Levy Economics Institute of Bard College

Public Policy Brief

AFTER AUSTERITY: MEASURING THE IMPACT OF A JOB GUARANTEE POLICY FOR GREECE

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Preface

Since 2010, Greece has been following the troika's lead, implementing the latter's handpicked strategy of austerity and internal devaluation. The question is no longer whether this strategy has failed, but what must be done to repair the damage wrought by its failure. And the damage is so deep—over three-quarters of the massive job loss in Greece occurred under the troika's stewardship—that merely putting an end to austerity is nowhere near sufficient. Even if the Greek economy miraculously bounced back to its precrisis economic growth rate, it would take almost a decade and a half to return to precrisis employment levels.

Recovering from a crisis of this magnitude requires bold public action that matches the scale of the problem. Inspired by the late Levy Institute Distinguished Scholar Hyman Minsky, this policy brief makes the case for the implementation of a direct job creation program: a "job guarantee" (JG) for Greece. The program would offer paid employment on work projects providing public benefits in the areas of physical and informational public infrastructure, environmental interventions, social service provisioning, and educational and cultural programs.

In a Levy Institute study conducted in 2011 ("Direct Job Creation for Turbulent Times in Greece"), with rising unemployment already in evidence, we focused on the need for adopting a direct job creation intervention. Based on the international experience and the Institute's deep knowledge and expertise in developing such policy proposals, we offered guidelines relating to transparent and socially inclusive design, implementation, and monitoring processes critical to successful outcomes of such initiatives.

The current policy brief, which presents findings arising from research undertaken by the Levy Institute in 2013 in collaboration with the Observatory of Economic and Social Developments of the Labour Institute of the Greek General Confederation of Labour (INE-GSEE), has a different focus. It makes available to the general public, policymakers, and the political establishment research-based evidence of the macroeconomic and employment effects of a large-scale direct job creation intervention in Greece. For this purpose, we simulated the results of implementing a JG in 2012, varying the size of the program (from 200,000 directly created jobs at the lower end to 550,000 at the upper end) and the monthly wage offered (€586, the current minimum wage, and €751, the previous minimum wage).

The results are promising. Depending on the size of the program, a job guarantee would have provided paid employment to between 22 percent and 64 percent of the roughly 1.2 million unemployed in 2012. These outcomes include the indirect creation of 62,268 to 219,421 jobs in the private sector, a result of the multiplier effect of the program.

Our research indicates that all of this would be possible on the basis of a total annual outlay of between 1.5 percent and 5.4 percent of GDP, depending on the size of the program. However, because a substantial portion of that outlay would be recouped through higher revenues, the *net* cost would be between 0.6 percent of GDP (for the 200,000 JG) and 2.2 percent of GDP (for the 550,000 JG).

The policy brief outlines a number of alternative means of funding the program. But even if financed entirely by an increase in borrowing—which would not, in our judgment, be the preferred option—implementing the direct job creation program would *reduce* the size of Greece's public debt relative to its GDP. The government's deficit would rise, but because growth would rise even faster, the public debt-to-GDP ratio would decline in every scenario—and the bigger the program, the faster the decline. For a midrange JG (300,000 directly created jobs), Greece's debt ratio would shrink by four or five percentage points, depending on the wage level, and the largest program studied (550,000 directly created jobs) would reduce the debt ratio by nine percentage points. This is a remarkable result, but it is not the central goal of a JG program. What the result really underlines is how counterproductive the troika strategy has been: because austerity has shrunk the economy, it has ended up worsening Greece's debt ratio.

Direct job creation on a comparable scale has been tried, and has succeeded, elsewhere. And the required outlay for the midrange (300,000) JG—2.3 percent of GDP (or 1 percent net)—is well in line with what a number of other countries have invested in the course of dealing with their own, far more manageable, crises. Greece must move beyond austerity, and when it does, direct job creation offers a promising path to recovering from the policy mistakes of the last four years.

As always, I welcome your comments.

Dimitri B. Papadimitriou, *President*
October 2014

Introduction

To mobilize Greece's severely underemployed labor potential and confront the social and economic dangers of persistent unemployment, we propose the immediate implementation of a direct public benefit job creation program—a Greek "New Deal." The Job Guarantee (JG) program would offer the unemployed jobs, at a minimum wage, on work projects providing public goods and services. This policy would have substantial positive economic impacts in terms of output and employment, and when newly accrued tax revenue is taken into account, which substantially reduces the net cost of the program, it makes for a comparatively modest fiscal stimulus. At a net cost of roughly 1 percent to 1.2 percent of GDP (depending on the wage level offered), a midrange JG program featuring the direct creation of 300,000 jobs has the potential to reduce the unemployed population by a third or more, once indirect employment effects are taken into account. And our research indicates that the policy would do all this while *reducing* Greece's debt-to-GDP ratio—which leaves little room for excuses.

In this policy brief we document the results of research we undertook in collaboration with the Observatory of Economic and Social Developments, INE/GSEE (the Labour Institute of the Greek General Confederation of Labour), during 2013.[1] We explain why the JG approach is needed and at what scale; share the results of our simulations of the impact of implementing the program at various levels; and report how many jobs would be created as a result of the direct and indirect effects of this policy, as well as the total and net costs of the program once the revenue gains from increased employment and economic activity are taken into account.

Before proceeding further, a word of caution is in order. The assumptions and key elements of the proposal detailed below should not be read as providing a blueprint for the design of a JG program. Rather, the scenarios presented are strictly focused on providing quantitative estimates to ascertain what the macroeconomic and employment outcomes would have been had a large-scale JG intervention been introduced in 2012. The particular benchmark assumptions for the policy were adopted for the purposes of this analysis, but the model was developed to accommodate a variety of scenarios by altering key variables (e.g., duration of employment; cost allocation between wages, inputs, and administration; type of work projects undertaken, and so on). The specifics of the design and implementation of a JG program ought to be decided through an open and democratic process that involves social partners, the academic community, and, above all, the unemployed.

A Historic Jobs Crisis

Greece was shut out of financial markets in 2010, and to avoid bankruptcy the government sought to support its sovereign debt through a loan agreement provided jointly by the European Commission, European Central Bank (ECB), and International Monetary Fund, known as the troika. To bring the deficit and debt-to-GDP ratios under control, so that Greece could regain access to financial markets, the troika prescribed austerity, tax increases, and internal devaluation. This has been disastrous for the Greek economy, leading, among other things, to massive unemployment that has exceeded, in depth and duration, even the levels encountered in the United States during the Great Depression of 1929–34.

Alongside a fall in output of over 25 percent—unrivaled in the recent history of Western economies—unemployment in Greece has grown at a staggering pace since the crisis began. The unemployment rate rose from 7.7 percent in 2008 to over 27.8 percent as of October 2013, with more than three-quarters of the job loss occurring in the period in which Greek policy has been under troika control (2010–13).

But the unemployment rate actually understates how bad the problem is. Involuntary underemployment in Greece is the highest among European countries, primarily for economic reasons: 63 percent of the underemployed report they want to increase their hours of work to full time. The corresponding averages for the eurozone and EU-27 are 26 percent and 28 percent, respectively.

Even more troubling, the vast majority of Greek joblessness has become long term: 71 percent of the 1.37 million unemployed (in a country of roughly 10 million people) have been out of work for longer than a year, as of the third quarter of 2013. In fact, over the course of 2013, an astonishing 224,000 persons on average—almost 17 percent of the total unemployed—had been out of work for longer than *four years*. As we know, long-term unemployment, which has been worsening in Greece over the last five years, ultimately becomes structural, as forced idleness leads to loss of skills and overall deterioration of human capital.[2]

Finally, those who are lucky enough to find paid work are doing so in a labor market that is undergoing a worrisome transformation. In the past three years, the proportion of employers and unpaid family workers has dwindled along with the proportion of wage and salaried employees. All of the difference was absorbed by the "self-employed without staff" category, otherwise known as "own-account" work.[3] The own-account slice of

a continuously shrinking employment pie expanded from 21 percent in 2008 to 26 percent in 2013. Own-account workers are identified by the International Labour Organization (ILO) as the most vulnerable among the employed (together with unpaid family workers) because they do not enjoy access to unemployment, social security, or health benefits, and own-account work is devoid of predictability in terms of hours of employment and earnings. The highly paid professionals included in this category notwithstanding, during periods of crisis, the swelling of own-account work is typically associated with informality and precarious forms of subcontracting. Rather than interpreting own-account employment as increased entrepreneurial activity, it is best understood as a coping strategy and a form of employment distress. If this trend continues, we may be witnessing the beginning of an unusual[4] structural shift, with more people in the working-age population forced to choose between long-term unemployment or distressed, own-account status.

Why Greece Needs a Job Guarantee

The policy status quo is continuing to exacerbate an already dire situation. Austerity and "internal devaluation" have shown no evidence of delivering the growth and employment results promised by the three successive governments that have implemented these policies since the crisis began. On the contrary, these policies have brought nothing short of economic disaster and social catastrophe to Greece.

To reduce deficits, general government spending has been cut by 20 percent, including allocations to old-age pensions, health, education, and social transfers, with grim consequences for both domestic demand and the standard of living of the general population. On the revenue side, steep emergency tax increases on property, "solidarity" taxes on earned income, and a VAT increase (even on staple food items), including higher excise taxes on fuel and heating oil, have reduced disposable income by about 19 percent, contributing to a precipitous drop in domestic demand, output, and—as expected—tax revenues.

While the brutal process of internal devaluation has reduced the wage cost of production by more than 25 percent (almost double the level of reduction assumed in the troika's projections), net exports have improved only minimally. What little improvement there has been is primarily the result of a recession-induced decrease in imports, not rising exports. Exports of refined oil products, which have risen, are the one exception in

an otherwise dismal performance, but this is attributable to higher international commodity prices rather than lower wages at home (Papadimitriou et al. 2014a).[5] The purported gains from Greece's increased competitiveness in tradables have been offset by legislated decreases in the monthly minimum wage—from €751 to €586 for those aged 25 years and older (a 22 percent reduction) and to €511 for those aged 15–24 (a 32 percent reduction)—together with a reduction in public sector wages of more than 20 percent. All told, the result has been a dramatic, 21 percent drop in household consumption spending.

We must emphasize, however, that simply putting an end to austerity will not suffice. Even if Greece somehow managed to return to the rates of economic growth it enjoyed prior to the crisis (averaging around 4 percent per year)—which is by no means likely in the near future—it would take more than *14 years* to reach precrisis employment levels, given the tendency of labor market recovery to lag behind recovery in GDP growth.[6]

If this is the "best-case scenario" for a postausterity Greece, further policy actions are urgently needed. The human suffering that accompanies protracted and deep unemployment is already evident. Rising poverty and food insecurity, homelessness and suicide, despair and distress migration, crime and domestic violence, and the rise of an extremist ideology fueled by scapegoating anti-immigrant sentiment are all manifestations of the cataclysmic social and economic deterioration that is ongoing. We need a policy that matches the scale of the crisis and targets the unemployment problem head on.

The so-called active labor market policies (ALMPs) that we have seen implemented so far were designed for less turbulent times and aim at improving "employability": training for the acquisition of skills or for upgrading existing skills, and subsidies to firms to hire, under apprenticeship programs, first-time entrants into the labor force. These interventions address problems that relate to improving the supply of labor, and they locate the problem of unemployment in the unemployed themselves (i.e., the unemployed do not possess the labor-quality characteristics required in the marketplace). Applicable as this may be in some cases, the current challenge is primarily the result of a lack of labor demand.

Other interventions within the ALMPs revolve around wage subsidies allowing new hiring or incentivizing firms and small-size enterprises to retain their workers. These measures are estimated to have prevented an additional 7 percent of employed workers from losing their job (OAED 2012). Yet, in a depression

economy, with many firms on the verge of collapse, the ability and willingness of firms to participate in such policies without being tempted to substitute regular contract labor with subsidized workers is limited. The key problem persists: despite these measures, unemployment remains stubbornly high. A large-scale intervention, beyond the scope of the current ALMPs, is urgently needed.

The Job Guarantee: Background and Rationale

The JG is modeled after Levy Institute Distinguished Scholar Hyman P. Minsky's concept of an "employer of last resort." Minsky's proposal, further developed by other Levy Institute scholars (Forstater 1999; Papadimitriou 1998, 2009; Wray 1997; Antonopoulos 2008, 2009; Antonopoulos, Papadimitriou, and Toay 2011), envisioned the government bearing the responsibility for increasing its demand for labor during downturns or periods of structural unemployment, analogous to the role of the central bank as lender of last resort (i.e., the central bank's guarantee of providing liquidity to banks when the market fails to do so). The government assumes responsibility for providing paid work opportunities of predictable duration and at a predetermined minimum wage in projects carefully chosen to yield public benefit. These are not proposed as permanent public jobs but as an integral part of a government-led countercyclical policy. As the economy gradually recovers and demand for labor by the private, public, and social sectors of the economy improves, the availability of other work options and better-paying jobs will proportionately decrease the program's job-provisioning targets.

The government becomes, in a sense, a market maker for labor by establishing a "buffer stock" of labor, as it stands ready to "buy" all unemployed labor at a fixed price (wage) or to "sell" it—that is, provide it to the private sector at a higher price (wage) (Mitchell 1998). As is the case in all buffer-stock schemes, the commodity used as a buffer stock is always fully employed and it always has a very stable price, one that cannot deviate much from the range established by the government's announced "buy" and "sell" prices. This feature of the proposal ensures full employment with stable wages and prices. The buffer-stock aspects of this program generate "loose" labor markets even as they ensure full employment.

Minsky's employer-of-last-resort proposal was inspired by the New Deal programs created in the United States in response to the Great Depression in the early 1930s—which is to say, the last time a Western economy faced a crisis comparable to that in Greece today. However, we need not look to the American New Deal to find a precedent for this direct job creation approach. To fend off the worst of the recent global crisis, job-targeted stimulus programs were implemented successfully in countries as varied as China, Indonesia, the United States, and Chile.

And Greece itself has some recent experience with direct job creation, albeit on a very small scale: the Program of Public Service Job Creation (Πρόγραμμα Κοινωφελούς Εργασίας), or PKE, implemented in 2012. Despite being inspired by the employer-of-last-resort policy orientation, the 2012 PKE should not be thought of as a proper JG, due to its small size (designed to offer 55,000 jobs) and limited duration (employment was provided for a maximum of five months). Moreover, the program did not offer full compliance with legal labor rights (participants were not granted unemployment insurance benefits once their PKE contract expired). Nevertheless, expanding and improving on the basic approach of the PKE, and drawing from this recent experience, will be essential if we wish to avoid a "lost decade" (or two) of labor market breakdown and depressed incomes.

Job Guarantee Scenarios for Greece

Our proposed JG program would provide paid employment for 12 months per year on work projects selected, through a community-level consultative process, from among the following areas: physical and informational public infrastructure, environmental interventions, social service provisioning, and educational and cultural enrichment programs. The positions would carry full legal labor rights, including normal time off. Eligibility would be extended to all of the unemployed, with a point system creating a rank order among applicants. Preference would be given to the long-term unemployed; those with low household income; members of households in which all adults are unemployed; and, finally, workers over 30 years of age. The last criterion is justified based on the age composition shares of the unemployed.[7] Program costs would be 60 percent wages and 40 percent indirect costs (intermediate inputs and administration).

To gauge the impact of the JG, we simulated the effects of four scenarios, corresponding to an increasing scale of direct job creation: 200,000, 300,000, 440,000, and 550,000 jobs. The scenarios were chosen based on statistical matching of the 2012 labor force survey (LFS) by the Hellenic Statistical Authority (ELSTAT) with applicant data from the 2012 PKE. For each direct job creation target, we measured the impact of setting the

JG wage rate at two different levels: the current minimum wage of €586, and the pre-2012 minimum wage of €751.

We used data provided by the EU Survey of Income and Living Conditions (SILC) and ELSTAT LFS, and instead of making arbitrary assumptions about who would be likely to participate in an expanded JG, we drew from the data obtained from roughly 86,000 applications to the 2012 PKE. To estimate the "multiplier effect" of the JG—the indirect job creation and increased output that would result from a given JG expenditure—we used an input-output (I-O) analysis, drawn from the 2010 input-output tables for Greece. We examined the effects of the newly earned JG wages in increasing demand throughout the economy and the linkages in output growth between industries: as demand increases for the output of one industry, its demand for intermediate inputs increases demand for the goods and services of other industries, resulting in expanded output and job creation.[8]

Before proceeding further, several conceptual and technical terms require clarification. The first concerns how we define the cost of the JG program. Our analysis includes two definitions of cost: "all-inclusive cost" and "program cost." The "all-inclusive cost" represents the total required investment. This consists of the monthly JG wages of the participants and payments for intermediate consumption (i.e., the inputs required to produce a road, paint a school, etc.). The "all-inclusive cost" also includes JG-participant social security contributions (employer and employee) and administrative costs.

However, for the purpose of our simulations, we use the "program cost." The program cost does not include the employer and employee payroll contributions or administrative costs. The program cost is, therefore, a smaller, and thus more conservative, number than the all-inclusive cost. We use the program cost to provide an estimate based on the amount of money that will be added to the economy in the short term. While the funds included under the all-inclusive cost will eventually be spent back into the economy, it includes payments that may or may not be disbursed in the short term. Thus, in order to provide the most robust and least controversial estimates of the macroeconomic impacts of the program, we have elected to err on the side of underestimating the benefits of the JG.[9]

The second issue concerns the definition of output, which is critical for the actual estimation of the "multiplier" effect (i.e., the increase in output resulting from the JG investment). The program cost, as explained above, includes wages returned to the economy in the form of spending, and additional spending on intermediate inputs for projects. Both forms of spending create a multiplier effect on demand and production that impacts the whole economy. Thus, computing the output "multiplier" relies on our definition of *output*.

Two different concepts are relevant to our analysis. First, gross value added (GVA) represents the total value added across all industries, excluding taxes and subsidies on products. Second, gross domestic product (GDP) is the sum of GVA, taxes, and subsidies. Apportioning taxes to the appropriate industries is challenging, as the sources for taxes less subsidies, most of which come from value-added-type taxes (VATs), are not straightforward. Because of these limitations, the industry-level output data used in the I-O table are available as GVA, but not as GDP. However, in aggregate terms, GVA as a percentage of GDP is relatively stable. In the case of Greece, GVA as a percent of GDP has been, historically (i.e., 2007–12), approximately 88 percent, and was 88.2 percent in 2012. For the convenience of the reader, especially regarding the implied multipliers, we convert the GVA to GDP by multiplying GVA by the inverse of the ratio (100/88.2≈1.134). Therefore, in our results, we provide both measures: the GVA multiplier, based on I-O analysis, and the more familiar GDP multiplier. Finally, the amount of the government JG investment used to generate both multipliers is the program cost, for the reasons explained above.[10]

Results of the JG Simulations: Output and Employment Creation

Our estimates are based on simulations of what would have happened had the JG been implemented in 2012. Though the past cannot be rewritten, our findings are more relevant than ever, as the ongoing unemployment crisis attests.

There are significant positive multiplier effects associated with the JG program. For every €100 spent on the JG, roughly €230 would be added to the Greek economy. And at the current monthly minimum wage (€586), for every 320 jobs directly created (JG positions), another 100 full-time jobs (mainly skilled) would be created in the private sector. At €751, the previous legal minimum wage, it would take only 250 JG positions to create 100 jobs elsewhere in the economy.

At the low end of the simulated scale for the JG (200,000 directly created jobs at a monthly wage of €586), this would mean a total increase in employment of 262,268 jobs and an increase in GDP of €5.4 billion (2.8 percent). At the top end of

Table 1 Reduction of Unemployment Impact of the JG

	Job Target	Total Job Creation	Unemployment Reduction (%)
Case A: €586	200,000	262,268	22
Case B: €751		279,790	23
Case A: €586	300,000	393,402	33
Case B: €751		419,684	35
Case A: €586	440,000	576,989	48
Case B: €751		615,537	51
Case A: €586	550,000	721,236	60
Case B: €751		769,421	64

Source: Authors' calculations

the scale (550,000 JG jobs at €751), the total employment effect would mean the addition of 769,421 new jobs (direct and indirect) and GDP would increase by €18.9 billion (9.8 percent). Given the size of the unemployed population, these effects are substantial: in 2012, the JG program would have generated enough new jobs (direct and indirect) to reduce total unemployment in Greece by between 22 percent and 64 percent (Table 1).

To put the employment impact of the proposed JG benchmarks in perspective, the direct and indirect job numbers are substantial, even under today's conditions: the direct job creation ranges from 5.6 percent to 15.3 percent of total employment in Greece as of the second quarter of 2013. The indirect job creation from the increasing intermediate and final demand is in the range of 1.7 percent to 6.1 percent of total employment as of the second quarter of 2013. In total, the program would generate new jobs in the range of 7.3 percent to 21.4 percent of total current employment.

Total and Net Costs

The total (or all-inclusive) cost of the program (including wages and indirect costs for inputs and administration) would range from €3.0 billion to €10.5 billion, or between 1.5 percent and 5.4 percent of 2012 nominal GDP (€193.7 billion). At the midrange, the 300,000 direct job creation program would have a total cost of €4.5 billion to €5.7 billion, depending on the wage rate, which comes to 2.3 percent to 3 percent of GDP.

However, because of the abovementioned multiplier effects, the cost of implementing the program would be only a fraction of the total cost—due to the increases in tax revenue and social contributions that would result from the rise in employment. Our simulations determined that 59 percent of the expenditure would be recouped through higher tax revenues (social contributions, value-added taxes, and direct income taxes). If we exclude the mandated social contributions that accompany the JG wages in this calculation, almost 40 percent is still recovered from the remaining sources of tax revenue.

As a percentage of nominal 2012 GDP, the *net* cost of the JG (total cost minus tax revenue) would range from roughly 0.6 percent of GDP (€1.2 billion) to 2.2 percent of GDP (€4.3 billion), for the creation of 262,268 and 769,421 jobs, respectively. Dividing the net cost by the total number of jobs, the government's monthly cost for each new job created would in effect range from €387 to €465. In the midrange, the 300,000 JG program would have a net cost of between 0.95 percent and 1.21 percent of 2012 GDP, or €1.8 billion to €2.3 billion. See Table 2 for a summary of the costs (total and net) and benefits of all the intermediate scenarios.

How Would a Job Guarantee Be Funded?

The question of funding such an initiative remains. We have argued elsewhere for the creation of a National Employment Fund financed from a variety sources, including European Union (EU) funds (Antonopoulos 2013). The EU Commissioner for Employment, Social Affairs and Inclusion, László Andor (2013), has clearly stated the desirability of a "European Fund against Unemployment" that would devote a percentage of EU funds to EU member-states according to their respective unemployment rates. In other words, this is an open admission that current EU budgetary allocations are inadequate, and that Greece should be at the forefront of such efforts.

Other funding alternatives include:

Debt renegotiation linked to a specific proposal in support of the National Employment Fund. Greece is currently spending over €7.5 billion annually to service its outstanding sovereign debt (Papadimitriou, Nikiforos, and Zezza 2014a). A suspension of interest payments for a single year would pay for the net cost of creating 440,000 JG jobs for three years (at a minimum monthly

Table 2 Costs and Benefits of the Job Guarantee

Job Target	200,000 Jobs		300,000 Jobs		440,000 Jobs		550,000 Jobs	
	Case A	Case B	Case A	Case B	Case A	Case B	Case A	Case B
Monthly Gross Wage	€586	€751	€586	€751	€586	€751	€586	€751
All-inclusive cost (million €)	2,988	3,829	4,482	5,743	6,573	8,424	8,216	10,529
Total number of new jobs	262,268	279,790	393,402	419,684	576,989	615,537	721,236	769,421
JG direct jobs	*200,000*	*200,000*	*300,000*	*300,000*	*440,000*	*440,000*	*550,000*	*550,000*
Indirect jobs	*62,268*	*79,790*	*93,402*	*119,684*	*136,989*	*175,537*	*171,236*	*219,421*
Δ in output (GDP, million €)	5,364	6,873	8,064	10,310	11,800	15,121	14,750	18,901
Δ in tax revenue (million €)	1,769	2,267	2,653	3,400	3,892	4,987	4,864	6,233
Net cost (million €)	1,219	1,562	1,828	2,343	2,681	3,437	3,352	4,296

Source: Authors' estimates based on I-O simulation results

wage of €586). Clearly, the cost of such a policy is minimal, and perhaps a bargain, if we consider that such action would not only provide a lifeline for so many people over the course of three years, but also put the entire country on the road to recovery.

Borrowing from the European Investment Bank for work projects dedicated to development. An off-balance-sheet item is another funding alternative whose aim would be to support projects that make a significant contribution to growth, employment, economic and social cohesion, and environmental sustainability.

Tax-backed bonds of zero coupon[11] could be offered as a form of tax-anticipated payment and issued by the Greek central bank. These bonds would be transferable and perpetual (i.e., not requiring repayment by the government).

Long-term "special purpose" bonds. These would be issued by the Greek central bank in coordination with the ECB and offered for purchase to a variety of clients, including international development foundations and those actively supporting these initiatives internationally, including Greek expatriates.

Last but not least, an agreement should be negotiated to use the recently announced and "unexpected" primary budget surplus to kick-start a large-scale JG initiative. After all, the prime minister has indicated that within the parameters of the signed Memorandum of Understanding with the troika, 70 percent of the primary surplus would become available to correct "injustices."

In the least desirable option of financing the JG exclusively through public borrowing, the total cost of investing in the program would without doubt raise the Greek deficit-to-GDP ratio: by 1.2 percentage points for the 200,000 JG and 4.1 percentage points for the 550,000 JG.

However, because economic growth would be increasing at a faster rate than the public debt, implementing a JG program would actually manage to do something that austerity has yet to accomplish: *decrease* the debt-to-GDP ratio. This is the result of the sensible multiplier (2.3) implicit in our results. In fact, in our simulations, the greater the scale of the JG, the more it reduced the public debt ratio (see Table 3): in 2012, the program would have reduced the ratio, then at 156.9 percent of GDP, by between 2.7 and 9 percentage points (for the 200,000 JG and 550,000 JG, respectively).

The fact that the total number of unemployed in Greece could be reduced by anywhere between a quarter to two-thirds while mildly decreasing the debt-to-GDP ratio—an ostensible

Table 3 Contributions of JG Program Scenarios to Public Deficit and Debt, 2012 (unit: € million)

Job Target	200,000		300,000		440,000		550,000	
Monthly Gross Wage	Case A: €586	Case B: €751	Case A: €586	Case B: €751	Case A: €586	Case B: €751	Case A: €586	Case B: €751
Nominal GDP Deficit Sovereign Debt	193,700 17,414 (9.0 percent of GDP) 303,928 (156.9 percent of GDP)							
All-inclusive cost Increase in GDP	2,988 5,364	3,829 6,873	4,482 8,046	5,743 10,310	6,574 11,800	8,424 15,121	8,217 14,750	10,529 18,901
Deficit (as a percentage of GDP) Debt (as a percentage of GDP)	10.2 154.2	10.6 153.4	10.9 152.9	11.4 151.8	11.7 151.1	12.4 149.6	12.3 149.7	13.1 147.9

target of troika policy—shows there is little excuse left for ignoring this option. These results also shed light on the folly of austerity. Austerity has been destructive in two ways: thus far, it has reduced output and employment, so much so that output is still in negative territory (-3.9 percent for 2013); and, consequently, even with a fixed amount of debt, the growth-killing dynamic it engenders will continue to push the debt-to-GDP ratio upward. Promoting employment today would place the country on a firm path to recovery while reducing the public debt ratio in the immediate future.

Conclusion

At the midrange of our scale of potential JG programs—300,000 jobs created directly—Greece would be looking at an annual investment of 2.3 percent of GDP (or around 1 percent of GDP net cost). Either way one looks at it (total or net cost), this is a relatively modest fiscal stimulus expenditure given the circumstances. Facing economic difficulties that did not come close to approaching the level of distress the Greek economy has experienced, numerous countries, in response to the global financial crisis, invested in fiscal stimulus programs that were comparable, or even far larger—including Germany and Brazil (4 percent of GDP), the United States (5 percent of GDP over two years), and China (13 percent of GDP) (UNCTAD 2011). Moreover, our research suggests that making this investment would shrink Greece's debt ratio (by 4 to 5 percentage points in 2012 for a midrange JG).

Although the required expenditure would not be out of line with other countries' fiscal responses, the JG would go a long way toward pulling Greece out of a much deeper economic crisis. The midrange JG program would have provided paid work in the public and private sectors to over a third of the 1.2 million unemployed in 2012. It would not, even at the high end of the direct job creation scale (64 percent reduction of 2012 unemployment), solve all of Greece's economic difficulties. But it is a crucial plank in a policy approach that would address the real structural danger in the Greek economy: a persistent and widespread job deficit.

Some argue that the JG policy would be disruptive to the extent that such policies interfere with labor markets. We think these critics are correct in expressing this fear—but we welcome this so-called "disruption." The JG policy promises to put a floor under the free-fall of wages and slow the trend toward precariousness in employment conditions, both of which are occurring at an alarming rate in Greece.

The need for action is urgent. It is our hope that this policy brief will stimulate discussion on the issues. If Greece is to recover, employment policy—specifically, a job guarantee—must be at the center of the debate.

Notes

1. For the full research report, see Antonopoulos et al. (2014).

2. See, for example, Valletta (2013), Ghayad and Dickens (2012), Acemoglu (1995), and the seminal paper by Heckman and Borjas (1980).

3. The official International Classification of Status in Employment (ICSE) definition separates "employed persons" into four distinct groups: (1) *employees*, or waged and salaried workers; (2) *employers*, the self-employed who hire other workers; (3*) own-account workers*, the self-employed who work on their own without hiring other employees; and (4) *family contributing workers*, who hold self-employment jobs in an establishment operated by a relative, with no financial compensation and too little involvement in its operation to be considered a partner. The distribution of employed persons along the ICSE reflects the structure of employment but engenders repercussions for public finance. For example, less developed economies tend to have a smaller wage and salaried class, large unpaid family worker cohorts, and substantial own-account worker segments. Correspondingly, employee and employer contributions make up a smaller proportion of general taxation.

4. Because the allocation of labor by worker status reflects the structure of an economy, even small movements across ICSE boundaries tend to take place gradually and over prolonged periods of time. This, however, has not been the case in Greece.

5. As for tourism, which has indeed contributed to a narrowing of the gap in the current account deficit, its volatility and unpredictability are cause for concern. See Papadimitriou, Nikiforos, and Zezza (2014b).

6. Based on Eurostat and LFS data, we calculated an average annual growth rate of 63,000 jobs for the period 1997–2007 and 54,000 jobs for 1998–2008. Based on employment levels over 1998Q1–2007Q4, Dedoussopoulos et al., in a report issued by the ILO in 2013, estimated a job creation rate of 60,000 per annum. Projecting into the future, they found that if the Greek economy, beginning in 2012Q4, returned to its precrisis (1998Q1–2007Q4) rate of adding 60,000 jobs annually, it would regain its 2009Q1 (precrisis) employment level in 2027Q2—that is, in roughly 14.5 years.

7. According to Eurostat, in 2012 there were 3.4 million unemployed young people aged 15–24 in the eurozone (EU-17), but roughly four times as many unemployed workers (12.6 million) between the ages of 25 and 54. In Greece, those

numbers were 173,000 and 950,000, respectively. Unemployed youth represent a relatively small percentage of the larger category of all unemployed persons in Greece: in 2012, the youth share of overall unemployment was 14.4 percent. Employment policies must be cognizant of this reality.

8. Our analysis combines two different quantitative methods. At the macro level we use I-O tables and multiplier analysis, while at the micro level we employ techniques that permit us to produce the necessary microdata for our various scenarios. The input-output analysis allows for the calculation of changes in total employment in the macroeconomy (direct and indirect job creation), GDP growth potential, and expansion of tax revenue. To estimate the employment creation through industry linkages, we use the 2010 input-output tables for Greece that offer an accounting of all transactions—production and consumption—in the economy.

   The microdata set is indispensable, as it provides the informational base needed for the identification of the scale for the four alternative benchmarks. Furthermore, the microsimulation model selects individuals among the unemployed who are most likely (according to a set of criteria) to apply for work through the JG's new direct job creation initiative. For the production of the microdata and to undertake the microsimulation exercise, we use data provided by the EU SILC and ELSTAT LFS, along with primary socioeconomic and demographic data (e.g., household income, gender, age, duration of unemployment, number of dependents, spouse also unemployed, etc.*)* based on the records of 86,000 individual applicants who sought jobs through the 2012 PKE.

   For more on the methodology, see Antonopoulos et al. (2014).

9. The rationale for this decision is that even though social security contributions are eventually disbursed to households, it is unclear as to *when* they are distributed. We choose not to presume that these funds reach households as quickly as the JG wages and salaries. When and by how much JG payroll contributions and JG administrative costs impact *current* purchases in the relevant period is uncertain. Administrative costs, as part of the injection into the economy, pose a challenge in terms of aggregation bias. Although the public administration seems a natural choice for the assignment, it is aggregated with other branches of government in the I-O table. The aggregation therefore conceals

the actual input composition of the public administration channel through which multiplicative effects take place, resulting in a biased estimate. Instead of providing potentially inaccurate impact estimates, we opted to leave the two items out and underestimate the positive impact of the JG program. Thus, we estimate the positive multiplicative effects on output and employment in the least controversial manner possible.

10. Implicit multipliers are calculated as the change in output divided by the change in spending that stimulates the production of more output. There are, therefore, different implicit multipliers that can be reported on the basis of this study: first, the change in GVA when we consider the *all-inclusive cost*, which provides the most conservative rate of return, so to speak, of investing in the JG program; second, the change in GVA based on the *program cost*, which turns out to be equal to 2.05; and third, the change in *GDP* based on the program cost, which yields an implicit multiplier of 2.32.

11. See Pilkington and Mosler (2012).

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