

Political Trust in Times of Economic Turmoil: Lessons from the Euro Crisis

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Abstract

How politically costly is a severe economic crisis? Despite recent advances in the study of political trust, we still know relatively little about how trust in political institutions responds to massive economic downturns. Extending the theory of economic voting to trust in political institutions, I argue that frustrated citizens withdraw trust from institutions involved in the policymaking process in response to disappointing economic performance. Using the synthetic control method, I find that Spanish citizens punished the government, parliament, and political parties for the crisis. This massive economic downturn nearly halved the share of individuals trusting those institutions. Additional placebo tests suggest that the effect was specific to representative political institutions as it did not spill over to trust in institutions not involved in the policymaking process. These results, which appear to generalize to other countries, suggest that economic downturns may threaten democracy because they undermine confidence in important political institutions.

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[†]I gratefully acknowledge Michael Bechtel's advice and encouragement throughout this project. For valuable insights and conversations, I also thank Roland Hodler, Catherine de Vries, Yotam Margalit, Klaus Armingeon, Lukas Schmid, Massimo Mannino, Mailys Korber, James Lo, and audiences at the 2015 and 2016 SPSA conferences, the 2015 EPSA conference, the 2015 meeting of the DVPW Comparative Politics section, and the 2015 meeting of the ECPR Standing Group on Citizenship. I gratefully acknowledge support from the Swiss National Science Foundation (grant # 100017_146170/1). All errors are my own.

Since Lehman Brothers went bankrupt in 2008, some countries of the European Union have suffered serious economic hardship. Many countries witnessed the most severe downturn since the Great Depression in the 1930s, which brought excessive poverty to many regions of the world. The crisis, however, did not only have economic consequences. Citizens voted governments out of office (Bosco & Verney, 2012), political leaders resigned, and thousands of individuals voiced their dissatisfaction with the perceived failure of governments to adequately cope with the crisis and its consequences (van Gent, Mamadouh, & van der Wusten, 2013). While these examples undeniably suggest that the economic recession in Europe had a tremendous impact on day-to-day politics and despite the emerging literature on the consequences of the crisis¹, scholarship has only just begun to gauge the political costs of the crisis.

The importance of trust for the functioning of democracy is widely recognized. Yet, we still know relatively little about how severe economic crises affect citizens' confidence in representative political institutions. Some have begun to explore the more immediate effects of the great recession on trust in selected national and international political institutions (Armingeon & Ceka, 2014; Braun & Tausendpfund, 2014). For example, Ringlerova (2015) finds that trust in institutions at these two levels of government developed differently during the recent economic crisis. While individual-level support for the European Parliament in the Netherlands remained surprisingly stable during the recent crisis, trust in the national government exhibited a higher degree of volatility. Countries that faced bigger economic shocks also experienced stronger fluctuations in political trust (Armingeon & Guthmann, 2014). Research furthermore suggests that negative perceptions of the political responsiveness of political institutions as well as corruption depressed political trust in Spain and Portugal in 2012 and 2013 (Torcal, 2014). Despite these valuable findings, we still lack a theory of trust in institutions that explains how political trust in different political institutions responds to severe economic crises that last for an extended period of time.

¹See for instance the Special Issue in Comparative Political Studies 2016, Volume 49, Issue 7.

Exploring this question seems particularly relevant considering Rothstein and Stolle’s (2008, 443) claim that it is problematic to collapse trust in different institutions under one label. Building indices of institutional trust (e.g., Catterberg & Moreno, 2006; Kaase, 1999; Lühiste, 2006) ignores heterogeneity in the determinants and dynamics of confidence in political institutions which could inform the ongoing debate about how economic hardship influences institutional trust. Examining trust in several institutions separately also allows for a more nuanced perspective on the political cost of a severe economic downturn. Does economic hardship undermine trust in political institutions more generally?

Building on the literature highlighting the importance of economic performance for trust in political institutions (e.g., Mishler & Rose, 2001; van der Meer & Dekker, 2011), I address these questions by exploring separately how the Spanish economic crisis that started in 2008 affected confidence in the government, the parliament, and political parties. Spain experienced a deep recession as well as a massive increase in unemployment. As a consequence, disappointed citizens withdrew trust from all representative political institutions that participate in the policymaking process as these institutions could have taken the appropriate measures to ameliorate the situation and provide voters with beneficial economic outcomes. To probe the validity of the theoretical argument, I perform placebo studies that analyze how trust in the legal system and the army evolved during the crisis. Because these institutions are not involved in the policymaking process, trust in these institutions should remain unaffected by the crisis.

I employ a synthetic control design to quantify the effect of the massive economic downturn in Spain on trust in political institutions. This design provides estimates of the recession’s causal effects, which helps to improve over the correlational nature of previous findings (e.g., Armingeon & Ceka, 2014). Moreover, while previous work has examined relatively short time series (e.g., Ringlerova, 2015), I analyze a much longer period (1997 to 2013). As this period includes both, the time prior and during the crisis, it allows me to study in greater detail how the economic crisis in one of the largest EU members affected

trust in political institutions from the beginning of the downturn onwards. Finally, unlike prior research on attitudes towards political institutions during the recent economic downturn in Europe, I explore different institutions to analyze in greater detail how economic hardship affects political trust in a diverse set of institutions.

Spain constitutes a particularly interesting case for evaluating the theoretical predictions due to the depth and severity of its economic downturn. First, the country not only experienced unprecedented levels of joblessness (“Spain’s Unemployment Rate Climbs to Record High,” 2013), but also witnessed the highest monthly increase in unemployment ever recorded (“La Recesión Económica Provoca en Octubre la Mayor Subida del Paro,” 2008). This provides a valuable opportunity to study the detrimental effect of a massive economic downturn on a country’s political culture. Second, Spain is the fifth largest European Union economy and has a considerable say in EU decision-making. Hence, domestic political developments have the potential to also affect European policy choices and thereby other member states. Third, the collapse of the real estate bubble in 2008 offers a relatively straightforward and uncontroversial way to determine the beginning of the economic slump. Studying the case of Spain using the synthetic control method promises to provide credible estimates of the causal effects of the crisis on trust in different political institutions. In addition, I explore the generalizability of these findings by analyzing a large dataset that comprises almost all EU member countries and examine how citizens’ trust in political institutions responds to fluctuations in the macroeconomic performance.

I estimate that the Spanish economic slump reduced the share of people trusting the government on average by about 21 percentage points. This equals a decrease of about 42% compared to pre-crisis levels. Additional analyses suggest that this effect likely mirrors economic concerns related to unemployment risks and not corruption-concerns or inflation-aversion. The results also suggest that the downturn undermined trust in the parliament and political parties, which implies that the crisis had a negative effect on trust in representative political institutions more generally. However, and in line with theories of economic/performance-

based assessments of political performance, additional placebo studies indicate that the crisis did not have any noteworthy effects on citizens' levels of confidence in institutions that do not participate in the policymaking process. I complement these case study results by examining a large sample of EU member countries and objective measures of economic performance. The findings support the idea that the main results for Spain have the potential to generalize. I elaborate on the implications of these findings in the conclusion.

Trust in Political Institutions

Rohrschneider and Schmitt-Beck (2002) place trust in institutions near the middle of a scale of regime evaluations, which ranges from constitutional ideals to democratic reality. As such, political trust combines elements from both poles of this scale. First, it “implies a broad confidence that an existing regime is a desirable regime” (Rohrschneider & Schmitt-Beck, 2002, p. 38), i.e., citizens accept the current democratic institutional architecture. Second, it mirrors a summary judgment of a regime's capacity to provide beneficial outcomes to citizens. Drawing on this distinction and building on important previous work on the subject (Levi & Stoker, 2000; Miller & Listhaug, 1990), I define political trust as a relational concept in which individuals make themselves vulnerable to political institutions that have the capacity to do them harm or betray them. Institutional trust is a summary judgment about whether institutions fulfill citizens' expectations. Therefore, citizens trust institutions to the extent that they produce desired outcomes. If expectations are met, citizens reward political institutions with higher levels of trust. If an institution fails to meet citizens' expectations, they withdraw trust.

One may question why political institutions have an incentive to increase or maintain citizens' trust. The rationale seems straightforward in the case of re-election seeking incumbents because voters with low levels of political trust in the government have a higher probability of voting for challengers (Hetherington, 1999). Thus, there exists a close link between a

commonly used measure of government support, i.e., vote share, and confidence in this institution.² However, political trust also matters in non-election periods because citizens with low levels of confidence in political institutions find it more acceptable to disobey the law (Marien & Hooghe, 2011), have a higher probability of committing crimes such as tax fraud (Scholz & Lubell, 1998), and purchasing illegal products (Lindström, 2008). More generally, trust serves as a resource that political institutions can use to increase citizens' willingness to support policy change (Trüdinger & Bollow, 2011), contribute to the provision of public goods (Hetherington, 2005; Rudolph & Evans, 2005), and grant them more temporal leeway to tackle long-term social problems (Jacobs & Matthews, 2012). These findings seem particularly important because recent research suggests that individuals may develop generalized, pro-social preferences that increase contributions to various types of public goods in different behavioral contexts (Bolsen, Ferraro, & Miranda, 2014). Overall, different institutions face strong incentives to actively try to accumulate and maintain political trust.

Which expectations may citizens have when considering political institutions? I argue that the logic of economic voting wherein economic fundamentals tend to explain electoral choice (Downs, 1957; Kramer, 1971) also applies to the level of trust citizens have in the government (Levi & Stoker, 2000; Mishler & Rose, 2001). Because the government has various policy instruments at its disposal to influence the economy and respond to adverse economic shocks, for instance, by increasing expenditure to boost demand (Alesina, Cohen, & Roubini, 1993; Nordhaus, 1975; Persson & Tabellini, 2002), citizens expect incumbents to use these instruments to realize economic prosperity. If they succeed, this will increase citizens' confidence in the government. However, if incumbents fail to deliver good economic performance, citizens will withdraw trust from the government. The Spanish economic crisis is such an instance where the government did not succeed in meeting citizens' demands and hence I expect that the downturn reduced individuals' trust in the government.

²Easton (1975) argues that support for political authorities expresses itself in trust in institutions. Empirical evidence suggesting that vote choice and trust in the government are correlated are in line with this argument.

A similar dynamic also characterizes how economic outcomes affect trust in other representative political institutions such as the parliament (Stevenson & Wolfers, 2011; van der Meer & Dekker, 2011) and the political parties. Since members of parliaments and government belong, at least in the vast majority of the cases, to political parties, I argue that citizens condition their trust in political parties on the same factors as trust in the other two institutions. Both, parliaments and parties, have important roles in all steps of the policymaking process and therefore have the means to voice citizens' requests in the public arena and ensure the supply of policy benefits. Consequently, these institutions have a subsidiary duty to improve individuals' economic well-being and represent their interests in the policymaking process. If political institutions fail to fulfill these expectations, citizens will lose confidence in them. Hence, in the case of a worsening economy, citizens withdraw trust owing to disappointed expectations. Therefore, I expect that the political cost of massive economic crises is not restricted to trust in the government, but rather that a severe downturn also erodes trust in the parliament and the political parties and thus representative political institutions more generally.

The Economic Crisis in Spain

To test these theoretical claims, I first conduct an in-depth case study of Spain, which has experienced a massive economic crisis from 2008 onwards. The fifth largest economy of the EU officially entered recession in the second quarter of 2008 (Ortega & Peñalosa, 2012, p. 7). Even before that, unemployment had started to grow and continued to do so until it reached almost unprecedented levels in 2013.³ Survey data shows that the population noticed this downward trend as considerably more Spaniards expressed negative views about the economy from 2008 onwards than in 2007 (Fraile & Lewis-Beck, 2014, p. 164). Public perceptions thus reflected economic reality from the very beginning of the crisis.

In 2008 and 2009, the Spanish government tried to address the economic woes by introduc-

³For a more detailed discussion see Section A.1 in the Online Appendix.

ing a package of expansionary policies but the crisis continued to worsen and unemployment increased further. Consequently, since their strategy to pursue an expansive fiscal policy had failed (Conde-Ruiz & Marín, 2013, pp. 22), Spanish authorities changed their approach from 2010 onwards and adopted budget cuts as well as tax increases to cope with the downturn. The IMF estimates that the Spanish economy will take until 2017 to return to the size it was in 2008 before the bubble burst. As of 2015, the economy shows signs of recovery but many people still experience economic hardship on a daily basis (“Spain’s Recovery: Not Doing the Job,” 2015). Considering the depth of the crisis and the theoretical mechanism discussed above, I expect that trust in Spanish representative political institutions started to decline in 2008.

It is important to note that the aforementioned austerity measures the Spanish government resorted to started to take effect in May 2010. Such budget cuts may negatively impact trust. Because the economic downturn was the prime reason in forcing the Spanish government to adopt adjustment measures, however, the possible negative effect of these measures on political trust can also be attributed to the economic crisis.

Data and Method

To explore the political cost of the Spanish economic crisis, I use Eurobarometer data from 1997 to 2013⁴ and measure the dependent variable as the share of respondents (0-1) that expressed *Trust in the Government* (or the respective political institution), i.e., answered with “tend to trust” to the survey question. Moreover, to construct synthetic Spain I choose a set of predictors consisting of sociodemographic variables as well as objective economic indicators based on theoretical considerations (see Mishler & Rose, 2001 for a discussion). I use the following sociodemographic variables which are part of the Eurobarometer datasets⁵: *Unemployed*, *Male*, *Level of Education* (three categories), and *Age* (seven categories). Fur-

⁴For detailed information about the waves used and other aggregation information, see Section A.2 in the Online Appendix.

⁵Always as the weighted share of individuals per country and wave in the dataset

thermore, I also use data from Eurostat on the *Yearly Unemployment Rate*, *Yearly Real GDP p.c. in Euro*, and *Yearly Real GDP p.c. Growth Rates*.⁶

I use the synthetic control method (SCM) to obtain credible estimates of the causal effect of the economic crisis on trust in the Spanish government and later also in other political institutions. Afterwards, I perform a time-series–cross-section analysis to explore whether the internally valid estimates have the potential to generalize across a large sample of EU member countries.

The SCM aims at constructing a synthetic version of the unit of interest, in my case Spain, to use it as counterfactual (Abadie, Diamond, & Hainmueller, 2010, 2015; Abadie & Gardeazabal, 2003).⁷ To this end, I choose a weighted average of donor pool countries that approximates the outcome of interest (trust in the respective political institution in Spain) as closely as possible in the period before the downturn by using information about pre-crisis characteristics, the so-called predictors. Following Abadie et al. (2015), I select the synthetic control that minimizes the root mean square prediction error (RMSPE), i.e., the difference between the unit of interest and the control unit in the outcome variable in the pre-treatment period. The credibility of the counterfactual critically hinges on the RMSPE because I use this counterfactual to project how trust in the respective institutions would have evolved had Spain not experienced the economic crisis. I estimate the negative effect of the downturn on trust in political institutions as the difference between trust-levels in Spain and its synthetic counterpart following the start of the economic crisis.

One of the advantages of using the SCM is increased transparency as it provides detailed information on the composition of the synthetic control unit, i.e., the weights with which every unit of the donor pool contributes to the synthetic control group. Additionally, it also presents details about pre-intervention outcomes for the synthetic control unit as well as the treated unit (Abadie et al., 2010, p. 494), which allows for an examination of similarities between these two units. I provide all this information in the Online Appendix and briefly

⁶See Table A.1 in the Online Appendix for a detailed overview.

⁷For a more technical discussion see Section A.3 in the Online Appendix.

refer to it in the discussion of the results.

The theoretical framework emphasizes the importance of the economy for trust in political institutions and the recent massive economic downturn in Spain offers a valuable opportunity to test this theoretical mechanism. To this end, I define this economic crisis as treatment. The fifth largest economy of the EU officially entered recession in the second quarter of 2008, which precedes the fieldwork period in 2008, and I consequently define 2008 as first treatment year. The crisis moreover lasted until after 2013, the last year for which I have data. Therefore, I consider the years from 2008 to 2013 as treatment period.

Donor Pool

To construct the counterfactual, I use a donor pool that contains Austria, Belgium, Denmark, Finland, France, Germany, Luxembourg, Sweden, the Netherlands, and the United Kingdom. I selected these countries for the following reason: Abadie et al. (2015, p. 497) point out that “it is important to restrict the donor pool to units with outcomes that are thought to be driven by the same structural process as for the unit representing the case of interest” to ensure that the comparison units are suited to approximate the counterfactual of the unit of interest. Therefore, the countries included in the donor pool are selected based on similarities in the underlying data-generating process with Spain rather than on resemblance in terms of country characteristics. One argument suggests that the same structural process should drive trust in political institutions in Spain and the countries in the donor pool. Spain and all countries in the donor pool joined the EU prior to the year 1997 and thus before the beginning of the period I examine. If any shocks at the EU-level affected political trust during this period, these were common to all these countries and hence presumably influenced the structural process in Spain and the donor pool countries in a similar way.

Due to concerns about the similarity of the data-generating process, I excluded several other countries from the donor pool. First, Greece, Ireland, and Portugal experienced similar or even worse economic downturns than Spain and were hence presumably subject to a

structural shock to the outcome variables of interest. Thus, these countries cannot be used to approximate the counterfactual of Spain without the economic crisis. Moreover, I excluded Italy from the donor pool because of its high levels of corruption (Del Monte & Papagni, 2007). Data collected from early January to late March 2014 shows that the frequency of corruption news varies strongly across time (Albertazzi & Marchetti, 2015, p. 28). Considering research suggesting that corruption correlates negatively with political trust (e.g., van der Meer & Dekker, 2011), it seems likely that these corruption scandals that the media covers affect trust in political institutions and confidence in Italy therefore follows an idiosyncratic pattern, which makes this country unsuitable as comparison unit. Consequently, I drop Italy from the donor pool.⁸ Finally, I also exclude the countries that joined the European Union in 2004 and later from the donor pool. Research suggests that economic performance correlates with political trust in post-communist societies (Mishler & Rose, 2001). However, these findings also show that factors such as perceived fairness of the institutions as compared to the communist regimes and corruption significantly correlate with trust in political institutions. This suggests that the data generating process in those countries differs from Spain and they are hence not suited to construct synthetic Spain. Therefore, I only use ten fellow member states of the EU that have all joined the Union long before 2004 like Spain for the donor pool.

Some may argue that the economic crisis also affected countries in the donor pool. This would imply that, according to the theoretical argument, these countries also experienced declining levels of political trust. Compared to the economic crisis in Spain, however, donor pool countries only experienced brief spells of economic downturns and recovered quickly. Moreover, even if the economic crisis somewhat depressed trust in the government in control countries, this would lead me to underestimate the true effect and thereby result in conservative estimates.

⁸I also conducted the same analyses including Italy in the donor pool. Overall, it yielded similar results. For some outcome variables, Italy received zero weight and thus did not influence the composition of synthetic Spain.

Political Trust in Spain

To estimate the negative effect of the economic crisis on trust in the Spanish government, I start by generating the counterfactual evolution of trust in the government in the absence of the crisis.⁹ The resulting synthetic Spain is a weighted average of Finland, Denmark, France, Germany, and Sweden with weights decreasing in this order. All other countries in the donor pool receive zero weights.¹⁰ The left panel in Figure 1 displays the trajectory of trust in the government in Spain and synthetic Spain for the 1997 to 2013 period and shows strong similarities before 2008. The RMSPE¹¹, which is only about 0.02, confirms the impression that synthetic Spain reproduces pre-crisis trust for Spain very well during the entire pre-crisis period.

[Insert Figure 1 about here]

The right-hand panel of Figure 1 reports the difference in trust in the government between synthetic and observed Spain, i.e., the negative effect of the crisis. From 2008 onwards, the two lines diverge substantially. The results suggest that the economic crisis reduced trust in the government already in 2008 but that this was only the beginning of a considerable reduction in trust in the government. The difference between Spain and its synthetic counterpart grows at an almost constant pace and peaks in 2012 when the gap reaches more than 35 percentage points. In 2013, the difference decreases to slightly below 28 percentage points, which still represents a massive loss of political capital due to the downturn. In comparison with pre-crisis levels of trust, this decrease means that the share of individuals trusting the government was more than halved. Overall, these results show a pronounced negative effect of the economic crisis on governmental trust in Spain where the difference-in-differences estimate suggest that confidence in the government was on average about 21 percentage points

⁹To compute the counterfactual, I used STATA/SE 13.1 and the Synth package described in Abadie et al. (2015) with the options nested and allopt.

¹⁰Table A.2 in the Online Appendix shows these weights for each country in the synthetic version of Spain for the outcome variable trust in the government.

¹¹The pre-2008 RMSPE for Spain is defined as $\text{RMSPE} = (\frac{1}{T_0} \sum_{t=1}^{T_0} (Y_{1,t} - \sum_{c=2}^{C+1} w_c * Y_{c,t})^2)^{\frac{1}{2}}$.

lower¹² during the crisis than before.¹³ A t-test suggests that this difference is highly significant. Furthermore, in-space placebos support the idea that the Spanish economic crisis exerts a statistically significant effect on trust in the government (see Section A.4 in the Online Appendix for details). The documented decline in trust in the Spanish government qualitatively mirrors the results reported in Armingeon & Ceka (2014, p. 95) based on a before-after comparison. However, since we do not use the same Eurobarometer wave in 2011, the results are not directly comparable since for instance unemployment continued to grow in the time between those two waves.

How credible is the counterfactual used here? Some may argue that the structural process in Spain differs from the one in the countries constituting synthetic Spain which would in turn cast doubt the credibility of the results. However, my examinations of the data-generating process in the synthetic Spain-countries, i.e., those that receive non-zero weights, using regressions (see Section A.5 in the Online Appendix) reveal similarities in the determinants of the outcome variable between these two sets of countries, which increases the credibility that the countries in the donor pool are suitable and using the resulting synthetic Spain as comparison units produces reliable estimates. Moreover, a comparison of the pre-crisis means of the predictor variables that were used to construct the counterfactual for Spain, synthetic Spain, and for reasons of comparison also the mean of all donor pool countries suggests that synthetic Spain is better suited as comparison unit.¹⁴ Synthetic Spain is very similar to real Spain in terms of pre-2008 share of unemployed in the sample, share of over 79 year olds in the sample, and trust in the government in 2004. These similarities are especially relevant because these variables played the most important roles in determining the outcome.¹⁵ This suggests that using the projections of the counterfactual obtained by applying the synthetic control method should yield credible estimates.

¹²See Table A.3 in the Online Appendix for more information.

¹³A simple before-after comparison using the means of the period 1997-2007 and 2008-2013 yields a minus of about 27 percentage points suggesting that it overestimates the negative impact of the Spanish economic downturn on trust in the government.

¹⁴See Table A.7 in the Online Appendix.

¹⁵See Table A.8 in the Online Appendix for variable weights.

Overall, using the synthetic control method suggests that the Spanish government lost much political capital due to the economic downturn. This is consistent with the argument that citizens, who were disappointed when the government failed to successfully cope with the crisis, withdrew trust from this central representative institution. The share of citizens trusting the government remained at least until 2013 well below what it supposedly would have been had Spain not experienced the massive economic downturn. This strong negative effect qualitatively mirrors the magnitude of the economic crisis.

Negative Effects on Trust in other Representative Institutions

I now turn to the analysis of trust in other representative institutions. Institutions such as the parliament and the political parties represent the citizens and are involved in the policymaking process. Therefore, they carry some responsibility for the policy response to the crisis. Consequently, I expect that the Spanish economic downturn undermined not only trust in the government but also confidence in the parliament as well as the political parties and therefore trust in representative institutions more generally. To test this claim, I apply the synthetic control method selecting a combination of the predictors presented earlier, which produces the best pre-crisis fit.¹⁶ The upper two panels in Figure 2 show the results for *Trust in the National Parliament*.¹⁷ The panel on the upper left depicts the pre-crisis fit. Synthetic Spain follows the share of people trusting the Spanish parliament quite well in the pre-crisis period ($\text{RMSPE} \approx 0.02$), which lends further credence to the results in the top right panel. This panel shows a small difference between Spain and synthetic Spain in the first crisis year 2008. Afterwards, however, the two lines diverge and the difference peaks in 2012, when the share of people that trusted the Spanish parliament was more than 33 percentage points below what it would have been without the crisis. Similar to trust in the government, the gap between Spain and synthetic Spain narrows a bit in 2013 but remains

¹⁶I tried different combinations and subsets of the predictors listed in Table A.1 in the Online Appendix and chose combinations that minimize the RMSPE.

¹⁷For more information about the composition of synthetic Spain for this and the following outcome variables see Section A.6 in the Online Appendix.

at a level that equals about half the share of individuals trusting the parliament in the last pre-crisis years. The economic crisis therefore reduced trust in the parliament by about 50%. These results thus support the idea that citizens also expect the parliament to take measures to address an economic crisis and that a strong downturn influences how citizens perceive the trustworthiness of the national assembly.

[Insert Figure 2 about here]

Did the crisis also affect *Trust in Political Parties*? The panel in the lower left corner of Figure 2 shows how confidence in parties evolved in the time before and during the crisis period in Spain and synthetic Spain. Synthetic Spain tracks the observed evolution of trust in the parties well with some deviations in 2006 and 2007, the last two pre-crisis years (RMSPE ≈ 0.02). The lower right panel shows that economic hardship caused mistrust in the parties to grow. The results suggest that the downturn reduced the share of people trusting the Spanish parties by 15 to 20 percentage points. This effect exceeds the differences between treated and synthetic Spain in pre-crisis times by a factor of about two. The magnitude of the decline in trust appears substantial because Spaniards already perceived political parties as rather untrustworthy before the onset of the economic crisis. Consequently, the loss in trust amounts to more than 50% over the pre-crisis average.

Overall, I find some similarities between how the Spanish economic crisis reduced trust in the national government, parliament, and the political parties: Trust in all three representative institutions was considerably below what it would have been without the crisis. While the downturn caused trust in the government and parliament to decline at an almost constant pace until 2012 and rebounded a bit in 2013, trust in the parties declined sharply from 2008 to 2009 and then remained at an almost constant level below what it would have been had the crisis not occurred. Despite these differences, these results corroborate the idea that the Spanish economic downturn eroded trust in representative institutions more generally and that citizens punish political institutions which fulfill representative tasks directly related to the policymaking process for an economic downturn.

Placebo Tests: Trust in Other Institutions

The previous section showed the extent to which the Spanish economic crisis eroded trust in representative institutions. I argued that this is primarily a consequence of the responsibility these institutions have for steering the economy and providing citizens with economic benefits. To what extent do these results reflect the theoretical mechanism laid out above according to which individuals withdraw trust from institutions involved in the policymaking process when they are dissatisfied with the economy? Applying the same logic to institutions that do not participate in the policymaking process predicts that trust in such institutions remains unaffected by an economic downturn as they do not have the means to influence the economy. Evaluating this prediction resembles a placebo test which helps to address the concern that the results obtained so far may capture a general trend of declining confidence in political institutions that occurs due to reasons other than the theoretical mechanism outlined above. To explore whether economic hardship also reduced trust in political institutions that are not involved in the policymaking process, I analyze how trust in the legal system and the army evolved before and during the crisis in Spain.¹⁸

The upper two panels in Figure 3 show the results of the synthetic control method applied to *Trust in the Legal System*. In the pre-crisis period, synthetic Spain replicates the evolution of trust in the legal system very well ($\text{RMSPE} \approx .02$), which increases its credibility as a counterfactual. The difference between Spain and synthetic Spain from 2008 until 2010 reaches a maximum of only about six percentage points. This suggests that trust in the Spanish legal system was largely similar to what it would have been in the absence of the crisis. Moreover, the estimates suggest that while the downturn had a pronounced negative effect on trust in representative political institutions already in 2009 and 2010, trust in the national legal system seems to have remained rather stable in this period. This corroborates the idea that the Spanish economic crisis did not negatively influence trust in the legal

¹⁸Unfortunately, questions about trust in these two institutions were included less frequently in the Eurobarometer surveys. For trust in the national legal system, I have data for the same waves as for the other outcome variables but only from 1997 until 2010, and for trust in the army from 1997 to 2010 without 2008.

system.

To explore trust in another institutions that does not participate in the policymaking process, the lower two panels in Figure 3 show the effect of the economic crisis on *Trust in the Army*. A visual inspection of the left-hand panel and the RMSPE of .04 indicate that in pre-crisis times, synthetic Spain approximates the share of people trusting the army in Spain well. The lower right panel in Figure 3 confirms this impression. The deviations during the crisis are positive. i.e. a higher share of individuals trusts the army than without the crisis, but seem small and comparable in magnitude to the negative deviations in the pre-crisis period. These results thus suggest that the crisis did not reduce citizens' trust in the army.

[Insert Figure 3 about here]

Taken together, the findings provide evidence that the economic downturn in Spain strongly and durably decreased trust in representative institutions. The results furthermore suggest that citizen's confidence in the legal system and the army remained at a level very similar to what it had been had the crisis not occurred. Overall, these results thus support the idea that the Spanish economic downturn destroyed much political capital and strongly reduced trust in representative political institutions. However, despite the severity of the crisis, the negative effect of the downturn did not spread to other institutions and it seems likely that the results capture the detrimental effect of the economic downturn rather than a general decline in confidence in political institutions.

To what extent does this effect mirror economic concerns as opposed to other potentially relevant issues? Survey data suggests that individuals in Spain worried mostly about the employment situation and these concerns were substantially more widespread than concerns about rising prices or corruption, all of which could be rival explanations for the observed decrease in trust (for a more detailed discussion see Section A.7 in the Online Appendix). This lends plausibility to the interpretation that the decline in trust in representative institutions can be attributed to individuals' worries about the employment situation.

Finally, because the evidence presented so far stems from a single case study, one might question whether the results generalize to a larger set of countries. To answer this question, I compiled a time-series cross-section dataset covering a large number of EU countries in the period from 1997 to 2013.¹⁹ I then estimate several regression models with trust in representative institutions as the dependent variables and two different versions of a binary recession indicator as the main independent variable (Section A.8 in the Online Appendix provides detailed information about the data, the estimations, and the results). The results from these analyses suggest that the findings generalize to a larger set of countries wherein recessions are negatively correlated with trust in representative political institutions.

Conclusion

How does trust in different political institutions respond to a massive deterioration of the economy in a prolonged crisis? Improving our knowledge about this topic is important because political trust adds to the long-term stability of democratic systems. I argue that economic hardship erodes confidence in representative political institutions that deal with policymaking because citizens withdraw trust as a consequence of institutional failure to provide them with policy benefits. Because representative political institutions have the means to voice citizens' requests and therefore contribute to a prosperous economy, trust in such institutions decreases during economic downturns.

I use a synthetic control design to estimate how trust in political institutions responded to the massive economic crisis in Spain. The results suggest that the downturn decreased trust in the Spanish government by about 21 percentage points compared to the pre-crisis period. I also find that disappointment with the incumbents' economic performance eroded trust in other representative institutions and lowered confidence in the national parliament as well as political parties. Overall, the Spanish economic crisis had a devastating effect on confidence in the national government, parliament, and political parties. The share of

¹⁹This dataset includes countries from the year onwards in which they joined the EU.

citizens trusting those institutions declined by about half of the pre-crisis levels. This effect largely seems to mirror individuals' unemployment concerns and not inflation aversion or perception of corruption. Consistent with the theory, placebo studies indicate that trust in the legal system and the army remained rather stable during the crisis. Additional analyses suggest that the results generalize to a large set of EU member countries since recessions are associated with lower trust in representative political institutions. Overall, these findings do not only quantify how severely economic crises undermine trust in political institutions, but also reveal similar patterns with respect to the loss of trust in the government and national parliament.

These findings directly add to our knowledge about the effects of economic crises on public opinion and carry implications for our understanding of democratic accountability and the study of political institutions. The strong negative effect of the economic crisis on trust in the government I document corroborates theories about the economic origins of political trust (Levi & Stoker, 2000; Mishler & Rose, 2001). However, my results also support the idea that the negative effects of an economic downturn are more far-reaching than a simple extension of economic voting theories would suggest. Economic hardship seems to undermine trust in representative institutions more generally, at least when one considers a massive economic crisis. Keeping this in mind, the effects estimated in this study most likely represent an upper bound of how sizable the impact of an economic crisis can be considering the magnitude of the downturn. Overall, the results suggest that adverse economic outcomes have multi-faceted consequences on trust in a political system.

My results also speak to the literature on the empirical study of trust in political institutions. I explicitly analyze trust in several political institutions separately and uncover differential effects of economic crises on trust depending on the type of institution. While the extant literature often studies political trust in highly aggregate form by analyzing additive indices of trust in political institutions, e.g., Catterberg and Moreno (2006) use an index combining confidence in the parliament and the civil service, my results suggest that this

masks potentially important and interesting heterogeneity (Polavieja, 2013; Torcal, 2014). In this sense, my results are more in line with Rothstein and Stolle's (2008) claim that collapsing various forms of institutional trust appears problematic. Because the response of trust in political institutions to economic hardship varies considerably between institutions and only seems to affect the confidence citizens put in representative institutions, one may question whether political trust is truly one-dimensional (Marien & Hooghe, 2011). This suggests that future work may gain deeper insight into the sources of trust by analyzing different types of institutions separately.

From a policy perspective, the result that severe economic crises undermine trust in representative institutions more generally tells a daunting tale. In some European countries, citizens continue to experience economic hardship on a daily basis. My findings and the accumulated evidence about the negative effects of distrust in political institutions nurtures skepticism about how quickly countries will manage to recover both economically and politically in the years to come. However, this also offers possible avenues for further research. The recent economic downturn has presumably shattered much political capital and this provides an opportunity to further explore the importance of political trust for democracy, e.g., by examining the behavioral consequences of high levels of distrust in political institutions on turnout, demonstrations, violent protest, and other types of political activism.

Finally, I would like to discuss the main limitations of my study. First, I only consider the negative effect of an exceptional economic crisis. This leaves open the question of whether rewards for extraordinarily positive economic performance would be of similar magnitude and whether this would also affect trust in representative institutions more generally. Second, previous research suggests a partisan bias in blame attribution (Healy, Kuo, & Malhotra, 2014; Malhotra & Margalit, 2010; Tilley & Hobolt, 2011). Because the data I use only rarely contains information about individuals' partisan attachments, I cannot explore the existence of a partisan bias in the erosion of political trust. However, even if such a partisan bias exists, it seems unlikely to undermine the credibility of my findings, especially with respect to trust

in the government. First, government partisanship in Spain remained virtually constant from 2004 to 2011 and hence, partisan attachments will presumably not have played a major role in explaining the long-term decline in trust I document. My analyses suggest that unemployment concerns eroded representative institutions' trustworthiness and those concerns increased sharply in 2008, despite stability in government partisanship and small overall changes in the composition of the parliament in that period. This suggests that the severity of the crisis prevented partisanship from clouding citizens' assessment of the economy. Second, even in 2011, when the party in power changed, unemployment concerns remained at a very high level. This further supports the idea that citizens were generally disappointed with the government and the parliament as institutions that were not capable to address increasing joblessness. Thus, the partisan bias seems unlikely to play a major role in explaining the institution-specific effects of the crisis documented here.

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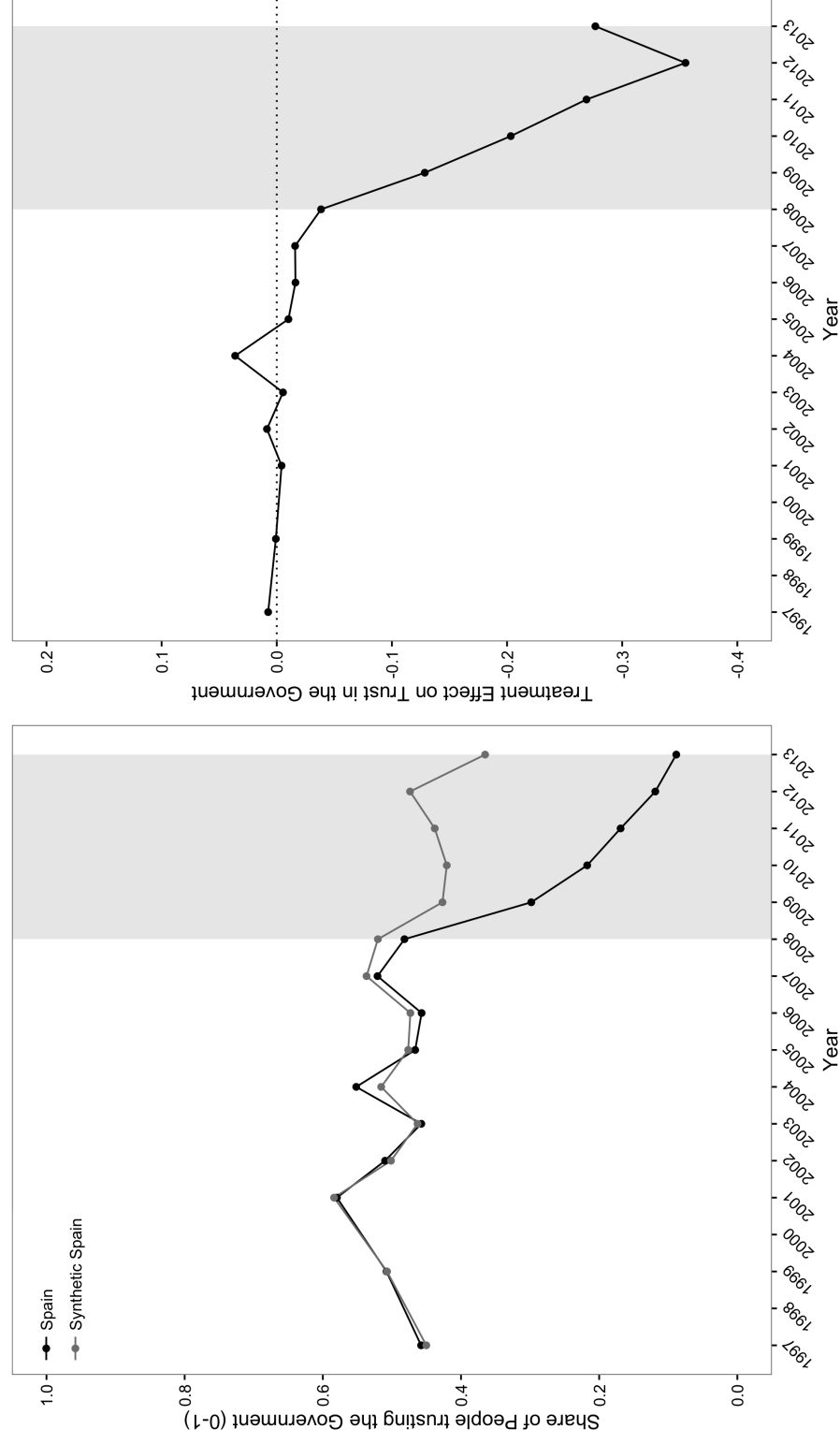
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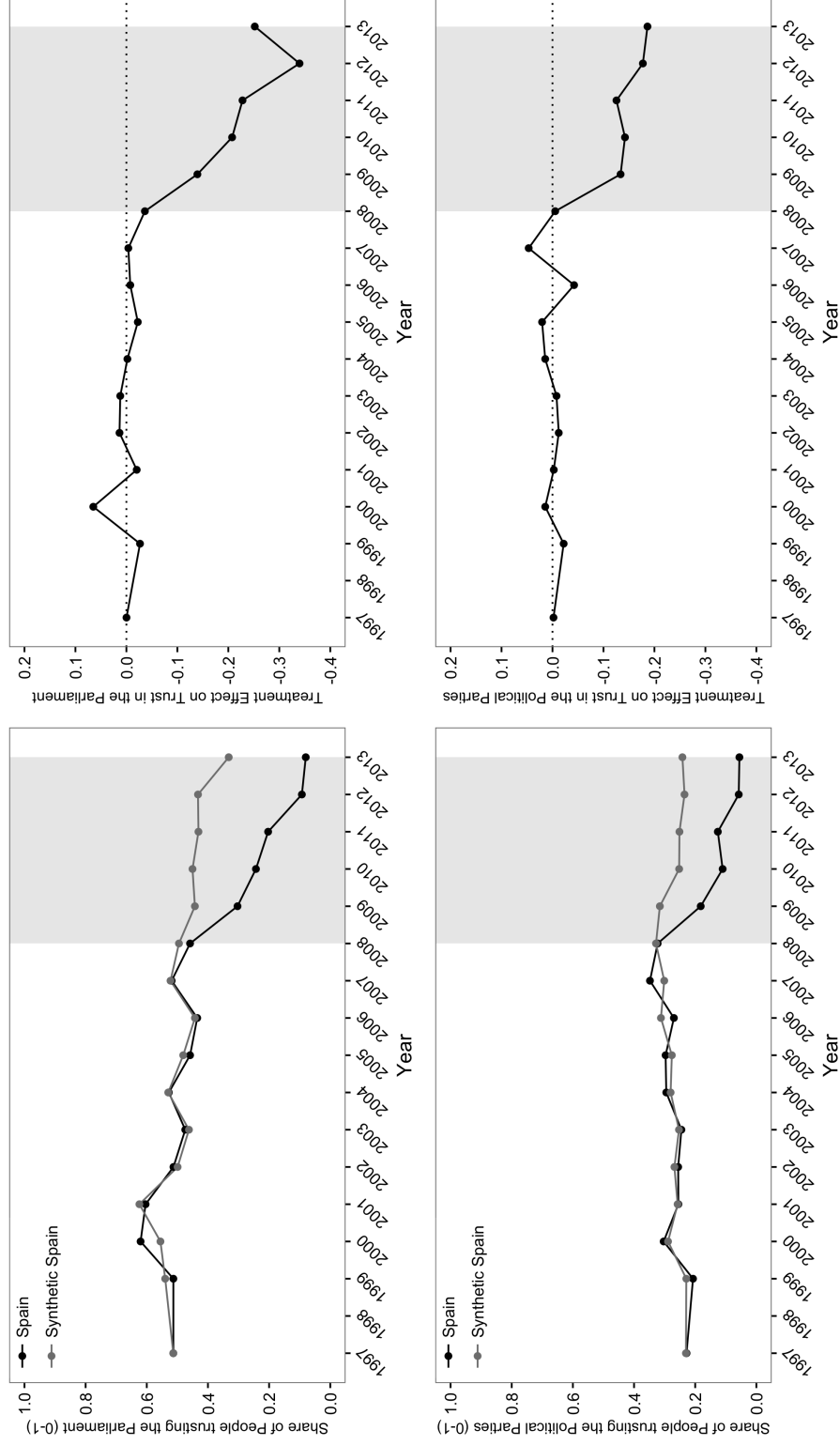
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Figure 1: The Detrimental Effect of the Economic Crisis on Trust in the Spanish Government



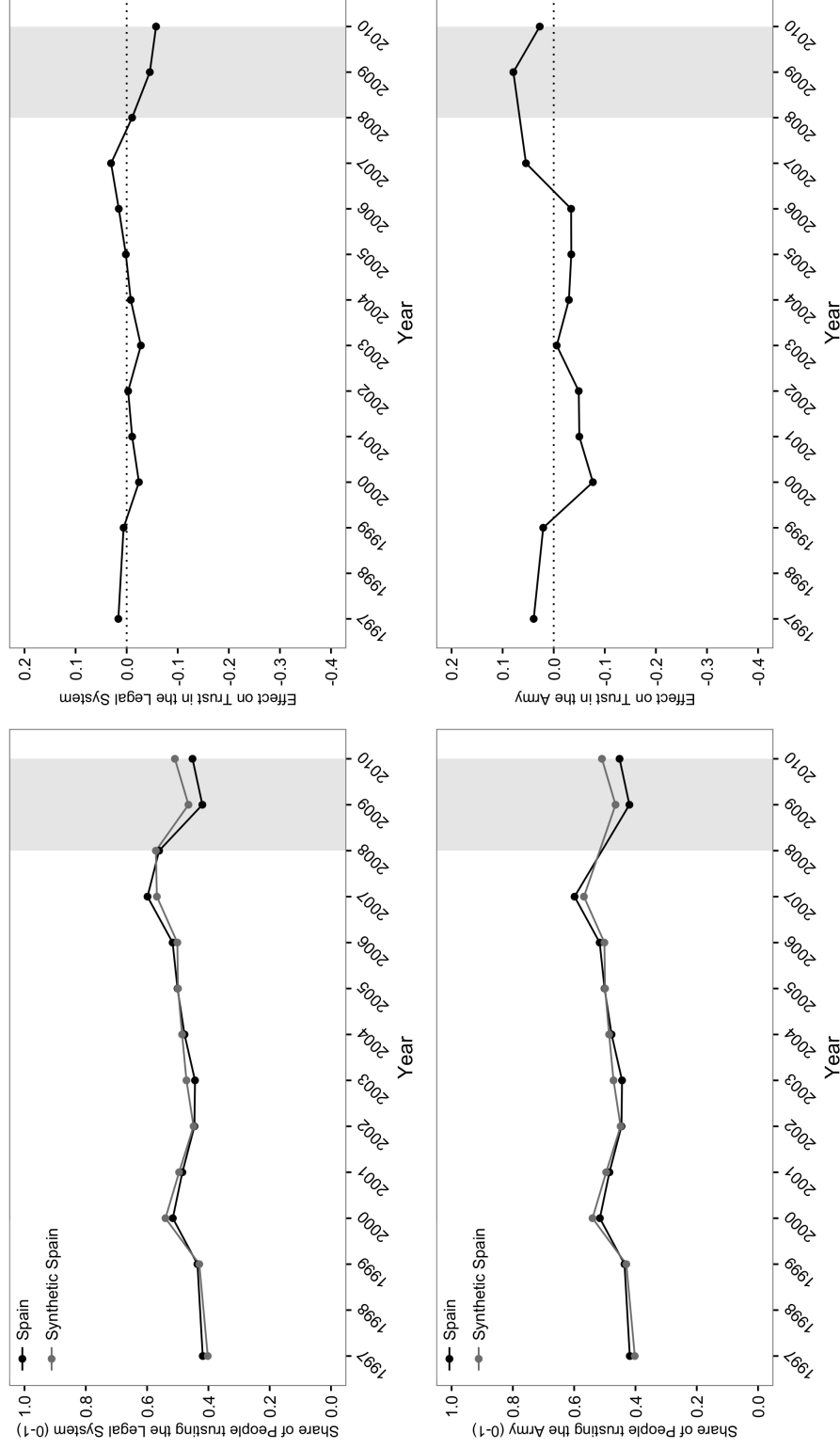
Note: The left-hand panel shows the evolution of trust in the government in Spain and synthetic Spain for the period from 1997 to 2013. The right-hand panel plots the difference in the share of people trusting the government between Spain and synthetic Spain. Negative values illustrate the depressing effect of the economic crisis on trust in the Spanish government. The grey-shaded area is the treatment period.

Figure 2: Negative Effect of the Crisis on Trust in the Parliament and Political Parties



Note: The two upper panels show the results of the synthetic control method applied to trust in the Spanish parliament, the lower two panels those of trust in the political parties. The left-hand panels show the evolution of trust in the respective institution in Spain and synthetic Spain for the period from 1997 to 2013. The right-hand panels plot the difference in the share of people trusting the parliament and the political parties respectively between Spain and synthetic Spain. Negative values illustrate the depressing effect of the economic crisis on trust in these two institutions. The grey-shaded area is the treatment period.

Figure 3: Trust in the Legal System and the Army Before and During the Spanish Economic Crisis



Note: The two upper panels show the results of the synthetic control method applied to trust in the legal system in Spain, the lower two panels those of trust in the Spanish army. The left-hand panels show the evolution of trust in the respective institution in Spain and synthetic Spain for the period from 1997 to 2010. The right-hand panels plot the difference in the share of people trusting the legal system and the army respectively between Spain and synthetic Spain. Negative values illustrate the depressing effect of the economic crisis on trust in these two institutions. The grey-shaded area is the treatment period.

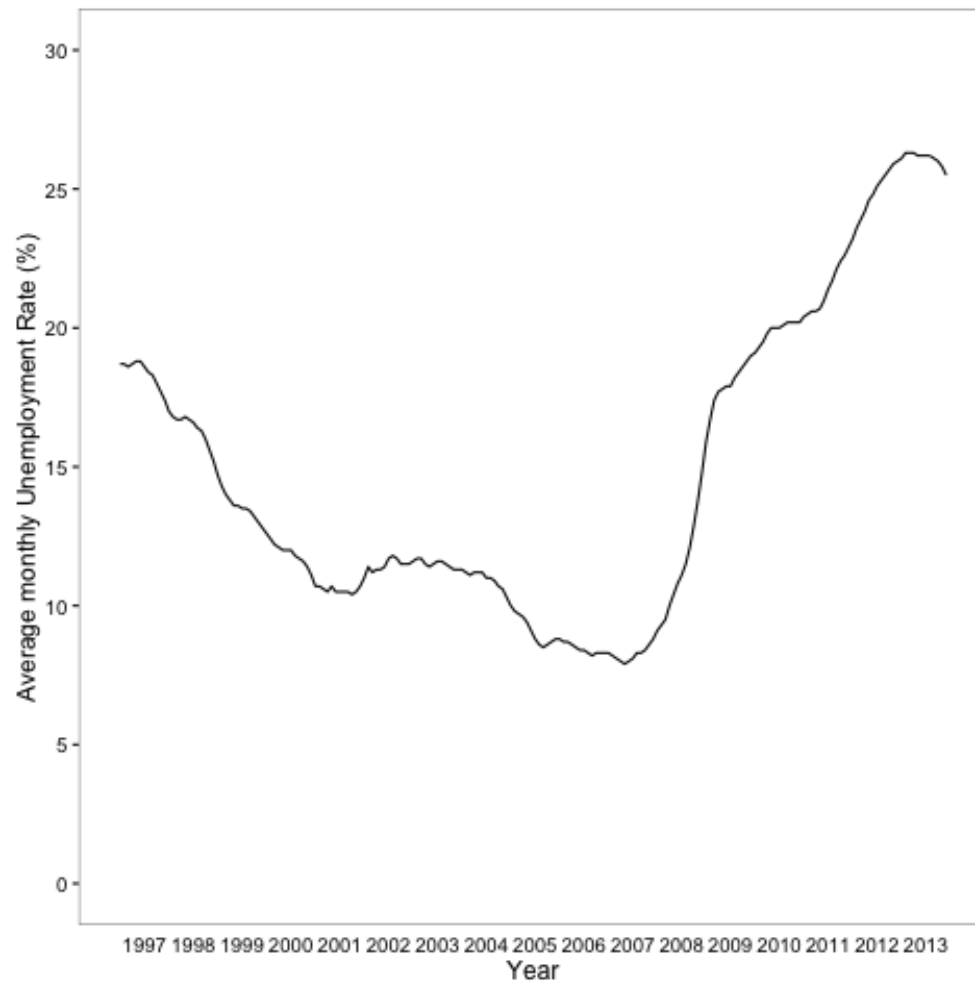
A Online Appendix

A.1 A Brief Overview of the Spanish Economic Crisis

This section briefly describes the Spanish economic downturn which started in 2008 when Spain went into recession. To this end, I discuss some peculiarities of the Spanish economic crisis and focus on four elements: the surge in unemployment, the crash of the housing bubble, the recession, and the request for financial assistance. I will briefly discuss those in turn.

After years of good news from the Spanish labor market, the trend reversed in 2007 (see Figure A.1). Unemployment grew only slightly at first but growth in joblessness accelerated enormously in 2008. The steepest increase took place between late 2007 and early 2009. Afterwards, growth in unemployment slowed down but only after joblessness had more than doubled within less than two years. One of the reasons for this surge in unemployment was the collapse of the Spanish real estate bubble in 2008. House prices started to fall in the second quarter of 2008 and investment in construction decreased for more than 15 consecutive quarters. Spain moreover went into recession in the second quarter of 2008 and this recession, which lasted until the first quarter of 2010, was much sharper than previous ones as investment in housing had been very important in Spain prior to the crisis and this is a “demand component that tends to generate the most pronounced cyclical oscillations” (Ortega & Peñalosa, 2012, p. 26). In June 2012, the Spanish government finally had to request financial assistance to recapitalize its financial institutions (“Many Questions Remain,” 2012). The collapse of the housing market left the banks vulnerable which necessitated this step. To comply with the conditions for the banking bailout set by the Eurozone countries, the Spanish government announced substantial budget cuts, raised taxes for 2013 (“Mariano Rajoy Announces €65bn in Austerity Measures for Spain,” 2012) and finally passed a budget with a total of €39 billion in budget cuts later in 2012 (“Spain Passes Massive Austerity Cutbacks,” 2012).

Figure A.1: Unemployment in Spain



Note: This figure shows the seasonally adjusted monthly unemployment rate for Spain (percent unemployed of active population). Source: Eurostat.

A.2 Additional Information about the Data

The outcome variables and some predictors used in the synthetic control group are drawn from Eurobarometer surveys. These are fielded in regular intervals in all European Union member countries. I base my analysis on respondents aged 18 and over. Respondents can answer the question if they trust the government (or the national parliament, the political parties, the legal system, or the army respectively) with one of the following four categories: “tend to trust”, “tend not to trust”, refuse to answer or say “don’t know”. I set the latter two categories as missing and hence ignore these individuals in the analysis. I then aggregate the data so that the dependent variable is the share of respondents stating that they consider the government (or the other institutions) as trustworthy in country c in year t . To this end, I weighted the data with the post-stratification weights provided along with the datasets so as to have samples that correspond to the real population (GESIS Leibniz-Institut für Sozialwissenschaften, 2014). I use data from 1997 to 2013. The full dataset contains one wave per year with the exception of 1998 where no Eurobarometer survey contained the questions I use as dependent variables.²⁰ Moreover, certain surveys I use do not contain some of the variables I need for my analyses during the period under consideration. First, I do not have data about trust in the government in 2001. Second, the interviewers did not ask about confidence in the army in 2008 and in both trust in the legal system and the army after 2010. I use the fall/winter waves of the Eurobarometer which were roughly fielded in the months September to November, depending on the year in which the survey was fielded.²¹ This offers the possibility to treat the data in 2008 already as data collected during the economic crisis as the interviews were conducted in fall and therefore only after Spain had already fallen into recession (second quarter of 2008). Thus, I define responses collected in Spain from 2008 to 2013 as observations during the economic crisis.

²⁰I use data from a total of 16 waves. These are: Eurobarometer 48.0, 51.0, 54.1, 56.2, 57.1, 60.1, 62.0, 64.2, 66.1, 68.1, 70.1, 72.4, 74.2, 76.3, 78.1, and 80.1.

²¹The only two exceptions are the year 1999 and 2002, where they only asked all the trust-questions I need for my analyses in the spring surveys for which data was collected from March to May.

Table A.1: Variables Used in the Case Study

Variable	Indicators/Categories	Source
Trust in the Government	Share of People Tending to Trust the Government	Eurobarometer
Trust in the Parliament	Share of People Tending to Trust the Parliament	Eurobarometer
Trust in the Political Parties	Share of People Tending to Trust the Political Parties	Eurobarometer
Trust in the Legal System	Share of People Tending to Trust the Legal System	Eurobarometer
Trust in the Army	Share of People Tending to Trust the Army	Eurobarometer
Age	Share of People That Are 18 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, and over 79	Eurobarometer
Education	Share of Individuals That Stopped Education When They Were up to 15 or Have no Full-Time Education, 16 to 19, and over 20 or Are Still Studying	Eurobarometer
Gender	Share of Male Respondents	Eurobarometer
Unemployed	Share of Unemployed Respondents	Eurobarometer
Real GDP p.c.	Real GDP p.c.	Eurostat
Real GDP p.c. Growth (in %)	Yearly Real GDP p.c. Growth Rate	Eurostat
Unemployment Rate (in %)	Average Yearly Unemployment Rate (% of active population)	Eurostat

Note: This Table lists the outcome as well as predictor variables I used to construct synthetic Spain, the categories of the aggregated individual-level variables (as share of the sample), and their sources.

A.3 Technical Details about the Synthetic Control Method

In this section, I discuss in some more detail how synthetic control method (SCM) works. To illustrate the basic idea, I use the potential outcomes notation. Let $Y_{c,t}^I$ denote the share of people trusting the government²² during an economic crisis, the intervention, in countries $c = 1, \dots, C + 1$ at time $t = 1, 2, \dots, T$. $Y_{c,t}^N$ is trust in non-crisis times. Let $c = 1$ denote Spain, the treated unit, and countries $c = 2$ to $c = C + 1$ constitute the donor pool. I am interested in $a_{1,t} = Y_{1,t}^I - Y_{1,t}^N$, which denotes the difference in the share of people trusting the national government in Spain exposed to the intervention (superscript I) and under control conditions (superscript N), i.e., not exposed to the intervention. It is, however, not possible to observe both those outcomes at the same time, i.e., trust shares in Spain during an economic crisis and without economic crisis. This is known as the so-called “fundamental problem of causal inference” (Holland, 1968). To impute the missing counterfactual, I employ the SCM (Abadie & Gardeazabal, 2003; Abadie et al., 2010, 2015). The following discussion closely follows Abadie et al. (2015, pp. 497).

To impute the counterfactual for Spain, I use a weighted average of control countries $c = 2, \dots, C + 1$ in my donor pool. This synthetic control can be represented by a $(C \times 1)$ vector containing weights $\mathbf{W} = (w_2, \dots, w_{C+1})'$, with $0 \leq w_c \leq 1$ for $c = 2, \dots, C + 1$ and $w_2 + \dots + w_{C+1} = 1$. Each $\mathbf{W}$ is one possible synthetic control group. I choose the combination of weights W^* that minimizes the difference between the pre-crisis characteristics of Spain and the synthetic control given by the vector $X_1 - X_0 W$.

The estimator of the effect of the intervention, i.e., in my case the Spanish economic crisis, on trust in the government is given by the difference between the level of trust in Spain and in the synthetic control:

$$\hat{a}_{1,t} = Y_{1,t} - \sum_{c=2}^{C+1} w_c^* Y_{c,t}.$$

²²To facilitate reading of this section, I only refer to the outcome variable trust in the government. The same logic, however, also applies to the other outcome variables.

This allows me to estimate how the Spanish economic downturn affects trust in political institutions.

The credibility of the counterfactual critically hinges on the pre-treatment fit and hence reducing the deviations in the outcome variable between observed Spain and synthetic Spain in pre-crisis times. I assess the credibility of the counterfactual in two ways in the main body of the text: First, I check whether Spain and the control follow similar trajectories in the outcome variable. Second, I examine the root mean square prediction error (RMSPE) which measures the lack of fit between the evolution of the outcome variable in Spain and its synthetic counterpart.

Data limitations restrict the number of pre-treatment periods to nine/ten.²³ This, however, should not pose a problem and theoretically it may make sense to focus on a limited period prior to the intervention. Going further back in time, the data-generating process may have been different than shortly before the crisis. This would consequently also influence the calculation of the variable and country weights. In this case, the synthetic control method may produce predictor weights that do not accurately depict which factors drive trust in the respective political institution in the time prior and during the Spanish economic crisis. Thus, it seems reasonable to focus on the years in the new millennium and a shorter period to avoid using data which was characterized by a different data-generating process.

²³For trust in the government, the dataset contains nine pre-treatment periods, for the other outcome variables ten.

Table A.2: Synthetic
Weights for Spain, Outcome:
Trust in the Government

Country	Weight
Austria	0
Belgium	0
Denmark	.10
Finland	.31
France	.40
Germany	0
Luxembourg	.14
Netherlands	0
Sweden	.06
United Kingdom	0
RMSPE	0.02

Note: This table lists the weights assigned to the different countries from the donor pool which resulted from using the Synth package in Stata.

A.4 Significance of the Treatment Effect for Trust in the Government

To gauge the statistical significance of this effect, I calculate the difference-in-differences estimate comparing the pre-crisis period with the crisis period (see Table A.3). The mean share of people trusting the government in the pre-treatment period is virtually identical in Spain and synthetic Spain with a t-value of the difference-in-means test of 0. Trust levels in synthetic Spain are lower in the post-2007 period than before but the decline in Spain is much stronger. The difference-in-differences estimate²⁴ suggests that during the crisis, the share of people trusting the government was on average about 21 percentage points (t-value: -4.5) lower than in the pre-crisis period. Thus, while there is no significant difference in people trusting the government between Spain and synthetic Spain before 2008, the difference-in-differences estimate for the difference between pre-crisis and crisis period is highly significant and substantially relevant.

²⁴I calculate the estimate using the means in the share of people trusting the government in the following country/period: $(\text{Spain}_{\text{crisis}} - \text{Spain}_{\text{pre crisis}}) - (\text{Synthetic Spain}_{\text{crisis}} - \text{Synthetic Spain}_{\text{pre crisis}})$.

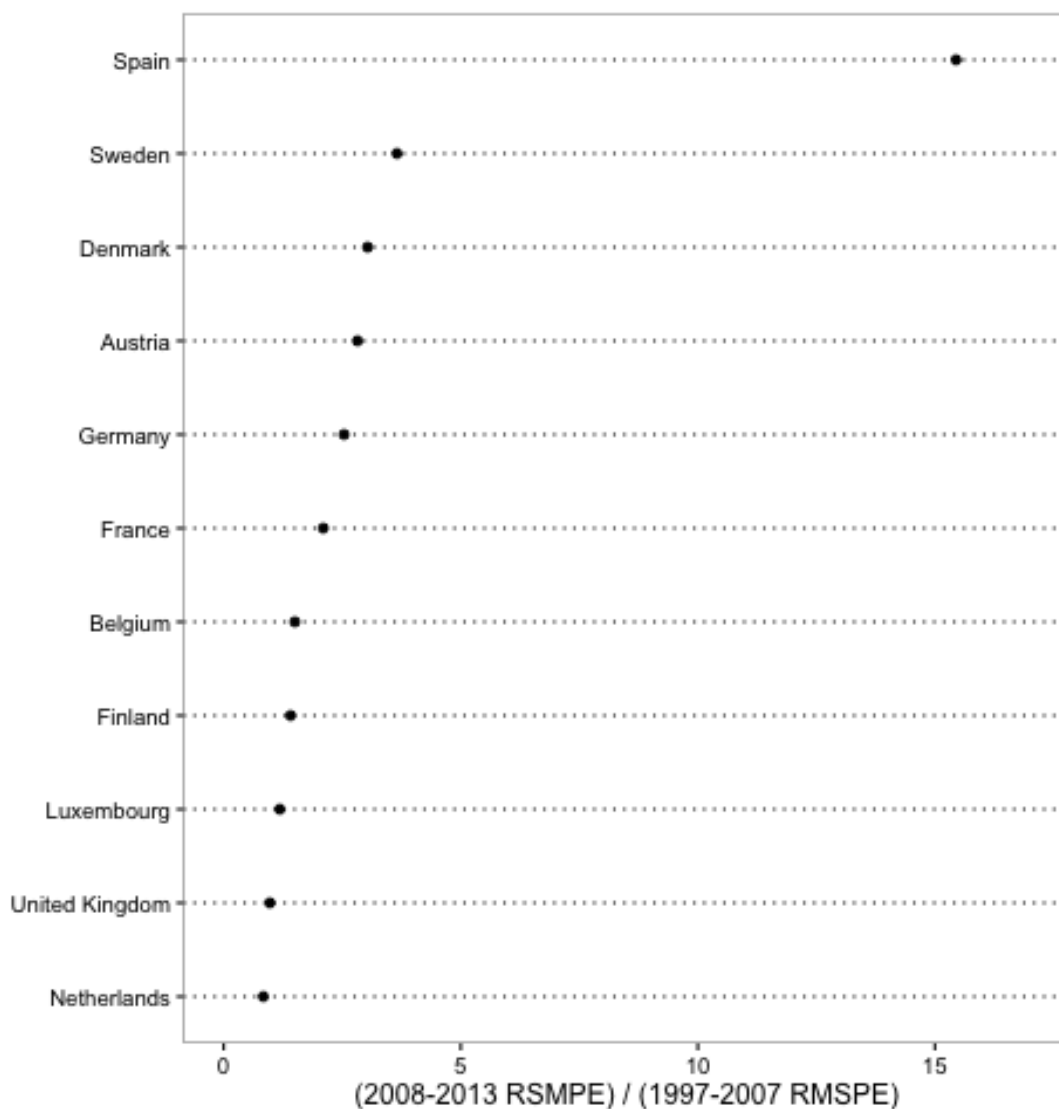
Another way to assess the statistical significance of the results is to conduct placebo studies wherein I reassign the treatment to control units when excluding Spain (“in-space placebos”)²⁵ (Abadie et al., 2010, p. 497). To this end, I use the same predictors and search for configurations that minimize the RMSPE for every single country in the donor pool.²⁶ Some of these placebo studies produce quite a good fit while others hardly approached the placebo-treated unit. In order to nevertheless take advantage of these results, I follow the example of Abadie et al. (2015, 505) by dividing treatment period RMSPE by pre-treatment period RMSPE for all placebo studies and Spain, respectively. A large crisis RMSPE by itself does not indicate a large effect of the intervention if the pre-crisis fit is poor. Calculating the ratio of crisis RMSPE to pre-crisis RMSPE across all possible configurations, i.e., Spain as well as the placebo studies, allows me to assess if the RMSPE-ratio of the Spanish case is unusually large in comparison with the others.²⁷ As Figure A.2 shows, Spain clearly stands out as the country with the highest RMSPE-ratio. The crisis-gap is about 15 times as large as the pre-crisis gap, followed by Sweden where the ratio is well below 5. Thus, if I was to pick one country at random from the sample, the probability of obtaining a RMPSE-ratio as high as this one would be $1/11 \simeq 0.09$. This strongly increases the credibility of these findings.

²⁵Because I use predictors averaged over the entire pre-treatment period as well as from certain years, I do not conduct any in-time placebos.

²⁶To produce counterfactuals that closely follow the trend in the placebo treated unit, I use a more detailed categorization of the education variable for some countries that consist of five categories instead of three.

²⁷By doing so, I avoid having to take the decision which of the pre-crisis fits I deem too poor to be used as credible counterfactual.

Figure A.2: Ratio of Crisis to Pre-Crisis RMSPE: Spain and Control Countries



Note: This figure displays the ratio of crisis RMSPE (period 2008-2013) to pre-crisis RMSPE (1997-2007) for the countries listed on the y-axis. The higher this ratio, the bigger the difference between a country and its synthetic counterpart during the crisis period compared to pre-crisis times. Or to put it differently, the smaller this ratio, the smaller the difference in the mean deviations between a country and its synthetic counterpart in crisis compared to pre-crisis times.

A.5 Similarities in the Data-Generating Process for Trust in the Government between Spain and the Countries Forming Synthetic Spain

The plausibility of causal identification in synthetic control studies also hinges on whether the same structural process drives the outcome variable in the donor units and the treated unit (Abadie et al. 2015, p. 497). To explore to what extent this is the case, I analyze the data-generating process in the donor pool countries that form synthetic Spain (Denmark, Finland, France, Germany, and Sweden) and observed Spain, respectively. I estimate regressions which model trust in the government using the same set of independent variables as predictors that I also use to construct the counterfactual. Due to the small number of observations I have for Spain ($n = 15$), I test the individual-level variables with individual data and the country-level variables with aggregate data. This is not optimal but it does at least allow for providing some informative evidence on the similarities (or dissimilarities) in the data-generating processes. It is important to note, however, that the aggregate-level results are more informative here because these allow me to test the data-generating process at the level of analysis used for the main estimation. If the coefficient on any given variable has the same sign and/or significance in both models, it is more likely that the data generating process is largely comparable in both sets of countries.

Table A.4 presents the results of the individual-level regressions. Model 1 shows the estimates for Spain while Model 2 reports the results for the countries (pooled) used to create synthetic Spain. To account for differences in the general levels of trust between countries, Model 2 includes country fixed effects. First, none of the variables that are significant in both models differ with respect to their sign although the exact magnitude varies. This suggests that the direction of the correlations between individual-level trust in the government and these categories/variables are similar in Spain and the countries I use to construct synthetic Spain. I also find that only two coefficients (highest level of education and dummy for 70-79

year old individuals) differ with respect to their sign when comparing Model 1 and Model 2. Thus, these two categories differ with respect to how they correlate with the outcome variable compared to the base categories of these variables and this hints at some dissimilarities between Spain and the countries that form synthetic Spain. Furthermore, some coefficients are significant only in one of the two models which is also a sign of differences. Overall, these results only partly support the claim that the data-generating process in Spain and the countries I used to construct synthetic Spain is similar at the individual level. However, I find some evidence of similar dynamics with respect to important variables/categories. Moreover, since the main analysis presented above relies on aggregate-level data, it appears more important to examine the correlations at the macro level.

Table A.5 shows the results of the aggregate-level regressions that model the share of people trusting the government as a function of economic indicators: the unemployment rate, GDP per capita, and GDP per capita growth. Model 1 reports the results for Spain and Model 2 shows the results for the pooled set of countries used to generate synthetic Spain. To take into account country-level differences in the level of trust, Model 2 includes country fixed effects. Most importantly, I find that the coefficient of the predictor unemployment rate has the exact same magnitude and significance level in both models. This strongly supports the assumption that the unemployment rate exerts the same effect on aggregate-level trust in Spain as in the pooled set of donor countries, which I use to construct synthetic Spain. There seem to exist some minor differences with respect to the other variables. For example, GDP per capita has a negative impact on trust in the Spanish government while the variable is not significant in Model 2. GDP per capita growth does not reach statistical significance in either of the two models.

To answer the question if the coefficients of these variables are statistically significantly different from each other in the two models, I estimated an additional regression model containing a dummy indicator for Spain and the interaction of this dummy indicator with all the independent variables in the model. If the interaction terms are statistically significant,

Table A.4: Individual-Level Determinants of Trust in the Government in Spain and the Countries Forming Synthetic Spain

	(1) Spain	(2) Donor Pool Countries
Level of Education		
Middle	0.00 (0.01)	0.01* (0.01)
High/Still studying	-0.01 (0.01)	0.09*** (0.01)
Age		
18-29	-0.09*** (0.03)	-0.13*** (0.01)
30-39	-0.08*** (0.03)	-0.14*** (0.01)
40-49	-0.08*** (0.03)	-0.14*** (0.01)
50-59	-0.02 (0.03)	-0.14*** (0.01)
60-69	-0.01 (0.03)	-0.10*** (0.01)
70-79	0.01 (0.03)	-0.06*** (0.01)
Unemployed	-0.20*** (0.01)	-0.06*** (0.01)
Country FE		✓
Constant	0.47*** (0.02)	0.65*** (0.01)
Observations	13410	62718
Adjusted R^2	0.030	0.069

Note: Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Model 1 presents the regression results for Spanish individuals, Model 2 those for a pooled sample of individuals from Denmark, Finland, France, Luxembourg, and Sweden, the countries that form synthetic Spain. Reference categories: Low level of education, over 79 years old.

Table A.5: Aggregate-Level Determinants of Trust in the Government in Spain and the Countries Forming Synthetic Spain

	(1) Spain	(2) Donor Pool Countries
Unemployment Rate	-0.03*** (0.00)	-0.03*** (0.01)
GDP p.c.	-0.00*** (0.00)	0.00 (0.00)
GDP p.c. Growth	-0.01 (0.00)	0.00 (0.00)
Country FE		✓
Constant	2.06*** (0.18)	0.72*** (0.09)
Observations	15	75
Adjusted R^2	0.943	0.737

Note: Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Model 1 presents the regression results for Spain, Model 2 those for a pooled sample of Denmark, Finland, France, Germany, and Sweden, the countries that form synthetic Spain.

it means that the effect of the respective variable differs in the two subsamples. Table A.6 presents the results. As expected, the coefficient of the interaction of Spain and the unemployment rate is not significant and thus I find no evidence that this variable exerts a statistically significantly different effect on trust-shares in the two sets of countries. The same also applies to GDP p.c. growth, which also fails to reach statistical significance. The interaction of Spain with GDP per capita, however, is significant at the 1% level which suggests that this variable has a different effect on trust in Spain and the pooled countries used to construct synthetic Spain. A brief look at Table A.8 on page XIX, which displays the variable weights that result from applying the synthetic control method, shows that this variable has a small weight which means that it only played a marginal role in fitting synthetic Spain. Hence, the significant difference with respect to the influence of this variable in the two sets of countries can be safely ignored. Overall, these similarities increase my confidence in that the countries in the donor pool can be plausibly used to construct synthetic Spain.

To sum up, these additional tests evidence several similarities in the data-generating processes underlying trust in Spain and the donor countries. Although examinations at the individual and aggregate level reveal some differences, the correlational structure with respect to the important variables in terms of variable weights are largely comparable. Specifically, the results evidence similarities in how the share of unemployed in the sample influences trust levels in the Spanish population and the donor countries. Moreover, since I carry out the main analysis at the aggregate level and I find similarities, the results of this section provide some support for using the donor pool countries (Denmark, Finland, France, Germany, and Sweden) to constructing a counterfactual for Spain, thereby adding to the credibility of the causal estimate.

Table A.6: Aggregate-Level Determinants of Trust in the Government With Interaction Effects

	(1)
Unemployment Rate	-0.03*** (0.01)
GDP p.c.	0.00 (0.00)
GDP p.c. Growth	0.00 (0.00)
Spain	1.46*** (0.22)
Spain * UR	-0.01 (0.01)
Spain * GDP p.c.	-0.00*** (0.00)
Spain * GDP p.c. Growth	-0.01 (0.01)
Country FE	✓
Constant	0.60*** (0.15)
Observations	90
Adjusted R^2	0.791

Note: Robust standard errors in parentheses;
* p < 0.10, ** p < 0.05, *** p < 0.01.

Table A.7: Trust in the Government Predictor Means before the Economic Crisis in Spain

Variable	Year (If Empty: Averaged over Entire Pre-Treatment Period)	Treated	Synthetic	Mean of Donor Pool
Unemployed (Share in Sample)		0.05	0.05	0.05
Education: Share in Sample That Stopped Education When They Were...				
No Full-Time Education, up to 15		0.45	0.17	0.20
16 to 19		0.29	0.35	0.39
Over 20 or Still Studying		0.26	0.48	0.41
Share of Male Respondents in Sample		0.49	0.48	0.48
Age: Share in Sample That is...				
18 to 29		0.23	0.21	0.20
30 to 39		0.20	0.19	0.20
40 to 49		0.17	0.18	0.18
50 to 59		0.14	0.16	0.16
60 to 69		0.13	0.13	0.14
70 to 79		0.10	0.09	0.10
Over 79		0.03	0.03	0.03
Unemployment Rate		11.39	7.68	6.57
Unemployment Rate	2003	11.50	7.59	6.58
Unemployment Rate	2004	11.00	7.91	7.03
Unemployment Rate	2005	9.20	7.68	7.04
Unemployment Rate	2007	8.20	6.61	5.94
Real GDP p.c.		22411.11	37816.81	36900.00
Real GDP p.c.	2004	23100.00	38834.00	37750.00
Real GDP p.c.	2005	23500.00	39514.80	38410.00
Real GDP p.c. Growth	2004	1.60	2.78	2.52
Trust in the Government	2004	0.55	0.52	0.47

Note: The left-most column lists the variables that were used to construct synthetic Spain. The third column shows the corresponding figures for Spain, the fourth column those for synthetic Spain, and the last one those for the unweighted average of the donor pool countries Austria, Belgium, Denmark, Finland, France, Germany, Luxembourg, Sweden, the Netherlands, and the United Kingdom in the period 1997 to 2007 for all years for which I have data for the dependent variable.

Table A.8: Trust in the Government: Predictor Weights of Synthetic Spain

Predictor	Year (If Empty: Averaged over Entire Pre-Treatment Period)	Weight
Unemployed (Share in Sample)		0.76
Education: Share in Sample That Stopped Education When They Were...		
No Full-Time Education, up to 15		0.00
16 to 19		0.04
Over 20 or Still Studying		0.00
Share of Male Respondents in Sample		0.00
Age: Share in Sample That is...		
18 to 29		0.00
30 to 39		0.00
40 to 49		0.01
50 to 59		0.01
60 to 69		0.00
70 to 79		0.00
Over 79		0.09
Unemployment Rate		0.00
Unemployment Rate	2003	0.00
Unemployment Rate	2004	0.00
Unemployment Rate	2005	0.00
Unemployment Rate	2007	0.01
Real GDP p.c.		0.00
Real GDP p.c.	2004	0.00
Real GDP p.c.	2005	0.00
Real GDP p.c. Growth	2004	0.01
Trust in the Government	2004	0.06

Note: This table shows weights of each predictor that was used to construct the synthetic control group. Lower weights mean that the predictor played a minor role in determining the country weights and their importance increases with the weights.

A.6 Additional Information about Synthetic Spain

This Section provides more detailed information about synthetic Spain for all outcome variables except trust in the government. More precisely, for all these outcome variables I provide details about the weights of the countries contributing to the respective synthetic Spain and comparisons of the predictor means of Spain and synthetic Spain in pre-crisis times.

Table A.9: Synthetic
Weights for Spain, Outcome:
Trust in the Parliament

Country	Weight
Austria	0
Belgium	0
Denmark	0
Finland	0
France	.59
Germany	0
Luxembourg	.35
Netherlands	.04
Sweden	.02
United Kingdom	0
RMSPE	0.02

Note: This table lists the weights assigned to the different countries from the donor pool which resulted from using the Synth package in Stata.

Table A.10: Trust in the Parliament Predictor Means before the Economic Crisis in Spain

Variable	Year (If Empty: Averaged over Entire Pre-Treatment Period)	Treated	Synthetic
Unemployed (Share in Sample)		0.05	0.04
Education: Share in Sample That Stopped Education When They Were...			
No Full-Time Education, up to 15		0.45	0.20
16 to 19		0.29	0.41
Over 20 or Still Studying		0.26	0.39
Share of Male Respondents in Sample		0.49	0.48
Age: Share in Sample That is...			
18 to 29		0.24	0.21
30 to 39		0.20	0.21
40 to 49		0.17	0.18
50 to 59		0.14	0.15
60 to 69		0.13	0.13
70 to 79		0.10	0.10
Over 79		0.03	0.03
Unemployment Rate		11.44	6.71
Unemployment Rate	2003	11.50	6.67
Unemployment Rate	2004	11.00	7.38
Unemployment Rate	2006	8.50	7.14
Real GDP p.c.		22310.00	44494.59
Real GDP p.c.	2004	23100.00	45901.80
Real GDP p.c.	2005	23500.00	46542.90
Real GDP p.c. Growth	2004	1.60	2.38
Real GDP p.c. Growth		2.59	2.47
Trust in the Parliament	2004	0.53	0.53

Note: The left-most column lists the variables that were used to construct synthetic Spain. The third column shows the corresponding figures for Spain, and the fourth column those for synthetic Spain.

Table A.11: Synthetic
Weights for Spain, Out-
come: Trust in the Parties

Country	Weight
Austria	.10
Belgium	.26
Denmark	.13
Finland	0
France	.23
Germany	0
Luxembourg	.27
Netherlands	0
Sweden	0
United Kingdom	0
RMSPE	0.02

Note: This table lists the weights assigned to the different countries from the donor pool which resulted from using the Synth package in Stata.

Table A.12: Trust in the Parties Predictor Means before the Economic Crisis in Spain

Variable	Year (If Empty: Averaged over Entire Pre-Treatment Period)	Treated	Synthetic
Unemployed (Share in Sample)		0.05	0.05
Education: Share in Sample That Stopped Education When They Were...			
No Full-Time Education, up to 15		0.45	0.20
16 to 19		0.29	0.39
Over 20 or Still Studying		0.26	0.41
Share of Male Respondents in Sample		0.49	0.48
Age: Share in Sample That is...			
18 to 29		0.24	0.20
30 to 39		0.20	0.20
40 to 49		0.17	0.18
50 to 59		0.14	0.15
60 to 69		0.13	0.13
70 to 79		0.10	0.10
Over 79		0.03	0.03
Unemployment Rate		11.44	6.17
Unemployment Rate	2003	11.50	6.36
Unemployment Rate	2004	11.00	6.92
Unemployment Rate	2005	9.20	6.76
Unemployment Rate	2007	8.20	5.98
Real GDP p.c.		22310.00	43382.63
Real GDP p.c.	2004	23100.00	44652.90
Real GDP p.c.	2005	23500.00	45362.40
Real GDP p.c. Growth	2004	1.60	2.65
Real GDP p.c. Growth	2006	2.50	2.56
Trust in the Parties	2004	0.29	0.28

Note: The left-most column lists the variables that were used to construct synthetic Spain. The third column shows the corresponding figures for Spain, and the fourth column those for synthetic Spain.

Table A.13: Synthetic
Weights for Spain, Out-
come: Trust in the Legal
System

Country	Weight
Austria	.24
Belgium	.20
Denmark	0
Finland	0
France	.56
Germany	0
Luxembourg	0
Netherlands	0
Sweden	0
United Kingdom	0
RMSPE	0.02

Note: This table lists the weights assigned to the different countries from the donor pool which resulted from using the Synth package in Stata.

Table A.14: Trust in the Legal System Predictor Means before the Economic Crisis in Spain

Variable	Year (If Empty: Averaged over Entire Pre-Treatment Period)	Treated	Synthetic
Unemployed (Share in Sample)		0.05	0.05
Education: Share in Sample That Stopped Education When They Were...			
No Full-Time Education, up to 15		0.45	0.21
16 to 19		0.29	0.44
Over 20 or Still Studying		0.26	0.35
Share of Male Respondents in Sample		0.49	0.48
Age: Share in Sample That is...			
18 to 29		0.24	0.22
30 to 39		0.20	0.20
40 to 49		0.17	0.18
50 to 59		0.14	0.15
60 to 69		0.13	0.13
70 to 79		0.10	0.09
Over 79		0.03	0.03
Real GDP p.c. Growth		2.59	1.83
Trust in the Legal System	2007	0.60	0.57
Trust in the Legal System	1999	0.44	0.43
Trust in the Legal System	2003	0.44	0.47
Unemployment Rate	2003	11.50	7.54

Note: The left-most column lists the variables that were used to construct synthetic Spain. The third column shows the corresponding figures for Spain, and the fourth column those for synthetic Spain.

Table A.15: Synthetic
Weights for Spain, Out-
come: Trust in the Army

Country	Weight
Austria	0
Belgium	.33
Denmark	0
Finland	0
France	.04
Germany	.18
Luxembourg	0
Netherlands	0
Sweden	.45
United Kingdom	0
RMSPE	0.04

Note: This table lists the weights assigned to the different countries from the donor pool which resulted from using the Synth package in Stata.

Table A.16: Trust in the Army Predictor Means before the Economic Crisis in Spain

Variable	Year (If Empty: Averaged over Entire Pre-Treatment Period)	Treated	Synthetic
Unemployed (Share in Sample)		0.05	0.06
Education: Share in Sample That Stopped Education When They Were...			
No Full-Time Education, up to 15		0.45	0.19
16 to 19		0.29	0.38
Over 20 or Still Studying		0.26	0.43
Share of Male Respondents in Sample		0.49	0.49
Age: Share in Sample That is...			
18 to 29		0.24	0.20
30 to 39		0.20	0.19
40 to 49		0.17	0.17
50 to 59		0.14	0.16
60 to 69		0.13	0.15
70 to 79		0.10	0.11
Over 79		0.03	0.03
Unemployment Rate		11.44	7.75
Unemployment Rate	2003	11.50	7.77
Unemployment Rate	2004	11.00	8.34
Unemployment Rate	2005	9.20	8.65
Unemployment Rate	2006	8.50	8.11
Real GDP p.c.		22310.00	32777.63
Real GDP p.c.	2004	23100.00	33743.50
Real GDP p.c.	2005	23500.00	34362.70
Real GDP p.c. Growth	2004	1.60	3.13
Trust in the Army	2004	0.66	0.69

Note: The left-most column lists the variables that were used to construct synthetic Spain. The third column shows the corresponding figures for Spain, and the fourth column those for synthetic Spain.

A.7 Employment, Inflation, or Corruption: Which Mechanism Explains the Decline in Trust?

So far, the results suggest that the crisis strongly depressed trust in the government and that this effect lasted for several years. My argument holds that poor economic performance disappoints citizens' expectations and, as consequence, individuals withdraw trust from the government. In this section, I explore which mechanism underlies this effect. First, I provide evidence supporting the argument about the economic origins of trust by analyzing survey data. Second, I examine which aspect of the crisis, i.e., concerns over unemployment or inflation, is likely to have negatively influenced trust. To this end, I explore which of these two issues ranked higher in citizens' perceptions of the most pressing problems. Third, I rule out a rival explanation, which holds that corruption scandals that made headlines in the Spanish media during the economic crisis caused the fall in trust in the government.

The available survey evidence suggests that Spaniards blamed the government for the economic crisis and the measures it took to cope with it. A snap poll conducted in 2008 shows that almost two-thirds of the Spaniards found the measures the Spanish government adopted in response to the crisis insufficient ("Spain's Economy: It's a Crisis, Stupid!," 2008). Another survey, conducted by the Pew Research Center in the spring of 2010, 2011, and 2012, shows that of the individuals that were not satisfied with the state of the economy, the share of people holding the government responsible for the economic problems was well above 50%.²⁸ People only accused actors such as banks and financial institutions more often than the government, which suggests that individuals perceived these actors as main culprits of the crisis. Most importantly, more people believed that the Spanish government was responsible for the current economic problems than the European Union.²⁹ In line with the theoretical argument, this suggests that economic issues are key for our understanding of how the crisis has affected trust in the government.

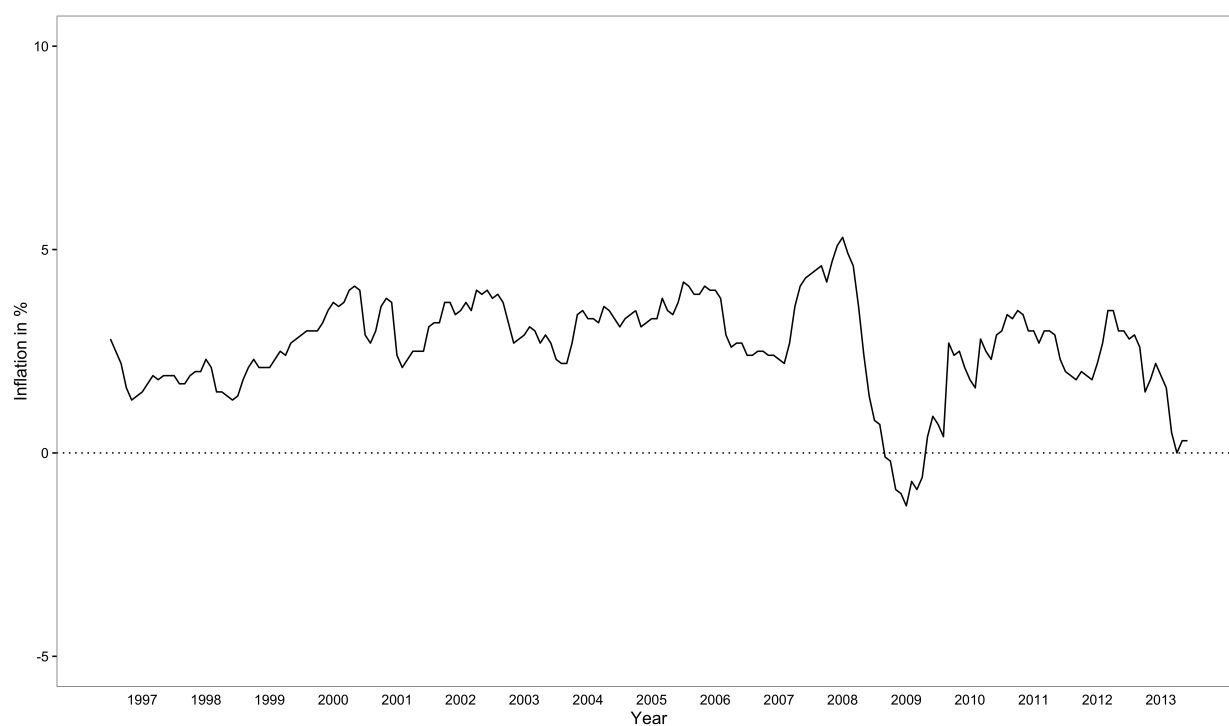
²⁸The exact shares of people that stated the government was first or second to blame for the country's problems were 67, 65, and 60%, respectively.

²⁹Source: Pew Global Attitudes & Trends Question Database.

But which economic issue has the most potential to explain the decline in trust? After all, financial crises are multifaceted phenomena with several symptoms occurring simultaneously. Therefore, it is important to explore in detail which aspect of the crisis disappointed citizens to learn about the empirical validity of the proposed causal mechanism. Specifically, I examine and empirically arbitrate between two potential explanations. The first mechanism highlights the importance of unemployment concerns. Spain experienced almost unprecedented levels of unemployment during the economic crisis. Previous research suggests that increases in the unemployment rate negatively influence life satisfaction (Di Tella, Macculloch, & Oswald, 2001) and high levels of unemployment increase the probability that individuals either experienced the unemployment crisis themselves or learned about it via the media (Mutz, 1992). The second mechanism predicts that the effect of concerns about changing prices reflect citizens' inflation aversion. Changes in the price level influence life satisfaction (Di Tella et al., 2001) as well as vote choice (Chappell & Veiga, 2000; Berle-
mann & Enkelmann, 2014) and trust in political institutions (Mishler & Rose, 2001). This seems especially plausible in this scenario since Spain experienced pronounced fluctuations in inflation during the economic crisis (see Figure A.3). Inflation fluctuated quite markedly, especially at the beginning of the crisis. Such volatility in inflation likely increases the probability that the public noticed it, the media reported about it, and politicians discussed the issue thereby increasing the public's awareness of inflation as inflation as potential problem. It thus seems possible that inflation influenced citizens' assessment of the government's trustworthiness. To arbitrate between these two potential explanations, I examine answers to survey questions asking about respondents' perception of the most important problem Spain faced. Problems that a large share of voters considered important are arguably more likely to have affected their evaluation of the government and consequently also their level of trust.

Figure A.4 examines the relative importance of unemployment and inflation to Spanish interviewees using Eurobarometer data. For each survey from 2003 to 2013, I plot the frac-

Figure A.3: Inflation in Spain (Annual Rate of Change)



Note: This graph plots the monthly data for the annual rate of change in inflation in Spain ($m/(m-12)$).
Source: Eurostat.

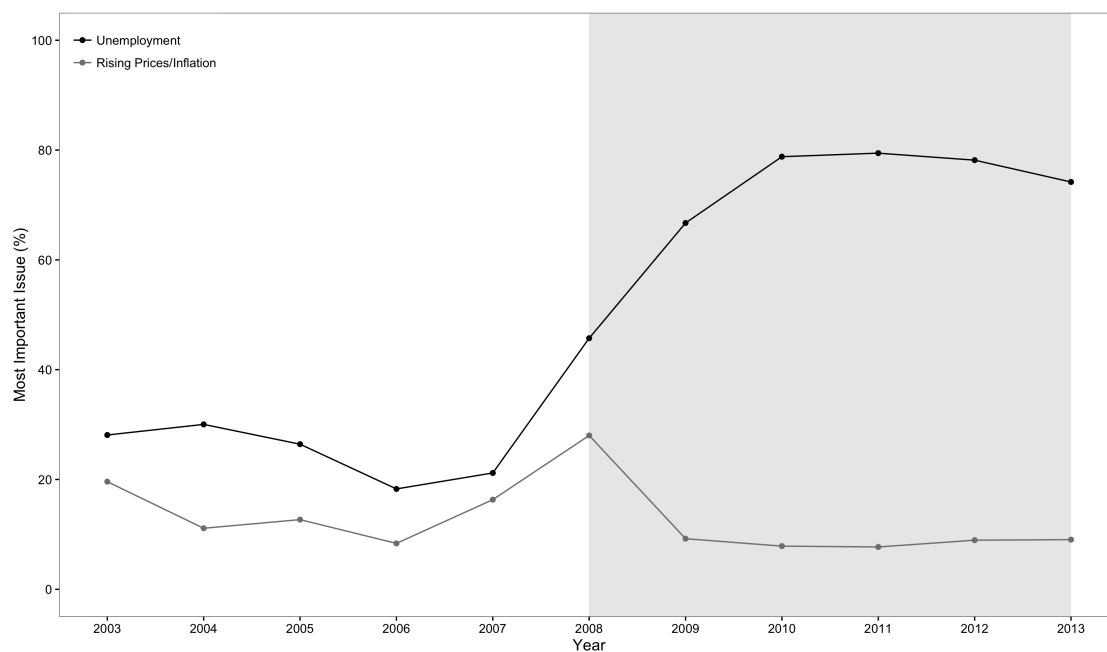
tion of respondents who perceived unemployment or rising prices/inflation to be among the two “most important issues facing Spain at the moment”.³⁰ The grey-shaded area indicates the crisis period. The results suggest that unemployment dominated the perception of problems of Spanish citizens from 2008 onwards. While unemployment was more important to respondents than inflation throughout the whole period, it started to rapidly gain prominence in 2008, the first crisis year, when about 45% of the respondents in Spain perceived unemployment to be among the two most important current issues. In the same year, about 28% of the respondents reported that inflation belongs to the two most important issues. From the second crisis year onwards, however, the relative importance of these two issues evolved completely differently. The importance of inflation fell in the second crisis year and remained at pre-crisis lows throughout the rest of the crisis. The relative importance of unemployment, however, continued to grow until 2010 when about four out of five respondents perceived it to be among the two most important issues and it remained at roughly the same level. The relative importance of unemployment as the dominating issue is consistent with the idea that unemployment and not some other symptom of the crisis caused the decrease in trust in the government.

Additional survey evidence further underscores this impression. Figure A.5 shows the perceived importance of unemployment as opposed to corruption and fraud in Spain.³¹ For each available survey from 2001 to 2013, I plot the fraction of respondents in Spain who perceive unemployment or corruption and fraud to be among the three most important problems. The grey-shaded area again indicates the crisis period. I find that unemployment always ranked high on the agenda, at about 60%. However, after a decrease in importance

³⁰This question was asked on a regular basis from the 2003 wave I use onwards only and hence I have data of a total of eleven waves. Interviewers presented respondents with a list of issues and they could choose up to two of these, but also had the possibility to spontaneously mention others in some waves. Moreover from the 2010 wave onwards, two lists were prepared and each was presented to one half of the sample. The two economic issues I analyze here were the same in both lists. Therefore, conditional on the assumption of the independence of irrelevant alternatives (IIA), these changes should remain inconsequential for the results.

³¹This data comes from the Spanish “Centro de Investigaciones Sociológicas” (Sociological Research Center), which carries out surveys containing questions about which three problems respondents consider to be the most important ones on an almost monthly basis.

Figure A.4: Perceptions of Economic Concerns as Most Important Issue in Spain



Note: This figure displays the share of Spaniards mentioning unemployment or rising prices/inflation as the most important issues Spain faced at the moment of the interview, respectively. Respondents can give up to two answers and totals thus may exceed 100%. The grey-shaded area represents the period in which the Spanish economy experienced the crisis. Based on Eurobarometer polling data from 2003 to 2013 since this question was only included in those waves I use.

prior to the crisis, the unemployment issue started to rapidly gain prominence in 2008, when the share of respondents that perceived it to be among the three most important problems rose by about 30 percentage points. From 2009 onwards, an almost constant share of about 80% reported that unemployment belongs to the three most important problems. One may question whether this perceived importance does reflect objective macroeconomic problems. The evidence suggests that this is the case: The correlation between the actual unemployment rate and the relative importance of the issue is about 0.94 in Spain.

Figure A.5: Relative Importance of Issues: Unemployment Versus Corruption and Fraud



Note: This figure displays the share of Spaniards mentioning unemployment and corruption as most important problems Spain faced at the moment of the interview. Respondents were allowed to mention up to three issues. The grey-shaded area represents the period in which the Spanish economy experienced the crisis. Based on Centro de Investigaciones Sociológicas polling data.

In the Spanish case, a rival explanation could be that corruption was responsible for the strong decline in political trust (cf. Torcal 2014) because the country experienced several corruption scandals that made headlines during the economic crisis.³² Plausibly, involvement

³²For example, the opposition party was hit by a massive scandal that surfaced in 2009 (“Spanish Opposition Party Rocked by Corruption Scandal,” 2009) and prime minister Mariano Rajoy’s party was involved in a scandal that made headlines in 2013 (“Spain’s Mariano Rajoy Corruption Scandal,” 2013).

in corruption also has the potential to disappoint citizens' normative expectations toward the government (Morris & Klesner, 2010). Since the scandals involved prominent politicians as well as the incumbent party, one may hypothesize that corruption perceptions contributed to the drop in trust in the government. However, as Figure A.5 shows, Spaniards did not perceive corruption to constitute a major problem in Spain until 2009. And although the time series exhibits two spikes that reflect two corruption scandals, which occurred at the end of 2009 and in 2010, the relative importance of corruption and fraud declined very quickly afterwards. This suggests that corruption scandals seem to have had relatively short-lived effects on trust. For most of the time, the share of Spanish citizens considering unemployment to be among the most important problems was at least ten times as high as the share of individuals concerned about corruption. Only in the last year I examine, the share of respondents that perceived corruption and fraud to be among the three most important problems increased. This, again, coincides with a corruption scandal that allegedly involved the governing party and the prime minister ("Spain Corruption Scandal Turns Up Heat," 2013). Yet, even in the presence of such a major corruption scandal, the relative importance of unemployment remained at least twice as high. This suggests that corruption perceptions do not seem to have driven the lasting negative effect of the crisis on trust in the government.

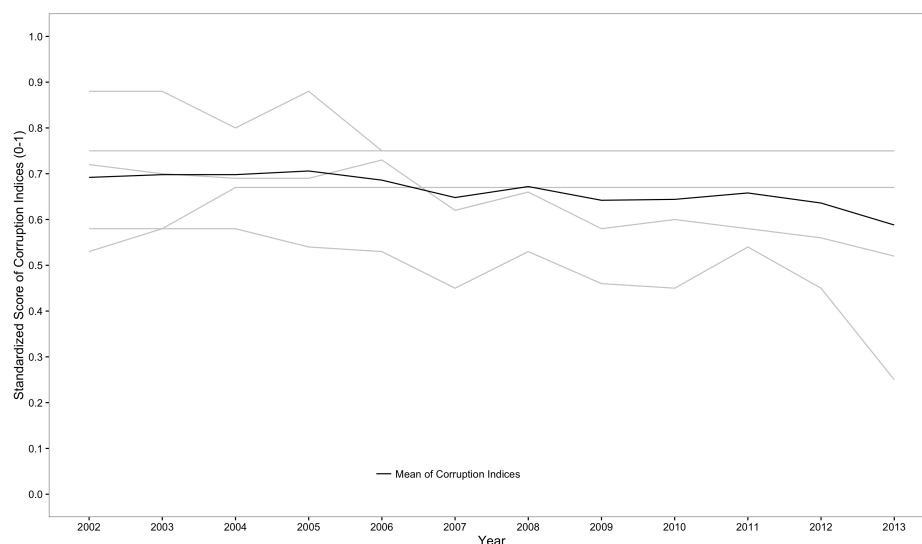
As a final test, Figure A.6 shows the dynamics of several corruption level indicator variables taken from the World Bank's Worldwide Governance Indicator "Control of Corruption"³³. These time series suggest that problems with corruption hardly worsened during the period under consideration. Some indicators did not change over the period from 2002 to 2013³⁴ suggesting that corruption did not get worse over time while other indicators show a slight downward trend. Overall, the mean of the indicators decreases somewhat over time. However, since the average of the indicators only decreases by little, it is highly likely that rising economic concerns are the key to explain trust in the Spanish government during the

³³Data access online: <http://info.worldbank.org/governance/wgi/index.aspx#home>.

³⁴From 2002 onwards, they published yearly data and hence I plot only data from this period.

economic crisis from 2008 onwards. This further corroborates the impression that corruption was not the factor driving the negative evolution of trust. Overall, these results support the idea that concerns about the deteriorating labor market dominated citizens' perception of problems, which is consistent with the idea that the crisis effect on trust can largely be attributed to unemployment concerns.

Figure A.6: Corruption Indicators for Spain, 2002 to 2013



Note: This Figure plots the corruption indicators used to construct the World Bank's WGI "Control of Corruption" index for which data from 2002 to 2013 is available. The dark line is the average of the individual indicators depicted in light grey.

A.8 Generalizability of the Findings

To assess the generalizability of the main results, I conduct further analyses using data from a large set of EU member countries and explore the relationship between economic crises and trust in political institutions. Theoretical considerations suggest that economic crises reduce trust in political institutions. To operationalize economic crises, I resort to the commonly used definition of a recession. If a country experiences at least two consecutive quarters with negative growth on a quarter by quarter basis, it is experiencing a recession.³⁵ To form a recession indicator, I hence downloaded quarterly growth rates from Eurostat and coded the binary *Recession_{2 Quarters}* indicator in the following way: If a country experienced at least two consecutive quarters with negative growth rates, this recession indicator is 1 for all quarters and else 0. If a country experienced a recession during any of the quarters in which interviews for the Eurobarometer were collected, this country is coded as being in recession.³⁶ In addition, to also estimate the effect of a long-lasting recession, I followed the same approach and coded a binary indicator for recessions lasting at least four consecutive quarters called *Recession_{4 Quarters}*. It is noteworthy that both these recession indicators I employ offer the advantage that they are based on objective economic figures and not on a stated survey measure. Thus, I avoid regressing stated preferences on subjective assessments which addresses the concern that subjective assessments of the economy are endogenous to vote choice (see, e.g., van der Eijk, Franklin, Demant and Thomassen 2007) which could potentially also bias results for other measures of institutional approval such as trust.

In order to examine the correlation between economic crises and trust in political institutions, I estimate the following time-series–cross-section model:

$$Trust_{c,t} (\%) = \beta_1 * Recession\ Indicator_{c,t} + \delta X'_{c,t} + \gamma_c + \lambda_t + \epsilon_{c,t},$$

where the dependent variable is the share of people trusting the respective political insti-

³⁵See for example: “Q&A: What is a recession?” (2008).

³⁶Some fieldwork periods spread over two consecutive quarters and for those cases, I followed this approach.

tutions in % (national government, national parliament, and political parties) and the above mentioned recession indicators are the main independent variables of interest. The vector $X'_{c,t}$ contains time-varying covariates and a constant.³⁷ First, I control for *Election years* as these offer politicians additional incentives to provide citizens with policy benefits, which may influence political trust. Third, to capture possible negative effects of austerity measures on trust in political institutions, I control for *Core government spending*. Following the example of Furth (2014), I construct a measure that deducts social benefits other than social transfers in kind and social transfers in kind, capital transfers, adjustments for the change in pension entitlements, other current transfers, and interest payments from total general government spending. The exclusion of transfer payments of all kind is important since such payments increase in times of high unemployment. Consequently, due to the deduction of such transfers, this measure captures the way austerity policies influence government spending. Finally, the equation also contains *Country* and *Year* fixed effects to account for time-invariant effects as well as a common trend. I estimate OLS regression models and cluster the standard errors by country. For this part of the analysis, I use the same waves of the Eurobarometer as for the case study of Spain, i.e., yearly data from 1997 to 2013. I include every country from either 1997 or from the year onwards in which a country entered the EU.³⁸

³⁷Tables A.17 and A.18 at the end of the document provide information about the sources of the variables and summary statistics.

³⁸Due to lack of data about several components used to calculate core government spending the following observations are excluded from the analyses: Bulgaria (2007-2013), Finland (1997-2013), Greece (2001-2005), Hungary (2004-2013), Latvia (2004-2013), Lithuania (2004-2013), Poland (2004-2013), Slovakia (2004-2013), Sweden (1997), and United Kingdom (1997-2013). Moreover, I lack data about the trust in the government in 2000.

Table A.17: Sources of the Independent Variables in the Regression Models

Variable	Indicator	Source
Recession_2 Quarters	Equals 1 for recessions lasting at least two quarters	Eurostat
Recession_4 Quarters	Quarterly GDP growth rates over previous period (seasonally and calender adjusted)	
	Equals 1 for recessions lasting at least four quarters	Eurostat
	Quarterly GDP growth rates over previous period (seasonally and calender adjusted)	
Election Year	Dummy Equalling 1 in Years When the Government Was Elected or the Parliament which then Formed Government	ECPR, Political Data Yearbook World Bank (Data on Pres. vs. Parl. system)
Core Gov't Spending	The Exact Formula With the Codes Used in Eurostat's Government Revenue, Expenditure and Main Aggregates Table Is as Follows: TE - D62_D632PAY - D9PAY - D8 - D7PAY - D41PAY (in 1'000 euro).	
		Eurostat

Note: This Table lists the indicators and sources of the variables I use in the regression models.

Table A.18: Summary Statistics of the Variables Used in the OLS Models

	Mean	Median	Std.Dev.	Min	Max	Count
Trust in the Government (%)	41.65	42.62	16.34	7.47	78.28	252
Trust in the Parliament (%)	44.98	46.86	17.76	6.20	78.67	265
Trust in the Political Parties (%)	22.84	21.09	10.61	4.29	55.44	265
Recession _{2 Quarters}	0.22	0.00	0.41	0.00	1.00	265
Recession _{4 Quarters}	0.13	0.00	0.34	0.00	1.00	265
Election Year	0.28	0.00	0.45	0.00	1.00	265
Core Government Spending	109.35	50.67	130.95	1.15	517.30	265

Note: This Table shows the summary statistics of the variables included in the regression models. The number of observations for core government spending is lower due to missing data about the components I used to calculate the measurement.

A.9 Results

Table A.19 presents the results for all three independent variables differentiating between models that use the two different recession indicators. Both recession indicators have negative signs and reach statistical significance in all regression models thus suggesting that economic downturns undermine trust in political institutions. During a recession that lasts at least two quarters, trust in the government and the parliament decreases by more than seven percentage points while the the results suggest that such a recession reduces trust in the political parties by about 3.8 percentage points. The corresponding figures for recessions that last at least four consecutive quarters are larger in magnitude. During long recessions, trust in the government and the parliament decreases by about twelve and more than 13 percentage points, respectively, while the decrease in trust in the parties amounts to about 4.9 percentage points. Overall, these results mirror the findings obtained using the synthetic control method to study Spain. While recessions undermine trust in all three political institutions, the effect size is substantially larger for trust in the government and the parliament. This suggests that the observed pattern, wherein citizens withdraw trust from policymaking institutions as a response to bad economic performance, can be generalized to a larger set of countries.

Table A.19: The Negative Effect of Economic Crises on Trust in Political Institutions

Dependent Variable: Trust in the...	Government		Parliament		Political Parties	
	(1)	(2)	(3)	(4)	(5)	(6)
Recession _{2 Quarters}	7.97** (2.19)		-7.41** (2.30)		-3.81* (1.52)	
Recession _{4 Quarters}		-12.19*** (3.05)		-13.63*** (3.14)		-4.89* (2.13)
Election Year	3.11* (1.25)	2.75* (1.15)	2.93* (1.11)	2.55* (1.10)	1.44* (0.63)	1.27 (0.63)
Core Government Spending	0.03 (0.06)	0.03 (0.05)	0.02 (0.06)	0.02 (0.05)	0.01 (0.03)	0.01 (0.03)
Constant	52.86*** (3.19)	52.88*** (3.17)	55.81*** (2.84)	55.70*** (2.73)	28.04*** (1.36)	28.09*** (1.34)
Year FE	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
Observations	252	252	265	265	265	265
Adjusted R^2	0.715	0.726	0.778	0.796	0.783	0.783

Note: Robust standard errors clustered by country in parentheses; * p < 0.05, ** p < 0.01, *** p < 0.001.

The variable election year reaches statistical significance and has a positive sign in all regression models but one supporting the idea that elections provide politicians additional incentives to provide policy benefits which results in higher levels of confidence in representative political institutions. Core government spending does not reach statistical significance.

Overall, the regression results thus suggest that the findings obtained from studying Spain using the synthetic control method generalize to other EU member countries and hence lend further credence to the argument that citizens, which are disappointed with the economic performance of a country, withdraw trust from policymaking institutions that have the means to influence the economy and voice citizens discontent. Table A.20 shows that these results remain stable even when including the lagged dependent variable in all but one case. The coefficient of recessions lasting 4 quarters or more is not significant anymore at the 5% level as the exact p-value is 5.7%.

Table A.20: The Negative Effect of Economic Crises on Trust in Political Institutions; Models Including Lagged DV

Dependent Variable: Trust in the...	Government		Parliament		Political Parties	
	(1)	(2)	(3)	(4)	(5)	(6)
Recession _{2 Quarters}	-5.65*** (1.38)		-4.05* (1.47)		-2.67* (1.22)	
Recession _{4 Quarters}		-8.14** (2.32)		-8.20** (2.21)		-3.38 (1.67)
Trust in the Government _{t-1}	0.54*** (0.10)	0.53*** (0.10)				
Trust in the Parliament _{t-1}			0.66*** (0.07)	0.63*** (0.07)		
Trust in the Political Parties _{t-1}					0.51*** (0.10)	0.51*** (0.10)
Election Year	4.35* (1.57)	4.19* (1.48)	4.28** (1.17)	4.00** (1.12)	2.25** (0.73)	2.13** (0.72)
Core Government Spending	0.04 (0.05)	0.03 (0.04)	0.02 (0.03)	0.02 (0.03)	0.01 (0.02)	0.01 (0.02)
Constant	21.82*** (5.48)	22.38*** (5.71)	20.23*** (4.34)	21.84*** (4.30)	15.84*** (3.48)	15.98*** (3.46)
Year FE	✓	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓	✓
<i>N</i>	207	207	233	233	233	233
adj. <i>R</i> ²	0.818	0.822	0.885	0.892	0.843	0.843

Note: Robust standard errors clustered by country in parentheses; * p < 0.05, ** p < 0.01, *** p < 0.001.