Chapter 10
Has the Financial Crisis Shattered Citizens' Trust in National and European Governmental Institutions? Evidence from the EU Member States, 1999–2010

Felix Roth, Felicitas Nowak-Lehmann D., and Thomas Otter

Abstract The financial crisis has affected trust in national and European governmental institutions in different ways. This contribution analyses the determinants of trust in the national and European institutions over the last decade and comes to the conclusion that inflation reduces citizens' trust only when the economy runs smoothly. In times of crisis, citizens do not worry about inflation but rather about jobs and the effects of a recession. Declining trust in national governments is related to an increase in unemployment in the EU-15 in all time periods, whereas trust in the European Commission and the European Parliament seems to be strongly associated with the situation in the real economy (unemployment and growth of GDP per capita) only in times of crisis. Yet in the EU-27, falling levels of trust in the national and European governmental institutions during times of crisis seem to be primarily related to an increase in government debt. In an EU-15 country sample, this negative relationship appears to be driven by countries that owe a larger share of their increase in government debt to aiding/bailing out their financial sectors and the implementation of significant austerity measures.

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1 Introduction

The financial crisis has severely affected citizens' trust in the European institutions in the direct aftermath of Lehman Brothers' declaration of bankruptcy on 16 September 2008. Citizens' net trust in the European Central Bank (ECB)[1] has significantly declined, despite partly recovering from June 2009 onwards. Citizen's trust in the European Parliament and European Commission has declined less severely than trust in the ECB, but still significantly (Roth, 2009). In contrast to citizens' net trust in European institutions, citizens' net trust in national governments and parliaments initially increased in most EU countries in the direct aftermath of the financial crisis (Roth, 2009). This paper analyses the determinants of trends in citizens' net trust in the national and European political institutions. More precisely, it analyses the determinants of citizens' net trust in the national governments and parliaments, as well the European Commission and European Parliament, for the last decade and particularly before and after the financial crisis.

2 Theoretical Links

Since late 2008, governments and supranational institutions have had to face severe challenges arising from critical economic (financial and economic crises) and social events (the social impacts of the economic crisis). As a consequence of these events, trust and confidence in national (national government and parliament) and European governmental institutions (European Commission and Parliament) have declined (Roth, 2009, 2011). These trends bring to the fore questions regarding the determinants of trust and its performance during periods that are determined more by crisis than by normality. Given the global financial and political challenges, European citizens' distrust towards national and European governmental institutions has been increasing (Roth, 2009, 2011). But what is the driving force behind this distrust?

Extensive literature shows that people have confidence in their leaders (people or institutions) when the government is working well. Uslaner (2002) argues that their perceptions and opinions about government performance reflect their evaluations of specific personalities, institutions and policies. Thus, when the government does not produce the outcomes envisaged, trust is expected to be lower. Easton (1965) and Norris (1999) find that economic crises or political shifts are temporary events,

[1] See Roth (2009); Gros and Roth (2010).

which affect trust in political incumbents deeper than confidence in the political system (seen as a general determinant for government). However, Newton (2008) highlights that although it might be the case that distrust in a political incumbent might not threaten democratic structures, a '*deep-seated lack of confidence in the institutions and systems of government*. . .' might menace '. . . *the very foundations of the system of government*' (243). Furthermore, in line with this argument, a more general argumentation claims that in the absence of citizens' trust in (policymaking) institutions, the legitimacy of those institutions is endangered (Kosfeld et al., 2005, p. 673; Kaltenthaler et al., 2010, p. 1261) and the probability that citizens begin to undermine the authority of those institutions becomes more likely.

2.1 Trust in National Governmental Institutions

Since the late 1960s and early 1970s, public trust in government and political institutions has been falling in all advanced industrialised democracies (Blind, 2006, citing Dalton & Wattenberg, 2000). Additionally, Dalton and Wattenberg (2000) show that in industrialised democracies, trust in political parties is eroding. And related to this, public confidence in parliaments has similarly decreased in the last decade (Blind, 2006, citing Dalton, 2004, Chap. 2). The general decline in trust covers several areas – government, parliament and political parties (Blind, 2006). In a later work, Dalton shows that even if the pattern and the pace of the fall in trust are dissimilar across countries, the downward trend is generalised (Blind, 2006, citing Dalton, 2005). Van de Walle et al. (2008), however, reject the hypothesis of a universal decline of trust in the public sector. They argue that there is little evidence of an overall long-term decline in trust in government but that there are fluctuations rather than a stable trend.

In his literature review, which he prepared for the United Nations, Blind (2006) cites the 'declining voter turnout (Gray & Caul, 2000, Eagles, 1999), youth disinterested in politics (Adsett, 2003) and decreasing levels of civic involvement (Saul, 1995, Putnam, 2000)' as symptoms of declining trust in advanced industrialised democracies. Blind argues that of course symptoms do not explain the causes of the declining trust, and many different factors may be behind the decline. Periods of low economic growth and public fear that governments have been incapable of dealing with previous or current fiscal and financial challenges have been cited by several authors (Blind, 2006; Mansbridge, 1997; Newton & Norris, 2000) as some of these causes.

People invest more trust in governments that have shown the capacity to generate economic growth, create jobs, provide access to social services and perform in a transparent manner (Fiorina, 1978; Mackuen et al., 1992). Nye Jr. (1997) argues that citizens' doubts regarding their national economy and governments' ability to

respond to these challenges could create even more distrust in the age of globalisation.

2.2 *Trust in European Governmental Institutions*

Muñoz et al. (2011) argue that when attempting to explain changing levels of political confidence in the European Parliament, we must keep in mind the supranational character of this institution. They also state that in recent years, public opinion regarding the work of the EU has received more and more attention. The authors put forward two arguments to explain the impact of national trust levels on the trust levels regarding the European institutions. The first argument, the congruence model, suggests that because of limited information on politics at the European level, citizens use their opinions based on domestic information as a proxy for trust at the European level. The second argument, the compensation model, states that citizens with positive evaluations regarding their national institutions compare the European institutions to a higher standard so higher trust in national institutions will decrease the trust in European institutions.

The same authors mention that a different approach conceives support for European integration as a result of a cost-benefit analysis perceived by citizens. Scholars in this tradition have developed several models mainly using pure or subjective economic variables to represent the benefits as determinants for citizens' support for European integration (Gabel, 1998a, 1998b; Hooghe & Marks, 2005). Gabel's argument, which supports the importance of economic benefits as an outcome of EU integration, centers on the low affective identification citizens have with EU institutions.

3 Previous Findings

3.1 *Trust and Support for National Governmental Institutions*

The 'popularity functions' approach is frequently used in research on trust and support for governments. It aims at explaining the determinants of support to governments, whereby a positive attitude towards support supposes the existence of a required level of trust. Nannestad and Paldam (1994) review 25 years of research and literature on voters and popularity (VP) functions, which explain the support for the government at elections and public opinion polls using economic and political variables. Most studies apply time series methodologies, using macroeconomic

variables. Nannestad and Paldam (1994) argue that the VP theory starts from the hypothesis that voters hold the government responsible for economic conditions. The authors find that such a system works only in countries with a two-party/bloc system. They also find that voting is retrospective and that voter's expectations are static (Nannestad & Paldam, 1994, p. 213).

In their review, Nannestad and Paldam find that 'nearly all studies made have found highly significant VP functions, and a clear pattern appears in the results. Only a few studies, such as Dinkel (1982) and Norpoth and Yantek (1983a, 1983b), have denied the very existence of the VP function' (Nannestad & Paldam, 1994, p. 214). For our paper, the most relevant findings in the literature as reported by Nannestad and Paldam are 1) 'voters hold the government responsible for the development in the economy' and 2) 'a good economic development increases the popularity of the government, while a bad development decreases the popularity' (both findings in Nannestad & Paldam, 1994, p. 215). Their third important finding for our study is that most econometric models on VP functions that have been reviewed usually find a very limited number of macroeconomic variables in the real sense of the responsibility hypothesis. For industrialised countries, the two most critical variables are unemployment and inflation (Nannestad & Paldam, 1994, p. 216). For the case study of Portugal, Veiga and Veiga (2004) find an especially strong effect of unemployment levels on a government's popularity and in an even more striking way when the ruling government holds a parliamentary majority as well. For the case study of the United Kingdom, Sanders (2000) finds that voters decide on the basis of government results regarding unemployment and inflation and on the basis of expectations about the economic future. Using data from the last government change in Germany in the year 2005, the working paper by Kirchgässner (2009) finds some evidence that even if the impact of unemployment and inflation on the electoral success (or failure) of German governments from the 1950s to the 1990s can be taken for certain, more recent electoral results seem to show a changing trend. Unemployment no longer seems to have the same strong impact as before.

Considering these results, Kirchgässner raises the question of the extent to which voters really hold the government responsible for economic developments. To better analyse future VP functions, he proposes to distinguish three different situations: '(i) governments are really responsible, (ii) governments claim to be responsible, and (iii) governments are held responsible by the electorate for economic development' (Kirchgässner, 2009, p. 14). An overview of the papers by Sanders (2000), Veiga and Veiga (2004) and the working paper by Kirchgässner (2009) is given in Table 10.1.

Roth (2009) finds that net trust in the national government and parliament actually increased in the direct aftermath of the financial crisis. This finding that citizens' trust increases in times of crisis had already been elaborated upon by Chanley (2002) and is called the 'rally around the flag' effect (Hetherington & Nelson, 2003). Roth (2011) finds that the financial and eurozone crisis is associated with a significant loss of citizens' trust in the national parliament and government in the four periphery countries Greece, Spain, Ireland and Portugal. Roth shows initial evidence that an increase of debt over GDP is associated with the loss of trust.

Table 10.1 Selected results in the popularity function literature

Authors	Sanders (2000)	Veiga and Veiga (2004)	Kirchgässner (2009)
Period studied	1974–1997	1986–1999	1999–2005
Data source	Gallup	Expresso (newspaper); OECD; IMF	German Central Bank and Institute for public opinion Allensbach
Typical countries	UK	Portugal	Germany
Estimation technique	OLS regressions	OLS; SUR estimation; dummy variables	OLS
Dependent variables	Government support at time *t*	Popularity index for PM, government, parliament and president	Share of intended votes per party or coalition
Independent variables	Monthly change in unemployment, inflation; aggregate perceptions of monthly change in unemployment, inflation; interaction term	Unemployment; inflation; dummies for personal effects and successive terms in office; a variable capturing the honeymoon effect	Unemployment and inflation
Regression results	(1) No evidence to indicate objective macroeconomic measures exerted any **direct** effect on government support; (2) Voters' subjective economic **perceptions** are strongly related to government support	High rates of unemployment decrease the popularity of political entities; existence of a honeymoon effect	Neither unemployment nor inflation is significant for this period
Observations	Up to 279 monthly observations	Monthly observations from 1986 to 1999	72 monthly observations
Empirical findings, conclusions	Voters decide on the basis of a government's results regarding unemployment and inflation and on the basis of expectations about the economic future	(1) Voters hold the political entities under investigation responsible for economic outcomes, especially unemployment; (2) On the unemployment rate, popularity is influenced by whether the party in power has a majority of seats in the assembly of the republic	Missing the impact of unemployment could be a consequence of a short observation period and the low variance of the explanatory variables; regarding inflation, citizens may hold the ECB responsible instead of the national government

Source: Authors' own compilation.

Finally, Listhaug and Ringdal (2008) refer to the traditionally higher levels of trust in Scandinavian countries in the national governments and argue that these may be explained by structural variables, such as indicators of a country's performance and political distance, and macro characteristics of development (e.g., as expressed by the Human Development Index). At the same time, trust levels in Scandinavian countries in European institutions are generally lower compared with trust levels in national governments.

3.2 *Trust and Support for the EU Trust and Support for European Governmental Institutions*

As there are not a lot of empirical studies on the determinants on trust in the European Commission and European Parliament, we discuss studies concerning trust in the EU, as there might be complementarities between trust in the EU and trust in the European Commission and European Parliament (see here also Kaltenthaler et al., 2010).

Biernat (2007), who used data from the European Values Survey and the Eurobarometer 62 for 14 EU countries, finds that there is no homogeneous level of trust towards EU institutions in the different member states. Even if it is difficult to find clear, unique patterns of factors related to political support, there seem to exist spatial structures that mark some differences in levels of trust and its features in relation to the EU. In Western and Southern Europe, the EU seems to be perceived more like an institution with characteristics similar to the national political system. In contrast, in Britain and Eastern Europe, a much clearer perception of a non-national European sphere can be observed. The author identifies three main factors that determine general trust in the EU: 'trust in national parliament, satisfaction with EU democracy, and trust in the social security system' (Biernat, 2007, p. 7). Additionally, the author finds that trust in national governments and satisfaction with national systemic performance reinforce trust in the EU.

The results by Hooghe and Marks (2005) confirm the importance of economic factors in determining citizens' trust in the EU. They use Eurobarometer data to measure the relative impact of economic aspects and of community identity on European public opinion. They find that both factors are important. Nevertheless, identity has a more profound impact on trust levels in the EU than economic self-interest.

Roth (2009) finds that trust in the European Parliament and European Commission has quite significantly decreased because of the financial crisis, but the overall level of trust in the European Parliament and European Commission is significantly higher than in national parliaments and national governments.

At the individual level, Muñoz et al. (2011) find a positive relationship between political support for domestic and European institutions, while they show a negative correlation between trust in the national parliaments and trust in the European Parliament at the country level. The lower the performance of national institutions, the higher is the trust in a European institution (country level).

Torcal et al. (2011) show that European citizens' trust in EU institutions is formed by three attitudinal variables: affective support for the EU, subjective sociotropic evaluations of the integration process and trust in the national parliament.

The findings of the studies by Dalton (2005), Van de Walle et al. (2008), Listhaug and Ringdal (2008) and Muñoz et al. (2011) are presented in more detail in Table 10.2.

Table 10.2 Selected results from the literature on trust in national governments and trust in European institutions

Authors	Dalton (2005)	Van de Walle et al. (2008)	Listhaug and Ringdal (2008)	Muñoz et al. (2011)
Period studied	1958–2000	1958–2006	2004	2004–2008
Data source	National election study series	Eurobarometer, world value survey, European value survey, national election studies	European Social Survey, 2004	European Social Survey, 2004, 2006 and 2008
Typical countries	US only for multivariate model; other models, US, Aus, UK, CA, FI, DE, JA, NO, SE, SW	US, JA, NZ, EU-6	Nordic countries and European countries (AT, BE, FR, DE, LU, NL, SW, DK, FI, ICE, NO, SE, UK, IE, ES, GR, PT, CZ, EE, HU, PL, SK, SI, UKRA)	AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HU, IE, LU, NL, PL, PT, SE, SI, SK, UK
Dependent variables	Trust in government	None (descriptive study)	Political trust in legal system, European parliament and electoral system	Trust in the European Parliament
Independent variables	Year of the survey; educational level; age; interaction term between education and year of survey and between age and year of survey	None (descriptive study)	Political distance; indicators of performance evaluations; questions on political issues; country size; standard of living	Trust in the national government, support for EU unification, years of full-time education, social trust, self-placement on a political L-R scale, age and gender, satisfaction with welfare services, political interest

(continued)

Table 10.2 (continued)

Authors	Dalton (2005)	Van de Walle et al. (2008)	Listhaug and Ringdal (2008)	Muñoz et al. (2011)
(Regression) results	Older generations are more trustful than the young; demographic change in education and generational groups lead to a decline in political support	Citizens' trust in the public sector is found to fluctuate; data generally do not show consistently declining levels of trust	High trust levels in the Nordic countries in national governments may be explained by structural variables (indicators of a country's performance and political distance) and macro characteristics (HDI); trust levels in European institutions are lower in the Nordic countries	Individual trust in national parliament influences trust in European parliament positively while trust in the national parliament at a country level has a negative effect on trust in the European parliament

Source: Authors' own compilation.

4 Data and Measurement

4.1 Operationalisation

Trust in the national governments, national parliaments, the European Commission and the European Parliament has been measured by Eurobarometer surveys by asking citizens the following question: 'For each of the following European bodies, please tell me if you tend to trust it or not to trust it'. The respondent is then presented a range of European institutions.[2] Next to the answers 'Tend to Trust it' and 'Tend not to Trust it', a third category, 'Don't Know (DK)', can also be selected by the respondents.[3] The best measure of trust seems to be 'net trust', which is obtained by subtracting the percentage of those who trust from those who do not trust the institution.[4]

[2] In addition to the European Commission and the European Parliament, a range of other European institutions such as the ECB are included in the Eurobarometer's trust item battery.

[3] DK answers can easily reach values of 20% points and more. Furthermore, the DK answers fluctuate over time.

[4] This approach is used in public opinion research in particular and is able to control for the fluctuations in the DK answers. The same approach of using net trust was also chosen by Gros and Roth (2010) and by Roth (2009, 2011).

4.2 Model Specifications

Our model specification includes the classical macroeconomic variables as specified in the popularity function literature (Nannestad & Paldam, 1994)[5] plus the additional variable debt per GDP in order to address the dramatic increases of debt in the aftermath of the financial crisis. In the baseline model with an unbalanced panel, net trust in the national government/parliament and net trust in the European Commission/Parliament are estimated as a function of inflation, growth of GDP per capita, unemployment, debt per GDP and important control variables. The baseline model for the fixed-effects estimation which holds in the long term when all adjustments have come to an end reads as follows:

$$\text{Trust in national and European governmental institutions}_{i,t} = \alpha_i + \beta \text{Inflation}_{i,t} + \chi \text{Growth}_{i,t} + \delta\ \text{Unemployment}_{i,t} + \varepsilon\ \text{Debt per GDP}_{i,t} + \phi Z_{i,t} + w_{i,t} \tag{10.1}$$

where i represents each country and t represents each time period; $\text{Trust}_{i,t}$ is the net trust amount for country i during period t; $\text{Inflation}_{i,t}$, $\text{Growth}_{i,t}$, $\text{Unemployment}_{i,t}$, $\text{Debt per GDP}_{i,t}$, and $Z_{i,t}$ are respectively, inflation, growth of GDP per capita, unemployment, debt per GDP and important control variables; α_i represents a country-specific constant term and $w_{i,t}$ is the error term. For analytical reasons, we allow the error term to be composed of an error due to omitted variables $v_{i,t}$ and an i.i.d. error $w_{i,t} = v_{i,t} + u_{i,t}$. This point becomes relevant when we present our estimation technique.

4.3 Measurement of Data

Data on trust in the national government, the national parliament, the European Commission and the European Parliament were based upon the biannual Eurobarometer surveys.[6] The first observation for information from spring 1999

[5] In addition, the popularity function literature normally includes political variables (Nannestad & Paldam, 1994, p. 218). As our analysis focuses specifically on the financial and economic crisis in September 2008, we did not see the relevance of including political variables. We did, however, incorporate an election dummy to control for the fluctuation in trust due to elections. The incorporation of the election dummy, however, did not alter our empirical results.

[6] The raw data are available on CD-ROM from Gesis ZA Data Service for Standard Eurobarometers 51–62 (Gesis, 2005a, 2005b) and were received on request from Gesis ZA Data Service for Standard Eurobarometers 63–69 (https://www.gesis.org/home). Data for the Standard Eurobarometer 70 were taken from Eurobarometer (2010a). Data for the Special Eurobarometer 71.1 were taken from Eurobarometer (2009a). Data from Eurobarometer 71 were taken from Eurobarometer (2009b). Data from Eurobarometer 72 were taken from Eurobarometer (2009c). Data from Eurobarometer 73 were taken from Eurobarometer (2010b). Data from Eurobarometer 74 were taken from Eurobarometer (2011).

was found in the Standard Eurobarometer 51.[7] From there onwards, Standard Eurobarometer data until autumn 2010 (Standard Eurobarometer 74) were taken. Furthermore, to precisely measure the effect of the financial crisis on net trust in the ECB, the observation from the Special Eurobarometer 71.1 in January–February 2009 was taken into consideration.

- Data on GDP were taken from Eurostat's quarterly data. The data were chain-linked with 2000 as the reference year.[8] The Eurobarometer fieldwork normally takes place around April–May and October–November.[9] We constructed semester GDP growth using GDP data on the four quarters preceding the Eurobarometers. More precisely, the two quarters directly preceding the Eurobarometer were compared with the third and fourth quarter before the Eurobarometer, for example, GDP growth for the May 1999 Eurobarometer was calculated by comparing the GDP for October 1998–March 1999 (fourth quarter 1998 plus first quarter 1999) with the GDP for April–September 1998 (second plus third quarters 1998). As in 2009, we had three observations for net trust; the Standard Eurobarometer 71, conducted in June 2009, was exceptionally matched with the first and second quarters of GDP in 2009. Data on GDP were missing for Bulgaria, Malta and Romania for the first three semesters. A graphical overview of the data construction is given in Fig. 10.A1.
- Data on inflation rates were based on Eurostat's monthly HICP indicator. Semester data were constructed by averaging monthly data from April to September and from October to the end of March. The April to September data were then matched with Standard Eurobarometers from autumn and the October to end of March data were then matched with Standard Eurobarometers from spring. As discussed above, the Standard Eurobarometer 71, conducted in June 2009, was exceptionally matched with the first and second quarters of inflation in 2009.
- Data on population, unemployment and government debt were retrieved from Eurostat. Semester data were constructed in a similar manner as for GDP and inflation. Data were missing on government debt for the first two semesters except for Belgium, France, and Romania. Furthermore, the values for

[7] It would have been possible to further follow the time trend backwards but as our analysis primarily wanted to focus on the impact of the financial crisis on citizens' trust, we concluded that the period 1999–2008 extended over a long enough time range to cover the pre-crisis sample.

[8] Chain-linking is a methodology to calculate GDP values at constant prices. In particular, the previous year is used as a base year instead of a single-fixed year, which is moved every five years. 2000 is used as a reference year, for which the deflators are expressed as equal to 100.

[9] Although this fluctuates slightly, we assumed that the Standard Eurobarometer in spring was polled in April–May and the one in autumn was polled in October–November. That this assumption is valid is underlined when analysing the exact dates of the fieldwork in which the single EB's took place. The polling for the Standard Eurobarometers took place in the following months: 03–04/1999, 10–11/1999, 4–5/2000, 11–12/2000, 4–5/2001, 10–11/2001, 04–05/2002, 10–11/2002, 04–05/2003, 10–11/2003, 02–03/2004, 10–11/2004, 05–06/2005, 10–11/2005, 04–05/2006, 09–10/2006, 04–05/2007, 09–10/2007, 03–05/2008, 10–11/2008, 01–02/2009, 06–07/2009, 10–11/2009, 05/2010, 11/2010.

unemployment were missing for the first two semesters for Bulgaria, Cyprus, Estonia, and Malta. The quarterly population data were inter- and extrapolated to replace missing values. A graphical exemplary overview of the data construction on debt over GDP is given in Fig. 10.A2.

- Data on the existence of an election were taken from the electoral database on parliamentary elections from the Consortium for Elections and Political Process Strengthening (CEPPS, 2011).[10]
- Data on state aids for the financial industry (Sector J) were provided by DG Competition (European Commission, 2009).
- Data on the size of austerity measures were taken from Theodoropoulou and Watt (2011).

5 Descriptive Statistics

Figure 10.1 shows the time trend of net trust in the European Commission and national government for the 27 European member states as measured by the biannual Eurobarometer surveys since the beginning of the financial crisis. Although one detects a decline in trust in the European Commission from spring 2008 onwards until January/February 2009, followed by an increase in net trust until autumn 2009, citizens' trust in the national government shows a diametric trend in the aftermath of the Lehman bankruptcy in autumn 2008. Citizen's trust in the national government actually increases until January/February 2009. This diametric trend vanishes with the beginning of the eurozone crisis from autumn 2009 onwards, after which both trust trends decrease. Thus, it seems that the eurozone crisis has had a negative effect on trust in both institutions: the national government and the European Commission. The finding that trust in the national government increased in the direct aftermath of the financial crisis has already been shown by Roth (2009) and can generally be identified as the rally-around-the-flag phenomenon (Hetherington & Nelson, 2003), which means that in times of crisis, citizens' trust in the national institutions actually rose on a short-term basis (see also Chanley, 2002). The same pattern can be detected when comparing the trust trends in the national parliament and the European Parliament in Fig. 10.2, which shows the time trend in net levels of trust in the European Parliament and national parliament for the 27 European member states measured by the biannual Eurobarometer surveys.

As Figs. 10.1 and 10.2 merely reflect the overall trend of the EU-27 and taking the ongoing eurozone crisis into consideration, it seems necessary to evaluate the periphery countries in comparison with the core countries. Figure 10.3 shows the trust trends in the national parliament for the four European periphery economies of Greece, Ireland, Portugal, and Spain. The figure clarifies once more (see also Roth, 2011) the immense loss of citizens' trust in the national parliament since the start of

[10] Data can be downloaded at http://www.electionguide.org/.

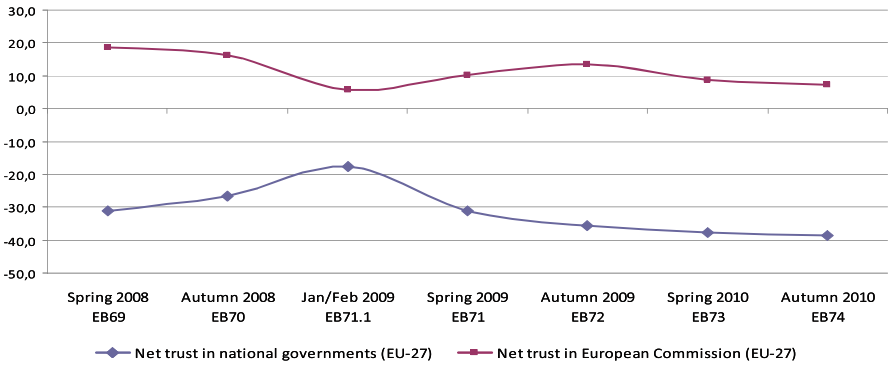

Fig. 10.1 Trust trends in the national government and European Commission in the aftermath of the financial crisis in the EU-27
Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

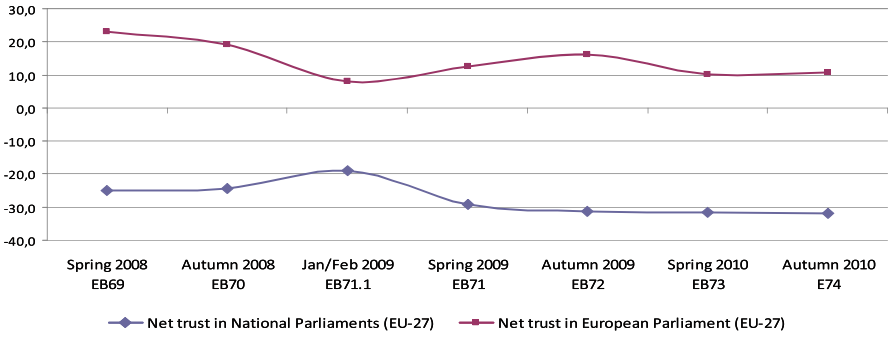

Fig. 10.2 Trust trends in the national parliament and European Parliament in the aftermath of the financial crisis in the EU-27
Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

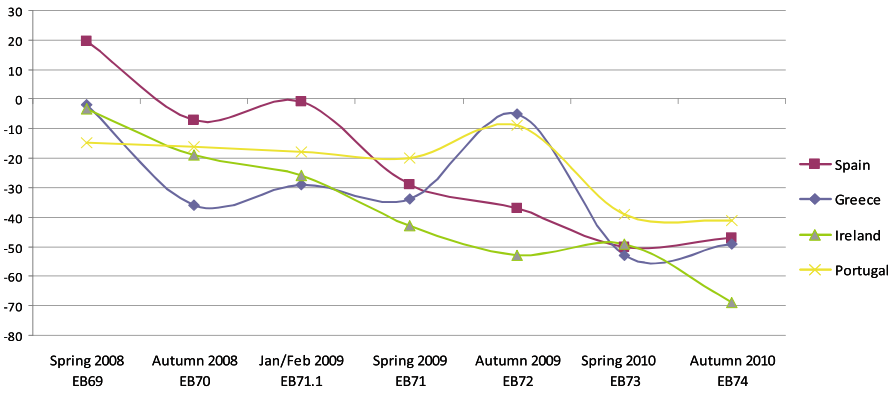

Fig. 10.3 Trust in the national parliament in the four periphery countries Greece, Ireland, Spain and Portugal
Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

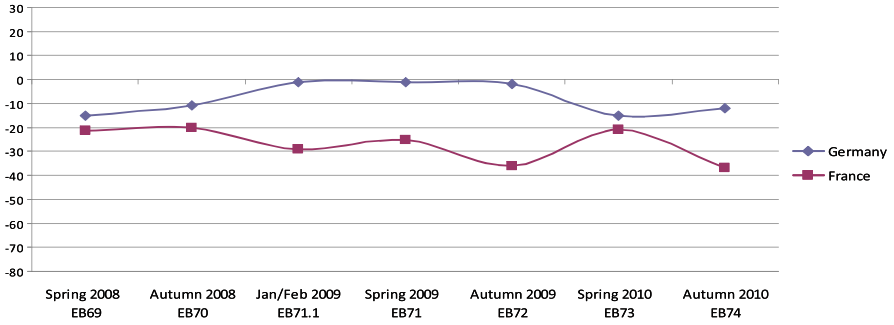

Fig. 10.4 Trust in the national parliament in the two core countries Germany and France
Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

the financial crisis in the periphery countries. Spanish citizens' net trust decreased by 67% (from 19.5% in spring 2008 to −47% in autumn 2010)[11] and that of Irish citizens declined by 65.7% (from −3.3% in spring 2008 to −69% in autumn 2010).[12] In Greece, citizens' trust fell by 49% (from 0% in spring 2008 to −49% in autumn 2010)[13] and in Portugal, it dropped by 25.2% (from −14.8% in spring 2008 to −41% in autumn 2010). Ireland's net trust value of −69 (as can be inferred from the summary statistics in Tables 10.A1 and 10.A2 in the Annex) is the lowest value in the EU-15 country sample in the observed timeframe of 1999–2010.

Whereas the four periphery countries have faced dramatic losses of their citizens' trust in the national parliament and government, the picture looks significantly different in the case of Germany and France, as depicted in Fig. 10.4. After a fall of citizens' trust in France in autumn 2010, the overall loss of net trust since the start of the financial crisis in spring 2008 has only been −15.6%. In contrast to France, however, in Germany, trust has stabilised with a value of −12%, which is an even higher level than before the financial crisis (−15% in spring 2008).

Figure 10.5 shows the above-mentioned rally-around-the-flag effect in the aftermath of the financial crisis for an EU-15 country sample. The picture clarifies that in the direct aftermath of the crisis, a decline in the growth of GDP is associated with an increase of net trust in the national government, whereas an increase in growth of GDP per capita (in the period of economic recovery) is associated with declining trust in the national government. This finding already indicates that it is not just a politically motivated crisis – such as the attacks on the twin towers on 9/11 (Chanley,

[11] Net trust in the national government fell 73% from 20% to −53%, with a tiny recovery in autumn 2010.

[12] Citizens' trust in the national government has been facing similar losses, with a record low of −75% of net trust in Ireland in autumn 2010. This is the lowest net trust value in the period from 1999 to 2010 in the EU-15 country sample. Soon afterwards in January 2011, the Irish government resigned.

[13] The immediate increase in autumn 2009 is due to the election of a new government.

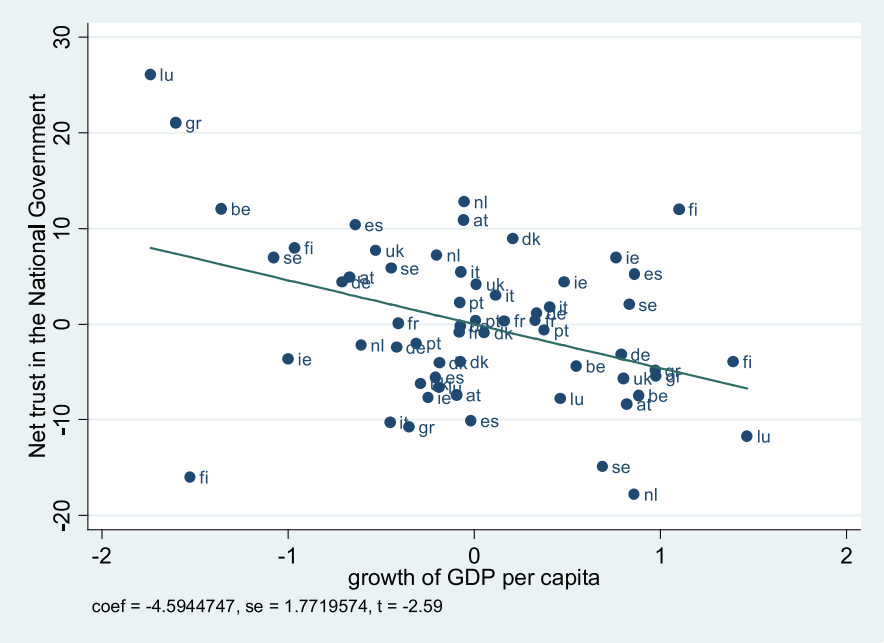

Fig. 10.5 Scatterplot between growth and trust in the national government in the aftermath of the financial crisis in the EU-15 (controlling for country-fixed effects)
Sources: Standard Eurobarometers 69–71 and Special Eurobarometer 71.1 and Eurostat data.

2002) – that triggers a rally-around-the-flag effect, but that an economically motivated crisis does so as well.

Figures 10.6 and 10.7 show partial regression plots when controlling for country-fixed effects (thus depicting the within variation) between government debt and trust in the national parliament in the crisis period from spring 2008 to autumn 2010 for the EU-27 country sample. Whereas Fig. 10.6 shows a partial regression plot without the exclusion of Ireland, Fig. 10.7 clarifies that even without the two Irish cases (which seem to drive the negative relationship in Fig. 10.6) overall, there is a clear and significant negative association between debt over GDP and net trust in the national parliament. An increase of government debt is associated with a decrease of net trust in the national parliament.

6 Econometric Analysis

To analyse the determinants of net trust in the national government/parliament and European Commission/Parliament over a longer time horizon, the fixed-effects Dynamic Ordinary Least Squares (DOLS) or a Feasible Generalised Least Squares (FGLS) estimation method is used (see Table 10.3). There are basically three

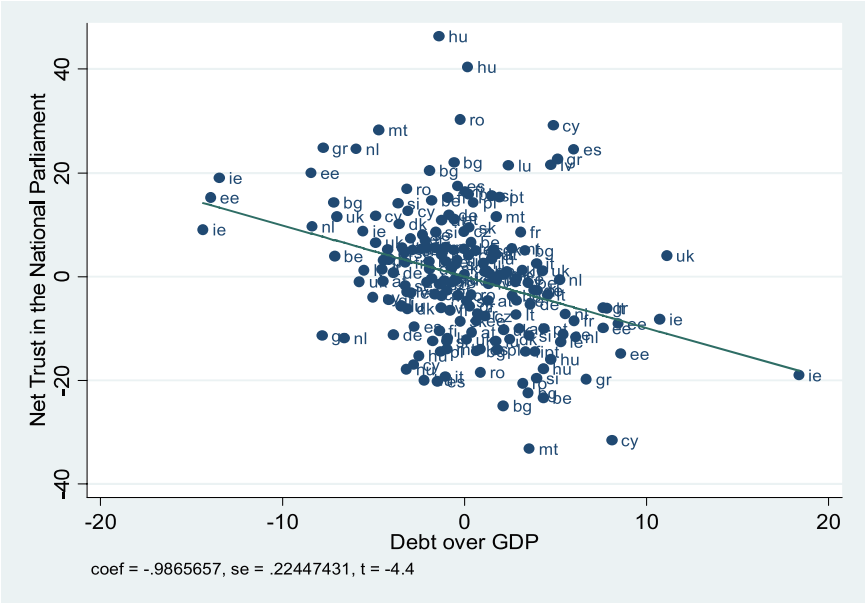

Fig. 10.6 Scatterplot between debt and trust in the national parliament during the financial crisis (controlling for country-fixed effects)
Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1 and Eurostat data.

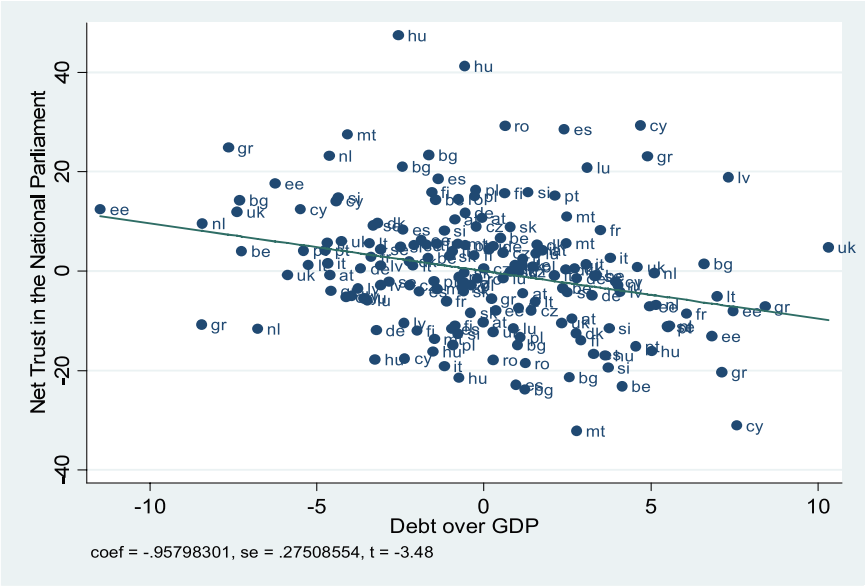

Fig. 10.7 Scatterplot between debt and trust in the national parliament during the financial crisis (controlling for country-fixed effects), excluding Ireland
Sources: Standard Eurobarometers 69–74, Special Eurobarometer 71.1 and Eurostat data.

econometric issues that deserve prior discussion. One is whether and how to control for omitted variables and whether inclusion of time fixed effects is an adequate approach; the second issue is about structural breaks or whether inflation, growth and unemployment influence trust in the national and European institutions in the same way under normal economic conditions and in times of crisis. The third issue concerns the endogeneity of the explanatory variables.

6.1 The Issue of Dealing with Unexpected Events and Omitted Variables

In econometric modelling, we often have to deal with unquantifiable or unobservable events (or both). In the panel data literature, it has become very common to work with fixed time dummies in order to proxy events that are identical for all countries in the sample but which change over time. In contrast to traditional panel data studies, we do not favour the use of time dummies. We have reason to believe that countries (our cross-sections) are usually affected differently by the same 'general' event. With respect to the 27/15 EU economies under investigation, for example, the EU's enlargement strongly affects the neighbouring countries in Central Europe but less so the countries farther away. Moreover, the state of the world economy affects especially those countries having commercial and investment banks with considerable international exposure and/or a strong dependency on exports, and tight financial markets do more harm to countries with a housing bubble, such as Spain, Ireland and United Kingdom. By plugging in time dummies, one would mimic the same exposure to an unspecified risk in all 27 EU countries under investigation. We thus find it more appealing to control for unknown omitted variables that are country-specific and that change over time (v_{it}) through FE-FGLS. FGLS works with transformed variables (denoted by an asterisk *). It is realistic to assume that today's disturbances are somehow related to past values of the disturbance term w_{it}, that is, to variables that are omitted over the entire sample period.

The new estimation equation describes the long-run co-movement of the series when all adjustments have been made. Therefore, it does not contain lagged values of the explanatory variables. Still, estimation requires the series to be non-stationary and to be in a long-run equilibrium (cointegrated). See Tables 10.A3, 10.A4, 10.A5 and 10.A6 in the Appendix for the panel unit root tests and cointegration tests performed. The series turned out to be I(1) and cointegrated.

The Equation reads as follows:

$$\begin{aligned}\text{Trust}^{*}_{it} = \alpha_i + \beta_1 \text{Inflation}^{*}_{it} + \chi_1 \text{Growth}^{*}_{it} + \delta_1 \text{Unemployment}^{*}_{it} + \varepsilon_1 \text{DebtperGDP}^{*}_{it} + \\ \phi_1 Z^{*}_{it} + \beta_2 \Delta\text{Inflation}^{*}_{it} + \chi_2 \Delta\text{Growth}^{*}_{it} + \delta_2 \Delta\text{Unemployment}^{*}_{it} + \varepsilon_2 \Delta\text{DebtperGDP}^{*}_{it} + \\ \phi_2 \Delta Z^{*}_{it} + u_{it}\end{aligned} \tag{10.2}$$

with Δ indicating that the variables are in first differences; and with * indicating that the variables have been transformed (purged from autoregressive processes) and that the error term u_{it} fulfills the requirements of the classical linear regression model (it is free from autocorrelation).

$$\begin{aligned}
&\text{Trust/Nat/Europ}^{*}_{it} = \text{Trust/Nat/Europ}_{it} - \rho_1 \text{Trust/Nat/Europ}_{it-1} - \rho_2 \text{Trust/Nat/Europ}_{it-2},\\
&\text{Inflation}^{*}_{it} = \text{Inflation}_{it} - \rho_1 \text{Inflation}_{it-1} - \rho_2 \text{Inflation}_{it-2}\\
&\text{Growth}^{*}_{it} = \text{Growth}_{it} - \rho_1 \text{Growth}_{it} - \rho_2 \text{Growth}_{it}\\
&\text{Unemployment}^{*}_{it} = \text{Unemployment}_{it} - \rho_1 \text{Unemployment}_{it-1} - \rho_2 \text{Unemployment}_{it-2}\\
&\text{DebtperGDP}^{*}_{it} = \text{DebtperGDP}_{it} - \rho_1 \text{DebtperGDP}_{it-1} - \rho_2 \text{DebtperGDP}_{it-2}\\
&Z^{*}_{it} = Z_{it} - \rho_1 Z_{it-1} - \rho_2 Z_{it-2} \text{ and } u_{it} = w_{it} - \rho_1 w_{it-1} - \rho_2 w_{it-2} = w^{*}_{it}
\end{aligned} \tag{10.3}$$

The transformations of the variables in first differences are generated in exactly the same way. Note that the new error term u_{it} is free of autocorrelation and that the omitted variable problem is reduced – if not eliminated – by transforming the variables. Since the coefficient ρ_1 is usually unknown (as in our case), it has been estimated by means of, for example, the Cochrane–Orcutt method (an FGLS procedure).[14] In addition, we use country-specific fixed effects in our analysis.

6.2 The Issue of Structural Break

Given that we would expect a structural break caused by the economic crisis, a test for parameter stability is indicated. The Chow test showed a structural break between the pre-crisis period (spring 1999–autumn 2007) and the crisis period (spring 2008–autumn 2010). Although we also present results for the full sample period (spring 1999–autumn 2010) in Tables 10.A7 and 10.A8 of the Appendix, the emphasis should be on the separate regressions for the pre-crisis period (column (1)) and the crisis period (column (2)). It also becomes evident that a regression over the full sample period can produce misleading results. For example, the price level seems to be of importance in the spring 1999–autumn 2010 period, but it is never significant in the subperiods (pre-crisis and crisis) (columns (1) and (2)).

6.3 The Issue of Endogeneity

When running regressions, one must be aware of the possibility that the left-hand side variables and the right-hand side variables influence each other. More

[14] If only first-order autocorrelation is present, $\rho 2$ are zero and the second term drops out.

specifically, the right-hand side variables (inflation, growth, unemployment and debt) might be endogenous (affected by a common event) or stand in a bidirectional relationship with trust (a low level of trust might lead to a self-fulfilling prophecy and might thus speed up and worsen an existing downturn). Therefore, we estimated the model for the pre-crisis and the crisis periods by means of DOLS, a method that controls for the endogeneity of the regressors. DOLS is also known as the 'leads and lags' approach proposed by Stock and Watson (1993) and described by Wooldridge (2009). It can be shown that by inserting the leads and lags of the right-hand side variables in first differences, the explanatory variables become (super-) exogenous and the regression results thus become unbiased. The coefficient estimator of the explanatory variables in levels follows a t-distribution and hence enables us to draw statistical inferences. Due to a multicollinearity problem, we included only the first differences of the explanatory variables. As we also eliminate autocorrelation (whenever necessary), the DOLS estimation turns into a DFGLS estimation. One should note that the DOLS/DFGLS estimation technique requires the series to be integrated of e.g. order 1 (I(1)) and cointegrated, i.e. to stand in a long-run relationship.[15]

6.4 Regression Results

All the tables contain results for the full sample (Tables 10.A7 and 10.A8 in the Appendix) and the pre-crisis and the crisis periods. Table 10.3 shows the results for the EU-15 country sample concerning citizens' trust in the national government and parliament. Inflation has the expected, negative impact on trust in the national government and parliament in the pre-crisis period. As inflation does not play a role in the crisis period, the full sample result in which inflation matters (Table 10.A7) is driven by the pre-crisis period. Growth is an important determinant of trust only in the pre-crisis period,[16] whereas unemployment has a significant, negative impact on trust in all sample periods (pre-crisis, crisis and full sample period). Government debt influences trust only in national parliament in the pre-crisis and full sample periods. Overall, we can conclude that the increasing/decreasing rate of unemployment is very strongly associated with citizens' trust in the national government and parliament.

Yet once incorporating an interaction term between debt and those EU-15 countries that have strongly supported their financial industry in the crisis period, the interaction term turns out to be negative and highly significant. Citizens' loss of

[15] See Tables 10.A3, 10.A4, 10.A5 and 10.A6 in the Appendix.

[16] In the direct aftermath of the financial crisis (Standard Eurobarometers 69–71 and Special Eurobarometers 71.1 or spring 2008 to January–February 2009), growth is significantly negatively related to trust in the national government and parliament. This supports the descriptive results of Figs. 10.1, 10.2 and 10.5, which show a rally-around-the-flag effect in the direct aftermath of the financial crisis.

Table 10.3 Trust in the national government and parliament, EU-15 country sample, controlling for endogeneity (FE-DFGLS or FE-DOLS estimation)

	(1) Government trust	(2) Government trust	(1) Parliament trust	(2) Parliament trust
	Spring 1999-Autumn 2007	Spring 2008-Autumn 2010	Spring 1999-Autumn 2007	Spring 2008-Autumn 2010
Inflation	−1.02***	1.44	−0.52**	0.84
	(−3.22)	(0.74)	(−2.12)	(1.06)
Growth	5.58***	−2.15	5.32***	−0.91
	(2.66)	(−1.45)	(2.92)	(−1.05)
Unemployment	−7.27***	−6.10***	−3.88***	−5.43***
	(−4.83)	(−3.46)	(−3.07)	(−5.30)
Government debt	0.00	0.10	−0.51**	−0.27
	(0.01)	(0.20)	(−1.97)	(−1.15)
Durbin-Watson statistic	1.72	1.88	2.22	2.05
R-squared	0.81	0.91	0.83	0.93
Adjusted R^2	0.78	0.87	0.80	0.91
Country fixed effects	Yes	Yes	Yes	Yes
Control for endogeneity via a simple DOLS	Yes	Yes	Yes	Yes
Elimination of first order auto correlation	Yes DFGLS	Yes DFGLS	Yes DFGLS	No DOLS
Observations	165	105	177	105
Number of countries	15	15	15	15

Note: t-values in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.
Source: Authors' own calculations.

trust in the national parliament and European Commission is negatively associated within those countries in which the increase of government debt was due to aid for the financial industry.[17] To determine the magnitude of a country bailing out its financial industry, data from DG Competition were used (European Commission, 2009). The data present the amount of state aid given by each of the 27 EU member states to financial services (sector j) in year 2009. As the state aid data for the financial industry for 2010 have not been published yet, we have assumed that the same list of countries should be applicable for 2010. When incorporating an interaction term between debt and those EU-15 countries that have faced significant austerity measures in the crisis period, the interaction term turns out to be negative

[17] In the EU-15 countries, these include Austria, Germany, Greece, Ireland, Luxembourg, the Netherlands, Sweden, and UK. After applying a very rough estimation strategy, we find that over 30% of new debt in these countries can be attributed to aiding/bailing out their banks.

and highly significant for trust in the European Commission and the European Parliament. The data are provided by Theodoropoulou and Watt (2011).[18]

Table 10.4 shows the results for the EU-15 country sample concerning citizens' trust in the European Commission and Parliament. The two variables inflation and government debt (and, to a somewhat lesser extent, growth) are strongly associated with trust in the European Commission and European Parliament in the full and pre-crisis samples, but not in the crisis period. The positive association between growth and trust in the European Commission and European Parliament is driven by the strong association in the aftermath of the financial crisis, where a dramatic economic downfall was accompanied by a severe drop in citizens' trust in the two European

Table 10.4 Trust in the European Commission and European Parliament, EU-15 country sample, controlling for endogeneity (FE-DFGLS or FE-DOLS estimation)

	(1) European Commission trust	(2) European Commission trust	(1) European Parliament trust	(2) European Parliament trust
	Spring 1999-Autumn 2007	Spring 2008-Autumn 2010	Spring 1999-Autumn 2007	Spring 2008-Autumn 2010
Inflation	−0.64***	−0.38	−0.79***	−0.58
	(−3.65)	(−0.67)	(−4.20)	(−1.05)
Growth	3.00***	1.32**	1.62	1.04*
	(3.02)	(2.13)	(1.52)	(1.73)
Unemployment	−0.15	−2.33***	−0.43	−2.47***
	(−0.16)	(−3.17)	(−0.45)	(−3.49)
Government debt	−0.61***	−0.23	−0.49***	−0.19
	(−3.43)	(−1.39)	(−2.55)	(−1.16)
Durbin-Watson statistic	2.23	1.79	2.18	1.86
R-squared	0.87	0.89	0.85	0.90
Adjusted R^2	0.85	0.86	0.83	0.87
Country fixed effects	Yes	Yes	Yes	Yes
Control for endogeneity via a simple DOLS	Yes	Yes	Yes	Yes
Elimination of first order auto correlation	Yes DFGLS	No DOLS	Yes DFGLS	No DOLS
Observations	212	105	212	105
Number of countries	15	15	15	15

Notes: t-values in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.
Source: Authors' own calculations.

[18] The paper indicates that in the given sample of 12 out of EU-15 countries, significant austerity measures have been implemented in Ireland from 2008 to 2010, and in Greece and Portugal in both periods of 2010. All three countries have had a fiscal adjustment larger than 1% in 2010. Data are not provided for the Netherlands, Finland and Belgium.

institutions. The increase in unemployment during and after the crisis has led to a decrease in trust in both the European Commission and the European Parliament.

Up to now, we have only considered an EU-15 country sample for the reason that with this sample, it is possible to extend the timeframe back to 1999. We now shift our analysis to an EU-27 sample. As the EU-25 has been in place since 2004, our timeframe when estimating our EU-27 country sample focuses on the period from 2004 to 2010.[19] Thus, Table 10.5 shows the results for the EU-27 country sample concerning citizens' trust in the national governments and parliaments.

It is interesting to note in the EU-27 sample that inflation only plays a role in trust in the national government or the national parliament when we look at the pre-crisis period. Growth is not of importance for trust in the national government in the

Table 10.5 Trust in the national government and parliament, EU-27 country sample, controlling for endogeneity (FE-DFGLS or FE-DOLS estimation)

	(1) Government trust	(2) Government trust	(1) Parliament trust	(2) Parliament trust
	Autumn 2004–Autumn 2007	Spring 2008–Autumn 2010	Autumn 2004–Autumn 2007	Spring 2008–Autumn 2010
Inflation	−1.00**	1.01	−1.09***	1.05
	(−2.08)	(1.11)	(−3.57)	(1.41)
Growth	2.08	−0.22	2.28**	0.21
	(1.52)	(−0.25)	(2.17)	(0.27)
Unemployment	−3.08**	0.52	−1.93**	0.09
	(−2.08)	(0.40)	(−2.07)	(0.08)
Government debt	−0.52	−1.05***	−0.66**	−1.01***
	(−1.08)	(−3.02)	(−2.12)	(−3.42)
Durbin-Watson statistic	2.08	1.87	2.23	2.02
R-squared	0.86	0.86	0.92	0.91
Adjusted R^2	0.82	0.82	0.90	0.89
Country fixed effects	Yes	Yes	Yes	Yes
Control for endogeneity via a simple DOLS	Yes	Yes	Yes	Yes
Elimination of first order auto correlation	Yes DFGLS	No DFGLS	No DOLS	No DFGLS
Observations	177	189	189	189
Number of countries	27	27	27	27

Notes: t-values in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.
Source: Authors' own calculations.

[19]The authors acknowledge that Romania and Bulgaria joined the EU in 2007. To estimate our equation with full coverage of the 27 countries, the timeframe of 2004–2010 is also applied to Romania and Bulgaria. Estimates do not differ significantly in an EU-25 country sample without Bulgaria and Romania or when estimating Bulgaria and Romania from 2007 onwards.

EU-27, whereas growth positively impacts on trust in the national parliament in the pre-crisis period. The negative impact of unemployment on trust shows up only in the pre-crisis period. The increase in debt leads to a decrease in trust in the national parliament and national government in the crisis period. This econometric result confirms the first empirical evidence given by Roth (2011).

Table 10.6 shows the results for the EU-27 country sample concerning citizens' trust in the European Commission and European Parliament. Regression 1 shows the results when employing the pre-crisis sample of 2004–2010. If inflation increases during good times, European institutions lose trust. A decline in growth diminishes trust during an economic crisis. Government debt must be considered harmful for trust in European institutions in both the pre-crisis and crisis periods. Unemployment reduces trust in the European Commission at all times and trust in the European Parliament in the pre-crisis period.

Table 10.6 Trust in the European Commission and European Parliament, EU-27 country sample, controlling for endogeneity (FE-DFGLS or FE-DOLS estimation)

	(1) European Commission trust	(2) European Commission trust	(1) European Parliament trust	(2) European Parliament trust
	Autumn 2004–Autumn 2007	Spring 2008–Autumn 2010	Autumn 2004–Autumn 2007	Spring 2008–Autumn 2010
Inflation	−0.63***	0.41	−0.62***	0.20
	(−3.26)	(1.20)	(−3.03)	(0.58)
Growth	0.57	1.78***	0.09	1.60***
	(0.86)	(4.05)	(0.13)	(3.64)
Unemployment	−1.64***	−0.88*	−1.78***	−0.78
	(−2.76)	(−1.63)	(−2.87)	(−1.42)
Government debt	−0.45**	−0.45***	−0.38*	−0.42***
	(−2.26)	(−3.07)	(−1.86)	(−2.84)
Durbin-Watson statistic	1.90	2.06	1.91	2.09
R-squared	0.85	0.87	0.85	0.88
Adjusted R^2	0.82	0.84	0.82	0.85
Country fixed effects	Yes	Yes	Yes	Yes
Control for endogeneity via a simple DOLS	Yes	Yes	Yes	Yes
Elimination of first order auto correlation	No DOLS	Yes DFGLS	No DOLS	Yes DFGLS
Observations	189	189	189	189
Number of countries	27	27	27	27

Notes: t-values in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.10$.
Source: Authors' own calculations.

7 Conclusions

We have estimated the relationship between inflation, growth, unemployment, government debt and trust in the national as well as the European government and Parliament. We have done so for both the EU-15 and the EU-27 countries and for the pre-crisis and the crisis periods. We have found that it is crucial to look at the two periods separately and to run separate regressions, as using only the full sample period would deliver misleading results. That is, the results do not change so much with the countries sampled, but rather with analysing the pre-crisis or crisis periods. Four results seem to be particularly noteworthy.

First, we find that inflation reduces trust in all national and European governmental organisations in the EU-15 and the EU-27, but only under good economic conditions. If the economy is performing poorly, inflation is never an issue.

Second, we detect that unemployment leads to a fall in trust in national and European institutions, especially during times of crisis and especially in the EU-15 countries. Unemployment is not a systematic determinant of trust in the EU-27 countries. For the EU-15 country sample, the negative impact of unemployment regarding trust is stronger for national governments than for EU institutions.

Third, we detect that an increase of debt over GDP reduces trust in the EU-27 sample. This association is given during all time periods in the EU-27 with respect to trust in European governmental institutions and trust in the national parliament. Furthermore, it is given with respect to trust in the national parliament and European Commission in the EU-15, taking into account whether an increase in debt was partly due to aiding the financial industry. Moreover, it is given with respect to trust in the European Commission and European Parliament in the EU-15, taking the significant austerity measures within a given country into account.

Fourth, when analysing the direct aftermath of the financial crisis, our econometric results confirm that the immense decline in the real economy (decline in growth of GDP per capita) was associated with a temporary increase in citizens' trust in the national institutions, thus pointing to a rally-around-the-flag effect. When analysing the entire crisis period, this association is levelled out. This rally-around-the-flag effect can only be detected for the national institutions, however, and not for the EU institutions.

Trust levels in the national governments and national parliaments have fallen to historically low points in many European countries, notably in the periphery countries, having been most exposed to the financial crisis and the ongoing eurozone crisis. In addition, Ireland, Spain, Greece and Portugal show strong increases in unemployment (especially Ireland and Spain) and sharp rises in the levels of debt over GDP (particularly Ireland and Greece). Thus, several policy steps seem crucial for European policymakers.

As unemployment and debt over GDP appear to be central explanatory variables for the declining trust in national governments and parliaments during the crisis period, European policymakers should first solve the eurozone crisis and help the periphery countries lower their debt levels and increase their employment rates. Doing so would most likely stabilise citizens' trust in their national governments and

parliaments. This might imply discarding the strategy of the three 'no's': no bail-out, no sovereign default and no exit (Roth, 2011). In particular, the falling trust levels in the national parliaments are worrisome, as this process points to long-lasting political costs of the financial (and eurozone) crisis. Moreover, citizens' increasing alienation towards their political representatives will likely result in the election of more populist governments (on this point, see also Lachman, 2010), who will support purely national rather than EU interests. While the core countries Germany and France have successfully managed to avoid an unemployment crisis, the unemployment rates in Ireland and Spain, at 15% and 20% (40% youth unemployment) respectively, are unsustainable for social and political cohesion.

Appendix

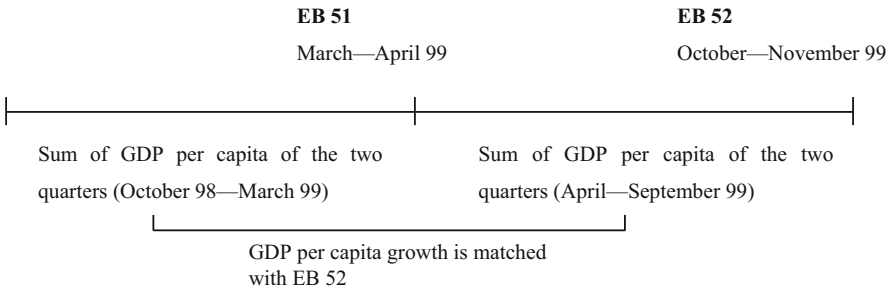

Fig. 10.A1 Research design for the construction of growth of GDP per capita

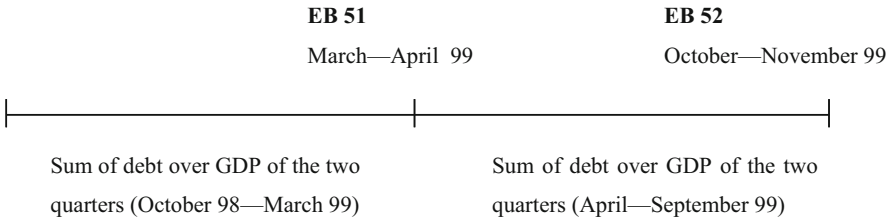

Fig. 10.A2 Research design for the construction debt over GDP

Table 10.A1 Summary statistics, EU-27 country sample from autumn 2004 to autumn 2010

Variable	Obs	Mean	Std. dev.	Min	Max
Net trust in the national government	378	−17.8	31.2	−84	61
Net trust in the national parliament	378	−16.5	36.2	−90	70.7
Net trust in the European Commission	378	25.1	17.0	−35	55.6
Net trust in the European Parliament	378	28.6	17.6	−38	62.9
GDP per capita growth	378	0.7	2.5	−10.6	6.2
Unemployment rate	378	7.8	3.3	3.05	20.3
HICP	378	107.5	8.8	91.4	141.6
Government debt in % of GDP	378	49.2	28.5	3.4	137.9

Source: Authors' own calculations.

Table 10.A2 Summary statistics, EU-15 country sample from spring 1999 to autumn 2010

Variable	Obs	Mean	Std. dev.	Min	Max
Net trust in the national government	316	−7.4	27.1	−75	61
Net trust in the national parliament	329	2.1	27.1	−69	70.7
Net trust in the European Commission	375	20.9	19.0	−40.2	57.4
Net trust in the European Parliament	375	26.7	18.8	−38	61.7
GDP per capita growth	371	0.7	1.6	−6.8	5.3
Unemployment rate	375	7.1	2.8	1.9	20.3
HICP	375	99.0	8.0	78.9	118.3
Government debt in % of GDP	349	60.6	28.3	5.6	137.9

Source: Authors' own calculations.

Table 10.A3 EU-15 country sample, ADF-panel unit root tests

Variable	Total (balanced) observations	ADF-Fisher Chi-square	Probability
Net trust in the national government	180	13.27	0.99
Net trust in the national parliament	180	14.12	0.99
Net trust in the European Commission	300	28.10	0.56
Net trust in the European Parliament	300	22.03	0.85
GDP per capita growth	296	35.22	0.23
Unemployment rate	300	30.32	0.45
Inflation rate	300	15.94	0.98
Government consumption in % of GDP	297	39.03	0.13
Government debt in % of GDP	300	37.88	0.15

Notes: H_0: Series has a unit root (individual unit root process).
Source: Authors' own calculations.

Table 10.A4 EU-27 country sample, Kao residual cointegration test

Cointegration between the following set of variables	Included observations	ADF-t-statistic	Probability
Net trust in the national government and explanatory variables	675	−2.19	0.01
Net trust in the national parliament and explanatory variables	675	−1.93	0.03
Net trust in the European Commission and explanatory variables	675	−2.91	0.00
Net trust in the European Parliament and explanatory variables	675	−3.32	0.00

Notes: H_0: no cointegration.
Source: Authors' own calculations.

Table 10.A5 EU-27 country sample, ADF-panel unit root tests

Variable	Total (balanced) observations	ADF-Fisher Chi-square	Probability
Net trust in the national government	288	35.55	0.98
Net trust in the national parliament	288	29.17	0.98
Net trust in the European Commission	408	40.94	0.90
Net trust in the European Parliament	408	39.80	0.93
GDP per capita growth	528	63.71	0.17
Unemployment rate	532	46.93	0.74
Inflation rate	625	50.95	0.59
Government consumption in % of GDP	531	55.86	0.41
Government debt in % of GDP	573	41.48	0.89

Notes: H_0: series has a unit root (individual unit root process).
Source: Authors' own calculations.

Table 10.A6 EU-15 country sample, Kao residual cointegration test

Cointegration between the following set of variables	Included observations	ADF-t-statistic	Probability
Net trust in the national government and explanatory variables	375	2.26	0.01
Net trust in the national parliament and explanatory variables	375	2.67	0.00
Net trust in the European Commission and explanatory variables	375	−1.43	0.08
Net trust in the European Parliament and explanatory variables	375	−1.94	0.03

Notes: H_0: no cointegration.
Source: Authors' own calculations.

Table 10.A7 Trust in the institutions, EU-15 country sample, controlling for endogeneity (FE-DFGLS or FE-DOLS estimation), full sample period

	(1) Government trust	(2) Parliament trust	(3) European Commission trust	(4) European Parliament trust
	Spring 1999-Autumn 2010	Spring 1999-Autumn 2010	Spring 1999-Autumn 2010	Spring 1999-Autumn 2010
Inflation	−0.66***	−0.42**	−0.56***	−0.78***
	(−2.93)	(−2.25)	(−4.51)	(−6.21)
Growth	−1.00	0.53	1.51***	0.99*
	(−1.04)	(0.62)	(2.79)	(1.79)
Unemployment	−4.04***	−3.06***	−0.16	−0.12
	(−4.44)	(−3.88)	(−0.29)	(−0.22)
Government debt	−0.36*	−0.61***	−0.59***	−0.55***
	(−1.89)	(−3.85)	(−5.66)	(−5.22)
Durbin-Watson statistic	1.78	2.15	2.16	2.17
R-squared	0.82	0.85	0.85	0.85
Adjusted R^2	0.80	0.84	0.84	0.84
Country fixed effects	Yes	Yes	Yes	Yes
Control for endogeneity via a simple DOLS	Yes	Yes	Yes	Yes
Elimination of first order auto correlation	Yes DFGLS	Yes DFGLS	Yes DFGLS	Yes DFGLS
Observations	270	282	317	317
Number of countries	15	15	15	15

Source: Authors' own calculations.

Table 10.A8 Trust in the institutions, EU-27 country sample, controlling for endogeneity (FE-DFGLS or FE-DOLS estimation), full sample period

	(1) Government trust	(2) Parliament trust	(3) European Commission trust	(4) European Parliament trust
	Autumn 2004–Autumn 2010	Autumn 2004–Autumn 2010	Autumn 2004–Autumn 2010	Autumn 2004–Autumn 2010
Inflation	−0.03	−0.11	−0.01	0.07
	(−0.13)	(−0.58)	(−0.04)	(0.58)
Growth	0.69	1.03*	1.09***	0.94***
	(1.13)	(1.91)	(3.20)	(2.84)
Unemployment	−1.04	−0.90*	0.12	0.07
	(−1.52)	(−1.65)	(0.35)	(0.20)
Government debt	−0.52	−0.81***	−0.61***	−0.60***
	(−1.08)	(−3.20)	(−5.37)	(−5.41)

(continued)

Table 10.A8 (continued)

	(1) Government trust	(2) Parliament trust	(3) European Commission trust	(4) European Parliament trust
	Autumn 2004–Autumn 2010	Autumn 2004–Autumn 2010	Autumn 2004–Autumn 2010	Autumn 2004–Autumn 2010
Durbin-Watson statistic	2.08	2.06	2.05	1.93
R-squared	0.86	0.90	0.82	0.84
Adjusted R^2	0.82	0.89	0.81	0.82
Country fixed effects	Yes	Yes	Yes	Yes
Control for endogeneity via a simple DOLS	Yes	Yes	Yes	Yes
Elimination of first order auto correlation	Yes DFGLS	Yes DFGLS	Yes DFGLS	Yes DFGLS
Observations	366	366	366	351
Number of countries	27	27	27	27

Source: Authors' own calculations.

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