Collective Memories on the 2010 European Debt Crisis

Laura Arnemann, Kai A. Konrad, Niklas Potrafke

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Abstract

We examine whether collective memories on the aid&reform programs chosen to handle the 2010 European debt crisis differ between citizens from borrower and lender countries. We use new international survey data for non-experts and experts in member countries of the euro area. The results show that non-experts from borrower and lender countries remember aspects of the programs in different manners; indicating biases for assessments of how the crisis outcomes are perceived in borrower and lender countries. Nation-serving biases may well explain if the European debt crisis has reduced the sense of belonging rather than bringing European citizens closer together.

Laura Arnemann
Department of Business
University of Mannheim / Germany
laura.arnemann@uni-mannheim.de

Kai A. Konrad
Max Planck Institute for Tax Law and
Public Finance / Munich / Germany
kai.konrad@tax.mpg.de

Niklas Potrafke
ifo Institute – Leibniz Institute for Economic Research
at the University of Munich / Germany
potrafke@ifo.de

1 Introduction

The 2010 European debt crisis partitioned the countries of the euro zone into two groups: fiscal and financial market conditions dramatically deteriorated in some Euro area countries such as Greece ((for an account of the crisis see, e.g., Schimmelfennig (2015), Frieden and Walter (2017), Frieden and Walter (2019)). Five countries (Greece, Ireland, Portugal, Spain and Cyprus) individually made formal applications for support. These applications led to *memoranda of understanding* with the 'Troika', consisting of the European Commission, the International Monetary Fund and the European Central Bank. The memoranda contained two main aspects. The applicant country received loans or loan guarantees and had to agree to pursue structural reforms in its own economy under the supervision of the Troika. We refer to the countries that made formal applications as the 'borrower countries'. Other countries of the eurozone collectively used their fiscal credibility to provide these loans or guarantees and delegated the monitoring process on requested reforms in the borrower countries to the Troika - the 'lender countries'.

We examine how citizens from borrower and lender countries remember the European debt crises, the aid&reform programs and their consequences. Our study is based on two new international surveys. We used an internet survey tool (Prolific) to interview citizens in the eurozone countries and CESifo's World Economic Survey panel of experts (WES) to interview international economic experts. Views of citizens (non-experts) and experts have been shown to differ quite a bit. We investigate whether non-experts and experts from borrower and lender countries remember the European public debt crisis in a different manner. Considering the euro crisis or a similar major recent crisis event for examining collective memories is new.

The results show that non-experts from borrower countries had different memories than non-experts from lender countries. The differences are likely to suggest a nation-serving bias. In their memory non-experts make their own country group appear in a favorable light. For example, the share of non-experts from lender countries agreeing that lender countries wanted

to help the borrower countries (62%) is larger than the share of non-experts from borrower countries (48%). In a similar vein, 71% of non-experts from borrower countries think the lender countries benefited mainly from the rescue programs, but only 44% of the non-experts from lender countries think the lender countries did. These unconditional correlations are corroborated by multivariate analyses that consider respondents' sociodemographic characteristics and macroeconomic circumstances in the individual countries. By contrast, the results do not suggest that experts from borrower countries remember the European debt crisis differently than experts from lender countries.

Our paper is related to studies in neuroscience and psychology that deal with (collective) memories (Dezső and Loewenstein (2012), Roediger and Abel (2015), Roediger et al. (2019)), studies that elaborate on views about elites and the general public regarding European integration and the effects of economic conditions on the latter (e.g., Gabel and Palmer (1995), Hooghe (2003), Steenbergen and de Vries (2007) Gabel and Whitten (1997)) and studies that investigate views of economic experts and non-experts (e.g. Sapienza and Zingales (2013), Andre et al. (2019)).

2 Background and hypotheses

2.1 Collective memories

Theories about memory and its plasticity describe how individuals' memory is formed, kept, reactivated and changed over time, and how a self-serving bias manifests itself in individuals memories. Dudai and Edelson (2016)(276) describe: "When the memory is retrieved, it seems to re-enter a transient phase in which it again becomes susceptible to the same amnesic agents that were effective in the original consolidation window (Dudai (2012); Nader et al. (2000); Sara (2000))." Brain sciences suggest that memory enters a state of plasticity when it is reactivated and the copy that is then stored might differ from the one that has been activated (see Agren (2014), and Lee et al. (2017)). Also, a tendency to memorize in a

'self-serving' way has been shown (see Bell et al. (2014)). An important application in the context of informal credit relationships is the study by Dezső and Loewenstein (2012). Using data about informal credit relationships between relatives and friends, the authors find that borrowers' and lenders' recollections diverge on average and in a self-serving way about the credit event as such, the conditions of the loan they had agreed upon, and the loan performance.

The logic of self-serving memories cannot be applied straightforwardly to how citizens remember issues related to their nation. The lenders and borrowers in the European debt crisis are nations, not individuals, and the citizens we asked were not personally responsible for their countries' roles in the credit crisis. The formation of memories of individuals who belong to and identify with an individual nation might interact in more complicated ways.[1] The multiple mechanisms and reinforcing effects that give rise to divergent memories of individual nations are difficult to separate from each other.[2] Clearly, we cannot test hypotheses why collective memories differ. We will offer interpretations for why collective memories are likely to differ and the extent to which results are likely to suggest a nation-serving bias.

Nation-serving collective memories of citizens may well influence cooperation and conflicts between states in a currency union, and in international politics more generally. Collective memories and own-nation-serving biases have been investigated in a few previous studies (e.g., Hirst et al. (2018)). Much of the empirical work on nation-serving collective memories is on war and how aspects of it are remembered. Subjects overestimate their country's contribution to the Second World War (Roediger et al. (2019)). Groups employ techniques such as selective omission, fabrication of alternative narratives and exaggeration or embellishments of events to let their group appear in a favorable light (Baumeister and Hastings (2013)). Common institutions inside a nation, such as common exposure to the same public media

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[1]For recent cognitive science contributions describing the possible channels see Stone and Jay (2019), Geana et al. (2019), and Gagnepain et al. (2020).

[2]Posttraumatic events also influence memories (de Quervain et al. (2012)).

and other public institutions might intensify information exchange inside the group, might strengthen and homogenize the national collections of memories and reinforce diverging views between countries (Rigney (2018) and Roediger and Abel (2015)).

Our first hypothesis to be investigated empirically is:

Citizens from borrower countries remember the 2010 European debt crisis in a different manner than citizens from lender countries.

2.2 Experts and non-experts

Scholars have examined for a long time whether elites and the general public view policy issues in similar ways. A prime example is European integration (see, for example, Gabel and Palmer (1995), Hooghe (2003)). Elites have been favoring European integration to a larger extent than the general public.[3] A major question is why. It is conceivable that both the elites respond to changing preferences of their electorates and that the elites make attempts to influence their electorate's preferences (e.g., Steenbergen and de Vries (2007)). Since the 2010 European debt crisis, European citizens with a high education and many skills had more trust in government than citizens with a low education and less skills. Among borrower countries, citizens from countries that suffered from high unemployment rates had less trust in national governments than citizens from countries with lower unemployment rates (Foster and Frieden (2017)).[4]

Economic experts often evaluate economic policy issues in different manners than non-experts. Citizens were influenced by the views of economic experts, more so if the issue at stake is highly technical and less ideological (Johnston and Ballard (2016)). In the United States, for example, views between experts and non-experts differed especially on those issues on which economic experts had very homogeneous views (Sapienza and Zingales (2013)). Ex-

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[3]Citizens with a high education tend to favor trade openness and globalization to a larger extent than citizens with a low education. See, for example, Mayda and Rodrik (2005), Harms and Schwab (2018), Harms and Schwab (2020) and Egger and Fischer (2020).

[4]Bailouts were also negatively associated with satisfaction with democracy (see Schraff and Schimmelpfennig (2019)).

perts and non-experts have been shown to assess effects of macroeconomic shocks in different manners (Andre et al. (2019)). People with a high degree of formal education and cosmopolitan communications maintain a more positive attitude towards European integration than people with a low degree of formal education and hardly any cosmopolitan communications (Inglehart (1970)). Expertise might be more developed among the economic experts, with less scope for a nation-serving adaptation of memories. Experts are likely to rely on sources of statistical evidence and on largely overlapping sets of research reports when forming their opinions. Also, national identity may be less pronounced among the experts and overlaid by other identities, such as membership of an international elite, or a European identity. These factors suggest that national differences in assessments of the euro crisis are less pronounced among experts than non-experts.

Our second hypothesis to be examined empirically is:

Collective memories on the aid&reform programs chosen to handle the 2010 European debt crisis differ to a greater extent between non-experts than between experts from borrower and lender countries.

3 The surveys

Our data was obtained through international surveys that were conducted among two pools of participants. First, we asked economic experts from the World Economic Survey (WES) on their views about the financial entrenchment following the European debt crisis. The WES is a quarterly survey conducted by the ifo Institute. The survey includes many questions, indicating the opinion towards overall economic development from European and non-European experts such as economic growth and inflation. Furthermore, scholars used the WES to ask a limited number of one-off questions in individual survey waves. See, for example, Boumans et al. (2017), Andre et al. (2019), Mosler et al. (2019), Gründler and Potrafke (2020a), Gründler and Potrafke (2020b). Our questions on the European debt crisis were included

in the WES survey in August 2018. We restrict our sample to include only experts who are currently living in the European Union. The WES sample includes 517 participants from EU member countries, among them 90 experts from program countries.

Second, we asked non-experts by using the website prolific.co. In contrast to other crowdsourcing platforms such as Mturk, Prolific is a platform specifically designed to recruit participants for academic research.[5] In exchange for their participation in surveys or experiments, participants receive a financial reward. The survey was distributed to 1702 participants in August 2019, 498 of these participants came from program countries. To ensure that our participants had an opportunity to actively remember the events during the European debt crisis we restrict our sample to include only participants 25 years of age or older. Both samples, for experts and non-experts, are not representative of the populations in the individual EU countries, however.

The same questions are used in both surveys, and in unchanged ordering. The individual questions are shown in section 9. The appendix shows the country composition of survey participants for both samples. Of course, as the participants of the WES sample are mostly professional experts, respondents in both samples are unlikely to have similar socioeconomic characteristics.[6] We control for individual socioeconomic characteristics in the multivariate analysis. We refer to the WES sample as the expert sample and to the prolific sample as the non-expert sample.

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[5]Peer et al. (2017) show that participants from the platform prolific perform better than participants from other crowdsourcing platforms.

[6]The majority of participants from the prolific sample, around 65 percent are younger than 35, whereas the majority of participants from the WES sample are between 35 and 55. Participants from the WES sample also have a higher level of education than participants from the prolific sample, 60 percent of participants hold a PhD. Nonetheless the majority of participants from the prolific sample have completed tertiary education. More than 80 percent of WES participants are male, whereas in the prolific sample there is an equal share of men and women.

4   Descriptive analysis

We ask the respondents to recall which country signed a Memorandum of Understanding, the central cluster of questions is about the assessments of these aid&reform programs. A first assessment is what was the general purpose of these programs: to help the borrower countries, to help the lender countries to avoid contagion, and/or to force institutional reforms upon the borrower countries. Related to the purpose of the aid&reform programs are the questions of whether the driving force behind these programs was rather the borrower countries or the debtor countries. And we ask about the assessments of which country group was the main beneficiary of the aid&reform programs.
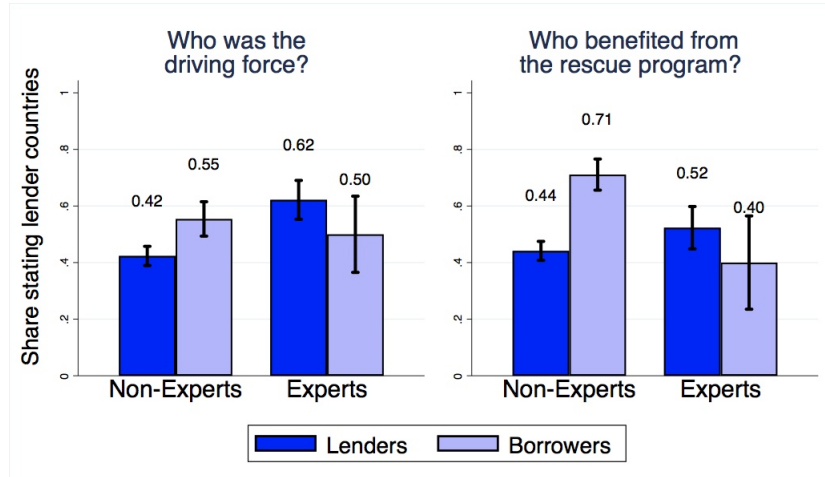
Figure 1: Reasons of the lender countries for entering the rescue program
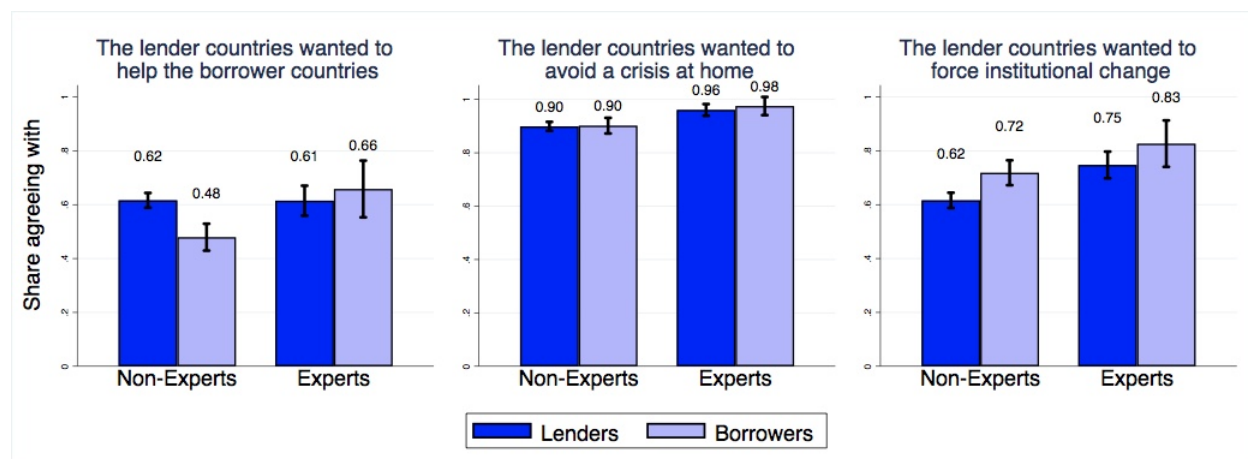
The exact wording of the question is: In your opinion, what is the main reason why these countries entered these programmes 2a The lender countries wanted to help the borrower countries; 2b The lender countries wanted to help themselves to avoid a major crisis at home; 2c The lender countries wanted to force their desire for institutional change upon the borrower countries. Participants could choose the options strongly agree, slightly agree, slightly disagree, strongly disagree, I don't know. We exclude all participants who answered with I don't know and report the share of respondents that strongly and slightly agreed to the individual question.
The whiskers represent the 95 % confidence intervals.

We discuss the extent to which answers from non-experts and experts from borrower and lender countries differ. Figure 1 deals with reasons of why the lender countries entered the rescue program. The share of non-experts from lender countries agreeing that lender countries wanted to help the borrower countries (62 %) is larger than the share of non-experts from borrower countries (48 %). The difference in assessments between non-experts from borrower and lender countries are large and statistically significant at the 1 % level for

Figure 2: Driving Force and Beneficiaries

this aspect of the reforms (left-hand diagram of Figure 1). There is also some disagreement in the expert sample. The differences, however, do not turn out to be statistically significant. Participants from borrower and lender countries agree that lender countries wanted to avoid a crisis at home both in the expert and non-expert sample (center diagram of Figure 1). 62 % of non-experts from lender countries agree that the lender countries wanted to force institutional change compared to 72 % among the lender countries.

How can these differences be interpreted as own-nation serving? To address this question we concentrate on the results for the non-expert sample and consider the assessments about who mainly benefited from the aid&reform programs. As shown in the right-hand diagram in Figure 2, respondents from both country groups remember the aid&reform programs in a way that makes their nation appear in a more generous light: 71 % of the borrower countries' respondents think the lender countries benefited mainly, but only 44 % of the respondents in the lender countries think the lender countries did. This is compatible with each side inflating their contributions and costs and/or deflating their receipts or benefits - an attitude which one might call own-nation serving.

These views of being the generous helper fit well with the memory biases shown in Figure 1. A large share of respondents from the borrower countries answer in a way that is consistent with the following narrative. They predominantly believe that the lender countries wanted to help themselves (90 %). They also tend to repress the idea that they were desperately in need of help and are more likely to entertain the idea that they did not press for help (42 % versus 55 % - left-hand diagram in Figure 2), but were helped because the lender countries had no choice - they wanted to help themselves, and therefore 'wanted' to help (62 % versus 48 % left-hand diagram in Figure 1).

The narrative for the lender countries also starts with the finding that a predominant share of 90 % of all respondents from both groups of countries think that the aid&reform program was caused by lender countries that wanted to avoid crisis contagion in the lender countries (center diagram in Figure 1). Respondents from lender countries appear to remember more frequently that they were the driving force than respondents from the borrower countries (55 % compared to 42 % left-hand diagram in Figure 2), but were not so keen on helping the borrower countries (48 % compared to 62 % left-hand diagram in Figure 1). This reluctance fits with the perceptions inside the lender countries that the programs mainly benefit the other countries.

The question on whether the lender countries wanted to impose reforms shows small differences that do not turn out to be statistically significant (right-hand diagram in Figure 2). Both groups of respondents think that such motives were important. However, this question is also difficult to assess from whether the answer is own-country-serving. We do not know the motivations of imposing reforms and they could be ambivalent. Lender countries' respondents might think that they wanted to impose reforms to improve the general performance of the Euro zone, whereas borrower country respondents might have seen these as power politics and an act of arbitrary oppression.

The differences between respondent answers in borrower countries and in lender countries
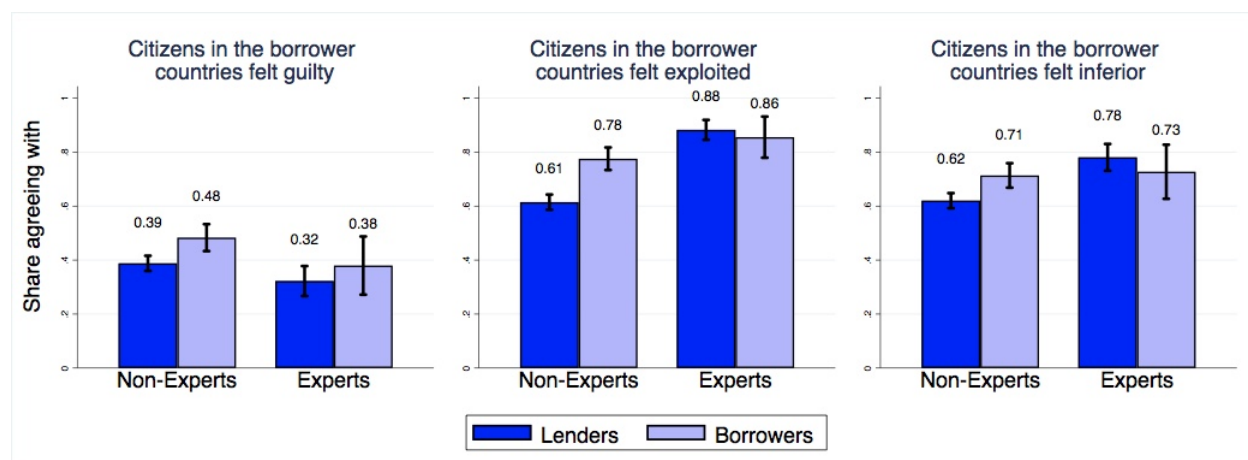
in the expert group do not turn out to be statistically significant.[7] But there are other possible explanations. It is conceivable, for instance, that there simply is no major memory bias among experts. Experts from different countries are informed by reading much of the same statistical material and scientific reports, refreshed and updated by the scientific studies that might largely overlap. And they might identify less with their own countries of origin and have a more cosmopolitan orientation. Therefore, the forces for developing a nation-bias might be less strong for experts than for non-experts. We address some of these issues in the multivariate analysis.

We now turn to a second set of questions (Figure 3). We ask whether the rescue experience might have caused feelings of *guilt*, feelings of *being exploited*, and/or feelings of *inferiority* in the borrower countries, and whether the populations in the lender countries are feeling *exploited* and/or *disappointed*. All these questions were presented to participants from all countries. We investigate whether the answers of participants from borrower countries and lender countries differ. If we find differences, they do not straightforwardly reflect a nation-serving bias but might rather be the outcome of such a bias. Figure 3 shows that the answers of non-expert respondents from borrower countries differ from those from lender countries. These differences are important in their own right, because they suggest country biases. An interpretation along the lines of nation-serving assessments is more complex and more difficult. A respondent from Greece might think that the aid&reform programs mainly benefited the lender countries who forced Greece to undertake the reforms. Hence, a Greek respondent might not feel guilty. On the other hand, a respondent from the lender countries might feel that the aid&reform programs were a benevolent gesture from the lender countries which provided large benefits to the program countries. Hence, a respondent from the lender countries might be more prone to assume that citizens in the borrower countries felt guilt due to the large benefits they received. Also, the respondents' perceptions might be formed by direct observations in the countries or media reports, but their views about the reasons

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[7]98 % of experts also works in their country of origin.

and motivations for aid&reform programs and their views about who actually benefited from these programs should correlate with their assessments, and might cause their beliefs about these feelings.[8]

Figure 3: Emotions of the borrower countries

Similar questions measure the assessments in the groups of respondents about the feelings in the lender countries (Figure 4). In particular, we asked the participants whether they agree that the aid&reform programs made the citizens in the lender countries feel exploited and disappointed. We note no significant differences for respondents from the two country groups. The same applies for the differences in the views of experts from the two country groups. Perhaps not unexpected, and similar to the first set of questions, experts from borrower and lender countries answered in a quite similar manner.

We also asked whether the rescue experience strengthened friendship between the citizens

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[8]Our findings may also be interpreted in an alternative way. Having a self-serving or nation-serving bias might make individuals oblivious to the way policies are received in other countries. Dezső and Loewenstein (2012) refer to this phenomenon as having a "blind spot" regarding the other party's feelings and emotions. The hypothesis on the existence of such a "blind spot" is confirmed in our findings. Citizens from lender countries are more likely to agree that they felt guilty, exploited and/or inferior as a consequence of the aid&reform programs. The largest difference between lender and borrower countries occurs with regards to feeling exploited. 78 % of citizens from borrower countries state that they felt exploited due to the aid&reform programs while only 61 % of lender countries agree to this statement.

Figure 4: Emotions of the lender countries
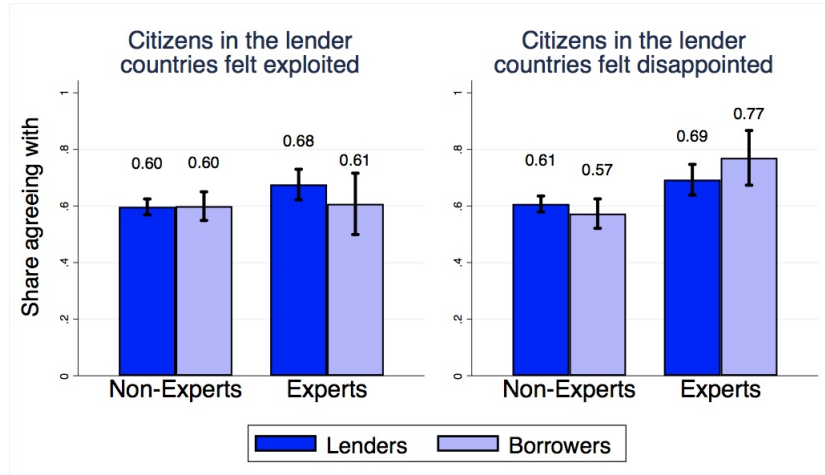
The exact wording of the question is: 5d) The rescue experience made many citizens in the lender countries feel exploited. 5e) The rescue experience made many citizens in the lender countries feel disappointed.
Answer options were strongly agree, slightly agree, slightly disagree, strongly disagree, I don't know. We exclude all participants who answered with I don't know and report the share of respondents that strongly and slightly agreed to the individual question.
The whiskers represent the 95 % confidence intervals.

in the two groups of countries (Figure 5). The results do not suggest that respondents from borrower countries have different views than respondents from lender countries, but the results draw a disappointing picture that is of interest on its own right. Building on realistic group conflict theory, an event such as the European debt crisis was a major challenge that was overcome by joint action. In the light of realistic group conflict theory (see Sherif et al. (1961), and Böhm et al. (2018) for a survey) it could have been a major opportunity for the governments of its member countries to overcome cleavages and strengthen the friendship ties between the countries. However, only some 25 % of the non-experts and some 20 % of the experts believe that the aid&reform programs strengthened friendships (Figure 5).[9] This is in line with the high percentage rates of all respondents who think that the crisis and its treatment caused feelings of exploitation, inferiority and disappointment.

The borrower countries were affected by the crisis in different manners. The European sovereign debt crisis first became manifest in Greece. Three extensive financial rescue pack-

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[9]Due to a typesetting error in the expert survey this question was displayed as "The rescue experience strengthened friendship ties between borrower". The fraction of experts who answered this question with "I don't know" lies around 20 %. This is very much in line with the frequency of "I don't know" responses throughout the survey. Hence, it seems plausible that participants correctly understood the question.
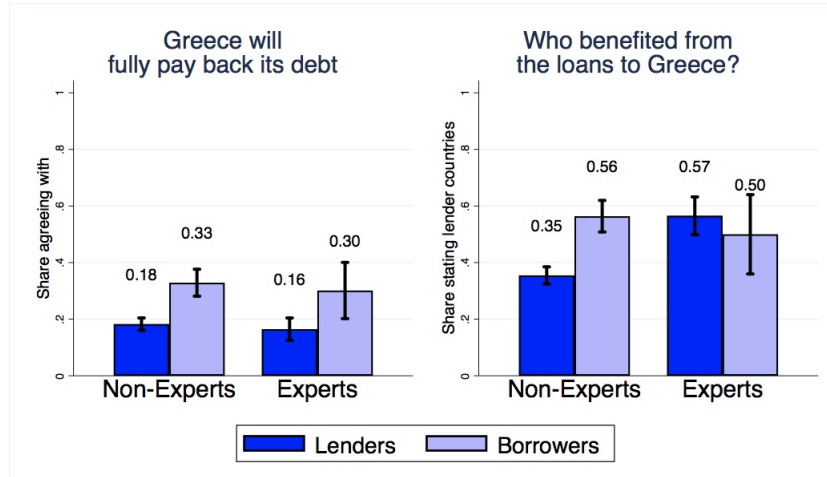
Figure 5: Impact on friendships
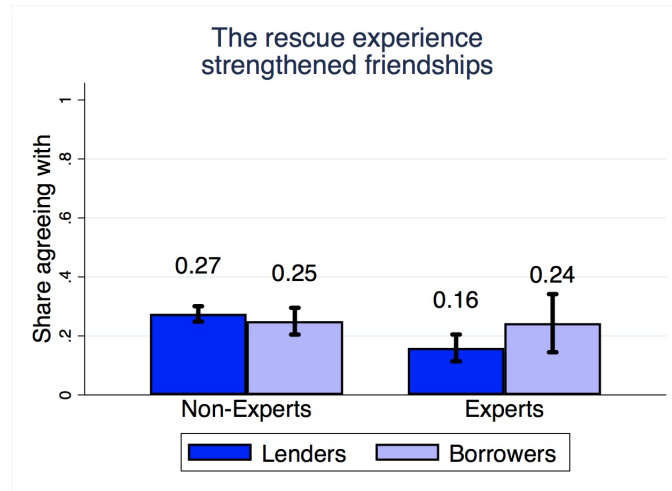
The rescue experience
strengthened friendships

ages and comprehensive reform programs were adopted and simultaneously accompanied by massive political protests. The resistance of the population in Greece was large and the consequences for the population were drastic (scholars examine the public debt crisis in Greece in detail. See, for example, Mink and de Haan (2013), Katsanidou and Otjes (2015), Sinn (2015), Mosler et al. (2019)). The salience of events in Greece might cause a higher level of consensus among the lender and borrower countries about the situation in Greece. On the other hand, since Greece was by far the most affected country, there might be solidarity between the other lender countries and Greece. This invites a specific view on Greece (Figure 6). We only ask about Greece, since Greece remains the only country that has not repaid it's debt.

The results in Figure 6 show that both non-experts and experts from borrower countries (0.33 % and 0.30 %) believe to a larger extent than non-experts and experts from lender countries (0.18 % and 0.16 %) that Greece will fully pay its debt. The differences are strong and significant for both samples. Similar divergences emerge in the non-expert sample in the assessment of which party mainly benefited from the loans to Greece. Borrower country

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Figure 6: The situation in Greece

citizens are far more likely to state that the lender countries benefited from the loans to Greece than the lender country citizens.

Both these divergences have natural interpretations as nation-serving biases. Respondents from the borrower countries might associate themselves with Greek citizens and perceive Greek citizens as more reliable borrowers than the respondents from lender countries. And respondents from borrower countries who went to a similar experience as Greece are less inclined to interpret the aid&reform programs as benevolent acts of the helper countries for the benefit of Greece. They might be more inclined to think that the lenders' actions were guided by their self-interest and to their own benefits.

We also examine how answers differ between the citizens from the individual borrower countries. The results suggest that Greek citizens had somewhat different views than the citizens from the other borrower countries. The appendix shows the results in detail.

5 Multivariate Analysis

5.1 Econometric Model

We examine whether the unconditional correlations discussed in section 4 are corroborated if we control for information on socioeconomic characteristics of the respondents. Including macro-economic variables that vary across individual countries is discussed in section 6. We estimate the following model using logit estimation both for the sample of experts and the sample of non-experts:

$$Y_{ij} = \alpha_j + \beta_j * D_i + \gamma_j * X_i + \epsilon_{ij}.$$

Y_{ij} describes the response of individual i to question j. Y_{ij} takes the value of one if a participant stated either strongly or slightly agree or if a participant stated the lender countries as the responsible party. The dummy variable D_i indicates whether the respondents report to have the nationality of one of the borrower countries. We control for individual characteristics X_i such as age, level of education, gender and employment status (affiliation for the expert sample). We report marginal effects of the dummy variable measuring whether a respondent has the nationality of one of the borrower countries.

5.2 Baseline Results

Our baseline results corroborate the findings discussed in section 4. Non-experts from borrower countries are 13.2 percentage points less likely to report that the lender countries wanted to help the borrower countries than non-experts from lender countries (Figure 7).

Non-experts from borrower countries are 13 percentage points more likely to report that the lender countries were the driving force behind signing the memorandum than non-experts from lender countries (Figure 8). Non-experts from borrower countries are 28 percentage points more likely to report that the lender countries were the main beneficiaries of the program than non-experts from lender countries (Figure 8). These marginal effects are sta-

Figure 7: Intentions of the lender countries

tistically significant at the 1 % level. Differences are not statistically significant in the expert sample.

Participants from borrower countries in the non-expert sample are 9.2 and 9.3 percentage points more likely to agree that the program experience made them feel guilty and inferior. Further, the probability to agree to "The rescue experience made many citizens in the borrower countries feel exploited" is 17 percentage points higher among citizens from borrower countries. These marginal effects are statistically significant at the 1 percent level (Figure 9). Experts and non-experts from borrower countries had similar views about the emotions evoked by lender countries as experts and non-experts from lender countries (Figure 10). When asked whether Greece will be capable of fully paying back it's debt, citizens from program countries show a 13.5 percentage point higher likelihood to agree in the non-expert sample and a 12.2 percentage point higher likelihood in the expert sample. The effect

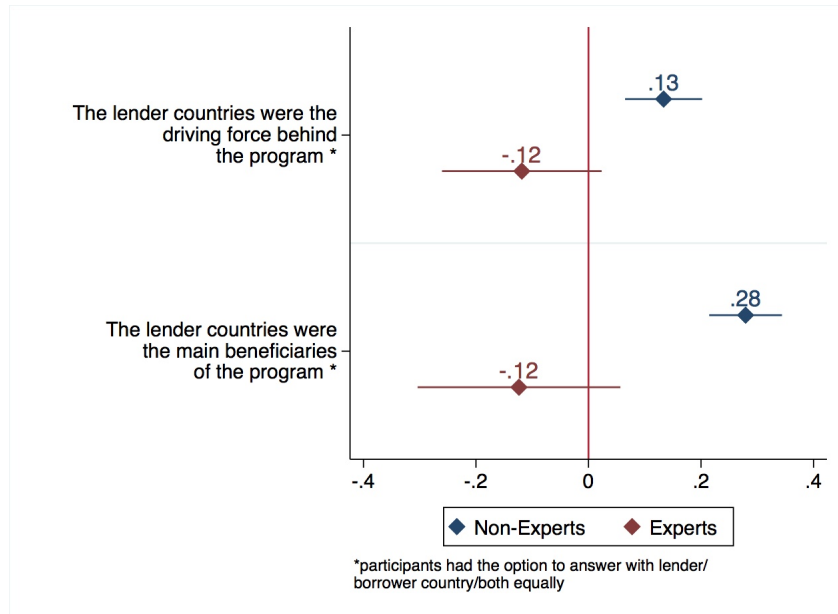Figure 8: Who initiated and benefited from the rescue program

We display the average marginal effect of estimating our model by binary logit. The displayed effect is the effect of reporting to be the national of a program country. The diamonds show the size of the effect, the lines represent the 95 % confidence intervals. The exact wording of the questions is the following: 3) Who was the driving force behind signing the memorandum? 4)Who was the main beneficiary of the program?. The dependent variable takes the value of one when the respondent replied "the lender countries".

in both samples is significant at the 1 percent level. When asked about who benefited from the loans to Greece non-experts from the borrower countries are 20.3 percentage points more likely to state that lender countries benefited from the loans to Greece (Figure 11).

Figure 9: Sentiments among borrower countries
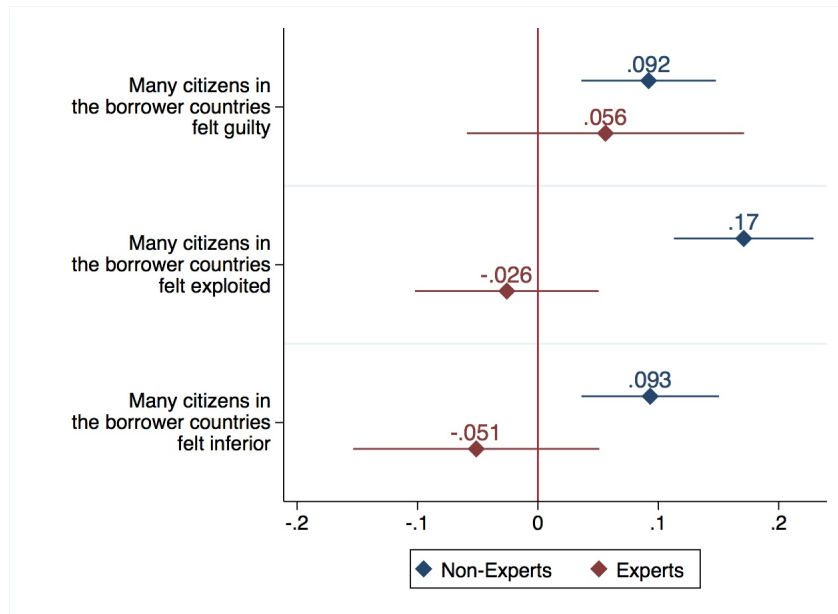
We display the average marginal effect of estimating our model by binary logit. The displayed effect is the effect of reporting to be the national of a program country. The diamonds show the size of the effect, the lines represent the 95 % confidence intervals. The exact wording of the questions is the following: 5a) The rescue experience made many citizens in the borrower countries feel guilty; 5b) The rescue experience made many citizens in the borrower countries feel exploited; 5c) The rescue experience made many citizens in the borrower countries feel inferior. The dependent variable takes the value of one when the individual respondent strongly or slightly agreed to the individual question and zero otherwise.

Figure 10: Sentiments among lender country citizens
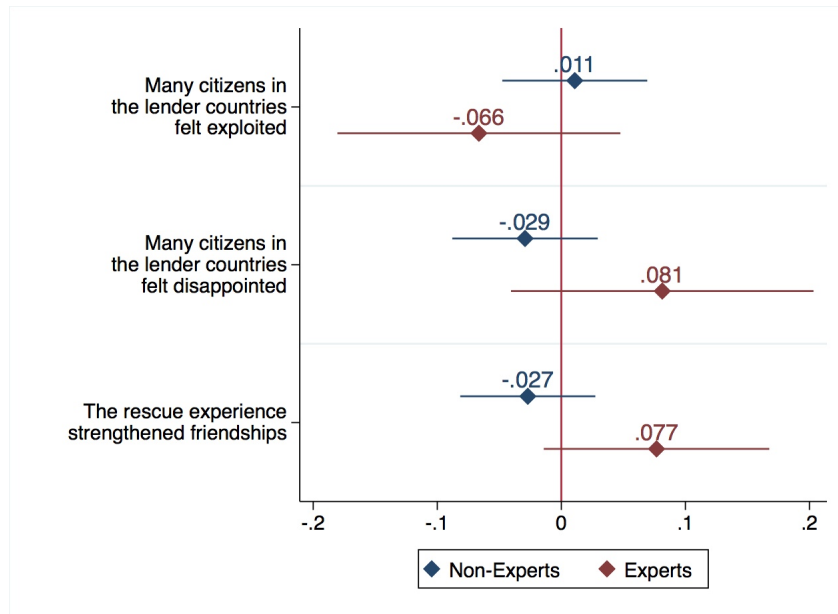
We display the average marginal effect of estimating our model by binary logit. The displayed effect is the effect of reporting to be the national of a program country. The diamonds show the size of the effect, the lines represent the 95 % confidence intervals. The exact wording of the questions is the following. 5d) The rescue experience made many citizens in the lender countries feel exploited; 5e) The rescue experience made many citizens in the lender countries feel disappointed; Question 5f) The rescue experience strengthened friendships between citizens. The dependent variable takes the value of one when the individual respondent strongly or slightly agreed to the individual questions and zero otherwise.

Figure 11: Situation in Greece

The lender countries
primarily benefited from —
the loans to Greece*

.13

.12

Greece will fully —
pay back its debt

.2

-.065

-.2   -.1   0   .1   .2   .3

◆ Non-Experts   ◆ Experts

*participants had the option to answer with lender/
borrower country/both equally

We display the average marginal effect of estimating our model by binary logit. The displayed effect is the effect of reportin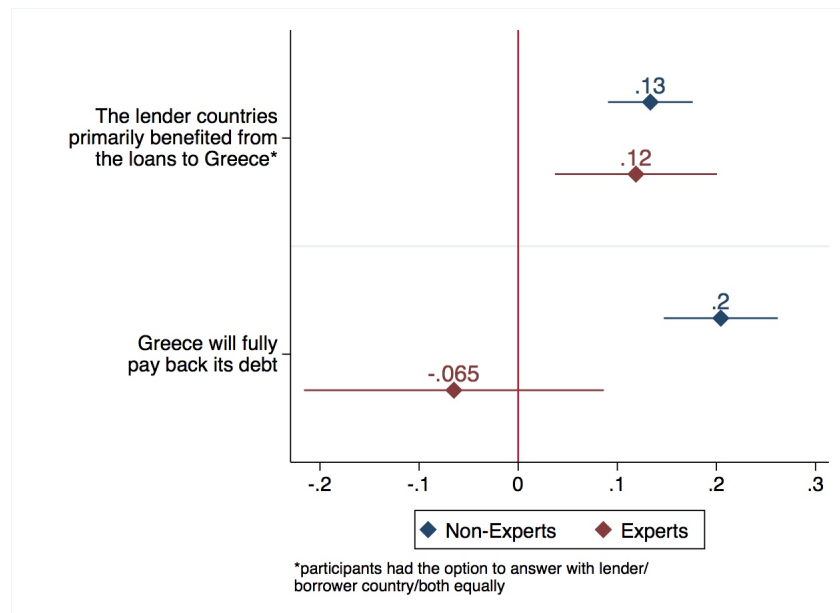g to be the national of a program country. The diamonds show the size of the effect, the lines represent the 95 % confidence intervals. The exact wording of the questions is the following. Question 6) Who primarily benefited from the loans to Greece? ; Question 7) Greece will fully pay back it's debt. The dependent variable takes the value of one when the individual respondent strongly or slightly agreed to the individual questions and zero otherwise.

5.3 Mechanisms

We investigate possible mechanisms for why differences in memories are present among the sample of non-experts but not among experts. An interesting question is which socioeconomic characteristics inherent to experts might explain why they do not show differences in memories. We use interaction effects based on a linear model to examine whether individual groups of the participants have a stronger differences in memories than others.

Age might well influence the perception of historic events. We therefore examine whether the effect of living in a borrower country differs for participants above the age of 35 as compared to participants below the age of 35. We find no statistically significant differences for citizens living in a borrower country above the age of 35.

Participants with a high level of education might have different political attitudes or use different types of media than participants with a low level of education (Inglehart (1970)). We interact the program variable with a dummy variable indicating whether the respondents have completed or are currently completing tertiary education. For most responses there is no differential effect of living in a borrower country for participants with a higher level of education. Citizens with a higher level of education from borrower countries are more likely to agree that lender country citizens felt exploited.

We also investigate whether not living in one's country of birth influences the recollection of the European debt crisis. Bechtel et al. (2014) show that having a cosmopolitan attitude explains differences in the attitudes of German citizens towards the aid&reform program. Choosing residence in another country might be an indication of a more cosmopolitan attitude. But it might also be an indication of unclear or weaker national identities: it becomes unclear whether someone who migrated from one country to another country some years ago should show a nation bias in favor of the country of origin, or for the country of residence. And for either of the two we might expect a weaker identification with both of these countries.[10]

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[10]Overall 541 non-experts reported living in a different country than their country of birth. 437 of these

We find that most responses remain unchanged for respondents not living in their country of birth. For the assessment of whether Greece will pay back it's debt and whether lender countries were the driving force the divergence between borrower and lender country citizens becomes smaller for the subsample of citizens living outside their country of birth. We interpret these results as being in line with the idea of own-nation biases.

6 Robustness Checks

Macroeconomic Variables We examine whether the correlation between the program country dummy variable and the respondents' answers depend on macroeconomic variables in the individual countries. We use interaction effects based on a linear model. Our macro variables include: the unemployment growth, public debt growth, GDP growth during the years after the great recession and the European debt crisis from 2007 to 2012. We also consider countries located more at the periphery (as measured by distance from Brussels). The baseline results remain unchanged when we condition the program country effect on these variables.

Non-experts from program countries who experienced large declines in GDP and high unemployment were more likely to agree that Greece will fully pay back it's debt than non-experts from program countries who experienced small declines in GDP and low unemployment.

The effect of the program country dummy is somewhat smaller when the individual country was located closer to Brussels and when we use questions 4, 5.2, 5.3 and 7 as the dependent variable.

Ordered and Multinomial Estimation In the baseline model the response options are aggregated into two categories, namely whether participants agree or do not agree with

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non-experts are from borrower countries and 104 are from lender countries. This information on whether respondents were born in a country other than that in which they currently live can be used as a proxy measure of country allegiance. The fraction of respondents living in a different country than their country of birth is quite equally distributed among borrower countries. For lender countries the highest fraction of mobile participants come from Eastern European countries.

an individual statement. Differences between participants from non-program and program countries also emerge when the full likert scale is used as the dependent variable using multinomial and ordered logit models. For all questions in which participants were asked to rank their level of agreement we estimate an ordered logit model, for questions in which participants were asked to name the responsible party we estimate a multinomial logit model. Inferences do not change.

Inattentive Respondents When distributing the survey online an attention check was included when asking non-experts about socioeconomic characteristics. If all participants failing this attention check are excluded from the survey or excluding all participants at the top 10 % and bottom 10 % of the survey time distribution does not change the inferences of the baseline estimation in the non-expert sample.

Clustered Robust Standard Errors We cluster standard errors on the country level. Due to the limited number of member states of the European Union we adjust for the small number of clusters using the wild bootstrap method for logit regressions as suggested by Cameron and Miller (2015). Inferences change for some questions when applying this method (Roodman et al. (2019)). The marginal effects of the borrower country dummy variable lacks statistical significance when we use the question about whether the lender countries wanted to force their desire for institutional change upon the borrower countries as the dependent variable.

Multiple Hypothesis Testing Applying the Bonferroni Method to control for multiple hypothesis testing the p-values can be adjusted by the number of questions that we ask our participants. The Bonferroni correction does not change the significance level of our results.

7 The French-German divide

Collective memories on the 2010 European public debt crisis may not just differ between respondents from borrower and lender countries. Brunnermeier et al. (2016) propose that

the euro crisis was a clash of ideas between France and Germany.[11] We therefore examine whether the memories of respondents in France are more in line with the borrower countries and, in particular, differ from the memories of German respondents.

The memories of French and German non-experts differ for individual questions (Table 1). For example, 70 % of the French and 52 % of the German non-experts agreed that the lender countries wanted to force institutional change in the borrower countries. The answers between French and German non-experts diverged regarding this question to a larger extent than non-experts from borrower (72 %) and lender countries (62 %). In a similar vein, 29 % of French and 13 % of German non-experts agreed that the lender countries were the main beneficiaries of the aid&reform programs (33 % of the non-experts from borrower and 18 % of the lender countries). Regarding other questions, however, the memories between French and German non-experts were more similar than the memories of non-experts from borrower and lender countries. For example, 66 % of the French and 70 % of the German non-experts agreed that the borrower countries felt exploited - this difference was much larger between non-experts from borrower (78 %) and lender countries (61 %).

The memories of French and German experts differ for individual questions to a large extent (Table 2). Standard errors are also larger than in the non-expert sample, however: our expert sample includes 31 French and 40 German experts; our non-expert sample includes 98 French and 99 German non-experts. In any event, 56 % of the French and 82 % of the German non-experts agreed that the lender citizens felt exploited - this difference was much larger between non-experts from borrower (61 %) and lender countries (68 %) and also much larger than the difference between French and German non-experts (66 % and 70 %). What is more, 62 % of the French and 30 % of the German experts agreed that the lender countries were the driving force of the aid&reform programs (40 % among the experts from borrower and 52 % among the experts from lender countries).

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[11]Blesse et al. (2020a) examine preferences of French and German politicians regarding European Monetary Union reforms. On governments' position taking in the 2010 European public debt crisis see Armingeon and Cranmer (2018).

We have also considered the view of Brunnermeier et al. (2016) in the multivariate analysis. We have considered France to be a program country and excluded Italy from the sample because Brunnermeier et al. (2016) propose that Italy was divided in a "teutonic" north and a "mediterranean" south. Doing so does not change the inferences as compared to our baseline model.

We have also examined differences between France, Spain, Greece, Portugal, Cyprus, the United Kingdom, Ireland and Croatia ("mediterranean" countries) and Germany, Austria, the Slovac Republic, Sweden, Finland, Denmark, the Netherlands, Estonia, Latvia, Lithuania, Poland and Czech Republic ("teutonic" countries). If we use the distinction between answers from respondents from "mediterranean" countries and "teutonic" countries as an explanatory dummy variable, differences as compared to our baseline model change. Doing so does, however, not distinguish between borrower and lender countries (the purpose of our study).

Overall, our results corroborate the hypothesis by Brunnermeier et al. (2016) that French and German respondents had different views regarding individual memories of the 2010 public debt crisis. Also, the memories of French respondents and the memories of the respondents from borrower countries were more similar than the memories of German respondents and the memories of the respondents from borrower countries.

8   Conclusion

Economic psychology suggests that individual borrowers and lenders remember informal credit relationships in different manners: memories are influenced by a self-serving bias. Similar phenomena are reported in the context of major other international events for collective memories in different countries, the Second World War being an important example (Roediger et al. (2019)).

We examine citizens' views about the 2010 European public debt crisis. In particular,

we investigate how the policy measures taken during the European public debt crisis are remembered, and whether there are systematic differences between citizens from borrower countries and citizens from lender countries. The results show differences in memories 8-9 years after the crisis. Distinguishing between experts and non-experts, the results suggest that experts from lender and borrower countries have quite similar views about the European public debt crisis. The views of non-experts are, by contrast, influenced by the country group of origin, and this influence may well be interpreted as a nation-serving bias. Such biases may explain if the European debt crisis has reduced the sense of belonging rather than bringing European citizens closer together. This experience is also useful for future assistance activities within the European Union as the ones discussed to handle the COVID-19 pandemic.

Differences in memories regarding the 2010 European public debt crisis also occurred between French and German respondents (Brunnermeier et al. (2016)). In particular, French and German experts had different memories regarding individual aspects of the crisis. An example is that French experts were more likely to agree that the lender countries were the driving force of the aid&reform program than German experts. Overall, the memories of French respondents and the memories of the respondents from borrower countries were more similar than the memories of German respondents and the memories of the respondents from borrower countries. Clearly, France and Germany are key players in the EU. Undertakings within the EU are more likely, the more France and Germany agree.

Future research may examine in more detail why collective memories on the 2010 European public debt crisis differ. The media and the narrative of national politicians are likely to influence collective memories. The study by Müller et al. (2018) shows, that leading newspapers in Germany, France, Italy and Spain blamed (or did not blame) individual countries for the 2010 public debt crisis. The narrative of national politicians is also very likely to influence collective memories: when national politicians blame individual countries for the crisis or downplay public debt, citizens are likely to adopt those views (Blesse et al. (2020b)).

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9 Survey Structure and Questionnaire

Figure 12: Questions 1 to 4

During the European debt crisis that started in 2010 several European countries signed a Memorandum of Understanding with the European Commission, European Central Bank (ECB) and the International Monetary Fund (IMF) on a combination of financial aid and economic adjustment.

1. The following list includes the EMU member countries. Please tick, as far as you can remember, which of them signed a memorandum with the EU, ECB and the IMF.

	Austria	Belgium	Cyprus	Estonia	Finland	France	Germany	Greece	Ireland	Italy
Yes	O	O	O	O	O	O	O	O	O	O
No	O	O	O	O	O	O	O	O	O	O
I don't know	O	O	O	O	O	O	O	O	O	O

	Latvia	Lithuania	Luxembourg	Malta	the Netherlands	Portugal	Slovakia	Slovenia	Spain
Yes	O	O	O	O	O	O	O	O	O
No	O	O	O	O	O	O	O	O	O
I don't know	O	O	O	O	O	O	O	O	O

2. In your opinion, what is the main reason why these countries entered these programmes:

	a)The lender countries wanted to help the borrower countries	b)The lender countries wanted to help themselves to avoid a major crisis at home	c)The lender countries wanted to force their desire for institutional change upon the borrower countries
strongly agree	O	O	O
slightly agree	O	O	O
slighty disagree	O	O	O
strongly disagree	O	O	O
I don't know	O	O	O

3. In formal terms, the borrower countries that signed a memorandum had to apply for support. But thinking about the true motivations and the political processes behind these events, which of the following three alternatives corresponds most closely to your perceptions

The borrower countries wanted it, the lender countries were more reluctant	O
The lender countries wanted it, the borrower countries were more reluctant	O
Both wanted it equally	O
I don't know	O

4. Who do you think mainly benefited from the rescue package?

The borrower countries	O
The lender countries	O
Both groups of countries benefited equally	O
I don't know	O

5. Please give assessments of the following questions.

	a) The rescue experience made many citizens in the borrower countries feel guilty	**b)** The rescue experience made many citizens in the borrower countries feel exploited	**c)** The rescue experience made many citizens in the borrower countries feel inferior	**d)** The rescue experience made many citizens in the lender countries feel exploited	**e)** The rescue experience made many citizens in the lender countries feel disappointed	**f)** The rescue experience strengthened friendship ties between the citizens in the borrower
strongly agree	○	○	○	○	○	○
slightly agree	○	○	○	○	○	○
slightly disagree	○	○	○	○	○	○
strongly disagree	○	○	○	○	○	○
I don't know	○	○	○	○	○	○

The two remaining questions are specifically about Greece.

6. Greece will fully pay back its debt.

strongly agree	○
slightly agree	○
slightly disagree	○
strongly disagree	○
I don't know	○

7. Who primarily benefitted from the loans granted to Greece?

Greece	○
The lender countries	○
Both benefitted equally	○
I don't know	○

10 Appendix

10.1 Sample Decomposition

Figure 14: Composition of the WES Sample
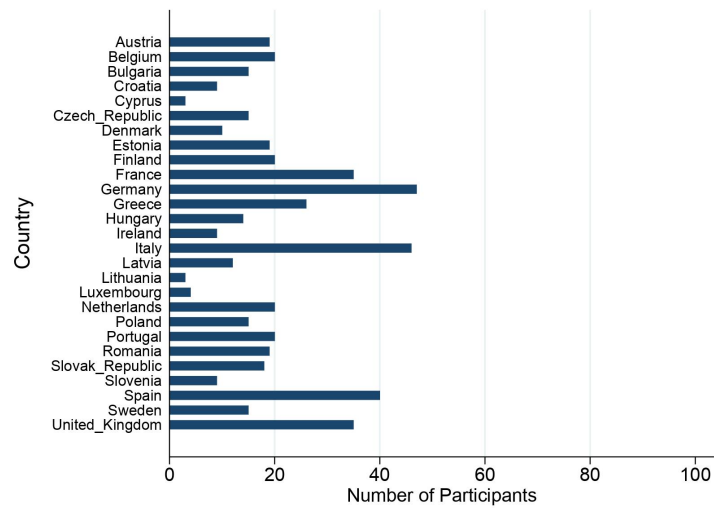
The figure displays the number of individuals according to the country they are currently living in.

Figure 15: Composition of the Prolific Sample
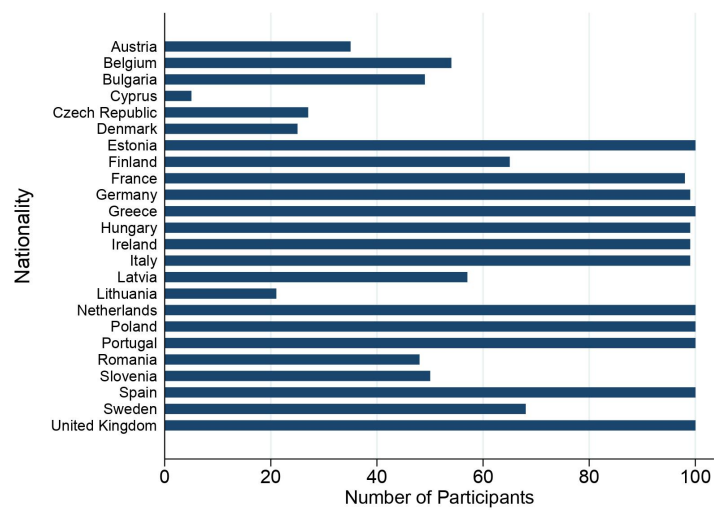
The figure displays the number of individuals according to the nationality they reported. The total number of individuals per nationality was capped at 100.

10.2 Inter-Country Comparison

Table 1: Comparison of answers from borrower country citizens (Non-experts)

	Greece	Ireland	Portugal	Spain	France	Germany	Borrowers	Lenders
2.a The lender countries wanted to help borrower countries								
	0.31	0.62	0.47	0.54	0.59	0.55	0.48	0.62
2.b The lender countries wanted to avoid crisis at home								
	0.96	0.93	0.88	0.86	0.94	0.94	0.90	0.90
2.c The lender countries wanted to force institutional change								
	0.87	0.54	0.77	0.66	0.70	0.52	0.72	0.62
5.a Borrower citizens felt guilty								
	0.57	0.51	0.41	0.45	0.49	0.34	0.48	0.39
5.b Borrower citizens felt exploited								
	0.93	0.74	0.78	0.63	0.66	0.70	0.78	0.61
5.c Borrower citizens felt inferior								
	0.82	0.75	0.62	0.68	0.62	0.67	0.71	0.62
5.d Lender citizens felt exploited								
	0.73	0.51	0.57	0.57	0.54	0.79	0.60	0.60
5.e Lender citizens felt disappointed								
	0.68	0.43	0.58	0.57	0.64	0.70	0.57	0.61
5.f The rescue experience strengthened friendships								
	0.10	0.35	0.30	0.27	0.28	0.16	0.25	0.27
3. Greece will fully pay back it's debt								
	0.68	0.57	0.43	0.52	0.50	0.41	0.55	0.42
4. Lender countries were driving force								
	0.85	0.70	0.73	0.51	0.60	0.46	0.71	0.44
6. Lender countries were main beneficiaries								
	0.36	0.30	0.31	0.35	0.29	0.13	0.33	0.18
7. Greeks benefited from rescue package to Greece								
	0.87	0.44	0.49	0.44	0.48	0.41	0.56	0.35
N	100	99	100	100	98	99	404	1293

The figure displays the responses for citizens from the individual borrower countries. For questions 2,5 and 6 respondents could answer: strongly agree, slightly agree, slightly disagree, strongly disagree, I don't know. We exclude all respondents who answered with I don't know and report the share of respondents that strongly and slightly agreed to the individual question. For questions 3, 4 and 7 respondents could answer: the lender countries, both equally, the borrower countries, I don't know. We exclude all respondents who answered with I don't know and report the share of respondents that stated lender countries.

Table 2: Comparison of answers from borrower country citizens (Experts)

	Greece	Ireland	Portugal	Spain	France	Germany	Borrowers	Lenders
2.a The lender countries wanted to help borrower countries								
	0.84	0.71	0.44	0.58	0.62	0.71	0.66	0.61
2.b The lender countries wanted to avoid crisis at home								
	1.00	1.00	0.94	0.96	0.93	1.00	0.98	0.96
2.c The lender countries wanted to force institutional change								
	0.82	0.63	0.82	0.88	0.79	0.73	0.83	0.75
5.a Borrower citizens felt guilty								
	0.40	0.67	0.41	0.30	0.35	0.23	0.38	0.32
5.b Borrower citizens felt exploited								
	0.96	1.00	0.72	0.83	0.93	0.94	0.86	0.88
5.c Borrower citizens felt inferior								
	0.75	0.89	0.67	0.71	0.96	0.94	0.73	0.78
5.d Lender citizens felt exploited								
	0.71	0.44	0.53	0.63	0.56	0.82	0.61	0.68
5.e Lender citizens felt disappointed								
	0.78	0.67	0.67	0.86	0.73	0.65	0.77	0.69
5.f The rescue experience strengthened friendships								
	0.19	0.14	0.44	0.15	0.11	0.03	0.24	0.16
3. Greece will fully pay back it's debt								
	0.50	0.17	0.31	0.70	0.67	0.46	0.50	0.62
4. Lender countries were driving force								
	0.40	0.40	0.22	0.67	0.62	0.30	0.40	0.52
6. Lender countries were main beneficiaries								
	0.63	0.00	0.00	0.28	0.27	0.05	0.30	0.16
7. Greeks benefited from rescue package to Greece								
	0.36	0.40	0.67	0.56	0.64	0.44	0.50	0.57
N	26	9	18	32	31	40	88	350

The figure displays the responses for citizens from the individual borrower countries. For questions 2,5 and 6 respondents could answer: strongly agree, slightly agree, slightly disagree, strongly disagree, I don't know. We exclude all respondents who answered with I don't know and report the share of respondents that strongly and slightly agreed to the individual question. For questions 3, 4 and 7 respondents could answer: the lender countries, both equally, the borrower countries, I don't know. We exclude all respondents who answered with I don't know and report the share of respondents that stated lender countries.