percent of GDP, before the 2012 PSI “haircut” that almost halved these payments.⁵ When considering the effect of interest payments earned by Greek residents on foreign assets at about 1.3 percent of GDP, total interest payments as of the fourth quarter of 2012 amounted to about 1.7 percent of GDP. To be sure, this figure seems very low, considering that both the private and public sectors are net debtors and that the sum of their gross liabilities largely exceeds 200 percent of GDP.

We turn next to the stock composition of foreign assets and liabilities. Table 2 starkly shows the dramatic increase in foreign debt, a consequence of the prolonged current account deficit. Greece’s overall net debt increased from 56 percent of GDP at the end of 2000 to 126.6 percent of GDP by the end of 2012. Public debt held abroad, as of the end of 2012, amounted to 122 percent of GDP. It is interesting to note the recently changed nature of debt financing, with a considerable drop in public securities held abroad—which now amount to only about 20 percent of GDP—and a strong increase in long-term loans to the government that reflects the European Union (EU) and IMF bailouts. As noted above, the private sector is also a net debtor to the rest of the world, and the latest numbers reflect the changed nature of the composition of Greek liabilities held by foreigners, with a drop in Greek equities from 36 percent of GDP in 2006 to the current 15 percent of GDP, and a strong increase in liquid assets (“deposits”), which increased from 41 percent of GDP in 2006 to the current level

of 103 percent of GDP. A large part of the decrease in the value of Greek equities held by foreigners is undoubtedly the result of the drop in their market value, which decreased by about 80 percent from 2006 to the end of 2012.

Fiscal policy

Fiscal policy has been following, to a large extent, the austerity program imposed by Greece’s international lenders (the troika) in exchange for financing the continuing public sector deficits and rolling over government securities when they become due. In Figure 18, the major components of government current expenditures, both actual and projected in accordance with the latest forecasts from the troika, are shown. We adopt these forecasts to form our baseline projection for fiscal policy.⁶

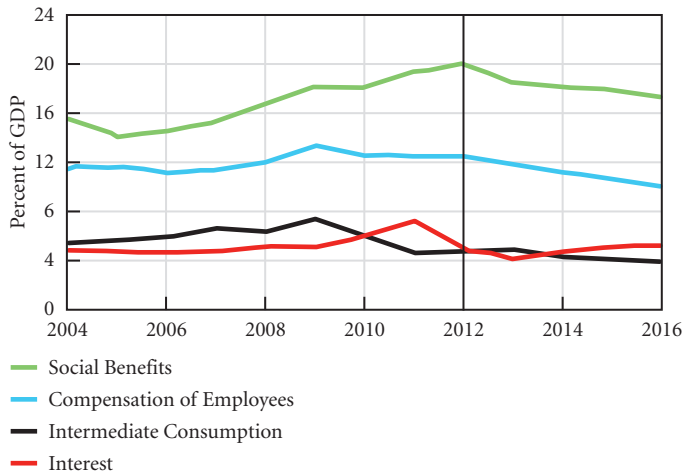
What the troika’s austerity plan has achieved is a considerable drop in most components of government expenditure, save for those not affected by the recession (i.e., interest payments). Intermediate consumption has decreased by 5.6 billion euros from its 2007 level; employee compensation, which continued to rise up to 2009, is now 1.2 billion euros below its 2007 level. Carefully examining the EC/IMF projections for both variables, however, reveals a significant decline in the years beginning in 2013, as shown in Figure 18. In addition, social benefits, which automatically increase with unemployment and are now 4.7 billion euros higher than in 2007, are projected to decrease in 2013 to conform with the troika’s optimistic estimates of decreasing unemployment. Interest payments on debt are shown to have increased steadily until the “haircut”

Table 2 Greece: Foreign Assets and Liabilities (ratio to GDP)

	2000			2006			2012		
	Assets	Liabilities	Net	Assets	Liabilities	Net	Assets	Liabilities	Net
Monetary Gold and SDRs	1.1	–	1.1	0.9	–	0.9	2.8	–	2.8
Deposits	29.4	29.7	-0.3	29.0	41.0	-12.0	51.4	103.4	-52.0
Securities: Private	12.9	3.0	9.9	28.9	2.8	26.2	49.3	1.1	48.2
Securities: Public	0.0	44.5	-44.5	0.1	68.5	-68.4	7.3	27.1	-19.8
Loans: Private	2.8	7.7	-4.9	2.5	11.6	-9.1	3.0	9.3	-6.3
Loans: Public	–	7.3	-7.3	–	9.9	-9.9	–	102.6	-102.6
Shares and Other Equity	6.5	14.0	-7.6	9.3	36.3	-27.0	19.9	15.0	4.9
Other	1.9	4.4	-2.4	3.3	3.2	0.2	4.3	6.1	-1.8
TOTAL	54.6	110.6	-56.0	74.1	173.3	-99.2	138.0	264.6	-126.6

Source: Bank of Greece

Figure 18 Greece: Government Current Expenditure



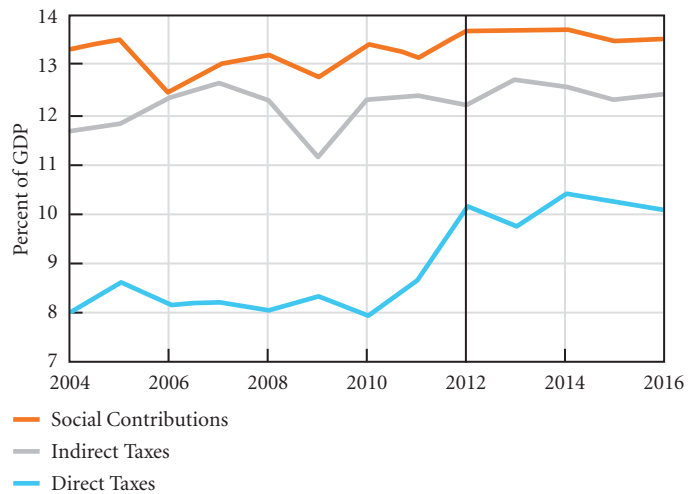
Sources: ElStat; EC; IMF

implemented in 2012, which together with the downward interest rate adjustment reduced expenditure by 5.3 billion euros over the previous year. Since the fiscal multiplier of government expenditure is much larger than what is assumed in the troika plan, the reduction of the interest expenditure as a share of GDP has been modest, given the large fall in output.

The major components of government current revenues, actual and projected, are illustrated in Figure 19. Social contributions respond to the business cycle; after an increase in 2008 they have been declining, although more slowly than GDP, so that the ratio to GDP increased slightly. They are projected to grow modestly according to the EC/IMF, on the assumption of employment growth. Revenues from indirect taxes have also declined with the fall in output, but more slowly than GDP. Direct taxes are the only component that has increased against the fall in income, providing about 1 billion euros more in revenue in comparison to 2007. Against a falling GDP, this implies a dramatic increase in the ex post implicit tax rate; this variable is projected to remain more or less stable up to 2016.

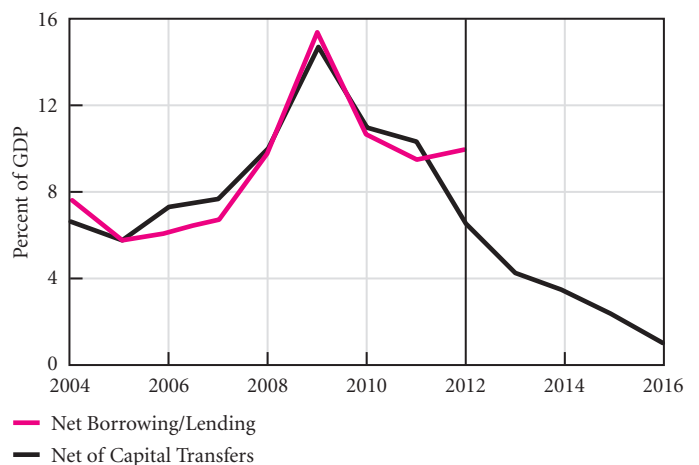
Other minor savings are expected from less important components of the government balance, while public investment is projected to increase in 2013 by about 500 million euros, and by smaller amounts in the coming years. Meanwhile, capital transfers received by the government are expected to decline moderately.

Figure 19 Greece: Government Current Revenue



Sources: ElStat; EC; IMF

Figure 20 Greece: Government Deficit



Sources: ElStat; EC; IMF

The implications of the troika plan for the overall government deficit are reported in Figure 20, which shows that the deficit, net of capital transfers, will fall considerably⁷ in 2013 and continue decreasing, eventually reaching less than 4 percent by 2016—provided that no further capital transfers are put in place and, above all, that the troika’s projections for GDP are realized. This is a result that we will strongly question with our model simulations, to which we turn next.

Model Simulations: The Impact of Austerity for 2013–16

In running simulations of the paths for the exogenous variables in our LIMG model, we use the results from the analysis above. In addition to the path for fiscal policy variables (public revenues and expenditures) discussed in the previous section, we assume that monetary policy will maintain its current stance, so that interest rates remain at a very low level, and that no significant changes will occur to the exchange rate of the euro. We use the recent OECD (2013) *Economic Outlook* for projections of foreign output and inflation, as codeterminants of the performance of Greek exports, and assume no price increases in Greece but rather a moderate increase in the stock market index (implying a stop to the rally of the past two quarters).

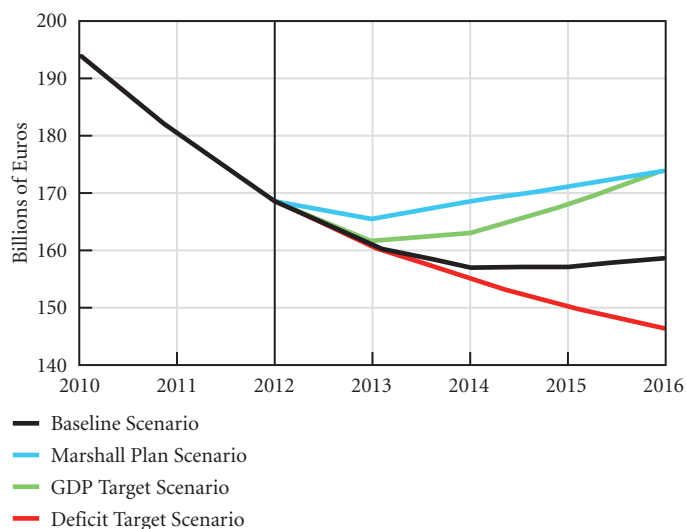
Baseline scenario

We begin with a baseline scenario that adopts assumptions based on the troika’s projections for changes in government revenues and outlays as outlined in its latest reports (EC 2013, IMF 2013c). The main results of our econometric analysis confirm that the fall in net financial wealth explains the decline in private expenditure over disposable income. Regarding the country’s foreign sector, our analysis, which is compatible with the Country Report issued in June by the IMF (2013d), shows

that there is a high elasticity of goods exports to the income of Greece’s trading partners, a higher elasticity for services exports, and no short-run impact from relative prices.⁸ The implication of our findings is that achieving growth in exports through internal devaluation will take a very long time, and furthermore, that the declining fortunes of Greece’s major trading partners do not bode well for the country’s exports. As mentioned above, some recent increases from oil refinery exports were achieved primarily from increases in the price of oil, which is known for its volatility. When it comes to imports, the econometric analysis shows high income elasticity for both goods and services imports, and a small short-run effect from relative prices.⁹ The implication of this finding is that imports decline quickly in concert with falling income, and that import substitution can be a slow process.

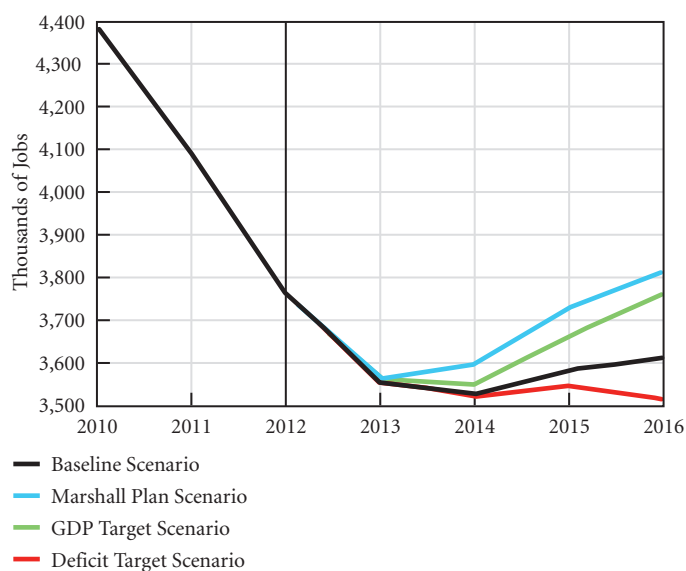
Our base-run simulations rooted in the planned austerity program agreed to by Greece’s present government and its international lenders show that GDP will grow more slowly, that employment will decline further than the corresponding troika projections, and that the deficit targets for the intermediate run will not be met. Our projections are depicted in *black* in Figures 21–23. As Figure 21 shows, GDP continues to decline until 2014, stabilizes in 2015, and grows slightly in 2016, reaching a level of about 158 billion euros at the end of that year.

Figure 21 Greece: Alternative Scenarios for Real GDP



Source: Authors’ calculations

Figure 22 Greece: Alternative Scenarios for Employment



Source: Authors’ calculations

Similarly, employment (Figure 22) declines by at least another 30,000 workers by 2014 before increasing to slightly over 3.6 million workers—an increase of about 50,000 from present levels. The deficit-to-GDP ratio (Figure 23) worsens, reaching 7.6 percent by the end of the simulation period. Based on previous experience of the troika’s response to missed targets, it will most likely become necessary in subsequent troika reviews to implement additional measures—that is, spending cuts or tax increases, more rapid privatization, or a combination of these to meet the targets for deficit reduction and GDP growth, unless those targets are revised downward.¹⁰

Troika deficit target scenario

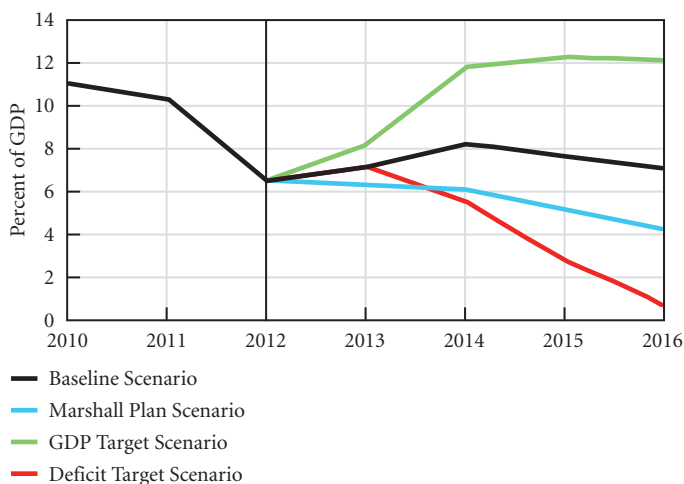
In this scenario, we modify our assumption as to how much more austerity will be needed to meet the deficit-to-GDP ratio targets. The results of this exercise and the implications for GDP growth and employment are summarized in *red* in Figures 21–22. Meeting the deficit target will put more pressure on GDP, which grows more slowly than in the baseline scenario (Figure 21), while employment declines more than in our baseline, shedding about 90,000 jobs by the end of the simulation period (Figure 22).

Troika GDP target scenario

Meeting a GDP target requires less austerity than currently included in the troika agreement. In this scenario, we compute the amount of fiscal stimulus needed to reach the GDP target as shown in the troika’s latest projections (IMF 2013c). Naturally, a fiscal stimulus worsens the government’s budget deficit, which steadily increases, rising above 12 percent by mid-2016 (Figure 23), while the current account balance also worsens, with a deficit exceeding 5 percent (Figure 24). Meeting the GDP target—requiring about 41 billion euros of fiscal stimulus—also increases employment, by more than 160,000 jobs above the baseline scenario by the end of the simulation period (Figure 22).

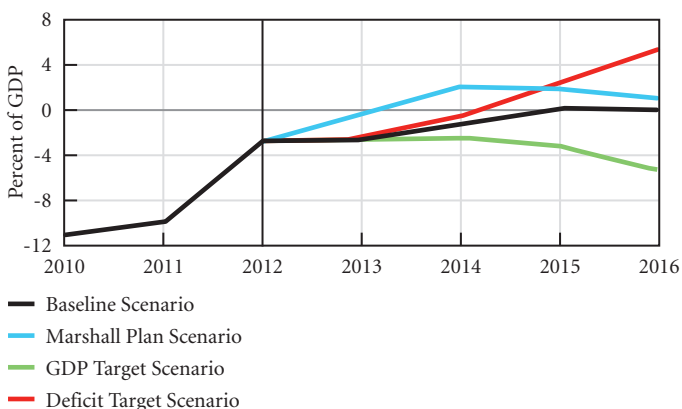
This scenario and the deficit target scenario discussed above clearly illustrate the fundamental problem with the troika’s projections, which, as outlined in the IMF’s May report, contain signs of faulty thinking. In addition to the errors in the values of the fiscal multipliers and the doctrine of “expansionary austerity,” there are implicit supply-side effects emanating from market liberalization and internal devaluation, with all effects converging to produce higher output growth and employment, together with lower deficit-to-GDP ratios. These flaws help to explain why, in the absence of any level of economic stimulus, the troika projections are so optimistic. In other words, the troika model is still based on theoretical

Figure 23 Greece: Alternative Scenarios for the Government Current Deficit



Source: Authors’ calculations

Figure 24 Greece: Alternative Scenarios for the External Account



Source: Authors’ calculations

assumptions that have been proven wrong by the spectacular failure of the austerity programs of the last three years.

“Marshall Plan” scenario

The results of the LIMG simulations of the baseline troika plan and the alternative deficit target and GDP target scenarios are not encouraging. As the evidence has shown, austerity leads to a path of continuous recession, lower employment, declining incomes, and higher levels of poverty.

We now turn to a plausible public spending plan and its likely effect on the outcomes of the previous three scenarios. We base our projections on an increase in government consumption or investment using special funds from the European Investment Bank or another EU institution. The amount of this exogenous stimulus—which has been discussed in many eurozone meetings—is assumed to be 30 billion euros, used at a rate of about 2 billion euros each quarter beginning in the third quarter of 2013. The results of this rather modest stimulus are illustrated in *blue* in Figures 21–24. The projected path of GDP growth exceeds all previous scenarios and ultimately converges with the GDP target scenario in mid-2016 at about 175 billion euros (Figure 21), while employment growth is also higher than in the previous scenarios, showing an increase of more than 200,000 jobs above the baseline scenario (Figure 22). The government deficit is lower than in the baseline and GDP target scenarios, reaching a bit over 4 percent of GDP (Figure 23), while the current account balance is above that in the baseline scenario, reaching a surplus of close to 2 percent of GDP at the end of the simulation period.

Conclusions

This analysis seeks answers to Greece’s continuing spiral of lost GDP and employment and higher public deficits and debt, which in our view is the result of foolish policy enacted by the government in its attempt to comply with the terms of a fiscal consolidation program imposed by its international lenders. The simulations discussed above show clearly that any form of fiscal austerity results in output growth and employment falling into a tailspin that becomes harder and harder to reverse. We have shown that a relatively modest fiscal boost funded by the appropriate EU institutions could not only

arrest the further declines in GDP and employment but also reverse their trend and put them on the road to recovery. A Marshall-type recovery plan directed at public consumption and investment is realistic and has worked in the past. Much research in recent years suggests that fiscal stimulus has larger effects, especially when short-term interest rates have reached unprecedented low levels (Stehn 2012). To reduce unemployment that is destined to hit the 30 percent mark within a short period of time, we would advocate an expanded public service work program proven effective both in Greece and in many other countries (see Antonopoulos, Papadimitriou, and Toay 2011). It is inconceivable that such a large rebalancing of the Greek economy could take place without a drastic change in the institutions responsible for running the eurozone—a change that would involve shedding discredited theories together with placing less than total reliance on market forces.

Acknowledgments

We would like to extend our sincere thanks to George Argitis, Vasilis Papadogabros, Yanis Dafermos, Maria Nikolaidi, and the Observatory of Economic and Social Developments of the Labour Institute, Greek Confederation of Labour, for their help and encouragement. The financial support provided by the European Social Fund and the Greek Ministry of Labour and Social Insurance as part of the Development of Human Manpower program is also gratefully acknowledged.

Notes

1. See Alesina and Ardagna (1998); Alesina, Favero, and Giavazzi (2012); Ardagna (2004); and Giavazzi and Pagano (1990), among others.
2. There is some evidence of additional effects of net capital gains arising from the housing market, but they seem to be negligible.
3. Net financial wealth of the private sector is the counterpart of the net debt of the foreign and public sectors, as determined by the macroeconomic identity. We estimate all these stock measures (values) at cost by cumulating the underlying flows—that is, private sector saving, the government deficit, and the (reciprocal of the) current account. Our stock measures differ from published values of net

financial wealth at market prices because they do not take into account net capital gains arising from fluctuations in the market price of the components of financial wealth (e.g., securities and equities).

4. The “official” measure can be obtained from the financial accounts published by the Bank of Greece as the sum of the stocks of net foreign assets and net government liabilities. This measure is declining steadily, becoming negative in the 2000s, and is now negative by about 50 billion euros.
5. We are referring here to gross payments, while the data in Figure 17 reflect net payments.
6. In passim, we have noted a discrepancy between our major consistent data source, which is the “Quarterly Non-financial Sector Accounts” published by ElStat, and some of the figures used by the EC in producing their forecasts. For instance, “social benefits other than social transfers in kind” amount to 38.8 billion euros according to ElStat, and to 44.4 billion euros according to the EC. The figure used by the EC for the “general government balance” for 2011 and 2012 is a deficit of 19.6 billion euros and 12.3 billion euros, respectively, while figures from our source suggest 21.8 and 12.8 billion euros, respectively, and net lending—that is, the government balance including net capital transfers—at a negative 19.4 billion euros for 2012, given a large capital transfer from the government to the banking sector. In our projections for fiscal policy we adopt the same path suggested in the EC document for all components of government expenditure and revenue, but we apply their projected changes to our consistent data source.
7. The EC measure of the government deficit is expected to reach 7.6 percent of GDP in 2013, while our measure net of capital transfers should fall to 4.2 percent. The latter value is reported in Figure 20, which shows a more optimistic path than that reported by the EC. A path similar to that of the EC is obtained from our figures using the “Net borrowing/lending” measure, which, however, is not consistent with the EC measure for 2012.
8. Our calculations show a long-run income elasticity of 3.2 for goods exports and a long-run elasticity of 1.4 from relative prices.
9. Our estimations for imports show a long-run income elasticity of 1.4, while short-run relative price elasticity is 0.06.

10. The deficit and GDP targets could be affected should another large debt restructuring take place in line with that implemented in 2012.

References

- Alesina, A., C. Favero, and F. Giavazzi. 2012. “The Output Effect of Fiscal Consolidation.” Working Paper 18336. Washington, D.C.: National Bureau of Economic Research. August.
- Alesina, A., and S. Ardagna. 1998. “Tales of Fiscal Adjustment.” *Economic Policy* 13(27): 487–545.
- Antonopoulos, R., D. B. Papadimitriou, and T. Toay. 2011. “Direct Job Creation for Turbulent Times in Greece.” Research Project Report. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College and Athens: Observatory of Economic and Social Developments, GSEE. November.
- Ardagna, S. 2004. “Fiscal Stabilizations: When Do They Work and Why.” *European Economic Review* 48(5): 1047–74.
- EC (European Commission). 2013. “The Second Economic Adjustment Programme for Greece: Second Review May 2013.” European Economy Occasional Papers, No. 148. Brussels: Directorate-General for Economic and Financial Affairs. May.
- Giavazzi, F., and M. Pagano. 1990. “Can Severe Fiscal Contractions Be Expansionary? Tales of Two Small European Countries.” Working paper 3372. Washington, D.C.: National Bureau of Economic Research. May.
- IMF (International Monetary Fund). 2013a. *World Economic Outlook: Hopes, Realities, and Risks*. Washington, D.C.: IMF. April.
- . 2013b. “Greece: Ex post Evaluation of Exceptional Access under the 2010 Stand-by Arrangement.” Country Report No. 13/156. Washington, D.C.: IMF. June.
- . 2013c. “Greece: Third Review under the Extended Arrangement under the Extended Fund Facility.” Country Report No. 13/153. Washington, D.C.: IMF. June.
- . 2013d. “Greece: Selected Issues.” Country Report No. 13/155. Washington, D.C.: IMF. June.
- Norris, F. 2013. “Seen from Greece, Great Depression Looks Good.” *The New York Times*, March 16.

- OECD (Organisation for Economic Co-operation and Development). 2013. *Economic Outlook*, No. 1. Paris: OECD. May.
- Papadimitriou, D. B., G. Zezza, and M. Nikiforos. 2013. "A Levy Institute Model for Greece (LIMG): Technical Paper." Research Project Report. Annandale-on Hudson, N.Y.: Levy Economics Institute of Bard College. May.
- Papadimitriou, D. B., G. Zezza, and V. Duwicquet. 2012. "Current Prospects for the Greek Economy: Interim Report." Research Project Report. Annandale-on-Hudson, N.Y.: Levy Economics Institute of Bard College and Athens: Observatory of Economic and Social Developments, GSEE. October.
- Stehn, S. 2012. "The Fiscal Multiplier at the Zero Bound." *US Economic Analyst*, No. 12/13. Goldman Sachs Global ECS Research, March 30.

Appendix: Data Sources

- Bank of Greece. Data accessed June 2013,
<http://www.bankofgreece.gr/>.
- Hellenic Statistical Authority (ElStat). Data accessed June 2013,
<http://www.statistics.gr/>.
- Organisation for Economic Co-operation and Development (OECD). Data accessed June 2013,
<http://stats.oecd.org/Index.aspx?DatasetCode=STAN08BIS>.