RESPONDING TO THE UNEMPLOYMENT CHALLENGE: A JOB GUARANTEE PROPOSAL FOR GREECE

Observatory of Economic and Social Developments, Labour Institute, Greek General Confederation of Labour
(Παρατηρητὴριο Οικονομικὼν και Κοινωνικὼν Εξελὶξεων, Ινστιτοὺτο Εργασὶας, ΓΣΕΕ)

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ACRONYMS AND ABBREVIATIONS

ALMP	Active Labor Market Policies
ASEP	Supreme Council for Civil Personnel Selection (Greek acronym)
EITC	Earned Income Tax Credit
ELR	Employer of Last Resort
EPANAD	Managing Authority of the Operational Program for the Development of Human Resources, Ministry of Labour and Social Insurance and Welfare (Greek acronym)
EPWP	Expanded Public Works Programme, South Africa National Strategic Reference Framework (NSRF; Greek acronym)
EU-SILC	European Union Statistics on Income and Living Conditions
EYD	Special Managing Authority (Greek acronym)
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GSEE	Greek General Confederation of Labour (private sector workers; Greek acronym)
GVA	Gross Value Added
ICSE	International Classification of Status in Employment
ILO	International Labour Organization
IMF	International Monetary Fund
I-O	Input-Output Tables
JG	Job Guarantee Program
KEK	Vocational Training Center (Greek acronym)
LFS	Labor Force Survey
MoF	Ministry of Finance (acronym in Greek, ΥΠΟΙΚ)
NACE Rev.2	Statistical Classification of Economic Activities in the European Community
NGO	Nongovernmental Organizations
NPISH	Nonprofit Institutions Serving Households
NREGA	National Rural Employment Guarantee Act, India
NSRF	National Strategic Reference Framework
NUTS	Nomenclature of Territorial Units for Statistics
OAED	Manpower Employment Organization (unemployment agency, Greek acronym)
OECD	Organization for Economic Cooperation and Development
OTA	Local Government Organizations (Greek acronym)
OTA/level a	Local Government Organizations – Municipal authorities (Greek acronym)
OTA/level b	Local Government Organizations – Regional authorities (Greek acronym)
PKE 2012	Public Benefit Job Creation Program, Greece (Greek acronym for Προγράμματα Κοινωφελούς Εργασίας)
SILC	Survey of Income and Living Conditions
VAT	Value-added tax

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EXECUTIVE SUMMARY

This report presents findings arising from a study 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). It uses as background the Levy Institute's 2011 study, "Direct Job Creation for Turbulent Times in Greece." In the earlier study, with rising unemployment already in evidence and anticipating the devastating effects of the austerity-driven macroeconomic policy orientation Greece had embarked on, 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 focus in this report, however, is different. Our aim is to make 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. The ultimate goal of this undertaking is to summon urgent attention to the worsening levels of unemployment and invite critical rethinking of the continuing austerity-guided macroeconomic policy started in 2010.

BACKGROUND

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 jointly provided by the European Commission, European Central Bank, and International Monetary Fund, known as the Troika. To bring the deficit and debt-to-GDP ratios under control, so as to regain access to financial markets, the international lenders prescribed austerity, tax increases, and internal devaluation. This has brought nothing short of a disaster to the economy, including massive unemployment that has exceeded, in depth and duration, even the levels encountered during the Great Depression of 1929–34.

At this juncture, 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 program (JG) we propose would offer jobs to the unemployed 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. When newly accrued tax revenue is taken into account, which substantially reduces the cost of the program, it makes for a comparatively modest fiscal stimulus and leaves little room for excuses to turn a blind eye, as the benefits clearly outweigh the costs.

In this report we document the findings of research we undertook in collaboration with the Observatory of Social and Economic Developments of INE/GSEE during 2013. 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. While the thrust of our findings would remain stable and equally compelling, the details, which serve as benchmarks for the JG policy proposal, can accommodate variations with relative ease.

A HISTORIC CHALLENGE

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 rate since the outbreak of the crisis in 2008—with more than 75 percent of the job loss occurring in the period in which Greek policy has been under Troika control (2010–13). The unemployment rate rose from 7.7 percent in 2008 to over 27.8 percent as of October 2013.

Even more troubling, however, is that the vast majority of Greek joblessness has become long term: 71 percent

of the 1.37 million unemployed 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 over the last five years, ultimately becomes structural as forced idleness leads to loss of skills and overall deterioration of human capital.

ENDING AUSTERITY IS NOT ENOUGH

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. It is clear that the fundamental choice the country is facing is between continued austerity and decisive action to promote economic recovery. However, we must emphasize and fully recognize 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)—which is by no means likely in the near future—in a best-case scenario, 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. The private sector, even when not dragged down by austerity, cannot be expected to bring employment back to acceptable levels on its own—public action is critical. We need a policy that matches the scale of the crisis and targets the unemployment problem head on.

Extending unemployment benefits will help, but will not solve the problem, as we are facing at least a "lost decade" ahead. Active labor market policies that redress lack of skills and first-time work experience or provide wage subsidies to firms to hire workers are applicable to only a small minority among the unemployed. Their limited impact is due to the root cause of unemployment in Greece, which rests in lack of demand for labor due to lack of demand for output.

The JG is modeled after Levy Institute Distinguished Scholar Hyman P. Minsky's "employer of last resort,"

which was in turn inspired by the New Deal programs created in the United States in response to that nation's Great Depression of 1929–34—which is to say, the last time a Western economy faced a crisis of comparable magnitude. 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, a job-targeted stimulus program was implemented successfully in countries as varied as China, Indonesia, the United States, and Chile.

And Greece does have 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, announced in 2011 and implemented in 2012. Despite being inspired by the "employer of last resort" policy orientation, the PKE 2012 is not appropriately 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 2012 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.

SCALING UP: FROM PKE 2012 TO A JOB GUARANTEE

Our proposed Job Guarantee 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. 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, to workers according

to the age composition of the unemployed, with the majority being over 30 years of age. 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: (1) 200,000, (2) 300,000, (3) 440,000, and (4) 550,000 jobs. The scenarios were chosen based on statistical matching of the 2012 labor force survey (LFS) with applicant data from the PKE 2012. 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 euros, and the pre-2012 minimum wage of 751 euros.

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 attested by further rising unemployment rates. We use 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 draw 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 use an input-output (I-O) analysis, drawn from the 2010 input-output tables for Greece. We examine 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.

There are significant positive multiplier effects associated with the JG program. For every 100 euros spent on the JG, roughly 230 euros would be added to the Greek economy. And at the current minimum wage (586 euros), for every 320 jobs directly created (JG positions), another 100 full-time jobs (mainly skilled) would be created in the private sector. At 751 euros, 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 direct job creation at 586 euros), this would mean a total increase in employment of 262,268 jobs and an increase in GDP of 5.4 billion euros

Table 0.1.A 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

(2.8 percent). At the top end of the scale (550,000 JG jobs at 751 euros), the total employment effect would mean the addition of 769,421 new jobs (direct and indirect) and GDP would increase by 18.9 billion euros (9.8 percent). (For full results of all the intermediate scenarios, see Table 0.1.A.) 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 and 64 percent.

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 to 10.5 billion euros, or between 1.5 and 5.4 percent of 2012 nominal GDP (193.7 billion euros).

However, because of the above 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 from this calculation, still, almost 40 percent gets recovered from the remaining sources of tax revenue.

Furthermore, 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 euros) to 2.2 percent of GDP (4.3 billion euros), for the creation of 262,268 and 769,421 jobs, respectively. Dividing the net cost by the total number of jobs, in effect the government's monthly cost for each new job created would range from 387 to 465 euros.

COSTS AND BENEFITS OF THE JOB GUARANTEE

We note that, 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 just a few years in fiscal stimulus programs that were comparable, or far larger—including Germany and Brazil (4 percent of GDP), the United States (5 percent of GDP), and China (13 percent of GDP). At the midrange of our scale of potential JG programs—the direct creation of 300,000 jobs—Greece would be looking at a relatively modest annual investment of 2.3 percent of GDP (or 1 percent of GDP net cost).

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. It would not, even at the high end of the direct job creation scale, solve all of Greece's economic difficulties, but it is a crucial missing plank in a policy approach that would address the real structural danger in the Greek economy: a persistent and widespread job deficit.

Funding for the program could be secured through a variety of alternative means, including the creation of a dedicated European Union Employment fund, the issuance of special-purpose tax-backed zero coupon bonds, or a one-year suspension of sovereign debt interest payments. In the least desirable option of being financed exclusively through public borrowing, to be sure, the total cost of investing in the program would 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—a result of a sensible implicit in our results multiplier effect of 2.3—implementing a JG program would actually *decrease the debt-to-GDP ratio*. In fact, the greater the scale of the JG in our simulations, the more it would reduce the public debt ratio: in 2012, the program would have reduced the ratio, which was 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 substantially while not increasing (in fact, mildly decreasing) the debt-to-GDP ratio—an ostensible target of Troika policy—shows there is little excuse left for ignoring this option. To the contrary, it provides much-needed evidence that promoting employment today will result in growth and will in turn place the country on a firm path to recovery and debt-to-GDP reduction in the immediate future.

1. THE NATIONAL CONTEXT

1.1 THE SPECTER OF UNEMPLOYMENT

The scope of the recent financial crisis that first erupted in the United States was global and did not leave Europe unaffected. While many eurozone countries managed to contain the economic debacle that followed, Ireland and southern Europe suffered a great deal. Greece has been hit the hardest.

Since 2008, the year Greece began experiencing economic contraction, the economy has lost, cumulatively, over 25 percent of gross domestic product (GDP). The drastic reduction in output was accompanied, as expected, by massive layoffs. In Greece, at the time of the onset of the recession, in 2008, the unemployment rate stood at 7.7 percent, with 369,400 workers out of a job. Fast-forward to October 2013, the most current official data available at the time this report was being finalized,[1] and unemployment, in that month, had reached a staggering 27.8 percent. In absolute numbers, since the onset of the crisis, one million more people joined the ranks of the unemployed, for a total of 1,387,520 persons (Figure 1.1), with 71 percent out of work for more than a year (Hellenic Statistical Authority, or ELSTAT).

These figures are unprecedented in recent memory for any Western economy during peacetime. In fact, they can only be compared to the 1929–34 US Great Depression levels, which Greece has now surpassed in depth and duration.[2] Employment prospects are scant today and, more importantly, the future leaves little room for optimism. Under the best possible circumstances;[3] that is, even if Greece were to return to the spectacular growth rates of its precrisis decade (an annual average of roughly 4 percent), and assuming the economy proved capable of generating a comparable number of jobs as in the high growth years of 1997–2007 (an average of 63,000 jobs per annum), it would take more than 14 years to recover the employment level of 2008.[4] Given the state of the Greek and the global economy, such a sustained high growth rate, at least in the relevant time period, is not within reach. Beyond any doubt, the specter of brain drain, massive unemployment, and Greek "lost decades" ahead are certain to ravage the country.

Figure 1.1 **Unemployment Level, 2005–13 (persons, in thousands)**
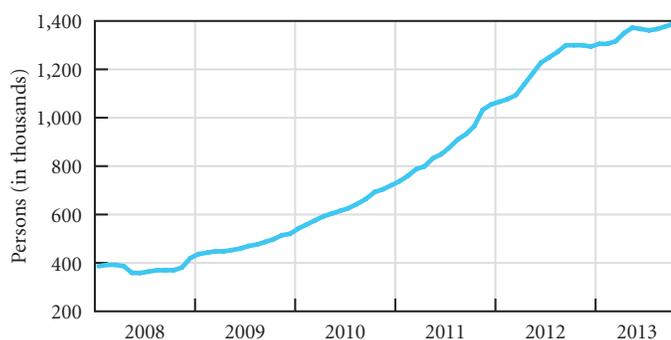
Source: ELSTAT, LFS, January 2014

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 sentiments are all manifestations of the cataclysmic social and economic deterioration that is still unfolding.

1.2 THE FINANCIAL "BAILOUT" AND AUSTERITY POLICY

This state of affairs is largely the result of an ill-conceived policy that has been implemented since 2010 by three successive governments under the direction of Greece's international creditors—the European Commission, the European Central Bank, and the International Monetary Fund (IMF), also known as the Troika.

Prior to the crisis, from 2000 to 2007, annual GDP growth in Greece averaged roughly 4.2 percent, as compared to 1.9 percent for the eurozone as a whole, with unemployment converging to the European average of 7–8 percent. This spectacular growth, however, was achieved partly through low tax-to-GDP rates that allowed for higher consumption levels and partly through borrowing at low interest rates that financed public spending—annually incurring government deficits and accumulating debt—which could be serviced till the crisis hit. In a world of low interest rates and low inflation, willing bankers paid no attention to the divergence of Greece's performance in areas critical for the health of the economy. Clear signs of trouble—such as low productivity gains in comparison to international competitors, lower tax-revenue-to-GDP rates relative to the EU-17 average (by 4 percentage points), and persistent trade deficits of roughly 12 percent during 2000–07, shortfalls in investment to GDP rates (of around 15 percent as compared to 20 percent in the EU-17)—did not deter international lenders from severely underpricing the country's risk. With growth stalling at the end of the fourth quarter of 2007, the two years that followed witnessed the beginning of a continuous decline in tax revenue, while the need for deficit financing continued unabated.

It was against this background that a newly elected Greek administration announced in late 2009 that the deficit-to-GDP ratio had been underreported for several years. The revised ratio for 2009 was over 12 percent of GDP (eventually, it was reported at over 15 percent), far higher than the 3 percent level mandated by the Maastricht Treaty for eurozone members. Unable to roll over maturing government debt obligations at reasonable interest rates, Greece was effectively shut out of the financial markets. To meet its sovereign debt obligations, in May 2010 the newly elected Greek administration requested and secured a rescue loan commitment package of 110 billion euros from the Troika (Memorandum I). This was, as some predicted at the time (e.g., Papadimitriou et al. 2010), insufficient, and an additional 130 billion euro "bailout" loan was agreed upon in September 2011 (Memorandum II).

As is always the case (i.e., the IMF's lending to Latin American and African countries in the 1980s and Eastern Europe in the 1990s), sovereign debt rescue-loan agreements are predicated on the condition that the loan recipient must accept a set of fiscal consolidation targets and a variety of structural adjustment measures. A commitment to meet these conditions, and an agreement for officers of lending institutions to evaluate regularly the achievement of targets, were prerequisites for the ongoing and timely disbursement of funds. Greece was thus set under the Troika's supervision.

The key goal of the conditionalities imposed by the international lenders was a swift reduction of government deficits and debt. This objective was thought best achieved through cuts in government spending and increases in taxes, plus the sale (i.e., privatization) of public enterprises and other public assets. Signing and implementing the Memoranda of Agreement I and II meant that the short- and medium-term macroeconomic framework was determined essentially by the Troika, which mandated the generation of primary surpluses[5] through austerity. Once fiscal consolidation achieved primary surpluses, the thinking went, deficit- and debt-to-GDP ratios would stabilize and financial markets would see that Greece's house was in order. Hence, its credit rating would be restored and borrowing at normal interest rates from the financial markets would become available, ultimately allowing Greece to decouple from its financial dependence from the Troika. In addition, the Troika's mandated changes to liberalize labor markets, so as to bring about internal devaluation and labor market "flexibility," were voted into law by the ruling majority parliamentarians. In combination with the austerity measures mentioned above, they set Greece on a disastrous path.

If the ratios of deficit- and debt-to-GDP were to be reduced, given that Greece had been in a deepening recession since 2008, fiscal consolidation was the wrong policy. The ongoing two-year recession should have been met with expansionary fiscal policy through the introduction of an emergency stimulus package, much as other countries did to fend off the impacts of the Great Recession.[6] Rather than implementing expansionary fiscal policy to help the economy grow, thus decreasing the ratios through an increase of GDP and tax revenue, for three years the policy instead insisted on procyclical measures—hence, the severe decline in GDP.

From an accounting point of view, a draconian reduction in government spending and a corresponding increase in taxes can decrease the numerator (the difference between tax revenue and government spending) faster than the decline in the denominator (output), which can eventually bring about a reduction in the deficit-to-GDP ratio. But this is only achieved at the expense of pushing the economy persistently deeper into recession and unemployment. The further challenge is that when the economy reaches rock bottom, there is no guarantee that the engines of growth will reignite automatically. This is John Maynard Keynes's famous idea of "underemployment equilibrium" (i.e., an economy can be potentially stuck at an equilibrium of extreme unemployment and undercapacity utilization for years). In terms of the desired reduction of the debt-to-GDP ratio, despite a "haircut" in early 2012 there has been an increase of debt relative to GDP from roughly 129 percent in 2010 to 171.8 percent as of the third quarter of 2013.[7] What the rescue package actually achieved was to *socialize* the ownership of Greece's sovereign debt; namely, to transfer it off the balance sheets of private sector banks (UK, French, German, etc.) to the national banks of European countries, and ultimately to the citizens of Greece.

1.3 THE HIGH PRICE OF THE "RESCUE" PACKAGES

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 dire consequences both for the standard of living of the general population and domestic demand. On the revenue side, steep emergency tax increases on property," solidarity" taxes on earned income, and a VAT increase from 9 percent and 13 percent to 18 percent and 23 percent (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 as well.

Furthermore, 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), there has been only minimal improvement in net exports. This improvement is the result of decreasing imports from the recession and not from rising exports. The exception of higher exports in refined oil products is certainly not attributed to lower wages, but rather to the circumstance higher international commodity prices. As for tourism, which has indeed contributed to the closing gap of the current account deficit, its volatility and unpredictability are cause for concern. The purported gains in Greece's competitiveness of tradables, which never came to pass, were offset by legislated decreases in the minimum monthly wage

Figure 1.2 Government Expenditure, Gross Household Disposable Income, and Household Final Consumption Expenditure (percent change, quarter-on-quarter)

- General Government Expenditure
- Gross Household Disposable Income
- Household Final Consumption Expenditure
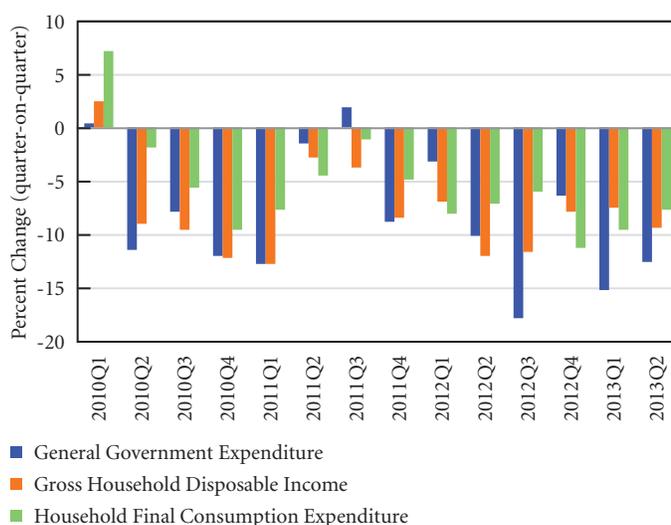
Note: The general government expenditure is total general government expenditure (OTE) minus capital transfers payable (D9). Household final consumption expenditure and gross disposable income are noted (P.3) and (B.6g) in the data.

Source: ELSTAT, National Accounts: Quarterly Non-financial Accounts of General Government (Expenses), Public Finance, Quarterly Non-financial Accounts—Households and Non-Profit Institutions Serving Households (S.1M), Quarterly Sector Accounts

from 751 to 586 euros for those aged 25 years and older (a 22 percent reduction) and to 511 euros for those aged 15–24 (a 32 percent reduction), together with a reduction in public sector wages of more than 20 percent. The result has been a dramatic drop in household consumption spending by 21 percent.

Complementing this picture, gross fixed capital formation (GFCF) has deteriorated precipitously, by a cumulative 74 percent.[8] These misguided policies continue unabated to this day. In 2013 alone, household consumption spending, the largest component of aggregate demand after adjusting for inflation, has seen an average monthly

Table 1.1 Poverty Rates by Usual Employment Status and Gender, 2012 (in percent)

Activity Status	Total	Female	Male
Employed	15.1	13.1	16.5
Unemployed	45.8	38.9	52.1
Retired	14.3	14.2	14.4
Inactive/other	33.3	34.2	29.1

Note: Includes social transfers, 18 years of age and older, excluding the population groups that are by inference poor, such as the homeless, persons living in institutions, illegal economic immigrants, and Roma.

Source: ELSTAT, SILC 2012

decrease of 11.6 percent (Figure 1.2).[9] Using the already depressed incomes and living standards of 2011 as a reference point, poverty has risen to 23.1 percent,[10] from 20.1 percent in 2008.[11] If we use the precrisis living standards, for example, the 2005 prevailing income and living conditions, ELSTAT estimates that poverty rates have increased to 32.3 percent.

The link between unemployment and income poverty is both clear and worth emphasizing. Table 1.1 is instructive in this regard. Relentlessly suppressing minimum wages over the past three years has resulted in many more people entering the ranks of the working poor. Yet, on average, the employed face a lower risk of poverty than the jobless. The poverty rate in 2012 among the 3.7 million employed persons was 15.1 percent (16.5 percent for males and 13.1 percent for females), while the poverty rate for Greece's 1.2 million unemployed persons was 45.8 percent. For unemployed men, the picture is worse: one in two unemployed males lives below the poverty line.

1.4 THE YEARS AHEAD: IS THERE A WAY OUT?

The Greek government, the Ministry of Finance (MoF), and the Troika representatives are making claims that recovery is just around the corner. Yet, the facts show very different economic conditions. We see a continuing decline in output, employment, private sector activity, and domestic demand; stagnating net exports, with current account gaps being eliminated through lower demand for imports due to depressed incomes and dependency on external factors; namely, high oil prices and the influx of tourism. In the meantime, with rising unemployment, poverty, and distress migration, it is difficult to embrace optimism.

One possible option to restart the engine of growth and employment would be for private sector investment spending to fill in the gap left by lower levels of public spending and consumption expenditures. However, as domestic demand is severely depressed, the prerequisite for such a scenario is that growth will be export led. This would be virtually impossible, even in normal times. In any event, current corporate sector spending data do not show signs of recovery. In fact, the government is currently wrestling with the Troika to find ways to bridge a projected budget gap in 2014–15 and avoid, to the greatest degree possible, the implementation of additional spending cuts and tax increases, which are certain to be imposed under yet another bailout program. Reversing the severe measures already in place is, of course, not under discussion. To convince the Troika, the government has advanced a most optimistic scenario that projects growth of 0.6 percent in 2014, 2.95 percent in 2015, and 3.74 percent in 2016 (IMF 2013; MoF 2013). Their "light at the end of the tunnel" rhetoric also predicts a decline in unemployment to 24.6 percent by end of 2014. Countering this optimism are predictions of further output declines and a rise in unemployment resulting from the continuing recession (OECD 2013; Papadimitriou, Nikiforos, and Zezza 2014), which are more plausible than the government's scenarios.

The Greek economy urgently needs a set of pro-growth policies to counter the damage done by the misguided policies of the last three years. But even in a best-case scenario, where inspired policymaking prevails and recovery signs begin to slowly make a comeback, the past experience of countries that suffered much milder economic crises indicates that when GDP growth rates recover, labor markets follow with a lag of five to seven years. For Greece, the task of lowering unemployment from the current 27 percent to the country's precrisis levels is daunting, and will take more than 14 years. The private sector cannot be expected to create over one million jobs on its own, not in the relevant timeframe. Given the employment elasticity of output, it would require an annual growth rate of 6–7 percent for at least a decade to reach precrisis employment levels. While the private sector slowly recovers, the unemployment crisis requires public action.

We cannot overemphasize the staggering numbers that we are dealing with in Greece. In a country of roughly 10 million people, the total number of unemployed increased from 369,400 in 2008 to 1.37 million in 2013. The customary responses to unemployment are not equal to the challenge Greece faces today. New thinking is required.

Unemployment benefits should clearly be expanded, but even if extended to cover a larger segment of the unemployed (as it should), and even if the duration of coverage is prolonged beyond one year, this cannot address the problem of long-term unemployment that reaches into three, four, or more years. The so-called active labor market policies (ALMP) that we have seen implemented so far have been designed for less turbulent times and aim at improving "employability" (i.e., training for the acquisition of skills or for upgrading existing skills, and subsidies to firms to hire, under apprenticeship programs, first-time entrants to the labor force so that they gain experience). These interventions address problems that relate to improving the supply of labor. They focus on working people and 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, however, is primarily the result of a lack of labor demand.

Other interventions within the ALMP 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 jobs. 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 remains: despite these measures, unemployment stubbornly remains at 27 percent. A large-scale intervention, beyond the scope of the current ALMP, is urgently needed.

1.5 THE JOB GUARANTEE

This report presents the findings of a study that proposes such an alternative: a large-scale "job guarantee"—a direct public benefit job creation program based on Hyman P. Minsky's "employer of last resort" (ELR) policy. The best-known parallel in history is Franklin Delano Roosevelt's Public Works Administration Program, also known as the "New Deal," undertaken during the Great Depression to fight poverty and unemployment in the United States. Along the lines of a job (employment) guarantee, a Greek "New Deal" proposes that the state assume 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.

In an earlier study undertaken in 2011, we developed a concise report explaining why the country should consider an ELR policy as part of the response to the looming crisis. That report also provided details for effective design, implementation, and monitoring of such a state-led job creation program.[12] The focus of this study is primarily on the macro-level

consequences derived from implementing a large-scale Greek employment guarantee policy, building on the experience of a smaller-scale direct public service job creation program that was adopted and rolled out in 2012—a program of public benefit job creation (Πρόγραμμα Κοινωφελούς Εργασίας / programa koinofelis ergasia, or PKE). Given the scale of unemployment the country faces, we suggest that the scale of such an intervention match the problem at hand, and, accordingly, propose several alternative job creation benchmarks. The scale we propose for Greece is not timid, however debatable our recommendation may be in light of the current political adherence to austerity and continuing fiscal consolidation. This study provides alternative cost scenarios and presents the associated impacts in terms of direct (Job Guarantee) and indirect (economy-wide) job creation, economic growth, and tax revenue.

The balance of this report is structured as follows: chapter 2, accompanied by the first four appendices, sheds light on employment and unemployment trends during the recent tumultuous period in Greece and presents the prevailing wage distribution of wage and salaried workers. The summary statistics are compelling and show vividly why interventions other than a "business as usual" approach are urgently needed. Two of the appendices related to this section provide information on recent changes in labor protection legislation that indicate the deleterious effects they are having on workers.

Chapter 3 presents Minsky's ELR policy approach and provides a brief discussion of the recent, albeit small-scale, direct public benefit job creation program in Greece; for the interested reader, an accompanying appendix (see appendix E) discusses the details of that intervention. The next section, chapter 4, begins with a description of key elements of the Job Guarantee proposal for Greece and subsequently presents four scale options, discussing the data and methods used, with a more technical appendix included for the specialist. Chapter 5 presents the core findings of the study. It summarizes the employment, growth, and tax revenue results of the proposed benchmark scenarios, which are derived from input-output multiplier analysis. While a basic description of the methodology is included in the main text, some technical details are presented in the accompanying appendix. Chapter 6 summarizes our findings and concludes with suggestions for financing such an initiative. Appendices containing information on selected topics relevant to the study are included at the end of this report.

As will be shown, the research-based evidence of this alternative policy approach is compelling. It is our hope that the employment and macroeconomic implications presented here will offer valuable insights and generate constructive public dialogue on how to best respond to the challenge of protracted unemployment while the country recovers from the most severe economic blow of the post–World War II era.

2. EMERGING TRENDS IN EMPLOYMENT AND UNEMPLOYMENT

As we examine the still unfolding developments in labor markets, four specific years require special attention. The year 2008 marks the onset of the crisis in Greece and thus provides a benchmark for the state of the world of work prior to the calamities that struck the country in the years that followed. The year 2010 marks the signing of the first Memorandum of Understanding with the Troika and the initiation of the supervision, control, and implementation of austerity, dividing the pre- and post-Troika (2010–13) periods; this separation is important, as we will discuss below.

The year 2012 is central to our project, for two interconnected reasons. The first relates to the availability of publicly available data (there is always a delay between the collection and release of survey micro data), which is crucial for developing our Job Guarantee (JG), the public benefit employment proposal presented in this report. The second stems from the fact that in estimating options for an appropriate JG scale of intervention, we draw knowledge and primary data from the Greek public benefit program (κοινωφελής εργασία), a small, limited-duration initiative, alluded to earlier, that was instituted in 2011–12.

Finally, 2013 is also an important year, as it establishes the end of the available data period (Q1–Q3) on which our proposal can be evaluated.[13]

The emerging picture from the summary statistics in the pages that follow captures the well-known, and devastating, reality for both the employed and unemployed in Greece. It also focuses our attention on aspects that have received less attention (i.e., the gender dimension of unemployment and the evolution of own account work) and provides evidence that allows the correction of distorted views presented in public discourse by the mass media and politically motivated narratives, including the size of public employment, the analysis of youth unemployment, etc. Above all, this section highlights the urgent need for a large-scale public policy response.

2.1 THE YEARS PRIOR TO THE CRISIS

Greece joined the European Union (EU) in 1981 and adopted the euro in 2001. During the decade preceding the current crisis, Greece had experienced healthy GDP growth rates and substantial gains in employment. From the first quarter of 1998 to the fourth of 2008, cumulative net job creation amounted to 539,700 positions (as illustrated in Figure 2.1).

Figure 2.1 Total Employment and Employment by Gender, 1998–2013 (persons, in thousands)
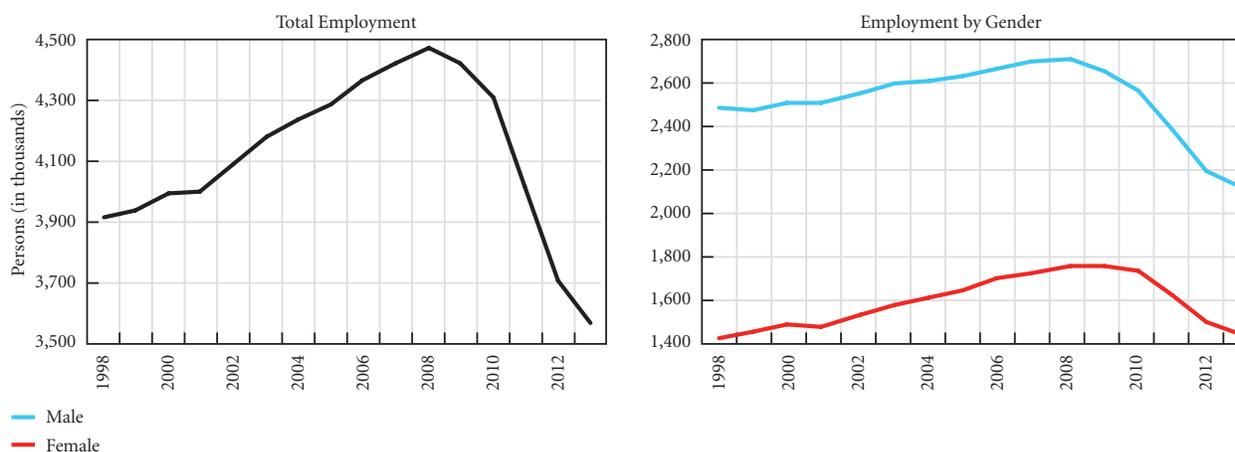
— Male
— Female

Source: ELSTAT, LFS

The roughly 54,000[14] new jobs created per year favored women (34,400 jobs for women and 19,600 for men). This was a welcome development, as female labor force participation in the country, until then, had lagged far behind male participation rates. Given the prevailing age demographics of the country, this steady job creation resulted in unemployment converging to the EU average, declining from 11–12 percent at the end of the 1990s to 7.7 percent by 2008.[15] This came to an end in 2008. And since 2008, unemployment has skyrocketed, with Greece shedding approximately 905,000 jobs.

Historically, Greece is unique among eurozone countries for its high agricultural sector employment—albeit with significant reductions in total employment levels over time. Another important feature of the economy is the presence of a very large number of small-size businesses.[16] Rooted in the absence of large-scale capital formation in agriculture and limited development of large-scale industry, a strong presence of small- and medium-size enterprises (SMEs) has persisted. However, a reduction of employment in family-operated, small-scale agriculture and husbandry, together with a distributional shift of labor toward services and public sector employment, has been taking place over the last 20 years.

In regard to the latter—public sector employment—a few words are in order. While a convincing argument may be advanced regarding the clientilist approach used in hiring public sector employees, contrary to oft-repeated and erroneous information, the size of public sector employment relative to total employment in Greece has always remained within the range of other EU countries. The evidence to that effect is provided by International Labour Organization (ILO) data. In 2010, ILOSTAT reported that the public sector in Greece accounted for 22.34 percent of the total number of the employed; in France, 19.98 percent; and in the UK, 25.12 percent.[17]

From 2000 through 2007 employment was expanding across most sectors of the Greek economy, save for agriculture, animal breeding, hunting, fishing, and forestry. While manufacturing, transportation, storage, and communication remained relatively flat, several industries demonstrated healthy growth in employment. Most striking were the gains in construction, real estate, wholesale and retail, public administration and defense, education, health, social work, and other community activities. Not surprisingly, much of the employment creation in construction went to male laborers. The overwhelming majority of workers hired, however, were women—many entering the labor force for the first time over this period. Wholesale and retail offered the greatest percentage of growth and absolute number of jobs for women, but gains were also notable in the number of women employed in the traditionally feminized sectors of public (and private) services of education, health, social, and community work. The sectoral structure of the economy that had emerged by the time the crisis hit made employment highly vulnerable to abrupt reductions of domestic consumption demand and government expenditures, both of which had contributed the most to the "spectacular" growth and employment generation of the 10 years leading up to the crisis.

Table 2.1 Decline in Employment by Industry, 2008–10 and 2008–13

Industry	2008–10	2008–13
Agriculture, forestry, and fishing	16,900	-40,800
Mining and quarrying	-1,200	-3,500
Manufacturing	-84,900	-230,000
Water supply; sewerage, waste management	-7,400	-15,900
Construction	1,500	-156,100
Wholesale and retail trade, and repairs	-88,200	-233,100
Transportation and storage	-39,000	-63,300
Accommodation and food service activities	-5,100	-42,000
Information and communication	-10,400	-19,200
Financial and insurance activities	5,200	3,500
Real estate activities	500	-3,700
Professional, scientific, and technical	-3,500	-20,300
Administrative and support service activities	-31,500	-44,700
Public administration and defense; compulsory social security	4,000	-37,000
Education	-7,500	-54,500
Human health and social work activities	-9,200	-34,700
Arts, entertainment, and recreation	12,100	4,700
Other service activities	-10,200	-25,000
Activities of households as employers	-4,100	-40,800

Note: All figures correspond to year-on-year Q2 comparisons.

Source: Authors' calculations; Eurostat, LFS

2.2 THE DECLINE IN EMPLOYMENT, 2008–13

Over the entire period of 2008 to October 2013, employment declined precipitously (as reported in Figure 2.1), amounting to more than 905,000 eliminated positions.[18] The negative impact on employment of the early period of the crisis was significant, but its pace picked up after 2010. In 2010, marking the beginning of the Troika period, 116,000 jobs disappeared, but it was the following two years that delivered the full blow of the austerity measures: 2011 and 2012 resulted in job losses of 298,900 and 311,400, respectively. During the first three quarters of 2013, the pace of job loss decelerated, but nonetheless, a total of 136,500 jobs were lost, for a monthly average of job loss of roughly 15,000 (see Table 7.3 in appendix A).

Figure 2.2 Loss of Employment by Sector, 2010–13

Sources: Eurostat, LFS; authors' calculations. All figures correspond to year-on-year Q2 comparisons.

2.2.1 Changes in Employment by Sector

Taking the crisis period from 2008 to 2013Q3 as a whole, as can be seen in the second column of Table 2.1, the biggest loses occurred in wholesale and retail trade (233,100 jobs), manufacturing (230,000), and construction (156,100). Public sector employment saw a decline as well, with a reduction of 37,000 positions. Finally, education saw the loss of 54,500 openings, while health and other social services lost another 34,700. During the first phase of the crisis in Greece—that is, between 2008 and pre-Troika 2010—the decline in employment across sectors amounted to a total of 262,000 positions (Eurostat 2013). All sectors shed jobs, except six that added jobs: agriculture, forestry, and fishing, 16,900 jobs; construction, 1,500; financial and insurance activities, 5,200; real estate, 500; public administration, defense, and compulsory social security, 4,000; and, finally, the arts, entertainment, and recreation industry, ranking second in job creation after agriculture, with 12,100 jobs. Wholesale and retail trade (88,200 jobs lost) and manufacturing (84,900 jobs) were hit the hardest.

The next three years (2010–13) are the years of austerity and paint a much grimmer picture, with over 75 percent of the employment reduction (794,400 positions) taking place during the post-Troika period of 2010–13. All sectors— without exception—incurred job losses, with the vast majority occurring in the highly distressed private sector. Construction, which had added 1,500 in 2008–10, was hit the hardest, with 157,600 workers losing their jobs. Wholesale and retail trade, and manufacturing were hit next, eliminating roughly 145,000 positions each, while agriculture, forestry, and fishing rapidly shed 57,700 jobs, and education, 47,000[19] (Figure 2.2).

2.2.2 Changing Distribution of Employment by Professional Status

In concert with the sectoral job shedding, the composition of employment by professional status / worker status has been changing in troublesome ways. The official International Classification of Status in Employment (ICSE) definition separates "employed persons" into four distinct groups: (a) *employees*, namely, waged and salaried workers; (b) *employers*,
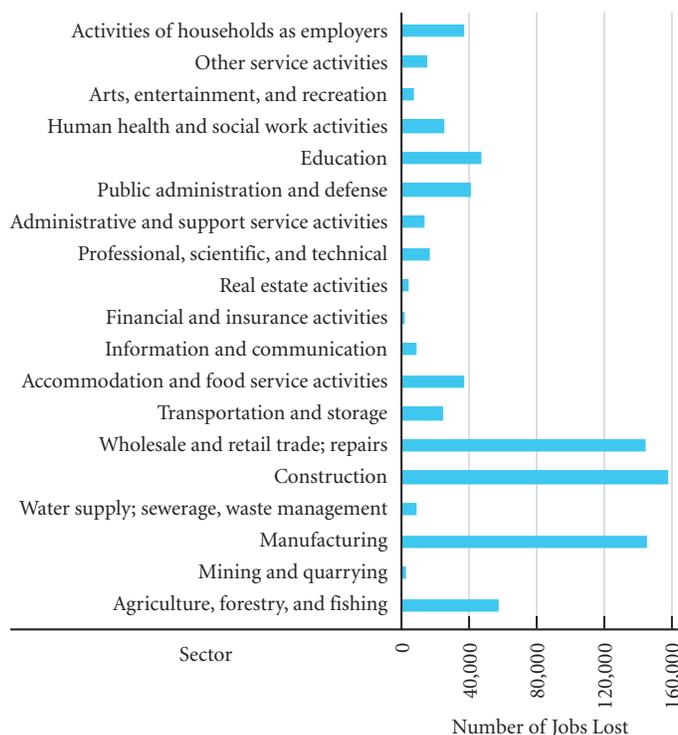
that is, the self-employed who hire other workers; (c) *own-account workers*, the self-employed who work on their own without hiring other employees; and (d) *family contributing workers*, who hold self-employment jobs in an establishment operated by a relative, with no financial compensation and too 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. Because the allocation of labor by worker status reflects the structure of an economy, even small movements across ISCE boundaries take place gradually and over prolonged periods of time. For example, in the case of EU-17 and EU-27 countries as a whole, one observes extreme stability when comparing the years 2010 and 2013, as shown in Table 2.2 and in appendix A, Table 0.1.

This, however, is not the case for Greece. Two key observations emerge from Figure 2.3. We note first that, as compared to EU-17 and EU-27 countries, the Greek economy had a much lower proportion of wage and salaried employees (roughly 20 percent less) prior to the crisis. This difference has increased substantially during the last three years. Rounding off decimal points for ease of comparison, in 2008, 65 percent of all employed persons were wage and salaried employees, but by 2013 this share had dropped to 62 percent while the EU-17 average of 85 percent has remained the same (with Spain and Portugal at 82 percent and Italy at 75 percent). Second, the ICSE distribution has changed in the past three years: the proportion of employers and unpaid family work has dwindled, and while the proportion of wage and salaried employees has also lost ground, all of the difference was absorbed by the "self-employed without staff" category. In other words, the "own-account" work slice of a continuously shrinking pie of employment expanded from 21 percent in 2008 to 26 percent in 2013. Own-account work, it must be kept in mind, is identified by the ILO as the most vulnerable form of employment (together with unpaid family workers) because it does not enjoy access to unemployment, social security, or health benefits and is devoid of predictability 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 misery, informality, and precarious forms of subcontracting. Rather than interpreting own-

Table 2.2 Distribution of Employment by Professional (Worker) Status, EU-27 and EU-17 (aged 15–64)

Worker Status	Persons (in thousands)			Percentage		
	2008	**2010**	**2013**	**2008**	**2010**	**2013**
EU-27						
Employees	183,151	177,843	177,489	84.3	84.0	84.3
Employers	9,628	9,223	8,736	4.4	4.4	4.1
Own-account workers	21,268	21,605	21,592	9.8	10.2	10.3
Contributing family workers	3,271	3,067	2,750	1.5	1.4	1.3
Total	**217,318**	**211,738**	**210,567**	**100.0**	**100.0**	**100.0**
EU-17						
Employees	120,418	117,450	116,151	84.6	84.6	84.8
Employers	7,262	6,945	6,555	5.1	5.0	4.8
Own-account workers	13,118	13,217	13,202	9.2	9.5	9.6
Contributing family workers	1,517	1,276	1,036	1.1	0.9	0.8
Total	**142,314**	**138,889**	**136,943**	**100.0**	**100.0**	**100.0**

Source: Eurostat, LFS

Figure 2.3 Distribution of Employment by Worker Status (15 years of age and older)

- ■ Employees
- ■ Employers
- ■ Own-account Workers
- ■ Contributing Family Workers
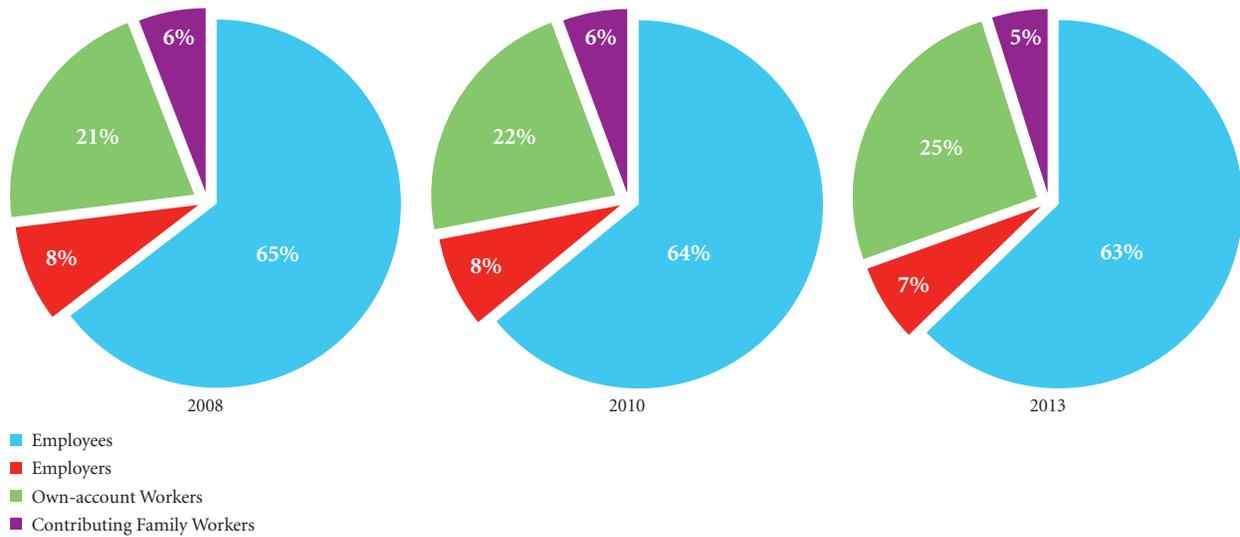
Sources: Eurostat, LFS; authors' calculations

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 a structural shift in employment, with more people in the working-age population forced to choose between long-term unemployment and distressed "self-employment without employees" status.

In summary, over the past five years the loss of employment is directly traceable to the decimation of the private sector—with manufacturing, retail and wholesale trade, and construction contributing roughly 60 percent of the jobs that disappeared. The public sector has also lost some jobs, but in the years ahead we are certain to see intensification in the elimination of government jobs, a result of the Troika's obiter dictum. In the meantime, there is clear evidence that the "own-account work" category of workers is expanding. With this background in mind, we turn next to a detailed analysis of the structure of joblessness in Greece.

2.3 UNEMPLOYMENT TRENDS

Since 2008, unemployment in Greece has risen by a perilous 370 percent, from 369,400 persons to 1,376,463[20] by the end of the third quarter of 2013 (ELSTAT). The increase in unemployment over the last five years to its current astounding level is depicted in Figure 2.4.

Contrary to the expectations of the MoF that the unemployment rate would decline to 24.6 percent by the end of 2012, the rate of unemployment continued its upward trend, and in October 2013 registered a new high of 27.8 percent. The comparable figure for September 2013 was 27.7 percent, while the rate in October 2012 was 26.1 percent. Despite

Figure 2.4 Unemployment Level, 2008–13 (persons, in thousands)
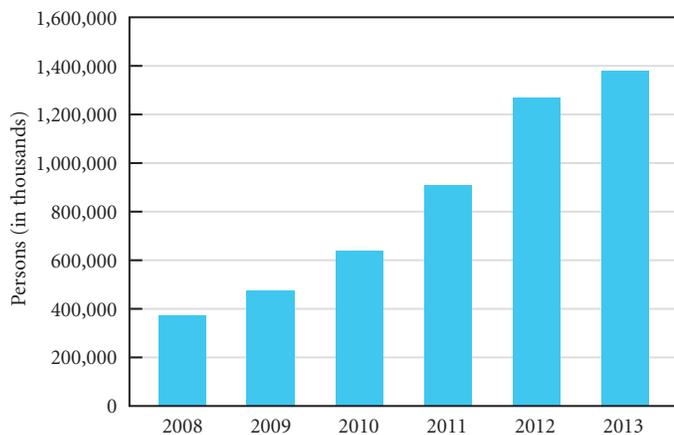
Source: ELSTAT LFS, Q3 data

the deceleration of the rate of increase of unemployment, nearly 12,000 additional persons per month have been joining the ranks of the unemployed in 2013 (October), for a total of 106,383. Women's unemployment rates, a topic we will return to later, have traditionally been higher than men's, and this upward trend in female unemployment has persisted during the crisis, as documented in Figure 2.5.

2.3.1 Long-Term Unemployment

What makes the above figures even grimmer is the length of time people have been out of work. The averages for 2013 show 224,000 persons out of work for more than four years; 317,000 jobless for two to four years; and 350,000 out of work for one to two years. All face scarce job prospects. The detailed data are shown in Table 2.3 in thousands of persons and as percentages of all unemployed. More specifically, we present the latest available figures for unemployed persons by duration for the first three quarters of 2013 (Figure 2.6). On average, of the 1,345,067 unemployed persons, more than 890,000—66 percent—had been unemployed for over a year. This upward trend has been worsening over time, and in 2013Q3 the ELSTAT figures show long-term unemployment at an appalling rate of 71 percent.

Given the ongoing crisis and the lack of labor demand, long-term unemployment is set to stay at high levels for many years to come, as the short-term unemployed progressively move into long-term status, as illustrated in Figure 2.7. As is by now well documented, since the 1980s, long-term unemployment, when it continues, becomes structural unemployment, limiting the prospects for reemployment due to both the deterioration of workers' skills and increased discrimination by employers.[21]

Moreover, 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.

Related to part-time employment is the incidence of poverty. In Greece, according to Survey of Income and Living Conditions (SILC) data, in 2012 the poverty rate among part-time workers was more than double compared to full-time workers, at 27.3 percent and 13.4 percent, respectively (ELSTAT).[22]

Figure 2.5 Unemployment Rates, Total and by Gender, 2005–13 (in percent)
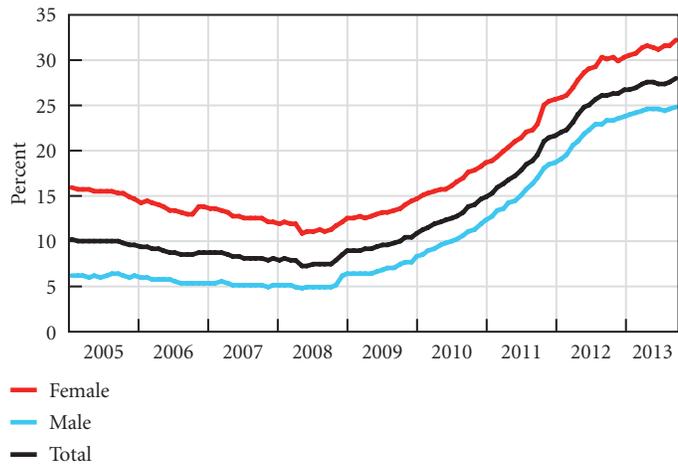
Source: ELSTAT, LFS

Table 2.3 Long-Term Unemployment Level by Duration, 2013 Q1–Q3 Average

Months Out of Work	Persons (in thousands)	Percent Share
12 to 17	198.9	14.8
18 to 23	151.2	11.2
24 to 47	317.0	23.6
48 +	224.1	16.7

Note: The sum does not add up to 100 percent since those unemployed for less than 12 months and nonrespondents are not included in this table.

Source: Authors' calculations; Eurostat, LFS

Figure 2.6 Unemployment by Duration (level, in thousands)
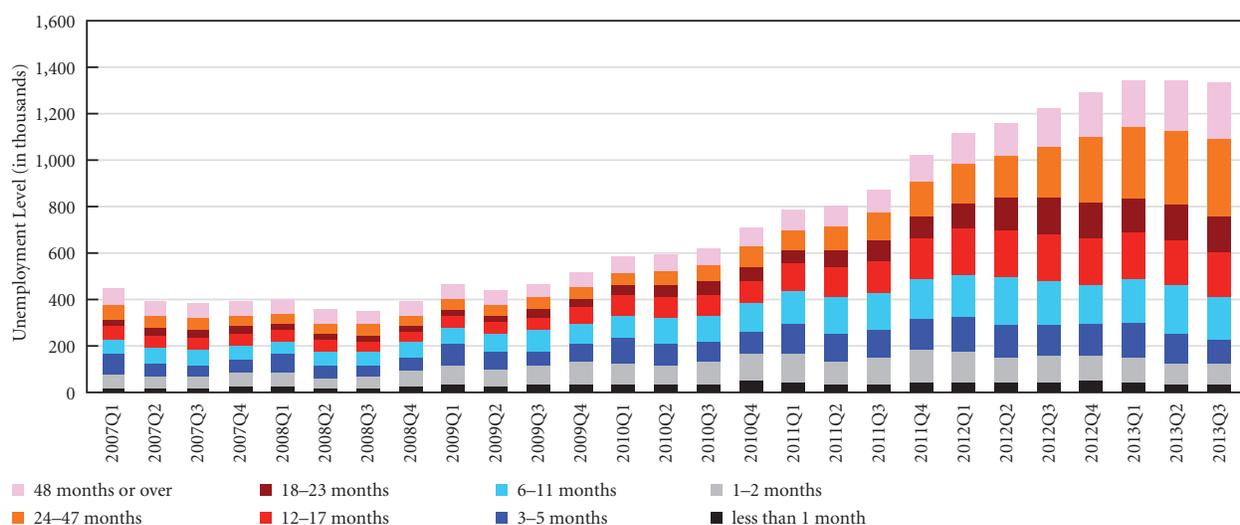
Source: Eurostat, LFS

Figure 2.7 Involuntary Part-Time Employment as a Percentage of Total Part-Time Employment, 2012
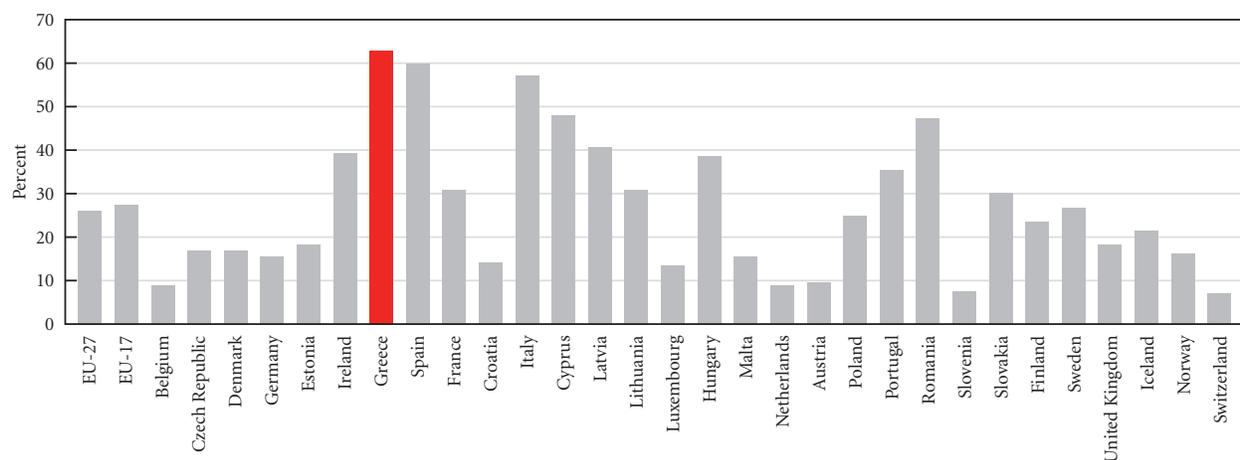
Source: Eurostat, LFS

2.3.2 Distribution of Unemployment by Educational Attainment Level

It is useful to have a clear understanding of the skill composition of the unemployed, as this serves as an indicator of future prospects of the unemployed in terms of wages and job opportunities. We use as a proxy for skill level the educational attainment (years of schooling) of the unemployed.

Our interest lies in understanding the compositional nature of the characteristics of the unemployed (the share of a group in the total pool of unemployed). Accordingly, the figures presented in Table 2.4 pertain to the proportion of individuals within an educational attainment group as a percentage of the total pool of unemployed. In 2012, the latest year for which annual data by educational attainment is available, 791,885 of the unemployed (66 percent of the total) had an attainment level of secondary education (Lyceum) or less: among them, 341,850 persons (28 percent) had only three years of high school (Gymnasio) or less, and an additional 450,035 had completed a primary level of education (Dimotiko).

Table 2.4 Distribution of Unemployment by Educational Attainment Level, 2012

Highest Level of Educational Attainment	Persons	Percentage	Cumulative	Cumulative Percentage
Primary education (6 years – Dimotiko) or less	194,115	16.2	194,115	16.2
Gymnasio (3 years of secondary education)	147,735	12.3	341,850	28.5
Lyceum (3 years beyond Gymnasio)	450,035	37.5	791,885	65.9
Technical education institutions (TEIs)	247,259	20.6	1,039,144	86.5
Bachelor's degree (university)	141,287	11.8	1,180,431	98.3
Ph.D. or master's degree (university)	20,921	1.7	1,201,352	100.0
Total	**1,201,352**	**100.0**		

Source: Authors' calculations; ELSTAT, LFS

2.3.3 The Gender Dimension of Unemployment

Even before the crisis, as illustrated in Figure 2.5, unemployment rates among women were higher than men's, especially if one considers that the overall female labor force participation is low (roughly 44 percent for women vs. 64 percent for men in 2010). In 2008, for example, when the unemployment rate was 7.7 percent, the unemployment rate for men was 5.1 percent, while that for women was more than double, at 11.4 percent. When the crisis unfolded, newly unemployed women boosted these already worrisome numbers. Historically, female unemployment, even in absolute numbers, has been higher than that of men, as shown clearly in Table 2.5. In August 2008, for example, there were 244,000 unemployed women vis–à–vis 145,000 unemployed men. By 2010, with a deepening recession in full force, and despite its effects on male-intensive industries, out of 641,000 unemployed workers, 344,000 were women and 297,000 were men. This trend contin-

Table 2.5 Unemployment Levels, Male and Female, Various Months/Years

Month/Year	Female	Male	Total
August 2008	224,000	145,000	370,000
March 2009	259,000	187,000	446,000
August 2010	344,000	297,000	641,000
December 2011	538,000	518,000	1,057,000
April 2012	562,000	578,000	1,141,000
August 2013	674,000	703,000	1,377,000

Source: Eurostat, LFS

Table 2.6 Long-Term Unemployment Rates, by Gender (in percent)

Year	Male	Female	Total
2008	40.4	52.0	47.5
2010	38.8	50.3	45.0
2012	56.6	62.0	59.3
2013	68.1	71.0	69.5

Note: 2013 corresponds to Q3.

Source: Eurostat, LFS, as a percentage of total unemployment

ued until April 2012, when the trend (in absolute numbers) reversed, with men exceeding women. The latest reversal in the trend notwithstanding, as conditions deteriorate there is a higher probability of women becoming unemployed in comparison to men.

For the third quarter of 2013, with an overall unemployment rate of about 27.4 percent, the corresponding unemployment rate for women was 31.4 percent, while the rate for men was 24.4 percent. The same picture emerges with regard to long-term unemployment rates (Table 2.6).

While youth unemployment, in general, has received a lot of attention in Greece and more generally in Europe, women's unemployment during the crisis has remained below the policy radar. We examine the age distribution of the unemployed below, but we want to highlight that women's opportunity to find gainful employment across *all age groups* is bleaker than men's, as is clearly illustrated in Figure 2.8.

2.3.4 Youth Unemployment

The youth unemployment rate has been universally much higher than the other age categories of unemployed workers. In 2008, youth unemployment was already high at 22.1 percent, compared to an overall unemployment rate of 7.7 percent. By the third quarter of 2013, the unemployment rate of job seekers aged 15–24 years had shot up to the unprecedented rate of 57.2 percent, while the rate for the next age cohort, 25–29 years of age, stood at 43.8 percent (Figure 2.9).

The extraordinary increase in the youth unemployment rate from 22.1 percent to an average of 54.2 percent between 2008 and 2012, and to 58.7 percent on average for the first three quarters of 2013, has elicited alarm and strong interest by the European political leadership for many countries, including Greece.

A traditional public policy response to the youth unemployment challenge took the form of ALMPs. These sorts of policies seek to foster an increase in the supply of labor; their focus is on increasing the employment prospects of youth via: (a) improving their employability through short training courses to better match their skills to labor market needs, (b) endowing them with initial work experience by incentivizing enterprises through wage subsidies to hire them as new entrants, and (c) fostering entrepreneurship through small grants and advising/extension services (see appendix D). What we notice, however, is that current labor market conditions have changed dramatically, and the ALMPs need to be reframed.

Unemployment is primarily the result of a lack of demand of labor, both for youths and for more mature working-age adults. Training may be important for some, but the "brain drain" seen in the migration of educated youth signals a misdiagnosis of the root causes of unemployment. Subsidies to firms may have some impact, but only to a

Figure 2.8 Unemployment Rates by Age and by Gender, 2012 (in percent)
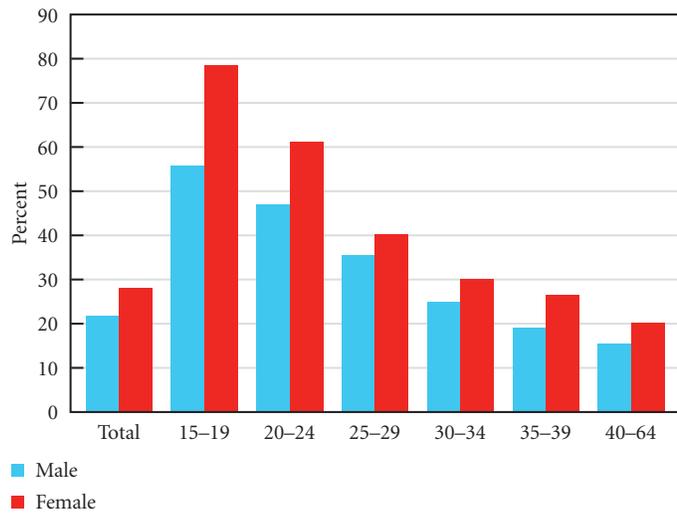
Sources: Eurostat, LFS, annual percent average of quarterly data; authors' calculations

Figure 2.9 Youth Unemployment Rates, 1998–2013 (in percent)
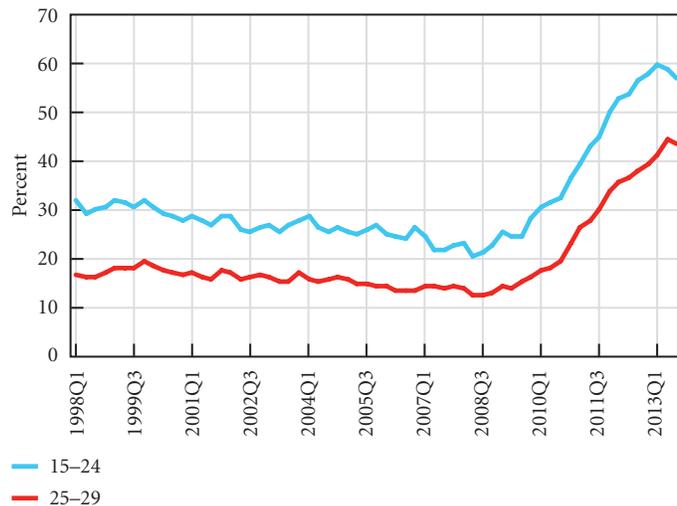
Source: Eurostat, LFS, Unemployment rates by sex, age, and nationality (%)

Figure 2.10 Unemployment Rate by Age Group, 2012 (in percent)

- 15–24
- 25–54
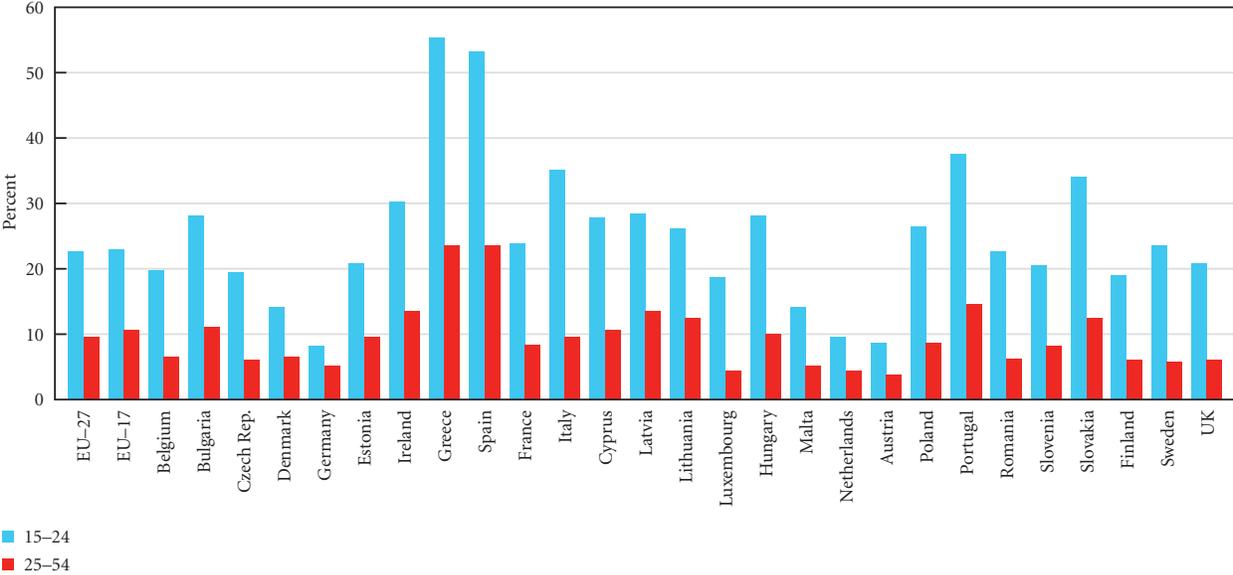
Sources: Eurostat, LFS; authors' calculations

Figure 2.11 Unemployment Share by Age, 2012 (in percent)

- 15–24
- 25–54
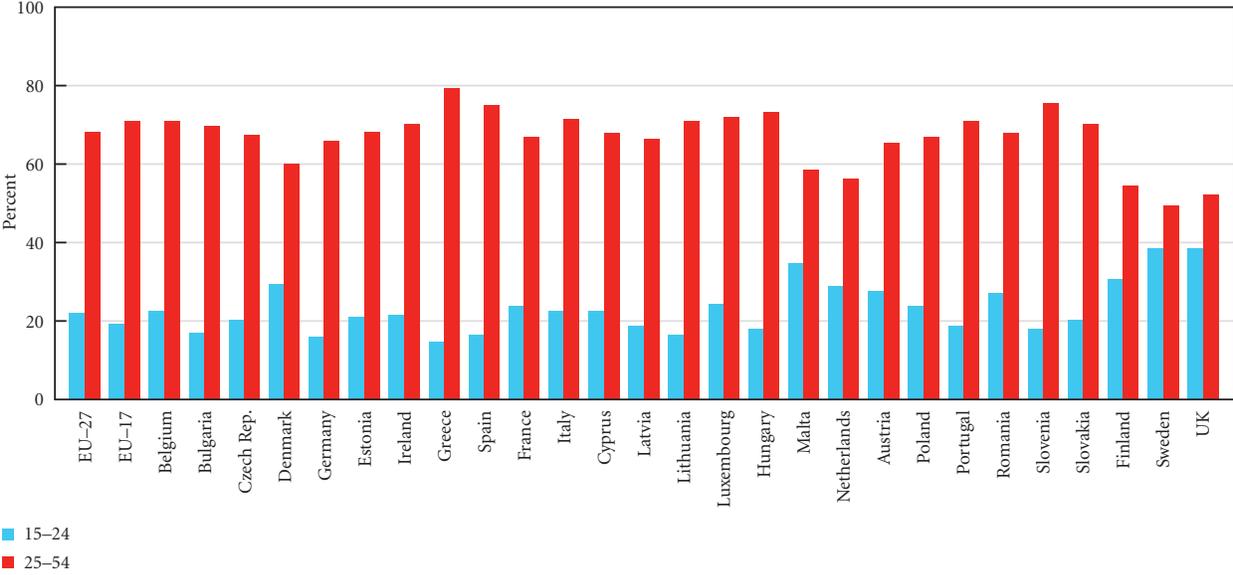
Sources: Eurostat, LFS; authors' calculations

limited extent, because firms also face a lack of demand. Fostering entrepreneurship is also important, yet the trouble for existing and aspiring entrepreneurs rests with the reluctance of commercial banks to lend; and when banks do make loans, they tend to lend at interest rates very much above the corresponding European levels, putting startup firms at a disadvantage. This is shown to some extent when we observe the higher decrease of the ranks of employers in relation to all employed to the overall reduction of employment. More important, the key issue to recognize is that the age composition of the unemployed has undergone an incredible transformation, which must be taken into account in policy interventions. For example, after one year into the crisis, in 2009Q1, the total number of unemployed aged 15–24 was

89,600, while for the age group 24 and over the total was 375,500. The corresponding numbers in 2013Q2 were 158,500 unemployed persons under the age of 25, an increase of 110 percent, while among those aged 25 and over, the number of jobless persons reached 1,171,500—an increase of 226 percent. This is not a uniquely Greek challenge.

In 2012, according to Eurostat, in the eurozone (EU-17) there were 3.4 million unemployed young people aged 15–24, but roughly four times as many unemployed workers were between 25 and 54 years old (12.6 million). 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. The recent focus and proposals of the EU authorities to deal with youth unemployment exclusively (i.e., the Youth Employment Initiative of 2012 and the Youth Job Guarantee[23]) is problematic. The policy response is also based on a misdiagnosis of the problem, and hence focuses on the three pillars mentioned above (training, employability, and entrepreneurship[24]). Figures 2.10 and 2.11 indicate that youth unemployment rates are extremely high across countries, but the reality confronting Greece and the EU countries—except Sweden, the UK, and, to some degree, Finland and Malta—is that the share of workers over 25 years of age make up by far the vast majority of the unemployed (Figure 2.11). In Greece, in 2012, the youth unemployment share of overall unemployment was 14.4 percent. Employment policies must be cognizant of this reality.

It is also useful and instructive for policymakers to know the educational attainment of this age cohort. Among unemployed youth between 15 and 29 years old, 220,701—or 56 percent of the total—had an educational attainment level of Lyceum or less in 2012 (Table 2.7). The comparable figure for 15–64 years old is about 65 percent (Table 2.8). The difference

Table 2.7 Distribution of Youth Unemployment by Educational Attainment (aged 15–29), 2012

Highest Level of Educational Attainment	Persons	Percentage	Cumulative	Cumulative Percentage
Primary education (6 years – Dimotiko) or less	27,562	7.0	27,562	7.0
Gymnasio (3 years of secondary education)	34,929	8.8	62,491	15.8
Lyceum (3 years beyond Gymnasio)	158,210	40.0	220,701	55.8
Technical education institutions (TEIs)	106,802	27.0	327,503	82.8
Bachelor's degree (university)	61,479	15.5	388,982	98.4
Ph.D. or master's degree	6,524	1.6	395,506	100.0
Total number of unemployed	**395,506**	**100.0**		

Source: Authors' calculations; Eurostat, LFS

Table 2.8 Distribution of Unemployment by Age and Educational Attainment, 2012 (in percent)

Highest Level of Educational Attainment	15–29	15–64	Cumulative 15–29	15–64
Primary education (6 years – Dimotiko) or less	7.0	16.2	7.0	16.2
Gymnasio (3 years of secondary education)	8.8	12.3	15.8	28.5
Lyceum (3 years beyond Gymnasio)	40.0	37.5	55.8	65.9
Technical education institutions (TEIs)	27.0	20.6	82.8	86.5
Bachelor's degree (university)	15.5	11.8	98.4	98.3
Ph.D. or master's degree	1.6	1.7	100.0	100.0
Total	**100.0**	**100.0**		

Source: Authors' calculations; Eurostat, LFS

of 10 percentage points accounts for those 15- to 29-year-olds who are still in school. We can, then, conclude that low educational/skill levels may be much more challenging for the unemployed of a more mature age. Next, we observe in Table 2.8 that the unemployment share of the cohort that has attained a Lyceum graduation degree is roughly the same for the two age groups compared in the table (40.0 and 37.5 percent, respectively). The next educational level, those with a bachelor's degree or higher, exhibits a slight bias (four percentage points) against the younger cohort. Finally, we notice that unemployment is higher for the 15- to 29-year-olds who have already acquired technical skills (i.e., the graduates of TEIs) as compared to the average unemployed. We can, again, conclude that lack of education/skills is not the key cause of the 15- to 29-year-old group being unemployed—at least, not more so than for the average unemployed person.

The overemphasis of public policy on remediation through skill enhancement is, then, an ineffective response. To face the scourge of unemployment in earnest, we need to recognize that the trouble with the country's unprecedented number of idled workers is a lack of effective demand. Its depth is extraordinary and it must be met with massive investment, achievable only through a well-coordinated plan implemented by the public and private sectors.

2.4 DISTRIBUTION OF MONTHLY EARNINGS OF EMPLOYEES IN THE PRIVATE SECTOR, 2012

Reduction in unemployment in the near future will depend on new hiring in the private sector, and the public sector. The latter, unwisely, is expected to shrink dramatically if the country is to fulfill the Troika's mandates. Assuming for the moment that private sector job creation takes place, it is important to understand the prevailing wage and salary environment within which the unemployed will be offered a job.

Following agreements defined in the second Memorandum of Understanding with the Troika, the government introduced employment protection legislation (Law 4046/2012) in February 2012 to comply with conditionalities of the bailout (see appendix B for details). The aim of the new legislation was to effect a rapid reduction of labor costs (internal devaluation), as discussed earlier. The new legislation mandated a decrease of the minimum wage *in the private sector* by 22 percent, with a further reduction for young workers (15–25 years old) of 32 percent. The new gross minimum wage was accordingly reduced from 751 euros per month to 586 euros, and to 511 euros for younger workers. When employee contributions are deducted (at a rate of 16.5 percent), the new legislated minimum net take-home pay amounts to 489 euros, and 427 euros for youths, down from the previous minimum level of 627 euros.

The policy of internal devaluation and other detrimental changes to employment protection (see appendix B for details) has devastated the wage-earning classes. This ill-advised policy orientation was predicated on the expectation of export growth as the result of increased competiveness via the suppression of labor costs. This has not come to pass. Instead, lower earnings have reduced the already anemic demand for nontradables—putting further pressure on domestic production for domestic consumption, and hence, on employment.

The reduction of the minimum wage has been accompanied by a large number of additional actions (beginning in 2010) that have all but decimated labor rights and collective bargaining. As a recent ILO (2013) publication puts it, "Since May 2010, Greece has been witnessing extensive and rapid legislative changes in labor law and collective bargaining conditions which are unprecedented in Greek and European political history." While a list of these unprecedented changes is included in appendices B and C of this report, below we analyze the distribution of monthly earnings (i.e., wages and salaries) of Greek employees in the private sector[25] using Labor Force Survey (LFS) 2012 information.[26]

We begin by identifying the subset of employed persons we will focus on. Table 2.9 indicates that, in 2012, out of 3,763,621 employed persons, 2,377,416 (63.17 percent) were employees. These 2,377,416 workers can be grouped in three categories according to the legal status of the hiring entity (enterprise) that employs them: core public sector; broader public sector (various legal entities of public and private law that are controlled by state and public organizations, municipal and communal enterprises, enterprises managed by the government, etc.); and private enterprises. It

is this last category (employees in private enterprises) that we are interested in.

The massive reduction in employment that has taken place in the private sector during the crisis years is apparent when we consider that by 2012 only 1,515,109 individuals (63.73 percent) worked in private sector enterprises.[27] Excluding part-time workers and those hired seasonally in agriculture (so as to avoid underestimating monthly earned incomes) gives us the net number of 1,039,924 persons (60.23 percent of all private sector employees). Table 2.10 reports the take-home earnings composition of these private sector full-time nonagricultural employees.

The results are telling: the majority of *full-time* wage and salaried employees in the private sector, 64.7 percent or a total of 672,669 persons, receive a monthly take-home pay of less than 1,000 euros. In fact, more than half of all full-time private sector employees (51.3 percent) earn less than 900 euros per month. Approximately one out of five *full-time* wage and salaried employees in the private sector earn 699 euros or less; that is, 52 euros less than the minimum wage that prevailed up until 2012 (prior to the wage reduction required by the Troika's Memorandum II). Adding workers who for economic reasons work part-time but wish to have full-time jobs, we obtain a total of 145, 724 workers who receive less than the pre–February 2012 legal minimum wage.

We conclude this section with a few remarks on poverty. In the introduction to this report, we mentioned that poverty rates among the unemployed are higher than among the employed, at 45.8 percent and 15.1 percent, respectively (ELSTAT, SILC 2012).[28] But looking at absolute numbers, it is clear that in-work poverty is a severe problem in Greece, with 560,170 persons (Table 2.11) among *all* the employed found to be below the poverty line (SILC 2013).[29] Still, among the 2,377,200 *employees* (all of the wage and salaried workers in the private and public sector, both full-time and part-time) we find 215,605 in poverty

Table 2.9 Professional Status of Employed Workers, 2012

Professional Status	Persons	Percentage
Self-employed with staff	269,199	7.2
Self-employed without staff	930,330	24.7
Employees (wage and salary)	2,377,416	63.2
Family worker (assistant in family business)	186,676	5.0
Total	**3,763,621**	**100.0**

Source: ELSTAT, LFS

Table 2.10 Distribution of Earnings, Private Sector Full-Time Employees, 2012

Monthly Income	Persons	Cumulative	Percentage	Cumulative Percentage
<=499	37,829	37,829	3.6	3.6
500–699	165,230	203,059	15.9	19.5
700–799	176,566	379,625	17.0	36.5
800–899	153,502	533,127	14.8	51.3
900–999	139,542	672,669	13.4	64.7
1,000–1,099	119,349	792,018	11.5	76.2
1,100–1,299	105,351	897,369	10.1	86.3
1,300–1,599	56,800	954,169	5.5	91.8
1,600–1,749	28,678	982,847	2.8	94.5
>=1,750	57,077	1,039,924	5.5	100.0
(Total)	1,039,924		100.0	

Source: Authors' calculations; ELSTAT, LFS

Table 2.11 Levels of Employed and Unemployed at Risk of Poverty, 2012 (18 years and older)

	At Risk of Poverty	Total
Employed persons	560,170	3,763,000
Employees	*215,605*	*2,377,200*
Employed persons except employees	*344,565*	*1,385,800*
Unemployed persons	521,885	1,201,100

Source: Authors' calculations; Eurostat, SILC, Distribution of population over 18 years of age by most frequent activity status, age group, and sex

(less than 10 percent of the total). In contrast, among the 1,385,800 *employed persons except employees*—which combines the more than 930,000[30] "self-employed without staff" with the "employers" category (self-employed with staff)—we find 344,565 poor.

These findings invite further reflection.[31] First, in absolute numbers, among the poor, 560,170 persons are employed and 521,885 are unemployed. Hence, the share of the "employed" among the poor is slightly larger (by 38,285 persons) in comparison with the unemployed (in absolute numbers). This does not change the fact that the probability of being poor, if unemployed, is much higher than the probability of being *employed* and poor.

Second, despite the pitiful picture that emerged when we examined the distribution of private sector employees by monthly wages, the vast majority of the employed in poverty come from the "employed persons except employees" (the self-employed and employees). This is the case in absolute terms (344,566 as compared to 215,605) and in relative terms (a poverty rate of 24 percent versus 9 percent among employees). One way of interpreting this is that many among the "self-employed without employees" are self-employed as a coping strategy, not because of entrepreneurial fervor, accepting for themselves below-poverty earnings simply because they do not have other viable employment alternatives.

2.5 FINAL REFLECTIONS

The economic fallout from the austerity regime installed in Greece by the Troika, with the acquiescence of three successive governments, has been staggering. Unemployment has exploded to unprecedented levels, and by 2012 the private sector had shed the vast majority of jobs. The level of disinvestment in the Greek economy is manifested in the rapid deterioration of annual gross fixed capital formation (GFCF) in the nonfinancial private sector, which has fallen from approximately 20 billion euros in 2008 to 12 billion euros in 2013 (Eurostat).[32] The business sector alone will not be able to provide the much-needed jobs, not in the relevant time frame and not for the 1.35 million jobless. The devastating economic consequences, though, go beyond the loss of GFCF and GDP. Should we magically return to the 2008 unemployment rates and minimum wage levels and return about one million unemployed people to work, even at a minimum wage, tax revenue from employers' and employees' contributions would amount to 4 billion euros annually.[33]

Government action is urgently needed. As we consider policy options, the following facts are important to keep in mind. Long-term unemployment emerges as the key challenge, and the process of it becoming structural is already taking shape. The age composition of the unemployed highlights that, even though youth unemployment rates are unacceptably high, policy should be guided by the shares of unemployed workers, which are undeniably much larger for those aged 15–24. Instead, to truly care for the youth, the previous minimum wage level should be reinstated. Women are being hit the hardest, because of preexisting trends that were already working against women prior to the crisis. The majority of part-time workers are ready and willing to work full-time, but full-time employment opportunities are not in sight. The ranks of the self-employed are increasing rapidly. This coping strategy should be recognized for what it is; namely, distressed own-account work, not heightened entrepreneurial spirit. In addition, it must be kept in mind that more than half of the full-time private sector employees receive wages of 1,000 euros or less a month. Standards of living are severely suppressed, and emergency increased taxation on property and VATs have further reduced disposable income. The danger of further downward pressure on wages, given the rates of unemployment, should be cause for alarm. Last but not least, under these conditions, in-work poverty is a clear challenge. Nonetheless, the link between unemployment and poverty is too obvious to ignore.

The official rhetoric and the vast majority of active labor market measures (and funds) are misplaced because they continue to focus on (a) improving employability via skill development and training when the main problem in the economy is lack of demand for labor, not quality of supply, as evidenced by the "brain drain" currently taking place; (b) enhancing "entrepreneurship" when Greece has roughly double the size of per capita small- and medium-size enterprises

as compared to the European average; and (c) wage subsidies to private companies to hire more workers, which in the midst of lackluster demand is both ineffective and poses the great danger of turning current full-time jobs into part-time ones or replacing them altogether with no-cost subsidized workers. The other type of misdiagnosis pertains to the age composition of the unemployed.

Indeed, while youth unemployment is a longstanding problem in Greece—as well as around the world, including many other Mediterranean economies—the impact of the crisis is much deeper among older workers. Trends in unemployment point to a needed prioritization of addressing long-term joblessness, gender disparities, and the rise of joblessness among the less educated. In addition, the rapid increase in self-employment gives us cause for alarm. Remedial policy prescriptions (detailed in appendix D) warrant rethinking. It is to this issue that we turn next.

3. THE NEED FOR AN "EMPLOYER OF LAST RESORT" POLICY

The sharp post-2010 reduction in government spending, severe and unfairly distributed increases in taxation, and harsh wage reductions put Greece's economy into a downward spiral. With investment and exports incapable of offsetting the dramatic decreases in public spending and household consumption, reversing austerity policies is an urgent priority. A demand-led/wage-led recovery path is needed to generate positive feedback loops. This will require coordination and consistency between a gradual reinstatement of the minimum wage, incentives to encourage and facilitate investment spending, and a government-led expansionary policy that includes an employment policy.

3.1 POLICY OPTIONS FOR EMPLOYMENT GENERATION DURING AN ECONOMIC DEPRESSION

As we noted earlier, active labor market interventions that aim at improving the supply of labor are based on a misdiagnosis of the root problem of unemployment in Greece (i.e., the loss of jobs as a result of the depressed state of the economy).

Employment policy that redresses the severe *lack of demand* for labor usually entails a choice among three well-known options: work sharing, wage subsidies to firms, and direct public benefit job creation. *Work sharing* is predicated on the reduction of work time of the currently employed so that existing work opportunities are shared among more persons; *wage subsidies* provide incentives to firms to hire additional workers by monetarily increasing wages and/or employer and employee social security contributions; and *direct public service job creation programs* create new jobs for willing and able unemployed persons in work projects that yield a public benefit (e.g., physical infrastructure, flood control, reforestation, care of children or the elderly, computerization of public records and services, etc.). There may be a wide array of compensation rules but the wage offered is approximately the legal minimum wage.

Experiments with work-share strategies in Germany, the Netherlands, Belgium, France, Australia, and Japan have not always yielded sustained employment increases (Papadimitriou 1998, 2008); nonetheless, they are being implemented anew to deal with the current economic crisis in a number of countries in Europe. A full discussion of these policies is beyond the scope of this study.[34] However, even if such measures provide some relief, the economic conditions in Greece, where declining domestic demand continues unabated and lowers economic activity, make them unworkable, if for no other reason than the extraordinary number of low-paid workers. As we saw in the previous section, employment figures show a loss of about one million jobs since the employment peak in 2008. Among the 3,639,429 employed persons, only 62.9 percent are wage and salaried employees. In European countries where work sharing has been implemented that ratio is much higher. The EU-17 average, for example, is 84 percent. In Germany, a country often cited as a success story for work sharing, unemployment is in single digits and wage and salary earners constitute 88.7 percent of the employed. Those in Greece who could potentially share their work hours are those working *full-time*—public and private sector workers—who total roughly 1.7 million, while, at the same time, the unemployed number 1.37 million. Wage sharing of those working full-time, were we to use this approach, would most likely be limited to those earning a monthly total wage of 1,000 euros and above—an employed labor constituency that the LFS identifies as only 367,255 individuals.

The employment subsidy strategy is one of the oldest policies proposed, going as far back as the work of Pigou (1933), Kaldor (1936), Hammermesh (1978), Haveman and Palmer (1982), and Phelps (1997). This strategy entails a full or partial offset of the cost to firms for hiring additional workers, on the condition that fires not fire existing employees and with the promise that firms will retain program beneficiaries as workers beyond the expiration date of the subsidy. This is only feasible if the economy expands. With relentless business failures and store closings continuing, and

with the turnover indices of business activity in wholesale and retail, industrial production, and other sectors being negative as discussed before, this approach is also not plausible. And even if this sort of policy were to be implemented, as it has been throughout the recent crisis, it has been estimated that it could forestall unemployment by only 5–7 percent. Finally, given the hardships that firms are facing today, this approach would most likely interfere with business decisions and create perverse incentives to replace higher-paid workers with subsidized workers, bypassing the legislation that prohibits such actions.

There are also other forms of wage subsidies that have been used that do not involve cash transfers to firms but directly to wage earners, as the Earned Income Tax Credit (EITC) in the United States and as negative income tax policies (Tobin 1966; Tobin, Pechman, and Mieszkowski 1967) in other countries. Yet, these policies aim at promoting participation in the labor market even at very low wages and under involuntary part-time conditions. They help close the wage earner's income gap (judged as the difference between actual earnings and a benchmark income threshold, often the poverty line). These minimum income guarantee policies, unfortunately, serve—perhaps unintentionally—to legitimize substandard wages and workers' labor rights. Be that as it may, in the case of Greece, under current conditions, there are no "unwilling" workers, only workers who are eager, even desperate, to work for low wages and under precarious employment conditions. Such a policy could increase their earnings, but first, they would need to have access to a job. In summary, the policies mentioned above have generated mixed outcomes globally, and in the case of Greece, their failure to produce solid results even prior to the crisis has been well documented (Glynos et al. 2011).[35]

3.2 MINSKY'S ELR POLICY

We now turn our attention to the third option, direct public service job creation—the approach that is most relevant to Greece today. As our vision is based on the theoretical approach developed by Minsky (1986), we begin with a brief introduction of his views. Minsky proposed this employment strategy as a response to the US War on Poverty, drawing lessons from the Great Depression. He called it an "employer of last resort" (ELR) policy. It is a policy under which government provides a job guarantee to ensure full employment when markets fail to do so—a minimum wage job for all who are willing and able to work but cannot find alternative employment opportunities. This approach diverges from what is customarily understood as active labor market policy in several ways:

- Creates a *demand for labor*; it therefore is not based on the shortcomings of the suppliers of labor (i.e., laborers' skills or desire to seek employment). Instead, the policy recognizes as the key problem the lack of demand for labor—the fact that the vast majority of the unemployed are *willing and able to* work but unable to find a job.[36]
- Establishes *new* job positions that produce newly created/upgraded public assets and additional public purpose services; it therefore truly mobilizes unutilized labor by absorbing the unemployed in productive engagements that improve physical and social infrastructure and standard of living of the public (e.g., parks, public buildings, elder care, computerization of public records and services, etc.), expanding along the way the commons and the wealth of the nation.
- Generates positive multiplier effects in other sectors of the economy through the purchase of inputs for the new work undertaken and the spending of wages by the newly hired workers, which create additional demand elsewhere in the economy. It is therefore a stabilizing force for the entire economy and the private sector.
- Arrests *the downward pressure in labor markets (wages and work conditions)*. The program offers a secure, albeit minimum wage, job, and a job with predictable and stable hours of employment. It respects existing wage agreements and is intolerant of violations of labor standards, which, during periods of high unemployment, often manifest themselves in proliferating irregular and informal jobs, and precarious working conditions.

Although the notion of government acting as the ELR dates as far back as the seventeenth century, it was Minsky who gave this idea a strong theoretical footing (Kaboub 2007). Concerned with the fiscal policies of the Kennedy and Johnson administrations in the 1960s, Minsky wrote that "the liberals'" War on Poverty was born out of a neoclassical theory in which the poor—not the economy—are to blame for poverty. The War on Poverty tried to "change the poor, not the economy" (Minsky 1971: 20). This led him to advocate an employer-of-last-resort policy in the late 1960s and 1970s, and included a more clearly defined version in his book *Stabilizing an Unstable Economy* (1986). His proposal, further developed by Levy Economics Institute scholars (Forstater 1999; Papadimitriou 1998; Wray 1997; Antonopoulos 2008, 2009, 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 lender of last resort (i.e., the central bank's guarantee of providing liquidity to banks when the market fails to do so).

Because there is no internal market mechanism to balance the demand and supply of labor, instances in which private sector demand is insufficient to provide full employment are the rule rather than the exception, and so unemployment emerges and persists. Only government can divorce profitability from hiring workers and create an infinitely elastic demand for labor (Minsky 1986: 308). This requires government to take responsibility for providing employment to all who are willing and able to work. Under this policy, 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 (i.e., provide it to the private sector at a higher price [wage]). As is the case in all buffer stock schemes, the commodity used as a buffer stock is always fully employed. It always has a very stable price, which cannot deviate much from the range established by the government's announced "buy" and "sell" price. This feature of the proposal ensures full employment with stable wages and prices. The buffer stock aspects of this JG program generate "loose" labor markets even as they ensure full employment.

The argument for introducing this kind of employment policy is not limited to periods of crises but also has a long-term (or permanent) view. In Chile, for instance, an upper-middle-income country, unemployment rates registering above the previous three-year average automatically trigger a *permanent* direct job creation program funded by 1 percent of tax revenue set aside annually. Most recently and against the backdrop of the global financial crisis, China invested 3 percent of GDP annually until employment was stabilized. In the United States, the American Recovery and Reinvestment Act of 2009 was passed for a similar purpose. Other examples in the recent past include Sweden, Argentina, Australia, France, the Republic of Korea, and countries in the developing world as well as emerging economies (i.e., India, South Africa). Careful design is required so as not to waste public money. There are many examples of services and public asset values that can be used as models; international examples include the maintenance of roads and public structures and spaces, reforestation and environmental cleanup, flood-control physical infrastructure, and community-based care services as well as adult literacy and cultural programs.

The above cases and the lessons from the New Deal programs during the Great Depression demonstrate that government could successfully fulfill the role of ELR by offering decent jobs that engage people in socially and economically useful activities that do not compete with the private sector. President Franklin Roosevelt's government had a number of programs; these included the Public Works Administration, Civil Conservation Corps, National Youth Administration, Rural Electrification Administration, and Federal Emergency Relief Act. All of these programs provided jobs, but also fulfilled two tasks. During times when financial resources were scarce, the greatest wealth of a nation (its labor resources) was mobilized and contributed to the recovery of the country. In so doing, the program engaged and included the previously unemployed in the economic reconstruction of the country, delivering much-needed income and, with it, hope, dignity, and a more inclusive society.

3.3 THE RECENT EXPERIENCE IN GREECE WITH PUBLIC-BENEFIT JOB CREATION

By March 2011, 10 months after the first "rescue" package of 110 billion euros, the overall unemployment rate had already reached 16.2 percent (810,000 persons), with 50 percent of the unemployed out of work for more than a year. With a singular focus of the government on meeting fiscal consolidation targets, the risks of further deterioration in labor demand were clearly visible. It was in this climate that three ministries (the Ministry of Labour, Social Insurance and Social Protection, the Ministry of Interior, and the Ministry of the Economy and Competitiveness) jointly announced an initiative to fight unemployment. The program, designed with the aim of creating jobs at the local level through community service programs, was referred to as the Program of Public Service Job Creation (Πρόγραμμα Κοινωφελούς Εργασίας; hereafter, PKE 2012). On April 15, 2011, the agreement was signed into effect.[37] It provided details for rolling out an initiative to create 55,000 jobs. The wages of the newly hired, previously unemployed were to be financed by *preexisting* funds of the National Strategic Reference Framework (NSRF; Εθνικό Στρατηγικό Πλαίσιο Αναφοράς, or ΕΣΠΑ) and "without burdening the state budget." This initiative was introduced in addition to the already existing and continuing ALMPs that aimed at improving "employability" and market insertion (e.g., training in vocational centers, or KEKs) as discussed earlier.

The program was implemented across all regions in Greece but with a delay. In the interim there was a change of government and two national elections, which postponed the program's implementation, as mandated by the constitution. The salary was set at 625 euros per month or 25 euros per day at 2011 rates (before the reduction of the minimum wage) and the total duration of participation was for a maximum of five months. The scale of the program was very small. In order to prioritize beneficiaries from among potential applicants, selection criteria assigned high score points for youth status, long-term unemployment, and low income. Table 3.1 provides the ranking criteria and the corresponding score points assigned.

Appendix E provides a critical evaluation of selected aspects of the design and implementation of the PKE 2012, as well as summary statistics on the profiles of the applicants. At this juncture we only wish to state that the PKE 2012, although inspired by the ELR, did not adhere to a number of features that characterize an ELR program, and hence its formulation was neither a "job guarantee" policy nor was the state acting as an ELR. First, its small scale made it akin to a pilot project, not a shift in employment policy. Second, an ELR policy is not meant to be a compensatory mechanism for ill-formulated macro policies that destroy market activity (i.e., procyclical policies and the imposition of austerity measures in the midst of a deepening recession). Instead, it ought to have been part of a pro-growth, countercyclical economic agenda. Third, ELR proponents advocate full compliance to legal labor rights and the PKE 2012 were not granted access to unemployment benefits after the end date of their PKE 2012 contract.

Table 3.1 Selection Criteria and Scoring System

Targeting Area	Criterion	Score
Unemployed farmers	Long-term unemployed (>12 months)	20
	Young unemployed (<30 years)	25
	Short-term unemployed without benefit	15
	Farmer with annual income <€10.500 (2009)	10
Family status	Single-parent household	15
	Married with both spouses unemployed	8
	With dependents	5 (per member)
Family income	€0–6,900 (2009)	15
	€6,901–12,000 (2009)	10
	€12,001–16,000 (2009)	8
	€16,001–22,000 (2009)	6
	22,001 –	0
Health status	35%<Disability<50%	6
	50%<Disability	8
Residence	Permanent resident of the regional entity	10

Source: http://www.epanad.gr; accessed January 15, 2013

To summarize, the state as "employer of last resort" is envisioned as part of an expansionary fiscal stabilization policy serving as an automatic stabilizer. It aims at boosting economic growth by stimulating consumption demand of the formerly unemployed. In creating jobs, it sets a floor on wages and supports the right to work and establishes legal labor conditions and entitlements. Hence, from the standpoint of ELR, an expanded PKE 2012 initiative would require fundamental reformulation. Expanding its scale to include a larger population and longer duration of employment must be its priorities. What form, then, would a restructured PKE 2012 that incorporates these crucial issues take? The next section focuses on the details of our proposal, a Job Guarantee, hereafter referred to as JG.

4. THE JOB GUARANTEE PROPOSAL

The remainder of this report focuses on two main themes: first, on the presentation of the scale and the macroeconomic impact of the proposed JG initiative on the economy had it been, hypothetically, adopted in 2012.[38] Second, the report focuses on the data and methodology used to arrive at four alternative scales, based on the estimated number of participants, and simulates the macroeconomic impacts of, therefore, four possible scenarios. In this respect, we are interested in the total employment effects, which include jobs created over and above those offered through the JG program; intermediate input costs—domestic and imported—in carrying out the program; details of government revenue—social contributions, direct and indirect taxes; and GDP growth. While it is clear that this counterfactual exercise of "what if" cannot rewrite the past, our findings for the future are more important than ever. Unemployment, if not properly addressed, is set to become an intractable challenge in the years ahead.

Before proceeding further, a word of caution is in order. The assumptions and key elements of the Job Guarantee proposal detailed below are not prescriptive and therefore should not be read as providing guidelines for the design of a job guarantee program. Rather, the scenarios presented are strictly focused on providing quantitative estimates to answer the question, what would have been the macroeconomic and employment outcomes in 2012 had a large-scale JG intervention been introduced? 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; types of work projects undertaken, etc.). Thus, the assumptions are adopted for the purposes of analysis, and are not intended as a framework for the proposal. As we have detailed elsewhere, the specifics of the design and implementation of the JG program ought to be decided through an open and democratic process that involves social partners, the academic community, and, above all, the unemployed.

4.1 INTRODUCTION TO THE KEY ELEMENTS OF THE JOB GUARANTEE[39]

(1) **Eligibility** for a JG job is extended to all unemployed persons based on the ELSTAT-LFS data for 2012. A scoring system ranks all the unemployed according to criteria that prioritize long-term unemployment, low household income, households with all adults having unemployment status, and workers over 30 years of age. The last criterion is justified based on the age compositional shares of the unemployed.

(2) **The duration of employment** is 12 months per year, with full compliance of all legal labor rights, including sick leave and normal vacation days. The combination of the duration of the JG contract and the set minimum wage aims to create a floor for the current labor market's flexibilization.

(3) **The monthly wage** is set at the current minimum of 586 euros and a second option proposed and used in our simulations is at a minimum wage of 751 euros, which was the legal wage level prior to the 2012 legislated reduction. Consideration of the second wage rate is important on two grounds: the GSEE (Greek General Confederation of Labour) has filed for a writ (court order) of annulment of the Ministerial Decision with the Supreme Court of Greece contesting the constitutionality of the reduction, and, should the policy regime change, it may be reinstated.[40] Moreover, it serves the purpose of making comparisons of the impacts of adopting a higher minimum wage as well as a differentiated two-tier wage system reflecting differences in skill or educational attainment among the unemployed (i.e., the qualifications required for specific skilled jobs).

(4) **The total cost** consists of the JG wages (inclusive of employer and employee social contributions), indirect costs of intermediate inputs (domestic and imported), and administration costs. The overall distribution of the investment follows the proximate rule of allocating 60 percent to wages paid directly to participating beneficiaries and 40 percent for all indirect costs.

(5) **The work projects** undertaken ought to be selected with two objectives in mind: the best utilization of current skills the unemployed possess and the public benefit accrued to the community. Work projects are expected to be selected through a consultative process, uniquely identified by each community, within the work project areas proposed below:

   a. *Physical and informational public structure*: computerization of public records and creation of electronic platforms for transparency and accountability at the service of citizens; flood control works, small improvement of side roads and municipal buildings, upgrading of small parks, etc.;

   b. *Environmental interventions leading to* community management of natural resources and preservation of the commons, examples of which include clearing of land for rural and urban community farming and gardens, coastline cleanup, reforestation and fire prevention, innovative collection of organic waste matter for composting, art-related projects that use recycled materials, etc.;

   c. *Social service provisioning* such as providing assistance to community-based social health clinics (κοινωνικά ιατρεία) and social food distribution outlets (κοινωνικά παντοπωλεία), outreach to caregivers of the protracted or permanently ill, support services to JG workers whose needs for caring for very young children and the elderly at home are not already met at the time of the job offer, etc.;

   d. *Educational and cultural enrichment* programs, general adult literacy, free-of-charge theatrical performances, music, and other artistic expression and engagement for children and their parents, formation of poetry and literature reading groups for adolescents of school age, special programs in libraries and at archeological sites, etc.

(6) **The scale of intervention** varies from a minimum of 200,000 jobs to a maximum of 550,000. To answer the question of "who is likely to wish to apply,"[41] we draw upon information from PKE 2012 applicants' records, and construct four progressively increasing scales of intervention. This serves (a) the purpose of providing alternative options and hence ground for a policy dialogue on the merits of each scale, and (b) the estimated effects for each scale provide research based evidence of ex ante outcomes of a gradual scale-up.[42]

4.2 INTRODUCTION TO THE METHODOLOGY AND DATA

Our analysis combines two different quantitative methods. At the macro level we use input-output (I-O) tables and multiplier analysis, while at the micro level we employ techniques that permit us to produce the necessary micro data for our various scenarios. The input-output analysis allows for the calculation of changes in total employment in the macro economy (direct and indirect job creation), GDP growth potential, and expansion of tax revenue. The micro data set is indispensable as it provides the informational base needed for the identification of the scale of the four alternative scale benchmarks. Furthermore, the microsimulation model selects individuals among the unemployed who are most likely to apply (according to a set of criteria) for work through the JG's new direct job creation initiative.

The I-O method we use captures the macro-level multiplier effects through linkages of output growth between industries: as one sector of the economy experiences an increase in demand for its own output, it ends up "demanding" more goods and services from several other industries, which in turn results in both direct and indirect job creation

downstream. In addition, the newly earned wages generate new demand for goods and services across the economy, which in turn expands employment and output. 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.

For the production of the micro data and to undertake the microsimulation exercise, we use data provided by the EU SILC and ELSTAT LFS, and primary socioeconomic and demographic data (e.g., household income, gender, age, duration of unemployment, number of dependents, spouse also unemployed, etc.) based on 86,000 individual records of applicants who sought jobs in PKE.

4.3 THE FOUR BENCHMARK SCENARIOS

We begin first with a summary of the four intervention scenarios, each representing a different scale of intervention, and then turn to the methods and data used to produce them.

Scenario (1) corresponds to the minimum size, a benchmark proposal of 200,000 jobs. This scenario uses the total number of applications submitted that were fully compliant with the eligibility criteria when the PKE 2012 was announced. The actual number was in fact slightly higher at 210,000, but the number of PKE 2012 jobs offered was 55,000. Hence, only a minority among applicants were able to secure a job. Participation in PKE 2012 was restricted to those holding a valid unemployment card issued to employees (renewed by the Manpower Employment Organization, or OAED). Thus, many of the previously self-employed (currently unemployed but without access to an unemployment card) were excluded. In addition, verification of low household income pertained to tax returns of 2009, assigning to many among the unemployed a much higher income status than the income currently available to them.

Scenario (2) proposes 300,000 jobs. This scenario relaxes the eligibility criteria to include all unemployed persons and, in addition, bases low-income status on household incomes of 2011 (instead of 2009). This figure (300,000) is a bit higher (by 1,123 persons) than the number we derive by estimating the likelihood of an unemployed individual applying. We created this estimate by running a logistic regression on the imputed applicant status of *all* the unemployed from a data set we created combining information from the LFS, the SILC, and the 86,000 PKE 2012 applicant files. In other words, we relaxed the assumption of "only currently valid unemployment card holders need apply," replaced the 2009 household income with that of 2011, and identified those among the unemployed that had very similar characteristics to the PKE 2012 applicants.

Scenario (3) concerns 440,000 jobs. This is a figure that matches the government's recently announced (January 29, 2014) ALMP interventions aimed at creating "employment opportunities." Based on the assumption that the score assigned to each application (in accordance with the selection criteria) ranks the "need" of each eligible applicant vis-à-vis all interested applicants, we note that this number of applicants (440,000) uses a cutoff total score for selection that is above the mean and median score ranges of all eligible applicants of the PKE 2012. Namely, in comparison to the 210,000 applicants of PKE 2012, the 300,000 individuals exhibit a need that is even higher than that of the average person applying in PKE 2012.

Scenario (4) is the largest proposal, for a total of 550,000 jobs, absorbing 40 percent of the currently unemployed. Using information from the score ranking system, we allow the program to accommodate potential participation from the widest income categories possible, as more and more among the newly poor, previously

middle- and upper-middle-income households find themselves with no employed person in the household even though the income they declared for previous years was not at or below the poverty level—the point being that anyone in need of a minimum wage job should be offered the opportunity to work.[43] Having said that, according to the score ranking system, all 550,000 are within the mean and median scores of the PKE 2012 applicants.

We now turn to the technical details of creating the data set we used for estimating the four scenarios described above.

4.4 GENERATING THE REQUIRED MICRO DATA SET

Our first task is to determine who among the unemployed is likely to seek a JG job. Guidance for this is provided by the selection criteria and the characteristics of the applicants that responded to the announcement of job offers through the PKE, as we use similar criteria in our study—with two exceptions. First, we ensure that age and the duration of unemployment are separate and not overlapping criteria. Second, we assign priority to the long-term unemployed and reverse the premium assigned to ages 29 or younger and instead give priority to those 29 and over. The difficulty we face in ranking the LFS unemployed is that the ELSTAT LFS 2012 does not contain a question regarding household income. Household income is, of course, a key consideration, because the lower the household income, the higher the probability that an unemployed person will apply for a job. The SILC, on the other hand, does provide household income information, but only cursory information on unemployment. Finally, a further challenge is that the PKE 2012 records contained income information in categorical values of widely disparate incomes, and that the income reported was from 2009, when we need actual income in 2011 for our study. In order to produce the data necessary to answer our questions for this study, we needed to create a database that "combined" all the required data, and therefore we needed to transfer information across surveys. In creating our database we undertook the following steps.

First, we performed a statistical "match" between the EU SILC and ELSTAT LFS, in order to transfer (assign) 2009 and 2011 household incomes to each and every unemployed person in the LFS 2012. We refer to the result of this exercise as the "synthetic LFS data file." The issue at hand is that the ELSTAT LFS provides information on the unemployed, but not on their household income.

Second, we matched a sample of 1,000 PKE 2012 applications for which we had accurate household incomes (instead of categorical values) to the "synthetic LFS data file." The data set of the applicants of the implemented PKE 2012 program (86,267 person records) does not contain information on the precise annual household income, nor does it identify the industry/occupation of the applicants. We selected a random sample of 1,000 records for which this necessary additional information was gathered by INE-GSEE regional offices and members of the research group, which provided the necessary information to do proper matching through the "synthetic LFS file" data.

Third, we estimated the number of unemployed individuals likely to apply for a JG job opening in the "synthetic LFS file." We describe each of these steps below.

4.4.1 Benchmarks for Scaling Up

A review of the number of applications submitted when PKE 2012 was rolled out[44] reveals that there were 210,000 applicants. There is also good reason to suspect that many individuals who would have liked to apply actually self-selected out of the PKE 2012 because they were "discouraged." To give just one example, the public announcement explicitly mentioned that those previously self-employed in family businesses or in small-scale enterprises, despite being currently jobless, need not apply.[45] In setting up a higher benchmark it is important to identify those among the unemployed that share

similar characteristics with the JG applicants (income level, long-term unemployed, spouse also unemployed, etc.) that could have potentially applied but never did.[46] To this issue, we turn next.

We used two different methods. The first consisted of ranking all the unemployed according to the criteria set by PKE 2012 (see Table 3.1), and after assigning a corresponding score to each we proceeded to select those unemployed persons that met a cutoff point comparable to those that did apply. To that end we used a slightly modified version of the original score ranking criteria so that (a) the length of unemployment and age of applicant were mutually exclusive characteristics and (b) priority was assigned to being over 30 years old instead of having "youth" status. While the first adjustment is self-evident, the second requires some explanation. Youth unemployment rates are very high indeed, but the share of the youth among the unemployed, as discussed earlier, is rather small. The ranking of all the eligible PKE 2012 applicants (roughly 210,000 persons) revealed a median score of 45 and mean value of 42.5, while the score distribution among the (roughly) 55,000 accepted as beneficiaries turned out to be 51.0 and 50.0, respectively. Using as a guideline a cutoff score of 45 yielded a total of 557,973 likely unemployed applicants. In other words, these individuals share characteristics that would have rendered them eligible for PKE 2012 jobs and ought to be considered as potential job seekers and applicants. This is, of course, not to claim that the actual number of applicants, should there be a scaled-up JG, would be identical to the above benchmark figure. It simply provides an indication of who in 2012 was eligible to apply for PKE 2012 jobs. Similarly, for the 440,000 jobs scenario we used as the cutoff point a score of 50, indicating a "need" level comparable to those accepted into the PKE 2012 as beneficiaries.

In the second approach, we estimated the likelihood of an eligible individual applying by running a logistic regression on the imputed applicant status from the match between the LFS 2012 and the GSEE applicant sample. As independent variables we used the individual's sex, age, marital status, and educational achievement, spouse's employment status, spouse's age, and spouse's educational achievement, as well as the household type, size, income, number of dependents in the household, geographic region, and rural/urban status. Using the results of this regression, we predicted the likelihood that they would apply for an expanded program in 2012, selecting the appropriate proportion of individuals with the highest estimated likelihood of applying. In this way, we identified a number slightly lower than 300,000 applicants, representing about 25 percent of the unemployed in 2012.

These numbers may look very high, but to put them in perspective we remind the reader of the following: in 2012, among the unemployed, 334,545 persons had an educational attainment of three years of high school or less (Gymnasium or less); an additional 442,794 had completed Lyceum but had not attended technical school or university. Among the total of 777,339 persons with an education level of Lyceum or less, around 340,000 individuals were long-term unemployed and roughly 240,000 among those were estimated to be living in households below the poverty line. In a labor market environment characterized by continuously deteriorating conditions, below-poverty-line wages, declining employment rates, and an unprecedented reserve of unutilized labor that has now reached over 1,380,000, the prospects of a *rapid* increase in employment in the range of 250,000 to 440,000 jobs, let alone to 550,000, is practically zero. Only a full-fledged JG policy can provide a job at a minimum wage to all who are willing and able to work but cannot find an employment opportunity elsewhere in the economy. The four scenarios above—for (a) 200,000, (b) 300,000, (c) 440,000, and (d) 550,000 jobs—represent a diverse range of policy options, from a modest proposal to a more ambitious target.

4.4.2 Data and Methods

To produce the estimates reported above, we needed to combine data from a variety of sources. No single source of data contains all of the information needed. The primary data we received from the PKE 2012 program records consisted of 86,652 applications submitted by unemployed persons wishing to participate in the PKE 2012, which was announced in 2011 and rolled out in 2012 (henceforth, "PKE 2012 applicant records"). Specifically, this data set contained the

answers to questions regarding the application criteria, including age, sex, number of dependents in the household, household income in 2009, unemployment status (long-term, short-term without benefits, low-income farmers), spouse's unemployment status, and geographic location of the applicant, as well as the application score (based on the criteria) and status (rejected or beneficiary). These data gave us some indication of who the applicants were in terms of their socioeconomic and demographic characteristics.

The LFS carried out quarterly by ELSTAT is a rich source of data providing detailed information on the socioeconomic characteristics of the population, both the employed and the unemployed. It furnishes information for all members of an entire household, which gives us a better picture of the employment and earnings of the entire household. And it provides detailed information about the previous work of the unemployed. The SILC carried out according to Eurostat's specifications provides perhaps the richest source of data on individuals and households, but it was not available for 2012.

Thus, the available data provided us with some advantages and some challenges. The advantages derive from the fact that the PKE 2012 applicant records shed light on the socioeconomic characteristics of unemployed persons who in fact applied for a job when the first PKE 2012 was rolled out. As a result, we were able to use the response rates, by exploring socioeconomic characteristics of respondents through cross-tabulations and small-cell analysis, instead of making use of arbitrary assumptions as to who might be "supplying" their labor in an expanded PKE, and this was of particular importance. The disadvantage was missing or limited information. The PKE 2012 applicant records present three challenges. First, there is no information on occupation, sector of employment, and monthly wage of the last job held by the applicants. This information could tell us a lot about who applied and why. Second, there is a lack of data on individual and household assets and savings. This information would be valuable in terms of estimating the impact of assets as a cushion during the crisis and resisting a job of lower pay or quality than the last one held. Third, household income is reported only in very wide bands on the application, corresponding to the scoring method for different levels of household income.[47]

The LFS, on the other hand, also lacks important information. It contains no information on household income and reports only monthly wages and salaries in narrow bands of categorical values.[48] Given the commonalities of the various sources, we were able to produce a synthetic data set that incorporates much of what we wanted to use. Specifically, in order to produce a data set containing as much of the information necessary to answer our questions as possible, we combined data from all three sources. First, we took individual employment and household income data from the European Union's 2010 SILC and "aged" it, transforming it to simulate the distribution of employment and reported income in 2012.[49] (Reported income in 2012 corresponds to earned income in 2011.) Next, we performed a statistical match between this "aged" SILC data set and ELSTAT's 2012 LFS, in order to transfer 2009 household incomes (which was the income that applicants were required to report, and thus this information is the data available in the PKE 2012 applicant records data set) as well as the "aged" household income. Finally, we matched a sample of 1,000 PKE 2012 records (minus four records that we dropped due to problems with their information) from the whole population of PKE 2012 applicants that was publically available (86,652 eligible PKE 2012 records – INE/GSEE program) to individuals in the matched LFS data set; that is, in the synthetic file of LFS with transferred SILC incomes. We describe each of these steps in more detail below. Ultimately, our goal was to be able to assign 2011 incomes to each record of the employed and unemployed in the LFS.

4.4.3 "Aging" the 2010 SILC Data

The SILC contains information on employment status during the said year and of household income based on filed tax return records of the previous year. The 2010 SILC, therefore, contains information on the 2010 employment/unemployment status of individuals and their 2009 household income. The aim of "aging" the 2010 SILC data to 2012 was to arrive at reasonable estimates of household income as it would have been reported had the 2012 SILC data been publicly available, thereby allowing us to link the employment status of the population in 2012 with household incomes from 2011. Given

Table 4.1 Distribution of Households by Family Type, 2010 SILC, 2012 LFS, and Adjusted 2010 SILC

Family Type	2010 SILC Households	Percentage	2012 LFS Households	Percentage	Adjusted 2010 SILC Households	Percentage
Married couple with children	1,139,321	27.6	1,040,294	23.7	1,040,314	23.7
Married couple without children	1,682,938	40.8	1,671,434	38.1	1,671,445	38.1
Male head with children	20,447	0.5	13,564	0.3	13,569	0.3
Male head without children	421,736	10.2	633,754	14.4	633,773	14.4
Female head with children	73,981	1.8	84,442	1.9	84,441	1.9
Female head without children	786,510	19.1	942,573	21.5	942,551	21.5
Total	**4,124,933**	**100.0**	**4,386,061**	**100.0**	**4,386,093**	**100.0**

Source: Authors' calculations; Eurostat, SILC and LFS micro data

the focus of this study, we were particularly interested in the 2011 household income of those households that contained unemployed persons in 2012, the year for which we needed to approximate the response (interest in applying for a job) to a scaled-up PKE 2012 by the unemployed. The ideal scenario, of course, would have been to have access to the actual SILC data. At the time of this writing, the survey data were still not publicly available.

The process of "aging" the 2010 SILC data set in order to estimate the population composition of those eligible for the program as of 2012 can be broken down into three sections. The first adjustment was in household composition. Due to dramatic changes brought about by the ongoing economic crisis, it was likely that a great deal of household formation/consolidation and internal migration had been taking place. Our goal was to reproduce the distribution of households within Greece in 2011 to the best of our ability. The second adjustment was in employment. As we have seen, there was a large overall reduction in employment between 2010 and 2012, while the total number of unemployed persons roughly doubled. In aging the SILC data we aimed to reproduce the distribution of employment as accurately as possible. The third adjustment was in individual compensation and household income. Again, since this was an important factor in determining eligibility and changed quite a bit in the period between 2010 and 2011, we aimed to produce a reasonable estimate of the distribution of earnings and overall household income for 2011. We provide documentation of each of these adjustments in the following sections.

Household Composition

In order to determine the household composition in 2012, we used the combined quarterly labor force surveys produced by ELSTAT. Households were divided into six categories. The distribution of households in the 2010 SILC and 2012 LFS are shown in Table 4.1. As measured in the LFS, there was a decrease in married couples with children between 2010 and 2012, as well as in married couples without children, while there was an increase in single-headed households without children that was slightly larger for males than females. To adjust the SILC data to correspond to the family type distribution in the 2012 LFS, we adjusted the sum of the weights for each family type in the 2010 SILC data to match that of the 2012 LFS. The results are shown below.

Employment

In order to age the SILC data, we also needed to alter the structure of employment. To do this, we drew on the 2012 LFS as a source of information. We used the distribution of those aged 16 and older in terms of their labor force engagement (in the labor force or not, employed or not), as well as the distribution of jobs by industry and occupation. Then, for every eligible individual[50] in the SILC data set we estimated their probability of being in the labor force using a probit

regression of labor force participation based on the sex, marital status, age, and education of the individual, as well as the presence of children in the household, the family type, region, rural/urban location, tenure, and homeownership of the household, and the individual's spouse's age education and labor force status. We used the results to predict the probability of being in the labor force for every eligible adult. We followed an identical procedure for the likelihood of being employed, with the exception that the probit was run on an indicator of employment and limited to those currently in the labor force, although the results were again used to predict likelihood of employment given labor force participation for every eligible adult. Finally, we used multinomial logit on industry and occupation in a similar manner to rank the likelihood of being employed in each of nine occupations and 13 industries for each individual.

Next, we began adjusting the labor force in the 2010 SILC to match the 2012 LFS. First, we compared the distribution of employed individuals for each industry and occupation combination. For all those combinations for which there was a decrease in employed persons, we removed the corresponding number of individuals in these industry–occupation combinations from employment. We did this by selecting the appropriate number of individual records with the lowest predicted probability of being employed within each industry–occupation combination. Next, we adjusted the labor force to account for changes by removing the appropriate number of individuals from the labor force (starting with those least likely to be in the labor force) from among those already unemployed in the SILC data set, as well as those who had just "lost" their jobs in the first step. Finally, for each element of the industry–occupation matrix with job gains we added the corresponding number of individuals from the adjusted labor force in the SILC data set that were most likely to be employed in order of their ranked likelihood of working in each industry and occupation. As can be seen in Table 4.2, the results match the 2012 LFS very well. For those 16 years of age and older, the employed over the total population ratio differs by 0.1 percent, and the unemployed-to-population ratio by 0.7 percent.

Table 4.2 Labor Force Participation Status of Eligible Adults in the 2012 LFS and "Aged" 2010 SILC

	2012 LFS		"Aged" 2010 SILC	
	Persons	Percentage	Persons	Percentage
Employed	3,763,621	59.0	3,797,161	59.1
Unemployed	1,204,097	18.9	1,166,923	18.2
Not in labor force	1,413,667	22.2	1,461,548	22.7
Total	**6,381,385**		**6,425,633**	

Source: Authors' calculations based on LFS, SILC, Eurostat

Income

In order to complete the aging process, we needed to adjust the incomes of households, both due to the changes in labor force status and changes in wages. For the changes in the labor force status of individuals, we used a bifurcated approach. For those individuals who lost jobs in the simulation, we simply zeroed out their earnings. For those who gained jobs, we used a hot-decking statistical match from the pool of employed individuals to impute their earnings. This procedure resulted in adjusted individual and household earnings that still reflected the wages and salaries of 2009. Thus, we needed to make further adjustments.

While a study has been published that estimates the change in household incomes in Greece in 2010, there was still little, if any, information available at this time on the details of earning and income changes between 2010 and 2011. We used the results in the former study to make changes to incomes reflecting the events between 2009 and 2010, based on the following (Matsaganis and Leventi, 2011):

> Households in the poorest decile lost an estimated 8.7 percent of their income; those in the next poorest decile 8.6 percent. Around the middle of the distribution (deciles 3–7), relative income loss fluctuated around 9.5 percent. Further up, income loss reached 10.1% (decile 8), and peaked at 11.6 percent for households in the richest decile.

Table 4.3 Earned and Gross Household Income in the "Aged" 2010 SILC (in euros)

	Gross Individual Earned Income	Simulated Gross Individual Earned Income	Gross Household Earned Income	Simulated Gross Household Earned Income	Gross Household Income	Simulated Gross Household Income
Minimum	–	–	–	–	(3,600)	(3,266)
Mean	13,310	14,057	14,463	13,054	30,403	25,723
Median	11,715	12,151	4,021	–	22,798	18,755
Maximum	168,840	168,840	221,553	215,084	431,416	377,279

* Simulated gross individual earnings are not deflated for the decrease in overall earnings, as the only numbers available were for household earnings.

Source: Authors' calculations

The adjustments we made for 2011 were based on information from the National Income nonfinancial accounts for the first quarter of 2012 (ELSTAT 2012):

During the first quarter of 2012, disposable income of the households and non-profit institutions serving households (NPISH) sector (S.1M) decreased by 5.5 percent in comparison with the same quarter of the previous year, from 37.2 billion euros to 35.2 billion euros. This was on account of a decrease of 15.6 percent in compensation of employees, which was partially offset by an increase in net property income and current transfers received.

Based on these estimates of changes in household incomes, we used a two-step approach to estimate 2011 household incomes. We first assigned an adjustment factor for 2010 to each household based on its 2009 equivalized disposable income (the measure referred to in the quote above from Matsaganis and Leventi 2011) decile, according to the percentages quoted above. We next took the simulated gross household income (created by subtracting or adding earnings gained/lost in the employment simulation) in the aged SILC data set and (a) applied the adjustment factor for 2010 and (b) reduced each household's resulting gross household income by 5.5 percent. While this is a crude procedure at best, until more detailed information is available it will serve as a first estimate. Some of the moments of the resulting income distribution are presented in Table 4.3. As we can see, the median gross household income fell from 22,800 euros in 2009 to 18,800 euros in 2012.

4.4.4 Matching Households in the "Aged" 2010 SILC Data with the 2012 LFS

We turn now to the task of "transferring" household incomes from the "aged" SILC data set to households in the LFS 2012. In order to accomplish this, we performed a statistical match with the aged 2010 EU-SILC data set, which contains 2009 household income information for Greek households, as well as the aged 2011 incomes and aged labor force characteristics. Since the income we were interested in was household income, we matched records at the household level. We matched the two data sets comprehensively, using up all the weights of records in each in order to carry over the distribution of household income as accurately as possible.[51] Because we were interested especially in the household incomes of those likeliest to apply for the PKE 2012 program, we used some of the occupational characteristics of households as strata variables: the number of earners in the household, as well as the industry and occupation of the household

Figure 4.1 Ratio of Matched File Household Income to "Aged" 2010 SILC, by Strata Variable (in percent)

	Number of Earners	Age Category	Marital Status	Household Type	Occupation	Industry
■ cat1	98.4	102.2		96.7	94.2	94.0
■ cat2	103.3	101.1	107.0	103.6	108.3	99.2
■ cat3	99.5	99.9	97.8	92.0	99.7	107.4
■ cat4	101.8	93.2	99.8	100.4	88.1	106.4
■ cat5		95.8		100.1		

Note: Each strata variable has different categories. From top to bottom: for number of earners, it is 0 to 3 more; for age category, less than 35, 35 to 44, 45 to 54, 55 to 64, and 65 and older; for marital status, never married, married, widowed/divorced; for household type, head and spouse employed, only head employed, only spouse employed, both head and spouse not employed, and all other; for occupation, not employed, low-income occupation, middle-income occupation, and high-income occupation; and for industry, not employed, low-income industry, middle-income industry, and high-income industry. The latter two were constructed by looking at earnings for each industry and grouping them.

Source: Authors' calculations

head. We also used the age and marital status of the household head, as well as the household type, as strata variables. In this manner we were able to reproduce the distribution of household income by employment status as closely as possible.

Figure 4.1 summarizes how well we reproduced the conditional distribution of gross household income by the six strata variables. As we can see, the ratio of mean values is very close to 1 for almost all categories. The worst case is that of high-income occupations, with the matched file having an average household income of 88 percent of the aged SILC file for those households whose heads worked in a high-income occupation. Reassuringly, these households would not be in the target group for the next match, or, in fact, the overall analysis for the most part. The matched file referred to in Figure 4.1 is the synthetic file we created, which consists of the 2012 LFS and transferred 2009 and 2011 household incomes from the "aged" 2010 SILC.[52]

4.5 BENCHMARKS FOR SCALING UP PKE 2012 TO A JOB GUARANTEE

4.5.1 Matching PKE/GSEE Applicants with Individuals in the (Matched) 2012 LFS

We began by selecting from the matched 2012 LFS (via SILC household incomes) the group that corresponded to the applicant pool. We first checked the quality of the application data provided to us, ensuring that there were no errors in the production of scores for selection into the program, that individuals were not applying multiple times in the same three-digit region, and that the personal identification numbers were valid in as many cases as possible. We discovered that although there were some problems with the data, these instances were either unavoidable or minor. Thus, we could select a sample of 1,000 records from the 86,652 that could then be retrieved and the full set of data recorded for each of those applications could be used in the next steps—including, very importantly, the reported household income of the PKE 2012 applicant.[53] We used a simple random selection, implemented in the STATA command *sample*. The resulting sample was as close as could be expected to the overall applicant pool in terms of region, sex, and other characteristics.

Table 4.4 Distribution of Individuals by Application Status in the GSEE and Matched File, by Household Income Category

Household Income (in euros)	GSEE			Match		
	Beneficiary	Rejected	All	Beneficiary	Rejected	All
Under 6,900	12,212	32,480	44,692	12,479	32,742	45,221
6,900 to 12,000	3,464	11,693	15,157	3,295	11,506	14,801
12,000 to 16,000	2,339	9,701	12,039	2,112	10,243	12,355
16,000 to 22,000	1,559	5,370	6,929	1,594	4,895	6,490
22,000 or more	1,299	6,149	7,449	1,118	5,784	6,902

Source: Authors' calculations

With the augmented applicant data for 1,000 records, we then identified those most closely resembling the PKE 2012 applicants in the synthetic matched file based on the 2012 LFS. This was done using a second statistical matching operation, during which we found the individual records in the matched LFS most similar to the sample PKE 2012 applicants, using all of the available data we had about each of the PKE 2012 applicants. We first created sample weights so that the sample we drew was representative of the total applicant pool. Since the sampling was simple random sampling, the weights were equivalent for all records and added up to the total number of applicants. Next, we performed a propensity score match until we had used up the applicants' sample weights. For this match, we used strata variables that correspond to the criteria used to score each application: unemployment type, household income in 2009, sex of the individual, and household type. We also used region as a strata variable, since the geographical distribution of the program is quite different from the population of the country in general. In the match, we transferred the application status to each recipient record (either beneficiary or rejected) as well as the application score. Thus, we could check the distribution of status and scores in the resulting matched file and compare it to the applicant sample file. The results are summarized in Table 4.4, which shows the distribution of individuals by household income category in the GSEE sample and matched file. As we can see, the differences in cell sizes are very small, and attributable to the lumpiness of weighted observations.

4.5.2 Our Estimates of the Benchmark Scenarios

We also included estimates of likely applicants to a program (based on 2011 household income and including all unemployed) in the 2012 LFS based on the following method. First we used the match of the GSEE sample with the 2012 LFS with 2009 household income to generate the portion of eligible unemployed that applied to the GSEE program within cells constructed using the sex of the applicant as well as the applicant's unemployment and 2009 household income categories. For example, we determined what percentage of program-eligible women who were long-term unemployed with household income below 6,900 euros in 2009 actually applied. We assumed that the same proportion (i.e., the number of applicants divided by the number of registered unemployed with the same characteristics) of all unemployed individuals would apply and that the size of the program was the full 55,000 jobs (as opposed to the subset of 22,000 GSEE program jobs for which we have applicant data). The procedure is as follows.

Within the cells described above, we estimated the likelihood of an unemployed individual applying by running a logistic regression on the imputed applicant status from the match between the 2012 LFS and the GSEE applicant sample. As independent variables we used the individual's sex, age, marital status, and educational achievement, spouse's

Figure 4.2 Score Distribution of Applicants: JG and PKE 2012
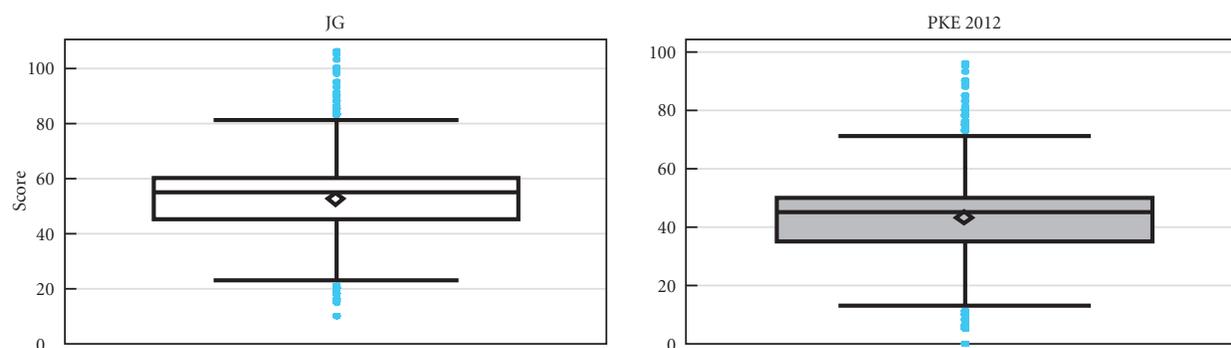
Source: Authors' calulations

employment status, spouse's age, and spouse's educational achievement, as well as the household type, size, 2009 income, number of dependents in the household, geographic region, and rural/urban status. Finally, we included the application score for each individual. Using the results of this regression, we predicted the likelihood that unemployed individuals would apply for an expanded program in 2012, using 2011 household income and adjusted scores. Within each of the cells described above, we then selected the appropriate proportion (determined as described above) of individuals with the highest estimated likelihood of applying. In this way we identified a number a bit less than 300,000 applicants, or 25 percent of the unemployed in 2012, as being likely to apply.

The score point system used in the selection criteria of PKE 2012 is intended to rank applicants according to need. The revealed mean and median score points of all applicant records (beneficiaries and other eligible but rejected applicants) made available to us by GSEE (available on the website of the organization as well) are 42.5 and 45 points (Figure 4.2; mean score marked by the diamond shape). Among the PKE 2012 selected beneficiaries, the mean and median points are 51 and 50. Our benchmark hypothetical scenarios, in addition to the 300,000 jobs target, include, as discussed earlier, three additional scales. The 200,000 jobs target was based on the total number of eligible applicants in 2012. The maximum of 550,000 jobs corresponds to the median score of all PKE 2012 applicants and the 440,000 to the median of those selected as beneficiaries among applicants of PKE.[54]

Accordingly, the cutoff score points for the four scenarios (200,000, 300,000, 440,000, and 550,000 jobs) are 58, 55, 50, and 45 points, respectively. Assuming the ranking system provides an acceptable ranking representation, the proposed scale falls within the range of the mean and median of the PKE 2012 applicants.

5. MACROECONOMIC IMPACTS

The previous section detailed the data and methods used to determine the four different scales of intervention, based on the number of JG jobs, and briefly introduced the simulation approach we employed to model their economic impacts. This section will mainly focus on JG employment policy impacts as they affect employment, output growth, and tax revenues. The proposed intervention comes, of course, at a cost. This section provides the details of the costs associated with each scenario. We also show below that the undertaking of the JG policy, as a result of the multiplier effects created, renders the ultimate net cost a fraction of the necessary initial investment.

We begin with a presentation of the simulation summary tables for each scenario and a brief discussion of the outcomes for each scenario. This is followed by detailed information in a table that delineates the breakdown of the associated costs. Finally, we discuss in detail several pertinent issues from a methodological and empirical vantage point, including (1) the input–output (I-O) tables and methodology we employed in our analysis; (2) the construction of the JG sector that undertakes the JG work projects—a synthetic public employment sector that is an amalgamation of environmental services, construction, services to buildings and landscape, office administration and support, education, and social work services, which in combination deliver the work projects and hire workers in the JG program; and (3) the detailed analysis of the employment multiplier impact—namely, the total jobs created directly and indirectly. (Appendix G presents selected topics in more detail for the specialist, including the validity of using the 2010 I-O tables in our analysis.)

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: (a) "all-inclusive cost" and (b) "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 employees) 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 the underestimation of the benefits of the JG.

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. Though 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 JG program. Thus, we estimate the positive multiplicative effects on output and employment in the least controversial manner possible.

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 affects 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 ($100/88.2 \approx 1.134$). Therefore, in the results presented below, 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.[55]

NOTES FOR TABLES 5.1, 5.3, 5.5, AND 5.7

1. The all-inclusive cost of the JG is estimated at almost €3.0 billion (€2,988 million) per year. Ideally, as "total JG wage" we would like to use the net wage—that is, net of employees' contributions—because household spending depends on disposable income. However, a net wage account is not available in I-O tables. Hence, we use gross wage. We do deduct the employees' contributions later on in our simulations but only at the aggregate level. In addition to the gross wage bill, the all-inclusive cost includes administration costs of 2 percent, domestic and imported intermediate consumption of 38 percent, and employers' and employees' payroll contributions. In multiplier analysis, spending this amount is equivalent to the government buying €3.0 billion worth of goods and services from the JG. We assume that administration costs do not have multiplicative effects, since administrative activities may not resemble any industries to which these costs could be assigned in the I-O table. Effectively, they are treated as gross operating surplus, a stock value that sits outside the flow system generating multipliers in the economy. Imported intermediate consumption is another factor without multiplicative impacts, as the amount leaves the economy for producers in foreign economies. Employers' and employees' contributions are removed from the multiplicative process because they are not part of disposable income, which finances household consumption. Rounding errors may be present in the tables.

2. *Direct jobs* represent the number of jobs available within the program. *Indirect jobs* represent the number of jobs created as a result of the increases in the domestic intermediate consumption and households' final consumption due to the program. For example, in the first scenario, each increment of one million euros spent on the program generated 66.9 direct and 20.8 indirect jobs, yielding the total of 87.8 jobs. Given €3.0 billion and allowing for the rounding error, we obtain 200,000 direct and 62,268 indirect jobs. The indirect employment multipliers are the same in all four scenarios because they are determined by industry labor intensities irrespective of the program wage rates.

3. The increase in gross value added (GVA) is a result of the increases in the gross output of all industries due to the multiplicative process. It is computed by taking the output shares of GVA for each industry, multiplying these shares by output multipliers, and summing the resulting products over all industries. In our simulation, the GVA multiplier is approximately 2.05, which, when multiplied by the program cost of €2.3 billion, yields an increase in GVA exceeding €4.7 billion. The increase in gross domestic product (GDP is a product of the GVA growth and the inverse ratio of GVA-to-GDP, 1.134. As a result, the GDP multiplier is 2.32, which is in effect the ratio of the increase in GDP to the program cost.

4. Government revenue is a sum of all payroll contributions accrued to the JG direct jobs and the indirect jobs (non-JG) in the rest of the economy, indirect taxes (VATs), and direct income taxes, excluding social contributions on earnings from indirect jobs.

5. Social contributions include employers' and employees' payroll contributions from both the JG program and the rest of the economy due to the multiplicative effects. The JG employers' social contributions are 27.46 percent of the offered wage. The JG employees' social contributions are 16.5 percent of the offered wage. Non-JG employees' payroll contributions are 14.8 percent of gross earnings in aggregate terms, based on 2010 Annual Government Finance Statistics published by Eurostat. The share is applied to the earned wages of €1.6 billion of the indirect jobs in the case of the first scenario. Non-JG employers' payroll contributions are derived from their ratio to the non-JG employees' payroll contributions, which are reported in the 2010 Annual Government Finance Statistics published by Eurostat. The ratio is 1.5638.

6. Indirect taxes (VATs) are based on indirect tax multipliers, which are 0.0216 and 0.0723 for industry and household accounts, respectively. The multipliers yield additional tax revenues generated from the multiplicative process.

7. Direct taxes are based on earnings from the indirect jobs. Current taxes on income are 15.8 percent of gross earnings in aggregate terms, based on 2010 Annual Government Finance Statistics published by the Eurostat. The share is applied to the indirect earnings of €1.6 billion for case A (a monthly wage of €586 per month).

5.1 SIMULATION RESULTS OF SCENARIO 1: 200,000 JOBS TARGET

Scenario 1 presents the implications of creating 200,000 public benefit jobs for a 12-month duration per year under two wage options: first, case A assumes a wage at the current level of minimum wage of €586 per month per beneficiary; and second, case B assumes a wage at €751, the minimum wage prevailing prior to the legislated wage suppression in 2012.

Costs: The total costs amount to almost €3.0 billion and €3.8 billion depending on the wage rate, at €586 and €751, respectively. This cost consists of total wages, the cost of needed inputs, and administrative costs. Total wages include payroll contributions of 16.5 percent by employees and 27.46 percent by employers (see details, Table 5.2). This level of JG investment (all-inclusive cost of the program) corresponds to a stimulus of 1.5 percent and 2.0 percent of GDP. The program costs—the amounts directly invested for the program after deducting the payroll contributions and administrative costs—are 1.2 and 1.5 percent of GDP, respectively.

Jobs: A total of 262,268 jobs are created in case A and 279,790 in case B. In addition to the 200,000 direct jobs, 62,268 (case A) and 79,790 (case B) more jobs are generated indirectly as a result of the multiplicative effects through which demand for intermediate inputs and household consumption from the JG wages are generated.

Gross value added and gross domestic product: Additional GVA of goods and services amounts to €4.7 billion for case A and €6.0 billion for case B, respectively. Gross value added, we note, represents roughly 88 percent of GDP, according to Eurostat. Therefore, at the wage of €586 per month, the corresponding increase in GDP is €5.4 billion, and at the monthly wage of €751 it is €6.9 billion, with the implicit multiplier of 2.32.[56]

Table 5.1 Scenario 1: 200,000 Jobs Target

200,000 Jobs Target	Case A: €586	Case B: €751
All-inclusive cost[1] (€ million)	**2,988**	**3,829**
1. Total JG wages	1,793	2,297
2. Intermediate consumption, JG	1,135	1,455
3. Administrative cost, JG	60	77
Program cost (€ million)	**2,310**	**2,960**
Total number of new jobs	**262,268**	**279,790**
1. Direct JG jobs[2]	200,000	200,000
2. Indirect jobs[2]	62,268	79,790
Increase in output[3] (GVA)	4,731	6,062
Increase in gross domestic product[3] (GDP)	5,364	6,873
Increase in government revenue[4] (€ million)	**1,769**	**2,267**
1. Payroll (social security) contributions[5]	1,240	1,589
2. Indirect taxes (VAT)[6]	270	346
3. Direct taxes[7]	259	332
Net cost (€ million)	**1,219**	**1,562**
Total cost	2,988	3,829
Minus increase in government revenue	-1,769	-2,267

Source: Authors' calculations based on national accounts aggregates and employment by branch (nama_nace2) for gross value added and gross wages and salaries in 2012; government revenue, expenditure, and main aggregates in 2012, Eurostat

Table 5.2 JG Cost Structure: 200,000 Jobs (unit: € million)

200,000 JG Jobs	Case A: €586	Case B: €751
All-inclusive costs of JG program	**2,988**	**3,829**
Wage component		
JG total wage cost	**1,793**	**2,297**
Employers' contributions	386	495
Gross wage	*1,406*	*1,802*
Employees contributions	232	297
Net wage	1,174	1,505
Nonwage component		
Intermediate demand	**1,135**	**1,455**
Domestic	895	1,147
Imported	241	308
Administrative costs	**60**	**77**
Program cost of JG program	**2,310**	**2,960**

Source: Authors' calculations

Tax revenue: Increases in employment, earnings, and output increase tax revenue through three channels: payroll (employer and employee contributions), indirect (value-added) taxes, and direct (income) taxes. In the two wage scenarios, case A corresponds to an increase by over €1.8 billion, and case B, €2.3 billion. Payroll, as can be seen, accounts for the lion's share of new taxes, highlighting the large revenue loss from the unprecedented record levels of unemployment.

Net cost: At a monthly wage of €586, taking into account the positive gains in total government revenue (€1.8 billion) and subtracting this figure from the all-inclusive cost (€3.0 billion), the net program cost of 200,000 jobs amounts to roughly €1.2 billion. For case B (€751) the equivalent cost is close to €1.6 billion. Finally, the JG net costs to GDP ratios are a mere 0.63 percent and 0.81 percent of GDP.

Table 5.2 provides a brief description of the costs associated with a public service job creation target of 200,000 jobs at wages of €586 (per person per month) and €751, respectively. Out of an all-inclusive cost of slightly less than €3.0 billion for 200,000 JG jobs at a monthly wage rate of €586, almost €1.8 billion, or 60 percent, is allotted for wage payments and mandatory payroll contributions of employers and employees (€386 million and €232 million each). The net wages, known as take-home pay, amount to over €1.17 billion. Other than wage payments, expenditures include intermediate input costs of €1.14 billion (38 percent) and administrative costs of €60 million (2 percent). For the case of the higher wage rate of €751, as can be seen in the last column of Table 5.2, the amount for each component is higher, though proportionate to the former case. The program cost (the portion of the all-inclusive cost that generates multiplier effects) amounts to €2.3 billion and €3.0 billion, respectively.

5.2 SIMULATION RESULTS OF SCENARIO 2: 300,000 JOBS TARGET

Scenario 2 presents the implications of creating 300,000 public benefit jobs, for a 12-month duration per year, under the two wage options: in case A at the current level of minimum wage of €586 per month/per JG worker, and in case B at €751, the minimum wage prevailing prior to the legislated wage suppression of 2012.

Costs: The all-inclusive total costs amount to approximately €4.5 billion and €5.7 billion, depending on the wage rate. This cost consists of total wages, inputs, and administrative costs. Total wages include payroll contributions of 16.5 percent by employees and 27.46 percent by employers (Table 5.4). The all-inclusive cost of JG as a percent of GDP amounts to 2.3 and 3.0 percent depending on the wage level. The program cost, the amount spent on the program after deducting the payroll contributions and administrative costs, is approximately €3.5 and €4.4 billion, or 1.8 percent and 2.3 percent of GDP, respectively.

Jobs: A total of 393,402 jobs are created in case A and 419,684 in case B. In addition to the 300,000 direct jobs, 93,402 (case A) and 119,684 (case B) more jobs are generated indirectly as a result of the multiplicative effects of JG wages and purchases of intermediate inputs, which in turn generate demand for more production of goods and services.

Gross value added and gross domestic product: Additional GVA of goods and services amounts to roughly €7.1 billion and €9.1 billion for cases A and B, respectively. Then, the increase in GDP at monthly wages of €586 and €751 is €8.0 billion and €10.3 billion, correspondingly, with the implicit multiplier of 2.32 (see footnote 57).

Table 5.3 Scenario 2: 300,000 Jobs Target

300,000 Jobs Target	Case A: €586	Case B: €751
All-inclusive cost[1] (€ million)	**4,482**	**5,743**
1. Total JG wages	2,689	3,446
2. Intermediate consumption, JG	1,703	2,182
3. Administrative cost, JG	90	115
Program cost (€ million)	**3,464**	**4,440**
Total number of new jobs	**393,402**	**419,684**
1. Direct JG jobs[2]	300,000	300,000
2. Indirect jobs[2]	93,402	119,684
Increase in output[3] (GVA)	7,096	9,093
Increase in gross domestic product[3] (GDP)	8,046	10,310
Increase in government revenue[4] (€ million)	**2,653**	**3,400**
1. Payroll (social security) contributions[5]	1,860	2,384
2. Indirect taxes (VAT)[6]	404	518
3. Direct taxes[7]	389	498
Net cost (€ million)	**1,828**	**2,343**
Total cost	4,482	5,743
Minus increase in government revenue	-2,653	-3,400

Source: Authors' calculations based on national accounts aggregates and employment by branch (nama_nace2) for gross value added and gross wages and salaries in 2012; government revenue, expenditure, and main aggregates in 2012, Eurostat

Table 5.4 JG Cost Structure: 300,000 Jobs (unit: € million)

300,000 JG Jobs	Case A: €586	Case B: €751
All-inclusive costs of JG program	**4,482**	**5,743**
Wage component		
JG total wage cost	**2,689**	**3,446**
Employers' contributions	579	742
Gross wage	*2,110*	*2,704*
Employees' contributions	348	446
Net wage	1,762	2,258
Nonwage component		
Intermediate demand	**1,703**	**2,182**
Domestic	1,342	1,720
Imported	361	462
Administrative costs	90	115
Program costs of JG program	**3,464**	**4,440**

Source: Authors' calculations

Tax revenue: Increases in employment, earnings, and output increase tax revenue through three channels: payroll (employer and employee contributions), indirect (value-added) taxes, and direct (income) taxes. In the two wage scenarios, case A corresponds to an increase by close to €2.7 billion and case B close to €3.4 billion. Payroll accounts for the largest share of new taxes.

Net cost: At a monthly wage of €586, taking into account the positive gains in total government revenue (€2.7 billion) and subtracting this figure from the all-inclusive cost (€4.5 billion), the net program cost of 300,000 jobs amounts to just over €1.8 billion. For case B (€751 euros) the equivalent cost is approximately €2.3 billion. Based on these figures, the JG net cost-to-GDP ratios are 0.95 percent and 1.21 percent, respectively. Table 5.4 provides a brief description of the costs associated with a public service job creation target of 300,000 jobs at wages of €586 (per person per month) and €751, respectively. Out of nearly €4.5 billion for 300,000 JG jobs at a monthly wage rate of €586, over €2.7 billion, or 60 percent, is allotted for wage payments and mandatory payroll contributions by employers and employees (€579 million and €348 million each). The net wages, known as take-home pay, for case A amounts to over €1.7 billion. Other than wage payments, expenditures include intermediate input costs of €1.7 billion (38 percent) and administrative task costs of €90 million (2 percent). For the case of the higher wage rate of €751, the amount for each component is higher, though proportionate to the former case. The program costs, after deducting the contributions and administrative costs, amount to over €3.4 billion and €4.4 billion each.

5.3 SIMULATION RESULTS OF SCENARIO 3: 440,000 JOBS TARGET

Scenario 3 presents the implications of creating 440,000 public benefit jobs for a 12-month duration per year under two wage options: in case A at the current level of minimum wage of €586 per month per beneficiary and in case B at €751, the minimum wage prevailing prior to the legislated wage suppression of 2012.

Costs: The all-inclusive costs amount to nearly €6.6 billion and €8.4 billion, depending on the wage rate. This cost consists of total wages, cost of needed inputs, and administrative costs. Total wages include payroll contributions of 16.5 percent by employees and 27.46 percent by employers (Table 5.6). The all-inclusive costs are 3.4 percent and 4.3 percent of GDP in 2012. The program costs, the amounts directly invested for the program after deducting the payroll contributions and administrative costs, are €5.1 billion and €6.5 billion, or 2.6 percent and 3.4 percent of GDP, respectively.

Jobs: A total of 576,989 jobs are created in case A, and in case B, 615,537. In addition to the 440,000 direct jobs, 136,989 (case A) and 175,537 (case B) more jobs are generated indirectly as a result of the multiplicative effects from the JG wages, which generate additional demand for output and employment across the economy.

Gross value added and gross domestic product: Additional GVA of goods and services amounts to roughly €10.4 billion and €13.3 billion for cases A and B, respectively. Then, the increase in GDP at monthly wages of €586 and €751 is €11.8 billion and €15.1 billion, correspondingly, with the implicit multiplier of 2.32 (see footnote 57).

Table 5.5 Scenario 3: 440,000 Jobs Target

440,000 Jobs Target	Case A: €586	Case B: €751
All-inclusive cost[1] (€ million)	**6,573**	**8,424**
1. Total JG wages	3,944	5,054
2. Intermediate consumption, JG	2,498	3,201
3. Administrative cost, JG	131	168
Program cost (€ million)	**5,081**	**6,512**
Total number of new jobs	**576,989**	**615,537**
1. Direct JG jobs[2]	440,000	440,000
2. Indirect jobs[2]	136,989	175,537
Increase in output[3] (GVA)	10,408	13,336
Increase in gross domestic product[3] (GDP)	11,800	15,121
Increase in government revenue[4] (€ million)	**3,892**	**4,987**
1. Payroll (social security) contributions[5]	2,728	3,496
2. Indirect taxes (VAT)[6]	593	760
3. Direct taxes[7]	570	730
Net cost (€ million)	**2,681**	**3,437**
Total cost	6,573	8,424
Minus increase in government revenue	-3,892	-4,987

Source: Authors' calculations based on national accounts aggregates and employment by branch (nama_nace2) for gross value added and gross wages and salaries in 2012; government revenue, expenditure and main aggregates (gov_a_main) in 2012, Eurostat

Table 5.6 JG Cost Structure: 440,000 Jobs (unit: € million)

440,000 JG Jobs	Case A: €586	Case B: €751
All-inclusive costs of JG program	**6,573**	**8,424**
Wage component		
JG total wage cost	**3,944**	**5,054**
Employers' contributions	850	1,089
Gross wage	*3,094*	*3,965*
Employees' contributions	511	654
Net wage	2,584	3,311
Nonwage component		
Intermediate demand	**2,498**	**3,201**
Domestic	1,969	2,523
Imported	529	678
Administrative costs	**131**	**168**
Program costs of JG program	**5,081**	**6,512**

Source: Authors' calculations

Tax revenue: Increases in employment, earnings, and output increase tax revenue through three channels: payroll (employer and employee contributions), indirect (value-added) taxes, and direct (income) taxes. In the two wage scenarios, case A corresponds to an increase by almost €3.9 billion and case B, €5.0 billion. Payroll as can be seen accounts for the largest share of new taxes.

Net cost: At a monthly wage of €586, taking into account the positive gains in total government revenue (€3.9 billion) and subtracting this figure from the all-inclusive cost (€6.6 billion), the net program cost of 440,000 jobs amounts to roughly €2.7 billion. For case B (€751) the equivalent cost is €3.4 billion. Hence, the net cost to GDP, given that GDP was €193.7 billion in 2012, is about 1.38 for case A and 1.78 percent for case B. Table 5.6 provides a brief description of the costs associated with a public service job creation target of 440,000 jobs at wages of €586 (per person/per month) and €751, respectively. Out of €6.6 billion for 440,000 JG jobs at a monthly wage rate of €586, over €3.9 billion, or 60 percent, is allotted for wage payments and mandatory payroll contributions by employers and employees (€850 million and €511 million each). The net wages, known as take-home pay, amount to nearly €2.6 billion. Other than wage payments, expenditures include intermediate input costs of €2.5 billion (38 percent) and administrative task costs of €131 million (2 percent). The program cost, after deducting the contributions and administrative costs from the all-inclusive costs, amounts to roughly €5.1 billion for case A. This is the amount that is directly invested for the program that results in the multiplicative effects. For the case of the higher wage rate of €751, the amount for each component is higher, though proportionate to the former case.

5.4 SIMULATION RESULTS OF SCENARIO 4: 550,000 JOBS TARGET

Scenario 4 presents the implications of creating 550,000 public benefit jobs for a 12-month duration per year under two wage options: in case A at the current level of minimum wage of €586 per month per beneficiary; and in case B at €751, the minimum wage prevailing prior to the legislated wage suppression of 2012.

Costs: The all-inclusive costs amount to €8.2 billion and €10.5 billion, depending on the wage rate. This cost consists of total wages, cost of needed inputs, and administrative costs. Total wages include payroll contributions of 16.5 percent by employees and 27.46 percent by employers. This extensive scale of intervention corresponds to 4.2 percent of GDP for case A and 5.4 percent of GDP for Case B. This is within the range of stimulus packages introduced by many countries around the world during the first two years of the 2007 financial crisis. The program costs, the amounts directly invested for the JG program after deducting the payroll contributions and administrative costs, are approximately €6.3 billion and €8.1 billion, or 3.3 percent and 4.2 percent of GDP, respectively.

Table 5.7 Scenario 4: 550,000 Jobs Target

550,000 Jobs Target	Case A: €586	Case B: €751
All-inclusive cost[1] (€ million)	**8,216**	**10,529**
1. Total JG wages	4,930	6,318
2. Intermediate consumption, JG	3,122	4,001
3. Administrative cost, JG	164	211
Program cost (€ million)	**6,352**	**8,140**
Total number of new jobs	**721,236**	**769,421**
1. Direct JG jobs[2]	550,000	550,000
2. Indirect jobs[2]	171,236	219,421
Increase in output[3] (GVA)	13,010	16,671
Increase in gross domestic product[3] (GDP)	14,750	18,901
Increase in government revenue[4] (€ million)	**4,864**	**6,233**
1. Payroll (social security) contributions[5]	3,410	4,370
2. Indirect taxes (VAT)[6]	742	950
3. Direct taxes[7]	713	913
Net cost (€ million)	**3,352**	**4,296**
Total cost	8,216	10,529
Minus increase in government revenue	-4,864	-6,233

Source: Authors' calculations based on national accounts aggregates and employment by branch (nama_nace2) for gross value added and gross wages and salaries in 2012; government revenue, expenditure and main aggregates (gov_a_main) in 2012, Eurostat

Jobs: A total of 721,236 jobs are created in case A, and in case B, 769,421. In addition to the 550,000 direct jobs, 171,236 (case A) and 219,421 (case B) more jobs are generated indirectly as a result of multiplicative effects.

Gross value added and gross domestic product: Additional GVA of goods and services amounts to roughly €13.0 billion and €16.7 billion for cases A and B, respectively. Then, the increase in GDP at monthly wages of €586 and €751 is €14.7 billion and €18.9 billion, correspondingly, with the implicit multiplier of 2.32 (see footnote 57).

Tax revenue: Increases in employment, earnings, and output increase tax revenue through three channels: payroll (employer and employee contributions), indirect (value-added) taxes, and direct (income) taxes. In the two wage scenarios, case A corresponds to an increase of over €4.8 billion and case B, to €6.2 billion. Payroll, as can be seen, accounts for the lion's share of new taxes.

Net cost: At a monthly wage of €586, taking into account the positive gains in total government revenue (€4.8 billion) and subtracting this figure from the all-inclusive cost (€8.2 billion), the net program cost of 550,000 jobs amounts to roughly €3.3 billion. For case B (€751) the equivalent cost is €4.3 billion. As a percentage of GDP, the net cost of creating over 700,000 jobs at a minimum wage amounts to a meager 1.73 percent and 2.22 percent, respectively. Table 5.8 provides a brief description of the costs associated with a public service job creation target of 550,000 jobs at wages of €586 (per person per month) and €751, respectively. Out of €8.2 billion for 550,000 JG jobs at a monthly wage rate of €586, over €4.9 billion, or 60 percent, is allotted for wage payments and mandatory payroll contributions by employers and employees (€1,062 million and €638 million each). The net wages, known as take-home pay, amount to over €3.2 billion. Other than wage payments, expenditures include intermediate input costs of €3.1 billion (38 percent) and administrative task costs of €164 million (2 percent). For the case of the higher wage rate of €751, the amount for each component is higher, though proportionate to the former case. The program costs amount to €6.3 billion and €8.1 billion, respectively.

Table 5.8 JG Cost Structure: 550,000 Jobs (unit: € million)

550,000 JG Jobs	Case A: €586	Case B: €751
All-inclusive costs of JG program	**8,216**	**10,529**
Wage component		
JG total wage cost	**4,930**	**6,318**
Employers' contributions	1,062	1,361
Gross wage	*3,868*	*4,957*
Employees' contributions	638	818
Net wage	3,229	4,139
Nonwage component		
Intermediate demand	**3,122**	**4,001**
Domestic	2,461	3,154
Imported	661	848
Administrative costs	**164**	**211**
Program costs of JG program	**6,352**	**8,140**

Source: Authors' calculations

5.5 SUMMARY RESULTS: THE MACROECONOMIC BENEFITS OF JG

Keeping in mind the four scales of intervention we have proposed and the two wage levels that a JG program ought to consider, we conclude this section with a focused summary of our results:

- The total number of unemployed workers in 2012 was roughly 1,207,000 persons. A JG intervention would have provided jobs to anywhere between 22 percent and 64 percent of the unemployed. We note that the proposed larger scale would bring the total number of unemployed persons close to the level of 2009–10.

- The JG is a stimulus to the economy and therefore contributes to GDP growth. Specifically, our results show that the JG intervention would have contributed a minimum of €5.3 billion (at a 200,000 jobs target and monthly minimum wage of €586) and a maximum of €18.9 billion (at a 550,000 jobs target and a monthly minimum wage of €751) to GDP.

- Because output and employment expand, tax revenue increases. The smallest-scale and lower-wage intervention contributes nearly €1.8 billion in new taxes, while the largest-scale and higher-wage intervention contributes a little over €6.2 billion.

- One of the benefits of the intervention comes in the form of the indirect job creation—ranging roughly between 62,268 and 219,421 jobs. Besides kick-starting private sector employment activity, the corresponding employer and employees contributions contribute tax revenue to the social security pension system.

- The JG requires an upfront investment, the all-inclusive cost that, depending on the scale of the program, is in the area of €3.0 billion (1.5 percent of GDP) to €10.5 billion (5.4 percent of GDP).

- Yet, the net cost is much smaller. Once the new tax revenue is taken into account, 262,268 jobs can "cost" as little as 0.6 percent of GDP and 769,421 jobs can be "accommodated" for at a net cost of 2.2 percent of GDP.

- But even more important, the JG reduces the debt-to-GDP ratio. Consider scenario 4 in combination with the higher wage of €751 (a 550, 000 jobs target that results in additional indirect 219,421 jobs). While the *all-inclusive cost* is certain to increase the deficit-to-GDP ratio, from roughly 10.2 percent to a maximum of 13.1 percent, it reduces the debt-to-GDP ratio from 154.2 percent to 147.9 percent.

We conclude this section with a more detailed presentation of this last finding.

5.6 DEBT REDUCTION BENEFITS OF A JOB GUARANTEE

In 2012, nominal GDP was 193.7 billion euros, while the public deficit and debt were 17.4 billion and 303.9 billion euros, respectively (Table 5.9). The deficit amounted to 9 percent of GDP, while the debt accrued up to 2012 was 156.9 percent of GDP. The JG program, depending on the size of the intervention, would cost between €3.0 billion and €10.5 billion per year, as shown in Table 5.9. Spending on the program is expected to generate additional GDP, in the range of €5.36 billion to €18.9 billion (or a 2.8 percent to 9.8 percent increase in GDP). Since additional public borrowing might be a likely source of financing, implementing the program by relying solely on borrowing (an unlikely event) would raise the level of deficit and debt of the Greek public sector. However, the program would not put a heavy burden

Table 5.9 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	193,700							
Deficit	17,414							
Sovereign debt	303,928							
All-inclusive cost	2,988	3,829	4,482	5,743	6,574	8,424	8,217	10,529
Increase in GDP	5,364	6,873	8,046	10,310	11,800	15,121	14,750	18,901
Deficit (as a percentage of GDP)	10.2	10.6	10.9	11.4	11.7	12.4	12.3	13.1
Debt (as a percentage of GDP)	154.2	153.4	152.9	151.8	151.1	149.6	149.7	147.9

on public finance, as one might suspect. Factoring in the additional cost to the 2012 deficit, on the one hand, and the increase in GDP, on the other, the proposed JG program's various scales (in 2012) would increase the deficit-to-GDP ratio from 9.0 percent to 10.2 percent in the case of 200,000 jobs, or to 13.1 percent in the case of 550,000 jobs. From the original ratio of 9.0 percent, the increment is in the range of 1.2 to 4.1 percentage points. Yet, what is important to note is that the debt-to-GDP ratio moves in the opposite direction, and indeed declines, as a result of the JG program, precisely because the JG gives a big boost to the production of GDP. For instance, under the 200,000 jobs scenario, the debt-to-GDP ratio becomes 154.2 percent, which is 2.7 percentage points lower than the original rate of 156.9 percent. And as the size of the program becomes larger, the ratio decreases to 147.9 percent (under the 550,000 jobs scenario with the monthly wage rate of €751). The pattern of decline stems from the fact that the *relative* contribution of the program to GDP is larger than to the debt. Put differently, as the program hires more people, the multiplicative effect raises GDP more than the debt in relative terms.

This is a clear example that supports the argument against austerity. Growth, even if based in deficit financing, will increase output sufficiently to lower the debt-to-GDP ratio. Austerity has been destructive in two ways: it has so far reduced output and employment, so much so that it is still in negative territory (-3.9 percent for 2013); and, consequently, even with a fixed amount of debt, the dynamic it engenders (through the reduced GDP) pushes the debt-to-GDP ratio further upward.

5.7 METHODOLOGY: EMPLOYMENT IMPACT ASSESSMENT

5.7.1 Input-Output Tables
Each industry's production process requires the use of inputs other industries produce, and an input-output (I-O) table records the flow of goods and services among all industries in an economy. In other words, it consists of supply and use tables that depict the industry-level supply and use of products. The supply tables combine both domestic production and imports, with their sum corresponding to the aggregate available products in the economy. The use table describes demand for the products by industries for intermediate consumption, as well as final demand by households and government for consumption and investment.

A *domestic* I-O table is a subset of the total that excludes imported products. It is these tables that serve as a basis for the calculation of a country's employment multipliers. The exclusion of imports is necessary when employment effects of growth in domestic production are scrutinized. Next, from the domestic I-O table, it is possible to derive multiplicative

effects that account for direct and indirect employment effects. Direct employment occurs within any industry whose activities increase due to an external and direct injection of funds that demands output from that particular industry. As demand for intermediate inputs increases, indirect employment takes place in other industries that will produce the newly needed intermediate inputs. Several more waves of subsequent indirect employment impacts will run through the channels of the intermediate uses, since the indirectly affected industries also increase their demand for intermediate inputs from other industries.[57] The output growth leads to the growth in labor demand, and thus employment, in fixed and predictable proportions, assuming that production technologies remain constant. In addition, to estimate the overall multiplier effects we need to take into account the impact of the newly created final consumption expenditures by households that cause *induced* multiplier effects. In our analysis, we classify households into five income groups to reflect the income criteria of the scoring system for the JG program participation. Household heterogeneity is important because the composition of goods and services low-income households consume is different from those consumed by high-income households, and this difference implies disparate multiplier effects on output and employment. For instance, a low-income household is likely to spend more on food items, relative to other goods and services in their consumption bundle, while a higher-income household is likely to spend more on personal services. In 2010, expenditure on food items accounted for 12.2 percent for the household in the lowest income quintile, while it was only 7.2 percent for the household in the highest income quintile. Since a majority of participants of the temporary employment program are from households in the lowest income quintile, their composition of final consumption needs to be identified in the model.

The resulting output multiplier table with an employment by industry table yields an employment multiplier table that translates the output growth into employment growth. The technical process requires several steps to transform the I-O table into an employment multiplier matrix. The employment matrix is the product of the output multiplier table and a vector of employment intensity by industry—a ratio of total number of workers to output. The output multiplier table is an inverse of the Leontief matrix of the I-O table, computed as $(I - A)^{-1}$ from the matrix of direct requirements table (A), which shows only the direct input requirements, or the technical coefficients of a product. In input-output terminology, the product output is given by $x = (I - A)^{-1} * y$, where x is the vector of total output by product, I the identity matrix, and y the vector of final product demand. The total requirement table elaborates how many additional units of products must be produced to meet one additional unit of final demand for the product. Its product-by-product layout is converted to that of industry-by-product by multiplying the supply table (normalized to the total supply of product) with the total requirement table. The converted table shows how much the output of all industries needs to increase to meet the multiplicative demand accrued for each product. This step is necessary to link to the employment data compiled by industry.

The employment multiplier matrix (E) is written as $E = w * (I - A)^{-1}$, where $w *$ is a diagonal matrix with jobs-to-industry output ratios along its principal diagonal. The employment multipliers are, therefore, computed by industry, and thus interpreted as the number of jobs created in each industry to produce one additional unit of product output. We multiply the matrix by a vector of spending on products demanded in our simulation to compute the number of direct and indirect jobs created by the spending (Miller and Blair 2009, chapter 6).

The industry and occupational classifications of the specific direct employment in the JG program are parsed from the job descriptions of public JG announcements made for recruitment. The occupational composition of the indirect jobs is assumed to follow an existing occupational distribution by industry, compiled from the LFS. The occupational classification of the indirect jobs is intended to reflect variation in earnings within and across industries.

5.7.2 Construction of the JG Sector: A Synthetic Sector Approach

The need to construct a "synthetic" JG sector and introduce it in the existing I-O table arises from the fact that the JG work projects' input composition is unique. It does not allow for gross operating surplus (profits), and it mandates that at least 60 percent of the investment be allocated to JG wages.[58]

Accordingly, in what follows, the synthetic sector we create is designed to reflect closely the economic activities and the input structure of the JG. The listed projects available on the INE-GSEE website are sampled and parsed for their characteristics of economics activities within the framework of the statistical classification of economic activities in the European Community (NACE rev.2). The projects closely resemble five economic activities, or industries:

1. Environmental services and remediation
2. Construction
3. Security and investigative activities / services to buildings and landscape / office administration and support
4. Education
5. Social work services

The synthetic sector embeds, by design, a certain mandate on labor intensity (i.e., total wages relative to other expenditures of the program). A general rule, following the international practice of other large-scale employment programs,[59] although to a degree arbitrary in this case study (in the sense that this mandate is flexible), is the use of 60 percent wages and 40 percent for all other costs. The gross operating surplus or operating margin after VAT of the sector is expected to be nonexistent—as we mentioned above in our simulation, a gross operating surplus of 2 percent of gross output, as part of the operations and management cost of the program. Construction of the synthetic sector takes the form of averaging intermediate and value-added items of the five industries and adding up the costs. First, wage and overhead costs, 60 percent and 2 percent of the total budget for the program, are set aside. Then the remaining 38 percent is distributed over intermediate input uses proportionate to the original distribution of intermediate inputs (domestic and imported) for each of the five industries. Additionally, taxes less subsidies on products for intermediate use are assumed to be zero for the synthetic sector. Finally, aggregation of the adjusted intermediate and other inputs yields the synthetic sector.

The first step of adjustment of each industry before aggregation partially mitigates mismatches of actual projects or tasks and economic activities of the industries in the I-O table. We suspect that the intermediate input composition of the sector would be lower than what the I-O table suggests, as the listed projects appear to focus on labor-intensive, small-scale repair and maintenance rather than large-scale construction that would require intensive use of intermediate inputs. Environmental services projects in the program mainly involve manual work related to cleaning up areas around water sources and remediation, rather than capital-intensive, facility-based wastewater treatment, which is part of the environmental services industry. Construction-related projects in the program appear to be repair and construction of small-scale structures, while construction in the I-O table includes large-scale construction of infrastructure and buildings. The downward adjustment before aggregation is intended to better reflect the input demand of the actual projects.

Figure 5.1 exhibits input composition of the five industries and the synthetic sector. The intermediate inputs are decomposed into domestic and imported ones, as demand for imported goods does not generate domestic employment. The domestic intermediate input demand generates indirect multipliers, as the demand increases output and employment of suppliers in other industries. The compensation of employees, financing household consumption, generates induced multipliers, as the increase in household final demand encourages firms to produce more. But notice that the gross operating surplus consists of profits, rentals, and mixed income of unincorporated enterprises. The surplus, under normal circumstances, may be used to finance fixed capital investment for the expansion of production. Yet, in a short-term model, direct

Figure 5.1 Input Composition, 2010 (in percent)

27.9	17.2	14.9	22.8	0.0	2.0
30.2	14.6	37.6	71.7	57.1	60.0
29.4	54.8	38.1		29.2	30.0
12.6	13.4	8.9	4.0 1.5	15.0	8.0

Environment Services | Construction | Security; Services to Buildings and Landscape; Office Administration and Support | Education | Social Work | Synthetic Sector

- ▨ GOS
- ▨ Compensation
- ▨ Domestic
- ▪ Import
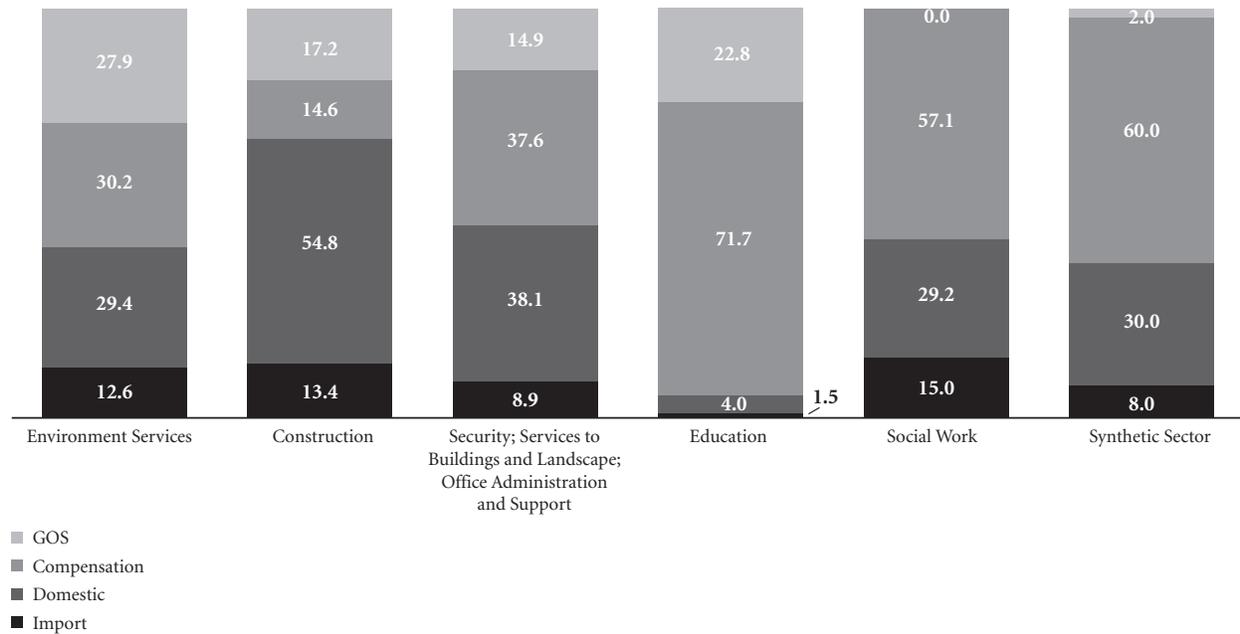
Source: Eurostat, 2010 symmetric, domestic I–O table

and indirect impacts of the investment are not accounted for. Hence, it does not contribute to the multiplicative processes in our model.

A great deal of heterogeneity is observed in the input composition of the industries. Per unit value of output, intermediate inputs produced in Greece range from 4 percent to 55 percent. Compensation for workers also varies, from 15 to 72 percent. The input composition of a sector, especially the labor component and intermediate inputs produced in a domestic economy, determines both direct and indirect employment effects. For instance, 55 percent of total expenditure by construction on intermediate inputs produced in Greece implies that the indirect employment impact can be much higher than that of education. The variations in the input composition are compiled to that of the synthetic sector, with 30 and 60 percent of the program expenditure being allotted to the domestic intermediate inputs and wage payments.

5.7.3 Employment Effects of the JG Program

To compare the employment potential of the JG sector with other sectors of the economy (such as construction, education, etc.), we begin with an exposition of the employment multipliers of each of the sectors that make up the JG we have created. The employment multipliers in Figure 5.2 indicate how many jobs would be generated both within and across the industry (directly and indirectly) if final demand for the industry's goods and services were to increase by one million euros. The darker shaded portion of the column (Figure 5.1) represents the number of jobs directly created within each industry, and the lighter segment illustrates the number of indirect jobs created elsewhere in the economy due to the increases in both intermediate and final consumption demands. Social work services poses the highest employment impact among the five industries, with a total of 72.0 jobs, out of which 45.6 jobs are created within the industry and the remaining 26.4 jobs in other industries. The labor intensity of almost 46.7 workers per million euros of gross output contributes to the large direct employment impact.

Figure 5.2 Employment Multipliers per Million Euros in Spending (number of jobs)
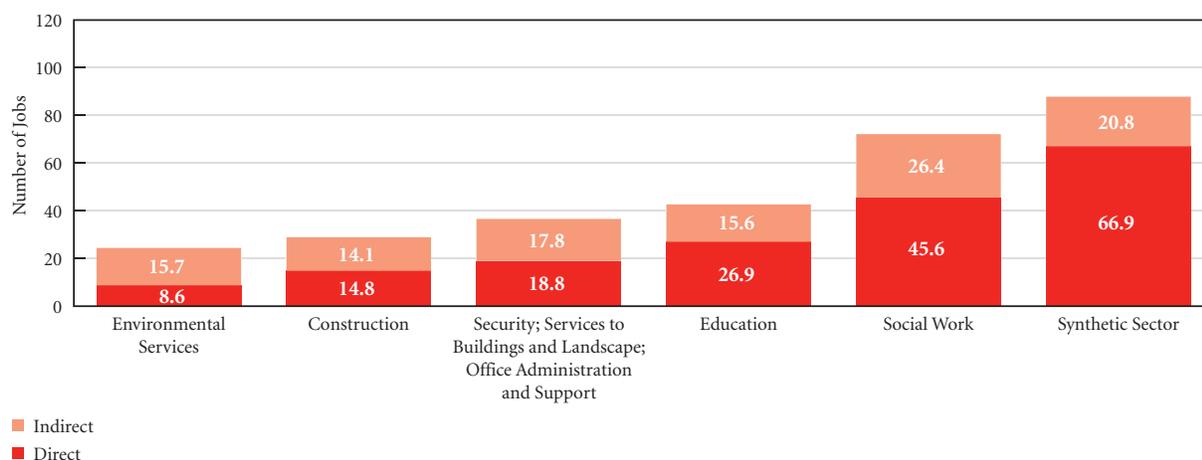
■ Indirect
■ Direct

Note: Numbers may not add up to total due to rounding errors.

Source: Authors' calculations

Following social work services, education has the second-highest employment impact, with 42.5 jobs per million euros spent. Direct employment dominates the impact, with 26.9 jobs in the industry; meanwhile, 15.6 jobs are generated in other industries. The high labor intensity of the industry—27.3 jobs per million euros of output—and the relatively low contribution of intermediate demand are attributed to the disproportionately high direct job effect.

Security, services to buildings and landscape, and office administration and support is placed next to education in terms of the total employment effect. One million euros of spending generates 36.6 jobs, of which 18.8 jobs are within the industry. The indirect effect of 17.8 jobs outside the industry is higher than in other industries, in both absolute and relative terms. Intensive use of intermediate inputs is attributed to the high indirect effect. A low labor intensity and high intermediate input expenditure relative to industry output entails relatively small direct employment and a high ratio of direct-to-indirect jobs created in construction and environmental services.

An industry's wage rate also influences the extent of direct employment. However, in education, with over 70 percent of gross output going to wage payments compared to 57 percent in social work, the direct employment multiplier is lower, at 26.9, than the 45.6 in social work service. Indirect employment originates from both intermediate demand by industries and final demand of household consumption. Though the share of intermediate input in construction is the highest, a heavy use of manufacturing goods produced with low labor intensities yields lower indirect jobs than the security, services to buildings, and other support industry, with intermediate demand for labor-intensive services instead. Social work service is another example of the low intermediate input share but high demand for goods and services produced with high labor intensities, such as food production, education, and health. Coupled with the highest direct employment multiplier, the social service industry would generate the largest number of jobs among the five source industries.

The synthetic sector has 87.8 jobs per one million euros of spending, though its wage share is only 3 percent more than that of social service. The low wage rate of €586 per month is the primary source of the large direct employment impact of 66.9. The indirect job creation of 20.8 can be attributed to a large share of intermediate demand for other labor-intensive services.

Let us now consider the employment multipliers of the JG sector in the context of a JG intervention. At monthly gross wage of €586, scenario 4, for example, sets a target of hiring 550,000 people for a duration of 12 months. The all-inclusive cost amounts to €8.2 billion, of which €3.2 billion would be paid for worker wages and the rest would be allocated for intermediate demand and contributions to social (payroll) insurance. The indirect and induced effects from intermediate

and household final demand generate a total of 171,236 jobs elsewhere in the economy, as shown in Table 5.10. The ratio of direct-to-indirect jobs indicates that for every 3.2 direct jobs created, one new job is created elsewhere in the economy.

The indirect jobs are distributed over various industries, as shown in Table 5.11. Wholesale and retail trade is the industry with the highest share of the new indirect jobs, at 22.5 percent, because most transactions, either for intermediate or final demand by households, involve this industry. Mining, manufacturing, and energy and utilities come next, at 14 percent. The high percentage of agriculture, forestry, and fishing, at 13.6 percent, is due to the high jobs-to-output ratio of this industry, as well as to the fact that it is the provider of intermediate inputs for food products, whose demand is driven partly by wage earnings from the program. Unlike the goods and service production industries, education and human health and social work account for a very small portion of the new indirect jobs, although these are among the primary consumption items of households. The negligible job growth in these industries is due to the mixed model that imposes zero growth of the industry other than through the synthetic sector, which we have imposed in our analysis due to cutbacks in government spending imposed by austerity-driven policies.

Table 5.12 shows the occupational distribution of direct and indirect jobs created by the program.[60] The characteristics of jobs in the program are identified from the job announcement files, available online from INE-GSEE, and assigned occupation code based on ISCO-08 definition. The assigned occupation codes are merged with job applicant files that contain specific jobs applied for by each individual. Out of 86,264 applicants, 18,446 were given jobs in the program, while 67,818 were not.[61] The occupational distribution of the direct jobs assigned reveals a high concentration of unskilled laborer (47.2 percent), as most projects in construction, services to buildings, and landscape demand manual workers. The professional jobs fol-

Table 5.10 Direct and Indirect Jobs Created

Direct	Indirect	Total	Ratio
550,000	171,236	721,236	3.2

Note: Total may differ from sum of the direct and indirect jobs due to rounding of numbers.

Source: Authors' calculations

Table 5.11 Distribution of Indirect Jobs by Aggregate Industry (in percent)

Industry	Indirect Jobs
Agriculture, forestry, and fishing	13.6
Mining, manufacturing, energy, and utilities	14.0
Construction	4.3
Wholesale and retail trade; repair of motor vehicles and motorcycles	22.5
Transportation and storage	5.3
Accommodation and food service	8.2
Information and communication	2.3
Financial and insurance	3.2
Real estate, professional, administrative, and support services	12.8
Public administration and defense; social security	2.6
Education	3.5
Human health and social work	2.1
Arts, entertainment and recreation; other services; activities of households	5.8

Source: Authors' calculations based on LFS 2011

Table 5.12 Distribution of Direct and Indirect Jobs by Occupation (in percent)

Occupation	Direct	Indirect
Managers	0.8	4.8
Professionals	16.2	14.4
Technicians and associate professionals	14.2	6.9
Clerical support workers	2.8	10.2
Services and sales workers	5.8	22.5
Skilled agricultural, forestry, and fishery workers	1.6	12.8
Craft and related trades workers	5.4	12.2
Plant and machine operators and assemblers	5.9	7.5
Elementary occupations	47.2	8.8

Source: Authors' calculations based on INE-GSEE job announcement files for direct jobs and 2011 labor force survey for indirect jobs

low at 16.2 percent, and these include teachers, early childhood educators, social work professionals, doctors and other medical practitioners, therapists, and engineers. Associate professional jobs, at 14.2 percent, include, for example, medical and pharmaceutical technicians, nursing associates, and administrative and specialized secretaries. Plant and machine operators and assembly jobs, at 5.9 percent, include mostly stationary plant and machine operators, and vehicle drivers. Services and sales jobs, at 5.8 percent, include child care workers, personal care workers in health services and home-based settings, and security guards. Craft and related trade jobs, at 5.4 percent, include mostly construction-related jobs—plumbers, painters, electricians, building frame workers, and machinery mechanics. The clerical support and skilled agricultural, forestry, and fishery jobs, at 2.8 percent and 1.6 percent, include general clerical and secretary, and horticultural and forestry related jobs, respectively.

The occupational distribution of indirect jobs follows the distribution of employed workers in the 2012 Greek LFS, and this is detailed in Table 5.12. Compared to the direct job distribution, elementary occupations account for merely 8.8 percent. In contrast, clerical, services and sales, and skilled agricultural workers make up 45.5 percent, while they

Table 5.13 Injection for 550,000 JG Jobs Scenario

	Amount (€ million)	Percentage
Employers' social contributions	1,062	12.9
Employees' social contributions	638	7.8
Administrative costs	164	2.0
Total	**1,864**	**22.7**
Injection	6,352	77.3
All-inclusive cost	**8,216**	**100.0**

Source: Authors' calculations

Table 5.14 Reduction of Unemployment Impact of the JG

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

Source: Authors' calculations

account for just over 10 percent of the direct jobs. The particular distribution of direct and indirect jobs implies that the JG program reaches many workers of lower skills, and therefore provides employment opportunities to the most vulnerable. The net injection in scenario 4, which feeds into the multiplicative process, is approximately € 6.3 billion out of € 8.2 billion in total (550,000 JG jobs at a gross wage of € 586), as Table 5.13 shows. The payroll contributions made by employers and employees, at 27.46 percent and 16.5 percent of the gross wage, account for about € 1,062 million and € 638 million, or 12.9 percent and 7.8 percent of total costs, respectively. Another 2 percent is allocated for administrative costs of the program. The sum of € 164 million is deducted, as spending on administrative costs are assumed not to raise intermediate or household final demand that generates multiplicative processes, as mentioned earlier.

We provide a summary in Table 5.14 that indicates the overall impact of the JG-simulated scenarios on unemployment. As can be seen, the probable contributions would have ranged between 22 percent and 64 percent, with the midrange job target of 300,000 jobs, resulting in a 33 percent to 35 percent decline in unemployment.

To put the employment impact of the JG proposed benchmarks in perspective (i.e., the JG targets of 200,000 to 550,000 jobs), 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 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 in Greece 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.

6. CONCLUDING REMARKS: THE IMPERATIVE OF A JG AND A MEANS OF FINANCING

Greece has labored under the Troika's failed austerity policy for three years. These policies have not delivered the jobs and growth Greece's people and businesses so desperately need. A job guarantee program would address unemployment directly and quickly. It is a cost-effective and proven policy response. Given the results to date, a national dialogue ought to begin, also inviting to the table the Troika to explain why Greece should not change course and adopt a large-scale national job guarantee.

We find that there are three possible trajectories for the Greek economy in the months ahead. Absent a radical change in course, Greece faces the bleak prospect of continuing economic stagnation and the ongoing devastation of unemployment, deteriorating living standards, and rising poverty. The second trajectory is an inequitable recovery, in which some groups recover while others continue to suffer. The ILO's 2014 annual report, *Global Employment Trends 2014: Risk of a Jobless Recovery?*, explains this path succinctly. And, finally, there is the more optimistic scenario of an economic recovery emerging in the near term that returns Greece to the high growth rates seen in the years prior to the current crisis. However, given the rate of net job creation, irrespective of how matters may appear to be improving (e.g., primary budget surplus, reduction of unit labor costs, coordinated public administration, etc.), it will take more than a decade to return to precrisis levels of employment. Therefore, regardless of which scenario plays out, unemployment will remain a stubborn obstacle to recovery, with dire social and economic consequences for the foreseeable future.

The JG policy is a bold and effective alternative. It is a proven policy that mobilizes the most valuable resource of any economy: labor. By providing a framework within which productive activity replaces forced idleness, Greek workers would earn a minimum wage while creating the very goods and services that benefit their communities, across Greece. Clearly, no government JG policy can absorb all unemployed workers without a radical reorientation of public policy away from austerity and with the active involvement of the private sector. In the meantime, the unemployed, especially those out of a job for a very long time, cannot and should not have to wait.

As we have shown in this report, the initial JG investment (i.e., the cost of the JG) produces compelling results:

(1) **Employment:** Every 320 JG employment positions (at the current minimum wage) create an additional 100 full-time private sector jobs in the economy. The vast majority of these indirect jobs are skilled jobs and command high wages. If the JG wage is set to the previous minimum of 751 euros, the results are even stronger: every 250 JG jobs funded will create the extra 100 private sector jobs.

(2) **Growth:** If we sum up the changes in GVA across all of the sectors of the economy, for every 100 euros spent initially in the JG program, 205 euros are added to the national economy (a GVA multiplier of 2.05). Alternatively, if we examine the impact of the JG intervention on GDP, the implicit multiplier turns out to be 2.3: for every 100 euros invested by the government in job creation directly, 230 euros are added to the economy.

(3) **Tax revenue:** For every 100 euros the government spends through the JG initiative, because of the multiplier demand and the additional spending created, the program recovers 59 percent of the initial program expenditures. Much of this revenue will directly contribute to replenishing the depleted payroll (social security contributions) coffers.

Table 6.1 Net Cost of the Job Guarantee Proposal

Job Target	200,000 Jobs		300,000 Jobs		440,000 Jobs		550,000 Jobs	
Monthly Gross Wage	Case A: €586	Case B: €751	Case A: €586	Case B: €751	Case A: €586	Case B:1 €751	Case A: €586	Case B: €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	419,685	576,990	615,538	721,237	769,422
Net cost (€ million)	1,219	1,562	1,828	2,343	2,681	3,437	3,352	4,296

Source: Authors' calculations

(4) Cost of the program: The cost depends on the scale of the program; specifically, on how many unemployed workers are offered a JG job. We have shown that, independent of the scale, were Greece to seek deficit financing in support of a large-scale JG initiative, the growth dividend would be strong enough to reduce the debt-to-GDP ratio.

Yet, even if no moral argument is raised for the Greek polity not to provide a minimum-wage job for workers made idle by the crisis, our proposal undoubtedly raises the question of how such a program would be financed. It is instructive to explore this question and put the various costs into perspective.

Table 6.1 illustrates both the total gross and net costs. The net costs reflect the offsetting government revenue, based on the various scenarios simulated using the two proposed JG wage options. In summary: case A (200,000 jobs) indicates that a total investment of 3.0 billion euros generates roughly 262,268 jobs. We include the 62,268 indirect jobs because the private sector would not have been able to create these jobs absent the demand originating from the JG policy. Dividing the *net* cost of approximately 1.2 billion euros by the total number of jobs, the government's monthly cost for each new job created is 387 euros.

The all-inclusive cost (approximately 3.0 billion euros) corresponds to fiscal stimulus spending of 1.5 percent of 2012 GDP (or 193.7 billion euros in 2012 prices). The net cost amounts to a mere 0.6 percent of GDP. In response to the global crisis, a diverse set of countries (e.g., Germany, Brazil, the United States) that did not experience GDP losses of 25 percent or unemployment rates of over 27 percent responded with fiscal stimulus packages of 2.5 percent to 4 percent of GDP annually. The policy response in the United States was 5 percent of GDP over two years; China and Indonesia implemented stimulus responses of 13 percent and 10 percent of GDP, respectively (UNCTAD 2011). In this context, our simulated scenario for the all-inclusive cost of a 300,000 direct job creation initiative for Greece amounts to 2.3 percent of GDP. Our estimates indicate that netting out the benefit of the increased tax revenue reduces the budget commitment to a mere 1 percent of GDP. From this perspective, our proposal is modest.

Still, the question of how to fund such an initiative remains. We have argued elsewhere for the creation of a *National Employment Fund* (Antonopoulos 2013) financed from a variety sources, including European Union funds. 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 European Union member-countries according to their respective unemployment rates. In other words, this is an open admission that current levels of EU budgetary allocations are inadequate, and 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 euros annually to service its outstanding sovereign debt (Papadimitriou et al. 2014). 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 wage of 586 euros). 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[62] could be offered as a form of tax-anticipated payment and issued by the Greek central bank. These bonds would be transferable and perpetual (not requiring repayment by the government).

Long-term "special purpose" bonds, issued by the Greek central bank in coordination with the European Central Bank 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."

Policymaking is deeply embedded in ideas, ideologies, and interests. Within the Greek context, some argue that the JG policy would be disruptive as it interferes 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 to the free fall of wages and precariousness of employment conditions, both of which are occurring at an alarming rate in Greece. We have also heard some argue that the public sector should not act as ELR because this is not "real" work, and that it is degrading to the very notion of public employment. This line of reasoning perceives JG employment as "charity" and "recycling of unemployment" but, in truth, misunderstands the core argument of the proposed policy. The confusion lies in that a job guarantee is not meant to be a handout—it is payment for actual and productive work performed. If the JG jobs are charity, what, then, are unemployment benefits? They both provide security in times of difficulty, but that does not make them charitable donations or tools for pacification of the unemployed.

In our view, a job guarantee ought to be an entitlement—a right—for all adults of working age, to ensure access to a job that pays the legal minimum wage, provides decent conditions of work, and offers predictable hours of employment.

The evidence we have presented is compelling. The need for action is urgent. It is our hope that this report will stimulate discussion and debate. If Greece is to recover, employment policy, specifically a job guarantee, must be at the center of the debate.

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APPENDICES

APPENDIX A: TABLES 0.1–0.4

Table 0.1 Stability of Employment by Professional Status, EU-27 (aged 15–64), 2010–13 (in percent)

Year	Employees	Employers	Own-account Workers	Contributing Family Workers	Total
2010Q1	84.0	4.4	10.2	1.4	100.0
2010Q2	83.9	4.4	10.2	1.5	100.0
2010Q3	83.9	4.3	10.3	1.5	100.0
2010Q4	84.1	4.3	10.2	1.4	100.0
2011Q1	84.0	4.3	10.2	1.4	100.0
2011Q2	84.1	4.3	10.1	1.4	100.0
2011Q3	84.2	4.2	10.2	1.4	100.0
2011Q4	84.3	4.2	10.1	1.3	100.0
2012Q1	84.1	4.2	10.4	1.3	100.0
2012Q2	84.1	4.2	10.3	1.3	100.0
2012Q3	84.1	4.2	10.3	1.4	100.0
2012Q4	84.2	4.1	10.2	1.3	100.0
2013Q1	84.3	4.1	10.3	1.3	100.0
2013Q2	84.2	4.2	10.2	1.3	100.0
2013Q3	84.3	4.1	10.2	1.3	100.0

Source: Eurostat, LFS, Employment by sex, age, and professional status

Table 0.2 Distribution of Employment by Worker Status in Greece (aged 15–64), 2012 and 2013

Worker Status	Number of Workers 2012Q2	Number of Workers 2013Q2	Percentage 2012	Percentage 2013
Employees (wage and salary earners)	2,377,200	2,285,700	63.20	62.93
Self-employed with employees (employers)	269,200	244,300	7.20	6.73
Self-employed without employees (own-account workers)	930,100	925,600	24.70	25.48
Contributing family workers	186,600	176,500	5.0	4.86
Total	**3,763,000**	**3,632,100**	**100.0**	**100.00**

Source: Eurostat, LFS, Employment by sex, age, and professional status

Table 0.3 Employment and Unemployment, 2008–13

Year	Employed	Unemployed
2008	4,473,700	377,200
2009	4,423,200	470,400
2010	4,306,500	627,600
2011	4,016,600	874,900
2012	3,705,200	1,201,100
2013	3,568,700	1,345,100

Source: ELSTAT, LFS

Table 0.4 Poverty Thresholds for 2009 and 2012 (in euros)

Household Size	2009	2012
One adult	6,897	5,708
Two adults with two children	14,484	11,986
Purchasing Power Standard		
One adult	7,521	5,969
Two adults with two children	15,794	12,536

Source: Eurostat, SILC, At-risk-of-poverty thresholds

APPENDIX B: CHANGES IN EMPLOYMENT PROTECTION LEGISLATION

Law / Year	Provisions
3833/2010	**Changes in public sector employment:** • 12% reduction in compensation and allowances for public sector employees and 7% reduction for employees in private law entities under the supervision of the state. • 20% reduction in professional experience benefit, postgraduate studies benefit, effective administration benefit, and allowances. • 30% reduction in Christmas, Easter bonuses and pay leave. • Exemptions involve allowances related to marital status, career advancement, job hazards, and educational achievement (master's degree). • Ban on salary increases. • Imposed ratio of one hire to five departures for permanent employees hired under public law contracts and indefinite-term private law employees in the wider public sector except for education, health, and security forces. • 30% reduction in maximum overtime afternoon hours.
3845/2010	**Changes in public sector employment:** • Additional introduction of 8% reduction in earnings. • Further reduction of bonuses (the Christmas bonus will amount to €500, the Easter bonus to €250; leave allowance, €250) and linkage of their eligibility with the level of monthly wage (no bonuses for wages beyond €3,000). • Additional 3% reduction of earnings, severance pay, allowances, and remuneration of employees in private-law entities owned by the state, in regularly state-subsidized private law entities, and in public enterprises. **Changes in private sector employment:** • Professional- and firm-level agreements can deviate from the respective sectoral and general collective agreements. **ALMP measures:** • Regular or long-term unemployment benefits can be transformed into a voucher (check) for reintegration in the labor market, accruing to the employer for hiring the unemployed (wage subsidy to the firm). In case the job is sustained after the end of the program, the employer is entitled to receive subsidization for social security contributions. • Suspension of prohibitions concerning the ability of temporary employment agencies to supply employees to the public sector for the next three years. OAED will subsidize temporary employment agencies for promoting the successful hiring of unemployed persons aged 55–64. • Introduction of apprenticeship agreements for registered unemployed persons up to 24 years old, registered for a period of up to 12 months, with earnings at 80% of the unskilled worker's minimum wage. Social insurance contributions address only sickness and job hazards and are covered by OAED.

Law / Year	Provisions
3846/2010	This law addresses issues related to flexible forms of work organization, mostly in the private but also in the wider public sector. As such, it institutionalizes and regulates **flexible types of work arrangements**. In particular:

- In case the employer faces problems and needs to limit productive activities, he/she is entitled instead of terminating employment contracts to transform them into rotation work (full-time work for fewer days per week or fewer weeks per month or fewer months per year or their combination). The duration of this work arrangement cannot exceed six months per year and presupposes prior information sharing and consultation with workers' representatives. However, given the increased decentralization of industrial relations at the firm level, the potential of such work arrangements is increased.
- If the employer demands increased work time from a part-time employee, the employee is obliged to provide it as a proof of goodwill provided it is within his/her capacity and it is not demanded on a regular basis. This overtime work is remunerated with an increased by 10% daily wage.
- Part-time employment contracts can also be exercised in the wider public sector, excluding local authorities and public law legal entities.
- Temporary agency work can be justified on grounds of exceptional, temporary, or seasonal conditions and is prohibited when the employer replaces workers on strike, when the indirect employer has already dismissed employees during the last six months, when health and safety risks are involved, and when the work is related to the construction sector. The maximum duration for temporary work is set at 12 months. When the employee replaces another employee whose contract is suspended, temporary work can extend to 18 months. However, given that new temporary contracts with the same employee can be signed after a period of 45 days from the previous contract, this in reality extends the time duration of temporary agency work indefinitely.
- In case the employer needs to limit productive activities, he/she is entitled to place employees under reserved status based on prior consultation with workers' representatives. An employee can be listed as reserved for up to three months per year and there should be a time interval of three months after similar previous arrangement. The employee receives 50% of the salary of the last two months of full-time employment.
- Leave periods can be split into more than one interval based on the needs of the employer, provided that the first leave period is at least six days for six-day weekly work schedules and five days for five-day weekly work schedules.
- An employment contract can be transformed from full-time to telework with the provision of a three-month adjustment period and with the right of the employee to return to previous full-time status.
- During periods of augmented workload, companies with work arrangements of up to 40 hours per week are allowed to ask for augmented shifts of two hours per day. This overtime can be compensated by reduced work hours in another period or with full days off or their combination. Such arrangements cannot be extended to more than eight months per year based on company level collective agreement. This in practice entails not remunerating overtime work with augmented daily wages, as was previously the case.
- Reductions are foreseen for compensation of work on the sixth day of the week (only 30% extra of regular daily wage).

Law / Year	Provisions
3863/2010	In general, this law addresses issues related to the social security system and pensioners' remuneration, but also entails further **changes in employment relations in the private sector**. In particular, the law introduces: • A reform in the mediation and arbitration procedure to be specified and issued by presidential decree. • Reduced notice periods for terminating white-collar workers' open-ended employment contract equivalent to an indirect 50% reduction of severance pay. • Increased thresholds for employment protection of collective dismissals (from four to six for companies with 20–150 employees, from 2–3% to 5%, and up to 30 employees for companies with more than 150 employees). • Social insurance coverage under self-employed status for dismissed workers aged 55–64 in order to facilitate access to retirement. The employer is obliged to cover 50% of social insurance contributions for workers aged 55–60 years and 80% of social insurance contributions for workers aged 60–64 years for a period of up to three years. OAED will cover the remaining part of social insurance contributions. • Further 5–10% reduction in overtime compensation. • Reduced minimum wage for workers aged less than 25 years to 84% of the minimum wage and for workers aged 15–18 to 70% of the minimum wage in the context of apprenticeship contracts. **ALMP measures:** • Dismissed workers aged 55–65 years are also eligible for participation in OAED ALMP measures (preferential hiring in the public sector).

Law / Year	Provisions
3871/2010	Given the strong focus of the law on fiscal discipline, the main changes introduced are related to the **right of remuneration increases in the private sector**. In particular, the law introduces: • Imposed pay freeze during 2010 and for the first semester of 2011. As from July 1, 2011, up to July 1, 2012, wage increases are allowed only up to the annual rate of European inflation (1.5% for 2010 and 1.7% for 2011). • Decisions of the Organization for Mediation and Arbitration that supersede the new eligible wage increases are not valid. • For decisions prior to the issue of the Law, appeal is foreseen within 15 days.

Law / Year	Provisions
3899/2010	**Changes in public sector employment:** • Imposition of a €4,000 ceiling for all earnings for employees in the (wider) public sector and a further 10% reduction of all earnings except for those allowances related to the marital status and hazardous jobs. This further reduction will hold only for employees with earnings greater than €1.800 per month. • In the frozen rate of hiring to departures in the wider public sector, employees transferred from other public sector entities are treated as new hirings.

- New employment contracts under private law in the wider public sector are reduced by 15% in 2011 in relation to 2010.

Changes in private sector employment:

- Introduction of a new type of Special Firm-Level Collective Agreements (SFLCAs), which allows for less favorable remuneration and working conditions than the ones envisaged by the respective sectoral collective agreements. The SFLCA can be signed, extended, and renewed based on a preliminary procedure where interested parties have only to submit a joint explanatory statement to the Labor Inspectorate while not being bound by the latter's opinion.
- Unilateral recourse to arbitration is still allowed but its result is binding for both parties. Arbitration can only determine minimum month and/or daily wages but no other employment conditions.
- Rotation work is extended to nine months per year.
- Temporary agency work is further extended to 36 months.
- The first 12 months of an open-ended employment contract are treated as probationary and the contract can be terminated without prior notification and severance pay.
- Notification period for dismissal for employees under indefinite employment contracts working from 12 months to 2 years for the same employer are reduced to one month prior to dismissal.

Law / Year	Provisions
3986/2011	**Changes in public sector employment:**

Changes in public sector employment:

- The period during which the ratio of one hiring to five departures in the wider public sector is valid is extended until 2015, while the ratio for 2011 becomes 1:10.
- New employment contracts under private law in the wider public sector are reduced by 50% in 2011 and by 15% per year for the remaining period up to 2015.
- Employees in private law corporate bodies under state supervision may be classified as redundant and receive a wage of 60% of their former earnings for a period up to 12 months after their classification. In case they sign any employment contract while being classified as redundant, their pay is terminated. During this period and upon its termination, these employees may be transferred to other public services, be treated preferentially in applications for part-time work or for up to 30% of all definite time job placements in the wider public sector, or leave the public sector with the advantages offered within the framework of voluntary leave schemes.

Changes in private sector employment:

- Fixed-term contracts can be renewed indefinitely on the grounds of solid justification. Without justification, fixed-term contracts can be renewed for three consecutive years.
- Consecutive fixed-term contracts are those contracts signed in less than 45 days from the expiration of the previous contract.
- Overtime work up to two hours per workday can be required from the employer with equivalent reductions in work time (days off and/or reduced work time) in other periods. The period of these work arrangements cannot exceed six months within one year or 32 weeks per year. Refusal of the employee to agree on overtime work is sustained and does not violate goodwill practices.

- Thresholds are instituted for the workers' associations at the company level depending on the total number of employees (25% of all employees in companies with more than 20 employees and 15% of all employees in companies with up to 20 employees).
- Young employees aged 18–25 can sign apprenticeship agreements with employers with earnings set at 80% of the respective wage for newly hired employees under the relative collective agreement. Apprenticeship contracts can be extended up to 24 months. Employers are obliged to withhold from dismissals for three months before and during these contracts.

Social protection against unemployment:
- The maximum number of days for which a registered unemployed can receive the regular benefit is 450 within a period of four years.
- Christmas and Easter bonuses are granted in full only if the unemployed is subsidized for the full eligibility period (1/1–30/4 for Easter bonus and 1/5–31/12 for Christmas bonus, respectively). In case they are subsidized for less than this period, they are only entitled to three daily unemployment benefits per subsidized month.
- Social protection against unemployment for the formerly self-employed is instituted; a €10 increase of social insurance contributions per month among the self-employed is introduced and earmarked for the provision of unemployment benefits to this category.

Law / Year	Provisions
4024/2011	**Changes in public sector employment:** - An employee in a specific public service is regarded as an employee of the whole public sector and can be assigned to any post in the public administration. - New seniority and remuneration systems are introduced that entail reductions for core public sector employees' remuneration. - The ceiling for all earnings in the wider public sector is reduced to €3,000. - Further reduction of bonuses in the public sector, since they are paid only when the full eligible period has been worked. If total earnings exceed €3,000 per month, the relevant bonuses are reduced in order to respect the ceiling. - A preretirement redundancy employment status is introduced for public sector employees who are above 55 years of age and have completed 35 years of service by 31/12/2013. They are paid 60% of their respective salary and face further reductions if they undertake complementary employment in the private sector. - A reserved employment status is introduced for employees under private law employment contracts in the wider public sector when the legal entities where they work are abolished or merged or when they are above 55 years and the respective years of service are 35 up to 31/12/2013. They receive 60% of their respective salary for 12 months. After the 12-month period, the reserved employees of the first case are fired without dismissal compensation whereas the ones of the second case are entitled to full pension. - Public sector entities are no longer obliged to recognize unions even in the case of restructuring of public services.

Changes in private sector employment:

- SFLCAs have superior validity to sectoral or occupational collective agreements throughout the duration of the structural adjustment program.
- Workers' associations at the firm level can be formed with the participation of 3/5 of total employees and may have indefinite duration.

Law / Year	Provisions
4046/2012	**Changes in public sector employment:** • The permanent employment contracts in the (wider) public sector are transformed into contracts of indefinite duration that allow for dismissal. **Changes in private sector employment:** • 22% reduction in the minimum wage for all employees and 32% reduction of minimum wage for employees below the age of 25 years without prior consent of workers' representatives. • The new gross minimum wages amount to €586,08 for workers with single marital status, no children or work experience and €510,95 for underage workers. • Collective agreements are from now on of fixed-term nature with a duration of 1–3 years. Any sectoral or occupational collective agreements that have been in force for 24 months or more will expire 1 year after the date the law was issued (14/2/2013). Collective agreements signed on or after 14/2/2013 can remain in force for 3 years, but are subject to employers' discretion to terminate them and start a new collective agreement after 1 year. • The aftereffect principle of collective agreements is drastically altered (collective agreements could remain in force if they expired and were not substituted by another one after 6 months). The new period for the aftereffect of collective agreements is 3 months. • Employers are obliged to pay only the respective salary and allowances related to seniority, children, educational attainment and hazardous work but not all the other bonuses and allowances envisaged. The new agreement can be imposed without the employee's consent and will apply until its replacement by a new collective agreement or individual contract even with less favorable terms. • Seniority increases are also frozen. • The right of unilateral recourse to arbitration is replaced by obligation for bilateral recourse. Arbitration can only cover issues related to basic wage but no other employment conditions.

Law / Year	Provisions
4093/2012	**Changes in public sector employment:** • Christmas, Easter bonuses and leave allowances are abolished. • The seniority and remuneration systems introduced by law 4024/2011 are extended to the wider public sector. **Changes in private sector employment:** • The minimum wage will not be determined through collective bargaining between the social partners but set at the national level by the government. Employers are only bound by the minimum wage.

- Seniority pay increases are reduced for all employees and workers in the private sector. Seniority pay increases are suspended from 14/2/2012 until the unemployment rate in Greece reaches 10%.
- Allowances related to the marital status are abolished (approximately 9% of basic wage).
- For future National General Collective Employment Agreements to hold, they have to be ratified by the leading representative organizations of workers and employers. This in practice entails that the national agreement will not be binding for employers who do not participate in these representative organizations.
- Notification periods are reduced for indefinite employment contracts. If the employer warns the employee in time, he/she is granted the right to submit half of the further reduced severance payments.
- Intermittent working schedules are extended to all shops and commercial entities and not only to those functioning with intermittent schedules. Obligatory 5-day work in commercial entities is also abolished, which entails that it is upon the discretion of the employer to decide the allocation of the weekly 40 hours of work into 5 or 6 days.
- Reduction in the required time off within 24 hours from 12 to 11 hours.
- Further facilitation of overtime work with reduced remuneration.
- Extended possibility to break employee's leave into more periods in accordance with the workload of the enterprise.

Law / Year	Provisions
4144/2013	**Changes in private sector employment:** - Facilitation of overtime work by sidestepping its prior obligatory announcement to the Social Labor Inspectorate. - Imposition of fines for employers when they are found to employ undeclared personnel by the Social Labor Inspectorate. - Augmented fines for employers when undeclared employees/workers are registered as unemployed and receive unemployment benefits (€3,000) and when these beneficiaries have been previously dismissed by the same enterprise (€5,000).

UNEMPLOYMENT BENEFITS

	Regular Unemployment Benefit (RUB)
Beneficiaries	Former employees whose employment contract expired or was terminated and were insured against unemployment are entitled to a regular unemployment benefit (RUB).
Prerequisites	If subsidized for the first time: a. The beneficiary must have been working 80 days per year for the past two years and he/she must have completed 125 workdays during the last 14 months, excluding the last two months. b. The beneficiary must have been working 200 days during the past two years, excluding the last two months, with a minimum of 80 workdays per year. If subsidized for the second time or more: a. The beneficiary must have been working 125 days during the last 14 months prior to his/her dismissal, excluding the last two months. b. Persons employed in the tourist sector and in seasonal jobs for two consecutive years must have been working for 100 days during the last 12 months. c. The beneficiaries should not have been granted a RUB for more than 400 days within the last four years.
Procedure	The application is submitted by the employee in person within 60 days from the date of dismissal or during the last days of the employment contract to the respective OAED service, depending on the place of residence. When the application is submitted within seven days from dismissal, the RUB is granted from the seventh day. When the application is submitted at a later date, the RUB is granted from the date of submission of the application.
Level	The RUB equals €360 and is increased by 10% for each family member.
Duration	Duration depends on the number of workdays completed, the occupational sector, and the age of the beneficiary: a. General category: 125–149 workdays within the last 14 months or 200 workdays within the last two years ensure RUB for five months; 150–179 or 250 workdays, respectively, ensure RUB for six months; 180–219 workdays or 300 workdays ensure RUB for eight months; 220–249 workdays ensure RUB for 10 months; 250 and more workdays ensure RUB for 12 months. If the beneficiary is above 49 years and has completed 210 workdays, he/she is granted RUB for 12 months. Beneficiaries with 125 workdays and over 4,050 workdays in general are also entitled to RUB for 12 months.

b. Tourist industry and seasonal professions: 100–149 workdays within the last 12 months ensure RUB for five months, 150–179 within the same period ensure RUB for six months, 180–219 workdays ensure RUB for eight months, 220–249 workdays ensure RUB for 10 months, 250 and more workdays ensure RUB for 12 months. If the beneficiary is above 49 years and has completed 210 workdays, he/she is granted RUB for 12 months. Beneficiaries with 100 workdays in the last 12 months and over 4,050 workdays in general are also entitled to RUB for 12 months.

c. Construction sector: 100–149 workdays within the last 14 months ensure RUB for five months, 150–179 within the same period ensure RUB for six months, 180–219 workdays ensure RUB for 8 months, 220–249 workdays ensure RUB for 10 months, 250 and more workdays ensure RUB for 12 months. If the beneficiary is above 49 years and has completed 210 workdays, he/she is granted RUB for 12 months. Beneficiaries with 100 workdays and over 4,050 workdays in general are also entitled to RUB for 12 months.

Changes

Since the RUB is calculated at 55% of the minimum daily wage, reductions in the minimum wage cause reductions in the RUB. From 12/3/2012, the regular RUB has been reduced from €461.50 to €360. From 1/1/2013, beneficiaries are ineligible if they have received 450 days of benefits during the last four years. If the beneficiary has been granted less than 450 days during the same period, he/she is entitled to the remaining days up to the ceiling of 450 days. From 1/1/2014, the number of unemployment insurance days has been reduced from 450 to 400 days within the four-year period.

Moving within the EU and Regular Unemployment Benefit (RUB)

Beneficiaries

The unemployed moving within the EU face better chances of receiving RUBM from the country of last employment. This provision is in accordance with EU Regulations in order to enable employees to enjoy social protection against unemployment while moving within the EU.

Prerequisites

For the right to transfer RUB within the EU, it is necessary for the beneficiary to have received at least the first month of the benefit. The beneficiary must register at the Public Employment Services at the country of destination and abide by their rules.

Procedure

The Public Employment Services in the country where the beneficiary applies are obliged to take into consideration employment and insurance periods in other EU member-states (U1 form).

Level

The level is the same as the current RUB in the country of application.

Duration	Maximum duration for the right to transfer is three months. After the three-month period, the benefit is terminated. If the beneficiary returns to the PES of the country before the termination of the three-month period, the benefit is continued.
Changes	No changes have been documented during the reference period.

Special Retention or Termination Benefit (SRTB)

Beneficiaries	Employees in companies that terminated their operations and were not able for any reason to officially terminate employment contracts, as well as employees exercising the right to work retention, are entitled to SRTB provided that they do not fulfill the requirements for RUB.
Prerequisites	The beneficiary must have completed at least 60 workdays within 12 months before the start of the three-month unemployment period prior to the benefit, and must prove that the net yearly family income is below a threshold (set at € 9,977.99 for 2013). This threshold is increased by € 293.47 each consecutive year.
Procedure	The beneficiary must remain as registered unemployed for three months and must also be available to the respective OAED services throughout this period.
Level	This benefit amounts to 20 x daily unemployment benefit (for 2013 € 287.98). Since the latter is calculated as a percentage of the minimum wage, the SRTB is also subject to minimum wage changes.
Duration	The beneficiary may receive SRTB up to three times per calendar year. The 60 workdays of insurance are no longer required in case the beneficiary fulfills the conditions for SRTB more than once per year.

Long-Term Unemployment Benefit (LUB)

Beneficiaries	Greek and EU citizens that were previously insured against unemployment and their 12-month subsidization period under the Regular Unemployment Benefit (RUB) has expired. Subsidized unemployed for less than 12 months under RUB are excluded from LUB.
Prerequisites	The beneficiary must be 20–66 years old upon the date of application.

Beneficiaries are unemployed persons who completed their 12-month RUB period even if the latter has not been installed continuously (i.e., suspensions and continuations). They must be registered unemployed for at least 12 months continuously. The family income should not exceed € 10,000 plus € 586.08 per underage child (<18 years).

Procedure   The beneficiary must apply within two months from the termination of the subsidized RUB period.

Level   LUB equals € 200 per month. This benefit is not subject to increases; it is identified with a specific person and cannot be transferred.

Duration   The long-term unemployed are entitled to receive LUB while they remain unemployed up to 12 months.

Changes   This benefit has been newly instituted by Law 4093/2012.

Special Seasonal Benefit (SSB)

Beneficiaries   Certain professions are listed as beneficiaries when being employed in Greece under dependent employment contracts (IKA-ETAM). Pensioners who exercised one of the eligible professions during the previous year and fulfill the requirements for SSB are entitled to receive the benefit provided that their pension does not exceed the minimum pension envisaged by the Social Insurance Fund (IKA, for 2013 € 486.84).

Prerequisites   a. Builders: They must have completed from 73 to 163 work-days (taking into account work leaves) in the year before the enactment of the benefit, with the exception of contractors employing more than three employees. They must be employed exclusively in the sector. Those participating in vocational training are not entitled SSB for the year most of their subsidized training activity is implemented.
b. Other professions: they must have completed from 50 to 210 workdays in the previous year. Foresters must have completed 50–240 workdays in the previous year. Workers in the tourist industry must have completed 75 workdays in the previous year and no more than 50 workdays during the period 1/10–31/12. Road infrastructure constructors must have completed 70–210 workdays. In all cases, their daily wages in other sectors must not exceed the number of workdays in the sector granting them the opportunity to apply for the benefit. In addition, they must not have completed more than 240 workdays. They must not fulfill the criteria for RUB. In case there is overlap of the subsidization period (10/9–30/11) between SSB and RUB, the benefits are counterbalanced. Those participating in vocational training are not entitled to SSB for the year most of their subsidized training activity is implemented.

Procedure	The beneficiary must apply to the relevant OAED services during the months of autumn each year.
Level	For builders, SSB amounts to 0.70 x 37 x unskilled daily wage (26.18 for those > 25 years and 22.83 for those <25 years). For Naxos emery mineworkers, SSB amounts to 0.70 x 50 x unskilled daily wage. For foresters, tobacco workers, potters, and shipbuilders, SSB amounts to 0.70 x 35 x unskilled daily wage. For musicians, singers, actors, footwear workers, theater inspectors, cashiers in theaters, technicians in the film industry and TV, workers in tourism, and road construction workers, SSB amounts to 0.70 x 25 x unskilled daily wage.
Duration	During 10/9–30/11, once per year.
Changes	No significant changes have been documented during the period of reference apart from Law 3762/2009.

	Special Benefit after the Termination of Regular Unemployment Benefit (SBTRUB)
Beneficiaries	Unemployed persons whose Regular Unemployment Benefit (RUB) has expired and who still remain unemployed after one month.
Prerequisites	The beneficiaries must not belong to any of the occupations listed under Special Seasonal Benefit (SSB) and have a net family yearly income that does not exceed €9,977.99 (this amount is increased by €293.47 each consecutive year).
Procedure	The beneficiary must apply to the relevant OAED services according to the place of residence within two months from the expiration of RUB.
Level	This benefit amounts to 13 x daily unemployment benefit (for 2013 €187.20).
Duration	Once per year.
Changes	No significant changes have been documented during the period of reference.

Special Benefit for Minimum Three Months' Unemployment Ineligible for RUB (SBnoRUB)

Beneficiaries	Persons unemployed for a minimum of three months who are ineligible for RUB.
Prerequisites	The beneficiaries must have completed at least 60 workdays in the previous year. The beneficiaries must not belong to any of the occupations listed under Special Seasonal Benefit (SSB) and have a net family yearly income that does not exceed €9.977.99 (this amount is increased by €293.47 each consecutive year). They must be available for PES during the period of benefit submission.
Procedure	The beneficiary must apply to the relevant OAED services according to the place of residence within two months from the expiration of RUB.
Level	This benefit amounts to 15 x daily unemployment benefit (for 2013 €215.98).
Duration	The beneficiary may receive the benefit up to three times per calendar year. The 60 workdays of insurance are no longer required in case the beneficiary fulfills the conditions more than once per year.
Changes	No significant changes have been documented during the period of reference.

Youth Unemployment Benefit (YUB)

Beneficiaries	Young people between 20 and 29 years old and unemployed for more than one year.
Prerequisites	The beneficiaries must be unemployed and at least 20 years old; or unemployed university graduates; or post termination of military service unemployed.
Procedure	The beneficiary qualifies to apply to the relevant OAED services according to the place of residence within three months of their 20th birthday; or from their university graduation date; or from military service termination.
Level	The benefit amounts to €73.37 per month.

Duration	Five months.
Changes	No significant changes have been documented during the period of reference.

Self-Employed Unemployment Benefit (SEUB)

Beneficiaries	Self- or independently employed persons who are insured in the respective funds (OAEE and ETAP-MME), stopped working after 1/1/2012 under any status (salaried or independent work), do not receive any pensions from Greece or abroad, and have submitted their contributions from 1/1/2011 to the OAED special account for the self- and independently employed.
Prerequisites	The beneficiaries must have completed three years of continuous or interrupted insurance in the relevant fund. They must have submitted one year of contributions if they stopped working after 1/1/2012, two years of contributions if they stopped working after 1/1/2013, and three years of contributions if they stopped working after 2014. In case they stopped working before 1/1/2011 and then restarted, the previous requirements hold, with the provision that the relevant contribution periods are counted from the restart of professional activity. They must have a net personal income of no more than 20,000 euros and a net family income of no more than 30,000 euros in the previous financial year. There should be a minimum period of three months between termination of professional activity after 1/1/2012 and application for the benefit. The beneficiaries should not be insured voluntarily in any fund upon termination of professional activity and should not have applied for pension. They should not have transferred the business (in whole or in part, shares, etc.) to any relative of first or second degree. They must have submitted all their contributions to the fund they belong to and not be subject to any special agreement for the payment of overdue contributions. They must live in Greece. In case the beneficiary terminates two or more professional activities, he/she must choose the fund from where the benefit is claimed.
Procedure	The beneficiary must apply to the relevant OAED services according to the place of residence or of professional activity within three months from the decision of the relevant fund to delete the beneficiary from insurance records.
Level	The benefit amounts to €360 per month. The benefit is not increased with the number of dependent children; it is not subject to Christmas–Easter bonuses and does not cover social insurance contributions.

Duration   The duration of the benefit depends on former insurance records. For three–four years of full insurance, benefit duration is three months; for five–six years, benefit duration is four months; seven–eight years, five months, nine–ten years, six months; 11–12 years, seven months; 13–14 years, eight months; and 15 years or more, nine months.

Changes   This benefit has been envisaged under Law N. 3986/2011 (Article 44, par.2) and under the Ministerial Decree ΦΕΚ 705/Β′/28.03.2013 due to the increasing number of self-employed and independently employed terminating their professional activity during the last years.

MOTHERHOOD AND FAMILY BENEFITS

Complementary motherhood benefit: Motherhood protection leave

Beneficiaries
Mothers insured in the Social Insurance Fund for dependent work employees (IKA). The benefit is granted after the expiration of the pregnancy leave and after the duration of the motherhood (protection) leave exceeds 6 months.

Prerequisites
The benefit is submitted to insured mothers working at the initiation of pregnancy leave, after birth, and when granted the motherhood benefit from IKA for pregnancy and birth. The amount of the motherhood benefit is equal to the minimum salary. The basic salary is €586.08.
In the case that a pregnant employee worked up to four hours/day or 13 days/week in the six months prior to her pregnancy leave, the amount of the benefit is reduced by half. There are no increases in the benefit. The duration of motherhood (protection) leave counts toward the "insurance period."

Procedure
The beneficiary must apply to the relevant OAED services according to the place of residence within three months from the submission of IKA motherhood benefit.

Level
This benefit equals the difference between the salary submitted by the employer and the benefit submitted by IKA for the same employment period.

Duration
Once.

Changes
No significant changes have been documented during the period of reference.

Special Motherhood Protection Leave Benefit

Beneficiaries
Mothers insured in the Social Insurance Fund (IKA), employed in private sector entities, with dependent employment contracts of definite or indefinite time and with full or part-time status. This leave period is granted by the employer upon the termination of pregnancy and birth leave or the equivalent reduced work schedule arrangement or the regular yearly leave, as long its provision is granted according to the yearly deadlines. The beneficiary has the right to enjoy this leave in full or in part, according to her application. She can also terminate the special leave with the written consent of the employer. In any case, the remainder of the eligible leave period cannot be transferred to another time period.

Prerequisites	The benefit is submitted to insured mothers working at the initiation of special motherhood leave and having received motherhood benefits from IKA or the special account of employees in hotels. This leave benefit can be terminated upon the request of the beneficiary or the initiation of a new employment contract with a new employer.
Procedure	The beneficiary must apply to the relevant OAED services according to the place of residence within 60 days from the termination of pregnancy and birth leave, from the equivalent reduced work-schedule arrangement, or from the termination of regular yearly leave.
Level	This benefit equals the minimum wage increased by the relevant bonuses and leave benefits. In cases where the mother was working for up to four hours per day or up to 13 days per month on average during the semester prior to pregnancy leave, the level of the benefit is equal to half the minimum wage. The benefit provides for social insurance contributions (health and pension, primary and supplementary schemes).
Duration	Six months.
Changes	This benefit was envisaged under Law 3655/2008 and modified by Law 3996/2011 (article 36).

	Family Benefits
Beneficiaries	a. Daily wage workers under dependent employment contracts as well as salaried wage workers not eligible for family benefit from their employer under the relevant collective agreement or special firm-level agreements, or are eligible to a family benefit from their employer that is below the respective benefit submitted by the Redistributive Account of Family Benefits for the same number of dependent children. b. Persons employed under independent work contracts under conditions similar to those of dependent employment contracts (Law 4075/2012, Article 1, paragraph 1). c. Persons employed by spouses or first- or second-degree relatives (Law 4075/2012, Article 1, paragraph 2).
Prerequisites	The beneficiaries must have completed at least 50 days of wage work in the previous year, or minimum two months of regular employment benefit submission, or minimum two months of continuous incapacity to work, or minimum two months of leave from work for pregnancy or birth. The family benefit is granted when children are up to 18 years of age, or 22 in case they study, if

		they are incapable of working as long as this incapacity holds and when they live in Greece or another EU member-state.
Procedure		Applications are received by the beneficiary or the employer at OAED respective services. Specific deadlines are issued per year by OAED according to the number of children for which the benefit is applied.
Level		The level of the benefit depends on the number of children with an extra increase for the third child and varies from € 8.22 (one child) to € 180.36 (14 children) per month.
Duration		Monthly submission for the duration of the wage/benefit upon which it is calculated.
Changes		No significant changes have been documented during the period of reference.

Severance Pay

Severance pay:	2010	2013 (with prior notice)
tenure ≥ 6 months:	15 days	0 days
tenure ≥ 9 months:	15 days	0 days
tenure ≥ 1 year:	30 days	0 days
tenure ≥ 2 years:	30 days	1 month
tenure ≥ 4 years:	1.5 months	1 month
tenure ≥ 5 years:	1.5 months	1.5 months
tenure ≥ 10 years:	3 months	1.5–2.5 months
tenure ≥ 20 years:	8 months	3–7.5 months
Redundancy payment:	**2010**	**2011**
tenure ≥ 6 months:	15 days	0 days
tenure ≥ 9 months:	15 days	0 days
tenure ≥ 1 year:	30 days	15 days
tenure ≥ 2 years:	30 days	1 month
tenure ≥ 4 years:	1.5 months	1 month
tenure ≥ 5 years:	1.5 months	1.5 months
tenure ≥ 10 years:	3 months	2 months
tenure ≥ 20 years:	8 months	3 months

Counseling

Target Group	Type of Intervention	Number of Beneficiaries	Implementing Agencies
Registered unemployed, young scientists, low-income farmers	Individualized counseling services, vocational training, business plan development	30,000	Local development partnerships for the promotion of employment
Disabled and former drug users	Counseling, pretraining, and training services	1,500	Specialized social and work integration centers
Unemployed with emphasis on vulnerable social groups	Individualized counseling services, vocational training, business plan development	12,300	Local development partnerships for local social integration projects
Unemployed with emphasis on vulnerable social groups	Pretraining and training	7,000	Specialized social and work integration centers

Vocational Training

Target Group	Sector	Number of Beneficiaries	Special Provisions
Unemployed sailors	Shipping	17,928	Includes obligatory job placement
Youth, women, long-term unemployed, and vulnerable social groups	Tourism	3,600	Includes obligatory job placement
Youth, women, long-term unemployed, and vulnerable social groups	Construction	7,000	Includes obligatory job placement
Youth, women, long-term unemployed, and vulnerable social groups	Green Economy	7,500	Includes obligatory job placement
Unemployed miners and engineers	Mining	4,900	Includes obligatory job placement
Unemployed	Information and Communication Technologies	18,334	
Unemployed sailors	Shipping	7,250	Includes professional accreditation
Unemployed journalists	Media	2,000	Holders of training vouchers
Unemployed, young graduates of higher education with emphasis on vulnerable social groups	Information and Communication Technologies	10,000	E-learning
Unemployed, young graduates of higher education with emphasis on vulnerable social groups	Information and Communication Technologies	28,735	
ALL unemployed aged 15–24	Announced on January 29 by the prime minister of Greece	Up to 240,000 over a period of two years	Details pending

Private Sector Wage Subsidies (received by employers)

Target Group	Number of Beneficiaries	Special Provisions
Unemployed, 31–44 years old	6,500	
Unemployed, holders of work reintegration vouchers	10,000	The unemployment benefit is transformed into a work reintegration voucher whose value accrues to the employer.
Unemployed, 16–24 years old	2,000	Apprenticeship – temporary job placement. The employer receives as a subsidy 100% of the cost of social insurance contributions for the first year and, if the contract is continued for a further 12 months, the employed received as subsidy 70% of social insurance contributions.
Young up to 30 years old, unemployed near retirement age, long-term unemployed women above 45 years old, unemployed women above 50 years old, single-parent households	25,000	The employer is subsidized with a certain percentage of social insurance contributions.
Graduates of higher education up to 35 years old	5,000	Employers are subsidized with €20 per day for employees under 24 years old and with €25 per day for employees above 24 years old for 24 months, and they are obliged to keep in employment the beneficiaries for another three months.
Long-term unemployed aged 55–64 years (including those dismissed after 15/7/2010).	5,000	Local authorities' enterprises are subsidized with €25 per day for 24 months and they are obliged to keep the employees for another three months.
Young unemployed up to 29 years old, graduates of higher education, young unemployed 18–29 years having completed only secondary and postsecondary education, technical university education graduates	35,000	Reintegration voucher; the unemployment benefit is transformed into a subsidy. The beneficiary receives from €2,400 to €2,700 as a training benefit and the employer receives as a subsidy the cost of social insurance contributions provided that they transform apprenticeship to employment contracts.
ALL unemployed aged 15–24	240,000 (over two years)	Details pending

Start-up Incentives

Target Group	Number of Beneficiaries	Special Provisions
Unemployed, up to 35 years old	2,000	Emphasis on innovative economic activities
Young scientists	6,000	
Women 22–64 years old	4,000	
Young, 22–32 years old	6,000	
Unemployed, 33–64 years old	3,500	
Unemployed, 22–64 years old	4,500	
Unemployed, 18–29 years old, with special emphasis on vulnerable social groups	7,500	Creation of social cooperative enterprises

Direct Public-benefit Job Creation (koinofelis ergasia)

Target Group	Number of Beneficiaries	Special Provisions
Unemployed (long-term, young, with disabled dependent children) with low income and low-income farmers	55,000	Nonprofit entities are the indirect employers and local authorities (mostly) direct employers. Beneficiaries participate in socially useful projects (environmental protection, cultural conservation, social services) for five months for a net monthly salary of €625.
Unemployed, up to 35 years old (long-term, young and professionals that terminated their activity during the last two years)	7,000	Beneficiaries will provide their services in cultural and archaeological sites for seven months and for a net daily wage of €25.
Unemployed in households where all are unemployed, unemployed heads of single-parent households, young unemployed aged 18–29, long-term unemployed, and unemployed graduates of higher education	10,000	Beneficiaries will be employed for five months in local authorities in positions demanding obligatory education and for a net monthly salary of €490 (above 25 years old) or €427 (below 25 years old).
Unemployed in households where all are unemployed, unemployed heads of single-parent households, young unemployed aged 18–29, long-term unemployed, and unemployed graduates of higher education	27,948	Beneficiaries will be employed for five months in local authorities and for a net monthly salary of €490 (above 25 years old) or €427 (below 25 years old).
Unemployed in households where all are unemployed, unemployed heads of single-parent households, young unemployed aged 18–29, long-term unemployed, and unemployed graduates of higher education	7,400	Beneficiaries will be employed for five months in social and educational services and for a net monthly salary of €490 (above 25 years old) or €427 (below 25 years old).

Figure 0.1 The Structure of the 2012 PKE
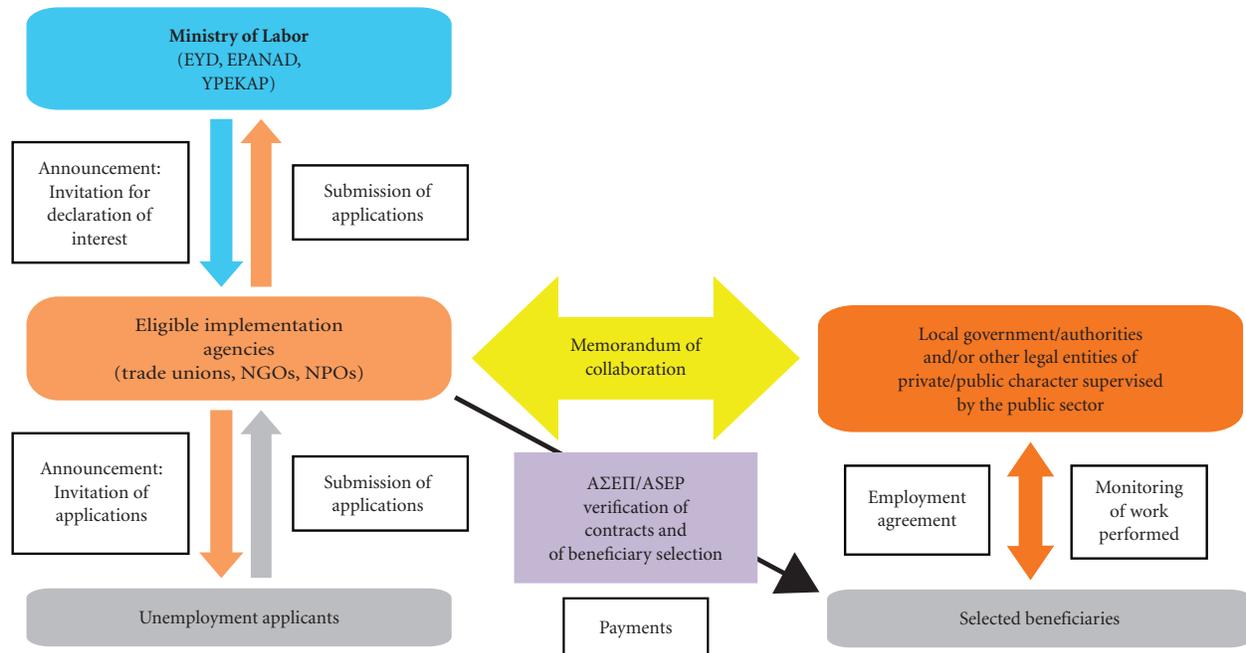
This appendix has two objectives. First, it aims at providing a snapshot of the operational structure of the PKE; and second, it presents some of the deficiencies that came to the forefront during the course of undertaking this research project. The latter does not serve as a formal evaluation. Such an investigation was outside the scope of this research project, and therefore critical documents and stakeholders—for example, PKE 2012 beneficiary workers—were not consulted. Instead, it should be read as a list of observations the authors of this report wish to offer.

PKE 2012 was coordinated and overseen by the Managing Authority of the Operational Program "Development of Human Resources" (EPANAD), which, from an institutional perspective, operates under the auspices of the Ministry of Labour, Social Insurance and Welfare.

EPANAD was mandated to invite, through a call for expressions of interest, the participation in regional PKE 2012 programs of all nonprofit organizations (NPOs) that fulfilled specific eligibility criteria to submit an application. The NPOs, which would become the Eligible Implementing PKE 2012 Agencies at the local level, were mandated to collaborate with other legal entities, mostly local public authorities such as municipalities and other public regional authorities but also nongovernmental organizations (NGOs), in each region. These two separate types of entities (e.g., a trade union or an NGO that had experience in environmental cleanup, etc., and/or a municipal governing body) were instructed to prepare and sign a memorandum of collaboration among themselves that would indicate the areas of intervention, the sectors of activity, the number of job placements, the specific qualification requirements of PKE 2012 workers for the proposed work projects, the timeline for the work to be completed, and the budget breakdown into direct (wages) and indirect expenses (administration costs). The eligible agency (i.e., nongovernmental organizations, trade unions, etc.) was assigned the supervision of the general work projects/program, the selection of beneficiaries, observance in meeting all safety regulations, wage payments to PKE 2012 beneficiaries, and follow-up six months after

the completion of the program. The partner agency (i.e., a local government entity) was assigned the responsibility for issuing all required work permits, covering of all costs not related to wages or social insurance contributions (i.e., tools, equipment and consumables, work premises and meeting rooms, means of transportation when necessary), and certifying completed work on a monthly basis. The two agencies were commonly in charge for the implementation of all awareness raising and dissemination activities related to the program.

Based on the partnerships formed and the applications submitted, the Managing Authority (EPANAD) selected the eligible agencies (prospective implementing agencies) and allocated a specific number of PKE 2012 jobs per agency and regional entity. Next, each selected implementing agency announced a call for participation in a PKE 2012 work project and extended this invitation to all eligible unemployed persons, using the specific format provided by the Supreme Council for Civil Personnel Selection (ASEP), an agency that was presumed to be independent of political influence and would ensure transparency in all public sector hiring. This document was completed following the guidelines that made explicit detailed information on all projects. This information included the name of the selected implementing agency, the regional entity where the projects would be implemented, a three-part code (the first part is completed by ASEP, the second denotes the sequential number assigned to the specific announcement by the implementing agency, and the third part corresponds to the year when the announcement was made), the number of job placements involved per code (a three-digit number unique per project, regional entity, qualification, and collaborating partner), and the documentation needed as proof of qualification, to be supplied by the PKE 2012 job applicants, as per the specific code of each job placement. The uniform part of all announcements described the exclusion criteria (i.e., who was not eligible to submit an application), the ranking score point system based on the targeted social criteria (e.g., unemployment status, family status, family income, disability status, residence, etc.), the necessary documentation to prove these criteria, and other qualification requirements, as well as the details that applicants must be aware of regarding the application procedure. According to the ASEP instructions, there are certain dissemination requirements (e.g., obligatory publication of the announcement at the premises of the implementing agency, all local authority premises in the specific regional entity, the relevant regional offices of OAED, the website of EPANAD, and ASEP). The selected implementing agency is required to disseminate a brief note on the day of publication of each announcement to ASEP.

Following these instructions, all selected agencies announced their calls and started to gather applications from all potential beneficiaries. Potential beneficiaries could apply for more than one job placement and in more than one agency and/or regional entity. Normally, there was a 10-day application period within which all interested potential beneficiaries had to submit their application. All applications were then registered by each implementing agency into a Microsoft Access database provided by ASEP with a uniform design but not in a centralized way (i.e., each database included only the application for one agency per regional entity). This database enabled the production of five types of tables: (1) a table of rejected applicants and the list all the jobs positions they applied for, (2) a table of applicants in alphabetical order and decreasing rank order of selection according to the score point system, (3) a table of applicants sorted according to their social security code number and order of selection, (4) a table of selected beneficiaries in alphabetical order and order of selection, and (5) a table of beneficiaries sorted according to their social security code number and their order of selection. The implementing agencies had to process all applications electronically within one month from the expiration of the deadline and subsequently disseminate the tables of accepted and rejected applicants, by posting them in printed form on their premises and in electronic form on their website; on the website of EPANAD; and in printed and electronic format to ASEP for assessment of their lawfulness and validity. Within three days from the publication of evaluation results, applicants (i.e., unemployed applicants for PKE 2012 jobs) were allowed to file their objections directly with ASEP in printed form. For all applicants who objected to the validity of results, the implementing agency had to provide ASEP with the full application folder within three days.

The implementing agencies were obligated to officially hire selected beneficiaries within 10 days of the publication of evaluation results. Contracts were also forwarded to ASEP for assessment. In cases where the objection was granted as valid, the originally selected and hired beneficiaries had to be fired after being paid for the time they worked prior to their substitution, while the new entrants were hired for the remaining period till the completion of each project (five months in total).

Supervision of work progress was monitored by the partner agency in accordance with the memorandum of cooperation. Given the certification of work progress, the implementing agency proceeded with the payment of wages to PKE 2012 beneficiaries in installments as program funding was being forwarded from the Special Managing Authority of EPANAD.

DEFICIENCIES OF THE PKE 2012 PROGRAM

The aim of the commentary that follows is not to provide a full evaluation of the PKE 2012 program. This is outside the scope of our study. However, it is important to highlight a range of deficiencies that have come to our attention. Among them, some pertain to ways in which the implementation falls short of the spirit of the ELR policy, others pertain to lack of attention regarding the articulation of this employment initiative with labor protection rights, and yet others pertain to lack of programming for data gathering, which, to a greater or lesser extent, hindered the undertaking of our research.

Number of Employment Opportunities at the Regional Level

Given that the main aim of this report is to demonstrate the need for an expanded PKE 2012 program, we will not address the small number of jobs offered during the first round of PKE 2012 (2011–12). We would be remiss, however, if we did not mention our concern with the regional distribution of jobs created under PKE. It should have to some degree reflected the regional distribution of unemployment or/and the risk of poverty linked to unemployment. As of the date this report was finalized, the managing authorities did not provide information on the exact criteria and methodology with which the regional allocation of jobs (and funds) was decided.

Strengthening Partnerships

The PKE 2012 program makes a distinction between implementation agencies and partner agencies. Implementation agencies include nonprofit associations, foundations, other incorporated entities under civil law, civil companies, and professional associations as well as trade unions. They are eligible to participate if they all meet the following requirements:

- They have legal status.
- They include in their Articles of Association the implementation of socially beneficial activities.
- They were created before the announcement of the program (in order to avoid encouraging the creation of ad hoc organizations).
- They are not-for-profit.
- They have no tax- or insurance-related liabilities.
- They have their legal domicile in the region of intervention and own or have access to sufficient infrastructure to meet the requirements of various projects.
- They are accessible to people with disabilities, especially if they already employ people with disabilities or are planning to do so within the framework of participating in the program.
- They have proven management capacity (certificate of type C).
- Local authorities and other public sector entities do not account more than 49 percent of their membership.

As for the partner agencies, the following agencies are eligible:

- Local authorities of A and B level (municipalities and regions, respectively).
- Legal entities of the public or private sector that include in their Articles of Association (or other binding document) the implementation of socially beneficial activities.

The rationale for creating a firewall and keeping separate the implementing and partner agencies that, among other functions, monitor the progress of work performed can be found in: (a) the need to avoid the negative legacy of STAGE programs (namely, clientelist appointment to nonpermanent jobs that nonetheless carry the promise of future regular and permanent contracts) and to clearly assign different roles to different agencies (e.g., beneficiaries' selection, project management, project implementation); and (b) strengthening civil society actors through the implementation of these programs.

However, we must note that there may have been another motivation at play: that is, a need to remove the "public employment" character of these jobs because of the Troika's mandate to reduce the current size of public sector employment as a part of the austerity and fiscal discipline regime. Independent of the rationale that led to this particular structure, the planning process faces two main obstacles. First, it created a complex partnership structure that increases red tape (e.g., start-up documentation, monitoring expenses, and timely submission of payment requests) and complicates the coordination between participating PKE 2012 beneficiaries and implementing and employment agencies: employee → public agency where he/she is assigned to work (i.e., municipality) → private agency in charge of hiring (i.e., NGO) → ministry and managing authority). For example, hiring each new PKE 2012 employee requires coordination between the public agency where they are assigned a job (e.g., a municipality); the public agency must coordinate with the private agency that manages the hiring process (e.g., an NGO), and the NGO must coordinate with the ministry and managing authority. Second, the separation of functions does not fully guarantee the elimination of clientelist practices. Influence can still be channeled from local authorities to the new implementing agencies (i.e., NGOs), as civil society safeguards were not put in place, nor was a clear mediation process with a dedicated ombudsman. It is not clear, of course, whether a more centralized system would be a preferred option. As there is no precedent for a program of this kind, the creation of the necessary institutional structures will develop dynamically—learning by doing is unavoidable.

The increased level of intermediation has also led to another type of criticism, which we believe is unfounded. PKE 2012 implementing agencies (NGOs), the argument goes, are functioning in effect as "temporary employment agencies" where a person is hired by one company and then "lent" to another for a fixed time period. In this case, the employee is being paid by the hiring agency (NGO) while working under the authority of the other, indirect employer (a municipal office). In Greece, this practice has been gaining ground recently in the private sector especially, but not exclusively, for unskilled labor positions (i.e., cleaning services) and is associated with reduced workers' rights and workplace protection for the employees. Hence, the sensitivity is understandable. The main line of criticism that has been advanced is that the various NGOs have been turned into hiring agencies that facilitate the outsourcing of labor tasks, lending employees to the public sector at a lower wage, for which they receive a reward—a fee of 5 percent of each project's cost for this service of intermediation. Against this view, what ought to be understood, from our perspective, is that the labor time that an NGO or any hiring and managing agency devotes to programing and monitoring is absolutely necessary and cannot be expected to be performed if not paid. In fact, what we should guard against is the work increase and the associated stress it produces on NGO workers that are expected to perform additional tasks within their usual work schedule.[63]

Given these arguments, it is important to consider possible options; the following are suggestions for consideration:

- The selection of applicants should remain at the central level (i.e., ASEP). Yet, a rethinking of the organizational linkages between employing and implementing agencies is important to reduce red tape.
- Consult with the stakeholders of each regional entity, before the announcement of an intervention, regarding the local needs of work projects to be undertaken and the proper agency to undertake their supervision. Special attention should be paid to consultation with second-tier stakeholders (e.g., trade unions, civil society observatories, etc.).
- Set up regional monitoring and evaluation committees with the participation of representatives from the ministry, implementing agencies, trade unions, and program participants.

In addition, it is important to focus on the identification of PKE 2012 domains of public service jobs and on associated labor rights. To these issues we turn next.

Identifying Domains of PKE 2012 Work and Jobs

The ministerial decree, which defines the program's management, evaluation, monitoring, and control system, explicitly states that "the programs cannot respond to permanent needs in the field where the intervention is to be implemented" (Min. Decree No. 1.5131/3.949, Article 5). However, a number of allegations and publicly available statements[64] indicate that former permanent public employees are being replaced with PKE 2012 participants. Such actions can only create conflicts between municipal employees, on the one hand, and the implementing agencies and local authorities, on the other. We cannot ascertain the extent of this practice, but we assume its presence, perhaps as a result of the austerity measures and the limited financial streams from the central government to the local authorities and other public sector entities. In this context, planning choices are reduced to the following:

- Making use of the program to sustain socially useful services in the retrenched public sector while strengthening the associated labor rights of participants (see next point).
- Careful identification of intervention areas in order to avoid the substitution effect.

This is a rather difficult choice, because what may be urgently needed by members of the community (i.e., elder care) is the result of the downsizing of permanent provisioning at the local and municipal level. Ultimately, it divides communities, and instead of building cohesion and social inclusion, it can aggravate differences. The second option is more promising, in terms of both labor market regulation (i.e., not further undermining employee rights in the public sector) and social provisioning. New areas of intervention can be identified in the field of social and solidarity economy (e.g., collective retail shops, agricultural cooperatives, cooperative supermarkets, urban farming, homeless day centers or residence houses, cooperative kindergartens, etc.). Given the inherent risk of constraining such initiatives, when they are planned in a top-down fashion, there is potential to interconnect PKE 2012 and social economy policies.[65] For example, PKE 2012 funds could be used to cover wages and social insurance contributions for the first year of a social economy entity start-up.

Contracts and Employment Rights

Employment guarantee programs aim at tackling unemployment and regulating the labor market.[66] Hence, it is crucially important to analyze the employment contracts and labor rights associated with the newly created job positions.

Wage level

According to the regional announcements: "the effected remuneration of the participants, regardless of professional specialization, in socially useful work projects implemented by non-profit agencies … is defined as 25 euros per day and not exceeding the level of 625 euros per month" (Managing Authority of the Operational Program Development of Human Resources). At this stage, we have to address two issues: the wage level and the acknowledgment of professional expertise and experience.

The usual practice is to set the employment guarantee wage at a level equal to or slightly below the minimum wage in order to minimize substitution effects in the private sector. However, in the case of Greece, the situation is complicated by the drastic deterioration of employment relations as a result of the Memorandum of Understanding (i.e., bailout) with the Troika (European Commission, European Central Bank, International Monetary Fund). To illustrate this point, we note that the universal daily wage of 25 euros with an equivalent of 625 euros monthly salary was below minimum wage (751 euros) when the program was announced, but above the new minimum wage (586 euros) after mid-February 2012, when program implementation began. The wage level is a policy choice reflecting the need for employment guarantee policies to indirectly regulate minimum wages by creating exit options for workers from noncompliant private sector employers. However, the current minimum wage of net 490 euros is below the unadjusted poverty threshold of 2011.

As far as wage differentiation is concerned, experiences drawn from the implementation of employment guarantee programs in other countries shows significant variation. India applied a universal system, South Africa a two-tier system based on skill level of the job, and proposals for Tunisia have argued for a three-tier wage system consistent with the professional expertise of each employee.[67] Wage-level differentiation is of the outmost importance, especially in the context of PKE 2012 participants being used to fill retrenched job positions as a strategy to reduce public service costs. If a flat rate is introduced without limiting public employment substitution effects, the end result will be a segmented workforce where employees with equal levels of specialization and experience performing the same types of tasks are remunerated in considerably different ways. This undermines workers' employment prospects in the public sector and destroys solidarity and collective identity among employees. If we control the substitution effect, by strictly identifying areas of intervention in the social and solidarity economy, a universal flat rate is not such a problem, given that cooperatives normally plan pay equal wages to all member-workers.

Duration of the employment contract

The PKE 2012 envisions a maximum five-month employment contract for each participant. Given that in 2012 half of the unemployed persons in Greece (and by now, around 70 percent) are long-term unemployed[68] (more than 12 months), the duration of the employment contracts is of particular relevance. The five-month duration does not signify a real change in the status of participants as unemployed. It is merely a temporary reduction in the number of people counted as unemployed. The duration is also linked to the wage level. Given the maximum remuneration of 3,125 euros per participant (i.e., 625 euros per month for five months), this amount is insufficient to lift a single unemployed person with no dependents above the poverty threshold.

Job guarantee and unemployment benefits

Job guarantee programs are closely connected to the social protection system of each country. The crucial difference between job guarantee programs and workfare policies is that, in the former, participation in the program is not a prerequisite for protection against unemployment (i.e., unemployment benefits will continue). If an unemployed person is receiving unemployment benefits, he/she faces a temporary suspension of his/her unemployment benefit as long as the program lasts. After its completion, the person continues to receive unemployment benefits until the end of the legally established eligibility period. But, the way the PKE 2012 job guarantee program was structured did not ensure

that unemployment benefits were accessible to participants after the five months of their employment in the PKE. According to the social protection system in Greece,[69] new claimants of unemployment benefits must have completed: (1) 80 insured workdays per year in the last two years, and (2) 125 insured workdays in the last 14 months preceding dismissal without taking into account the last two months prior to dismissal. Let's assume for argument's sake that a PKE 2012 participant has worked for the whole period (125 days). Given that the two last months do not count, he/she will have in total 75 eligible insured workdays and cannot be granted unemployment benefits. This is clearly troubling. By design, even if not intended, PKE 2012 does not provide unemployment protection after the completion of the program.

The situation is even more complicated in terms of disability benefits. First, the program does not allow for the continuation of social protection benefits to disabled participants. This practice stands in sharp contrast with the policy adopted within social cooperatives of limited liability[70] and the recently established social integration cooperative enterprises.[71] In both cases, the law allows for parallel eligibility for social protection benefits. This provision was not extended to PKE 2012 participants even though disabled persons are among the target groups.

Time schedule and place

Under normal circumstances, a PKE 2012 contract defines the weekly duration of socially useful employment as five days per week at eight hours per day. This has not been always observed. There is evidence that some employers (NGOs)[72] have asked for the right to require employees to work in various places according to the needs of the intervention and at the employer's discretion according to the memorandum of cooperation. This provision undermines the ability of applicants to understand the requirements of a position before signing a contract; typically, applications are made for specific positions associated with particular agencies (e.g., social worker in a specific municipality). In addition, when there are transportation requirements associated with a position, there should be a provision requiring employers to cover this cost for the employee. There have been cases reported where participants were asked to work at distant locations and to cover the increased transportation costs on their own.

Other labor rights and benefits

PKE 2012 does not cover all of the legal benefits associated with fixed-time employment contracts (e.g., Christmas and Easter benefits, annual leave/vacation allowance, sick leave), in contrast with the National General Collective Employment Contract provisions.[73] Even more important is that the existing programs do not provide additional medical insurance even though many job positions involve manual labor and hazardous work (e.g., construction, waste management). These deficiencies seriously undermine the capacity of PKE 2012 programs to regulate the labor market, which has been greatly destabilized.

Identifying Target Groups

PKE 2012 targets unemployed persons and low-income farmers (<10,500 euros in 2009). It is important to note that self-employed persons who are out of work because they were forced to close down their businesses are not entitled to unemployment benefits, while any income from undertaking independent work (self-employment) may lead to the termination of the unemployment card.[74] Therefore, this category is not addressed in this program. Let us now examine the selection criteria of PKE 2012 (Table 0.5).

As far as targeting unemployed persons is concerned, out first observation is that the various targeting categories used are not mutually exclusive. For example, an applicant can be simultaneously long-term unemployed and young in age. If we take as given the targeted character of the program, then we normally expect the selection criteria to define broad and clearly differentiated subgroups in accordance with LFS data. Based on this line of reasoning, a clear differ-

Table 0.5 Selection Criteria and Point System

Targeting Area	Criterion	Points	Documentation
Unemployed Farmers (>12 months)	Long-term unemployed	20	Unemployment card
	Young unemployed (<30 years)	25	Unemployment card
	Short-term unemployed without benefit	15	Unemployment card
	Farmer with annual income <10.500 € (2009)	10	OAED certificate
Family Status	Single-parent household	15	Family status certificate
			Official document for single-parent households
	Married with both spouses unemployed	8	Spouse's unemployment card
	With dependents	5 per member	+ Tax form for financial year 2010
Family income	€ 0–6,900 (2009)	15	Tax form for financial year 2010
	€ 6,901–12,000 (2009)	10	Tax form for financial year 2010
	€ 12,001–16,000 (2009)	8	Tax form for financial year 2010
	€ 16,001–22,000 (2009)	6	Tax form for financial year 2010
	22,001 –	0	Tax form for financial year 2010
Health status	35%<Disability<50%	6	Certificate from health committee
	50%<Disability	8	Certificate from health committee
Residence	Permanent resident of the regional entity	10	Certificate of permanent residence

Source: http://www.epanad.gr, accessed January 15, 2013

entiation would entail: long-term unemployed over 30 years of age, short-term unemployed over 30 years of age, young unemployed (<30 years of age). One further remark entails the privileging of unemployed up to 29 years old over more mature workers. While the unemployment rate has been extremely high, the share of the youth in the total number of unemployed is very small, as we explained in section II. In addition, the gender dimension is not explicitly addressed, even though women have been particularly hard hit by unemployment, both before and after the crisis began.[75] However, given the social infrastructure approach of PKE, a gender perspective is structural in the program because women are overrepresented in certain professional categories and the newly created social services are expected to remove the unpaid social care burden of women.[76]

With regard to income criteria, there is a significant lag between the financial year used as proof of an applicant's standard of living (e.g., 2010 referring to 2009 income) and the point in time when applications for participation were actually announced, which was in 2012. As the announcements for participation and the submission of necessary documents by potential beneficiaries took place in 2012, income tax returns of 2011 would have been much more appropriate, when possible, or at least of 2010. Moreover, the income bracket criteria are so wide that families with dramatically different incomes (below and above the poverty threshold, subject to the number of dependents) are included in the same category. It is also unclear why applicants were not asked to declare their precise household income, while they were required to submit a copy of their

Table 0.6 Poverty Thresholds in Greece (in euros)

Family Type	2008	2009	2010	2011
Single adult	6,480	6,897	7,178	6,591
Two adults with children <14 years	13,608	14,484	15,073	13,842

Source: EU SILC, Eurostat (2012)

tax return documents. This further complicates any effort to match applicants with the data of the SILC and does not allow program evaluators to obtain accurate information regarding the profile of job applicants and selected participants. It would have been simpler to include the exact income of the family in conjunction with family size and poverty thresholds (Table 0.6).

Application Procedure

Significant delays were observed among regional entities in the announcement of the program. The project implementation coincided with two election rounds, which was a significant impediment given that all PKE 2012 calls for proposals were by law suspended.[77] Eventually, all calls for proposals were announced by December 2012.

Certain practices developed within the framework of PKE 2012 proved useful and should be highlighted:

- Development of an information-dissemination team within the Managing Authority of the Program with specific regional assignment.
- Implementation of information sessions explaining the objectives, content, and procedures of the program by all implementing agencies.
- Effective and transparent dissemination of information, including online announcements of job opportunities by district, application forms, detailed instructions for successful submission of an application, beneficiary selection list by region, and procedures for filing objection to the final beneficiary selection list.
- The organization of an online help desk by certain implementing agencies for the clarification of issues raised both by applicants and selected participants.[78]
- Development of software applications for the entry of applicants' data and the automatic extraction of selected participants by score.
- Installation of a central control mechanism by the Supreme Council for Civil Personnel Selection.

However, certain deficiencies were also identified:

- The software databases (Microsoft Access) compiled by each implementing agency were not centrally coordinated. As a result, multiple applications sent to different agencies of the same regional entity or multiple applications sent to the same implementing agency in different regional entities cannot be detected.
- The same job positions were not assigned a uniform code in the overall program. Instead, each agency was allowed to assign its own codes. Therefore, we cannot identify and group job positions by sector, occupation, or skill requirements.
- The application forms did not collect applicants' professional classification and sector of economic activity based on their previous work experience. This omission means that the matching process is based largely on self-selection.
- The software application does not differentiate nonselected applicants for all the positions they applied for from those nonselected only for certain job positions.

Selection Procedure – Grievances

According to field visits and communication with the regional offices of INE-GSEE, the workload during the application process was particularly heavy and the amount of time allocated for data entry was insufficient. This situation led to frustration and anxiety concerning the elimination of registration errors. Given the ratio of applications to each available job position (roughly 5 to 1 for INE-GSEE), these risks need to be carefully addressed because they undermine the legitimacy of the selection procedure. In addition, there is no consistency in the time allocated by the implementing agency

and regional entity for the objection period. The result is that a participant could approve one specific offer and deny other offers from other regional entities and/or implementing agencies and then be rejected after an objection is evaluated.

Given this experience, an expanded version of a job guarantee program should be based on the following:

- Decentralized application process organized by regional entities to improve information sharing with applicants.
- Data entry in a unified online central system by regional implementing agencies.
- Extraction of selected results at the central level with clear indication of the regional entity and job position for each selected participant.
- Selection results announced at both the central and the regional level simultaneously by all regional entities.
- Provision of adequate time for the grievance process in all regional entities.

Hiring and Payments

Hiring procedures are important for information sharing and the monitoring needs of the program. All participants should be informed about the exact nature of the work to be performed, including the place, schedule, pay level, payment schedule, and any requirements specific to the job. Given the workload in comparison with the assigned personnel and available time, a lack of information can erode the trust of participants and undermine relations in the workplace. In addition, the job contracts were formulated by each individual agency and thus were not uniform in how they presented basic information about the program. It would have been better to construct uniform contracts for each job position at the central level using the guidelines and provisions of the National General Collective Agreement.

One of the most controversial issues in the implementation of the program was associated with the delays in the remuneration of participants. In some cases the first installments were delayed 2.5 months after participants began work.[79] Most of the contracts informed participants that payment was due within the first 10 days upon the completion of each month. A different section of the same contract stated that in effect the payment of salaries would follow the stream of funding from the ministry. Taking into account the multiple levels of coordination between the participants and all the involved agencies already mentioned, this situation led to an eruption of disputes, including sit-ins at the implementing agencies (Athens, Thessaloniki), the occupation of municipal premises (Patra), retention of labor (Ioannina), and a 48-hour strike (Crete).[80] Given these developments, it is of utmost importance to clearly state all information concerning the payment schedule when signing contracts and to meet the payment schedule as defined in the contract. (Please see the next section.)

Monitoring Project Implementation

There should be a contact person for each geographic area of intervention and implementing agency. Regular feedback meetings are strongly encouraged (i.e., every two weeks or once a month within the work schedule of participants) and should include the representatives of the implementing agency and the participants in order to discuss project implementation and resolve any issues raised. The minutes of these meetings should be recorded to facilitate monitoring and evaluation. A brief report should be produced by the representative of the implementing agency.

Financial Management

The crucial issue here is to track expenses according to the plan and to make timely requests for funds from the ministry. The funding stream from the ministry should be planned in a forward-looking way (i.e., 60 percent advance payment) in order to ensure timely payment of participants on behalf of the implementing agency. In any case, participants should receive information regarding the relevant contact person for financial matters on behalf of the implementing agency.

Table 0.7 Information Missing from the Application Form

Targeting Area	Classification/Content	Indicator
Residence 1	NUTS 3	Regional entity code
Residence 2	LFS classification	Code (1–3: rural, semi-urban, urban)
Education	ISCED, one-digit	Code (1–6: primary, lower secondary, upper secondary, secondary, postsecondary, tertiary)
Professional skills	ISCO 88	4-digit code
Unemployment	Duration	Exact duration
Dependents	Number and age of children	Number of children in age brackets 0–6, 6–12, 12–18, >18
Income	Family income for the last two years	Exact family income

Source: Authors' compilation

Table 0.8 Information Missing for Evaluation Needs

Targeting Area	Classification/Content	Method of Gathering Information
Professional experience	Duration of employment prior to participation in the program	Baseline questionnaire
Employment status	Part- or full-time	Hours worked per week in previous employment
Employment mode	Self-employed, salaried employee, employer, unpaid family contributing worker	Code (1–4)
Dependent members	Number of aged	Number of old-age (>64 years of age) dependents in the household
Ownership	Owner of residence	Yes/no

Source: Authors' compilation

MONITORING AND EVALUATION

In a previous study, Antonopoulos, Papadimitriou, and Toay (2011) presented a concrete proposal for a monitoring and evaluation system for the Greek job guarantee program (PKE). However, these suggestions were not included in the PKE 2012 framework. Any effort to perform evaluations was seriously compromised by the lack of data, even at the level of the application form (Table 0.7).

The lack of information makes it extremely difficult to contextualize each applicant in the relevant household, and to match applicants and participants using the relevant data (LFS, EU SILC). These omissions create a substantially limited evaluation procedure, given that no control group has been designed and assessed (i.e., rejected applicants). In addition, there has not been an initial assessment of the pool of selected applicants (Table 0.8).

Finally, job guarantee programs require an internal evaluation by the implementing agency and an external evaluation by the ministry or an independent authority assigned this task.

APPENDIX F: STATISTICAL MATCHES USED IN GENERATING BENCHMARK ESTIMATES

INTRODUCTION

In order to create the synthetic data set used to produce the estimates in this report, we performed two statistical matches. The first, between the 2010 SILC (SILC 2010) and the 2012 LFS (LFS 2012), transferred household income data from the SILC to the LFS. The second, between a sample drawn from the PKE 2012 applications (PKE) and the synthetic data set created by the first match, served to identify individual records in the LFS-SILC match file that correspond to the PKE 2012 applicant pool. The steps taken to perform both matches and the quality assessment of the matches are presented below.

HOUSEHOLD INCOME MATCH

The SILC 2010 contains individual and household records for all participating European Union countries. The Greek subsample contains 14,788 records representing 9,184,243 individuals above the age of 15 in 4,124,933 households. Because of the rapidly changing employment, earnings, and even demographic situation in Greece as the crisis has unfolded, we first "aged" the SILC data set to help account for the considerable changes in the distributions of employment and income in Greece between 2010 and 2012. The LFS 2012 contains four waves, which we combined in order to represent the changing situation in Greece even as the year (and the PKE 2012 program) unfolded. The four waves of the 2012 LFS contain a total of 242,672 individual records. We simply divided the weight for each record by four and appended the four waves together to make the combined LFS 2012 file, which contains information for a weighted total of 10,964,962 individuals and 4,386,061 households. We performed a constrained statistical match on the two files, transferring household income for 2009 as reported in the SILC data as well as the household income "aged" to approximate the distribution in 2012. We performed statistical analysis of the result to assess the quality of the match by comparing the conditional and marginal distributions of the transferred variables between the aged SILC data set and the matched file. Each of these steps is described below.

Aging the SILC 2010

The SILC 2010 contains information on employment status during 2010 and 2009 household income. The aim of "aging" the 2010 SILC data to 2012 is to arrive at reasonable estimates of household income as it would have been reported had 2012 SILC data been available. The process also automatically aligns certain important variables for the match, especially household composition and employment characteristics, which aids in the quality of the match. The "aging" process we performed on the 2010 SILC data set can be broken down into three sections. The first adjustment is in household composition, to reflect dramatic changes brought about by the ongoing economic crisis. The second adjustment is in employment, to account for the large overall reduction in employment between 2010 and 2012, from 4.4 million to 3.7 million persons, while the total number of unemployed roughly doubled from about 641,000 persons to 1.2 million.[81] The third adjustment is in individual compensation and household income. Again, the distributions of these income variables have changed quite a bit in the period between 2009 and 2011. We provide documentation of each of these adjustments in the following sections.

Table 0.9 Distribution of Households by Family Type, 2010 SILC, 2012 LFS, and Adjusted 2010 SILC

	2010 SILC		2012 LFS		Adjusted 2010 SILC	
Family Type	Households	Percentage	Households	Percentage	Households	Percentage
Married couple with children	1,139,321	27.6	1,040,294	23.7	1,040,314	23.7
Married couple without children	1,682,938	40.8	1,671,434	38.1	1,671,445	38.1
Male head with children	20,447	0.5	13,564	0.3	13,569	0.3
Male head without children	421,736	10.2	633,754	14.4	633,773	14.4
Female head with children	73,981	1.8	84,442	1.9	84,441	1.9
Female head without children	786,510	19.1	942,573	21.5	942,551	21.5
Total	4,124,933	100.0	4,386,061	100.0	4,386,093	100.0

Source: Authors' calculations

Household composition

In order to determine the household composition in 2012, we used the combined quarterly labor force surveys produced by ELSTAT. Households were divided into six categories. The distribution of households in the 2010 SILC and 2012 LFS are shown in Table 0.9. As measured in the LFS, there was a decrease in married couples with children between 2010 and 2012, as well as in married couples without children, while there was an increase in single-headed households without children, which was slightly larger for males than for females. To adjust the SILC data to correspond to the family type distribution in the 2012 LFS, we adjusted the weights for each family type in the 2010 SILC data to match that of the 2012 LFS by multiplying by the ratio of the sum of weights for each category in the LFS and the sum of weights in the SILC 2010. We can see that the distribution of household composition after the adjustment matches the distribution of households in the LFS perfectly.

Employment

To alter the structure of the labor market in the SILC 2010 to match that in the LFS 2012, we again drew on the 2012 LFS as a source of information. We used the distribution of those aged 16 and older in terms of their labor force engagement (in the labor force or not, employed or not), as well as the distribution of jobs by industry and occupation found in the combined 2012 LFS. Then, for every eligible individual[82] in the SILC data set we estimated their probability of being in the labor force using a probit regression of labor force participation on the sex, marital status, age, and education of the individual, as well as the presence of children in the household, the family type, region, rural/urban location, tenure, and homeownership of the household, and the individual's spouse's age, education, and labor force status. We used the results to predict the probability of being in the labor force for every eligible adult. We followed an identical procedure for the likelihood of being employed, with the exception that the probit was run on an indicator of employment and limited to those currently in the labor force, although the results were again used to predict likelihood of employment given labor force participation for every eligible adult. Finally, we used multinomial logit on industry and occupation run on each employed individual and then predicted for every eligible adult to rank the likelihood of being employed in each of nine occupations and 13 industries for each individual.

Next, we calculated the change in the number of employed individuals for each industry and occupation combination between the SILC 2010 and LFS 2012. For all those industry-occupation combinations for which there was a decrease in employed persons, we removed the corresponding number of individuals in those industry-occupation combinations from employment. We did this by selecting the appropriate number of individual records with the lowest predicted probability of being employed within each industry-occupation combination. The number of employed persons in the LFS 2012 and the adjusted SILC 2010 are presented in Table 0.10, panels A and B, respectively.

Table 0.10 Industry-Occupation Distribution of Employed Persons in the LFS 2012 and Adjusted SILC 2010

A. LFS 2012	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services and Sales Workers	Skilled Agricultural, Forestry, and Fishery Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Operations	Total
Agriculture, Forestry, and Fishing	167	1,016	768	399	1,226	457,594	680	1,174	27,123	490,147
Mining, Manufacturing, Energy, and Utilities	20,026	29,374	31,157	32,827	20,801	104	173,743	74,404	38,389	420,825
Construction	7,172	10,491	5,602	8,595	187	228	142,203	17,158	14,526	206,162
Wholesale and Retail Trade Repair of Motor Vehicles and Motorcycles	57,048	33,777	20,326	60,212	403,221	189	55,787	19,558	23,607	673,725
Transportation and Storage	5,887	8,261	19,488	32,699	7,902	-	6,591	96,397	6,939	184,164
Accommodation and Food Services	35,303	2,356	2,401	18,496	176,226	581	3,308	3,615	30,674	272,960
Information and Communication	5,364	29,411	11,030	19,152	2,980	91	4,084	324	502	72,938
Financial and Insurance Activities	8,058	25,413	34,570	42,349	712	225	522	59	754	112,662
Real Estate Professional Activities Administrative and Support Services	10,203	145,883	45,400	42,691	18,993	363	1,769	5,471	24,505	295,278
Public Administration and Defense Compulsory Social Security	6,274	46,925	48,509	71,845	68,461	1,798	12,150	8,904	14,343	279,209
Education	3,271	254,192	8,113	10,250	7,702	126	883	530	10,212	295,279
Human Health and Social Work Activities	1,552	92,170	62,518	21,082	31,594	61	3,258	5,719	8,922	226,876
Arts, Entertainment, and Recreation Other Service Activitie, Activities of Households	5,103	23,854	11,512	16,811	56,000	580	6,732	4,028	52,564	177,184
Total	**165,428**	**703,123**	**301,394**	**377,408**	**796,005**	**461,940**	**411,710**	**237,341**	**253,060**	**3,707,409**

B. Adjusted SILC 2010	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Services and Sales Workers	Skilled Agricultural, Forestry, and Fishery Workers	Craft and Related Trades Workers	Plant and Machine Operators and Assemblers	Elementary Operations	Total
Agriculture, Forestry, and Fishing	169	1,417	1,359	1,223	1,730	457,896	731	1,266	27,251	493,042
Mining, Manufacturing, Energy, and Utilities	21,673	29,594	32,573	33,342	21,323	162	174,399	74,413	38,455	425,934
Construction	7,330	10,571	8,857	10,780	188	1,058	143,049	17,339	13,671	212,843
Wholesale and Retail Trade Repair of Motor Vehicles and Motorcycles	57,500	34,732	21,072	61,027	376,095	797	55,894	19,676	23,672	650,465
Transportation and Storage	7,028	11,828	20,443	33,302	9,750	-	6,966	96,825	7,299	193,441
Accommodation and Food Services	35,434	3,167	3,172	18,061	174,946	850	3,410	4,312	31,487	274,839
Information and Communication	6,258	29,464	11,431	19,235	3,006	202	4,788	1,628	619	76,631
Financial and Insurance Activities	8,452	25,866	34,770	42,818	1,026	306	1,672	575	1,286	116,771
Real Estate Professional Activities Administrative and Support Services	10,754	144,675	46,084	43,635	19,422	1,521	2,417	8,177	25,674	302,359
Public Administration and Defense Compulsory Social Security	6,370	46,946	48,662	72,337	68,930	2,622	12,730	9,444	14,672	282,713
Education	3,425	255,205	8,340	10,277	7,746	-	1,607	980	10,544	298,124
Human Health and Social Work Activities	1,686	92,378	63,074	22,395	31,998	919	3,538	6,810	8,935	231,733
Arts, Entertainment, and Recreation Other Service Activitie Activities of Households	7,670	24,651	12,558	14,309	55,870	394	7,119	6,515	44,824	173,910
Total	**173,749**	**710,494**	**312,395**	**382,741**	**772,030**	**466,727**	**418,320**	**247,960**	**248,389**	**3,732,805**

Source: Authors' calculations

Then we adjusted the labor force to account for changes in its size by removing the appropriate number of individuals (simply the difference in the size of the labor force between the SILC 2010 and LFS 2012, or 90,034) from the labor force, starting with those least likely to be in the labor force, from among those already unemployed in the SILC data set as well as those who had just "lost" their jobs in the prior step. Finally, for each element of the industry-occupation matrix with job gains, we added the corresponding number of individuals from the adjusted labor force in the SILC data set that are most likely to be employed in order of their ranked likelihood of working in each industry and occupation. As can be seen in Table 0.11, the results match the 2012 LFS very well. For those 16 years of age and older, the employed-to-total-population ratio differs by 0.1 percent and the unemployed-to-total-population ratio by 0.7 percent.

Table 0.11 Labor Force Participation Status of Eligible Adults in the 2012 LFS and "Aged" 2010 SILC

	2012 LFS		"Aged" 2010 SILC	
	Number	Percentage	Number	Percentage
Employed	3,763,621	59.0	3,797,161	59.1
Unemployed	1,204,097	18.9	1,166,923	18.2
Not in labor force	1,413,667	22.2	1,461,548	22.7
Total	6,381,385		6,425,633	

Source: Authors' calculations

Income

In order to complete the aging process we needed to adjust the incomes of households, both due to the changes in labor force status and the changes in earnings. For the changes due to shifts in the labor force status of individuals, we used a bifurcated approach, depending on whether they lost or gained jobs in the simulation. For those individuals who lost jobs in the simulation, we simply zeroed out their earnings. For those who gained jobs, we used a hot-decking statistical match from the pool of employed individuals to impute their earnings. In this match we compared each job recipient with all employed persons in the SILC data set, using the following variables: industry and occupation (we used the assigned values for those gaining jobs in the simulation, actual values for those in the donor pool); the age, sex, and educational achievement of the individual; an indicator for whether the individual has a spouse; an indicator for the presence of children in the household; the household's geographic region; an indicator for whether the household is in a rural area; the household's housing tenure; an indicator for homeownership; the individual's spouse's labor force status, educational achievement, and age; and the family type. We assigned weights to each matching variable, with the heaviest weight on industry and occupation, followed by the individual's age and education; then sex, presence of children, family type, and homeownership; then presence of a spouse; then tenure and the spouse's characteristics; and, finally, the region and rural indicator. We randomly selected an individual record from the group that had the highest match rate along all these axes and then assigned employment status, gross and net cash and noncash income, and usual weekly work hours from the selected record. This procedure resulted in individual and household earnings that reflect the employment distribution of 2012, but that still reflect the wages and salaries of 2009. Thus, we needed to make further adjustments.

While a study has been published that estimates the change in household incomes in Greece in 2010, there is still little, if any, information available at this time on the details of earning and income changes between 2010 and 2011. We used the results in the former study to make changes to incomes reflecting the events between 2009 and 2010, based on the following (Matsaganis and Leventi 2011):

* Households in the poorest decile lost an estimated 8.7% of their income; those in the next poorest decile 8.6%. Around the middle of the distribution (deciles 3–7), relative income loss fluctuated around 9.5%. Further up, income loss reached 10.1% (decile 8), and peaked at 11.6% for households in the richest decile.

Table 0.12 Earned and Gross Household Income in the "Aged" 2010 SILC (in euros)

	Gross Individual Earned Income	Simulated Gross Individual Earned Income*	Gross Household Earned Income	Simulated Gross Household Earned Income	Gross Household Income	Simulated Gross Household Income
Minimum	-	-	-	-	(3,600)	(3,266)
Mean	13,310	14,057	14,463	13,054	30,403	25,723
Median	11,715	12,151	4,021	-	22,798	18,755
Maximum	168,840	168,840	221,553	215,084	431,416	377,279

*Simulated Gross Individual Earnings is not deflated for the decrease in overall earnings, as the only numbers available were for household earnings

Source: Authors' calculations

The adjustments we made for 2011 were based on information from the National Income nonfinancial accounts for the first quarter of 2012 (ELSTAT 2012):

- During the first quarter of 2012, disposable income of the households and non-profit institutions serving households (NPISH) sector (S.1M) decreased by 5.5% in comparison with the same quarter of the previous year, from 37.2 billion euros to 35.2 billion euros. This was on account of a decrease of 15.6% in compensation of employees, which was partially offset by an increase in net property income and current transfers received.

Based on these estimates of changes in household incomes, we used a two-step approach to estimate 2011 household incomes. We first assigned an adjustment factor for 2010 to each household based on its 2009 equivalized disposable income (the measure referred to in the quote above from Matsaganis and Leventi 2011) decile, according to the percentages quoted above. We next took the simulated gross household income (created by subtracting or adding earnings gained/lost in the employment simulation) in the aged SILC data set and (a) applied the adjustment factor for 2010 and (b) reduced each household's resulting gross household income by 5.5 percent. While this is a crude procedure, at best, until more detailed information is available, it will serve as a first estimate. Some of the moments of the resulting income distribution are presented in Table 0.12. As we can see, the median gross household income fell from € 22,800 in 2009 to € 18,800 in 2012.

Match Process

We next performed the statistical match between the "aged" 2010 EU-SILC data set, which contains 2009 household income information for Greek households as well as the "aged" 2011 incomes, and "aged" labor force characteristics with the LFS 2012. Since the income we were interested in is household income, we matched records at the household level. Because we were interested especially in the household incomes of those likeliest to apply for the PKE 2012 program, we used some of the occupational characteristics of households as strata variables: the number of earners in the household, as well as the industry and occupation of the household head. We also used the age and marital status of the household head, as well as the household type, as strata variables. In this manner, we were able to reproduce the distribution of household income by employment status as closely as possible.[83] These variables were used to construct matching cells, within which the matches of records were made. The first round of matching took place within cells composed of all of these strata variables, so that all of the matches were between records with the same value for each

strata variable, ensuring the best possible matches. Within the cells created by the strata variables, we used the following additional common variables to generate propensity scores: the sex, age, educational attainment, labor force status, and employment status of the household head; indicators for whether the household head is a student, retired, or disabled; the household's geographic region; the number of persons in the household; and the age, educational attainment, and labor force characteristics of the spouse of the household head. Before beginning the matching we checked the alignment of the two data sets by the strata and matching variables to ensure there were no discrepancies due to inconsistent definitions, etc. The alignment is presented in Table 0.13. Most notable is the difference in rural/urban status. This is due to different definitions in the two data sets, making the variable unusable for the matching. The rest of the variables are fairly well aligned, so the match should be a good one. We matched the two data sets comprehensively using up all the weights of records in each in order to carry over the distribution of household income as accurately as possible.[84]

Table 0.13 Alignment of the LFS 2012 and "Aged" SILC 2010 for Statistical Matching

Total	LFS 2012 4,386,061	SILC 2010 4,386,093	Differential 0.0
Number of earners in household			
0	41.9	45.0	3.1
1	35.7	28.7	-7.0
2	20.4	21.7	1.3
3+	2.1	4.5	2.4
Type of household, based on head's and spouse's LFS			
Head and Spouse Employed	19.7	20.8	1.1
Only Head Employed	27.8	20.5	-7.3
Only Spouse Employed	5.1	7.6	2.5
Both Head and Spouse Not Employed	22	23.8	1.8
All Other	25.4	27.2	1.8
Compressed occupation by income			
Not Employed	52.5	59.7	7.2
Low Income Occupation	8.6	6.4	-2.2
Middle Income Occupation	23.5	21.1	-2.4
High Income Occupation	15.4	12.8	-2.6
Compressed industry by income			
Not Employed	52.5	49.1	-3.4
Low Income Industry	14.3	14.6	0.3
Middle Income Industry	22.4	25.3	2.9
High Income Industry	10.8	11.1	0.3
Marital status			
Never married	16.0	15.9	-0.1
Married or in consensual union	61.8	61.8	0.0
Separated, widowed, or divorced	22.1	22.2	0.1
Age category			
LT 35	12.0	14.4	2.4
35 to 44	18.2	18.3	0.1
45 to 54	19.1	17.7	-1.4
55 to 64	17.8	17.5	-0.3
GE 65	32.9	32.1	-0.8
Educational attainment			
Less than upper secondary	45.6	42.6	-3.0
Upper secondary	28.2	30.1	1.9
More than upper secondary	26.2	27.4	1.2
Sex			
Female	25.3	27.6	2.3
Male	74.7	72.4	-2.3
Labor Force Status			
Employed	47.5	41.4	-6.1
Unemployed	7.6	11.2	3.6
Not in labor force	44.9	47.4	2.5
Employment status in current job			
Self-employed with employees	4.4	3.1	-1.3
Self-employed without employees	12.8	10.7	-2.1
Employee	29.9	27.2	-2.7
Family worker	0.5	0.4	-0.1
Not employed	52.5	58.7	6.2
Number of persons in household			
1 28.2	24.8	-3.4	
2 30.6	28.4	-2.2	
3 18.5	19.8	1.3	
4 17.1	24.1	7.0	
5+ 5.5	2.9	-2.6	

Total	LFS 2012 4,386,061	SILC 2010 4,386,093	Differential 0.0
Spouse's employment status			
No Spouse	38.2	38.2	0.0
Self-employed with employees	1.1	1.5	0.4
Self-employed without employees	5.4	5.8	0.4
Employee	16.0	19.0	3.0
Family worker	2.2	2.1	-0.1
Not employed	37.0	33.4	-3.6
Compressed spouse's industry by income			
Spouse Not Employed or No Spouse	75.2	71.0	-4.2
Low Income Industry	7.5	8.4	0.9
Middle Income Industry	10.9	12.6	1.7
High Income Industry	6.4	8.0	1.6
Compressed spouse's occupation by income			
Spouse Not Employed or No Spouse	75.2	71.0	-4.2
Low Income Occupation	7.5	8.4	0.9
Middle Income Occupation	10.9	12.6	1.7
High Income Occupation	6.4	8.0	1.6
Spouse's labor force status			
No Spouse	38.2	38.2	0.0
Employed	24.8	28.5	3.7
Unemployed	6.3	2.4	-3.9
Not in labor force	30.8	30.9	0.1
Spouse's educational attainment			
No Spouse	38.2	38.2	0.0
Less than upper secondary	26.9	26.9	0.0
Upper secondary	18.6	17.8	-0.8
More than upper secondary	16.4	17.1	0.7
Spouse's age category			
No Spouse	38.2	38.2	0.0
LT 35	8.2	8.6	0.4
35 to 44	15.4	14.6	-0.8
45 to 54	14.4	14.5	0.1
55 to 64	11.4	12.3	0.9
GE 65	12.4	11.9	-0.5
In school or training (y/n)			
No 97.0	96.6	-0.4	
Yes 3.0	3.4	0.4	
In retirement or early retirement (y/n)			
No 68.0	66.6	-1.4	
Yes 32.0	33.4	1.4	
Permanently disabled (y/n)			
No 30.9	31.0	0.1	
Yes 21.7	20.0	-1.7	
1-digit NUTS Region			
Macedonia, Thessaly, and Thrace	30.9	31.0	0.1
Epirus, Ionian Islands, Western Greece, Eastern Greece, and the Peloponnese	21.7	20.0	-1.7
Attica	37.5	39.7	2.2
Crete and Aegean Islands	9.9	9.3	-0.6
Urban/rural status			
Urban	79.6	55.9	-23.7
Rural	20.4	44.1	23.7

Source: Authors' calculations

Quality Assessment

The first indicator of the quality of the match is the number of records matched in the early rounds of matching, and especially in the first round. The number of records matched in each round of matching is presented in Table 0.14. As we can see, over 78 percent of households were matched in the first round, which used all of the strata variables. The next six rounds used cells constructed with all but one strata variable to match remaining records. After these cells were used in the matching, over 88 percent of the households had been matched. This gave us a good indication that the match would be a good one in terms of the reproduction of the conditional and marginal distributions of household income based on the strata variables.

The overall distribution of household income in the matched file compared to the SILC is presented in Table 0.15. The ratios of household income percentile cutoffs were carried over to the matched file quite well, although the 90th percentile appears to be somewhat higher in the matched file than in the SILC. The lower end of the distribution was much more closely preserved in the matched file. Since the latter is the portion we were most concerned with in this project, this boded well for the matched file's usefulness. The Gini coefficient in the matched file is within 1 Gini point of the SILC.

Figure 0.2 summarizes how well we reproduced the conditional distribution of gross household income by the six strata variables.[85] As we can see, the ratio of mean values is very close to 1 for almost all categories. The worst case is that of high-income occupations, with the matched file having an average household income of 88 percent of the aged SILC file for those households whose heads worked in a high-income occupation. Reassuringly, these households would not be in the target group for the next match or, in fact, the overall analysis, for the most part. The rest of the categories of the strata variables have a mean within 10 percent of the mean for that category in the SILC, which made this a very good match, based on the conditional distributions.

PKE 2012 APPLICATION MATCH

The second match required for the project involved identifying those individual records in the LFS 2012 that are most similar to the applicants to the PKE 2012 program. We used a simple random sample of 1,000 records from the 86,652 applications and retrieved the full set of data recorded for

Table 0.14 Matching Rounds

Matching Round	Matched Households	Percentage	Cumulative Percentage
0	3,427,611	78.15	78.15
1	221,176	5.04	83.19
2	50,674	1.16	84.35
3	72,591	1.66	86
4	6,708	0.15	86.15
5	83,499	1.9	88.06
6	9,019	0.21	88.26
7	3,773	0.09	88.35
8	2,384	0.05	88.4
9	116,757	2.66	91.07
10	74,154	1.69	92.76
11	6,249	0.14	92.9
12	99,448	2.27	95.17
13	30,120	0.69	95.85
14	12,263	0.28	96.13
15	169,635	3.87	100
Total	4,386,061	100	

Source: Authors' calculations

Table 0.15 Distribution of Gross Household Income in the SILC 2010 and Matched File

	p90/p10	p90/p50	p50/p10	p75/p25	p75/p50	p50/p25	Gini
Match	8.051	2.690	2.993	3.225	1.774	1.818	0.437
SILC	7.813	2.617	2.985	3.167	1.732	1.829	0.445

Source: Authors' calculations

Figure 0.2 Ratio of Matched File Household Income to "Aged" 2010 SILC, by Strata Variable (in percent)

	Number of Earners	Age Category	Marital Status	Household Type	Occupation	Industry
■ cat1	98.4	102.2		96.7	94.2	94.0
■ cat2	103.3	101.1	107.0	103.6	108.3	99.2
■ cat3	99.5	99.9	97.8	92.0	99.7	107.4
■ cat4	101.8	93.2	99.8	100.4	88.1	106.4
■ cat5		95.8		100.1		

Note: Each strata variable has different categories. From top to bottom: for number of earners, it is 0 to 3 more; for age category, less than 35, 35 to 44, 45 to 54, 55 to 64, and 65 and older; for marital status, never married, married, widowed/divorced; for household type, head and spouse employed, only head employed, only spouse employed, both head and spouse not employed, and all other; for occupation, not employed, low-income occupation, middle-income occupation, and high-income occupation; and for industry, not employed, low-income industry, middle-income industry, and high-income industry. The latter two were constructed by looking at earnings for each industry and grouping them.

Source: Authors' calculations

each of them. The resulting sample was as close as can be expected to the overall applicant pool in terms of region, sex, and other characteristics. This set of records was then matched with the LFS 2012 in a similar procedure as the previous match, although since the donor data set in this case was not representative of the entire population, we used a modified version of the constrained statistical match in which we proceeded with matching until we exhausted the donor records, leaving most records in the LFS unmatched. From the LFS we used only those records that identified the individual as unemployed and registered with the unemployment bureau in 2012, since only these would be eligible to apply to the PKE 2012 program. This means that 15,847 records from the LFS 2012, representing 793,648 unemployed individuals, were in the recipient file for the match.

Table 0.16 Distribution of Individuals by Strata Variable in the LFS 2012 and PKE 2012 Applications

Strata Variable	LFS 2012	PKE	Difference
Household income category			
Under 6,900	13.82	51.81	37.99
6,900 to 12,000	14.91	17.57	2.66
12,000 to 16,000	10.30	13.96	3.66
16,000 to 22,000	17.88	8.03	-9.85
22,000 or more	43.09	8.63	-34.46
Sex			
Female	50.97	56.53	5.56
Male	49.03	43.47	-5.56
Age category			
Under 35	47.39	56.93	9.54
35 to 44	27.25	26.00	-1.25
45 to 54	18.93	13.86	-5.07
55 to 64	6.37	3.21	-3.16
65 and older	0.06	0.00	-0.06
Number of dependents			
0	69.91	63.96	-5.95
1	13.78	13.96	0.18
2	12.89	16.57	3.68
3	2.74	4.32	1.58
4	0.54	1.00	0.46
5	0.08	0.10	0.02
6	0.04	0.00	-0.04
7	0.01	0.00	-0.01
8	0.02	0.00	-0.02
10	0.00	0.10	0.10
Occupation 1-digit ISCO **(GSEE ISCO-08; ELSTAT ISCO-88)**			
Managers	1.06	1.20	0.14
Professionals	7.88	15.66	7.78
Technicians and Associate Professionals	6.27	13.96	7.69
Clerical Support Workers	15.29	6.63	-8.66
Services and Sales Workers	26.81	5.22	-21.59
Skilled Agricultural, Forestry and Fishery Workers	0.60	0.20	-0.40
Craft and Related Trades Workers	20.89	3.01	-17.88
Plant and Machine Operators and Assemblers	8.01	3.21	-4.80
Elementary Operations	13.18	50.90	37.72

Strata Variable	LFS 2012	PKE	Difference
Unemployment Category			
Other	14.82	6.22	-8.60
Unemployed more than 12 months	35.06	33.03	-2.03
Unemployed and under 30 years old	30.12	35.44	5.32
Short-term unemployed without benefits	17.25	23.59	6.34
Farmers unemployed	2.75	1.71	-1.04
Household Type			
Single head of household	10.86	0.60	-10.26
Married with spouse unemployed with dependents	6.90	8.13	1.23
Married with spouse unemployed without dependents	4.48	3.11	-1.37
Other	77.76	88.15	10.39
1-digit NUTS Region			
Macedonia, Thessaly, and Thrace	35.24	67.47	32.23
Epirus, Ionian Islands, Western Greece, Eastern Greece, and the Peloponnese	21.31	25.50	4.19
Attica	34.99	5.32	-29.67
Crete and Aegean Islands	8.46	1.71	-6.75

Source: Authors' calculations

Match Process

For this match we used strata variables that correspond to the criteria used to score each application: unemployment type, household income in 2009, number of dependents in the household, sex of the individual, and household type. We also used region as a strata variable, since the geographical distribution of the program is quite different from the population of the country in general. Since this match is not a constrained statistical match, alignment was less of an issue than with the prior match. Nevertheless, we checked that there were enough records in each category of our strata variables to satisfy the matching requirements, and also compared the distribution of our strata variables in the LFS and the PKE 2012 applications. Table 0.16 presents the distribution of individuals by strata variables in the LFS subsample of registered unemployed and the PKE 2012 applications. As we can see, the distribution by 2009 household income category is quite different in the two files. Over half of the applicants to the PKE 2012 were from households that had less than 6900 euros of income in 2009, while 43 percent of the LFS sample were from households with incomes exceeding 22,000 euros in 2009. The PKE 2012 applicant pool had more women than the unemployed in general, which were split fairly evenly between male and female. Applicants were considerably younger than the unemployed in general, perhaps in part because of the low wages and the advantage youth held in scoring of the applications. The large difference in occupation is due to the fact that for the unemployed from the LFS, the occupation refers to their last job, while the occupation in the PKE 2012 applicant pool refers to the specific job that they were applying for. We used this variable in the match to control for qualifications for the jobs being awarded through the PKE 2012 program. In terms of household type, there were almost no single heads of households in the applicant pool, while 10 percent of the unemployed were single heads of households. This, again, could be a reflection of the selection criteria for the program. Finally, two-thirds of the applicants were in the Macedonia, Thessaly, and Thrace region of the country, while only slightly over one-third of the registered unemployed in the LFS were from these regions. We now move on to describe in detail the match itself.

Quality Assessment

The strata variables compared above were used to construct matching cells, within which the matching procedure takes place. Subsequent rounds of matching occur within cells constructed from fewer of the strata variables, as they were dropped in order of subjective importance for the quality of the match or lack of available matches remaining. The number of individuals matched by matching round is presented in Table 0.17. As we can see, the bulk of the records were matched in the first three rounds of matching. The difference between the total number of matched records in the LFS and

Table 0.17 Matching Rounds

Round Number	Records Matched	Percentage
1	53,412	62.2
2	18,540	21.6
3	9,694	11.3
4	1,672	1.9
5	61	0.1
6	1,963	2.3
7	397	0.5
9	72	0.1
Total	**85,811**	**100.0**

Source: Authors' calculations

the number of individuals in the applicant pool is due to the lumpiness of the weights. The overall difference is less than 2 percent of the total.

In this match, we transferred the application status to each recipient record (either beneficiary or rejected) as well as the application score. Thus, we could check the distribution of status and scores in the resulting matched file and compare it to the applicant sample file. The results are summarized in Table 0.18, which shows the distribution of individuals by strata variables and application status in the PKE 2012 sample and matched file. As we can see, the differences in cell sizes are very small for all strata variables, and attributable to the lumpiness of weighted observations.

Table 0.18 Distribution of Individuals by Application Status in the PKE 2012 and Matched File, by Strata Variable

Result of Application	PKE			Match		
	Beneficiary	Rejected	All	Beneficiary	Rejected	All
Household income category						
Under 6,900	12,212	32,480	44,692	12,479	32,742	45,221
6,900 to 12,000	3,464	11,693	15,157	3,295	11,506	14,801
12,000 to 16,000	2,339	9,701	12,039	2,112	10,243	12,355
16,000 to 22,000	1,559	5,370	6,929	1,594	4,895	6,490
22,000 or more	1,299	6,149	7,449	1,118	5,784	6,902
Sex						
Female	10,567	38,196	48,763	10,359	38,781	49,140
Male	10,307	27,196	37,503	10,240	26,390	36,630
Age category						
LT 35	13,165	35,944	49,109	12,335	31,094	43,429
35 to 44	4,850	17,582	22,433	3,580	14,812	18,392
45 to 54	2,339	9,614	11,953	3,172	11,754	14,927
55 to 64	520	2,252	2,772	1,416	7,406	8,821
65 and older	0	0	0	96	105	201
Number of dependents						
0 11,173	43,999	55,172	15,122	47,242	62,364	
1 3,551	8,488	12,039	2,241	8,232	10,473	
2 3,724	10,567	14,291	1,640	7,668	9,308	
3+2,425	2,339	4,764	1,596	2,029	3,624	
Unemployment status						
Other	346	5,024	5,370	291	4,764	5,055
Unemployed more than 12 months	6,756	21,740	28,495	6,656	21,386	28,042
Unemployed and under 30 years old	9,874	20,700	30,574	9,745	21,754	31,500
Short-term unemployed without benefits	3,724	16,630	20,354	3,906	16,723	20,629
Farmers unemployed	173	1,299	1,472	0	543	543
Household type						
Single head of household	346	173	520	1,904	2,436	4,341
Married with spouse unemployed with dependents	4,504	2,512	7,016	1,933	2,469	4,402
Married with spouse unemployed without dependents	780	1,905	2,685	613	605	1,218
Other	15,244	60,802	76,046	16,149	59,659	75,808
1-digit NUTS region						
Macedonia, Thessaly, and Thrace	14,204	43,999	58,204	11,891	35,809	47,699
Epirus, Ionian Islands, Western Greece, Eastern Greece, and the Peloponnese	4,764	17,236	22,000	4,504	14,619	19,123
Attica	1,213	3,378	4,590	3,415	12,609	16,024
Crete and Aegean Islands	693	780	1,472	790	2,134	2,923
Total	**20,874**	**65,392**	**86,266**	**20,599**	**65,171**	**85,769**

Source: Authors' calculations

A rapid deterioration of the Greek economy raises questions regarding the use of the 2010 input-output table as representative of the current economic structure. In its defense, a time lag for the publication of input-output tables is inevitable due to the extensive data required for its compilation. Researchers have been developing various algorithms to update an old table with limited, partial new information from the latest set of national accounts, such as GDP and final demand. Eurostat has adopted an iterative updating method using projection of real growth rates for GDP, final demand, imports, and value added. We refrained from applying one of the updating methods in order to maintain the transparency and reproducibility of this study. Instead, we provide evidence of the stability of the input coefficients in the table over time to justify our use of the 2010 symmetric domestic input-output table, the most recent table available at the time this draft report was prepared.

Table 0.19 displays the speed of deterioration in terms of year-to-year growth rates of GVA of 10 industry groups between 2009 and 2012. From 2010 on, industry GVA transitioned from a stagnant to a declining period, though heterogeneity in this contraction was observed. Construction has declined most rapidly, at a rate well over 20 percent annually, while agriculture declined 2 percent or less until 2011. One may suspect that firms may change not only levels of output but also input composition, as they adapt to the severe recession in Greece. The disproportionate contraction between input and output could render an input-output table outdated and the multipliers inaccu-

Table 0.19 Annual Growth Rate of Gross Value Added, by Industry (in percent)

Industry	2009	2010	2011	2012
Agriculture, forestry, and fishing	-0.3	-1.1	-2.0	-6.9
Mining and quarrying; manufacturing; electricity, gas, steam, and air-conditioning supply; water supply; sewerage, waste management, and remediation activities (environmental service)	-1.1	5.0	-7.5	0.0
Construction	-24.0	-35.8	-32.7	-20.7
Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities	-7.2	-2.4	-8.5	-13.0
Information and communication	9.3	-7.3	-6.0	-6.6
Financial and insurance activities	-1.8	0.3	-3.1	-7.1
Real estate activities	7.1	-5.0	5.7	-1.6
Professional, scientific, and technical activities; administrative and support service activities	11.5	-13.2	-20.1	-6.9
Public administration and defense; compulsory social security; education; human health and social work activities	9.3	-7.1	-5.4	-5.2
Arts, entertainment, and recreation; repair of household goods and other services	11.6	0.4	1.7	-11.8
Gross value added (at basic prices)	0.4	-5.2	-6.2	-6.9
Taxes less subsidies on products	-10.6	6.9	-5.7	-8.5
Gross domestic product (at market prices)	-0.9	-3.9	-6.1	-7.1

Note: Values are in current prices to be comparable to the current price valuation in the input-output table. The extent of heterogeneity remains strong in constant prices. Disaggregated data at the 64 industry levesl are not available for 2011 and 2012 as of the time of this writing.
*Source*: Gross value added by industry (A10) 2000–12 and gross domestic product, annual national accounts by ELSTAT

rate. To assess the applicability of the 2010 table, we checked the stability of the input coefficients in the table. Since the latest symmetric input-output tables are from 2009 and 2010, one could only extrapolate the stability test for the first two years to later periods. Note that the growth rate of GVA was at 0.4 percent in 2009, in contrast to a contraction of -5.2 percent in 2010 and over -6 percent in 2011 and 2012. If it were found that the 2009 table could represent the structure of Greek economy of 2010, it would then be reasonable to use the 2010 table for analysis of the current time period.

Comparing the Leontief multiplier matrices from the two periods is one of the ways to check the stability (Miller and Blair 2009, 305). The method compares an observed output level from a recent year to that of the necessary output level required for a given set of final demand of the recent year. Our analysis shows that not only is the total amount close, but also the distribution of industry output is very similar. Figure 0.3 shows the comparison of observed and computed industry output for 2010 with a 45-degree line to highlight deviations. Data points below the line represent estimated output that is lower than the observed output, and vice versa. The concentrated distribution of data around the line supports the stability of input coefficients from 2009 to 2010. Therefore, our assertion on the extrapolated stability of 2010 table for later years should hold.

Changes in the input-output accounts may be attributed to changes in prices as well as quantity demanded, since the table was compiled using current prices. Input coefficients, which are ratios of current values of inputs to industry output, and subsequent Leontief multipliers may exhibit less stability than the multipliers derived from the table in constant prices. On the contrary, Miller and Blair (2009: 308) argue that input coefficients from current prices exhibit more stability for two reasons: compensating movement of prices for inputs and output (the numerator and denominator in calculating input coefficients) would limit the variation of the coefficients over time; and the substitution of products within an aggregated industry classification tends to stabilize transaction values in the table, and consequently the input coefficients. Dietzenbacher and Temurshoev (2012) find that an impact analysis in current prices yields similar results to impact analyses in constant prices. Therefore, we assert that the table in current prices is a good way to ascertain the stability of the coefficients from price fluctuations. Changes in the coefficients over time, then, could be attributed to changes in quantity of input demanded rather than changes in prices. In addition, the annual average rate of change in the Greek consumer price index has slowed down to 0.1 percent as of August 2013, as growth of the producer price index has stalled since 2012, as shown in Figures 0.4 and 0.5. The observed price stability supports our analyses focusing on the changes in quantities through the multiplicative process.

The synthetic sector is a composite of the five industries and subject to changes in the industry output and input composition. By comparing input-output tables from 2009 and 2010, we extrapolated the stability of sector input coefficients.

Figure 0.3 Observed vs. Simulated Industry Output, Year 2010 (in millions of euros)
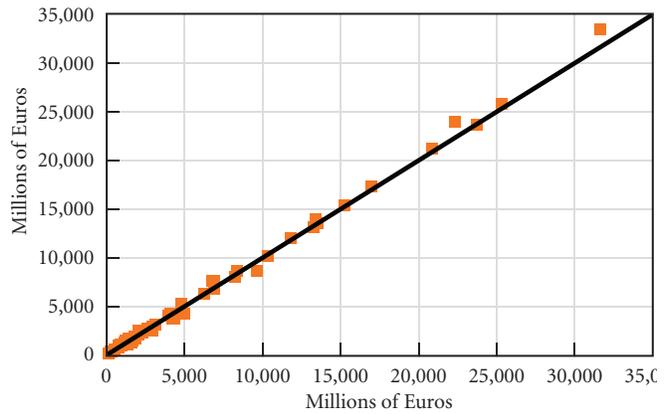
Source: Authors' calculations using symmetric, domestic iinput-output tables of 2009 and 2010

Figure 0.4 Consumer price index (2005=100)

— 2013
···· 2012
–– 2011
–·– 2010
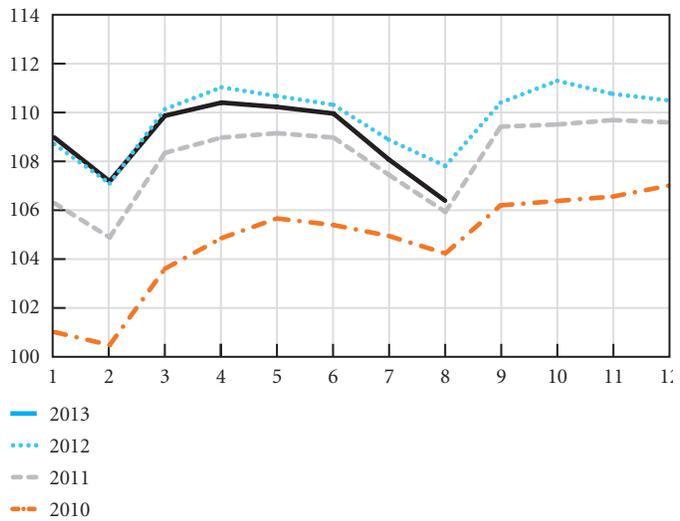
Source: ELSTAT

The stability ensures applicability of the old table to the current situation without algorithm-based updating. Table 0.20 shows changes of output and intermediate input values in current prices between 2009 and 2010. The industry gross output declined between 2 percent and almost 30 percent—with the largest drop observed in construction—with the exception of environmental services. The intermediate input adjustments follow the changes in the output, with the exception of education, in which the intermediate demand dropped by 38.4 percent. The large drop is attributable to the expenditure on one item: security, services to buildings and landscape, and office administration and support. It was the largest item on the intermediate input of education at 1.5 percent in 2009, and dropped to a mere 0.01 percent of output the next year. However, the ratio of the overall intermediate input to output is less than 6 percent in education, and its impact on the share of intermediate inputs of the synthetic sector is less than 2 percent.

Figure 0.5 Producer Price Index (2009=100)
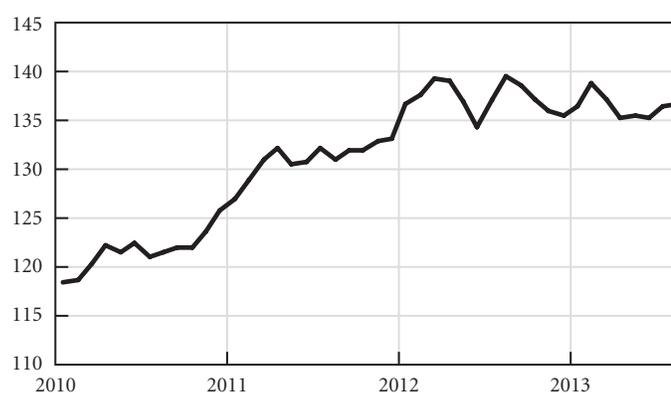
Source: ELSTAT

The intermediate input demand is one of the main conduits of multiplicative effects of expanding final demand of the synthetic sector. It is equivalent to expanding the government's budget for the employment program. A closer look at the changes over time reveals how well the 2010 table would reflect the current economic structure. The shares of

Table 0.20 Changes in Output and Intermediate Input between 2009 and 2010 (in percent)

|	Environmental Services	Construction	Security; Services to Buildings and Landscape; Office Administration and Support	Education	Social Work	Total
Output	4.7	-29.8	-2.2	-7.5	-10.7	-6.05
Intermediate	-4.4	-28.2	3.0	-38.4	-14.3	-10.24

Source: Authors' calculations based on the symmetric, domestic input-output tables, 2009 and 2010

Table 0.21 Shares of Intermediate Input, 2009 and 2010 (percentage of gross output)

Year	Environmental Services	Construction	Security; Services to Buildings and Landscape; Office Administration and Support	Education	Social Work	Synthetic Sector
2009	32.18	53.52	36.21	5.95	30.45	31.14
2010	29.38	54.80	38.12	3.97	29.21	29.95

Source: Authors' calculations based on the symmetric, domestic input-output tables, 2009 and 2010

Figure 0.6 Distribution of Intermediate Input Coefficients: 2009 (X) and 2010 (Y)
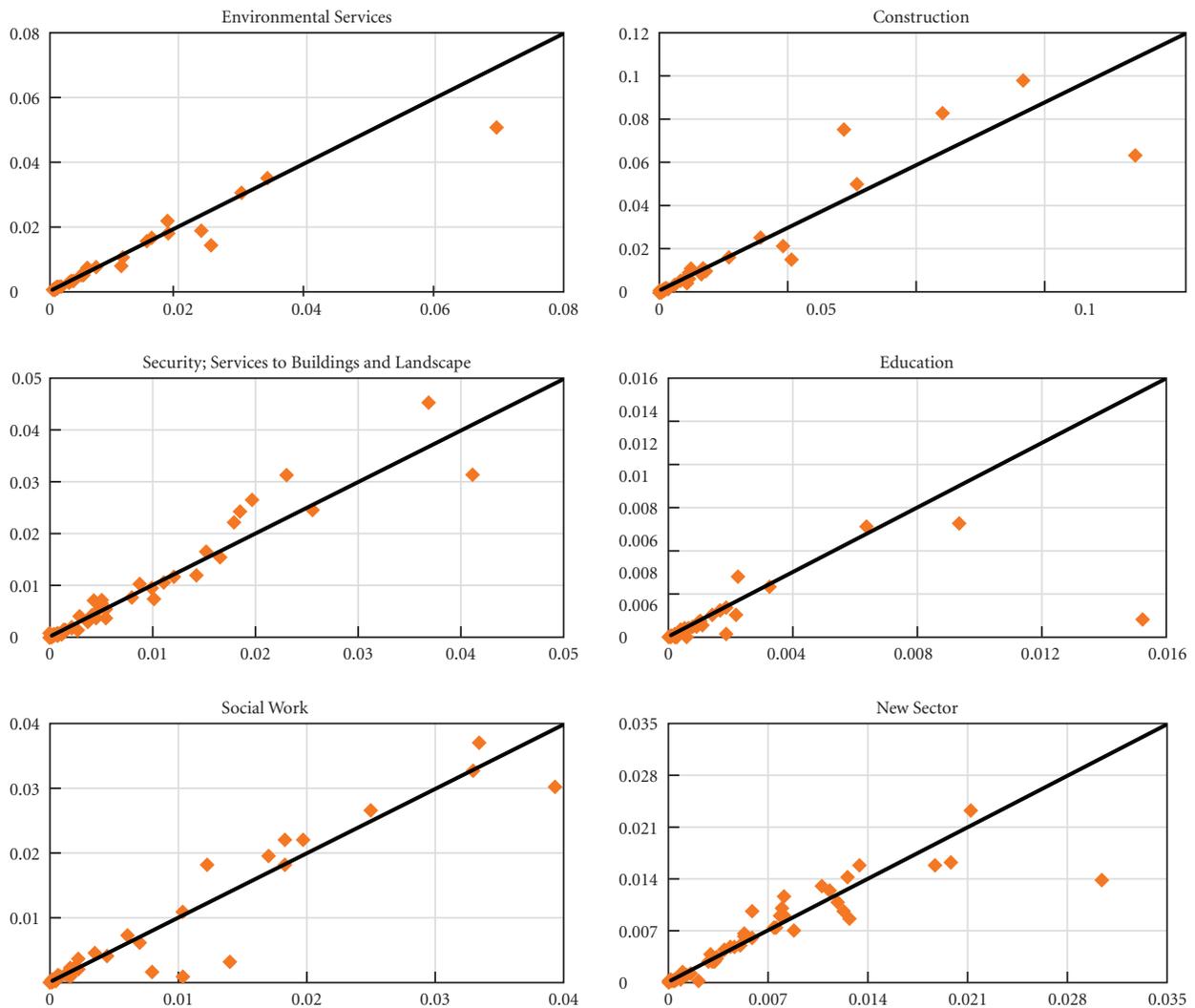
Source: Authors' calculations from symmetric, domestic input-output tables, 2009 and 2010

intermediate inputs in five industries do not vary as much, as substitution of intermediate inputs with labor or capital inputs is obviously limited. The limited substitution in the source industries leads to the minor change of the intermediate share in the synthetic sector, shown in Table 0.21. The distribution of intermediate inputs of the source industries and synthetic sector illustrate the relative substitution of inputs by the industries and how that affects the input composition of the sector over time. Figure 0.6 shows small deviations among the majority of inputs with small coefficient values but noticeable deviations among inputs with large coefficients. Some of the large drops can be found in construction and education. In construction, its own product and services, marked at the far right in the figure, are the largest intermediate input, and its own demand dropped in 2010, which is consistent to the observed rapid contraction of the industry. In education, security/services to buildings, and landscape/office administration and support, services to buildings is the largest intermediate input and exhibits the largest drop in the share, from 1.5 percent to 0.1 percent of output in 2010. These contractions ostensibly affect the distribution of inputs in the synthetic sector. The equally weighted aggregation of industries after the initial redistribution of inputs transmits the large drop of the inputs to the

input composition of the synthetic sector. Given the unknown distribution of various projects in terms of their association with the industry classification and their peculiar input compositions, the equal weighting is believed to be the most neutral among the other methods of aggregation. Nonetheless, the stability of input coefficients is evident. The small variation of the output multiplier—2.80 and 2.69, using 2009 and 2010 input-

Table 0.22 Industry–product Output Multipliers of the Synthetic Sector, based on 2009 and 2010 I-O Tables

	2009	2010
Total	**2.80**	**2.69**
Direct	1.00	1.00
Indirect	1.80	1.69

Source: Authors' calculations

output tables—provides evidence of the stability, as shown in Table 0.22, and hence warrants use of the 2010 table for our analysis.

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1. The report was finalized in January 2014. The latest report on unemployment data reported by ELSTAT was for October 2013, and the data was accessed electronically on January 12, 2014, http://www.statistics.gr/portal/page/ portal/ESYE/BUCKET/A0101/PressReleases/A0101_SJO02_DT_MM_10_2013_01_F_GR.pdf.

2. Papadimitriou et al. (2013).

3. For example, see the McKinsey & Company (2012) report *Greece 10 Years Ahead*. It proposes a new National Growth Model, which at best could lead to the creation of 520,000 jobs in 10 years.

4. Authors' calculations, Eurostat, LFS. We estimate that the 1997–2007 period saw an average annual growth of 63, 000 jobs, and from 1998 to 2008, 54,000 jobs correspondingly. Starting with the employment level of 1998Q1–2007Q4, Dedousopoulos et al. (2013), in a report issued by the International Labour Organization (ILO), estimates a 60,000 job creation per annum; projecting into the future beginning with the fourth quarter of 2012, the ILO report finds that if the Greek economy regains its precrisis (1998Q1–2007Q4) job growth pace of 60,000 jobs annually, it will achieve the employment level of the first quarter of 2009 in 14.5 years; i.e., roughly in the second quarter of 2027.

5. The primary surplus is the difference between tax revenues and government spending, excluding interest or principal payments on government debt obligations.

6. China, for example, introduced a fiscal stimulus package of approximately 600 billion dollars, corresponding to a massive 13 percent of its GDP. Other examples of fiscal interventions include Indonesia, Argentina, and Brazil, all of which intervened at a scale ranging from 10 to 4 percent of GDP, and the United States, with a stimulus of 2.3 percent of GDP for two consecutive years (UNCTAD 2011).

7. Eurostat, "Euro Indicators 10/2014," News Release, January 22, 2014. As compared to the third quarter of 2012, Greece's debt/GDP increased by 19.9 percentage points.
   http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/2-22012014-AP/EN/2-22012014-AP-EN.PDF.

8. Authors' calculation based on ELSTAT, Quarterly Non-financial Accounts. Authors' calculations, based on summation of year-on-year changes: for 2007–08: -6.10%; 2008–09: -23.35%; 2009–10: -9.24%; 2010–01: -13.59%; 2011–02: -21.59%.

9. ELSTAT, "Household Budget Survey 2012," Press Release, November 29, 2013,
   http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0801/PressReleases/A0801_SFA05_DT_AN_00_2012_01_F_EN.pdf.
   The comparison among the 2012 Household Budget Survey and the previous surveys shows a decrease in the average monthly household expenditure from 2,401.44 euros in 2008 to 1,637.10 euros in 2012, which corresponds to a 22.7 percent decrease at current prices and a 31.8 percent decrease at constant prices.

10. ELSTAT announced on November 29, 2013, the results of the 2012 Survey on Income and Living Conditions (EU Statistics on Income and Living Conditions) of households, with the *reference income period the year 2011*. The 23.1 poverty rate provided above uses a poverty threshold of 5,708 euros per person annually and up to 11,986 euros for households with two adults and two dependent children under 14 years old. This measure is referred to as the "the risk of poverty threshold" and is calculated on the basis of households with income below 60 percent of the median of the total equivalized disposable household income. As incomes have declined precipitously in the past few years, it is clear that the 60 percent of the median income has dropped as well. Concretely, the

poverty threshold in 2009 was 7,521 euros for a single person. Also note that the population groups that are by inference poor—such as the homeless, persons living in institutions, illegal economic immigrants, Roma, etc.—are not included in the survey.

11. ELSTAT, "Statistics on Income and Living Conditions [SILC 2012]," Press Release, November 29, 2013 (*reference income period the year 2011).*
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0802/PressReleases/A0802_SFA10_DT_AN_00_2012_01_F_EN.pdf.

12. Antonopoulos et al. (2011).

13. As of the date of finalizing this report, fourth-quarter data and November-to-December monthly information for 2013 has not yet released by ELSTAT. Hence, 2013 annual data refers to Q1–Q3. The LFS sources used in this section are available online, on the ELSTAT and Eurostat websites.

14. Such estimates are very sensitive to the start and end dates of comparisons. See footnote 4.

15. The European Union's average unemployment rate in 2008 was 7.1 percent.

16. The Ministry of Labour of Greece reports that, according to the Ergani Information System, which collects data submitted electronically by all enterprises operating under private sector employer-employee contract agreements, 90.2 percent of all businesses employed 1–10 workers as of October 2013.

17. Authors' calculations, ILOSTAT, "Employment by Sex and Institutional Sector" series. International comparisons of public sector employment are a little tricky because, beyond the core public sector employment, a number of public and private sector entities that operate under public supervision at the national, state, and local level hire workers under private contract law. The calculations are based on the following definition of public sector employment, provided by the ILO: "Public sector employment covers employment in the government sector plus employment in publicly owned resident enterprises and companies, operating at central, state (or regional) and local levels of government. It covers all persons employed directly by those institutions, regardless of the particular type of employment contract. Private sector employment comprises employment in all resident units operated by private enterprises, that is, it excludes enterprises controlled or operated by the government sector."

18. The reduction in employment is calculated as the difference between the average employment in of 2008 and the average employment between January and October 2013, provided by ELSTAT.

19. All employment data are drawn from Eurostat's website on employment statistics.

20. The figure of 1,387,520 for total unemployment mentioned at the very beginning of the introductory section of this report pertains to the more recently released data for the month of October 2013. The average for January to October is 1,350,000 persons. As a reminder, the unemployment rate in 2008 was 7.7 percent.

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

22. ELSTAT, "Statistics on Income and Living Conditions 2012: Risk of Poverty," Press Release, November 29, 2013.

23. The Youth Employment Initiative was proposed by the February 7–8, 2013, European Council, with a budget of €6 billion for the period 2014–20. This is clearly inadequate for the 3.4 million unemployed youth, since it amounts to only 1,764 euros per person for the period. The second initiative, the Youth Guarantee, is a recommendation made by the Council of the EU and is estimated to carry an investment cost of 21 billion euros; EU countries endorsed the Youth Guarantee on principle in April 2013.

24. Finland and Sweden are two countries that have used this approach to youth unemployment.

25. As mentioned above, the public sector is expected to shed jobs, and therefore any potential new hiring will be taking place in the private sector.

26. This is the latest micro data available from ELSTAT, from the 2012 LFS providing employee earnings; 2013 LFS data will become available at the end of 2014. Comparisons with previous years is not possible as the survey questionnaire on wages and salaries reported up to 2010–01 did not include the same categorical values of earnings. For more details, see http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/EU_labour_force_survey_%E2%80%93_data_and_publication#Availability_and_release_of_LFS_microdata.

27. In 2012, we find 465,144 individuals (19.57 percent) working in the public sector; 397,163 individuals (16.71 percent) in the broader public sector. As the private sector shed thousands of jobs, the balance between public and private sector employment that prevailed in the previous 20 years changed dramatically.

28. As a reminder, the official poverty line, using the already depressed incomes of 2011 as a baseline, is 5,708 euros per year for a single individual, yet only slightly more than double that, at 11,986 euros, for a family of four (two adults and two dependent children).

29. The SILC data reported here pertain to adults 18 years of age and older. Unlike Eurostat's LFS, which begins with 15-year-old workers, the age range of choice in SILC begins with employed persons who are 18 years of age and older. In addition, SILC, unlike the LFS, does not separate out own-account workers from employers.

30. This figure is from the LFS, not SILC as indicated in the footnote above.

31. We must keep in mind that poverty status is a household-level variable, and counts the individuals living in a household below the poverty-line income and not simply an individual's earnings. Hence, other social transfers, household composition, and the employment status/earnings of all household members matter.

32. Eurostat, National Accounts, Non-financial transactions [nasa_nf_tr]. Were we to include Government and the Household sector, the corresponding figures are 56 billion euros in 2008 and 26 billion euros in 2012.

33. The annualized total contributions of 330 euros per month per employee amount to 3, 960 euros per person. Hence, for one million persons the total is 3,960,000,000 euros. But we must keep in mind that this excludes the customary 13 and 14 months' salary, which would have increased the contributions by an additional 660 million euros.

Gross Wage (in euros)	Employee Contribution (in percent)	Employee Contribution	Net Wage (in euros)	Employer Contribution (in percent)	Employer Contribution (in euros)	Total Wage (in euros)	Total Contributions (in euros)
751	16.50	124	627	27.46	206	958	330 (124+206)

34. For an excellent discussion see Dafermos and Papatheodorou (2012).

35. Study undertaken for the National Bank of Greece by the Hellenic Foundation for European and Foreign Policy (ELIAMEP).

36. Clearly, the fact that this policy can eliminate all involuntary unemployment by providing a job for every person ready, willing, and able to work does not imply that all the unemployed would be interested in participating in ELR work projects. Examples include those exploring alternative forms of productive engagement in cooperative structures or the social economy, the voluntarily unemployed, and those unwilling to work for the ELR's predetermined wage, not to mention individuals who do not meet the minimum standards for such employment or who would rather look for a better job while unemployed.

37. Decision No. 1.5131/oik.3.949/KYA (Government Gazette #613 V/15-4-2011), Deputy Ministers of Interior, Decentralization and Electronic Governance, Economy, Competitiveness and Shipping and the Minister of Labour and Social Security on "System Management Assessment, Monitoring and Control – Application Procedure Act: "Creating jobs at a local level through programs of public benefit" under the National Strategic Reference Framework for the 2007–13 period.

    Υπ′ αριθμ. 1.5131/οικ.3.949/ΚΥΑ (ΦΕΚ 613 Β′/15-4-2011) των Υφυπουργών Εσωτερικών, Αποκέντρωσης και Ηλεκτρονικής Διακυβέρνησης, Οικονομίας, Ανταγωνιστικότητας και Ναυτιλίας και της Υπουργού Εργασίας και Κοινωνικής Ασφάλισης με θέμα «Σύστημα Διαχείρισης, Αξιολόγησης, Παρακολούθησης και Ελέγχου – Διαδικασία Εφαρμογής της πράξης: "Δημιουργία θέσεων απασχόλησης σε τοπικό επίπεδο μέσω προγραμμάτων κοινωφελούς χαρακτήρα," στο πλαίσιο του Εθνικού Στρατηγικού Πλαισίου Αναφοράς για την Προγραμματική Περίοδο 2007–13.

38. Introducing a JG policy requires a dedicated institutional structure and carefully planned arrangements for overall design, selection of work projects, beneficiaries, and mechanisms of implementation. See Antonopoulos et al. 2011.

39. These characteristics are key elements of the hypothetical scenarios we built. They are, of course, not immutable. Instead, they provide a backdrop for fruitful discussion and debate.

40. See http://www.gsee.gr/news/news_view.php?id=178 [αίτηση ακύρωσης Πράξης του Υπουργικού Συμβουλίου) (ΠΥΣ) 6 / 28.2.2012].

41. A two-stage supply of labor response estimation equation with a wage of 700 euros per month yielded 160,000 persons from among all the unemployed (1.2 million in 2012), when, in fact, the PKE 2012 offer of 625 euros attracted 210,000 applicants from among the segment of the unemployed registered with the unemployment office, a population of roughly 800,000 individuals, or two-thirds of the total unemployed. Whether the crisis has changed the labor market response or prevailing attitudes under more normal circumstances, or the construction of the model is in error, this provided sufficient support to the idea that we should explore alternative methods in identifying "potential applicants."

42. The scale of intervention is first and foremost a policy choice. The international experience ranges from open-ended self-selection with some eligibility requirements (e.g., only one person per household with children under the age of 15 years old, or being a resi-

dent of a rural area and with income below a designated level only, etc.) to imposing a strict limit on the number of offered jobs based on ranking criteria.

43. Applicants in PKE 2012, for example, declared 2009 income from the tax forms. But as we have seen in section II, labor market deterioration accelerated in 2011 and 2012, and this would not be reflected even in the best-case scenario: an applicant in 2012 submitting a tax return from 2011 for income earned in 2010.

44. Declaration of interest is manifested in the *total* number of submitted applications—by the sum of those who became beneficiaries, those who were eligible but were rejected because there was a strict limit as to how many individuals could be hired in, and those who were deemed noneligible—for example, because they had not renewed their unemployment card, or did not submit proof of income, or were missing part of the documentation needed. For this study, we had access to the *total* applications submitted for roughly half of the 55,000 jobs, made available through GSEE's public-access website.

45. As mentioned earlier, a key criterion of eligibility was having an unemployment card issued by OAED and renewed regularly. OAED is the public authority and central structure managing unemployment insurance (regular unemployment benefits) and other social security benefits and allowances, under the supervision of the Ministry of Labour.

46. For our study, we first explored using a traditional supply of labor response methodology to estimate the number of individuals from among the unemployed that would potentially be interested in applying for a PKE 2012 job. We used a monthly wage offer of 700 euros as a benchmark, for the year of 2012, and employed a probit model with sample selection. Unlike the Heckman sample selection model (Heckman 1976), in which the second stage estimates the wages of employed individuals, in this setup we estimated the binomial probability of belonging to the income category of 700 euros or above. The results were divergent of the Greek reality and unacceptably low in explaining the behavioral supply of labor response today, and hence we decided against using this methodology for our study. As mentioned earlier, an even lower wage offer of 625 euros per month, and a more restricted sample of unemployed (cardholders of OAED), attracted 210,000 applicants, whereas the probit results identified 168,000 persons.

47. Less than €6,900, €6,901–12,000, €12,001–16,000, €16,001–22,000, and €22,001 or more.

48. Question 95 in the LFS questionnaire, which concerns only employees (Q.17–code3), provides the following categories: less than €499, €500–699, €700–799, €800–899, €900–999, 1,000–1,099, 1,100–1,199, 1,200–1,299, 1,300–1,449, and 1,500 or more.

49. Multiple efforts to gain access to the SILC 2012 micro data from ELSTAT were unsuccessful.

50. In this context, "eligible" means not in school, in the military, retired, or disabled.

51. For more detail about this method, see Kum and Masterson (2010).

52. Since each variable presented in Figure 4.1 has different categories, we simply number them from 1 to 5. The actual categories in each case, from top to bottom, are the following: for the number of earners, they are 0 to 3 or more; for age category, less than 35, 35 to 44, 45 to 54, 55 to 64, and 65 and older; for marital status, never married, married, widowed/divorced; for household type, head and spouse employed, only head employed, only spouse employed, both head and spouse not employed, and all other; for occupation, not employed, low-income occupation, middle-income occupation, and high-income occupation; and for industry, not employed, low-income industry, middle-income industry, and high-income industry. The latter two were constructed by grouping each occupation or industry by median and average earnings.

53. The applicant was obligated to submit proof of income via the tax return form submitted in 2009. This document was included in the physical paper file of the applicant but was not recorded electronically. As a result, these 1,000 files were retrieved and the household incomes entered in spreadsheets by colleagues at GSEE and then used in Stata for modeling purposes.

54. As of the final stages of issuing this report, we had as yet been unsuccessful in acquiring EU-SILC 2012 data for Greece. When we finally received the EU-SILC 2012 data, we checked that our estimates held up with more recent data. Our initial estimates regarding potential demand for participation in the JG program were conservative. In other words, the "aged" data (the rough estimates of 2011 household income) were somewhat biased. Using our aged 2011 data and the SILC actual data, it turns out that, while the likelihood of applying for unemployed persons in the poorest household income category was roughly the same (78 percent compared to 80 percent in our original estimates), the likelihood of applying was higher in the higher income groups. For example, in the next-highest income group (6,900 to 12,000 euros), 44 percent of unemployed individuals were likely to apply, as opposed to only 33 percent with the "aged" 2009 SILC income. In short, our own estimates of actual demand for the program, although rough, predicted fewer individuals among the unemployed declaring interest for participation than what the actual data suggest.

55. 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 a JG.—in a

previous draft of this report we estimated this value to be 1.6; 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.

56. The implicit multiplier is calculated as the ratio of the increase in GDP divided by the "program cost." At the monthly wage of 586 euros, the change in GDP is roughly 5.4 billion euros and the program cost is 2.3 billion euros. Hence, 5.4 / 2.3 ≈ 2.32; similarly, at the wage of 751 euros, given that the change in GDP is 6.9 billion euros and the program cost is 2.9 billion euros, yields an identical implicit multiplier of 2.32, as expected.

57. The chain of the multiplicative effects can be derived by taking the Leontief inverse of the difference between the identity matrix and the matrix of technical coefficients from the symmetric, domestic table (Leontief 1986). The technical coefficients are the ratios of values of inputs to total output in each industry, which represents the input composition of the industry. A large body of literature deals with estimation and application of multipliers for impact analysis, formally developed by Wassily Leontief (*The Structure of the American Economy* [Cambridge: Harvard University Press, 1941]). It is applied to a wide range of policy impact assessments and planning, from local to global scale. For instance, for an impact analysis of a plant relocation on a local economy, see Edmiston (2004). On a global level, Saito, Ruta, and Turunen (2013) at the IMF have written on the rise of the "supply-chain trade" using the World Input-Output Database. Zacharias et al. (2009) assess the ex ante employment impact of the American Recovery and Reinvestment Act in the United States.

58. Kim (2011) developed the approach to assess employment and macro impacts of the Expanded Public Works Programme (EPWP) in South Africa. Under this program, a variety projects, ranging from construction to home-based health care, exhibited different input compositions and other employment related components, such as extensive on-the-job training, that were absent in any existing industry accounts.

59. For instance, the EPWP in South Africa and the National Rural Employment Guarantee Act (NREGA) in India roughly follow this ratio of wage to output.

60. The distribution of occupation does not vary by different simulations, as it is fixed by observed shares from the labor force survey.

61. Note that the number of beneficiaries is smaller than the total number of jobs announced. It may be the case that job assignment was still under way when the job applicant data were collected for this study.

62. See Pilkington and Mosler (2012).

63. Kapsalis (2012).

64. Indicatively: S. Vamiedakis, "Programs of Socially Useful Work: STAGE died, hurray STAGE," *Levga*, no. 8 (2012; in Greek); Federation of Workers of All Specialisations in the Municipalities and Local Communities of Greece – Hellas, "STAGE Replaced with Socially Useful Work Programs" (http://www.inews.gr/199/poe-ota-antikatestisan-ta-stage-me-tin-koinofeli-ergasia.htm, accessed October 10, 2012; in Greek); announcement of the federation of workers in the municipalities and local communities of Greece (2011) (http://www.aftodioikisi.gr/ergasiaka_ypllhlwn_ota/12702, accessed September 15, 2012; in Greek); "Federation of Workers in the Municipalities and Local Communities: The Social Work Program Is Being Violated," *Vima* (2012) (http://www.tovima.gr/society/article/?aid=477922&wordsinarticle=%CE%BA%CE%BF%CE%B9%CE%BD%CF%89%CF%86%CE%B5%CE%BB%CE%AE%CF%82%3b%CE%B5%CF%81%CE%B3%CE%B1%CF%83%CE%AF%CE%B1, accessed November 1, 2012; in Greek).

65. Tcherneva (2012).

66. Papadimitriou (2008).

67. Levy Economics Institute of Bard College (2006).

68. ELSTAT (2013).

69. OAED, http://www.oaed.gr/index.php?option=com_content&view=article&id=688:2012-03-09-17-10-3&catid=71:2012-02-02-08-25-33&Itemid=748&lang=en (accessed March 15, 2013).

70. Addressing people with mental health problems, Law 2716/1999, article 12.

71. Addressing people from vulnerable social groups in general, Law 4019/2011.

72. This information is derived from the following link, http://synekox.espivblogs.net/2ke/2-1/, which was created in the framework of the assembly of employees in socially useful programs, a collective of people working in the program and trying to collectively protect and demand their employment rights.

73. Law 3996/2011, article 89, paragraph 1.

74. The Greek Ombudsman (2007).

75. European Commission (2013).

76. Antonopoulos (2007).

77. According to the announcement of the managing authority (April 25, 2012): "We inform the Implementing Agencies … that based on the instructions of the Supreme Council for Civil Personnel Selection, no announcements for applicants' selection, no selection results can be publicized and no contracts can be signed. All relevant procedures (deadlines for submission of application forms and objections) already announced will be suspended temporarily and restarted after the formation of the new Government until the completion of the initially planned remaining time" (http://www.epanad.gov.gr/default.asp?pID=53&la=1&pg=3, accessed May 15, 2012).

78. Such is the case of the nonprofit organization Epimenoume Drama (http://www.epimenoumedrama.gr/cms/index.php?option=com_content&view=section&layout=blog&id=3&Itemid=37, accessed December 1, 2012).

79. Indicatively: http://www.aftodioikisi.gr/proto_thema/23771 (accessed December 15, 2012).

80. Newsletter by the Assembly of Employees/Unemployed in Socially Useful Work Programs, October–November 2012, available at http://synekox.espivblogs.net/files/2012/12/synekox_newsletter1.pdf (accessed January 15, 2013), and http://www.inews.gr/30/ergazomenoi-sta-programmata-koinofelous-ergasias-dynamiki-i-chtesini-apergia-sti-larisa.htm (accessed December 15, 2012).

81. Employment and unemployment numbers are based on the 2010 and 2012 LFS data.

82. In this context, "eligible" means not in school, the military, retired, or disabled.

83. The industry and occupation were compressed into three income categories based on the average earnings within each of the industries and occupations, and these compressed categories were used for the match.

84. For more detail about this method, see Kum and Masterson (2010).

85. Since each variable presented in Figure 0.2 has different categories, we simply numbered them from 1 to 5. The actual categories in each case, from top to bottom, are the following: for the number of earners, 0 to 3 or more; for age category, less than 35, 35 to 44, 45 to 54 55 to 64, and 65 and older; for marital status, never married, married, and widowed/divorced; for household type, head and spouse employed, only head employed, only spouse employed, both head and spouse not employed, and all other; for occupation, not employed, low-income occupation, middle-income occupation, and high-income occupation; and for industry, not employed, low-income industry, middle-income industry, and high-income industry. The latter two were constructed by grouping each occupation or industry by median and average earnings.

ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ
"ΑΝΑΠΤΥΞΗ ΑΝΘΡΩΠΙΝΟΥ ΔΥΝΑΜΙΚΟΥ"
2007 - 2013
ΠΡΟΣΑΝΑΤΟΛΙΣΜΟΣ
ΣΤΟΝ ΑΝΘΡΩΠΟ

ΕΣΠΑ
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πρόγραμμα για την ανάπτυξη