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## **The effects of economic austerity on pro-sociality: evidence from Greece**

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### **Abstract**

The European sovereign debt crisis resulted in policies of fiscal austerity and economic downturn in Greece, marked by a prolonged period of recession and high unemployment. This article explores the social impact of the economic crisis, focusing on its effects on altruism using new household-level survey data and quasi-behavioral outcomes. We focus on the effects of joblessness, the most severe form of economic hardship imposed as a result of the crisis. Our findings reveal a strong relationship between job loss in the household and decreased altruism. We provide experimental evidence of these effects and of in-group bias in charitable giving as a result of joblessness. Our results show that joblessness intensifies survey respondents' preferences for national as opposed to foreign charities.

**Keywords:** Austerity, solidarity, altruism, joblessness

**JEL codes:** D64, E64, C93

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### **Introduction**

In 2009, Greece's government announced that its budget deficit was 12.9% of the country's GDP, four times the 3% limit mandated by the European Union (EU). The announcement marked the beginning of a sharp period of fiscal adjustment during which austerity policies were implemented to reduce the deficit and promote growth. Partly due

to these policies and to problems and delays related to their implementation, Greece went into five years of recession, GDP dropped by 25% and the official unemployment rate jumped to 27%. The painful adjustment period turned public opinion against Greece's creditors and delegitimized the political establishment. The public's reaction to austerity policies and their economic consequences has been extensively analyzed; however, their social impact is less well understood. This article explores the social consequences of the European sovereign debt crisis in Greece with a focus on the effects of economic hardship on group solidarity. Specifically, we ask whether the experience of joblessness in the context of an economic crisis makes individuals more or less altruistic toward others.

Greece's debt crisis led to a sharp increase in unemployment starting in 2010. We take advantage of this unexpected rise in unemployment to study the social impact of the economic crisis. Using data from a face-to-face survey of a representative sample of Greek households (the 2016 round of the Life in Transition Survey funded by the European Bank for Reconstruction and Development (EBRD) and the World Bank), we provide the first systematic analysis of the effects of economic austerity on altruism in Greece. More broadly, we contribute to the literature on economic determinants of pro-social behavior, of which altruism is an established type. We measure altruism with charitable giving and provide experimental evidence on in-group bias in altruistic behavior as a function of exposure to joblessness.

Our analysis is informed by psychological theories of behavior, including perspectives that connect joblessness to resentment and polarization. The psychological effects of unemployment on individuals are increasingly recognized in the literature. Joblessness has been linked to mental health impairment, and that impairment is even

greater for individuals who lose their jobs relative to those who have never had recent work experience (Batic-Mujanovic et al., 2017; Paul and Moser, 2009). This article broadens the scope of these investigations and considers the impact of joblessness on social polarization and altruism in Greece.

We argue that joblessness reduces altruism. Joblessness is experienced as an exceptionally severe hardship in the context of an economic downturn, exposing affected individuals to disproportionate risks relative to the rest of the population. This asymmetric risk exposure weakens the bonds with the rest of the in-group. The opposite pattern is likely to occur in crises that generate shared risks, such as natural disasters (Savala, 2018; Tierney, 2007) or international wars which bring people together by virtue of being exposed to a common threat that reduces the perceived distance separating individuals in a given group. By contrast, joblessness is felt as a “targeted” hardship that separates the affected individuals from the group, increasing their social and economic isolation. Individual-specific risks due to joblessness make class cleavages and other social divisions more cognitively salient for those who have lost their jobs, creating psychological trauma, and increasing the social distance that separates them from the rest of the population.

Although most of the population experienced wage cuts or reductions in disposable income in Greece, a smaller percentage experienced job loss (21% of respondents in our sample) and most of those affected were concentrated in the private sector due to protections from layoffs in the public sector. Our article explores whether the experience of joblessness reduced individuals’ willingness to make donations to philanthropic organizations, an empirical measure of altruism. We use new data from an allocation game that was embedded in a household survey conducted in Greece between November 2015

and January 2016. There is clear evidence that donations are lower among those most affected by the crisis. This reduction in giving to charitable organizations is not entirely explained by the reductions in all forms of spending that one could reasonably expect as a result of a drop in disposable income – a clear consequence of joblessness. The effect that we identify persists across levels of household wealth and is not mediated by income, which supports the hypothesis that it is indicative of diminished altruism due to a psychological mechanisms that we posit in this article. Furthermore, we show that reduced charitable giving is correlated with other outcomes suggestive of a decline in altruism and solidarity, such as reduced support for tax spending to help low-income households in need of assistance and welfare chauvinism. The latter effect is measured by the difference in charitable donations to organizations that cater to Greeks and organizations that help mainly foreigners.

Because a default on Greek debt would have had negative repercussions for several economies in western Europe, the debt crisis made differences between Greek and foreign interests cognitively salient, which could have led to the activation of national identities and *us-versus-them* thinking. A widely shared view among the Greek public was that Greece's bailout packages were designed to prevent an international financial crisis by turning private debt exposure to Greek debt into public debt carried by European taxpayers, which strengthened domestic opposition to austerity policies. The belief that the crisis was partly caused by foreign institutions reified *us-them* distinctions and generated resentment among tax payers in Greece, but also in EU lending countries. That resentment was fanned by the media and by public debates on whether Greece deserved assistance or whether it should be expelled from the Eurozone. We explore whether the unemployment caused by

Greece's debt crisis in this context lowered generalized altruism and whether that decline was more pronounced with respect to the charities that helped foreigners more than they helped Greeks.

### **Theory and hypotheses**

Giving to charity is a type of pro-social behavior, yet there is no canonical model of pro-social behavior that can form the basis of our analysis. Previous studies have explained pro-sociality as motivated either by anticipated reciprocity or altruism; in turn, altruism has been analyzed as a personality characteristic that explains other-regarding preferences akin to a "taste for giving" (Rushton et al., 1981; Andreoni, 1990) and, according to socio-biological theories, altruism could be an evolutionary response to group threat (Bowles, 2009). Evidence of altruistic behavior abounds, ranging from sacrifice in war to charitable giving, and experimental studies have established that the expression of altruism usually benefits an in-group – an ethnic, religious, or national group, or a school, a team, or any other social grouping with which an individual shares one or more attributes.<sup>i</sup> While behavioral theories have explained altruism as a fairly constant feature of individual behavior in the context of inter-group competition, to explain individual-level over-time variation in altruistic behavior we must also explore contextual or situational factors. The economic crisis constitutes such a situational factor that could generate short- or long-term effects on altruism and other types of pro-social behavior.

Crises such as natural disasters, wars, or other situations that generate collective or shared hardships affect population-level altruism differently than crises that generate group-specific or individual-specific hardships. This insight is reflected in the literature on social preferences, generosity, and social policy (Beramendi, 2012; Rueda, 2017; Rehm,

2016), which suggests that crises that generate shared risks strengthen group bonds by linking individuals' fate. In other contexts, a "linked fate" (Dawson, 1985) can explain how non-targeted (indiscriminate) repression unifies minority groups or others whose rights are restricted by the state, promoting collective action (Cederman et al., 2015; Nugent, 2018). Similarly, natural disasters or shared external security threats can unify domestic groups exposed to those threats by reducing the social distance that divides them and strengthening empathy among in-group members (Gaertner and Dovidio, 2000). By contrast, when threats or risks are not shared equally among in-group members, this can weaken in-group identity by highlighting within-group differences and creating more social distance among in-group members (Nugent, 2018).

These insights are based on the foundational literature in social psychology that explains patterns of group identification. The common thread is that any conflict that makes specific identities (or attributes that characterize different identities) cognitively salient will create social distance between individuals sharing that attribute and the rest of society. Individuals are inclined to identify with groups toward which they feel more socially proximate<sup>ii</sup>, and greater distance will reduce the strength of social identification (Gaertner and Dovidio, 2000). We expect perceptions of social distance to grow – and group identification to weaken – during crises that generate individual-specific risks that are distributed unevenly among members of a group (the opposite would be true if risks are group-wide and evenly distributed). Based on this insight and considering that exposure to joblessness was a risk that was not distributed equally among the population, we posit that Greeks who experienced joblessness due to the austerity measures will feel weaker bonds with others, which will translate into lower altruism.

Prior literature offers some support for the idea that disproportionate exposure to economic crisis should reduce pro-social forms of behavior. In the USA, individuals with more exposure to the effects of the Great Recession exhibit more selfishness in lab experiments (Fisman et al., 2015), and survey data show similarly negative effects of economic shocks on generalized trust (Alesina and La Ferrara, 2002). In other studies that focus more closely on the psychological underpinnings of the effects of joblessness, we see that displaced workers are less likely to be involved with social organizations, religious or community groups, or interact with friends (Brand and Burgard, 2008). Although exposure to recessions has been shown to increase support for welfare policies, these effects may be due to self-interest (Giuliano and Spilimbergo, 2014; Margalit, 2013). While the literature on redistributive preferences is related to our study, we choose to analyze charitable giving as a more direct measure of altruism that is unlikely to depend on expectations of reciprocity or direct benefit due to redistribution.

A premise of our analysis is that all forms of pro-social behavior depend on a shared social identity. Any exogenous event that weakens group ties by deepening political, economic, or other cleavages, should reduce pro-social behavior and altruism. Job loss amidst economic hardship qualifies as an event that can cause polarization, resulting in a loss of “psychosocial assets” that makes individuals more socially withdrawn from society (Brand, 2015). Job loss has been shown to generate social stigma, anxiety, and insecurity (Newman, 1988), and it is associated with a higher incidence of depression and associated conditions (Brand et al., 2008).

Individual-specific hardship generated by joblessness during an economic crisis induces polarization by heightening perceived conflict between professional groups or



social classes. This polarizing effect of job loss might actually be less stigmatizing and pronounced during periods of economic crises due to what scholars have called the “social norm effect” according to which increases in aggregate levels of unemployment make individual experiences with unemployment seem less deviant (Clark, 2010). Yet, economic crises often originate in bad policies or structural inefficiencies so that affected groups or individuals could attribute their bad fortune to political parties, elites, or social classes that are not adversely affected, thereby increasing the social distance between them and the rest of society. The Greek debt crisis may be a case in point as it was largely blamed on poor management of the public sector and on corrupt state programs and policies that benefited closed professions, unions, and other patrons of a deeply clientelistic system (Lyrintzis, 2011). Thus, political discord over who caused the crisis, combined with the uneven distribution of the costs of joblessness after the first bailout, should have caused resentment, which could diminish levels of altruism, as we hypothesize.

*H1: Exposure to joblessness during the period of austerity policies in Greece reduced altruism.*

#### *In-group/out-group effects*

Previous studies have established that there is in-group bias in charitable giving patterns: People are usually more altruistic toward in-group charities and feel more social pressure to donate to them (DellaVigna et al., 2012; Charnysh et al., 2015). This pattern reveals that an individual’s degree of attachment to the group is correlated with their charitable giving to that group. Indeed, one influential study finds co-ethnic bias in giving only among people who feel socially proximate to their in-group (Fong and Luttmer, 2009).

We draw on these studies to explore whether, amidst an overall decline in the level of altruism due to the economic crisis in Greece, joblessness caused a sharper reduction in donations to out-group charities. This pattern could be due to the perception that international actors contributed to the austerity policies.

Although the large Greek political parties took most of the blame for the crisis, foreigners were also blamed for the harsh terms of the bailouts. These terms and the targets of structural adjustment policies were decided in coordination with representatives of the EU and the International Monetary Fund (IMF), leading many in Greece to blame foreigners for the sharp increase in unemployment, deep wage cuts, and sharp tax increases (Rudig and Karyotis, 2013). The media fanned negative stereotypes of Greeks in several European lending countries (Thompson, 2012),<sup>iii</sup> which in turn stoked a nationalist response in Greece (Galbraith, 2018). Blaming outsiders for the crisis could have adversely affected charitable giving to foreigners, as national identities were made more salient by this conflict. The perception that Greek governments were no longer sovereign, having relinquished control to external actors represented by the Troika (European Commission (EC), European Central Bank (ECB), and the IMF), should have a similarly negative impact on sentiment toward outsiders (Sambanis, 2015). Walter et al. (2018) show that EU institutions and politicians intervened forcefully to influence the public debate regarding the debt in Greece. The more the public perceived the crisis as externally driven, and the more the austerity policies were portrayed as insensitive to the welfare of Greeks, the greater should be the social distance separating Greeks (who were affected by the crisis) and foreigners, due to the heightened salience of national identity. Thus, we expect individuals who were severely affected – i.e. those who lost their jobs – to exhibit welfare

chauvinism in their preferences for social giving. This rise in in-group bias occurred within an overall decline in generalized altruism and solidarity which could be reflected in reductions in giving to in-group charities. However, the effect of widening distance between Greeks and foreigners should be reflected in a greater drop in charitable giving to out-group charities compared to in-group charities.

*H2: Austerity exposure reduces altruism toward the out-group (foreigners) more than it reduces altruism toward the in-group (Greeks).*

### **Research design**

Our main empirical measure of exposure to the economic crisis is job loss. We focus on job losses during the period of the crisis and not on pre-crisis unemployment. The unemployment rate in Greece rose from 7.8% in 2008 to 12.7% in 2010 (one year after the start of the crisis) to 27.5% in 2013. These increases are staggering, and job losses incurred during this period were clearly perceived as the result of the austerity policies. Although one could focus on different economic outcomes, we view job loss as the most severe form of exposure to economic crisis<sup>iv</sup>. In a country caught in the throes of economic crisis with declining social expenditures and increased taxation of wealth, job losses caused extreme hardship, which we argue would alienate those who were affected.

Our analysis treats exposure to joblessness due to the imposition of austerity policies as an exogenous variable. Although this assumption cannot be proven using our data, we cannot construct plausible arguments that unemployment brought about by austerity policies was targeted at individuals who were identified on the basis of their social

preferences or selected according to pre-crisis levels of personality attributes that are somehow correlated with their pro-sociality or altruism.

We note that the set of structural reforms that led to sharp increases in unemployment were decided in consultation with Greece's external creditors on the basis of a Memorandum of Understanding between the government of Greece and the Troika. More than 200 separate actions were taken to restore fiscal health in the initial Memorandum of 2010 and more were added with each additional bailout negotiation (Mitsopoulos and Pelagidis, 2012). The complexity and unusual breadth of policies that were implemented over a five-year period (Pagoulatos, 2012) makes it unlikely that any single social group was targeted on the basis of attributes that might be correlated with individual social preferences. The role of the Troika in recommending specific reforms further strengthens this view, since the Troika did not have private knowledge of how social preferences were distributed in the Greek population, nor did it have a mandate to consider the broader social impact of adjustment policies. The design of the austerity policies supported by Greece's creditors was informed by economic theory and all adjustment policies were gradually implemented by several different governments, each of which aimed to serve a different electoral constituency. Thus, specific social groups that might have differed systematically with respect to their *ex ante* levels of pro-sociality were unlikely to have been targeted by austerity policies when the entire period of adjustment is considered.<sup>v</sup>

Despite these claims in support of the exogeneity assumption, we acknowledge that we cannot exclude the possibility that there exists some covariation of unobserved correlates of individual-level altruism and exposure to austerity policies that resulted in job

loss. We address potential for confounding by controlling for individual-level correlates of social preferences, such as education and pre-crisis economic position, using the rich Life in Transition Survey (LiTS) dataset as our source. In the Online appendix, we show that individual characteristics that are typically associated with higher donations to charity, such as age, gender, education and the amount of savings at each person's disposal do not have a significant association with job loss. We control for sectoral employment in our regression analysis, since public sector employees did enjoy protections from joblessness that were not available to private sector employees. Moreover, we test the sensitivity of our results to the possibility of omitted variable bias using a method developed by Oster (2017).<sup>vi</sup> To further test robustness, we estimate the effect of job loss through matching to adjust for differences between background characteristics in our "treated" and "control" groups and as a way to reduce model dependence.

### **Measuring altruism and in-group bias**

We measure altruism using a modified dictator game. The dictator game has been used extensively in behavioral economics to measure altruism compared to self-interest. In that game, a proposer dictates an allocation of resources (an endowment), which the responder must accept. Charitable giving of a windfall gain is a clear example of such a game, and the outcome is considered a measure of pure altruism (Camerer and Fehr, 2003). In our version of this game, survey respondents are given the opportunity to participate in a lottery that will generate an endowment for them. If they win the lottery, they can keep the money or give all or some of it to charity. They are presented with a choice of charities engaged in similar work: one is a domestic organization, serving primarily Greeks, and the other is an international organization, serving primarily refugees or people in foreign

countries. The difference between the charities is intended to capture in-group/out-group distinctions created by differences in national origin of the recipients of charitable donations. We use this game to test whether exposure to job loss reduces giving overall and, in particular, with respect to out-group charities. We use two different pairs of organizations to address concerns that results might be specific to a single-issue area or a single organization.

## **Data**

To measure the social impact of the Greek economic crisis, we conducted a household survey in collaboration with the EBRD and the World Bank during the 2016 LiTS. The survey was conducted from November 2015 to January 2016. Data were collected in face-to-face interviews in 1500 households in Greece's regions (we use weight-adjusted data, with adjustments made for age, gender, urban/rural status, and region; weights were provided by the polling firm). Sampling for the LiTS was carried out as follows. Respondents (aged 18 and older) were randomly drawn using a two-stage sampling method with primary and secondary sampling units. Households were selected at random from 75 primary sampling units (PSUs) across the country. The head of the household or another knowledgeable household member answered the Household Roster and questions about housing and expenses. All other modules were answered by a randomly selected adult from the household with no substitutions possible, using a minimum of three repeat visits if an interview could not be conducted. We consulted with EBRD economists on the design of the survey and added several questions to the module for Greece.

Few Greeks were shielded from the fallout of the economic crisis. Most households report being affected “a fair amount” (38.5%) or “a lot” (53.4%) by the crisis. However, this concentration of responses at the high end of the scale obscures important differences in exposure. For more nuanced measures of the impact of the crisis, we prefer to use objective changes to personal economic circumstances, specifically job loss. The key explanatory variable used in our analysis is *household job loss*. Wage or pension reductions is another measure one could use, yet, measurement error is greater with this variable compared to job loss, as income is likely under-reported. Other studies of the effects of economic crises have also focused on job loss (e.g. Margalit, 2013).

We collect data on *any* household exposure to job loss rather than just job loss experienced by the head of household because we assume that if there is more than one working person in the household, then the income losses resulting from any job loss would affect the entire household. The psychological stress associated with job loss experienced by any household member would be shared by other family members, thereby influencing their outlook and attitudes. In the Online appendix we show results with head of household job loss for our main specification as a robustness test and the results are consistent with those presented in the article. Subjective assessments of the effect of the crisis suggest that job loss is perceived as a consequence of the crisis which affected the household’s welfare: 74% of households with job loss reported that the crisis affected them “a lot”, compared to 48% of households without job loss.

*Measuring pro-social behavior and the choice of non-profit organizations*

Our quasi-behavioral estimate of altruism consists of measuring giving to charities. Each respondent was given a description of a pair of charities and asked how they would like to allocate their lottery winnings of €40.<sup>vii</sup> They had the option of keeping the money or giving all or part of it to charity (the structure of this exercise is similar to a modified dictator game, with two potential recipients in addition to the respondent). Charities in each recipient set were engaged in similar work and included a domestic organization serving primarily Greeks and an international organization targeting primarily refugees or people in foreign countries.

The non-profit organizations were selected based on their mandate. Charity pair A included two organizations that provide food assistance/poverty alleviation. Several food assistance programs emerged to address household poverty during the crisis. We selected a program called “Social Grocery Store” (*Koinwniko Pantopwleio*) as the in-group charity. This was an organization administered by the municipality of Athens that provided food aid to low-income households. We paired it with the Hellenic Red Cross, an international organization with high name recognition, which respondents were told “works to provide food aid to refugees and immigrants in Greece.” Therefore, while both organizations were described as providing food aid, the out-group charity targeted mostly foreigners, whereas the in-group organization benefited mostly Greeks (without explicitly excluding foreigners as potential recipients of their services).

Charity pair B includes organizations with mandates to improve children’s welfare. Specifically, respondents were told that the organizations provide assistance to abused children or children with disabilities and work to improve health outcomes in children.



Both organizations have high name recognition in Greece. The domestic (in-group) organization was “The Smile of the Child” (*Hamogelo tou Paidiou*) and the international (out-group) organization was the Hellenic Association for UNICEF, which is a subsidiary of UNICEF working in Greece. As with the first pair of charities, the in-group organization targets mainly Greeks by virtue of the scope of its activities and area of operation; UNICEF is a global organization and could be engaged in initiatives within Greece, but also internationally. The mandate of both organizations in charity pair A is closely related to the direct effects of unemployment, so effects should be stronger in charity pair A. However, children’s welfare is also plausibly impacted by the crisis.

Our use of real charitable organizations means that the organizations’ reputations for effectiveness within or across pairs cannot be kept constant and the results might not be generalized to other organizations with similar mandates. Moreover, the non-profit space in Greece is not very dense, so it was not possible to find organizations that are identical in their size and scope. To ensure that respondents were familiar with the selected organizations, we piloted the charity questions in 20 households prior to the actual survey. The out-group organizations in both pairs are larger and have solid international reputations, thus, we see these comparisons as setting a high threshold for registering in-group bias since the in-group organizations are smaller.<sup>viii</sup>

The survey includes several other questions that measure attitudes, including the respondents’ willingness to pay for public education (“would you be willing to give part of your income or pay more taxes, if you were sure that the extra money would be used to improve public education”); trust toward family members, neighbors, other Greeks, or foreigners; trust in institutions; and beliefs about who was responsible for the crisis. These

survey items provide measures of alternative outcomes, which we discuss in the next section and in the Online appendix. Our main analysis is focused on the quasi-behavioral indicators of altruism obtained via the allocation game described above.

## **Analysis**

We first evaluate the effect of job loss on altruism, represented by the total allocations of the respondent to charity. Second, we examine how crisis-induced job loss affected preferences for in-group relative to out-group charities. Our hypothesis is that crisis-induced job loss will have a negative effect on donations.

### *Overall altruism*

We model donations to charity as a linear function of job loss, a vector of personal and household characteristics, and region fixed effects. We control for the respondents' age and gender, their level of education and that of their father, and their availability of pre-crisis savings, which speaks to the individuals' social class before the crisis, as well as their ability to compensate for some of the hardship due to income losses. We also include several household characteristics as controls: home ownership, public sector employment (an indicator variable denoting whether the head of household was employed in the public sector, which we control given the differential risk of job loss for public sector vs. private sector employees), and number of adults in the household (with more people in the job market, the risk of exposure to job loss is higher, and other economic effects of the crisis will be felt more strongly).

Table 1 shows the estimates from linear regressions on individuals' decisions to donate to charity. Column 1 estimates the effect of household job loss on donations in the full sample. Columns 2 and 3 report results separately for charity pair A (column 2) and

charity pair B (column 3). We find evidence for *H1*: individuals whose households experienced job loss during the crisis gave significantly less to charity. We find a reduction in donations of approximately €8.13 in charity pair A and €4.66 in charity pair B, out of a maximum possible donation of €40.

Despite including individual-level and household-level controls and region fixed effects, there may still be concerns that the unobserved characteristics of the respondents could have influenced both job loss and altruism. To address this issue, we measure the sensitivity of our results using Oster's (2017) coefficient stability approach. This test is similar to the approach of Altonji et al. (2005) in that it assesses changes in the estimated effect of job loss as we include controls. However, as Oster (2017) clarifies, we must consider how much of the outcome is explained by the control variables in tandem with the changes they induce in the coefficient of job loss. The upper bounds for the effect of job loss (estimated using the standard assumption that the influence of unobserved variables is equal to that of observed variables and that the maximum R-squared is 1.3 times the observed R-squared) are shown in the bottom row of Table 1. These coefficients are very close to those estimated using the controlled regression. For the complete sample, we estimate that selection on un-observables would have to be 10 times stronger than selection on observables for the true effect of job loss to be zero. Therefore, this test increases our confidence that job loss has a negative and statistically significant effect on pro-sociality.

**Table 1.** Effect of job loss on donations to charity.

	<i>Dependent variable: Total amount donated</i>		
	(1) Complete sample	(2) Charity pair A	(3) Charity pair B
Household job loss	-6.07*** (1.59)	-8.13*** (2.24)	-4.66** (2.10)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	1341	687	654
Upper bound on effect of household job loss <sup>a</sup>	-5.90	-8.09	-4.46

Note: Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01  
Individual and household controls described in the text.

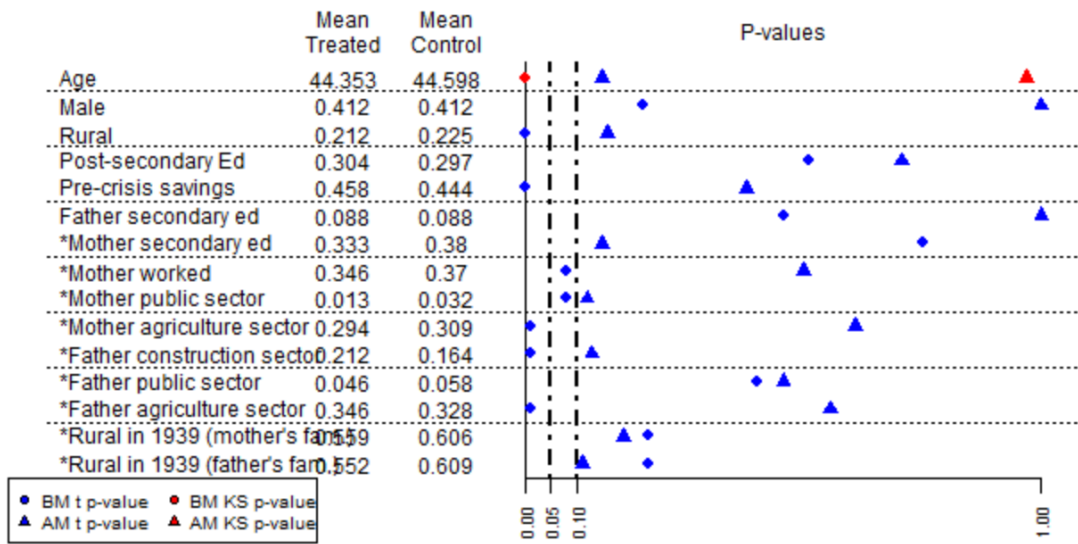
<sup>a</sup> The upper bound on the effect of job loss is calculated using Oster's (2017) method for quantifying the effects of potential omitted variable bias.

### *Matching estimates*

Perhaps selection on observables is a bigger threat to causal inference than unobserved heterogeneity. We address this concern via robustness tests included in the Online appendix as well as by estimating average treatment effects of joblessness via matching. We generate a matched sample to compare individuals with job loss to a set of control individuals (without job loss) using genetic matching because it directly maximizes covariate balance (Diamond and Sekhon, 2013; Sekhon, 2011). We match one-to-one within region on a set of pre-treatment covariates: age, gender, urban/rural status, post-secondary education, and father's education, and check for balance on these variables and other potential predictors of job loss. The resulting matched dataset is balanced on both sets of variables, increasing our confidence that the treatment and control groups are comparable.

Figure 1 shows the post-matching means for each covariate and p-values for the t-tests that compare treatment and control values (we also show that the balance is improved for covariates not included in the matching). For each covariate, the matching improves balance and leaves no significant difference between groups. Assuming that we have adequately accounted for the treatment assignment mechanism, there should be no significant differences in pre-treatment covariates across treatment and control groups. We check the balance for a wide variety of characteristics of parents that may have influenced their offspring's risk for job loss during a crisis (these variables are preceded by an asterisk in Figure 1). After matching we find no significant difference between treatment and control groups, which increases our confidence that we satisfy the selection on observables assumption.

In addition to presenting the difference in means between treatment and control in the matched sample (*ATT*), we employ regression adjustment to account for any bias that may remain after matching. Thus, we estimate the regression-adjusted *ATT* by including the variables used for matching as covariates in a regression using the matched sample.



**Figure 1.** P-values for difference between treatment and control observations before and after matching.

Using the matched sample, we estimate the average treatment effect on the treated (*ATT*), which is the expected difference between treatment and control conditions for the treated individuals. Identifying this effect requires that our treatment and control groups have common support across covariates and that the treatment assignment is explained by observable covariates. Table 2 also reports the *regression-adjusted ATT* (using the matching variables as covariates) to account for any remaining influence of covariates (Abadie and Imbens, 2006, 2011). The results show a consistently negative effect of job loss on altruism (see Table 2). These findings strongly support *H1*, i.e. that the crisis lowered pro-sociality among those most affected by it (see the Online appendix for further discussion of the matching procedure).

**Table 2.** Effect of job loss on donations to charity: matching estimates.

	Matched sample				Complete sample
	no job loss	job loss	<i>ATT</i>	<i>ATT<sub>RA</sub></i>	<i>linear model coeff.</i>
Amount Donated	28.21	22.36	-5.86*** (1.48)	-5.92*** (1.28)	-6.07*** (1.59)

*Note:* Matched sample created using genetic matching on age, gender, education, father’s education, and matched exactly within region. Abadie-Imbens standard errors in parentheses (column 3). Regression-adjusted ATT shown in column 4. For comparison, we present the coefficient from the baseline model, presented in Column 1, Table 1, in the far-right column.

#### *Other robustness tests*

In the Online appendix, we return to the main regressions from Table 1 and show that results are unlikely to be driven by household wealth. We also control for differences in interview conditions across observations (e.g. did respondents enter the information themselves, or did they require assistance?); we add a control for party vote in 2009; we check if dropping our control for pre-crisis savings affects the outcome; and report results (marginal effects) using Tobit regression. Overall, our analysis in the Online appendix shows that reduced altruism cannot be explained by a diminished capacity to give due to income loss and that results are robust to these other controls and estimation approaches.

#### *Attitudes toward social spending*

Closely related to our measure of altruism are attitudes expressed about social spending in different policy areas. If job loss reduces altruism by inducing welfare chauvinism, we would expect to see lower support for social programs that are likely to

benefit others. The survey instrument asks: “Would you be willing to give part of your income or pay more taxes, if you were sure that the extra money was used to...help the needy? / improve public education? / combat climate change?” (1=yes, 0=no). The results of logistic regressions of the response are presented in Table 3.

**Table 3.** Effect of job loss on willingness to pay for social spending.

	(1) Tax for needy	(2) Tax for schools	(3) Tax for climate
Household job loss	-0.80*** (0.20)	-0.94*** (0.21)	-0.72*** (0.25)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	1263	1309	1245

Note: \* p<.10, \*\* p<.05, \*\*\* p<.01

Standard errors clustered by PSU are in parentheses. Individual/household controls: respondents’ age, gender, highest level of education, father’s highest level of education, pre-crisis savings, home ownership, public sector employment (household head), number of adults in the household.

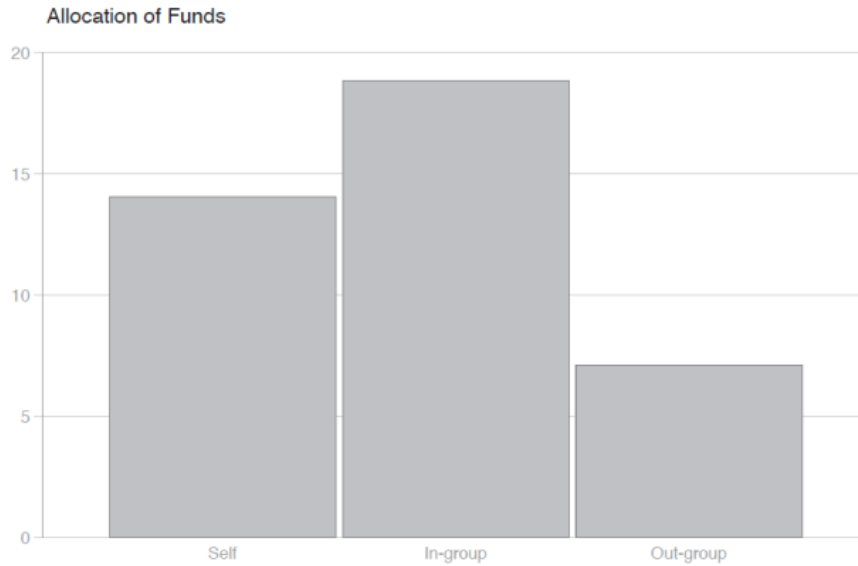
As with the behavioral measure of altruism, household job loss is associated with strong reductions in the expressed willingness to pay higher taxes for each issue area. Our results echo public opposition to those tax hikes, which were implemented as a condition for the bailouts. Joblessness clearly reduces support for social programs intended to fund broader public goods. These negative attitudes toward social spending are registered in the context of an increasingly alienated electorate which distrusts state institutions and the national government (see the Online appendix for results on trust in institutions using matched data). This is consistent with the idea that the austerity crisis generated social



isolation. The overall decline in levels of trust in institutions as a result of job loss while controlling for other covariates is consistent with explanations found in prior literature regarding the turn toward political extremism during deep recessions in other countries (e.g. Dal Bo et al., 2018; Dahdari, 2021). We also show that the decline in trust was much more severe in Greece than in other European countries during the period of the crisis (the Online appendix). The correlations shown in Table 3, seen together with these results on declining trust, provide further suggestive evidence that the negative effects of joblessness on altruism operate through psychological mechanisms and are not simply due to a reduction in disposable income.

#### *Preference for in-group charities*

We hypothesized that altruistic behavior would be directed primarily toward charities targeting Greeks and that the negative effects of joblessness on altruism would be more pronounced with respect to altruism toward out-groups. A glance at the overall donation levels in Figure 2 supports our expectation. Donations to in-group charities outpace those to out-group charities at a ratio of more than 2:1 (in the Online appendix, we show the same figure disaggregated by job loss status): Respondents allocated, on average, €19 to the in-group charity and €7 to the out-group charity while keeping the rest for themselves. Our results sorted by charity type suggest that this imbalance with respect to in-group vs. out-group giving is even larger for charity pair B (children's welfare), where respondents gave, on average, €22 to the in-group charity compared to €5 for the out-group charity (see the Online appendix).



**Figure 2.** Average donations to in-group and out-group charities and to self.

To what extent are these preferences a result of more severe exposure to the economic crisis? We look at this question by modeling donations to the out-group and in-group charities as separate outcome variables. As in previous models, we use *household job loss* as the indicator of crisis exposure and include individual- and household-level controls as well as region fixed effects. We do not control for household wealth in these regressions as wealth levels in 2015 are post-treatment with respect to the timing of job loss. The results, presented in Table 4, show that out-group altruism is slightly more sensitive to job loss than is in-group altruism. Overall, we find that job loss reduces out-group giving by approximately three euro.

**Table 4.** Effect of job loss on donation amount to in-group and out-group charity.

	(1) In-group Amount	(2) Out-group Amount
Household job loss	-2.84* (1.43)	-3.24*** (0.90)
Individual controls	Yes	Yes
Household controls	Yes	Yes
Region FE	Yes	Yes
Observations	1341	1341

Note: Standard errors clustered by PSU are in parentheses. \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Individual/household controls: respondents' age, gender, highest level of education, father's highest level of education, pre-crisis savings, home ownership, public sector employment (household head), number of adults in the household.

In the Online appendix, we disaggregate data from the two charities and find that most of this effect comes from charity pair A (charities that focus on food assistance to poor households). As one would expect, including wealth as a control in the disaggregated analysis has a large impact on the difference between in-group and out-group giving for charity pair A (the coefficient for job loss drops significantly for in-group charity donations, however, there is no effect on the reduction in giving to the out-group charity); Yet, we still see a significant negative effect of job loss with respect to in-group giving for charity pair B (in fact, the result becomes more statistically significant). If household wealth was the main driver of the reduction in giving to charities, then we should have expected consistent effects of household wealth on giving to in-group vs. out-group charities sorted by charity type.

The results in Table 4 (Column 2) show a decrease in the *level* of altruism toward the out-group. While the absolute amount of the decline is only slightly larger for out-

group giving than for in-group giving and the difference is not statistically significant, if job loss intensifies in-group *favoritism*, the decline in support for the out-group should be disproportionate to the decline in overall altruism due to the crisis. If, in contrast, exposure to the crisis reduces altruism in general but does not increase in-group bias, then we should see a proportionate reduction in predicted donations to both in-group and out-group charities.

We look at this question in Table 5, which summarizes predictions generated by the models presented in Table 4, with continuous covariates held at their means and categorical covariates held at their modes. Job loss reduces predicted out-group altruism by €3.24, which is a 42% drop relative to the amount of giving to the out-group charity without job loss; and it reduces in-group altruism by €2.84, which is a much smaller (15%) decline in giving. These approximations are in line with *H2*, i.e. that austerity exposure would increase in-group preference. In Table 6, we report the effects sorted by charity type using the matched data. Estimates of the decline in giving to both in-group and out-group charities are statistically significant, though as we explain in the Online appendix, estimates for the in-group charity are less precisely estimated in some specifications. Using the matched data as a robustness check, we find that the decline in giving due to joblessness is robustly significant with respect to the out-group charities (the Online Appendix).

**Table 5.** Predicted donations to in-group and out-group charities.

	No job loss	Job loss	Drop
In-group	€ 19.30	€ 16.46	€ 2.84 (14.7%)
Out-group	€ 7.64	€ 4.40	€ 3.24 (42.4%)

**Table 6.** Effect of job loss on donations to in-group and out-group charities.

Outcome:	Matched sample				Complete sample
	no job loss	job loss	<i>ATT</i>	<i>ATT(ra)</i>	<i>linear model coeff.</i>
In-group Amount	20.06	17.39	-2.67+ (1.46)	-2.71* (1.22)	-2.84* (1.43)
Out-group Amount	8.27	5.08	-3.19** (1.05)	-3.20** (0.85)	-3.24*** (0.90)

*Note:* For matched sample, column 3 gives the Abadie-Imbens standard error (p-value for in-group amount estimate is 0.067 (p-value without the AI adjustment is 0.04).

+p<0.10, \*p<.05, \*\* p<.01, \*\*\* p<.001.

In the Online appendix, we disaggregate the analysis by charity pair and control for overall selfishness – i.e. how much of the lottery winnings respondents keep for themselves. The analysis reveals that exposure to the economic crisis lowers altruism toward the out-group more than it does toward the in-group, both in absolute and relative terms. We find that increased in-group bias is seen primarily with reference to charity pair A (organizations focused on poverty alleviation). The Online appendix provides additional discussion and results on patterns of giving in the two different charity pairs. We view the weaker results in charity group B as suggestive of floor effects (due to an already strong in-group bias with respect to organizations helping children); it is also likely that attitudes toward children’s rights organizations were not affected as much by the economic crisis.

In charity group A, we compare responses to a domestic organization providing food assistance to poor Greek families and an international organization working in Greece

to provide similar types of assistance to refugee families. It is possible that the effects we identify are shaped by the coincidence of the austerity crisis and the unprecedented refugee crisis that started in Greece in 2015. During that crisis, the Aegean islands (Greece) were faced with overwhelming burdens in accommodating extraordinarily large waves of refugees, so it is possible that worsening anti-immigrant attitudes could drive the decline in giving to the out-group charity.

Although we do not have enough data to explore the connection between the refugee and economic crisis, such a reaction would be consistent with prior literature, which shows an association between economic hardship and anti-immigrant sentiment (e.g. Heizmann and Huth, 2021). Nonetheless, exposure to joblessness should be orthogonal to exposure to the so-called refugee crisis; and our data suggest that anti-immigrant attitudes are not what explains our results. Specifically, a survey item measuring attitudes toward immigrants that was placed prior to the survey experiments does not show a statistically significant correlation between hostile attitudes (“immigrants are a burden”) and reduction in out-group giving (see the Online appendix). Moreover, while several years after the Greek so-called refugee crisis of 2015 the world might have formed negative views of natives’ reactions to the refugees in the Aegean islands, in the early phases of the crisis (coinciding with the timing of our survey), the inhabitants of the Aegean islands were overwhelmingly positive toward refugees, and there was an unprecedented mobilization to assist them. Thus, we cannot simply assume that the reduction in out-group giving due to joblessness in poverty alleviation organizations is driven by an overall worsening of attitudes toward immigrants due to economic hardship and we view our results as

consistent with evidence from other countries that austerity policies reduce community cohesion (Bray et al., 2022).

## **Conclusion**

Austerity policies were blamed for Greece's prolonged recession after the economic crisis of 2009. The recession resulted in extraordinarily high levels of unemployment, which compounded other financial consequences of the crisis. Using new data from a nationally representative household survey, we provide the first systematic analysis of the social consequences of the Greek crisis, focusing on the negative effects of joblessness on altruism. Our analyses show that affected individuals across all levels of income exhibit lower altruism as a result of job loss during the crisis and that this decline in altruism is more pronounced with reference to national out-groups.

Our results speak to the broader literature on the economic determinants of social preferences by showing that negative economic shocks with uneven distributive consequences are likely to weaken levels of social trust, reducing pro-social behavior. While it is expected that reductions in income and household wealth will have similar effects, the income channel is not the only path to reduced social cohesion. Experiencing job loss and other negative consequences of an economic downturn affects individuals' attitudes toward others, and it can affect their mental health and shape their outlook on life in ways that go beyond the material consequences of reduced disposable income. Across income levels, exposure to economic hardship reduces donations to charities. We find that joblessness induces in-group bias when individuals are forced to make a choice between a charity that caters to the national in-group vs. a charity that helps foreigners. The fact that

support for national out-groups declines by more than support for national in-groups is consistent with connections made in the extant literature between deep recessions and increased support for nationalist parties. In our data, perceptions that foreigners are to blame for the crisis cannot fully explain the in-group bias in charitable giving. Furthermore, this decline in altruism occurs within a broader decline in solidarity as measured by levels of trust toward others and toward state institutions, and by preferences for less tax spending on the low-income households and on public goods (schooling or the environment).

Our results are broadly consistent with intertwined psychological mechanisms: on the one hand, joblessness increases social isolation and resentment, decreasing general altruism; on the other hand, perceptions that foreigners were partly to blame for the crisis make national identity more salient, thereby increasing in-group bias by deepening perceived social distance between Greek nationals and the targets of international charities (foreigners). Experiencing joblessness amidst harsh economic conditions has an overall negative effect on altruism. This is consistent with psychological theories according to which unequal exposure to threats induces polarization. The fact that joblessness was not experienced equally by all households implies that class and sectoral divisions were made more salient for the affected households, and the unequal exposure generated resentment in households that suffered disproportionately more than others.

As with every single-country study, context-specific factors could shape the results in ways that make them less applicable to other countries. The unprecedented depth of the austerity crisis in Greece, coupled with the so-called refugee crisis of 2015 may have set the stage for outsize effects of joblessness on different types of pro-social behavior. In this context, our analysis suggests a possible feedback loop that could shed some light on the



depth of economic recessions. To the extent that trust in institutions, willingness to pay taxes and contribute to public goods, and altruism are ingredients for a well-functioning economy, our findings suggest that austerity policies that result in joblessness can weaken the social underpinnings of pro-growth policies by increasing citizens' social isolation and diminishing their incentives to contribute to public goods. Lower levels of altruism will contribute to further economic decline through the socio-psychological pathway as we have discussed. Similarly, our article suggests that if the management of the economic crisis by the government or the media heightens the awareness of *us-versus-them* distinctions that fall along national lines, this can reduce international cooperation by increasing in-group bias and parochialism.

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<sup>i</sup> As is common in the psychology literature, we distinguish between in-group membership (*categorization*) and in-group *identification* (Bourhis and Gagnon, 2001). Identification implies caring for the group and promotes actions that enhance the group's welfare (Brewer, 1999). In-group membership is defined on the basis of shared attributes among members of the group. Mere categorization as a member of a group can increase identification even with arbitrary group identities (Tajfel et al., 1971) and group identification can increase or decrease depending on the context. For a review of empirical studies of in-group bias, see Heinrich et al (2010). Mullen et al. (1992) show that people feel more empathy for in-group rather than out-group members. For a similar argument in a post-conflict setting, see Whitt and Wilson (2007).

<sup>ii</sup> See Benjamin et al. (2010). For evidence consistent with this claim, see Mummendley and Wentzel (1999); Staerkle et al. (2010); Manning and Roy (2010).

<sup>iii</sup> See also “*Chapter 4. Views of EU Countries and Leaders* | *Pew Research Center.*” Pew Research Center’s Global Attitudes Project. June 01, 2015. Accessed October 17, 2018. [http://www.pewglobal.org/2012/05/29/chapter-4-views-of-eu-countries-and-leaders/.](http://www.pewglobal.org/2012/05/29/chapter-4-views-of-eu-countries-and-leaders/))

<sup>iv</sup> In the Online appendix, we show results for other measures of exposure to the crisis, such as the depth of wage cuts.

<sup>v</sup> This assumption is supported by evidence from studies in other countries/contexts. Brand (2015) notes that most studies of job loss face the problem that employees who lose their jobs may be targeted because of characteristics that make them systematically different from others who do not lose their jobs. The author (Brand, 2015: 5) also cites results from several studies showing that scholars “have found few differences across several leading estimators of causal effects (including regression, matching, difference-in-difference and fixed effects models), suggesting a degree of robustness regarding the nature of the observed associations between displacement and life outcomes in the face of various technical assumptions and model specifications.”

<sup>vi</sup> Spillovers of the effects of austerity policies between households may still attenuate our estimates of the effect of job loss. If someone in household A loses their job and relates their experience to friends or relatives in household B, then outcomes in the two households might be correlated even though individuals in household B have not experienced job loss. In an experimental setting, this problem would amount to a SUTVA violation and would attenuate the treatment effect – that is, it would make it harder for us to identify an effect for our main explanatory variable. In light of this, we view our estimates as conservative assessments of the effect of exposure to the crisis.

<sup>vii</sup> This allocation game was incentivized: after completion of the survey, 100 respondents were randomly selected to receive €40, which were distributed to the charities and the respondents according to the winning respondents’ allocation decisions. The full text of the charity questions and enumerator instructions are included in the Online appendix.

<sup>viii</sup> The in-group organization (“Social Grocery Store”) in charity pair A distributed humanitarian assistance to poor households via the municipality, though funds were from non-state sources, whereas the Hellenic Red Cross is part of the International Committee

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of the Red Cross and the Red Crescent, an independent non-governmental organization which acts in coordination with governmental authorities in the discharge of their mandate. Both are non-governmental organizations, though municipal authorities were more directly involved with the distribution of aid in the in-group organization.

## Online Appendix

# The effects of economic austerity on pro-sociality: evidence from Greece

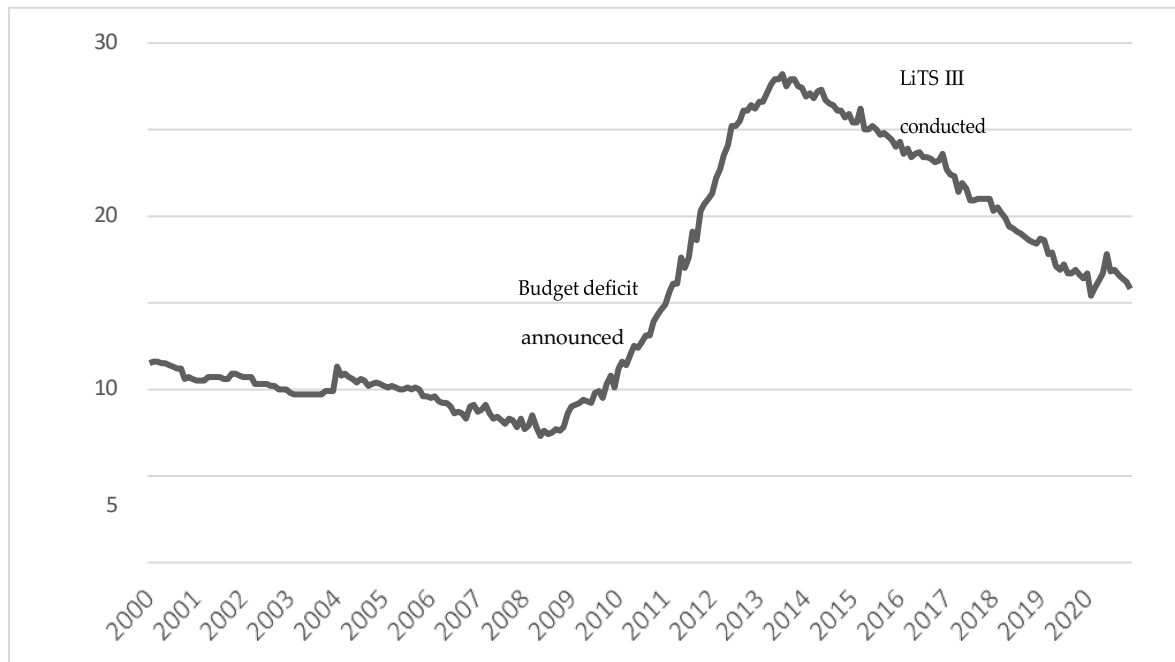
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## 1. Unemployment in Greece



**Figure A1.** Unemployment Rate in Greece since 2001.

*Note:* Total unemployment as % of the labor force; Source: OECD labor market statistics.

## 2. Correlates for Household Job Loss and Donations

Here we examine possible correlates of job loss at the town, household, and individual levels. Table A1, column 1 reports the results from bivariate regressions of job loss on each variable one by one, and column 3 presents the same for regressions using the amount individuals gave to charity as the dependent variable. We begin with geographic controls. People in rural areas were less likely to experience job loss, because the agricultural sector was less affected by the economic crisis, but this variable is also negatively (and not significantly) correlated with donations to charity. People in two regions, Thessaly and West Macedonia, were significantly less likely to have household job loss than those in Attica; of these only people in West Macedonia gave significantly more to charity.

At the household level, as expected, the number of working-age adults is associated with higher rates of household job loss. It is also associated with lower rates of giving, although this is not significant at conventional levels. Home ownership is negatively associated with job loss and positively associated with giving, although again the latter is not significant.

For regressions using individual-level variables, we include the geographic and household controls, and present the partial correlation of individual attributes conditional on geographic and household characteristics. While socioeconomic characteristics predict donations, they do not predict job loss. This reduces concerns regarding the possible endogeneity of job loss to individual-level attributes that might also explain giving to charity.

**Table A1.** Correlates of Household Job Loss and Donations.

	<i>Dependent variable:</i>			
	Job loss		Donations	
	(1)	(2)	(3)	(4)
Controls	Coeff.	S.E.	Coeff.	S.E.
<b>Geographic controls</b>				
Rural	-0.12***	(0.031)	-3.27	(2.22)
Region (base level=Attica)				
Central Greece	-0.081	(0.082)	7.50***	(1.97)
Central Macedonia	-0.022	(0.051)	-1.34	(2.41)
Crete	-0.090	(0.072)	-6.02	(4.59)
East Macedonia and Thrace	-0.066	(0.063)	-8.70**	(3.15)
Epirus	-0.041	(0.042)	-4.55	(7.88)
Peloponnisos	-0.0086	(0.076)	-9.69**	(3.04)
Thessaly	-0.16**	(0.048)	-11.8***	(3.18)
West Greece	-0.0052	(0.076)	-4.59	(3.94)
West Macedonia	-0.15**	(0.053)	8.15**	(2.83)
<b>Household controls</b>				
Working age adults (number)	0.096***	(0.013)	-1.16	(0.75)
Homeowner occupied	-0.15***	(0.025)	1.98	(1.32)
Public sector (primary respondent)	-0.10*	(0.049)	-2.63	(2.96)
<b>Individual controls<sup>a</sup></b>				
Age	0.00011	(0.00092)	0.020	(0.044)
Male	-0.022	(0.025)	1.63	(1.26)
Post-secondary education	-0.020	(0.027)	3.93**	(1.23)
Father's post-secondary education	-0.093	(0.049)	5.18*	(1.97)
Had savings pre-crisis	-0.015	(0.027)	6.98***	(1.21)
Observations	1503			

*Note:* The table reports the results of regressing household job loss on control variables, one by one. Region indicators were all included in the same regression. Standard errors clustered by PSU are in parentheses.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

<sup>a</sup> Regressions for individual variables include geographic and household controls.

### **3. Donation to charity experiment**

In this section, we provide details regarding the way the charity experiment was introduced to respondents, and we then provide additional discussion regarding our choice of charities.

#### ***Charity pair A***

The text used to introduce the experiment to respondents who were assigned randomly to “charity pair A” was the following:

We now invite you to participate in a lottery that will award 100 of the participants in our study some money. 100 people will be chosen at random to receive a prize of 40 euro. If you are chosen to receive the 40 euro prize, you can keep the entire amount for yourself or you can donate all or part of it to a non-profit organization providing services to vulnerable people. You can make a donation to *Koinwniko Pantopoleio*, an initiative that helps municipalities across Greece provide food, clothes, and basic necessities to poor residents of the municipality; or the Hellenic Red Cross, an international organization that helps feed and provide medical assistance to hundreds of refugees across Greece; or you can contribute to both. If you are selected to receive the prize, how much would you like to keep and how much would you like to donate? Keep in mind that the total must add up to 40 euro. Your chances of receiving the prize do not depend in any way on your answers. The money that you have decided to keep for yourself will be sent to you. The money you have decided to donate will be transferred to the respective organizations.

#### ***Charity pair B***

The text used to introduce the experiment to respondents who were assigned randomly to “charity pair B” was the following:



We now invite you to participate in a lottery that will award 100 of the participants in our study some money. 100 people will be chosen at random to receive a prize of 40 euro. If you are chosen to receive the 40 euro prize, you can keep the entire amount for yourself or you can donate all or part of it to a non-profit organization providing services to vulnerable people. You can make a donation to Smile of the Child (Χαμόγελο του Παιδιού), a Greek organization which provides food, medical aid and psychological support to children in need in our country, or the Greek National Commission for UNICEF (Ελληνική Εθνική Επιτροπή της UNICEF), an international organization which helps provide food, medical aid and psychological support to refugee children around the world, including in our country, or you can contribute to both. If you are selected to receive the prize, how much would you like to keep and how much would you like to donate? Keep in mind that the total must add up to 40 euro. Your chances of receiving the prize do not depend in any way on your answers. The money that you have decided to keep for yourself will be sent to you. The money you have decided to donate will be transferred to the respective organizations.

### ***Justification for the use of actual vs hypothetical charities***

We use a realistic setting to measure altruism, which involves using real non-profit organizations as targets of charitable giving. Many survey experiments using vignettes are devoid of realistic context and this can cause problems with interpreting the results as respondents are often put in the position of having to make assumptions regarding key features of the experiment. There are pros and cons to our decision to use actual organizations in our experiment. If we had used fictional organizations, we might have been able to achieve a cleaner in-group/out-group distinction by telling respondents that the charities were identical in every way except with regard

to the national origin of the population they served. However, that approach has significant disadvantages.<sup>1</sup>

First, the artificiality of the setup would have made it obvious to respondents that we were interested in measuring in-group bias, risking demand effects. Second, asking respondents to donate real money to fictional organizations would have raised suspicions about the process – how could money be disbursed to organizations that are not named? How reputable are these organizations and why are their names withheld? Why should the researchers decide which organizations should receive the respondents' allocations? These types of questions would complicate the decision-making process and likely reduce overall participation. In light of these considerations, we decided to use two pairs of actual organizations with established reputations, assigned to the respondent at random, and to pool results from the two charities in the main analysis so as to reduce the risk that our conclusions apply only to a single issue area/pair of charities.

### ***Instructions given to enumerators regarding the donation questions***

Interviewers were told that respondents should be allowed to make allocations to the two charities without interference or monitoring by the interviewer. This is the set of instructions we shared with the polling firm/interviewers during training:

The interviewer should ask the respondent if they feel comfortable using a tablet so that they can enter the data themselves. The interviewer should turn the tablet toward the interviewer and instruct them on how to enter the data while averting her/his eyes so that s/he does not observe

---

<sup>1</sup> There are few, if any, NGOs or public charities operating in Greece that explicitly exclude foreigners as recipients of their assistance. Choosing a fictitious NGO that explicitly excluded non-Greeks would likely have identified it as affiliated with right-wing extremist parties, which would have added an extraneous dimension to the analysis.

the allocations. The interviewer should explicitly say to the respondent: “now please enter the information in the tablet. I will look away so that no one will know how you allocate your money.” If the respondent does not feel comfortable entering the information directly, the interviewer can ask if there is another family member who can assist and hand the tablet over to that person while stepping back so as not to hear any communication between the respondent and the family member regarding the allocations. Finally, in the event that the respondent is unable to enter the information directly and there is no family member who can assist, the interviewer can enter the information while assuring the respondent that their answers will remain private.

Interviewers were asked to record in a separate variable if the respondent entered allocation by themselves or was assisted by an interviewer or family member (record interviewer/family member). We use that data in robustness tests later in this appendix.

Respondents were asked to sign a consent form to participate in the lottery. Details of the lottery were provided verbally after the respondent has read the consent form. Respondents were told that the lottery would be held in January 2016 abroad, by one of the researchers, in the presence of a notary public. A set of random identifiers would be selected and passed on to the polling firm, which could match the identifier with respondent’s contact information. Winners would be contacted by staff to arrange for the payments. The researchers contracted with local staff in Greece to make all payments to respondents as well as to transfer funds donated to the charities.

#### **4. Robustness checks for Table 1**

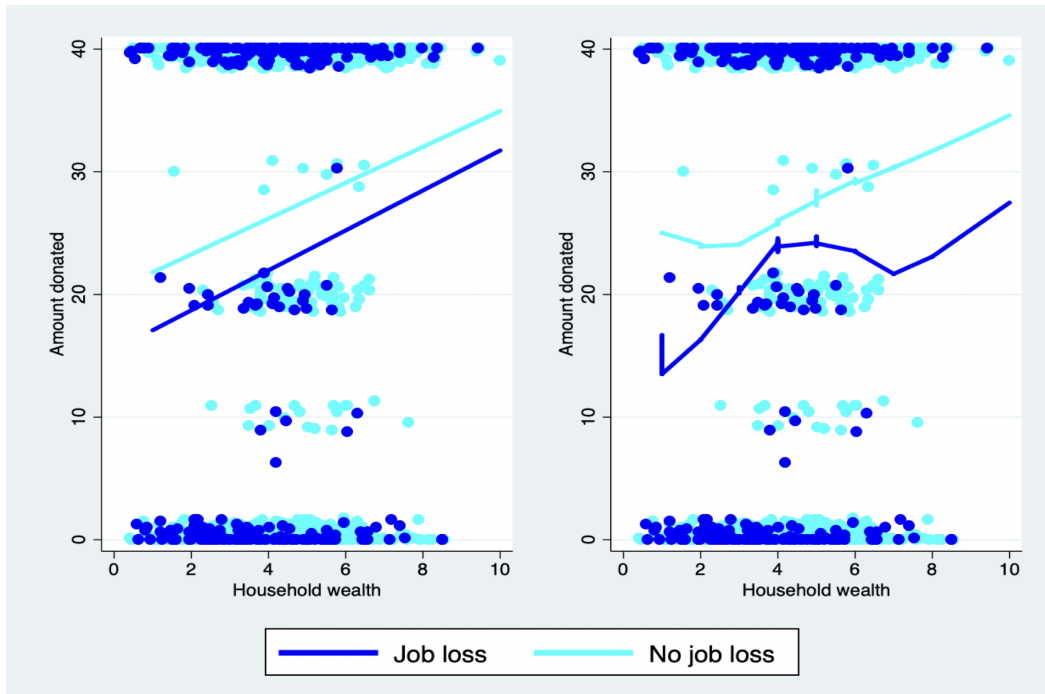
This section includes additional information in response to comments that came up during the review process, and presents a number of robustness checks that are mentioned briefly in the

text. In the next sub-section, we show results from models that control for household wealth and explain why this is not our preferred specification.

### ***Household Wealth and Overall Solidarity***

An alternative hypothesis consistent with the results we show in Table 1 is that households that have suffered unemployment have a diminished capacity to give due to income loss. If the diminishing marginal utility of wealth drives our results, we would expect a smaller effect of job loss on charitable giving for those whose household wealth remains high. Figure A2 plots charitable giving against household wealth using the wealth/income ladder variable from our survey for households with and without job loss. The question wording is as follows: “Please imagine a ten-step ladder where on the bottom, the first step, stand the poorest 10% of the people in our country, and on the highest step, the tenth, stand the richest 10% of the people in our country. On which step of the ten is your household today?”

We see a fairly consistent difference in giving, between those who experienced job loss and those who did not, at all levels of wealth (Figure A2(a) shows a linear fit; Figure A2(b) shows a loess fit). Regression analysis (see Table A2) confirms that the effect of job loss does not vary significantly across levels of wealth, so we are not simply picking up the diminished capacity to give by households that have suffered wealth losses due to unemployment.



**Figure A2.** Level of giving against wealth, by job loss.

*Note:* Amount donated is on the Y-axis. Dark blue lines indicate linear fit (left) or loess (right) of giving against wealth for households with job loss during the crisis. Light blue lines indicate the same for those households that did not experience job loss.

Next, we re-estimate the effect of job loss on overall donations to charity (Table 1 in the main text) while adding an interaction between job loss and household wealth. The effects are shown in Table A2. We find no evidence that the effect of job loss varies significantly depending on the level of household wealth (i.e. there are no heterogeneous treatment effects when interacting job loss with wealth). Caution is necessary in interpreting the results for models controlling for respondents' household wealth. Respondents' current household wealth at the time of the survey is directly influenced by a household job loss during the economic crisis. Thus, conditioning on wealth amounts to controlling for a variable affected by the "treatment" (job loss), which can introduce post-treatment bias in estimates of the effect of job loss. The results from this model are

thus descriptive, included here to show how giving to charity correlates with wealth and job loss when both factors are considered. Our focus here is on the interaction term between these two variables, which does not show heterogeneous effects of the treatment by level of wealth.

**Table A2.** Job loss and donations, conditional on current wealth.

	(1)	(2)	(3)
	Complete sample	Charity pair A	Charity pair B
Household job loss	-2.40 (3.87)	-3.34 (5.64)	-1.04 (5.52)
Wealth	1.64*** (0.60)	2.27*** (0.73)	1.15 (0.69)
Household job loss x Wealth	-0.77 (0.83)	-0.82 (1.38)	-0.88 (1.02)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	1302	671	631

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Individual controls: age, gender, post-secondary education, father's education, pre-crisis savings.

Household controls: urban/rural status, household home ownership, number of adults, public sector employment.

### ***Additional Robustness Checks***

To ensure that there were no demand effects introduced by interviewers, we re-estimate our models from Table 1 in the article while adding controls for possible complications introduced by the presence of interviewers during the survey. Column 1 of Table A3 below shows that the effect of job loss on overall donations to charity is robust to the presence of others while respondents entered their allocations to charity; whether respondents entered allocation by

themselves or if they needed assistance; and whether the respondent signed the consent form to participate in the lottery.

Next, in column 2 we control for whether any children live in the household. At the end of this appendix, we show results from models subset to the charity pair controlling for the number of children in the household. See Table A16.

In column 3, we estimate the effect of job loss when the model does not include *savings* as a covariate. Savings can offset some of the financial impact of job loss; however, if respondents from households with job loss underreported their savings, then including savings could artificially inflate our estimate of the marginal effect of job loss on overall giving. The estimated effect of job loss presented in column 3 alleviates this concern.

Column 4 reports results from our model when we add a control for how the respondent voted in 2009, before the debt was announced and austerity policies were implemented. The estimated effect of job loss remains strong. Respondents were asked to name the party they voted for and we also recorded whether they refused to answer, cast a blank vote, abstained from voting deliberately or due to circumstances beyond their control. These additional options are retained in the analysis so as to avoid losing data due to missingness in this control.

**Table A3.** Job loss and donations to charity.

	<i>Dependent Variable: Amount Donated</i>			
	(1)	(2)	(3)	(4)
Household job loss	-6.01*** (1.58)	-6.07*** (1.59)	-5.46*** (1.66)	-6.09*** (1.57)
Donation privacy variables included	Yes			
Children in household included		Yes		
Pre-crisis savings included	Yes	Yes		Yes
Party choice in 2009				Yes
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Observations	1341	1341	1466	1341

*Note:* Standard errors clustered by PSU are in parentheses. \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Donation privacy variables: respondent entered donation amounts w/o bystanders, respondent entered donation amounts w/o help, respondent consented for lottery.

Individual controls: age, gender, post-secondary education, father's education, pre-crisis savings.

Household controls: urban/rural status, household home ownership, number of adults, public sector employment.



Next, we show results from Tobit models. Because donations cannot exceed 40 euros or be below 0, our dependent variable is in effect censored. Table A4 shows the effect of job loss when accounting for upper and lower limits in the dependent variable, as estimated using a Tobit model. The effect of job loss remains large and precisely estimated.

**Table A4.** Job loss and donations to charity (Tobit regression).

	(1)	(2)	(3)
	Complete Sample	Charity pair A	Charity pair B
Household job loss	-74.5*** (19.5)	-107.3*** (31.7)	-53.4** (23.7)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	1341	687	654

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Individual controls: age, gender, post-secondary education, father's education, pre-crisis savings.

Household controls: urban/rural status, household home ownership, number of adults, public sector employment.

Next, we show results from our main model while replacing our dependent variable with a version that only codes household head job loss (Table A5). The results are consistent with those presented in the text for *any household job loss*.

**Table A5.** Household head job loss and donations to charity.

	(1) Complete Sample	(2) Charity pair A	(3) Charity pair B
Hh head jobloss	-7.08*** (1.66)	-7.94*** (2.16)	-6.19*** (2.29)
age	-0.026 (0.057)	-0.024 (0.077)	-0.034 (0.073)
post-secondary	4.20*** (1.34)	6.33*** (1.55)	1.78 (2.07)
had savings	6.51*** (1.23)	4.95*** (1.85)	7.95*** (1.61)
Male	1.68 (1.16)	0.47 (1.57)	2.37 (1.72)
father post-sec	2.69 (2.12)	1.50 (2.60)	4.40 (3.04)
hh_adults	-1.68* (0.91)	-1.16 (1.07)	-2.24* (1.24)
Own home	1.18 (1.21)	-1.07 (1.43)	3.54* (1.99)
Rural	-2.85 (2.48)	-2.91 (2.56)	-3.19 (2.96)
region_number=2	3.92 (3.77)	1.76 (2.42)	5.42 (7.05)
region_number=3	14.2*** (3.80)	11.7*** (3.31)	16.0** (6.74)
region_number=4	-4.48 (4.67)	-5.85 (5.42)	-3.15 (6.82)
region_number=5	2.07 (8.15)	-4.00 (6.93)	6.09 (9.13)
region_number=6	-0.51 (3.81)	-2.30 (3.71)	1.08 (6.88)
region_number=7	13.2*** (3.29)	11.8*** (1.51)	14.5** (6.77)
region_number=8	-4.73 (4.45)	-9.18** (4.21)	-0.38 (7.21)
region_number=9	4.26 (3.80)	3.97 (2.76)	4.06 (7.13)
region_number=10	-2.10 (5.13)	-1.76 (4.07)	-2.84 (8.24)
HH head public empl.	-2.78 (2.77)	-3.08 (3.57)	-2.38 (3.82)
Constant	22.1*** (4.69)	24.6*** (5.09)	20.7** (8.21)
Observations	1318	670	648

Note: Standard errors clustered by PSU in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

## 5. Social Trust

In this section, we present one more piece of evidence to support our argument that the pattern of giving described in the article is explained by diminished altruism, due to polarization and feelings of social isolation. Trust is a standard measure of pro-sociality that is not causally related to wealth. We present results with respect to the effects of job loss on social trust.

Table A6 presents the results of regressions modeling the respondent's trust of family, neighbors, strangers, and foreigners (on a scale of 1-5). There is no reason to expect that wealth has any effect on trust and, indeed, we find no statistically significant correlation between the two (with a near-zero coefficient). By contrast, *Household job loss* significantly reduces trust of strangers and foreigners, even when accounting for the individual's education level and partisan affiliation as well as other plausible control variables, including age, gender, and place of residence (rural vs urban location). The observed reduction in generalized trust is consistent with an overall reduced pro-sociality as a result of job loss. As anticipated, the reduction in trust is greater when the object of trust is further removed from the respondent ("strangers" -- other Greeks with no personal connection to the respondent) or "foreigners", as opposed to family members). Social isolation brought about by joblessness should not have any effects on trust toward family members or friends and neighbors.

**Table A6.** Effect of job loss on trust.

	(1)	(2)	(3)	(4)
	Family	Neighbors	Strangers	Foreigners
Household job loss	-0.013 (0.034)	-0.11 (0.071)	-0.18** (0.079)	-0.14* (0.079)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Observations	1140	1340	1341	1338

*Note:* Trust is measured on a 1-5 scale where 1 = “complete distrust” and 5 = “complete trust”. Reference category for party vote in 2009 is “none.”

Standard errors clustered by PSU are in parentheses. \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Individual controls: age, gender, post-secondary education, father’s education, pre-crisis savings.

Household controls: urban/rural status, household home ownership, number of adults, public sector employment.

Another casualty of the austerity crisis in Greece was a decline in trust in institutions. We show this below, using our own data in Table A7 and also by corroborating our findings with data from the Eurobarometer survey, plotting levels of trust in the national government in Greece over time and comparing that trend to other EU countries since 2001 (Figure A3).

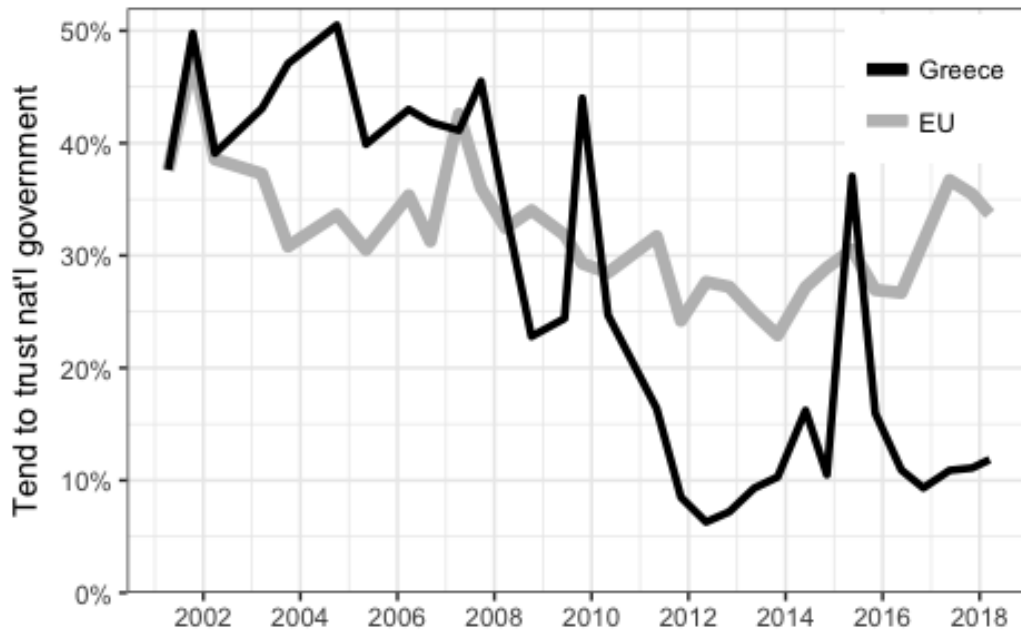
**Table A7.** Effect of job loss on trust in institutions.

Outcome:	Matched sample		Complete sample
	<i>ATT</i>	<i>ATT(ra)</i>	<i>linear model coeff.</i>
Trust national government	-0.18* (0.09)	-0.19* (0.07)	-0.31*** (0.073)
Trust local government	-0.14 (0.10)	-0.15 (0.08)	-0.18 (0.097)
Observations	736	736	1336

Note: \*p<.05, \*\* p<.01, \*\*\* p<.001

Matched sample: Abadie-Imbens standard errors in parentheses. Standard controls for the regression-adjustment estimates of models estimated on matched sample in Table 2 of the article.

Complete sample: Same specification as baseline model: linear regression with region fixed effects. Individual controls: age, gender, post-secondary education, father's education, pre-crisis savings. Household controls: urban/rural status, household home ownership, number of adults, public sector employment. Standard errors are in parentheses.



**Figure A3.** Eurobarometer data on trust in the national government in Greece and across all EU countries since 2001.

Finally, we show below a replication of the model producing our main results while adding trust as a covariate (Table A8). The trust index (coded as the average of our multiple trust outcomes) increases donations to charity in both pairs and adding it to the model does not change our substantive findings regarding the effects of joblessness. Our preferred specification excludes trust from the model since trust is not necessarily a mediator and could occur concurrently with the decline in altruism as an outcome of job loss.

**Table A8.** Effect of job loss on donations to charity, controlling for trust.

	<i>Dependent variable: Total amount donated</i>		
	(1)	(2)	(3)
	Complete sample	Charity pair A	Charity pair B
Household job loss	-5.51*** (1.58)	-7.31*** (2.21)	-4.29** (2.07)
Trust index	3.12*** (1.05)	2.61** (1.46)	3.89*** (1.42)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	1315	671	644

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Individual and household controls described in the text.

## 6. Wage Cuts as an Alternative Measure of Exposure to Austerity

In the article, we mention that exposure to the economic effects of austerity policies might be measured by reductions in respondents' wages during the crisis. Among those reporting cuts to their wages or pensions, deeper cuts correlate with stronger subjective effects of the economic crisis. Among those reporting the highest level of subjective austerity ("a lot"), the average wage reduction is 29%. By contrast, those who say were affected "a little" by the crisis report an average reduction in wages or pensions of just 5%.

We analyzed the effect of wage cuts by restricting the sample to only those who experienced wage cuts from sources *excluding* job loss. We modeled charitable giving as a function of the fraction of their previous salary lost to the economic crisis. In a second model, we retained the full sample and for those who did not mention cuts to their salary or pension as a result of the economic crisis, we set the percent reduction in wages to zero. In a third model, we treat wage cuts as a categorical variable, to allow for nonlinearities in their effect (where cuts of less than 1.4% are the reference category). We include the same set of covariates as in the job loss models, except for public sector employment, because employment in the public sector would not have decreased the likelihood of experiencing wage cuts.

Results are shown in Table A9. We find no significant effects of wage cuts on donations to either charity pairs, for any of the specifications. The disparity in the results when we compare job losses to wage reductions is interesting and consistent with other studies of the effects of economic crises. Margalit (2013) also finds that wage losses have no effect on attitudes whereas job loss does. We do not have sufficient data to explore this difference further, but the results shown might be instructive with regard to the mechanism underlying the effect of job loss. If



reduced donations to charity were simply a function of having lower wealth due to the crisis, then we would expect a similar effect for both job loss and wage reductions, since they both reduce household wealth. However, job loss is a more severe form of exposure to an economic crisis and might trigger a more traumatic response to austerity policy as the affected households feel more isolated and more vulnerable, having lower expectations about the future. Whereas most Greeks were in the same boat with regard to wage reductions, fewer individuals lost their jobs, so this unique experience might make them feel less solidarity toward others.

Might it be the case that we observe no decline in pro-sociality among those whose wages/pensions were reduced because those people were able to smooth consumption using support from informal networks? We do not have data to answer this question, but that is unlikely to be the explanation. If such informal networks are strong, then those who lost their jobs due to austerity should have received even more assistance than those whose wages were cut, yet we find that people who lost their jobs became less pro-social. A more plausible explanation is that job loss is a more unusual and severe experience than wage cuts with fewer people experiencing job loss than wage reductions. The effects on solidarity should therefore be more pronounced in the case of job loss.

**Table A9.** Effect of wage and pension cuts on donations to charity.

	<i>Dependent variable: Amount Donated</i>		
	(1)	(2)	(3)
Percent cut	5.13 (6.64)		
Percent cut, including 0		4.24 (4.79)	
cut < 22%			0.024 (1.85)
cut 22% +			1.14 (1.83)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	530	1260	1260

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Individual controls: age, gender, post-secondary education, father's education, pre-crisis savings.

Household controls: urban/rural status, household home ownership, number of adults.

## 7. Preference for In-group Charities

In this section, we look more closely at donations to charity, present robustness checks, and explore the effects of joblessness on each charity pair separately.

### *Controlling for Selfishness*

As a robustness check of the effect of job loss on in-group preferences shown in Table 1 in the article, we now estimate regressions of out-group altruism controlling for funds *not* donated to either charity. This allows us to estimate the effect of job loss on out-group altruism while

accounting for selfishness, so that we can assess changes to the preferential treatment of in-groups over out-groups. Table A10 presents the resulting estimates. In column 1, *amount kept* is included as a control. Job loss is associated with a drop in donations to the out-group of 1.55 euro, even when controlling for overall selfishness.

In column 2 of Table A10, we interact the amount kept with job loss. This interaction term allows the effect of job loss on donations to the out-group to vary based on the amount kept, so that the difference in expected level of donations to the in-group versus the out-group could shrink as the total amount donated falls.

**Table A10.** Effect of job loss on bias against out-groups; controlling for selfishness.

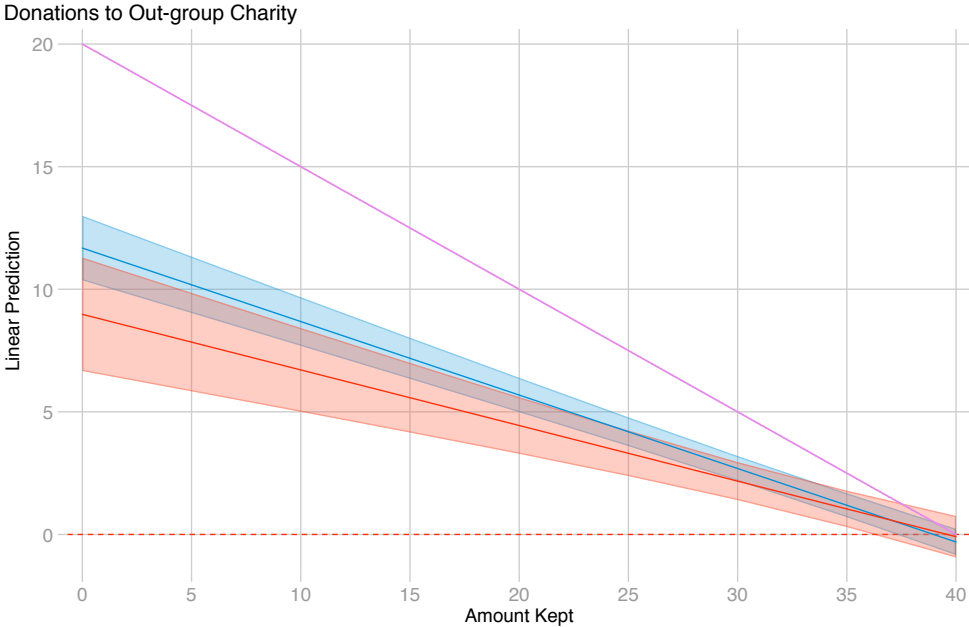
	Dependent variable: amount donated to out-groups	
	(1)	(2)
Amount kept	-0.28*** (0.022)	-0.30*** (0.023)
Household job loss	-1.55* (0.78)	-2.89** (1.33)
Household job loss x Amount kept		0.077** (0.036)
Individual controls	Yes	Yes
Household controls	Yes	Yes
Region FE	Yes	Yes
Observations	1341	1341

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Individual controls: age, gender, post-secondary education, father's education, pre-crisis savings.

Household controls: urban/rural status, household home ownership, number of adults, public sector employment.

The results of this model are illustrated in Figure A4, which plots the predicted donations to out-groups against the amount of funds the respondent kept. The diagonal pink line represents the funds that would be donated to the out-group if respondents were indifferent between the in-group and out-group charities (that is,  $y = (40-x)/2$ ). If a respondent were indifferent and donated all funds to charity, we would expect donations of 20 euro to each charity. In each case, we see predicted donations to the out-group are far below the line of parity. Those without job loss allocate to the out-group less than 2/3 of what we would expect under in-group/out-group parity. Those with job loss allocate to the out-group less than 1/2 of what we would observe under parity. These estimates suggest that job loss is associated with 25% lower donations to the out-group, at any given level of donation.



**Figure A4.** Predicted amount donated to the out-group charity against amount kept.

Note: Predictions calculated based on estimates presented in column 2 of Table A10. Red represents predicted donations by those with job loss; blue represents predictions for those without job loss. Bands indicate 95% confidence intervals. The diagonal pink line represents the funds that would be donated to the out-group if respondents were indifferent between the in-group and out-group charities.

### ***Controlling for Pre-Crisis Ideology***

Next, we revisit the analysis of the effect of job loss on donations to the in-group vs the out-group charity (Table 4 in the article) while accounting for pre-crisis voting behavior. The measure of voting behavior in 2009 was introduced earlier (see section 4, Table A3). We add this control to account for the potential that pre-existing ideology could confound the relationship between job loss and social attitudes. Columns 1 and 2 of Table A11 present the effect of job loss on in-group and out-group giving when controlling for respondents' 2009 party vote (Table A11). We first show results pooling across the two types of charities and then break down results by charity type (columns 3-4 for charity pair A and columns 5-6 for charity pair B). Our results for job loss remain consistent with Table 4 in the article: job loss reduces out-group giving, but has a smaller and less significant effect on giving to the in-group. This is in line with our hypothesis that job loss would increase in-group bias (*H2*).

**Table A11.** Effect of job loss on donations to out-group and in-group charities, including 2009 vote; broken down by charity pair.

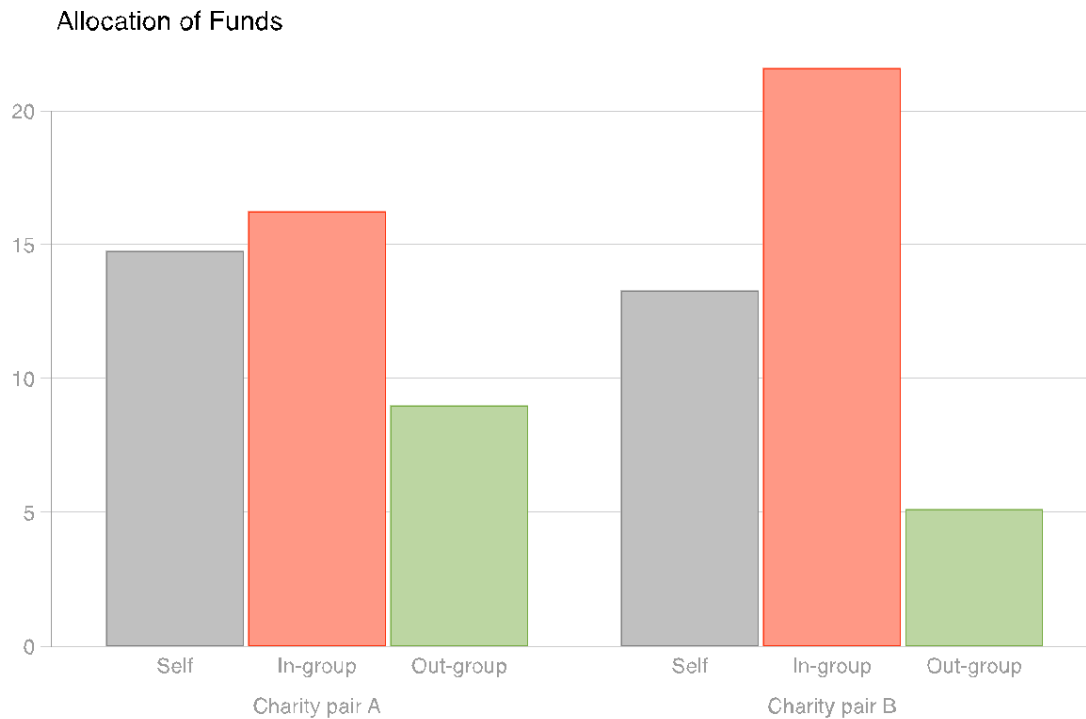
	(1)	(2)	(3)	(4)	(5)	(6)
	<u>Complete Sample</u>		<u>Charity pair A</u>		<u>Charity pair B</u>	
	In- group Amt	Out- group Amt	In- group Amt	Out- group Amt	In- group Amt	Out- group Amt
Household job loss	-2.74* (1.38)	-3.34*** (0.93)	-3.28* (1.80)	-4.55*** (1.42)	-3.40* (1.95)	-1.51 (0.98)
Vote choice (2009)	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1341	1341	687	687	654	654

Note: Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

### *In-group bias by charity type*

Next, we look more closely at in-group vs out-group preferences for each charity pair. The allocation of funds in each charity pair is shown in Figure A5. The preference for in-group charities appears to differ somewhat across pairs. Respondents presented with charity pair B donated to the in-group charity over the out-group charity at a ratio of 4:1, while those presented with charity pair A donated to the in-group charity less than twice what they donated to the out-group. We believe this difference is likely due the exceptionally strong reputation of the in-group NGO in charity pair

B (“The Smile of the Child”). Out-group giving is also lower in charity group B (Figure A5), but this drop by less than in-group giving increases relative to charity group A.



**Figure A5.** Mean allocation of funds to self, the in-group charity, and the out-group charity in each pair.

While in the article we analyze both charity pairs together, in Table A12 we look at models of charitable giving to the in-group vs the out-group charity organization separately for each charity pair. As in previous models, we use OLS regression with individual- and household-level controls and region fixed effects.

We observe a statistically significant reduction in giving to the in-group charity in both pairs, whereas the effects of job loss on out-group giving are limited to charity pair A. In charity

pair A, out-group altruism is clearly sensitive to joblessness: job loss reduces out-group giving by 4.71 euros. The point estimate for the effect of job loss on in-group giving in charity pair A is smaller, and it is statistically significant only at the 10% level. Columns 2, 4, 6, and 8 include a control for household wealth (though recall that this is not our preferred specification due to concerns with post-treatment bias introduced by the inclusion of this variable). Overall, these findings are in line with our expectations as they suggest that job loss reduces altruism toward the out-group by more than it does toward the in-group.

**Table A12**, Effect of job loss on in-group and out-group giving in charity pairs A and B,

	Charity pair A				Charity pair B			
	<u>In-group A</u>		<u>Out-group A</u>		<u>In-group B</u>		<u>Out-group B</u>	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Household job loss	-3.43*	-2.06	-4.71***	-4.54***	-3.26*	-3.82*	-1.40	-1.07
	(1.87)	(1.83)	(1.39)	(1.42)	(1.94)	(1.96)	(0.96)	(1.01)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Household wealth		Yes		Yes		Yes		Yes
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	687	671	687	671	654	631	654	631

*Note:* Same controls included as in previous tables. Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

The results with respect to charity pair B are slightly different. Here we see that job loss causes a modest reduction in giving to the in-group charity (-3.26, significant at the 10% level),



yet it does not have a statistically significant effect on out-group giving. This pattern is not consistent with expectations, and we offer some potential explanations.

As mentioned above, charitable giving to the out-group in charity pair B was already low compared to the in-group NGO, even among those without job loss. There are likely floor effects here, whereby significant reductions in out-group giving are difficult to capture because out-group donations were already very low. Another potential reason for the pattern observed with reference to charity pair B is that the psychological impact of job loss (social isolation; resentment) might not affect sentiment toward children as much as it affects solidarity with other households that need financial assistance. Children's welfare is an issue area that is not directly pertinent to the economic crisis – at least not to the same extent as is the case for organizations in group A charities that focus on poverty alleviation. Any negative impact from crisis-related hardship is likely to have a less pronounced effect on giving to group B charities by virtue of the difference in issue area.<sup>2</sup>

As a way to gauge the plausibility of this claim, we replicate the analysis presented earlier in Table A10 while disaggregating the data by charity pair. This analysis is shown in Table A13 where we control for funds kept by the respondent (a measure of selfishness). This table shows results of a model of the in-group preference in giving (subtracting donations to the out-group from donations to the in-group). These models allow us to estimate the effect of job loss on in-group vs out-group giving while accounting for selfishness.

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<sup>2</sup> Although these organizations' mandates could lead them to become involved in poverty alleviation initiatives targeting children, respondents were made aware that poverty alleviation was not their primary focus. On their website, the "Smile of the Child" lists four thematic areas covered by its mandate in order of importance and helping children in poverty is at the bottom of the list, which is topped by protecting abused children (<http://www.hamogelo.gr/>). UNICEF is primarily a children's rights organization with global coverage (<https://www.unicef.org/what-we-do>).

In columns 2 and 4 (Table A13) we allow the effect of job loss on donations to the out-group to vary based on the amount kept (by including the interaction term). The amount kept by respondents (Figure A5) is slightly lower in charity pair B compared to A and the interaction of the amount kept and job loss is only significant in charity pair A suggesting that the experience of joblessness may have induced psychological effects that could have made respondents more selfish when they were assigned to the poverty alleviation charities as opposed to the children’s welfare charities. The in-group preference in giving declines by less in charity pair B vs charity pair A.

**Table A13.** Effect of job loss on in-group vs out-group giving in charity pairs A and B.

	<i>Dependent variable: donations to out-group</i>			
	Charity pair A		Charity pair B	
	(1)	(2)	(3)	(4)
Amount kept	-0.36*** (0.028)	-0.38*** (0.029)	-0.20*** (0.023)	-0.21*** (0.026)
Household job loss	-1.82 (1.13)	-3.86* (2.05)	-0.45 (0.87)	-0.91 (1.44)
Household job loss x Amount kept		0.11* (0.053)		0.029 (0.039)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Observations	687	687	654	654

*Note:* Same controls included as in previous tables. Standard errors clustered by PSU are in parentheses. \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ .

In Table A14 we add to the model a control for respondents’ pre-austerity vote choice to account for the potential that pre-crisis ideology could confound the relationship between job loss and social attitudes. Here we use vote choice in the 2009 elections, as in previous tables, though

we again break down the analysis by charity pair.

Columns 1 and 2 (Table A14) present the effect of job loss on in-group and out-group giving in charity pair A, and columns 3 and 4 present the same for charity pair B. All models include a control for vote choice in the 2009 elections and our substantive results remain consistent with those presented in Table A12. With respect to charity pair A, job loss reduces out-group giving, but has a smaller and less significant effect on giving to the in-group. With respect to charity pair B, we observe a small reduction in in-group altruism, but no reduction in out-group giving (which is already very low).

**Table A14.** Effect of job loss on donation amount to out-group and in-group charities, including 2009 vote.

	Charity pair A		Charity pair B	
	(1)	(2)	(3)	(4)
	In-group Amount	Out-group Amount	In-group Amount	Out-group Amount
Household job loss	-3.28* (1.80)	-4.55*** (1.42)	-3.40* (1.95)	-1.51 (0.98)
Vote choice (2009)	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Observations	687	687	654	654

*Note:* Same controls as in previous regressions. Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Next, we consider that anti-immigrant sentiment might be implicated in the pattern of results shown above. The fact that out-group giving declines by more in charity group A, where the potential beneficiaries of charity are refugees, might imply negative attitudes toward refugees

and immigrants more generally. A complication inherent to our study is that an unprecedented refugee crisis started in Greece in 2015 during the end of the period of austerity crisis. We believe that it is unlikely that anti-refugee attitudes explain the in-group preference. We see in-group preference in both charities (see Figure A5) and anti-refugee sentiment did not intensify in Greece until later in the crisis when natives in the Aegean islands realized that they were unsupported by the state and by international organizations in managing the consequences of the refugee crisis. Our survey does not provide us with a lot of data to consider this question more closely, however, we can use a pre-treatment indicator of anti-immigrant attitudes to check if there is a correlation with out-group giving.

The survey item in question (q418) asks respondents their opinion of immigrants, and answers take the following values: I do not know (1.93%); Immigrants make a valuable contribution (17.56%); Immigrants are a burden (55.49%); None of the above (25.02%). We use these data to build a binary indicator (*antimm*) which takes the value 1 if respondents indicated that they view immigrants as a burden and 0 otherwise. We now replicate the analysis shown above, regressing donations to in-group and out-group charities with the standard set of controls, while adding *antimm* to the model specification. Results, shown in Table A15, are instructive in that the addition of this control does not change our substantive conclusions. With respect to charity group A, where there might be concern that anti-immigrant or anti-refugee attitudes drive in-group preferences, we see no significant reduction to the coefficient of the job loss variable when we include *antimm* to the model; and the anti-immigrant indicator is nowhere near statistical significance. Interestingly, the anti-immigrant indicator is weakly significant and negatively correlated with giving to the out-group charity in group B – indicating that this preference exerts a stronger effect on out-group giving the job loss when the target is children in need in other

countries.

**Table A15.** Giving to in-group and out-group charities, by charity pair, controlling for anti-immigrant attitudes.

	(1)	(2)	(3)	(4)
	In-group Amount	Out-group Amount	In-group Amount	Out-group Amount
Anti-immigrant	-1.03 (1.43)	1.29 (1.27)	-1.38 (1.20)	-1.45* (0.86)
any hh job loss	-3.16* (1.80)	-4.44*** (1.41)	-3.61* (2.00)	-1.53 (1.01)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Observations	679	679	635	635

*Note:* Standard errors clustered by PSU are in parentheses

\* p<.10, \*\* p<.05, \*\*\* p<.01

Finally, we report three more sets of results: In Table A16 we show results for giving to the out-group charity, sorted by charity type and adding a control for whether there are children in the household and in the last two tables of this section we show results for a binary version of our dependent variable: Table A17 shows effects of job loss on donations to charity with a binary version of the dependent variable for the entire sample as well as by charity pair; and Table A18 uses a binary version of the dependent variable and shows results for any donation to the in-group or the out-group charity.

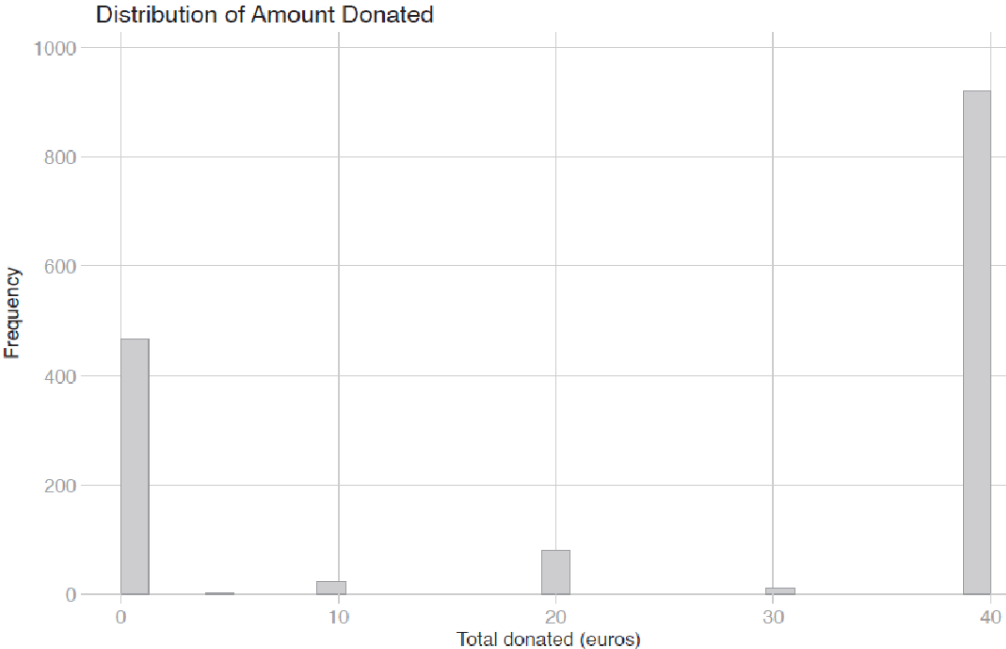
**Table A16.** Job loss and donations to out-group charities, sorted by charity type and controlling for children in household.

	(1) Out-group A	(2) Out-group B
any hh job loss	-2.09*	-0.14
	(1.15)	(0.92)
Individual controls	Yes	Yes
Household controls	Yes	Yes
Region FE	Yes	Yes
Observations	671	631

Note: Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

Figure A6 shows the distributions of donations to charity in our sample. In Table A17, we re-ran our main analysis using binary versions of the dependent variable given the pattern of giving seen in this figure.

**Figure A6: Distributions of amount donated**



**Table A17.** Job loss and donations to charity; binary version of the dependent variable.

	(1) Complete Sample	(2) Charity pair A	(3) Charity pair B
Household job loss	-0.14*** (0.042)	-0.18*** (0.058)	-0.10** (0.052)
Individual controls	Yes	Yes	Yes
Household controls	Yes	Yes	Yes
Region FE	Yes	Yes	Yes
Observations	1341	687	654

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

**Table A18.** Binary version of the dependent variable.

	(1) In-group (any)	(2) Out-group (any)
Household job loss	-0.11*** (0.041)	-0.14*** (0.034)
Individual controls	Yes	Yes
Household controls	Yes	Yes
Region FE	Yes	Yes
Observations	1341	1341

*Note:* Standard errors clustered by PSU are in parentheses. \* p<.10, \*\* p<.05, \*\*\* p<.01

## 8. Responsibility for the Crisis

One hypothesis concerning the reduction to out-group giving among individuals who were more affected by the crisis is that job loss made people hostile to foreigners if they believed that the austerity policies were adopted to serve the interests of foreigners (European institutions; taxpayers in EU lending countries). Holding outsiders responsible for the crisis could induce greater hostility, leading to greater reductions in altruism toward foreign charities. Perceptions of conflict between the interests of Greeks and those of other Europeans should have made national identity more salient, thereby increasing in-group bias. An implication of this argument is that those who experienced job loss should be more likely to believe that outsiders/foreigners were more responsible for the economic crisis in Greece. We test this by measuring beliefs about responsibility for the crisis directly and then explore if blaming outsiders for austerity mediates the relationship between exposure to the economic crisis and giving to out-groups.

To measure beliefs that outsiders (the EU) were responsible for the economic crisis, we ask respondents “Which of the following do you believe were responsible for the economic crisis?” giving them a number of options and allowing multiple answers. The EU was the most commonly cited “outsider,” with 46% of respondents attributing responsibility to the EU. We integrate these results in Models 1-3 in Table A19.

Model 1 is the standard model generating estimates of the effect of household job loss on allocations to the out-group, controlling for pre-treatment covariates: gender, age, urban/rural status, education and father’s education dummies, and region fixed effects. Because model 1 excludes post-treatment covariates, the coefficient on *household job loss* can be considered the average treatment effect of job loss on allocations to the out-group: job loss is expected to reduce



allocations to the out-group charity by a little over €3. In model 2, we control for blame assigned to the EU which lowers the coefficient on job loss marginally, but it is still significant. The “blame the EU” variable is statistically significant and negatively correlated with out-group giving. This association cannot be interpreted as causal, however, and it might merely reflect underlying negative feelings toward outsiders. The effect of job loss continues to be significant and negative. Blame for the EU may be a pathway via which job loss affects out-group giving.

We test the sensitivity of our estimation strategy using a placebo mediator: blame for the ruling party at the time of the crisis (PASOK). Approximately 73% of our sample blame PASOK and/or Nea Dimokratia for the crisis. We have no reason to believe that holding the ruling party (PASOK) responsible for the economic crisis should affect donations to the out-group. Holding the EU responsible and PASOK responsible are not mutually exclusive: respondents answered yes or no for each institution. If exposure to the crisis induces people to blame the ruling party, this response should not be a mediator for the effect of austerity on out-group giving. If the analysis suggests otherwise, we should be concerned that in this context, this estimation approach is sensitive to random noise. We now replace blame for the EU with blame PASOK (Model 3) and blame PASOK or ND (Model 4) and find no indication that these variables are significant, which further strengthens our prior results regarding “blame the EU” as a possible mediator.

**Table A19.** Effect of household job loss on donations to the out-group, controlling for attribution of blame for the crisis.

	(1)	(2)	(3)	(4)
	Out-group Amount	Out-group Amount	Out-group Amount	Out-group Amount
any hh job loss	-3.24*** (0.90)	-3.05*** (0.87)	-3.23*** (0.90)	-3.18*** (0.89)
Blame EU for crisis		-1.95*** (0.76)		
Blame PASOK for the economic crisis			-0.080 (0.80)	
Blame PASOK or Nea Dimokratia				-1.18 (0.81)
Individual controls	Yes	Yes	Yes	Yes
Household controls	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Observations	1341	1340	1341	1341

*Note:* Standard model/effect of job loss (model 1). Controlling for blaming the EU (model 2), PASOK (model 3), or PASOK and/or Nea Dimokratia (model 4) for the economic crisis.

Finally, in Table A20, we replicate our main model after expanding our operationalization of “blame outsiders” to include other non-Greek entities besides the EU. Respondents are now coded as holding outsiders responsible for the crisis if they blame any of the following: the EU, the ECB, the IMF, Germany, or foreign banks (63% of our sample blamed one or more of these actors). Using a broader operationalization of “blame outsiders,” we achieve similar, but less precisely estimated results.

**Table A20.** Effect of household job loss on donations to the out-group, net blame of outsiders for the economic crisis.

	<i>Dependent variable: Out-group giving</i>	
	(1)	(2)
Household job loss	-3.24*** (0.90)	-3.14*** (0.88)
Blame outsiders		-0.40* (0.23)
Pre-treatment covariates	✓	✓
Post-treatment covariates		✓
Observations	1341	1341

*Note:* \* p<.10, \*\* p<.05, \*\*\* p<.01.

Pre-treatment covariates: gender, age, urban/rural status, education and father's education dummies. Post-treatment covariates: savings, public sector employment, and the number of adults in the household. Regional fixed effects are included in both specifications.

## 9. Matching-based analysis to check robustness

Simple balance tests reveal that there are significant differences in the means of some covariates in the treatment group (respondents who lost their jobs) and control group (those who did not have joblessness in the household) in our data. We use matching as a way to make inferences about the effects of joblessness on charitable giving focusing on areas of common support in the data. We use genetic matching, with all analysis implemented in R version 3.5.0.

As mentioned in the article, we do not have a well-developed selection model (i.e. a model of joblessness), so our approach consists of controlling for covariates from our survey that are plausibly associated with the treatment variable. In light of the fact that the selection process is not addressed fully at the design stage, this matching exercise should be seen as exploratory. The following 6 variables are used in the matching model: "Rural","sec\_ed","father\_any\_sec",

"savings", "age", "male" as well as region and the propensity score. Our approach is to match exactly on "Rural", "sec\_ed", and "father\_any\_sec" (all of these are binary variables) and smoothly on others except "region\_number" where we use exact matching, which amounts to adding region fixed effects to the model, as is our practice in all other models in other parts of the analysis. We match smoothly on the propensity score, which should improve balance on covariates because the propensity score is factored in the calculation of the mahalanobis distance and facilitates the search for matches.

It is possible to explore different combinations of variables to match on and different specifications of the matching procedure. We do not show results from every possible permutation of covariates and specifications of the matching procedure, though we note that results from all variations/permutations that we tried are broadly consistent with those reported in the article. As a limited probe into the robustness of matching estimates, we include in the replication file two variations:

- First, we match exactly on all binary covariates and smoothly only on age and the propensity score. The results from these analyses are not presented in table form, but they can be replicated by running the code and they show that matching estimates of the effects of joblessness on charitable giving are robust. The ATT shown in Table 2 is now -4.8059 with a standard error of 1.475; and -4.69114 (s.e. = 1.31346) for the regression-adjusted estimates.
- Second, we return to the original specification of the matching procedure used to produce results reported in Tables 2 and 6 in the article and restrict the dataset to exclude cases where the household head worked for the public sector or where information on that

variable is missing from the data on the assumption that it might be difficult to find matches for those cases (and considering that we use this variable as a control in some of the regressions). The pattern here is the same as what is reported above: Table 2 results are robust (ATT -5.3322 (1.4618); and -5.20058 (1.31688) regression-adjusted).

- For both of these permutations of our estimation approach/data file, we find that the reduction in giving to *in-group* charities reported in Table 6 is less robust (less statistically significant) than the estimates of the decline in giving to the *out-group* charities.