Felix Roth

Public Support for the Euro

Essays on Labor Productivity, Monetary Economics, and Political Economy, Vol. 2

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Economics, and Political Economy,
Vol. 2

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Preface

The long-term sustainability of the euro and the Economic and Monetary Union (EMU) depends heavily on their ability to attract widespread public support. The support shown for the euro throughout its first two decades has helped to shield it against populist attempts at the national level to dismantle the common currency. It has granted political legitimacy to the presidents of the European Central Bank to do "whatever it takes" whenever a serious crisis has threatened the viability of the euro.

This book is the second of two open-access volumes presenting a selection of my essays on Labor Productivity, Monetary Economics and Political Economy. They are drawn from the second part of my habilitation in economics on the topic of *Intangible Capital and Labor Productivity Growth and Determinants of Public Support for the Euro*, which I completed in June 2020 at the department of economics at the faculty of Business, Economics and Social Sciences at the University of Hamburg. This second volume contains 11 chapters, which follow a reverse chronological order, starting with my most recent research output in chapter one. The essays in the individual chapters were selected with the aim of providing an overview of my research to date on public support for and the economics and political economy of the euro and EMU.

On the one hand, five of the chapters present articles of mine that have already appeared in the *Journal of Common Market Studies*, *Journal of European Integration*, *Intereconomics* and as a contribution to an edited volume published by Routledge (Chapters 1, 2, 4, 6 and 11, respectively). On the other hand, the essays in Chapters 5, 9 and 10 make available unpublished material based on original project reports of mine. Chapters 3, 7 and 8 represent my policy contributions to *VoxEU* and *Intereconomics*. In particular, in Chapters 9, 10 and 11, the reader should keep in mind the proximity of the original publication date to the then recent financial and sovereign debt crisis.

This volume would not have been possible without the thoughtful mentoring and strong support generously given by Thomas Straubhaar, to whom I am deeply grateful. He acted as a reporting reviewer in my Habilitation Committee and encouraged me to publish the selected essays in this book. In addition, I would

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About the Author

Since 2017, Felix Roth has been a Senior Research Fellow and Senior Lecturer with the Chair for International Economics in the Department of Economics at the University of Hamburg. In June 2020, he successfully completed his German Habilitation in economics on the topic of *Intangible Capital and Labour Productivity Growth and Determinants of Public Support for the Euro*. Prior to his appointment at the University of Hamburg, he worked six years as a Research Fellow in the macroeconomic policy unit and as editor of the journal *Intereconomics* at the Centre for European Policy Studies (CEPS) in Brussels. In addition to his ongoing research association with the department of economics at the University of Göttingen, he worked as a Research Fellow, Scientific Expert, and Economic Policy Advisor for the European Commission in Brussels for over three years. He pursued his doctorate in economics on the topic *Social Capital, Trust and Economic Growth—A Cross-Sectional and Panel Analysis* at the University of Göttingen in the framework of a post-graduate program funded by the Deutsche Forschungsgemeinschaft (DFG) and jointly supervised by the University of Göttingen and the London School of Economics and Political Science. He studied economics, sociology and European law at the University of Munich where he received his Diploma in Social Sciences in 2003. Dr. Roth has published his research in monographs and collective volumes produced by internationally renowned academic publishing houses, such as Springer, Routledge and Edward Elgar; in leading academic journals in his field, such as *Review of Income and Wealth* and *Journal of Common Market Studies*; and in a wide range of policy contributions, e.g., *VoxEU* and *Intereconomics*. Visit his personal homepage at: https://www.felixroth.net.

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Chapter 1
Public Support for the Euro and Trust in the ECB: The First Two Decades of the Common Currency

Felix Roth and Lars Jonung

Abstract This contribution examines the evolution of public support for the euro since its introduction as a virtual currency in 1999, using a unique set of data not available for any other currency. We focus on the role of economic factors in determining the popularity of the euro. We find that a majority of citizens support the euro in each individual member country of the euro area (EA). The economic crisis in the EA provoked by the Great Recession led to a slight decline in public support, but the recent economic recovery has strengthened that support, which is now approaching historically high levels after two decades of existence. A similar, but less pronounced upturn in trust in the ECB can also be detected during the recovery. Our econometric work demonstrates that unemployment is a key driver of support behind the euro. Given these developments, we discuss whether the large and persistent majority support enjoyed by the euro equips the currency to weather populist challenges during its third decade.

Key words Euro · Public support · Trust · Unemployment · Optimum currency area · Monetary union · ECB · EU

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1 Introduction

The euro, the common European currency adopted in 1999, is now entering its third decade. The euro is unique in at least two ways. First, a large number of independent countries, EU member states, have handed over responsibility for their monetary policy to an independent central bank, the European Central Bank (ECB), while maintaining domestic control over fiscal policy. Second, the euro, to the best of our knowledge, is the only currency for which we have a long and consistent time series showing public support for the currency and public trust in the central bank that supplies the currency. No such opinion poll data exist for the dollar, the pound, or any other currency for that matter. This unique data set enables us to conduct innovative studies of the determinants of support for a currency actively in circulation.

The purpose of this contribution is to examine how the European public has viewed the euro throughout its first two decades. It also examines how trust in the ECB and in national governments has evolved among the EU member states within the euro area (EA) and those outside. We stress that we are looking at support for the euro and its governance from the perspective of the public as revealed in public opinion polls, which is not the typical approach adopted by economists. The latter tend to study currencies via other analytical methods, such as the optimum currency area (OCA) approach developed by Robert Mundell (1961) or the process of divergence and convergence within a monetary union. Our approach should be viewed as a complementary strategy to these more conventional ways.

This paper is structured as follows. Section 2 discusses the role of public support for the sustainability of a common currency within a monetary union. Section 3 summarises previous empirical findings. Section 4 describes the Eurobarometer data used in this study. Section 5 offers a descriptive summary of the measures used to quantify popular support and trust. Section 6 presents our macro-econometric findings. Section 7 explains the divergence in support for the euro and trust in the ECB. Section 8 offers an outlook on the future of the euro area. Section 9 concludes.

2 The Role of Public Support for the Euro

The literature on monetary unions and monetary unification identifies public support for a common currency as a key determinant of its long-term prospects for survival.

First, the literature on the history of monetary unions suggests that these entities depend on public support for their legitimacy and viability. As long as the common currency enjoys sufficient support, policymakers are able to make adjustments and adequately confront the challenges posed by political, economic, and financial disturbances and crises (Bordo & Jonung, 2000, 2003). According to Bordo and Jonung, the standard OCA criteria are too static to use as a means of evaluating the performance of a monetary union. They stress that ultimately it is the presence of

strong political will that holds a monetary union together. An established political bond between European policymakers and their publics/voters guarantees flexible solutions to emerging challenges (Bordo & Jonung, 2003). Strong public support for the common currency may thus act as a shield deflecting the critical rhetoric voiced by populist parties on both the right and the left.

Second, the literature on the political economy of monetary unions based on the OCA approach highlights the concept of commonality of destiny. Echoing the literature on the history of monetary unions, Baldwin and Wyplosz (2019) argue that it is foremost this political OCA criterion that accounts for the survival of the euro. The sense of a shared common destiny helps policymakers to find solutions in difficult times. Such a feeling is of key importance for reconciling the conflicting interests of the EA governments, which represent a significant source of the recent crisis in the EA (Frieden & Walter, 2017).

Third, political scientists stress that public support for the euro is crucial for any potential move towards deeper supranational governance (Banducci et al., 2003). In general, broad public support for the euro is viewed as a necessary pre-condition before European citizens will entertain a further transfer of power from national to European institutions (Kaltenthaler & Anderson, 2001). The political science literature concludes that public support is central to the political legitimacy and thus sustainability of the euro as well (Deroose et al., 2007; Verdun, 2016).

Public support alone, however, is not sufficient in itself to ensure the long-term survival of the euro. Trust on the part of the public in the institutions responsible for governing the euro is also crucial in this context. For this reason, we look at two measures of trust: trust in the ECB and trust in the national government.

3   Earlier Studies

Empirical studies analysing public support for the euro can roughly be clustered into one of the four groups:

1. Studies of public support for a common currency in the years *before* the introduction of the euro, that is from 1990 until 1999, e.g. Kaltenthaler and Anderson (2001) and Banducci et al. (2003);
2. Analyses of public support for the euro in the pre-crisis period from 1999 to 2008, such as Banducci et al. (2009) and Deroose et al. (2007);
3. Contributions dealing with the crisis phase from 2008 to 2013, including Hobolt and Leblond (2014), Hobolt and Wratil (2015), and Roth et al. (2016); and
4. Recent papers focusing on the impact of the recovery from the crisis from 2013 onwards, for example Roth et al. (2019).

What can we learn from this body of empirical work? For the sake of brevity, we focus on papers published since the introduction of the euro in 1999.

Looking at descriptive statistics, we find mixed evidence concerning majority support for the euro in the individual countries of the EA. Although Roth et al.

(2016) show majority support for the euro since its establishment in 1999 in each individual country, Guiso et al. (2016) and Stiglitz (2016) claim that only a minority of citizens supported the currency in Italy and Germany. A study by Roth et al. (2019) argues that this discrepancy is due to the fact that Guiso et al. (2016) and Stiglitz (2016) use opinion poll data, which do not stem from data produced by the Eurobarometer surveys. The latter, to date, are the sole authoritative source of data for measuring public support for the euro across countries and over time.

An examination of the macro-evidence adduced in the literature reveals that the impact of unemployment and inflation on public support for the euro is a controversial question. While Hobolt and Leblond (2014) find no significant relationship between unemployment and net support for the euro, Roth et al. (2016, 2019) establish a weak negative relationship during the crisis but a stronger impact during the post-crisis recovery.

A similarly controversial finding applies to the effect of inflation on public support. While Banducci et al. (2003) and Hobolt and Leblond (2014) rule out a significant relationship between inflation and net support for the euro in pre-crisis and crisis years, Roth et al. (2016, 2019), who rely on an econometric analysis for 1999–2017, find a strong negative coefficient between an increase in inflation and a decline in net support for the euro before and during the crisis. This effect dissipates during the economic recovery.

Micro-data give support to the findings based on macro-data. Analysing a micro-dataset with 474,712 observations over the time period 1999–2017 for an EA19 country sample, Roth et al. (2019) find that perceptions of inflation and unemployment yield negative coefficients, whereas perceptions of the economic situation yield a positive coefficient. The findings concerning socioeconomic variables, such as gender, education, and employment status in the pre-crisis period, are similar to the results previously reported by Banducci et al. (2009). The latter find a stable pattern for education, employment, and legal status when comparing the pre-crisis period with the crisis-recovery period. In addition, Roth et al. (2019) detect a halving of the negative female coefficient and report a complete reversal in opinion among the oldest age group (65+) when comparing the pre-crisis with the crisis-recovery period. They conclude that the largest effect on public support for the euro is related to education.

Concerning public support for the euro and trust in the ECB, some first results have been published by Roth (2015), who highlights the contrasting evolution of public support for the euro and trust in the ECB. In addition, Roth et al. (2016) compare the effect of the unemployment crisis on public support for the euro with the effect on trust in the ECB. Here an increase in unemployment is roughly four times more negatively associated with trust in the ECB than in public support for the euro.

To sum up, research on the determinants of support for the euro is evolving. We would expect this to be the case as the new currency is only 20 years old. In addition, the euro area has recently experienced a major crisis and is still in recovery.

4   Eurobarometer Data

Our measures of public support for the euro are based upon the biannual Standard Eurobarometer (EB) surveys (European Commission, 2018) from March–April 1999 (EB51) to November 2018 (EB90). These surveys ask a representative group of respondents the following question: 'What is your opinion on each of the following statements? Please tell me for each statement, whether you are for it or against it. A European economic and monetary union with one single currency, the euro'. Respondents can then choose between 'For', 'Against', 'Don't Know' or (since Eurobarometer 90) 'Spontaneous Refusal'.

Measures for trust in the ECB are based on responses to the following question: 'Please tell me if you tend to trust or tend not to trust these European institutions. The European Central Bank'. Respondents can then choose between 'Tend to trust', 'Tend not to trust' or 'Don't Know'.

Measures for trust in the national government are based on responses to the following question: 'I would like to ask you a question about how much trust you have in certain media and institutions. For each of the following media and institutions, please tell me if you tend to trust it or tend not to trust it. The National Government'. Respondents can then choose between 'Tend to trust', 'Tend not to trust' or 'Don't Know'.

Net public support measures are constructed as the number of 'For' responses minus 'Against' responses, according to the expression: Net support = (For – Against)/(For + Against + Don't Know). Net trust measures are constructed as the number of 'Tend to trust' responses minus 'Tend not to trust' responses, according to the expression: Net trust = (Trust – Tend not to trust)/(Trust + Tend not to trust + Don't Know).

5   Descriptive Results

This section describes how support and trust have evolved since the start of the euro as a virtual currency in 1999. We focus first on the whole euro area, then move to individual euro area members and finally to the non-euro area members of the EU. In addition, we account for major differences in the pattern of support for the euro and of trust in the ECB following the crisis that started in 2008.

5.1   Support and Trust in the Euro Area

Figure 1.1 plots public support for the euro and trust in the institution that carries out monetary policy in the euro area – the European Central Bank – and trust in the national governments across the 19 member countries in the euro area as well as the unemployment rate in the euro area. We can draw four central findings from the patterns shown.
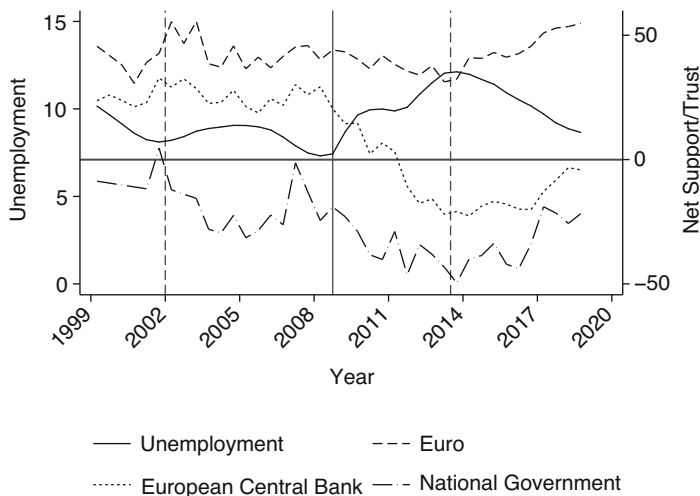
Fig. 1.1 Unemployment and net support for the euro and net trust in the ECB and in the national government, average EA19, 1999–2018
Notes: The left-hand y-axis plots unemployment ranging from 7.3% to 12.1%. The right-hand y-axis displays net support/trust in percentage. Since the figure depicts net support/trust, all values above 0 indicate that a majority of the respondents support the euro and trust the ECB. The dashed lines distinguish the physical introduction of the euro in January 2002, the start of the financial crisis in September 2008 and the start of the recovery at the end of 2013. The averages for EA19 are weighted by population.
Source: Standard Eurobarometer data 51–90.

First, we see that a large majority supported the euro (>30%) during the first two decades of its existence. Second, while a large majority trusted the ECB before the 2008 crisis, only a minority of citizens expressed trust in their national government. Third, while the large majority of support for the euro was only slightly dented by the sharp increase in unemployment during the crisis years of 2008–2013, trust in the ECB and in national governments was strongly negatively affected by the crisis, with the ECB losing the trust of a majority of citizens surveyed and the national governments entering the territory of large mistrust (<−50%).

Fourth, and finally, the recent recovery in the EA has led to a clear rise in support for the euro from November 2013 onwards, reaching the average value of 55% in 11/2018, and thus nearly reaching the peak value of 56% from March to May 2003. The economic recovery also led to a recovery in trust in the national government to a level higher than in the pre-crisis period and a recovery of trust in the ECB. The latter has nearly re-established a majority level of trust, but one not high enough to make up for the decline during the crisis (see Table 1.A1 in this contribution Appendix).

5.2   Support and Trust among Individual Euro Countries

Let us now turn to the data for each member state. What do we learn from the disaggregated pattern? Figure 1.2 displays the pattern in each member state of the
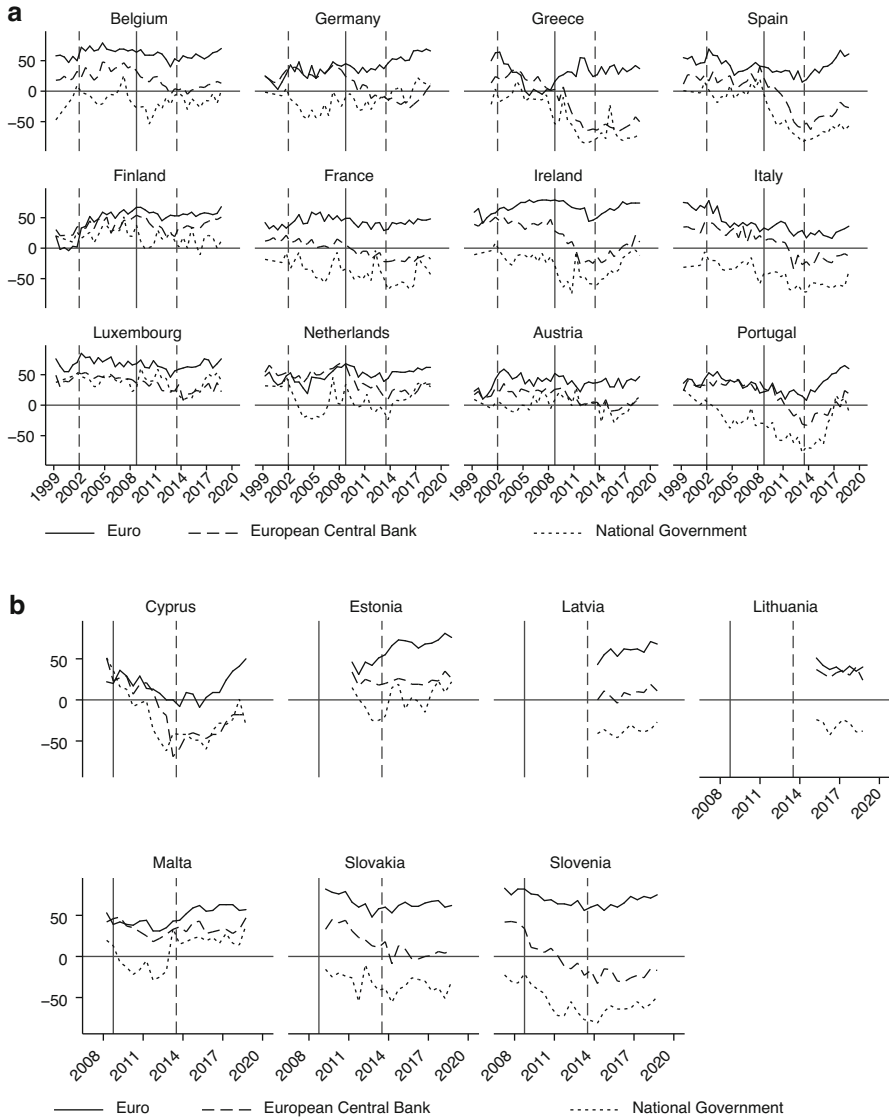
Fig. 1.2 (**a**) Net support for the euro and net trust in the ECB and in the national government, EA12, 1999–2018. (**b**) Net support for the euro and net trust in the ECB and in the national government, EA7, 1999–2018

Source: Standard Eurobarometer data 51–90.

EA19, split into an EA12 country sample in Fig. 1.2a and the EA7 countries in Fig. 1.2b, which joined the EA after 2001 (for a figure showing all 19 individual members, including the unemployment rate, see Fig. 1.A1 in this contribution Appendix).

We identify three striking results. First, with the exception of Greece and Finland in the pre-crisis time and Cyprus in the time of crisis, a majority of citizens express

support for the euro in each individual EA economy. Second, while there is only a slight decline in support for the euro during the crisis, we detect pronounced losses in trust in the ECB and national governments, particularly in the periphery countries of the EA, namely Spain, Greece, Ireland, Portugal, and Cyprus (see also Table 1.A1 in this contribution's Appendix). Third and finally, during the recovery, a pronounced increase in public support for the euro is apparent in almost all countries. A strong recovery in trust in the ECB as well as in the national government is also registered in some periphery countries. The loss in trust has been more than restored in two countries, namely Portugal and Ireland, but this has not happened in Spain and Greece.

5.3   Support and Trust outside the Euro Area

How did public support for the euro and trust in the European Central Bank and the national government evolve outside the member countries of the euro area? Figure 1.3 reveals four patterns worth noting.

First, public support for the euro is substantially lower outside the EA than inside, particularly in the United Kingdom, Sweden, the Czech Republic, and Denmark. The case of Denmark is interesting, given that the country has de facto tied its currency to the euro since the start of the common currency. Second, support for the euro declined in a pronounced manner following the euro crisis in all non-euro
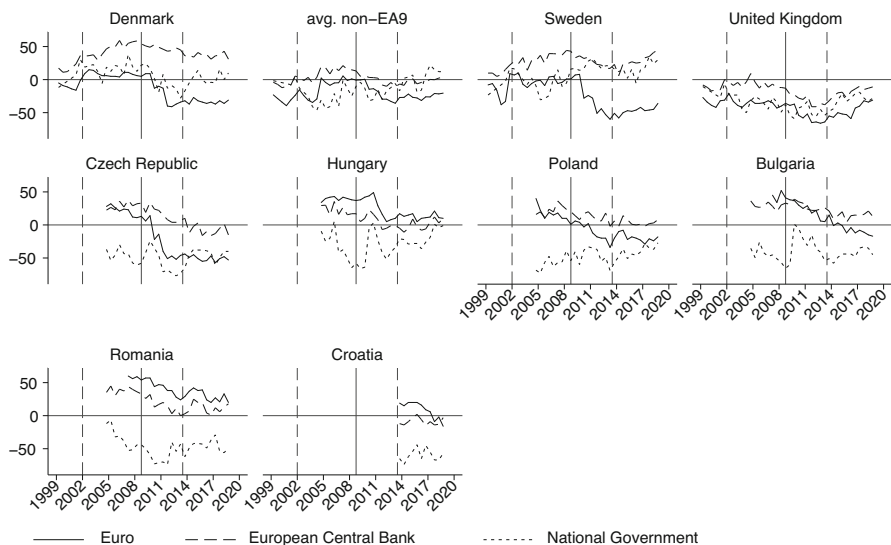
Fig. 1.3 Net support for the euro and net trust in the ECB and in the national government, outside the euro area, 1999–2018
Source: Standard Eurobarometer data 51–90.

member states. Third, we detect a recovery in support since November 2013, particularly in the United Kingdom. The euro currently enjoys a fairly high level of support – compared to its time-series pattern – although it is still negative. Fourth, in the three older EU member states, Sweden, Denmark and the United Kingdom, trust in the ECB and in the national government is higher than support for the euro. In the new member states, trust in the national government is significantly lower than trust in the ECB and support for the euro.

6 Econometric Results

We now turn to some econometric evidence. To analyse the channels that influence public support for the euro and trust in its governance, we adopt a model specification used by Roth et al. (2016, 2019). We estimate support for the euro and trust in the ECB as a function of unemployment, inflation, growth in real GDP per capita, and control variables deemed of potential importance in explaining the within the variation of support. Our baseline model (1.1) reads:

$$\text{Support/Trust}_{it} = \alpha_i + \beta_1 \text{Unemployment}_{it} + \chi_1 \text{Inflation}_{it} + \delta_1 \text{Growth}_{it} + \phi_1 Z_{it} + w_{it}, \tag{1.1}$$

where Support/Trust$_{it}$ is the net support for the euro and net trust in the ECB for country i during period t. Unemployment$_{it}$, Inflation$_{it}$, Growth$_{it}$, and Z_{it} are, respectively, unemployment, inflation, growth of GDP per capita and control variables deemed of potential importance lumped together in Z,[1,2] α_i represents a country-specific constant term (fixed effect), and w_{it} is the error term.

We estimate Eq. (1.1) by means of DOLS (dynamic ordinary least squares),[3] a method that permits full control for endogeneity of the regressors. To correct for autocorrelation,[4] we apply FGLS (Feasible General Least Squares)

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[1]The components of Z could potentially be macroeconomic or socio-political control variables. However, given the cointegrating relationship between support for the euro and our macroeconomic variables (see Tables 1.A3 and 1.A4 in this contribution's Appendix), we can be confident that these Z variables do not cause bias in the coefficients of unemployment, inflation, and growth.

[2]Data on inflation (the change in the harmonized index of consumer prices), seasonally adjusted unemployment rates, as well as seasonally and calendar adjusted data on GDP per capita are taken from Eurostat. A summary of the data utilized can be found in Table 1.A2. The matching methodology between our macroeconomic variables and public support for the euro and trust in the ECB follows the approach of Roth et al. (2016, 2019).

[3]A prerequisite for using DOLS is that the variables entering the model are non-stationary and that all the series are in a long-run relationship (cointegrated). In our case, all series are integrated of order 1, i.e. they are I(1) (and thus non-stationary); non-stationarity of inflation and growth of GDP per capita is due to non-stationarity (non-constancy) of the variance of these series and they are cointegrated. The panel unit root tests and Kao's residual cointegration test are displayed in Tables 1.A3 and 1.A4 in this contribution's Appendix.

[4]We found first-order autocorrelation to be present.

procedure.[5] Both applications lead to the following Eq. (1.2), representing our FE-DFGLS (Fixed Effect Dynamic Feasible General Least Squares) approach – for a detailed explanation of the FE-DFGLS approach, see Roth et al. (2016, 2019):

$$
\begin{aligned}
\text{Support}^*_{it} = {} & \alpha_i + \beta_1 \text{Unemployment}^*_{it} + \chi_1 \text{Inflation}^*_{it} + \delta_1 \text{Growth}^*_{it} + \phi_1 Z^*_{it} \\
& + \sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Unemployment}^*_{it-p} + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Inflation}^*_{it-p} + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Growth}^*_{it-p} \\
& + \sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z^*_{it-p} + u_{it}
\end{aligned}
$$

$$(1.2)$$

with α_i being the country fixed effect and Δ indicating that the variables are in first differences. Applying DFGLS, Unemployment, Inflation and Growth turn exogenous and the coefficients β_1, χ_1, δ_1 and ϕ_1 follow a t-distribution. This property permits us to derive statistical inferences on the causal impact of unemployment, inflation, and growth. The asterisk (*) indicates that the variables have been transformed and that the error term u_{it} fulfils the requirements of the classical linear regression model.

Table 1.1 shows the econometric results for Eq. (1.2) within our EA19 country sample. Analysing the full period from March–April 1999 to November 2018, we detect unemployment to be a significant factor behind public support for the euro, trust in the ECB and trust in the national government (regressions 1, 4, and 7 in Table 1.1).

A 1%-point increase in unemployment is associated with a decline in net support by 1.3 percentage points. The effect is threefold in trust in the ECB and in national governments, with an estimated coefficient of −4.2 and −4.6, respectively.

Analysing the pre-crisis sample (regressions 2, 5 and 8 in Table 1.1), we find unemployment to be insignificantly related to public support for the euro and to trust in the ECB and only slightly significantly related to trust in the national government. However, we find a highly significant and strong effect of inflation on public support for the euro (−14.9). Studying periods of crisis and recovery (regressions 3, 6 and 9 in Table 1.1), it is clear that the negative unemployment coefficient from the full sample is driven by the crisis-recovery period. We detect a highly significant and negative coefficient between unemployment and net support for the euro (−2.1) and net trust in the ECB and the national government (−3.4 and respectively −3.7) during the crisis.

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[5]FGLS (in the ready-to-use EViews commands) is not compatible with time-fixed effects. It picks up shocks and omitted variables in the period of study. In addition, it has been found that running the regression with time-fixed effects (without applying FGLS) does not tackle the problem of autocorrelation of the error term.

Table 1.1 Unemployment, inflation, GDP per capita growth, and net support for the euro and net trust for the ECB and national government, FE-DFGLS estimation, EA19, 1999–2018

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable	Euro	Euro	Euro	ECB	ECB	ECB	NG	NG	NG
Period	FS	BC	CR-RE	FS	BC	CR-RE	FS	BC	CR-RE
Unemployment	**−1.3***	−1.7	**−2.1***	**−4.2***	1.1	**−3.4***	**−4.6***	−3.1*	**−3.7***
	(0.41)	(2.13)	(0.41)	(0.54)	(0.88)	(0.61)	(0.41)	(1.80)	(0.59)
Inflation	**−4.9***	**−14.9***	**−4.8***	0.3	−2.0	−1.4	−0.1	1.2	−0.6
	(1.71)	(5.75)	(1.47)	(1.90)	(3.59)	(1.91)	(2.28)	(7.25)	(2.50)
GDP per capita growth	−0.5	−2.1	0.0	1.2	0.1	0.7	1.2	**7.7***	0.2
	(0.78)	(2.33)	(0.71)	(0.84)	(1.58)	(0.89)	(1.10)	(3.49)	(1.24)
Durbin–Watson statistic	2.23	2.49	2.12	2.46	2.14	2.36	2.09	1.96	2.13
Adjusted R^2	0.81	0.79	0.85	0.90	0.72	0.91	0.84	0.78	0.85
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
El. of first-order autocorr.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	548	218	330	548	218	330	479	149	330
Number of countries	19[a]	19	19[a]	19[a]	19	19[a]	19[a]	19	19[a]

[a]Econometric results remain robust when analysing an EA15 country sample.

Notes: ECB = European Central Bank; NG = national government; FS = full sample; BC = before crisis; CR-RE = crisis-recovery.

***$p < 0.01$. **$p < 0.05$. *$p < 0.1$

Source: Standard Eurobarometer Data 51–90.

To untangle the effects of the crisis-recovery, Table 1.2 splits the crisis-recovery period into a crisis phase 2008–2013 and a recovery phase 2013–2018. When analyzing the crisis period 2008–2013 (regressions 2, 5 and 8 in Table 1.2), we find that whereas the unemployment increase in times of crisis slightly dented public support for the euro (–0.8), it had a six-fold impact on trust in the ECB (–5.3) and a four-fold impact on trust in the national government (–3.5).

In analysing the recovery period (regressions 3, 6 and 9 in Table 1.2), we detect a four times larger coefficient for public support for the euro (-3.6) compared to the crisis period, which indicates a rising effect during the recovery in which a 1 %-point decline in unemployment leads to an increase of 3.6 percentage points of public support. The unemployment decline during the recovery more than fully makes up for the decline during the crisis. The same pattern holds for trust in national governments. The compensation effect (-4.1) during recovery is larger than the losses during the crisis (-3.5). It was only in analyzing trust in the ECB that we found a different pattern. The pronounced loss in trust during the crisis due to the sharp rise in unemployment (-5.3) has only partially been restored during the recovery (-2.2).

To sum up the econometric work, the rate of unemployment emerges as a key factor determining support for the euro and trust in the ECB and in national governments.

7   Explaining the Divergence in Support for the Euro and Trust in the ECB

Our descriptive and econometric findings highlight an intriguing difference in EA citizens' public support for the euro and their trust in the ECB. Before the crisis, the two sets of time series were stable and strongly correlated at a relatively high level (see Fig. 1.1). This pattern changed during the crisis (2008–2013), which brought about a sharp fall in trust in the ECB, while support for the euro declined only slightly. During the recovery (2013–2018), when unemployment started to decline, support for the euro began to rise. Although the same holds for trust in the ECB, the recovery was far more modest. In 2018, the gap between the two series remains much larger than during the pre-crisis period.

How can we explain this difference over time? We suggest that the public makes a distinction between the role of the euro as the currency per se and the role of the ECB as the central bank that supplies the currency and frames monetary policy.

When asked about the euro, the public most likely considers how well the euro performs the standard micro-functions of money, traditionally expressed as that of a medium of exchange, a store of value and a unit of account. The euro has served the public well on all three accounts, particularly as a source of stable purchasing power. Inflation in the euro area has been low and fairly constant since the introduction of the euro, in sharp contrast with the inflationary history of several euro-area members.

This stability is a likely factor behind the support for the euro as a currency even during the crisis years of 2008–2013. Indeed, this line of reasoning is confirmed by

Table 1.2 Unemployment, inflation, GDP per capita growth and net support for the euro and net trust for the ECB and national government, FE-DFGLS estimation, EA19, 2008–2018

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable	Euro	Euro	Euro	ECB	ECB[a]	ECB	NG	NG[a]	NG
Period	CR-RE	CR	RE	CR-RE	CR	RE	CR-RE	CR	RE
Unemployment	**−2.1***	**−0.8****	**−3.6***	**−3.4***	**−5.3***	**−2.2***	**−3.7***	**−3.5***	**−4.1***
	(0.41)	(0.38)	(0.60)	(0.61)	(0.72)	(0.68)	(0.59)	(0.67)	(1.48)
Inflation	**−4.8***	**−11.2***	−0.6	−1.4	**−10.8***	1.5	−0.6	**−10.2****	3.6
	(1.47)	(2.58)	(2.06)	(1.91)	(3.85)	(2.33)	(2.50)	(4.74)	(4.99)
GDP per capita growth	0.0	−1.6	0.0	0.7	0.7	0.1	0.2	0.7	−1.0
	(0.71)	(1.07)	(0.97)	(0.89)	(1.44)	(1.11)	(1.24)	(2.00)	(2.28)
Durbin–Watson statistic	2.12	2.14	2.03	2.36	2.11	2.11	2.13	2.27	2.19
Adjusted R^2	0.85	0.85	0.90	0.91	0.88	0.94	0.85	0.84	0.87
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
El. of first-order autocorr.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	330	164	166	330	164	166	330	164	166
Number of countries	19[b]	19	19[b]	19[b]	19	19[b]	19[b]	19	19[b]

[a]Inflation coefficient lacks robustness. Excluding the two sets of time periods (EB 70 and 71) in the direct aftermath of the financial crisis renders insignificant coefficients if tested in the sensitivity analysis.

[b]Econometric results remain robust when analysing an EA15 country sample

Notes: ECB = European Central Bank; NG = national government; CR-RE = crisis-recovery; CR = crisis; RE = recovery. ***$p < 0.01$. **$p < 0.05$.

Source: Standard Eurobarometer data 69–90.

our econometric findings, which depict a strong negative relationship between inflation and public support for the euro during the crisis period.

When asked about trust in the ECB, the respondents turn their attention from the micro-issues related to the euro as the money they use in daily business and commerce to the macro-problems related to monetary policy, interest rates, unemployment, and crisis management. Most likely, they hold the ECB responsible for the state of the macroeconomy, or at least jointly with other actors such as national governments, as reflected in the decline in trust in the ECB in parallel with the fall in trust in national governments during the euro crisis. During this crisis, the ECB is associated with the flow of negative macroeconomic news, such as the crisis management by countries like Greece, as a member of the troika, and the rise in unemployment due to the austerity programs launched in several euro-countries in response to the crisis.

In addition, the crisis provoked strong criticism of the ECB, which was not present during the first decade of the euro, when its launch was commonly regarded as a success. And again, our interpretation is confirmed by our econometric findings, which depict a six-fold stronger negative impact from unemployment on trust in the ECB compared to public support for the euro during the crisis period.

In short, the ECB is judged as a policymaker, whereas the euro, as a currency, is regarded as falling outside the immediate policy sphere. When its policies are viewed as being insufficient, as reflected in failing outcomes and rising unemployment, public trust in the ECB declines. When the economy of the euro area starts to improve, trust in the ECB is eventually restored.

Still, the euro crisis has left a scar on the trust invested in the ECB. The level of trust has not recovered to the level it obtained before the crisis. The gap between support for the euro and trust in the ECB suggests that it will take a long time for trust in the ECB to reach pre-crisis levels.

8 Why Is Popular Support of the Euro So Important? Two Recent Cases

We have argued that popular support of the common currency is crucial for its sustainability. Here we illustrate this argument by discussing two recent cases.

First, we suggest that the case of Italy in 2018 demonstrates how public support for the euro is crucial for the long-term survival of the common currency, in particular, if there is a loss of trust in the ECB and in the national government. After more than a decade of economic distress, higher than EA-average unemployment and lower than EA-average trust in the national government, a coalition government of major populist parties was formed in May 2018. The new coalition government intended to nominate a finance minister known to be critical of the euro. Such a nomination would have damaged cooperation among EU policymakers. The Italian president ultimately prevented the nomination.

The most likely explanation for his action is found in the fact that a majority of Italian citizens have supported the euro for over three decades, since the first plans of monetary unification were floated in 1990. Similarly, a referendum on the euro, initially considered by the populist government, was not held due to the popularity of the common currency.

In short, attempts by the Italian populist coalition government to dismantle EA cooperation were effectively countered by the popularity of the euro, serving in this way as a shield against populism. Most likely, this effect will persist in the near to medium future as well. In our opinion, a similar story has played out in France. The populist party of Marie Le Pen has dropped or at least moderated its criticism of the euro.

Second, the decision by the ECB to become the lender of last resort in the government bond market of the EA in 2012 was facilitated by the popularity of the euro. It took the ECB four years after the start of the crisis in 2008 to assume this role, but the announcement by the president of the ECB in July 2012 to 'do whatever it takes' swiftly resolved the sovereign debt crisis in the EA. The quantitative easing (QE) programme implemented from 2015 to 2018 also contributed to the EA's recovery from the euro crisis. Given the loss of majority trust in the ECB during the crisis, we speculate that the large public support for the euro granted the ECB political legitimacy to secure its independence against growing criticism of its actions.

9   Conclusions

In our analysis of Eurobarometer data for the first two decades of the euro's existence, from 1999 to 2018, we find that a majority of respondents have supported the euro in each member country of the euro area. Although the crisis in the EA led to a slight decline in public support, the recovery since 2013 has triggered an upturn in support. As the euro turns 20, the currency enjoys historically high levels of support among the citizens of the EA. A similar, although less pronounced, rise in trust in the ECB can be detected.

Looking ahead, we argue that the high esteem with which the euro is presently held by a persistent majority of citizens makes it well-equipped to weather the challenges it will surely face in its third decade. Our results suggest that keeping unemployment and inflation at bay, particularly the former, will be important for sustaining public support for the common currency and public trust in the ECB. Ultimately, euro-area citizens assess the euro and the ECB based on their economies' performance. This reality impresses upon policymakers the need to design measures that succeed in enhancing growth and employment in the member states and thereby foster support for the common currency and trust in the ECB.

Appendix

Table 1.A1 Changes in net support for the euro, EA19, 2018–2008, 2013–2008 and 2018–2013

Country	CR-RE	Euro	ECB	NG	CR	Euro	ECB	NG	RE	Euro	ECB	NG
Austria	18–08	8	−8	20	13–08	−3	−17	11	18–13	11	9	9
Belgium	18–08	2	−29	22	13–08	−15	−38	14	18–13	17	9	8
Cyprus	18–08	28	−69	−82	13–08	−22	−120	−92	18–13	50	51	10
Germany	18–08	25	−25	37	13–08	−4	−44	19	18–13	29	19	18
EA19	18–08	15	−33	3	13–08	−8	−50	−25	18–13	23	17	28
Estonia	18–08	–	–	–	13–08	–	–	–	18–13	25	8	47
Greece	18–08	35	−51	−39	13–08	22	−63	−50	18–13	13	12	11
Spain	18–08	20	−67	−77	13–08	−26	−100	−103	18–13	46	33	26
Finland	18–08	7	2	−7	13–08	−8	−30	−7	18–13	15	32	0
France	18–08	3	−28	−5	13–08	−16	−32	−11	18–13	19	4	6
Ireland	18–08	−4	−37	2	13–08	−32	−72	−46	18–13	28	35	47
Italy	18–08	9	−34	21	13–08	2	−48	−12	18–13	7	14	33
Lithuania	18–08	–	–	–	13–08	–	–	–	18–13	–	–	–
Luxembourg	18–08	10	−20	18	13–08	−10	−19	5	18–13	20	−1	13
Latvia	18–08	–	–	–	13–08	–	–	–	18–13	–	–	–
Malta	18–08	4	5	18	13–08	−10	−9	14	18–13	14	14	4
Netherlands	18–08	0	−35	29	13–08	−23	−56	−11	18–13	23	21	40
Portugal	18–08	40	−20	19	13–08	−5	−70	−49	18–13	45	50	68
Slovenia	18–08	−7	−58	−17	13–08	−26	−64	−45	18–13	19	6	28
Slovakia	18–08	–	–	–	13–08	–	–	–	18–13	4	−3	11

Notes: CR-RE = crisis-recovery; CR = crisis; RE = recovery; EA = euro area.
Sources: EB96-EB90.

Table 1.A2 Summary statistics for the macro analysis, EA19 countries, 1999–2018

Variable	N	Mean	Std. dev.	Min.	Max.
Net support for the euro	578	47	18.7	−9	85
Net trust in the European Central Bank	578	14.3	27.1	−69	70
Net trust in the national government	533	−17.4	32.4	−85	61
Unemployment rate	578	8.8	4.5	1.9	27.7
Inflation	578	0.8	1.0	−3.7	5.2
GDP per capita growth	578	0.7	1.8	−7.4	17.0

Notes: N = number of observations; Std. dev. = standard deviation; Min. = minimum; Max. = maximum.
Sources: EB51-EB90 and Eurostat.

Table 1.A3 Pesaran's CADF panel unit root tests, EA19 countries

Variable	Observations	CADF- Zt-bar	Probability
Net support for the euro	562	2.05	0.98
Net trust in the ECB	562	−1.06	0.15
Net trust in the national government	517	−0.18	0.43
Unemployment	562	2.72	0.99
Inflation	562	0.77	0.78
GDP per capita growth	562	0.62	0.73

Notes: H_0: series has a unit root (individual unit root process); H_a: at least one panel is stationary. Table 1.A3 shows that all series have a unit root. A time trend and two lagged differences were utilised. Three lagged differences were utilised for Inflation, GDP per capita growth and Net trust in the ECB. Latvia and Lithuania were not included due to the brevity of their time series.

Table 1.A4 Kao's residual cointegration test, EA19 countries

Cointegration between the following set of variables	Number of included observations	ADF-t-statistic	Probability
Net support for the euro, unemployment, inflation, GDP per capita growth	579	−1.8	0.034
Net trust in the ECB, unemployment, inflation, GDP per capita growth	579	−1.3	0.090
Net trust in the national government, unemployment, inflation, GDP per capita growth	579	−1.7	0.041

Notes: H_0: no cointegration. Table 1.A4 shows that the series are cointegrated and thus stand in a long-run relationship.
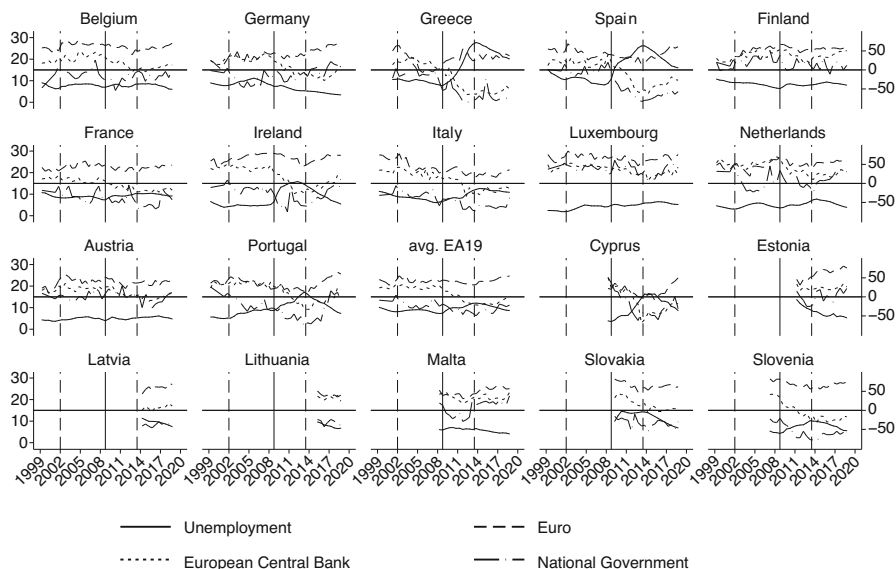
Fig. 1.A1 Unemployment and net support for the euro and net trust in the ECB and in the national government, EA19, 1999–2018
Sources: EB51-EB90 and Eurostat.

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Chapter 2
Revisiting Public Support for the Euro, 1999–2017: Accounting for the Crisis and the Recovery

Felix Roth, Edgar Baake, Lars Jonung, and Felicitas Nowak-Lehmann D.

Abstract This contribution explores the evolution and determinants of public support for the euro since its creation in 1999 until the end of 2017, thereby covering the pre-crisis experience of the euro, the crisis years and the recent recovery. Using uniquely large macro and micro databases and applying up-to-date econometric techniques, the authors revisit the growing literature on public support for the euro. First, we find that a majority of citizens support the euro in nearly all 19 euro area member states. Second, we offer fresh evidence that economic factors are important determinants of change in the level of support for the euro: Crisis reduces support while periods of recovery from unemployment bode well for public support. This result holds for both macroeconomic and microeconomic factors. Turning to a broad set of socioeconomic variables, we find clear differences in support due to education and perceptions of economic status.

Keywords Public support for the euro · Euro area crisis · Euro area recovery · Unemployment · Economic and Monetary Union

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1 Introduction

This contribution explores the evolution and determinants of public support for the euro, using the largest up-to-date database on public opinion of the euro since its inception, available from March–April 1999 (EB 51) to November 2017 (EB88). It falls within the tradition of studies of the determinants of public support for the euro that have sprung up in recent decades (as a prominent example, see Banducci et al., 2009, Deroose et al., 2007, Hobolt & Leblond, 2014, and Hobolt & Wratil, 2015). This debate is about whether and under which circumstances the euro has been supported by citizens, in particular on the macroeconomic and microeconomic impact on public support. In line with the previous literature (see, for example, Banducci et al., 2009), we model public support for the euro at the macro- and micro-level, emphasizing the impact of economic factors. In contrast with much of the previous literature (see Hobolt & Leblond, 2014), we apply the latest econometric techniques to control for endogeneity.

Based on these specifications, we find that the euro has enjoyed support by a majority in nearly all 19 individual member states of the euro area (EA) from March–April 1999 to November 2017. Moreover, our econometric results at the macro- and micro-level find that unemployment is significantly and negatively related to public support for the euro. This result implies that the economic recovery in the EA starting in November 2013, which brought about a fall in unemployment, has increased public support.

The paper is structured as follows. Section 2 discusses the role of public support for the euro. Section 3 describes public support for the euro in the EA member states. The fourth section provides insights into the model specification, research design and data. Section 5 provides econometric results. The sixth section discusses the empirical findings in light of previous findings. The contribution ends with a short summary of our conclusions. Additional supporting information in the form of tables and figures can be found in the Appendices.

2 Public Support for the Euro

This section considers the role of public support for the Economic and Monetary Union (EMU) and the euro, as treated within various strands of the literature. First, evidence from the history of monetary unions suggests that a monetary union like EMU benefits from public support for the common currency. As long as the common currency enjoys public support, the monetary union will be able to adjust and adapt to changing circumstances (Bordo & Jonung, 2003, pp. 58, 63).

Second, the literature on the political economy in the optimum currency area approach suggests that a sustainable monetary union should feature a shared sense of common destiny (Baldwin & Wyplosz, 2019, p. 358). Such a shared sense of destiny between the partners of a monetary union is crucial to allow them to find collective

solutions to common problems in times of economic strain. Public support for EMU and the euro is a prerequisite for such a sense of shared destiny. It is a vital ingredient for reconciling powerful national interests among EA governments, which have been one of the sources of the EA crisis (Frieden & Walter, 2017, p. 386).

Third, contributions within political science stress that public support for the euro is crucial for any move towards more supranational governance (Banducci et al., 2003, p. 686). Public support is necessary for European citizens to be willing to transfer power from national to European institutions (Kaltenthaler & Anderson, 2001, p. 14). This body of literature concludes that public support for EMU is crucial for its political legitimacy (Deroose et al., 2007) and hence its sustainability (Verdun, 2016, p. 306). In short, all strands of the literature note that public legitimacy matters. Therefore, widespread public support for the euro stands out as an important prerequisite for its long-term sustainability.

3   Descriptive Statistics

Figure 2.1 shows public support for the euro by the 19 member states that joined the EA between 1999 and 2017 (namely Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovenia, Slovakia and Spain – the EA-19).

Figure 2.1 distinguishes between two stages in the history of the euro. The first stage covers the time from its inception until the start of the financial crisis (1999–2008). The second stage covers the time since the start of the financial crisis (October–November 2008 to November 2017). The latter is subdivided into a period of crisis (October–November 2008 to May 2013) and a period of recovery (November 2013 to November 2017).[1]

Figure 2.1 shows that first, on average, a large majority of EA-19 citizens supported the euro over the 19-year period since its implementation (>30% net support). While net support declined in times of crisis by 9% points to a mean level of 31%, it has more than compensated for this drop during the recovery, with an increase of 22% points to a mean level of 53% (see Table 2.A1 in Appendix 2).

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[1]The distinction between the subdivison is based on the aggregate unemployment rate in the EA-19. Whereas unemployment rates steadily increased from October–November 2008 to May 2013, we witnessed the start of the economic recovery from November 2013 onwards, with a steady decline in aggregate unemployment (see Fig. 2.A2 in Appendix 2).

Second, since the establishment of the EA in 1999, aside from short periods in Finland and Greece in pre-crisis times and in Cyprus in crisis times, a majority of citizens in each of the 19 member states of the euro area has supported the euro. This includes continuous majority support in the largest EA economies such as Germany (with a minimum net support of 3% in November to December 2000) and Italy (with a minimum net support of 16% in November 2016) since the introduction of the euro in 1999.

Third, during the economic recovery (since November 2013), public net support for the euro has strongly increased within the EA's periphery, in Spain and Portugal by 52% and 46% points, respectively, as well as in the EA's core, namely Germany, by 28% points. In the majority of cases (nine of 15), the increase in public support for the euro throughout the recovery has more than compensated for the losses that accrued throughout the crisis (see Table 2.A1 in Appendix 2).[2]
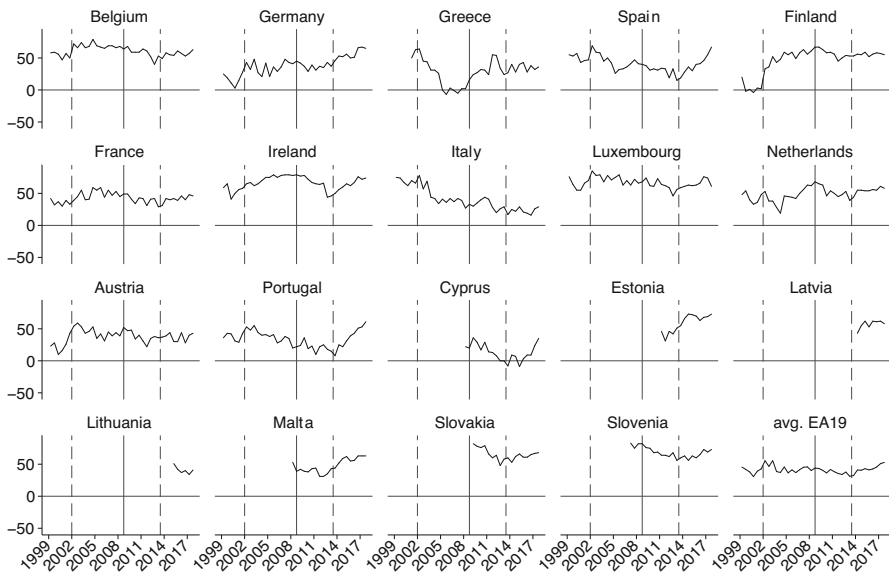
Fig. 2.1 Net support for the euro in the EA-19, 1999–2017

Notes: The y-axis displays net support in percentages. As the figure depicts net support, all values above 0 indicate that a majority of the respondents support the euro. Net support measures are constructed as the number of 'For' responses minus 'Against' responses, according to the equation: Net support $= (For - Against)/(For + Against + Don't know)$. The dashed lines distinguish the actual physical introduction of the euro in January 2002, the start of the financial crisis in September 2008 and the start of economic recovery at the end of 2013. Average (avg.) EA-19 is population-weighted.

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[2]For purposes of comparison, the pattern for the nine EU member states outside the EA19 is displayed in Fig. 2.A1 in Appendix 1.

4 Empirical Approach

4.1 Model Specification

To analyse the channels that influence public support for the euro, we adopt a model specification used by Roth et al. (2016, pp. 950–952). We estimate support for the euro as a function of unemployment, inflation, growth in real GDP per capita and the macroeconomic control variables considered important in explaining the within variation of support. Our baseline model (2.1) reads:

$$\text{Support}_{it} = \alpha_i + \beta_1 \text{Unemployment}_{it} + \chi_1 \text{Inflation}_{it} + \delta_1 \text{Growth}_{it} + \phi_1 Z_{it} + w_{it}, \tag{2.1}$$

where Support_{it} is the net support for the euro for country i during period t. Unemployment_{it}, Inflation_{it}, Growth_{it}, and Z_{it} are, respectively, unemployment, inflation, growth of GDP per capita and control variables deemed of potential importance, which can be lumped together in Z.[3] α_i represents a country-specific constant term (fixed effect), and w_{it} is the error term.

4.2 Research Design

Eq. (2.1) is estimated with an EA-19 country sample for the time period 1999–2017, with a total number of 38 time observations. With $t = 38$ and $n = 19$ and thus with a ratio of $t/n = 2$, Eq. (2.1) is estimated via a panel time-series estimation. Panel data analysis is superior to cross-section analysis as it exploits both variations over time and across cross-sections. In particular, it allows us to control for time-invariant cross-section (country) characteristics by modelling cross-section-specific intercepts. It also allows us to control for endogeneity by internal instrument techniques that require lagging the variables and to control for omitted variable bias by tackling the autocorrelation of the disturbances. In our analysis, we also apply a matching procedure between the macroeconomic variables and the Eurobarometer data (following Wälti, 2012, p. 597).

Second, to corroborate the findings between unemployment, inflation, economic growth, and support for the euro from the macro analysis, support is examined from a microeconomic point of view using 474,712 individual observations. In this case, the dependent variable is dichotomous, that is, 1 in case of support and 0 in case of no support. In this step, emphasis is put on perceptions about unemployment, inflation,

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[3]The components of Z could potentially be macroeconomic, socio-political or social control variables (see Appendix 3). However, given the cointegrating relationship between support for the euro and our macroeconomic variables (see Tables 2.A5 and 2.A6 in Appendix 2), we can be confident that these Z variables do not cause bias in the coefficients of unemployment, inflation or growth.

and the overall economy as well as on exploring the socioeconomic characteristics of the interviewees: their gender, age, legal status, education, and employment status.

4.3 Operationalization and Data Used

Measures for public support for the euro are based upon the biannual Standard Eurobarometer (EB) surveys[4] (European Commission, 2017) from March to April 1999 (EB51) to November 2017 (EB88), which asked respondents: '*What is your opinion on each of the following statements? Please tell me for each statement, whether you are for it or against it. A European economic and monetary union with one single currency, the euro*'. Respondents can then choose between '*For*', '*Against*' or '*Don't know*'. Net support measures are constructed as described in the note to Fig. 2.1.

Data on inflation (the change in the harmonized index of consumer prices), seasonally adjusted unemployment rates, as well as seasonally and calendar adjusted data on GDP per capita (European Commission, 2013) are taken from Eurostat. A summary of the data utilized can be found in Table 2.A2 in Appendix 2.

Individual observations for support for the euro, which we obtained from the GESIS Leibniz Institute for Social Sciences, have been merged for the period 1999–2017 and include observations from EB51 (March–April 1999) to EB87 (May 2017). The merged variables include perceptions about unemployment, inflation and the overall economy and socioeconomic variables including gender, age, legal status, education and employment status. A summary of the data utilized can be found in Tables 2.A3 and 2.A4.

5 Econometric Results

5.1 Macro Analysis

We estimate Eq. (2.1) by means of dynamic ordinary least squares (DOLS), a method that permits full control for the endogeneity of the regressors (Stock & Watson, 1993; Wooldridge, 2009). To correct for autocorrelation,[5] we apply a feasible general least squares (FGLS) procedure.[6] Both applications lead to

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[4]For each Standard EB survey, which covers about 1,000 respondents per country, new and independent samples are drawn. Interviews are conducted face-to-face in the respondent's home. A multi-stage and random sampling design is used.

[5]We found first-order autocorrelation to be present.

[6]The feasible general least squares (in the ready-to-use EViews commands) procedure is not compatible with time fixed effects. It picks up shocks and omitted variables in the period of study. In addition, it has been found that running the regression with time fixed effects (without applying feasible general least squares) does not tackle the problem of the autocorrelation of the error term.

Eq. (2.2), representing our fixed effect dynamic feasible general least squares (FE-DFGLS) approach (the detailed steps leading from Eq. (2.1) to Eq. (2.2) are explained in Appendix 3):

$$\text{Support}_{it}^* = \alpha_i + \beta_1 \text{Unemployment}_{it}^* + \chi_1 \text{Inflation}_{it}^* + \delta_1 \text{Growth}_{it}^* + \phi_1 Z_{it}^*$$
$$+ \sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Unemployment}_{it-p}^* + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Inflation}_{it-p}^* + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Growth}_{it-p}^*$$
$$+ \sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p}^* + u_{it}$$

$$(2.2)$$

with α_i being the country fixed effect and Δ indicating that the variables are in first differences. On applying DFGLS, unemployment, inflation, and growth become exogenous and the coefficients $\beta_1, \chi_1, \delta_1$ and ϕ_1 follow a t-distribution. This property permits us to derive statistical inferences on the causal impact of unemployment, inflation, and growth. The asterisk (*) indicates that the variables have been transformed and that the error term u_{it} fulfills the requirements of the classical linear regression model. In addition, DFGLS estimations are very robust against the omission of other potentially relevant variables and therefore permit unbiased and consistent estimates of all right-hand side variables.

Table 2.1 shows the econometric results for Eq. (2.2) within our EA-19 country sample. When analysing the full period from March–April 1999 to November 2017 with 530 observations, we detect a highly significant negative impact of unemployment and inflation on the net support for the euro (−1.3 and −4.9, respectively). While the negative relationship between unemployment and public support for the euro is driven by the crisis-recovery period (October–November 2008 to November 2017), the negative relationship between inflation and public support for the euro is driven by both periods.[7] More importantly, however, a sensitivity analysis of the crisis-recovery period reveals that whereas the negative relationship between unemployment and public support for the euro in the crisis-recovery period (−1.8) is strongly driven by the recovery period (−3.0), the relationship between inflation and public support becomes insignificant in times of economic recovery (see regressions 7–8 and 15–18 in Table 2.A8 in Appendix 2).[8]

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[7]The inclusion of the control variable change in the euro/US dollar exchange rate does not significantly alter these results (see Table 2.A7 in Appendix 2).

[8]In times of economic recovery, one detects negative correlation coefficients of <-0.94 in particular in Ireland, Portugal, and Spain (see Table 2.A9 and Fig. 2.A2 in Appendix 2).

Table 2.1 Unemployment, inflation, GDP per capita growth and support: fixed effect dynamic feasible general least squares estimations (aggregated level), EA-19, 1999–2017

Regression	(1)	(2)	(3)
Dependent variable	Net support for euro	Net support for euro	Net support for euro
Period	FS	BC	CR
Unemployment	−1.3***	−1.7	−1.8***
	(0.41)	(2.14)	(0.37)
Inflation	−4.9***	−14.9***	−5.3***
	(1.74)	(5.75)	(1.44)
GDP per capita growth	−0.5	−2.1	−0.1
	(0.78)	(2.33)	(0.70)
Durbin-Watson statistic	2.25	2.49	2.13
Adjusted R^2	0.81	0.79	0.85
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order autocorrelation	Yes	Yes	Yes
Observations	530	218	312
Number of countries	19[a]	19	19[a]

[a]Econometric results remain robust if analysing an EA-15 country sample.
Notes: FS = full sample; BC = before crisis; CR = crisis recovery. Standard errors are in parentheses. *** $p < 0.01$.

5.2 Micro Analysis

At the micro level, we examine support for the euro by means of a probit model using individual data and account for respondents' perceptions (PC) of unemployment, inflation and the overall economy as well as their socioeconomic characteristics. The equation for the probit model is expressed below:

$$
\begin{aligned}
P\big(\text{Support}_{jit} = 1\big) = \alpha_i &+ \beta\text{Gender}_{jit} + \gamma\text{Age}_{jit} + \delta\text{Legal Status}_{jit} \\
&+ \theta\text{Education}_{jit} + \lambda\text{Employment Status}_{jit} \\
&+ \phi\text{Unemployment PC}_{jit} + \chi\text{Inflation PC}_{jit} \\
&+ \psi\text{Economic PC}_{jit} + \eta_t + \varepsilon_{jit},
\end{aligned}
\tag{2.3}
$$

where P represents the probability with which the euro is supported. The dependent variable (Support$_{jit}$) represents the support of individual j in country i at time t and takes on 1 if the individual supports and 0 if the individual does not support the euro. Gender$_{jit}$, Age$_{jit}$, Legal Status$_{jit}$, Education$_{jit}$, and Employment Status$_{jit}$ represent the gender, age, legal status, education, and employment status for individual j in country i at time t. Unemployment, Inflation, and Economic PC$_{jit}$ represent the unemployment, inflation, and economic *perceptions* for the national economic

Table 2.2 Probit analysis (individual level), marginal effects, EA-19, 1999–2017

Regression	(1)	(2)	(3)	(4)	(5)
Sample	FS	BC	CR	CR	CR
Level	–	–	–	PNE	PPE
Female	−4.6***	−6.4***	−3.2***	−2.5***	−2.4***
	(−37.14)	(−33.90)	(−19.21)	(−14.67)	(−12.78)
Age: 25–44	−2.0***	−2.3***	−1.5***	−1.2***	−0.5
	(−8.11)	(−6.60)	(−4.07)	(−3.15)	(−1.25)
Age: 45–64	−0.5*	−0.9**	0.3	0.8**	1.5***
	(−1.88)	(−2.44)	(0.81)	(2.27)	(3.80)
Age: 65+	0.3	−3.8***	3.3***	3.5***	3.4***
	(1.28)	(−9.44)	(8.73)	(8.99)	(7.76)
Married	3.0***	3.2***	3.0***	2.6***	1.6***
	(21.82)	(15.52)	(16.34)	(14.05)	(7.53)
Education: 16–19	9.2***	8.8***	9.2***	8.6***	7.2***
	(48.87)	(32.77)	(35.36)	(31.96)	(23.56)
Education: 20+	17.7***	17.9***	17.3***	15.6***	14.0***
	(91.86)	(65.00)	(64.22)	(56.07)	(44.03)
Unemployed	−8.2***	−6.2***	−8.3***	−6.8***	−1.8***
	(−32.15)	(−14.72)	(−26.22)	(−21.31)	(−5.28)
Unemployment perceptions	–	–	–	−5.6***	−6.5***
	–	–	–	(−22.85)	(−23.05)
Inflation perceptions	–	–	–	−4.2***	−2.1***
	–	–	–	(−18.69)	(−10.46)
Economy perceptions	–	–	–	10.3***	9.5***
	–	–	–	(45.60)	(34.48)
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	474,712	207,966	266,746	245,577	205,499

Notes: FS = full sample; BC = before crisis; CR = crisis recovery; PNE = perceptions national economy; PPE = perceptions personal economy. Coefficients display marginal effects. Z-statistics are placed beneath the coefficients between parentheses. *** P < 0.01, ** P < 0.05, * P < 0.1.

situation or personal economic situation for individual j in country i at time t.; α_i represents the country fixed effects; η_t represents the time-fixed effects; and ε_{jit} represents the error term.

Regressions 1–3 in Table 2.2 list our socioeconomic background variables for the full-time sample compared with the pre-crisis and crisis-recovery period.[9] The econometric results indicate significant negative associations for female and unemployed respondents and positive associations for married and educated respondents (aged 16–19 and 20+ years, respectively, when finishing education). The largest effect can be detected with regard to education. The probability that highly educated

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[9] A detailed comparison of the crisis and recovery periods is shown in Table 2.A10 in Appendix 2.

(20+) respondents would support the euro is around 18% points higher than those with lower education. While the pre-crisis and crisis-recovery sample results remain by and large stable, we observe a halving of the negative association for women in the crisis-recovery period[10] and a complete reversal of opinion among the oldest age group, aged 65+ (a shift from −3.8 in pre-crisis times to +3.3 in the crisis-recovery period).[11]

Regressions 4–5 incorporate the unemployment, inflation, and economic perceptions at the country and personal level for the crisis-recovery period. The two perceptions indicators, unemployment and inflation, have the expected negative effect, and the economic perceptions indicator has the expected positive effect for the national (Regression 4) as well as the personal economy (Regression 5) in the crisis-recovery period. As the estimation has utilized marginal effects, the coefficients can be interpreted in the following manner: an individual who identified the current unemployment situation of the national or their personal economy to be very/rather bad in the crisis-recovery period was around 5.6% or 6.5% points, respectively, less likely to support the euro than an individual who identified the unemployment situation of the national/their personal economy to be rather/very good.

6   Previous Empirical Results

Using the largest up-to-date dataset since the inception of the euro, from 1999 to 2017, our analysis first demonstrates that a majority of EA citizens have supported the euro in nearly each of the individual EA-19 member states. Our results are in stark contrast with those of scholars who claim to have found minority support in Italy (Guiso et al., 2016, p. 292) and Germany (Stiglitz, 2016, p. 314). However, these claims are not based on Eurobarometer data – the sole authoritative dataset for thorough research on public support for the euro across countries and over time.

Moreover, our macroeconometric results support the previous research of Roth et al. (2016, p. 953), who found a negative relationship between unemployment and support for the euro, analysing data from 2008 until 2014.[12] Extending the data up to

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[10]The narrowing of the gender gap might be due either to the fact that women have become more supportive or that men, whose occupations were hit hardest by austerity measures, have become less supportive. The results of a probit estimation in Table 2.A11 in Appendix 2 indicate that while women's support has increased by 3% (from 70% to 73%), men's support has decreased by 1% (from 77% to 76%).

[11]The reversal of opinion among the oldest age group, age 65+, might be related to the fact that they have the best historical understanding of the far-reaching consequences of a break-up of the euro – which represents a centerpiece of European integration.

[12]Our results contrast with those of Hobolt and Leblond (2014, p. 141), who found an insignificant relationship between unemployment and support for the euro in times of crisis. The results differ because our analysis: 1) has controlled for potential endogeneity, 2) uses a matching strategy as identified above, and 3) estimates an extended time period from March–April 1999 to November 2017.

2017, we continue to find a negative relationship between unemployment and support for the euro. It is worth noting that the negative relationship becomes stronger in times of economic recovery. In addition, the highly significant negative relationship between inflation and support for the euro is in line with previous findings that relied on a shorter time span (Roth et al., 2016, p. 954).[13] Extending the data up to 2017, we find that the negative relationship loses significance in times of economic recovery.

Furthermore, the findings of our macroeconomic analysis are corroborated at the micro-level. We find unemployment and inflation perceptions to be negatively related and economic perceptions to be positively related to public support for the euro in our crisis-recovery period. The patterns for our socioeconomic variables of gender, education, and employment status in the pre-crisis period are similar to previous results (Banducci et al., 2009, p. 576). Our finding that a stable pattern emerges for education, employment, and legal status when comparing the pre-crisis period with the crisis-recovery period makes a novel contribution to this literature.[14]

Furthermore, the halving of the negative association for women during the crisis-recovery period and the complete reversal in opinion among the oldest age group (65+) from strongly negative before the crisis towards strongly positive towards the euro during the crisis-recovery period stand out as new patterns that deserve further research.

7 Conclusions

This contribution has analysed the support for the euro for an EA-19 country sample over the 19-year period from 1999 to 2017. We reach three main conclusions. First, the euro, with few exceptions, has enjoyed majority support within each individual EA-19 member state since its introduction in 1999 until 2017. Second, our econometric results at the macro-level suggest that there is a negative and significant relationship between unemployment and public support for the euro, which is more pronounced during the recovery. The results also indicate a significant and negative relationship between inflation and public support for the euro, although this relationship was insignificant in times of recovery. Third, the findings of our micro-econometric analysis corroborate our macro-level findings. We discover a negative

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[13] Our results contrast with those of Banducci et al. (2009, p. 571) and Hobolt and Leblond (2014, p. 141), neither of which established a negative significant relationship between inflation and support for the euro. Our results differ because points (1), (2) and (3) mentioned in footnote 12 apply.

[14] Utilizing a similar but distinctly different research design over the pre-crisis and crisis period from 2005 to 2013, previous studies report only results for their socioeconomic variables for an EU-27 country sample (Hobolt & Wratil, 2015, p. 247).

relationship between unemployment and inflation perceptions and public support for the euro. In addition, our results indicate that the patterns for our socioeconomic variables, including education, legal, and employment status, are stable. The largest effect is related to education; the probability for highly educated citizens (who were 20+ when finishing school) to support the euro is significantly higher than for those with lower education.

Overall, our results demonstrate that both macroeconomic and microeconomic developments are important drivers of public support for the euro. This finding generally supports previous studies on the matter.

Appendix 1: Net Support for the Euro in the Non-EA-19, 1999–2017
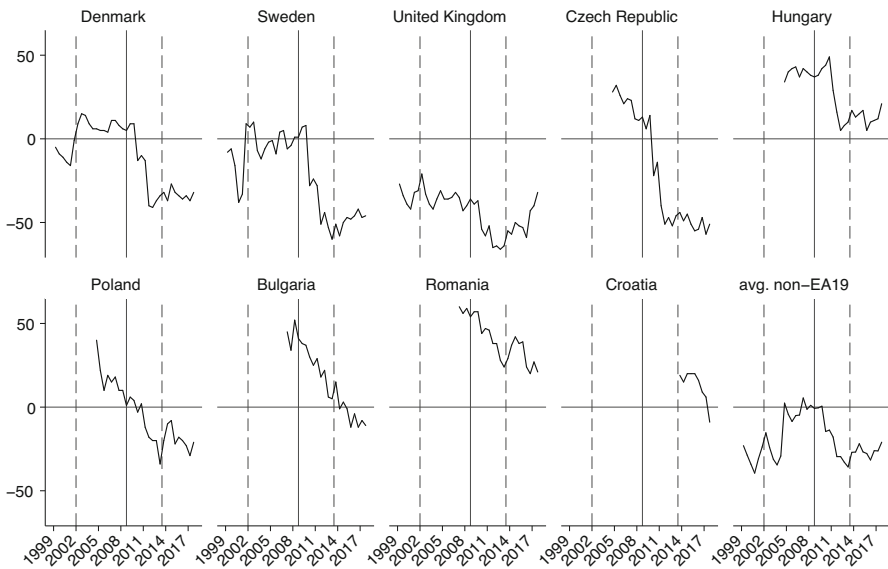
Fig. 2.A1 Net support for the euro in the non-EA-19, 1999–2017
Data sources: Standard EB51-EB88.

Appendix 2: Descriptive Statistics and Test Results

Table 2.A1 Levels and changes in net support for the euro, EA-19, 2008, 2013 and 2017

Country	Levels	Levels	Levels	Changes	Changes	Changes
	3–5/2008	5/2013	11/2017	5/2013 – 3–5/2008	11/2017 – 5/2013	11/2017 – 3–5/2008
Spain	41	15	67	−26	52	26
Portugal	20	15	61	−5	46	41
Cyprus	22	0	35	−22	35	13
Germany	41	37	65	−4	28	24
Ireland	78	46	74	−32	28	−4
EA-19	40	31	53	−9	22	13
Estonia	–	51	73	–	22	–
Malta	53	43	63	−10	20	10
Netherlands	62	39	58	−23	19	−4
France	45	29	46	−16	17	1
Slovenia	82	56	73	−26	17	−9
Greece	2	24	36	22	12	34
Belgium	68	53	63	−15	10	−5
Slovakia	–	58	68	–	10	–
Austria	39	36	43	−3	7	4
Luxembourg	66	56	61	−10	5	−5
Finland	61	53	55	−8	2	−6
Italy	27	29	29	2	0	2
Latvia	–	–	58	–	–	–
Lithuania	–	–	41	–	–	–

Data sources: EB51-EB88.

Table 2.A2 Summary statistics for the macro analysis, 1999–2017

Variable	N	Mean	Std. dev.	Min.	Max.
Net support for the euro	560	47	18.7	−9	85
Unemployment rate	560	8.8	4.5	1.9	27.8
Inflation	560	0.8	1.0	−3.6	5.2
GDP per capita growth	560	0.7	1.8	−7.4	17.0
Change in euro/US dollar exchange rate	560	−0.1	6.4	−15.3	8.9

Notes: N = number of observations; Std. dev. = standard deviation; Min. = minimum; Max. = maximum.
Data sources: EB51-EB88 and Eurostat.

Table 2.A3 Summary statistics for the micro analysis, regressions 1–3, 1999–2017

Time period	Variable	Obs.	Mean	Std. dev.	Min.	Max.
Full sample	Support for the euro	474,712	0.74	0.44	0	1
	Age	474,712	49.2	17.2	15	99
	Gender	474,712	0.46	0.50	0	1
	Education attainment	474,712	2.09	0.75	1	3
	Unemployed	474,712	0.08	0.27	0	1
	Married	474,712	0.65	0.48	0	1
Before crisis	Support for the euro	207,966	0.73	0.44	0	1
	Age	207,966	47.3	17.0	15	99
	Gender	207,966	0.47	0.50	0	1
	Education attainment	207,966	2.02	0.76	1	3
	Unemployed	207,966	0.06	0.24	0	1
	Married	207,966	0.64	0.48	0	1
Crisis-recovery	Support for the euro	266,746	0.74	0.44	0	1
	Age	266,746	50.6	17.2	15	99
	Gender	266,746	0.46	0.50	0	1
	Education attainment	266,746	2.15	0.74	1	3
	Unemployed	266,746	0.09	0.29	0	1
	Married	266,746	0.66	0.47	0	1

Notes: Obs. = observations; Std. dev. = standard deviation; Min. = minimum; Max. = maximum. Education attainment is measured based on the responses to the question 'How old were you when you stopped full-time education?' and was subsequently categorized into three classes: 2–15 years, 16–19 years and 19+ years.
Data sources: EB51-EB87.

Table 2.A4 Summary statistics for the micro analysis, regression 4–5, 2008–2017

Time Period	Variable	Obs.	Mean	Std. dev.	Min.	Max.
Crisis-recovery	Support for the euro	245,577	0.74	0.44	0	1
	Inflation perception (PNE)	245,577	0.20	0.40	0	1
	Unemployment perception (PNE)	245,577	1.75	0.43	1	2
	Economic perception (PNE)	245,577	1.67	0.47	1	2
	Age	245,577	50.5	17.1	15	99
	Gender	245,577	0.46	0.50	0	1
	Education attainment	245,577	2.15	0.73	1	3
	Unemployed	245,577	0.09	0.29	0	1
	Married	245,577	0.67	0.47	0	1

Table 2.A4 (continued)

Time Period	Variable	Obs.	Mean	Std. dev.	Min.	Max.
Crisis-recovery	Support for the euro	205,499	0.75	0.44	0	1
	Inflation perception (PPE)	205,499	0.38	0.49	0	1
	Unemployment perception (PPE)	205,499	1.31	0.46	1	2
	Economic perception (PPE)	205,499	1.33	0.47	1	2
	Age	205,499	47.6	15.9	15	99
	Gender	205,499	0.47	0.50	0	1
	Education attainment	205,499	2.19	0.72	1	3
	Unemployed	205,499	0.10	0.30	0	1
	Married	205,499	0.68	0.47	0	1

Notes: Obs. = observations; Std. dev. = standard deviation; Min. = minimum; Max. = maximum. Education attainment is measured based on the responses to the question 'How old were you when you stopped full-time education?' and was subsequently categorized into three classes: 2–15 years, 16–19 years and 19+ years. PNE = perceptions national economy; PPE = perceptions personal economy. One valid proxy for individual perceptions about unemployment is provided by the following question in the Eurobarometer surveys: 'How would you judge the current situation in each of the following?' This question is then split into several parts, including '*the employment situation in (OUR COUNTRY)*' and '*your personal job situation*'. The respondents might then choose one of five answers: '*very good*', '*rather good*', '*rather bad*', '*very bad*' and '*don't know*'. Our final unemployment perception variable was recoded to a dichotomous variable by recoding 'very good' and 'rather good' to 0 and 'very bad' and 'rather bad' to 1. The utilized data on perceptions were only available for the crisis-recovery period.
Data sources: EB70-EB87.

Table 2.A5 Pesaran's CADF panel unit root tests, EA-19 countries

Variable	Observations	CADF-Zt-bar	Probability
Net support for the euro	546	1.84	0.97
Unemployment	546	1.68	0.96
Inflation	546	0.62	0.73
GDP per capita growth	546	−1.07	0.14
Change in euro/US dollar exchange rate	546	17.99	1.00

Notes: H_0: series has a unit root (individual unit root process); H_a: at least one panel is stationary. Table 2.A5 shows that all series have a unit root. A time trend and two lagged differences were utilized. Three lagged differences were utilized for inflation. Latvia and Lithuania were not included due to the brevity of their time series.

Table 2.A6 Kao's residual cointegration test, EA-19 countries

Cointegration between the following set of variables:	Number of included observations	ADF-t-statistic	Probability
Net support for euro, unemployment, inflation, GDP per capita growth	560	−1.59	0.056

Notes: H_0: no cointegration. Table 2.A6 shows that the series are cointegrated and thus stand in a long-run relationship. Cointegration could also be established for the pre-crisis and the crisis periods.

Table 2.A7 Unemployment, inflation, GDP per capita growth, change in the euro/US dollar exchange rate and support: FE-DFGLS estimations (aggregated level), EA-19, 1999–2017

Regression	(1)	(2)	(3)
Dependent variable	Net support euro	Net support euro	Net support euro
Period	FS	BC	CR
Unemployment	**−1.3*****	−1.4	**−1.9*****
	(0.40)	(2.09)	(0.37)
Inflation	**−6.9*****	**−11.6****	**−7.1*****
	(1.73)	(5.87)	(1.54)
GDP per capita growth	−1.1	−0.7	−0.4
	(0.77)	(2.39)	(0.69)
Change in euro/US dollar exchange rate	**0.8*****	**0.9****	**0.7*****
	(0.19)	(0.36)	(0.26)
Durbin-Watson statistic	2.27	2.50	2.16
Adjusted R-squared	0.82	0.79	0.86
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order autocorrelation	Yes	Yes	Yes
Observations	530	218	312
Number of countries	19[a]	15	19[a]

Notes: FS = full sample; BC = before crisis; CR = crisis-recovery. Standard errors are in parentheses. ***$p < 0.01$, **$p < 0.05$, and *$p < 0.1$.
[a]Econometrics results remain robust when analysing an EA-15 country sample.

Table 2.A8 Sensitivity analysis between unemployment, inflation and net support for the euro: FE-DFGLS estimations (aggregated level), 2008–2017

Row	Specification change	Unemployment	Std. err.	Inflation	Std. err.	Obs.	Cou.	Adj. R-Sq.	DW stat.
1	No change	−1.8***	0.37	−5.3***	1.44	312	19	0.85	2.13
Exclusion of outliers									
2	Greece	−2.8***	0.38	−4.9***	1.33	294	18	0.87	2.03
3	Greece + Germany	−2.7***	0.38	−4.8***	1.32	276	17	0.87	2.03
Restructuring of time sample									
4	10–11/2008–05/2017	−1.5***	0.36	−5.7***	1.42	293	19	0.85	2.08
5	10–11/2008–11/2016	−1.2***	0.34	−6.1***	1.38	274	19	0.85	2.11
6	10–11/2008–05/2013	−0.8**	0.38	−11.2***	2.59	164	17	0.85	2.14
7	10–11/2013–11/2017	−3.0***	0.67	−1.5	2.27	148	19	0.90	2.12
8	10–11/2013–05/2017	−2.8***	0.82	−2.1	2.54	129	19	0.90	2.11
Restructuring of time sample and exclusion of outliers									
9	10–11/2008–05/2017 – Greece	−2.6***	0.38	−5.1***	1.30	276	18	0.87	1.98
10	10–11/2008–05/2017 – (Greece + Germany)	−2.5***	0.38	−4.9***	1.31	259	17	0.87	1.99
11	10–11/2008–11/2016 – Greece	−2.3***	0.38	−5.4***	1.26	258	18	0.87	2.02
12	10–11/2008–11/2016 – (Greece + Germany)	−2.3***	0.38	−5.1***	1.29	242	17	0.87	2.01
13	10–11/2008–05/2013 - Greece	−1.8***	0.43	−11.3***	2.51	154	16	0.87	2.08
14	10–11/2008–05/2013 - (Greece + Netherlands)	−1.7***	0.43	−11.0***	2.63	144	15	0.87	2.07
15	11/2013–11/2017 – Luxembourg	−3.3***	0.69	−2.1	2.27	140	18	0.90	2.13
16	11/2013–11/2017 – (Luxembourg + Portugal)	−2.4***	0.64	−3.2	2.01	132	17	0.91	2.25
17	11/2013–05/2017 – Luxembourg	−3.1***	0.82	−2.3	2.55	122	18	0.90	2.15
18	11/2013–05/2017 – (Luxembourg + Portugal)	−1.9**	0.80	−3.4	2.25	115	17	0.91	2.32

Notes: Std. err. = Standard error; Obs. = number of observations; Cou. = number of countries; Adj. R-sq. = adjusted R-square; DW stat. = Durbin-Watson statistic. *** $p <=0.01$, ** $p <=0.05$, * $p <=0.10$. Country outliers were based on the correlation coefficients between unemployment and public support for the euro for the EA-19, as e.g. displayed in Table 2.A9 for the crisis-recovery, crisis and recovery periods.

Table 2.A9 Correlation coefficients between unemployment, inflation and net support for the euro in the EA-19 countries, 2008–2013 and 2013–2017

Country	Crisis-recovery sample		Crisis sample		Recovery sample	
	Unemployment	Inflation	Unemployment	Inflation	Unemployment	Inflation
	Euro	Euro	Euro	Euro	Euro	Euro
Greece	**0.35**	−0.07	**0.43**	−0.10	−0.14	0.24
Luxembourg	0.11	−0.11	−0.36	−0.19	**0.24**	0.27
Austria	−0.08	−0.20	0.06	−0.41	−0.31	0.23
Belgium	−0.27	0.13	−0.16	0.06	−0.46	0.21
Finland	−0.31	0.10	−0.36	0.02	0.11	−0.14
France	−0.43	−0.11	−0.72	0.08	−0.59	−0.38
Netherlands	−0.46	−0.21	**−0.83**	−0.18	−0.63	−0.27
Ireland	−0.55	−0.16	−0.60	−0.23	−0.94	0.00
Portugal	−0.59	−0.03	−0.36	−0.25	**−0.98**	0.30
Spain	−0.60	0.07	−0.74	0.18	−0.96	0.41
Italy	−0.68	0.23	−0.47	−0.30	0.04	−0.07
Germany	**−0.76**	−0.19	0.02	0.10	−0.84	0.42
Lithuania	0.67	−0.65	–	–	0.67	−0.65
Slovakia	−0.22	−0.10	−0.46	−0.61	−0.75	0.44
Latvia	−0.72	0.03	–	–	−0.72	0.03
Cyprus	−0.74	0.18	−0.86	−0.12	−0.85	0.20
Malta	−0.79	−0.10	0.25	−0.25	−0.79	−0.10
Estonia	−0.87	−0.50	−0.35	−0.73	−0.58	0.00
Slovenia	−0.89	0.37	−0.91	0.35	−0.86	0.18

Notes: Euro = net support for the euro. Correlations coefficients for the full sample are based on 19 observations (10 for the crisis sample and 9 for the recovery sample). The outlier countries as utilised in Table 2.A8 are shown in bold.

Table 2.A10 Probit analysis (individual level), marginal effects, EA-19, C: 2008–2013, R: 2013–2017

Regression	(1)	(2)	(3)	(4)	(5)	(6)
Sample	C	R	C	R	C	R
Level	–	–	PNE	PNE	PPE	PPE
Female	−4.1***	−2.1***	−3.5***	−1.5***	−3.2***	−1.5***
	(−17.97)	(−8.96)	(−14.26)	(−6.47)	(−12.13)	(−5.85)
Age: 25–44	−1.5***	−1.4**	−1.2**	−1.1**	−0.7	−0.2
	(−3.21)	(−2.54)	(−2.46)	(−1.97)	(−1.33)	(−0.42)
Age: 45–64	0.5	0.3	1.0**	0.8	1.2**	1.9***
	(1.02)	(0.49)	(2.03)	(1.45)	(2.26)	(3.37)
Age: 65+	3.0***	3.6***	3.2***	3.7***	2.4***	4.2***
	(5.83)	(6.39)	(5.97)	(6.58)	(3.97)	(6.75)
Married	2.8***	3.2***	2.5***	2.9***	1.5***	1.7***
	(11.16)	(12.42)	(9.15)	(10.95)	(5.12)	(5.95)
Education: 16–19	10.1***	8.0***	9.4***	7.4***	8.0***	6.1***
	(28.68)	(20.65)	(25.44)	(19.15)	(18.98)	(13.86)
Education: 20+	18.9***	15.4***	17.3***	13.9***	15.6***	12.3***
	(51.53)	(39.01)	(44.42)	(34.66)	(35.14)	(27.10)
Unemployed	−7.5***	−8.7***	−6.2***	−7.2***	−1.5***	−1.7***
	(−17.09)	(−19.27)	(−13.63)	(−16.24)	(−3.17)	(−3.75)
Unemployment perceptions	–	–	−6.4***	−4.5***	−6.1***	−7.0***
	–	–	(−18.22)	(−12.96)	(−15.43)	(−17.41)
Inflation perceptions	–	–	−4.0***	−4.1***	−2.6***	−1.3***
	–	–	(−13.43)	(−12.01)	(−9.52)	(−4.60)
Economy perceptions	–	–	9.4***	11.4***	9.5***	9.3***
	–	–	(29.27)	(35.34)	(24.53)	(23.78)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	139,175	127,571	122,765	122,812	102,259	103,240

Notes: C = crisis; R = recovery; PNE = perceptions national economy; PPE = perceptions personal economy; Obs. = observations. Coefficients display marginal effects. Z-statistics are placed beneath the coefficients between parentheses. *** $p < 0.01$.

Table 2.A11 Probit analysis (individual analysis), predicted probabilities, EA-19, 1999–2017

Regression	(1)	(2)	(3)
Sample	FS	BC	CR
Male[a]	0.76***	0.77***	0.76***
	(861.26)	(579.57)	(638.99)
Female	0.72***	0.70***	0.73***
	(825.79)	(529.22)	(639.14)
Age: 15-24[a]	0.75***	0.75***	0.74***
	(325.91)	(235.02)	(225.21)
Age: 25–44	0.73***	0.73***	0.72***
	(645.37)	(453.29)	(462.78)
Age: 45–64	0.74***	0.74***	0.74***
	(708.1)	(459.95)	(541.74)
Age: 65+	0.75***	0.71***	0.77***
	(555.73)	(318.66)	(459.64)
Single[a]	0.72***	0.71***	0.72***
	(654.18)	(433.91)	(489.55)
Married	0.75***	0.74***	0.75***
	(972.21)	(632.53)	(744.38)
Education: 2–15[a]	0.64***	0.64***	0.64***
	(414.01)	(301.28)	(289.59)
Education: 16–19	0.73***	0.73***	0.73***
	(741.8)	(481.09)	(566.38)
Education: 20+	0.82***	0.82***	0.81***
	(818.33)	(526.85)	(625.94)
Not Unemployed[a]	0.74***	0.74***	0.75***
	(1157.51)	(763.05)	(872.0)
Unemployed	0.66***	0.67***	0.67***
	(270.62)	(163.81)	(221.94)
Country fixed effects	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes
Obs.	474,712	207,966	266,746

[a]Reference category for estimating marginal effects.
Notes: FS = full sample; BC = before crisis; CR = crisis-recovery; Obs. = observations. Coefficients display predicted probabilities. Z-statistics are placed beneath the coefficients between parentheses. *** $p < 0.01$.
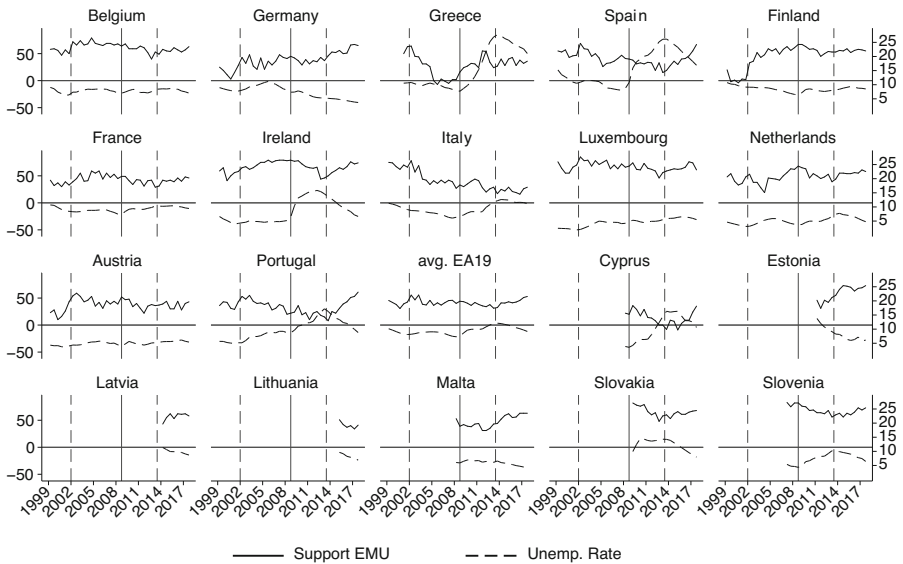
Fig. 2.A2 Unemployment and net support for the euro, EA19, 1999–2017
Data sources: Standard EB51-EB88.

Appendix 3: Transforming Eq. (2.1) into Eq. (2.2)

In the baseline model (2.1), net support for the euro is estimated as a function of unemployment, inflation, growth of GDP per capita and control variables deemed to be of potential importance:

$$\text{Support}_{it} = \alpha_i + \beta_1 \text{Unemployment}_{it} + \chi_1 \text{Inflation}_{it} + \delta_1 \text{Growth}_{it} + \phi_1 Z_{it} + w_{it}$$
(2.1)

where Support_{it} is the net support for the euro for country i during period t; Unemployment_{it}, Inflation_{it}, Growth_{it}, and Z_{it} are respectively unemployment, inflation and growth of GDP per capita and control variables deemed to be of potential importance for country i during period t. α_i depicts a country-specific constant term and w_{it} is the error term. As we utilize a Feasible Generalized Least Square (FGLS) estimation approach, time dummies are not included in our baseline estimation, as they are mutually exclusive with FGLS.

The Issue of Endogeneity

When running regressions such as in Eq. (2.1), one must be aware of the possibility that the right-hand side variables (unemployment, inflation and growth) might be endogenous (affected by a common event) or stand in a bi-directional relationship

with support (a low level of support might lead to a self-fulfilling prophecy, speeding up and worsening an existing downturn). Therefore, we estimate the model by means of dynamic ordinary least squares (DOLS),[15] a method that controls for endogeneity of the regressors (Stock & Watson, 1993; Wooldridge, 2009).[16]

It can be shown that by decomposing the error term and 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 baseline regression, which does not control for endogeneity and reflects a situation in which all adjustments have been made, has already been depicted in Eq. (2.1) above. Within Eq. (2.1) w_{it} is the iid-N error term, with the properties of the classical linear regression model. Controlling for endogeneity requires the decomposition of the error term w_{it} into the endogenous changes of the right-hand side variables, which are correlated with w_{it} (the changes in the variables) and the exogenous part of the error term v_{it}; with:

$$
\begin{aligned}
w_{it} = &\sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Unemployment}_{it-p} + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Inflation}_{it-p} \\
&+ \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Growth}_{it-p} + \sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p} + v_{it}
\end{aligned}
\tag{2.1a}
$$

Inserting Eq. (2.1a) into Eq. (2.1) leads to the following Eq. (2.1b) in which all explanatory variables from the baseline model can be considered exogenous:

$$
\begin{aligned}
\text{Support}_{it} = &\alpha_i + \beta_1 \text{Unemployment}_{it} + \chi_1 \text{Inflation}_{it} + \delta_1 \text{Growth}_{it} + \phi_1 Z_{it} + \\
&\sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Unemployment}_{it-p} + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Inflation}_{it-p} + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Growth}_{it-p} + \\
&\sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p} + v_{it}
\end{aligned}
$$

$$
\tag{2.1b}
$$

with α_i representing country fixed effects and Δ indicating that the variables are in first differences; the error term v_{it}, Unemployment, Inflation and Growth become

---

[15] A prerequisite for using DOLS is that the variables entering the model are non-stationary and that all the series are in a long-run relationship (cointegrated). In our case, all series are integrated of order 1, i.e. they are I(1) (and thus non-stationary); non-stationarity of inflation and growth of GDP per capita is due to non-stationarity (non-constancy) of the variance of these series, and they are cointegrated. The panel unit root tests and Kao's residual cointegration test are displayed in Tables 2.A5 and 2.A6.

[16] Why is the control for endogeneity so important? Endogeneity implies a correlation between the error term and the RHS variables of the equation. Ignoring endogeneity of the RHS variables can lead to biased (distorted) coefficients; i.e. they may become under- or overestimated and appear to be significant when they are not or vice versa.

exogenous, and the coefficients β_1, χ_1, δ_1 and ϕ_1 follow a t-distribution. In addition, υ_{it} must fulfil the requirements of the classical linear regression model. Fulfilment of these properties allows us to draw statistical inferences concerning the impact of unemployment, inflation, and growth on support for the euro at the national and European level.

Omitted Variables and Autocorrelation

Having found that net support for the euro and the economic variables (unemployment, inflation, and growth) are non-stationary and cointegrated, we can be confident that omitted variables (which are lumped together in the error term) do *not* systematically influence our long-run relationship between support and macroeconomic variables. Omitted variables could include macroeconomic variables of potential importance, such as the change in the euro/US dollar exchange rate and the interest rate (Banducci et al., 2003, 2009; and Hobolt & Leblond, 2014), or socio-political factors such as positive attitudes towards EU membership (Banducci et al., 2009; Hobolt & Leblond, 2014), consumer confidence (Hobolt & Leblond, 2014), as well as social indicators, such as measures of income inequality and poverty rates, all of which have most likely deteriorated within the periphery countries of the EA-12.

Even though the error term is stationary [I(0)], which is a characteristic of cointegration, *autocorrelation of the error terms might still be a problem that must be fixed*. We do so by applying the two-step FGLS procedure. In a first step, we collect the $\widehat{\upsilon}_{it}$ s from Eq. (2.1b), which has been estimated by means of DOLS. Thereafter, we estimate ρ_1, the first-order autocorrelation[17] coefficient, via OLS based on Eq. (2.1c).

$$\widehat{\upsilon}_{it} = \rho_1 \widehat{\upsilon}_{it-1} + u_{it}. \tag{2.1c}$$

Since the coefficient ρ_1 is usually unknown (as in our case), it has been estimated (giving us $\widehat{\rho}_1$) by means of the Cochrane-Orcutt method (see Pindyck & Rubinfeld, 1991), which is an FGLS procedure. In a second step we transform all variables of Eq. (2.1b), which can be described by the following formulas (2.1d):

$$
\begin{aligned}
&\text{Support}^*_{it} = \text{Support}_{it} - \widehat{\rho}_1 \text{Support}_{it-1}, \\
&\text{Unemployment}^*_{it} = \text{Unemployment}_{it} - \widehat{\rho}_1 \text{Unemployment}_{it-1}, \\
&\text{Inflation}^*_{it} = \text{Inflation}_{it} - \widehat{\rho}_1 \text{Inflation}_{it-1}, \\
&\text{Growth}^*_{it} = \text{Growth}_{it} - \widehat{\rho}_1 \text{Growth}_{it-1}, \\
&Z^*_{it} = Z_{it} - \widehat{\rho}_1 Z_{it-1}
\end{aligned} \tag{2.1d}
$$

---

[17]Higher orders of autocorrelation were not present.

where the differences of the explanatory variables are transformed in exactly the same way as the variables in levels.

Correcting for autocorrelation in the error term via FGLS leads to Eq. (2.2):

$$\text{Support}_{it}^* = \alpha_i + \beta_1 \text{Unemployment}_{it}^* + \chi_1 \text{Inflation}_{it}^* + \delta_1 \text{Growth}_{it}^* + \phi_1 Z_{it}^* +$$

$$\sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Unemployment}_{it-p}^* + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Inflation}_{it-p}^* + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Growth}_{it-p}^* +$$

$$\sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p}^* + u_{it}$$

$$(2.2)$$

with α_i being the country fixed effect and Δ indicating that the variables are in first differences; * indicating that the variables have been transformed (purged from autoregressive processes) and that the new error term u_{it} ($u_{it} = v_{it} - \widehat{\rho}_1 v_{it-1}$) fulfils the requirements of the classical linear regression model (it is free from autocorrelation). Eq. (2.2), which is an improved version of Eq. (2.1b), represents the fixed effects dynamic feasible generalized least squares (FE-DFGLS) approach.

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Chapter 3
Public Support for the Euro

Felix Roth, Lars Jonung, and Felicitas Nowak-Lehmann D.

Abstract The euro as a common currency has recently been the subject of harsh criticism by economists from both sides of the Atlantic, including claims that citizens in some Eurozone countries are turning against it. This contribution argues that, in fact, the euro currently enjoys comfortable popular support in each of the 12 original member states of the Eurozone and that potential upcoming referenda in any of these countries do not appear to pose a threat to the currency. In contrast, popular support for the euro has declined sharply in non-Eurozone EU member states since the recent crisis, with the UK standing out as the country with the most negative view.

Keywords Euro · Public support · Euro area · Non-euro area · UK referendum · Italy · Germany

1 Introduction

Recently the euro as a common currency has been the object of strong criticism by economists on both sides of the Atlantic (e.g. Stiglitz, 2016; Sinn, 2014). This criticism has been inspired by the financial and economic crisis in some Eurozone

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countries and by the slow recovery in the region after the Global Crisis of 2008. Scholars claim that a majority of citizens have turned against the euro in large member states of the Eurozone, such as Germany (Stiglitz, 2016, p. 314) and Italy (Guiso et al., 2016, p. 292, Sinn in Kaiser, 2016a).

In the wake of the vote for Brexit in the UK referendum in June this year, it is argued that knock-on effects in the form of potential upcoming referenda on the euro in the Eurozone (e.g. in Italy) might lead to its break-up (Feldstein, 2016, Stiglitz in Martin, 2016, Stiglitz in Kaiser, 2016b). In addition, it has been postulated that animosity amongst EU member states is at a high (Alesina, 2015, p. 78). This suggests a rising threat to the European project, including the common currency.

These claims concerning the standing of the euro raise the question: How does the public in EU member states actually look upon the common currency at this stage? We are able to provide an answer based on survey data on the popularity of the single currency, which is available from the time of its creation, as polled by TNS-opinion (European Commission, 2016). These data are provided through the Eurobarometer (EB). The euro is a unique currency in the sense that similar time-series evidence does not exist for any other currency.

Our answer draws upon our previous contribution to the VoxEU platform (Roth et al., 2012), where we explored Eurobarometer survey data on public support for the common currency from 1990 to 2012. There we concluded that in the first four years of the crisis (2008–2012), public support for the euro declined only marginally. Now the question is: What has happened in the more recent years regarding public support for the euro?

2   Support for the Common Currency within the Original Eurozone

We present an up-to-date picture of the evolution of public support for the euro until May 2016, adopting our approach in Roth et al. (2016). First, we focus on the original 12 Eurozone member states (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain – the EZ12) that adopted the euro as a physical entity in January 2002. Figure 3.1 shows average net support (in per cent) for the single currency in the EZ12 countries over a 27-year period from 1990 to 2016.

Figure 3.1 leads us to the following conclusions:

- Over the 27-year time period, a majority of citizens within the EZ12 have supported the single currency (with average net support exceeding 15% at all times).
- Since the introduction of the euro in 1999, a large majority of EZ12 citizens have supported the euro (with average net support exceeding 30%).
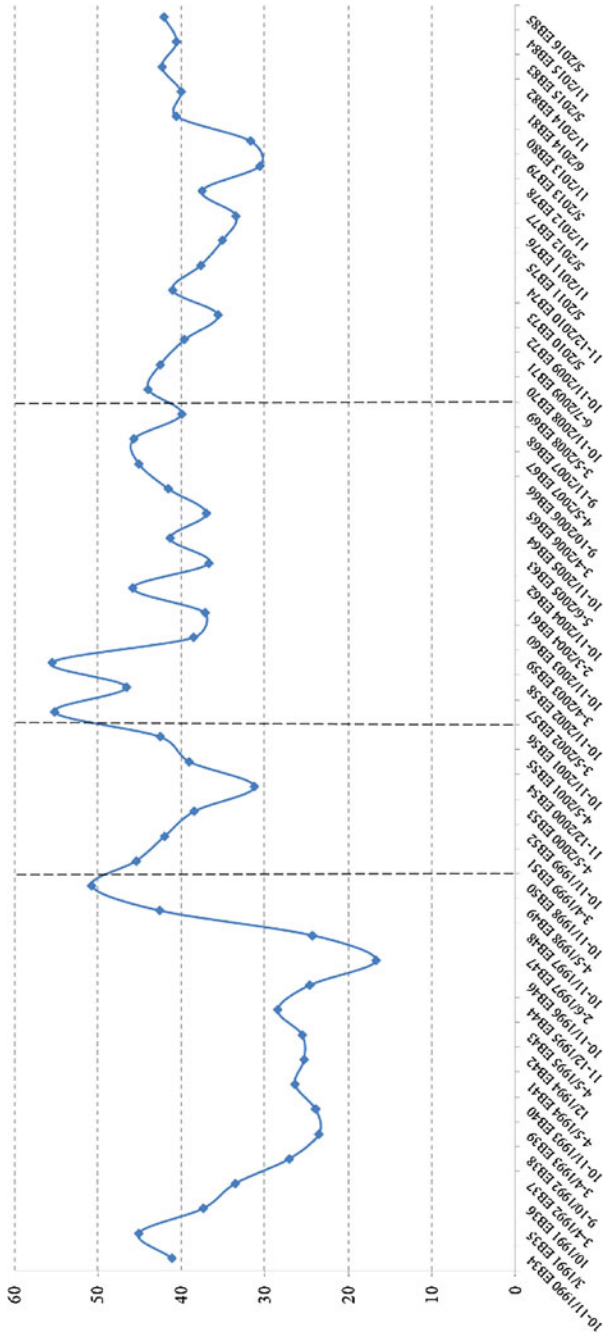
Fig. 3.1 Average net support (in %) for the single currency in the EZ12 countries, 1990–2016

Notes: The y-axis displays net support in percent. Since the figure depicts net support, all values above 0 indicate that a majority of the respondents support the single currency. The dashed lines distinguish the introduction of the euro as a bookkeeping entity in January 1999, the actual circulation of the euro in January 2002, and the start of the financial crisis in September 2008. Data for EB45 were not available. Population weights are applied. Net support is measured as the number of 'For' responses minus 'Against' responses and is constructed according to the equation: Net support = (For − Against)/(For + Against + Don't Know).

Source: Fig. 3.1 is an updated version of Fig. 1 until 5/2016 (by EB's 82–85) in Roth et al. (2016, p. 948).

- In the eighth year (in May 2016) since the start of the financial crisis, the average net support of 42% surpassed the pre-crisis level of 40% in March–May 2008.

Figure 3.1 gives the aggregate picture. How has support for the euro evolved in the individual members of the EZ12? Figure 3.2 provides an answer. It suggests that:

- Since the introduction of the euro in 1999, aside from short periods in Finland and Greece before the crisis, a majority of citizens in each member state of the EZ12 supported the euro, even in times of crisis.
- From 2008 to 2016, significant increases in support in Greece, Portugal and Germany (26%, 235 and 10% points, respectively) levelled out the fall in net support in other EZ12 countries, ranging from 11 percentage points in Ireland to 55 points in Finland.
- Over the 27-year time period (1990–2016), Italy has always had a pro-euro majority, with the minimum net level of 17% in November 2013, clearly above the majority threshold of 0%.
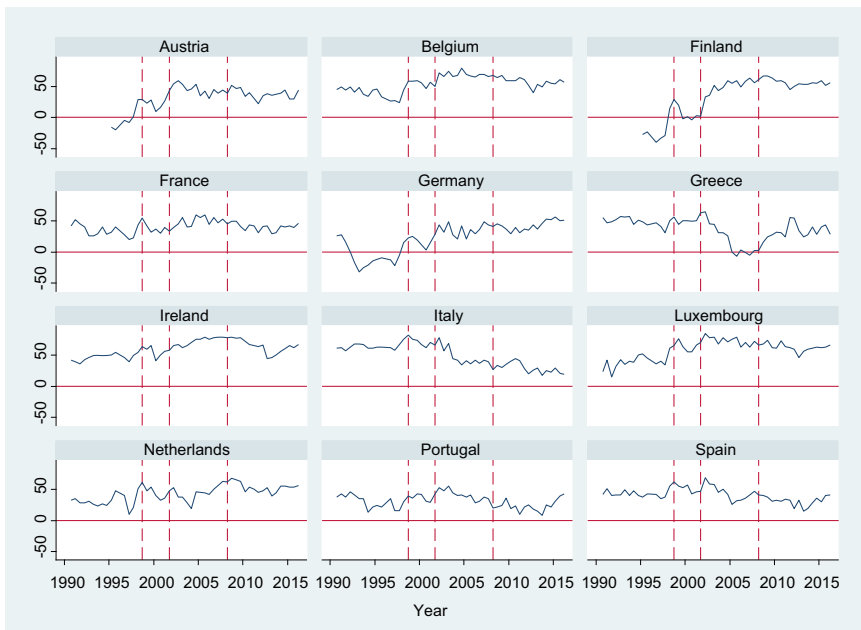
Fig. 3.2 Net support for the single currency in EZ12 countries, 1990–2016 (%)
Source: Fig. 3.2 is an updated version of Fig. A1 until 5/2016 (by EB's 82–85) in Roth et al. (2016, p. 957).

3 Support for the Euro among the New Members of the Eurozone

How has support for the euro evolved in the new member states that joined the euro after its physical introduction in January 2002, that is, in Cyprus, Estonia, Latvia, Lithuania, Malta, Slovakia and Slovenia? After adopting the euro, aside from short periods in Cyprus, a majority of citizens in each country has supported the euro.
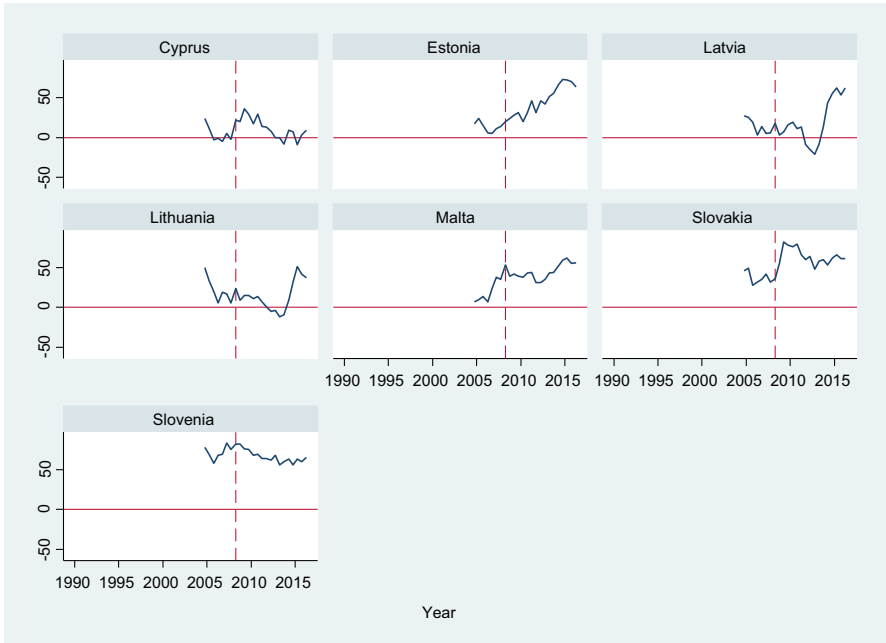
Fig. 3.3 Net support for the euro across seven EZ countries that joined the euro in the period 2004–16 (%)
Source: Fig. 3.3 is an updated version of Fig. A3 until 5/2016 (by EB's 82–85) in Roth et al. (2016, p. 958).

4   Support for the Euro outside the Eurozone

In our 2012 column on VoxEU, we highlighted the distinct fall in public support for
the euro in EU member states outside the Eurozone (Roth et al., 2012). What has
happened since then? Figure 3.4, displaying the evolution of net support for the euro
outside the Eurozone from 1990 to 2016, gives an answer.
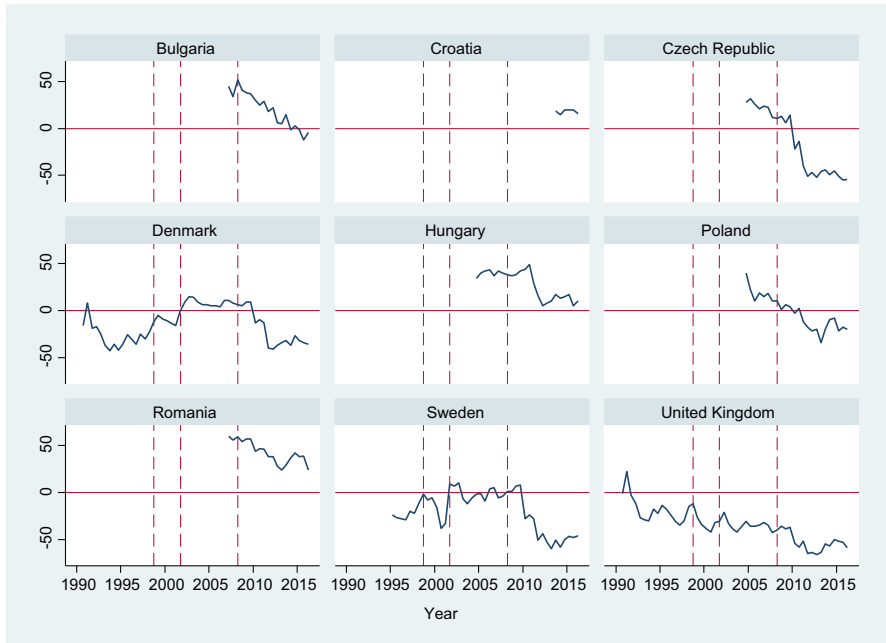
Fig. 3.4 Net support for the single currency in non-EZ countries, 1990–2016 (%)
Source: Fig. 3.4 is an updated version of Fig. A2 until 5/2016 (by EB's 82–85) in Roth et al. (2016,
p. 958).

Figure 3.4 suggests:

- Outside the Eurozone, net support for the euro has declined in a pronounced
  manner. Whereas in Bulgaria, the Czech Republic and Poland a majority of
  citizens supported the euro in the years preceding the crisis, a majority in those
  countries has turned against the euro after the crisis. The decline in support,
  ranging from 65% to 30% points, is marked. In contrast, in Romania and
  Hungary, in spite of a fall of 35% and 28% points, respectively, a majority of
  citizens still support the euro.
- In Denmark and Sweden, the majority have turned away from euro support after
  the crisis. In the run-up to the crisis, there were brief periods in which a majority
  supported the euro.
- The UK is an exceptional case. For the 26 years from 1991 to 2016, a majority of
  citizens were always against the single currency. During the crisis, net support for

the euro reached levels as low as -66% (in November 2012). Given the persistent rejection of the euro, the Brexit vote should not come as a surprise but rather as a reflection of a long-running critical view towards the European project. Therefore, any knock-on effects of the Brexit vote in the form of a break-up of the Eurozone via potential upcoming referenda in the Eurozone are not likely to emerge. On the contrary, recent survey data from July 2016 by the French polling institute, Ifop, suggest an enduring majority support for the euro in the Eurozone (Fourquet et al., 2016, p. 52).

5   Conclusions

Our updated analysis of public support for the common currency over a quarter of a century, from 1990–2016, brings out four major conclusions.

First, in contrast to recent claims, a majority of citizens support the euro in each member state of the original Eurozone, including in Germany and Italy. This was the case even during the peak of the recent crisis.

Second, in contrast to some critical voices, we do not believe, on basis of Eurobarometer data, that any knock-on effects of the Brexit vote in any potential upcoming referenda on EU issues would pose an imminent threat to the euro.

Third, taking into account our earlier findings, which identify the unemployment rate as a key driver of public support for the euro in times of crisis (Roth et al., 2016), a strong job recovery in the Eurozone is likely to increase public support for the euro.

Fourth, popular support for the common currency has fallen sharply after the recent crisis in EU member states that have not adopted the euro. Here the negative sentiment is strongest in the UK.

We suggest the following bottom line: with the exception of short periods in Finland and Greece before the crisis, the evidence points towards majority support for the euro in each original Eurozone member state (including Italy and Germany) before, during and after the crisis. So far, the euro has clear backing from the public. It has adopted the common currency as its own.

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Chapter 4
Crisis and Public Support for the Euro, 1999–2014

Felix Roth, Lars Jonung, and Felicitas Nowak-Lehmann D.

Abstract This contribution analyses the evolution of public support for the single European currency, the euro, from 1990 to 2014 for a 12-country sample of the euro area (EA-12), focusing on the most recent period of the financial and sovereign debt crisis, starting in 2008. We find that citizens' support for the euro on average was marginally reduced during the first six years of the crisis, and that support has remained at high levels. While the pronounced increase in unemployment in the EA-12 throughout the crisis has led to a marked decline in trust in the European Central Bank (ECB), it is only weakly related to support for the euro.

Key words Support for the euro · Euro area crisis · Unemployment · Economic and Monetary Union (EMU) · Trust in the ECB · Panel time series estimation

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1   Introduction

Ever since the plans for a European Monetary Union and a single European currency were announced, social scientists have explored the determinants of public attitudes towards the new currency (see e.g., Banducci et al., 2003, 2009; Brettschneider et al., 2003; Deroose et al., 2007; Gärtner, 1997; Guiso et al., 2014; Hobolt & Leblond, 2009, 2014; Hobolt & Wratil, 2015; Kaltenthaler & Anderson, 2001). This study falls into this area of research by analysing the longest time series collected to date for public support for the single currency, covering the period 1990–2014 for a 12-country sample of the euro area (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain – the EA-12).

We analyse the period 1990–1998 solely on a descriptive basis, before focusing on the period since the establishment of the euro (1999–2014) in the econometric analysis, making a distinction between the pre-crisis years 1999–2008 and the crisis years 2008–2014.[1] Our study takes its inspiration from the observation that citizens' trust in the European Central Bank (ECB) fell significantly during the financial and sovereign debt crisis that started in 2008 (see e.g., Ehrmann et al., 2013; Roth et al., 2014; Wälti, 2012). This raises the question: has the euro, the currency supplied by the ECB, also suffered a loss in public support due to the crisis, similar to the fall in trust in the ECB?[2,3]

In line with the literature (Guiso et al., 2014, p. 1, and Hobolt & Leblond, 2014, p. 132, and Hobolt & Wratil, 2015, p. 238), our analysis reveals that on average there is no empirical evidence of a significant erosion of citizens' support in times of crisis. It remains largely unchanged. However, in contrast to the above-mentioned literature, we detect distinct differences in the time series of public support within the individual EA-12 countries in times of crisis. Estimating our panel time series data with the help of a fixed-effects dynamic feasible generalized least squares (FE-DFGLS) approach, we detect that these differences do not seem to be affected by inflation or growth of GDP per capita, but they are – by and large – negatively affected by unemployment.

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[1]We identify the bankruptcy of Lehman Brothers in September 2008 as the peak of the financial crisis and the start of the economic crisis. Thus, we distinguish between a pre-crisis period before and a crisis period after this date.

[2]We are aware that a *support* measure, such as support for the euro, is not fully identical to a *trust* measure, such as institutional *trust*. However, the two measures are close enough for us to compare them in our empirical work.

[3]The comparison between public support for the euro and trust in the ECB helps to clarify whether citizens hold the euro per se responsible for the unemployment crisis or whether they hold policymakers and their institutions accountable. Being a centerpiece of European integration, a pronounced decline of support for the euro would endanger the legitimacy of the euro and EMU.

For the quarter century covered by our analysis, the euro has always on average been supported by a majority of the citizens in the euro area and, since its introduction in 1999 – aside from short periods in Finland and Greece – in each individual member state of the EA-12. The suggestion that 'the global economic crisis has sapped support for the euro' (Jones, 2009, p. 1085) finds little empirical support – at least within the first six years of the crisis that we examine.

The remainder of this contribution is structured as follows: Section 2 discusses the role of public support for the euro. Section 3 considers the measurement of public support for the euro and describes the aggregated and individual country patterns. Section 4 specifies the econometric model, the research design and the data utilized. Section 5 presents the econometric results and Section 6 discusses the empirical findings. The last section concludes.

2   The Role of Public Support for the Euro

Why study public support for European monetary unification and the single currency, the euro? Our reply is straightforward: public support plays a crucial role in determining the sustainability of the euro. The glue that holds a monetary union together is the political will to maintain a single currency. The costs and benefits of the euro as perceived by the public are reflected in their support for the currency. By analysing public support, we are able to understand the factors that impact the sustainability of the euro. We highlight three strands of the argument below to support this view.[4]

First, according to Banducci et al. (2003, p. 686), citizens' support for European monetary unification and the euro is critical to evaluate the future of European integration and the potential to move towards supranational governance. Similarly, Kaltenthaler and Anderson (2001, p. 141) argue that citizens' support for the euro functions as 'a crucial test case for whether and why European citizens may be willing to transfer power from the nation state to European institutions'. Following the sovereign debt crisis, De Grauwe (2010, 2014) argues that only deeper European political integration would guarantee the long-term success of EMU (Economic and Monetary Union).

Second, Jonung (2002, pp. 413–421) and Bordo and Jonung (2003) stress that citizens' support is crucial for the political legitimacy of the euro. Weak political legitimacy will undermine the political unity behind it, thus eroding the glue that holds the monetary union together.

Third, high levels of citizens' support can be interpreted as a shared sense of a 'commonality of destiny', which Baldwin and Wyplosz (2009, pp. 327–329) argue

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[4]It is not imperative for a government to follow public opinion. In reality, some governments of the EA-12 acted against public opinion before switching to the euro in 1999, for example, the euro was not supported by a majority of German citizens from 1992 to 1997.

is a prerequisite for the smooth functioning of a currency union. The absence of such sentiment will likely lead to the dissolution of a currency union in the medium to long run. In this context, De Grauwe (2014, p. 133) argues that an important prerequisite for the proper functioning of a currency union might be a socially determined variable, such as solidarity, in contrast to the standard economic criteria found in the theory of optimum currency areas.

In sum, public support for the common currency is an important determinant of the sustainability of a monetary union. Traditionally, this aspect is neglected in assessments of the monetary policy of a nation state, as the existence of the national currency is taken as a self-evident fact. We find no studies, for example, of the popularity of the dollar or the pound. Such popularity data are only available – as far as we know – for the euro. Thus, our data are unique in the context of international comparisons.

3   Public Support for the Euro

3.1   Measuring Public Support for the Single Currency

We construct our measure of public support for the euro from data on responses to Eurobarometer (EB) surveys[5] carried out bi-annually between 10–11/1990[6] and 6/2014 (EB34–EB81). Here, the survey respondents were asked their opinion on several statements: 'Please tell me for each statement, whether you are for it or against it'. One statement was: 'A European Monetary Union with one single currency, the euro'. The respondent could choose from the following answers: 'For', 'Against' or 'Don't Know'. The exact wording of the survey question was adjusted over time in response to the development of the monetary union (see Appendix 2).

The use of this survey question underlies the literature on public attitudes towards the single currency (see e.g., Banducci et al., 2003, 2009; Kaelberer, 2007; Kaltenthaler & Anderson, 2001). Following Gärtner (1997, pp. 488–489), we focus on the average percentage of net support measured as the number of 'For' responses minus 'Against' responses to the above question on the country level.[7]

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[5]Eurobarometer surveys normally cover about 1,000 respondents per member country in the EU. The interviews are conducted face-to-face in the home of the respondent. For each Standard EB survey, new and independent samples are drawn. The basic sampling design in all EU Member States is multistage and random, thereby guaranteeing the polling of a representative sample of the population.

[6]Values depict the month(s) of fieldwork in the respective year. All values are displayed in the legend of the x axis in Fig. 4.1.

[7]Net support is constructed according to the equation: Net support $= \frac{\text{For} - \text{Against}}{\text{For} + \text{Against} + \text{Don't Know}}$ Since the response rate of 'Don't Know' fluctuates over the entire sample (ranging from 0 to 38, with a mean of 8 and a standard deviation of 6), a measure of net support is more appropriate than a measure of support to account for these fluctuations. Still, the two measures are highly correlated at 0.96.

3.2   Support in the EA-12

Figure 4.1 shows average net support for the single currency in the EA-12 country sample from 10–11/1990 to 6/2014.[8,9]

In Fig. 4.1, we identify four distinct phases in the history of the euro during the period 10–11/1990 to 6/2014. The first one covers the 1990s up to the actual establishment of the euro area in January 1999, when irrevocably pegged exchange rates were introduced among the euro area members. This period is characterized by a steady decline of net support from 47% in 3/1991 to 17% in 2–6/1997, with a rapid increase in net support to 51% until 10–11/1998. Whereas the average net support remained positive, net support was indeed negative (≥ -40) in Austria and Finland (1995–1997) and in Germany (1992–1997).

The second period starts with the introduction of the euro as a bookkeeping entity in January 1999 and ends with the launch of the euro as a fully-fledged currency in January 2002. Initially, net support deteriorated by 20 percentage points to 31% until 11–12/2000, increasing again to 55% in 3–5/2002. Net support was negative (≥ -4) only in Finland (1999–2000).

Our third period starts when the euro entered into actual circulation in January 2002. Whereas net support declines to 38% in 10–11/2003, from this time onwards until 3–5/2008, net support remains stable at an average mean level of 41% and a standard deviation of 3.5%. Net support was negative (≥ -7) only in Greece (2005–2007).

Our fourth period begins with the financial and sovereign debt crisis in September 2008. An average mean level of 37% paired with a standard deviation of 4% from 10–11/2008 until 6/2014 suggests that there is no evident break between the pre-crisis and crisis periods. Net support has been positive in each individual EA-12 country. In 6/2014, in the sixth year of the crisis, net support is positioned at 41% (in total values, 67% support the euro vs. 26% who are against it). The summary statistics for the four phases of the population-weighted aggregated times series and the individual observations at the country level are shown in rows 3–10 in Table 4.A1, Appendix 3.

Figure 4.1 and its underlying single-country patterns in Fig. 4.A1 clarify five facts. First, on average, there always existed a majority of EA-12 citizens who supported the euro over the 25-year period. Second, since the establishment of the euro area in 1999, aside from short periods in Finland and Greece in pre-crisis times,

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[8]All individual aggregates for the EA-12 countries are depicted in Fig. 4.A1; the respective summary statistics for all 546 individual observations at the country level can be found in row 12 in Table 4.A1, Appendix 3.

[9]For the aggregation, population weights were applied. Although population-weighted measures are slightly smaller than non-population-weighted measures, with a mean of 375 versus 42%, both are highly correlated at 0.91. The summary statistics are displayed in rows 1 and 2 in Table 4.A1, Appendix 3.
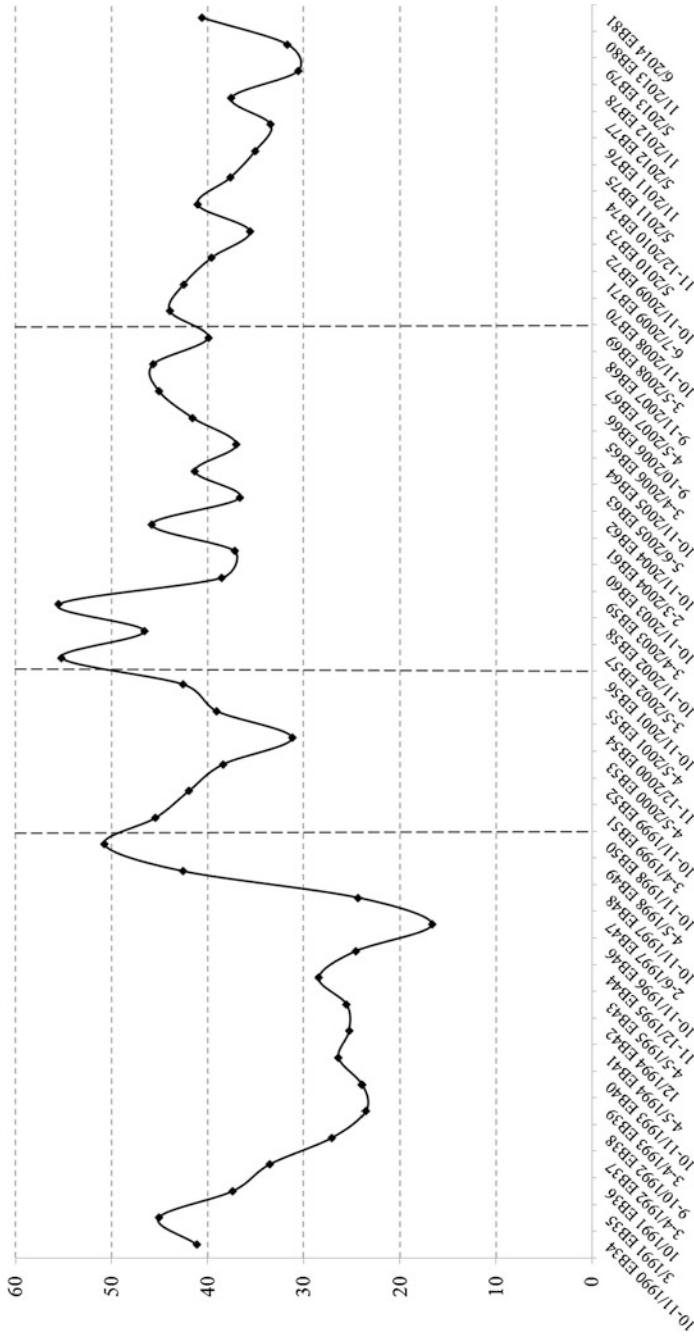
Fig. 4.1 Average Net Support for the Single Currency in the EA-12 Countries, 1990–2014
Notes: Fig. 4.1 is based on 546 individual observations at the country level. Since the figure depicts net support, all values above 0 indicate that a majority of the respondents support the single currency. Data for EB45 are not available.
Data sources: Aggregated data from 1990 to 2014 include observations from EB34–EB81. The aggregate from 1990 to 1994 is only based on EA-10 countries, that is, EA-12 excluding Austria and Finland.

a majority of citizens in each member state of the EA-12 supported the euro, even during the crisis. Third, in 6/2014, in the sixth year of the financial crisis and the fourth year of the sovereign debt crisis, on average, there is actually a slight increase (1 percentage point) in popular support for the euro compared to the pre-crisis period in 3–5/2008. Fourth, in 6/2014 a large majority of EA-12 citizens still supported the euro as a whole (net support >40), and the same was the case in each individual member state of the EA-12 (net support ≥25). Fifth, in comparison to a significant decline in *net trust in the ECB* since September 2008, net support for the euro remained almost stable in the EA-12 on average; it declined only slightly in most individual countries and even increased in some countries (Figs. 4.A4 and 4.A5, Appendix 3).

Table 4.1 Net support and changes in net support in the EA-12, EA-4, EA-8 and individual EA-12 countries, 2008–2014

Country	Levels 3–5/2008	Levels 6/2014	Changes 6/2014–3–5/2008
EA-12	40	41	1
EA-4	34	31	−3
EA-8	42	43	1
Ireland	78	56	−22
Spain	41	28	−13
Belgium	68	58	−10
Netherlands	62	55	−7
Luxembourg	66	61	−5
Finland	61	56	−5
France	45	42	−3
Italy	27	25	−2
Austria	39	39	0
Portugal	20	25	5
Germany	41	53	12
Greece	2	40	38
Non-EA	1	−26	−27
EA-6	38	51	13

Notes: EA-12 includes EA-4 and EA-8 countries. EA-4 includes Greece, Ireland, Portugal, and Spain. EA-8 includes Austria, Belgium, Finland, France, Germany, Italy, Luxembourg, and the Netherlands. Non-EA includes Bulgaria, Czech Republic, Denmark, Hungary, Lithuania, Poland, Romania, Sweden, and the United Kingdom. EA-6 includes Cyprus, Estonia, Latvia, Malta, Slovak Republic, and Slovenia. All country aggregates are weighted by population.
Data sources: EB69 and EB81.

3.3   Support across Member States

To analyse the impact of the crisis on net support for the euro across member states, Table 4.1 compares net support before the crisis (3–5/2008) with the level recorded in the sixth year of the crisis (6/2014) (and the respective change between these two periods). Following Roth et al. (2014, p. 308), values are displayed for EA-12, EA-4, EA-8, and each individual EA-12 country, as well as for a non-EA and an EA-6 country sample.

According to Table 4.1, similar to the findings in Fig. 4.1, average net support in the EA-12 actually increased by 1% point, from 40% to 41% from 3–5/2008 to 6/2014. Only a small difference can be observed between an EA-4 and an EA-8 country sample, with a slight drop in the EA-4 by 3% points and a small increase in the EA-8 by 1% point. The marginal drop in the EA-4 is driven by a decrease in Spain (-13), with a strong increase of 38% points in Greece leveling out the more pronounced decline of 22% points in Ireland. The marginal drop in the EA-8 is driven by Germany, France, and Italy, which either follow their pre-crisis paths with only slight declines of 3% and 2% points (in France and Italy) or even manage to augment support (in Germany), with an increase of 12% points. One EA-8 country, Belgium, registered a noteworthy decline of net support, with a 10%-point decrease.

Thus, although most EA-12 countries follow a stable time pattern, we detect distinct differences within the time series between the EA-4 and EA-8 countries. By focusing almost exclusively on country aggregates, these individual country differences have not been discussed in the existing literature (Guiso et al., 2014, p. 21, Hobolt & Leblond, 2014, p. 132, Hobolt & Wratil, 2015, p. 244–245). The results of Table 4.1 contrast sharply with comparable data showing net trust in the ECB, which declined by 52% points in the EA-12 and by 89% points in the EA-4, with Spain, Ireland, and Greece losing 103%, 71%, and 58% points in net trust, respectively (Table 4.A2, Appendix 3).

In contrast to the stable support in most EA-12 countries, support outside the euro area declined sharply by 27% points, from 1% in 3–5/2008 to -26%.[10] The most pronounced declines occurred in the Czech Republic and Sweden, with respective values of -60% and -59%. In the UK, whereas the decline was still moderate, with a value of -17%, the level of -66 in 11/2012 is the lowest within the EU-27 over 1990–2014. Within the member countries that joined the euro after 2001, support increased by 13% points.[11] We focus on the original EA-12 countries while controlling for the robustness of the econometric results with an EA-18 country sample.[12]

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[10]Support for the euro within non-EA countries is depicted in Fig. 4.A2; summary statistics for all 242 individual observations at the country level are shown in row 13 in Table 4.A1, Appendix 3.

[11]Individual time series data for the EA countries that joined the euro after 2001 are depicted in Fig. 4.A3; the respective summary statistics for all 120 individual observations at the country level are displayed in row 14 of Table 4.A1, Appendix 3.

[12]The countries outside the EA deserve a more detailed econometric analysis not provided here (see e.g., Guiso et al., 2014, p. 32, Hobolt & Leblond, 2014, pp. 133–36, and Hobolt & Wratil, 2015).

4 Empirical Approach

4.1 Model Specification

So far, we have described public support for the euro. Next, we analyse channels potentially influencing support for the euro. We estimate net support for the euro as a function of inflation, growth in real GDP per capita and unemployment.[13] This approach is solidly embedded within three strands of research: 1) the literature on popularity functions (Bellucci & Lewis-Beck, 2011, pp. 192–194, Nannestad & Paldam, 1994, pp. 215–216); 2) a recent study on trust in the ECB (Roth et al., 2014, pp. 306–307); and 3) a study that suggests further work on the macro-economic impact on the popularity of the euro (Banducci et al., 2009, p. 564). Thus, in our baseline model (4.1), aggregated net support for the euro is estimated as a function of inflation, growth of GDP per capita, unemployment, and macro-economic control variables deemed to be important:

$$\text{Support\_euro}_{it} = \alpha_i + \beta_1 \text{Inflation}_{it} + \chi_1 \text{Growth}_{it} + \delta_1 \text{Unemployment}_{it} \\ + \phi_1 Z_{it} + w_{it}, \tag{4.1}$$

Support_euro$_{it}$ is the aggregated net support for the euro in country i during period t; Inflation$_{it}$, Growth$_{it}$, Unemployment$_{it}$ and Z_{it} are, respectively, inflation, growth of GDP per capita, unemployment and macro-economic control variables, such as the change in the euro/US dollar exchange rate for country i during period t. α_i depicts a country-specific constant term, and w_{it} is the error term. Since we utilize an FGLS (Feasible Generalized Least Square) estimation approach, time dummies are not included within our baseline estimation.

4.2 Research Design

We proceed in two steps. First, support for the euro is studied from a macro perspective with a focus on feedback effects between support for the euro and the overall economic situation. Eq. (4.1) is estimated with an EA-12 country sample for 1999–2014, with a total number of 331 observations.[14] Due to a lack of monthly or quarterly data on inflation, GDP and unemployment, it is not possible to cover the period prior to the establishment of the euro (1990–1998). Focusing on the period from 1999 onwards allows us also to compare our econometric results with those from other studies.

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[13] We disregard potential collinearity between growth of GDP per capita and unemployment; see for example Okun (1962), as the correlation between growth of GDP per capita and unemployment is only −0.17 in the EA-12 country sample.

[14] For Greece, time series data from 2001 onwards were taken.

With $t = 31$ and $n = 12$ and thus with a ratio of $t/n = 2.58$, Eq. (4.1) is estimated via panel time series estimation. The analysis differentiates between a pre-crisis (1999–2008) and a crisis period (2008–2014). The matching between the macro-economic variables and the Eurobarometer data follows a procedure proposed by Wälti (2012, p. 597).

Second, to corroborate the findings between inflation and support for the euro from the macro-econometric analysis in regressions 1–3 in Table 4.2, support for the euro is examined from a micro point of view using 136,587 individual observations. In this step, emphasis is put on inflation *perceptions*, controlling for the personal characteristics of the interviewee (age, gender, education, employment and legal status, and political attitudes) as well as perceptions concerning the employment and economic situations.

4.3   Data Used

Data on support for EMU and the euro and trust in the ECB are taken from the biannual Eurobarometer survey. For the descriptive analysis, aggregated data on support for EMU and the euro from 1990 to 2014 include observations from EB34 (10–11/1990) to EB81 (6/2014).[15] For the econometric analysis at the aggregated level, data on support for EMU and the euro and trust in the ECB from 1999 to 2014 include observations from EB51 (3–4/1999) to EB81 (6/2014). Monthly data on inflation (the change in the harmonized index of consumer prices) and unemployment rates are from Eurostat. Unemployment data were seasonally adjusted. Monthly data on GDP[16] and population[17] are taken from Eurostat's quarterly database. To gain monthly observations, data on GDP and population were interpolated.[18] Monthly data on the exchange rate of the euro vis-à-vis the US dollar are based on Eurostat data. A summary of the data utilized for the descriptive analysis (1990–2014) is given in Table 4.A1, Appendix 3; and data for the econometric analysis at the macro level from 1999 to 2014 are given in Table 4.A3, Appendix 3.

Data for the econometric analysis of individual observations are obtained from the ZACAT service from GESIS–Leibniz Institute for the Social Sciences and have

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[15] Aggregated data from EB38–EB71 for support for the EMU and the euro were purchased from TNS-Emnid. Data from EB34–EB37 were drawn from Gesis (2005). Data for EB72–EB81 were drawn from the European Commission (2014).

[16] GDP data were seasonally adjusted and chain-linked with 2005 as the reference year. Data on GDP were missing for Greece from the second semester of 2011 onwards and for Portugal and Ireland from the first semester of 2013 onwards.

[17] Due to inconsistencies and breaks in various country series within the official Eurostat data, values had to be replaced by means of interpolation whenever necessary.

[18] Potential measurement errors from the applied interpolation seem unlikely as the monthly constructed variables correlate with those constructed on a semester basis as high as 0.95 for growth of GDP per capita.

been merged for the period 1999–2011; they include observations from EB51 (3–4/1999) to EB75 (5/2011). The merged variables utilized include support for the euro, inflation perceptions, and socio-economic background variables, including age, gender, education, legal and employment status, political attitudes and perceptions concerning the employment and economic situations. A summary of the descriptive statistics of all variables is given in Table 4.A4, Appendix 3.

5 Econometric Results

5.1 Macro Analysis

We estimate Eq. (4.1) by means of DOLS (dynamic ordinary least squares),[19] a method that permits full control for endogeneity of the regressors (Stock & Watson, 1993; Wooldridge, 2009).[20] To correct for autocorrelation,[21] we apply an FGLS procedure.[22] Both applications lead to the following Eq. (4.2), representing our FE-DFGLS approach (the detailed steps leading from Eqs. (4.1)–(4.2) are explained in Appendix 4).

$$
\begin{aligned}
\text{Support\_euro}_{it}^* = {} & \alpha_i + \beta_1 \text{Inflation}_{it}^* + \chi_1 \text{Growth}_{it}^* + \delta_1 \text{Unemployment}_{it}^* + \phi_1 Z_{it}^* + \\
& \sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Inflation}_{it-p}^* + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Growth}_{it-p}^* + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Unemployment}_{it-p}^* + \\
& \sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p}^* + u_{it}
\end{aligned}
$$

$$(4.2)$$

with α_i being the country fixed effect and Δ indicating that the variables are in first differences. Inflation, growth, and unemployment turn exogenous and the

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[19] A prerequisite for using DOLS is that the variables entering the model are non-stationary and that all the series are in a long-run relationship (cointegrated). In our case, all series are integrated of order 1, that is, they are I(1) (and thus non-stationary); non-stationarity of inflation and growth of GDP per capita is due to non-stationarity (non-constancy) of the variance of these series and they are cointegrated. The panel unit root tests and Kao's residual cointegration test are displayed in Tables 4.A5 and 4.A6, Appendix 3.

[20] Without controlling for endogeneity, existing empirical studies based their conclusions on biased empirical results (see e.g., Banducci et al., 2009, p. 571 and Hobolt & Leblond, 2014, p. 141).

[21] We found first-order autocorrelation to be present.

[22] FGLS (in the ready-to-use EViews commands) is not compatible with time-fixed effects. It picks up shocks and their influence over short- to medium-term periods. In addition, it has been found that running the regression with time-fixed effects (without applying FGLS) does not tackle the problem of autocorrelation of the error term.

Table 4.2 Inflation, unemployment, GDP per capita growth, and net support for the euro: FE-DFGLS estimations (aggregated level), 1999–2014

Regression	(1)	(2)	(3)
Dependent variable	Net support for euro	Net support for euro	Net support for euro
Sample	FS	BC	C
Inflation	−4.0	−12.7***	−2.2
	(2.57)	(4.80)	(2.71)
Unemployment	−1.4**	−1.6	−1.6**
	(0.61)	(2.07)	(0.67)
GDP per capita growth	−0.8	−1.4	−2.2*
	(1.14)	(2.43)	(1.26)
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order correlation	Yes	Yes	Yes
Durbin–Watson statistic	2.38	2.48	2.22
Number of observations	331	211	120
Number of countries	12	12	12
Adjusted R^2	0.79	0.79	0.84

Notes: FS = full sample; BC = before crisis; C = crisis. Data on GDP per capita are missing for Greece from the second semester of 2011 and for Portugal and Ireland from the first semester of 2013 onwards. Standard errors are in parentheses. *** $p < =0.01$. ** $p < =0.05$. * $p < =0.10$.

coefficients β_1, χ_1, δ_1 *and* ϕ_1 follow a t-distribution. This property permits us to derive statistical inferences on the impact of inflation, growth and unemployment.[23] The asterisk (*) indicates that the variables have been transformed (purged from autoregressive processes) and that the error term u_{it} fulfils the requirements of the classical linear regression model (i.e., it is free from autocorrelation).

Table 4.2 shows the econometric results for Eq. (4.2) within our EA-12 country sample. When analysing the full sample (3–4/1999 to 6/2014) with 331 observations, in regression (1) unemployment is significantly (95% confidence level) and negatively (−1.4) related to support for the euro.[24] In contrast to unemployment, inflation and growth of GDP per capita are insignificantly related to support for the euro when estimating our full sample.[25]

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[23] The coefficients β_{2p}, χ_{2p}, δ_{2p} and ϕ_{2p} are linked to the endogenous part of the explanatory variables and do not result in a t-distribution. Since we are not interested in the influence of these 'differenced variables' on support for the euro, they will not be reported here.

[24] The sensitivity analysis in Table 4.A7, Appendix 3, indicates that the most robust relationship is obtained when solely analysing the third and fourth phases in the history of the euro from 3–5/2002 until 6/2014. In this case, even when restructuring the time sample (rows 6–8) and excluding the identified country outliers (rows 18–23), the unemployment coefficient remains robust and highly significant (99% confidence level).

[25] When excluding Greece, inflation tends to be significant (95% confidence level) (see rows 14–23 in Table 4.A7).

   We have argued that the pre-crisis period (3–4/1999 to 3–5/2008) should be kept distinct from the crisis period (10–11/2008 to 6/2014); accordingly, regressions 2 and 3 split the full sample into a pre-crisis period and a crisis period to explore the impact of the crisis on popular support for the euro. Splitting the full sample reveals that the significant effect of unemployment (-1.4) on net support for the euro is driven by the crisis period, in which unemployment is negatively (-1.6) and significantly (95% confidence level) related to net support for the euro.[26] In contrast, whereas inflation is insignificantly related to support for the euro in times of crisis, it is strongly negatively (-12.7) and highly significantly (99% confidence level) related to net support for the euro in the pre-crisis period.[27,28,29]

   The relatively weak coefficient of -1.6 between unemployment and net support for the euro in times of crisis is in clear contrast to a much larger coefficient of -6.6 between unemployment and *net trust in the ECB* in times of crisis (see Table 4.A9, Appendix 3). Thus, in times of crisis, an increase in unemployment exerts an effect on *net trust in the ECB* that is more than four time stronger compared to the effect on net support for the euro. Whereas the pronounced increase in unemployment rates in the EA-12 throughout the crisis – with the exception of Germany, but in particular in the EA-4 – has led to a significant decline in *net trust in the ECB*, it has only led to a slight decline in net support for the euro in the EA-12, in particular in Spain and Ireland.[30] It even followed opposite trends in Greece at the beginning of the crisis. Interestingly, whereas the reduction of unemployment rates in Germany was positively associated with a significant decline in *net trust in the ECB*, it is negatively associated with an increase in net support for the euro, and thus contributes to the weak negative evidence between unemployment and net support for the euro.[31]

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[26]For a comparison of unemployment and net support for the euro in each EA-12 country, see Fig. 4.A6, Appendix 3. The relationship within the EA-12 country sample in times of crisis seems to be driven by the most recent observations (see rows 9–11 and rows 24–29 in Table 4.A7). It also tends to be more robust once Greece is excluded (see rows 9 and 24, 10 and 26 in Table 4.A7), where unemployment and net support are actually positively associated from 10–11/2008 to 11/2011 (see Table 4.A8 and Fig. 4.A6). Due to missing data for growth of GDP per capita, the Greek time series could only be estimated until 11–12/2010.

[27]We also utilized alternative inflation indicators, such as the absolute deviation from the 2% target, as well as including a squared term to estimate a curvilinear relationship. These alternative estimators, however, did not yield any additional insights.

[28]For the behaviour of inflation and net support for each individual EA-12 country, see Fig. 4.A7, Appendix 3.

[29]This highly significant association is driven by the Finnish case and our second phase in the history of the euro (see rows 12–13 and 30–32 in Table 4.A7).

[30]For a comparison of time series between unemployment and net support for the euro, as well as *net trust in the ECB* in each EA-12 country, see Figs. 4.A6 and 4.A8, Appendix 3. For a table of correlation coefficients see Table 4.A8.

[31]See the results of the correlation coefficient for Germany in Table 4.A8, as well as the evolution of time series in Figs. 4.A6 and 4.A8.

We are confident that our econometric analysis has not omitted any important variables, having found that our time series are cointegrated.[32] However, to address concerns over missing variables, we include the change in the euro/US dollar exchange rate, as Banducci et al. (2003, p. 694; 2009, p. 571), Brettschneider et al. (2003, p. 50) and Hobolt and Leblond (2009, 2014, p. 137) stress its importance for support for the euro. The inclusion of the change in the euro/US dollar exchange rate in Table 4.A10, Appendix 3 does not alter our results in any substantial manner – although the growth of GDP per capita renders significant (95% confidence level) in times of crisis. This observation confirms previous empirical results, which find a positive and significant relationship between the change in the euro/US dollar exchange rate and net support for the euro in pre-crisis times. In times of crisis, however, it is insignificantly related to net support for the euro.

To corroborate our results for the complete euro area, we include an EA-6 country sample. Estimating an EA-18 country sample, as shown in Table 4.A11, Appendix 3, does not change the key econometric results in any substantial manner, although inflation is rendered significant (95% confidence level) in times of crisis.

5.2 Micro Analysis

To extend our study of the relationship between the official inflation rate and net support for the euro from regressions 1–3 in Table 4.2, and as Banducci et al. (2009) suggest that the actual economic situation – as summarized in official economic statistics – does not necessarily accord with the perceived economic situation, in Eq. (4.3) we examine the support for the euro based on a probit model and individual data, to account for citizens' perceptions towards inflation.[33] The data set at hand does not allow us to track individuals over time. The equation for the probit model is expressed as follows:

$$P\big(\text{Support\_euro}_{jit} = 1\big) = \alpha_i + \beta \text{Inflation PC}_{jit} + \chi \text{Economic PC}_{jit} \\ + \delta \text{Unemployment PC}_{jit} + \phi Z_{jit} + \gamma_t + \varepsilon_{jit}, \quad (4.3)$$

where P represents the probability with which the euro is supported. The dependent variable (Support_euro$_{jit}$) represents the support for the euro for individual j in

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[32] See Table 4.A6, Appendix 3 and the discussion concerning potential omitted variables in Appendix 4.

[33] To illustrate the difference between the official inflation rate and inflation perception, Fig. 4.A10 compares their behavior within each EA-12 country. These two series are lowly correlated at 0.39.

Table 4.3 Inflation perceptions and support for the euro – probit analysis (individual level), 2003–2011

Regression	(1)	(2)	(3)	(4)	(5)	(6)
Sample	FS	BC	C	FS	BC	C
Level	PNE	PNE	PNE	PPE	PPE	PPE
Inflation perceptions	−3.9***	−4.4***	−2.9***	–	–	−4.4***
	(−12.7)	(−11.6)	(−5.6)	–	–	(−9.9)
Obs.	136,587	92,389	44,198	–	–	44,198

Notes: FS = full sample; BC = before crisis; C = crisis; PNE = perceptions national economy; PPE = perceptions personal economy; Obs. = observations. Coefficients display marginal effects. Z-statistics are placed beneath the coefficients between parentheses. ***$p < 0.01$.

country i at time t and takes on 1 if the individual supports the euro and 0 if the individual does not support the euro. Inflation,[34] Economic and Unemployment PC_{jit} represent the inflation, economic and unemployment perceptions for the national economic situation or personal economic situation for individual j in country i at time t. Z_{jit} represents micro controls including age, gender, education, employment and legal status and political orientation for individual j in country i at time t; α_i represents the country fixed effects; γ_t represents the time-fixed effects; and ε_{jit} represents the error term.

To corroborate the findings between inflation and net support for the euro, Table 4.3 only displays and analyses the value for the β-coefficient in Eq. (4.3) (in other words, the impact of the perception of inflation on support for the euro). Controlling for the above-mentioned specification with a maximum number of 136,587 individual observations, inflation perceptions, in contrast to the official inflation rate, have the expected negative effect in all three samples (Full Sample, Before Crisis and Crisis) for the national economic situation (regressions 1, 2 and 3) as well as the personal economic situation in times of crisis (regression 6). As the values depict the marginal effects, the interpretation of the coefficient in times of crisis is as follows: an individual who identifies inflation to be an important issue either for the national economy or for his/her personal economy in times of crisis is around 2.9 or, respectively, 4.4% less likely to support the euro than an individual who has not identified inflation to be an important issue.

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[34] The best proxy for individual perceptions about inflation is provided by the following question in the Eurobarometer surveys: 'What do you think are the two most important issues (you are)/(OUR COUNTRY is) facing at the moment?' Several possible answers are then given, with 'rising prices/inflation', 'unemployment', 'economic situation', and a range of other responses as possibilities, with a maximum of two options to be chosen by the respondent. The particular inflation perception measure for the personal and national economic situation is then coded as 1 if the respondent identifies inflation as an important issue for herself/himself and for her/his country or 0 if inflation is not identified to be important.

5.3 *Previous Findings*

How do our econometric results for the crisis period 2008–2014 square with previous findings? First, in contrast to Hobolt and Leblond (2014, p. 141), we find a significant and negative relationship between unemployment and net support for the euro in times of crisis.[35,36] Second, similar to previous empirical findings (Roth et al., 2014, p. 310), this negative relationship is four times smaller than the one between unemployment and net trust in the ECB. Third, in contrast to Banducci et al. (2009, p. 571)[37] and Hobolt and Leblond (2014, p. 141),[38] we find a significant and negative relationship between inflation and net support for the euro in pre-crisis times, in line with underlying theoretical literature (Kaelberer, 2007, p. 626). The negative relationship, however, is insignificant in times of crisis. Fourth, at the micro level, we are able to confirm the negative relationship between inflation perception and support for the euro in pre-crisis times, as found by Banducci et al. (2009, p. 576), and we also find a similar negative relationship in times of crisis. These differences in the empirical results suggest the need for further research on the determinants of public support for the euro.

6 Discussion

Our econometric results invite a number of comments concerning the future of the euro. First, how should we interpret the support for the euro in light of the theoretical literature and the first six years of the crisis? Following the arguments by Banducci et al. (2003, p. 686) and Kaltenthaler and Anderson (2001, p. 141), support for the euro within the EA-12 during the crisis period 2008–2014 suggests that there may be scope for further political integration to strengthen the sustainability of the single currency, as argued by De Grauwe (2010, 2014). Following Jonung (2002) and Bordo and Jonung (2003), support for the euro during the crisis indicates that the political glue necessary for the euro is present within the EA-12. In a similar vein, according to the arguments of Baldwin and Wyplosz (2009, pp. 327–329) and De Grauwe (2014,

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[35] Results differ because our analysis: 1) has controlled for potential endogeneity; 2) uses a matching strategy as identified above; and 3) is based on a longer time sample (until 6/2014).

[36] Our result indicates that the claim by Hobolt and Leblond (2014, p. 142), that 'worsening economic conditions lead to increased support for the euro in the event of a very severe economic crisis', needs to be revisited.

[37] Results differ because points (1) and (2), as mentioned above, apply. In addition, our analysis (3) is based on 211 biannual versus 84 annual observations and (4) estimates an extended pre-crisis time-period from 1999 to 2008 versus 2001–07.

[38] Results differ because points (1) and (2), as mentioned above, apply. In addition, (3) the matching of the inflation indicator 'annual' rate of change in HICP to a 'biannual' research design (Hobolt & Leblond, 2014, p. 144) might create measurement errors.

p. 133), the key prerequisite for the smooth functioning of a currency union – the sense of a 'commonality of destiny' or solidarity – is still present within the EA-12.

Second, how should we interpret the fact that the ECB bears the brunt of the blame for the unemployment crisis in the EA-12, as opposed to the actual euro? One could argue that euro-area citizens simply continue to want the euro as their currency and do not hold the euro per se responsible for the unemployment crisis. Instead, they blame policymakers and their institutions. Consequently, the decline in trust in the ECB is part of a larger decline in *systemic trust* due to the crisis, including institutions of democratic governance at the European and national level (see e.g., Ehrmann et al., 2013; Roth et al., 2013). It may be the case that citizens support the euro because the euro is a binary regime from which exit would have worse consequences than staying in (Guiso et al., 2014, p. 32, Hobolt & Leblond, 2014, p. 142). In contrast, the ECB is a policy-making institution that is held accountable by citizens for the crisis.

Finally, the fact that the euro – a centerpiece of European integration – still finds support during the crisis should be viewed as a necessary condition for its survival. The future will show if this support is sufficient to guarantee its existence.

7 Conclusions

Five findings emerge from the analysis presented in this contribution.

First, the analysis covering the 25-year period from 1990 to 2014 for the EA-12 country sample shows that, on average, a majority of citizens has supported the single European currency.

Second, since the establishment of the euro in January 1999, aside from short time periods in Finland and Greece in the pre-crisis period, a majority of citizens in each individual member state of the EA-12 supported the euro, even during the crisis period 2008–2014.

Third, the crisis only slightly dented support for the euro in most EA-12 countries and even increased it in some. This finding contrasts with the evolution of *net trust in the ECB*, which declined in a pronounced way due to the crisis.

Fourth, the difference between net support for the euro and *net trust in the ECB* during the crisis can largely be explained by changes in unemployment rates. Whereas the pronounced increase in unemployment rates in the EA-12 during the crisis – with the exception of Germany, but in particular in the EA-4 – has led to a significant decline in *net trust in the ECB*, it only led to a slight decline in net support for the euro in the EA-12.

Fifth, whereas an insignificant relationship was detected between inflation and net support for the euro during the crisis at the macro level, a negative link was found between citizens' perceptions towards inflation and support for the euro.

Finally, the support shown for the euro both before as well as after the crisis suggests that one of the most important prerequisites for a sustainable monetary union is present within the EA-12. The future will show how well European policymakers manage to sustain this support for the single currency.

Appendix 1: Individual Country Time Series for the EU-27, 1990–2014
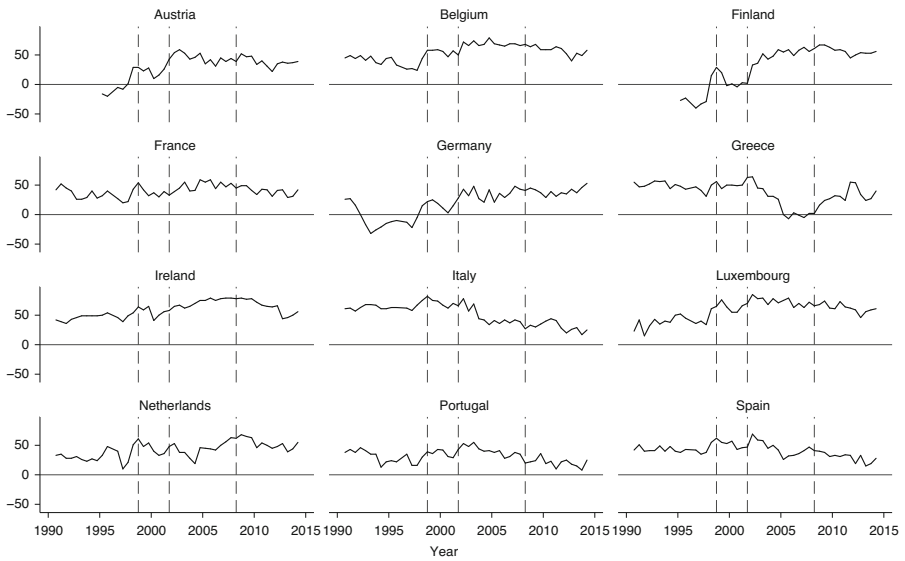
Fig. 4.A1 Net support for the single currency, EA-12 countries, 1990–2014
Data sources: EB34–EB81.
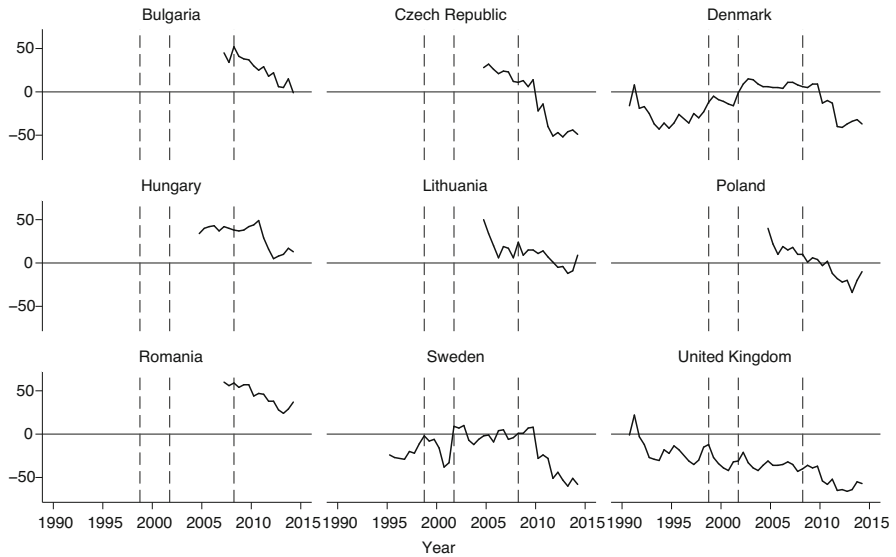
Fig. 4.A2 Net support for the single currency, non-EA countries, 1990–2014
Data sources: EB34–EB81.
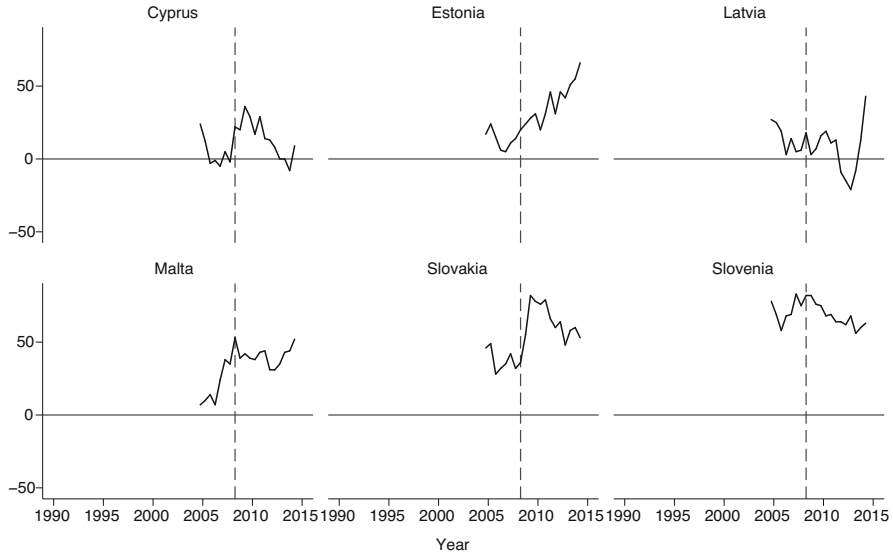
Fig. 4.A3 Net support for the euro, six EA countries that joined EMU after 2001, 2004–2014
Data sources: EB62–EB81.

Appendix 2: A Detailed Breakdown of the Questionnaire over the 25-year Time Period

Over the course of the 25-year period examined in this study, the question of whether a common, single currency is supported has been slightly modified. The wording of the proposals in EB34 to EB37 reads: 'Within this European Economic and Monetary Union, a single common currency replacing the different currencies of the Member States in 5 or 6 years' time.' The wording of the question from EB38 to EB40 reads: 'There should be a European Monetary Union with one single currency replacing by 1999 the (national currency) and all other national currencies of the Member States of the European Community.' After ratification of the Maastricht Treaty, the wording in EB41 was changed to: '(...) Member States of the European Union and European Community.' From EB42 onwards, the 'European Community' was dropped. From EB44 onwards, the 'by 1999′ was dropped. From EB46 onwards, the 'euro' is introduced and the wording 'European Monetary Union' is taken out. From EB48 onwards, the word 'should' is replaced by 'has'. From EB54 onwards, the wording 'replacing the (national currency) and all other national currencies' is dropped and the wording 'European Monetary Union' is reintroduced. In addition, from EB54 onwards the word 'statement' replaced the word 'proposal'. From EB56 to EB72 and onwards, 'There has to be' is dropped. The question in EB56 to EB72 represents the wording as highlighted within our main text. From

EB73 onwards, the 'European Monetary Union' was replaced by the 'Economic and Monetary Union'.

As we are of the opinion that these changes in the framing of the question over time are related to context and time and are not responsible for any significant changes in the responses, we ignore these slight modifications to the survey questions. A similar argument is made by Banducci et al. (2003, p. 690) for the time-period 1990–2000. However, in contrast to Banducci et al. (2009, p. 570), who argue that an alteration in the wording of the question prevented them from comparing the 1990–2000 period with the 2000–07 period, we believe that the introduction of the new wording in EB 54 in 11–12/2000 (as described above) should not prevent an empirical analysis from making a comparison. The change in values from 4–5/2000 to 11–12/2000, with a decrease of 7% points from 38% to 31% is well situated within the pattern of the 25-year time series (see here also the summary statistics in row 1 in Table 4.A1, Appendix 3).

Appendix 3: Descriptive Statistics and Test Results

Table 4.A1 Summary statistics for the descriptive analysis

Row	Variable	Time period	Figure	N	Mean	Std. dev.	Min	Max
1	NSE – PWA EA-12	10–11/1990 to 6/2014	1	47	37	8	17	56
2	NSE – NPWA EA-12	10–11/1990 to 6/2014	1	47	42	9	19	59
3	NSE – PWA EA-12: Phase 1	10–11/1990 to 10–11/1998	1	16	31	9	17	51
4	NSE – PWA EA-12: Phase 2	3–4/1999 to 10–11/2001	1	6	40	5	31	45
5	NSE – PWA EA-12: Phase 3	3–5/2002 to 3–5/2008	1	13	44	6	37	56
6	NSE – PWA EA-12: Phase 4	10–11/2008 to 6/2014	1	12	37	4	31	44
7	NSE – IOCL EA-12: Phase 1	10–11/1990 to 10–11/1998	1	174	34	24	−40	82
8	NSE – IOCL EA-12: Phase 2	3–4/1999 to 10–11/2001	1	72	42	20	−4	76
9	NSE – IOCL EA-12: Phase 3	3–5/2002 to 3–5/2008	1	156	49	19	−7	85
10	NSE – IOCL EA-12: Phase 4	10–11/2008 to 6/2014	1	144	44	16	8	79
11	NSE – IOCL EU-27	10–11/1990 to 6/2014	A1– A3	908	29	31	−66	85

(continued)

Table 4.A1 (continued)

Row	Variable	Time period	Figure	N	Mean	Std. dev.	Min	Max
12	NSE – IOCL EA-12	10–11/1990 to 6/2014	A1	546	42	21	−40	85
13	NSE – IOCL Non-EA	10–11/1990 to 6/2014	A2	242	−4	30	−66	60
14	NSE – IOCL EA-6	10–11/2004 to 6/2014	A3	120	34	26	−21	83

Notes: NSE = net support for euro; PWA = population weighted average; NPWA = non-population weighted average; IOCL = individual observations at the country level.
Data sources: EB34–EB81.

Table 4.A2 Net trust and changes in net trust in the ECB in EA-12, EA-4, EA-8 and individual EA-12 countries, 2008–14

Country	Levels 3–5/2008	Levels 6/2014	Changes 6/2014–3–5/2008
EA-12	29	−23	−52
EA-4	34	−55	−89
EA-8	27	−14	−41
Spain	40	−63	−103
Ireland	47	−24	−71
Portugal	39	−32	−71
Greece	1	−57	−58
Italy	21	−30	−51
Germany	35	−11	−46
Netherlands	70	24	−46
Belgium	42	6	−36
Luxembourg	42	8	−34
France	10	−21	−31
Austria	20	−5	−25
Finland	49	33	−16

Notes: Updated version of Table 1, as appears in Roth et al. (2014, p. 308). EA-12 includes EA-4 and EA-8 countries. EA-4 includes Greece, Ireland, Portugal and Spain. EA-8 includes Austria, Belgium, Finland, France, Germany, Italy, Luxembourg and the Netherlands. All country aggregates are population weighted.
Data sources: EB69 and EB81.

Table 4.A3 Summary statistics for the macro analysis, 1999–2014

Variable	N	Mean	Std. dev.	Min.	Max.
Net support for euro	368	45.5	18.4	−7	85
Inflation	368	1.1	0.8	−1.6	3.8
GDP per capita growth	356	0.5	1.6	−8	6
Unemployment rate	368	8.3	4.4	1.9	27.8
Change in euro/US dollar exchange rate	368	0.7	6.2	−15.3	8.9
Net trust in ECB	368	20.2	24.8	−65	70

Notes: N = number of observations; Std. dev. = Standard deviation; Min. = minimum; Max. = maximum. For Greece, the net support and net trust time series start from 2001 onwards, and growth of GDP per capita is missing from the second quarter of 2011 onwards. For Ireland and Portugal, growth of GDP per capita is missing from the fourth quarter of 2012 onwards.
Data sources: EB51–EB81 and Eurostat.

Table 4.A4 Summary statistics for the micro analysis, 2003–11

Time Period	Variable	Obs.	Mean	Std. dev.	Min.	Max.
Full sample	Support for euro	136,587	0.75	0.43	0	1
	Inflation perception (PNE)	136,587	0.22	0.41	0	1
	Unemployment perception (PNE)	136,587	0.43	0.5	0	1
	Economic perception (PNE)	136,587	0.3	0.46	0	1
	Age	136,587	49.7	16.5	15	99
	Gender	136,587	0.48	0.5	0	1
	Education	136,587	18.3	4.7	2	85
	L–R placement	136,587	1.9	0.75	1	3
	Unemployed	136,587	0.06	0.24	0	1
	Married	136,587	0.67	0.47	0	1
Before crisis	Support for euro	92,389	0.75	0.43	0	1
	Inflation perception (PNE)	92,389	0.21	0.41	0	1
	Unemployment perception (PNE)	92,389	0.43	0.5	0	1
	Economic perception (PNE)	92,389	0.24	0.43	0	1
	Age	92,389	49.3	16.5	15	99
	Gender	92,389	0.48	0.5	0	1
	L–R placement	92,389	1.9	0.75	1	3
	Education	92,389	18.2	4.7	2	85
	Unemployment	92,389	0.06	0.24	0	1
	Married	92,389	0.67	0.47	0	1
Crisis	Support for euro	44,198	0.75	0.43	0	1
	Inflation perception (PNE)	44,198	0.24	0.43	0	1
	Unemployment perception (PNE)	44,198	0.44	0.5	0	1
	Economic perception (PNE)	44,198	0.41	0.5	0	1
	Inflation perception (PPE)	44,198	0.41	0.49	0	1
	Unemployment perception (PPE)	44,198	0.17	0.38	0	1
	Economic perception (PPE)	44,198	0.27	0.44	0	1
	Age	44,198	50.6	16.5	15	97

(continued)

Table 4.A4 (continued)

Time Period	Variable	Obs.	Mean	Std. dev.	Min.	Max.
Crisis	Gender	44,198	0.49	0.5	0	1
	L–R placement	44,198	1.9	0.75	1	3
	Education	44,198	18.5	4.7	2	73
	Unemployment	44,198	0.08	0.27	0	1
	Married	44,198	0.68	0.47	0	1

Notes: Obs. = observations; Std. dev. = Standard deviation; Min. = minimum; Max. = maximum. Education is measured as 'How old were you when you stopped full-time education?'. Only a few observations had extreme values for education (e.g., 85). *PNE* = perceptions national economy; *PPE* = perceptions personal economy. The proxy for individual perceptions about inflation at the national economic situation (PNE) has been available within the standard EBs from 3–4/2003 (EB59) onwards and at the personal economic situation (PPE) within the standard EBs from 10–11/2008 (EB70) onwards.
Data sources: EB59–EB75.

Table 4.A5 Pesaran's CADF panel unit root tests, EA-12 countries

Variable	Observations	CADF-P-statistic	Probability
Net support for the euro	368	23.47	0.49
Inflation	368	25.54	0.38
Unemployment	368	15.74	0.90
GDP per capita growth	356	17.98	0.80
Change in euro/US dollar exchange rate	368	0.00	1.00
Net trust in the ECB	368	31.10	0.15

Notes: H_0: series has a unit root (individual unit root process); H_a: at least one panel is stationary. Table 4.A5 shows that all series have a unit root. A time trend and two or three lagged differences were utilised.

Table 4.A6 Kao's residual cointegration test, EA-12 countries

Cointegration between the following set of variables:	Included observations	ADF-t-statistic	Probability
Net support for euro, inflation, GDP per capita growth, unemployment	372	2.90	0.002
Net trust in ECB, inflation, GDP per capita growth, unemployment	372	4.59	0.000

Notes: H_0: no cointegration. Table 4.A6 shows that the series are cointegrated and thus stand in a long-run relationship. Cointegration could also be established for the pre-crisis and the crisis periods.

Table 4.A7 Sensitivity analysis between unemployment, inflation and net support for the euro: FE-DFGLS estimations (aggregated level), 1999–2014

Row	Specification change	Unemployment	Std. err.	Inflation	Std. err.	Obs.	Cou.	Adj. R^2	DW stat.
1	No change	−1.4**	0.61	−4.0	2.57	331	12	0.79	2.38
Exclusion of outliers									
2	Greece	**−1.6*****	0.60	−5.3**	2.65	313	11	0.77	2.40
3	Greece + Spain	−1.7*	0.88	−5.1*	2.79	284	10	0.77	2.39
Restructuring of time sample									
4	3–4/1999–11/2013	−1.4**	0.64	−4.7*	2.66	322	12	0.79	2.35
5	3–4/1999–11/2012	−1.2*	0.70	−5.5**	2.70	304	12	0.80	2.35
6	3–5/2002–6/2014	**−1.7*****	0.48	−3.0	2.40	276	12	0.82	2.29
7	3–5/2002–11/2013	**1.6*****	0.50	−3.8	2.45	267	12	0.82	2.26
8	3–5/2002–11/2012	**−1.6*****	0.57	−4.4*	2.52	249	12	0.83	2.26
9	10–11/2008–6/2014	−1.6**	0.67	−2.2	2.71	120	12	0.84	2.22
10	10–11/2008–11/2013	−1.0	0.72	−4.6	2.99	111	12	0.84	2.18
11	10–11/2008–11/2012	−0.38	0.98	−5.9*	3.15	93	12	0.87	2.19
12	3–4/1999–3–5/2008	−1.6	2.07	**−12.7*****	4.80	211	12	0.79	2.48
13	3–5/2002–3–5/2008	−2.8	2.15	−6.2	5.19	156	12	0.79	2.52
Restructuring of time sample and exclusion of outliers									
14	3–4/1999–11/2013 – Greece	**−1.6*****	0.63	−6.8**	2.83	304	11	0.77	2.38
15	3–4/1999–11/2013 – (Greece + Spain)	−1.4	0.89	−5.9**	2.87	276	10	0.79	2.37
16	3–4/1999–11/2012 – Greece	−1.4**	0.69	−7.1**	2.79	286	11	0.77	2.37
17	3–4/1999–11/2012 – (Greece + Spain)	−1.2	0.93	−6.8**	2.95	260	10	0.78	2.40
18	3–5/2002–6/2014 – Greece	**−1.8*****	0.41	−4.9**	2.24	258	11	0.77	2.19
19	3–5/2002–6/2014 – (Greece + Spain)	**−2.2*****	0.60	−4.9**	2.29	234	10	0.77	2.21
20	3–5/2002–11/2013 – Greece	**−1.7*****	0.42	−5.7**	2.26	249	11	0.77	2.16
21	3–5/2002–11/2013 – (Greece + Spain)	**−2.0*****	0.60	−5.7**	2.30	226	10	0.80	2.19
22	3–5/2002–11/2012 – Greece	**−1.7*****	0.47	**−6.5*****	2.34	231	11	0.78	2.16
23	3–5/2002–11/2012 – (Greece + Spain)	**−1.9*****	0.62	**−6.3*****	2.37	210	10	0.78	2.22

24	10–11/2008–6/2014 – Greece	**−2.1*****	0.67	−2.8	2.66	115	11	0.84	2.16
25	10–11/2008–6/2014 – (Greece + Spain)	−2.5**	0.71	−2.4	2.79	104	10	0.84	2.12
26	10–11/2008–11/2013 – Greece	−1.4**	0.70	−5.4*	2.90	106	11	0.84	2.12
27	10–11/2008–11/2013 – (Greece + Spain)	−1.3	1.11	−5.1	3.11	96	10	0.87	2.08
28	10–11/2008–11/2012 – Greece	−0.99	0.95	−6.9**	3.02	88	11	0.87	2.10
29	10–11/2008–11/2012 – (Greece + Spain)	−0.11	1.31	−7.5**	3.21	80	10	0.86	2.12
30	3–4/1999–3–5/2008 – (Greece + Spain)	−1.7	2.19	−13.2**	5.12	180	10	0.75	2.43
31	3–4/1999–3–5/2008 – Finland	0.62	1.86	−8.6*	4.93	193	11	0.78	2.43
32	3–5/2002–3–5/2008 – (Greece + Spain)	−4.1**	1.67	−6.6	4.26	130	10	0.74	2.16

Notes: Std. err. = Standard error; Obs. = number of observations; Cou. = number of countries; Adj. R.^{2} = adjusted R^2; DW stat. = Durbin–Watson statistic. *** $p <= 0.01$, ** $p <= 0.05$, * $p <= 0.10$. Values depicted in bold highlight *** $p <= 0.01$. Country outliers were identified with the help of a complete set of correlation coefficients for the EA-12, as displayed in Table 4.A8.

Table 4.A8 Correlation coefficients between unemployment, inflation and net support for the euro, net trust in the ECB in the EA-12 countries, 1999–2014

Country	Full sample				Before crisis sample				Crisis sample			
	Unemployment		Inflation		Unemployment		Inflation		Unemployment		Inflation	
	Euro	ECB	Euro	ECB	Euro	ECB	Euro	ECB	Euro	ECB	Euro	ECB
Greece	0.30	−0.85	−0.15	0.39	0.69	0.21	−0.22	0.04	**0.36**	−0.90	−0.12	0.47
Austria	0.25	−0.03	−0.09	−0.33	0.33	0.28	0.08	0.17	0.02	−0.17	−0.39	−0.37
Luxembourg	−0.29	−0.53	−0.15	−0.05	0.01	0.05	−0.16	−0.06	−0.29	−0.51	−0.16	0.00
Belgium	0.20	−0.05	−0.09	0.14	0.43	0.07	−0.19	0.30	−0.31	−0.38	0.12	0.35
Finland	−0.76	−0.47	−0.04	−0.17	−0.76	−0.62	**−0.52**	−0.41	−0.34	−0.29	0.06	−0.01
Germany	−0.27	0.78	0.15	−0.06	0.24	−0.05	0.21	0.17	−0.35	0.87	−0.10	−0.05
Portugal	−0.75	−0.88	0.17	0.24	−0.33	0.12	0.12	−0.13	−0.44	−0.92	−0.24	0.04
Ireland	−0.27	−0.92	−0.11	0.45	−0.04	−0.31	−0.30	0.25	−0.53	−0.68	−0.22	−0.23
Netherlands	−0.12	−0.63	−0.09	−0.05	−0.14	−0.03	−0.04	−0.26	−0.62	−0.83	−0.21	0.07
Italy	0.12	−0.41	−0.17	−0.07	0.82	0.51	−0.40	−0.38	−0.64	−0.87	−0.04	0.05
France	−0.35	−0.61	0.19	0.08	−0.05	−0.16	0.32	0.02	−0.68	−0.86	0.09	0.25
Spain	−0.60	−0.90	0.11	0.26	0.57	0.02	−0.42	−0.02	**−0.77**	−0.93	0.24	0.13

Notes: Euro = net support for the euro; ECB = net trust in the European central bank. Correlations coefficients for the full sample are based on 31 observations per individual country (19 for the before-crisis sample and 12 for the crisis sample). Identified country outliers are written in Italics. The identification principle for the three outlier countries is based on the numbers shown in bold, namely the correlation coefficients between unemployment and net support for the euro in Greece and Spain in the crisis sample and the correlation coefficient between inflation and net support for the euro in Finland in the before-crisis sample. The table is ranked according to decreasing values of correlation coefficients between unemployment and net support for the euro in times of crisis.

Table 4.A9 Inflation, unemployment, GDP per capita growth and net trust in the ECB: FE-DFGLS estimations (aggregated level), 1999–2014

Regression	(1)	(2)	(3)
Dependent variable	Net trust ECB	Net trust ECB	Net trust ECB
Sample	FS	BC	C
Inflation	−5.3*	−2.8	−11.8*** [a]
	(2.70)	(3.10)	(3.50)
Unemployment	−4.8***	1.0	−6.6***
	(0.69)	(0.90)	(1.23)
GDP per capita growth	0.9	0.5	0.5
	(1.19)	(1.69)	(1.61)
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order correlation	Yes	Yes	Yes
Durbin–Watson statistic	2.46	2.13	2.37
Observations	331	211	120
Number of countries	12	12	12
Adjusted R^2	0.83	0.72	0.89

[a]The highly significant (99% level) and strong negative relationship (−11.8) between inflation and net trust in the ECB in times of crisis is not robust, as it is driven by two time periods (10-11/2008 and 6-7/2009) in the direct aftermath of the crisis. Once these two time periods are excluded from the estimation, an insignificant relationship is rendered between inflation and net trust in the ECB. This insignificant relationship between inflation and net trust in the ECB aligned with the fact that the ECB muted inflation in times of crisis. In contrast, the coefficient between unemployment and trust in the ECB remains stable to various sensitivity checks as performed in the previous empirical literature (Roth et al., 2014) and when updated until 6/2014, even after excluding the four cases of the EA-4, namely Spain, Greece, Portugal and Ireland (results can be obtained from the authors upon request). For the descriptive time series between unemployment/inflation and net trust in the ECB in each individual EA-12 country, see Figs. 4.A8 and 4.A9 and the correlation coefficients in Table 4.A8, Appendix 3.
Notes: FS = full sample; BC = before crisis; C = crisis. Data on GDP per capita are missing for Greece from the second semester of 2011 and Portugal and Ireland from the first semester of 2013 onwards. Standard errors are in parentheses. ***$p < =0.01$, ** $p < =0.05$, *$p < =0.10$.
Source: Updated and modified version of Table 2, as appears in Roth et al. (2014: p. 310).

Table 4.A10 Inflation, unemployment, GDP per capita growth, change in euro/US dollar exchange rate and net support for the euro: FE-DFGLS estimations (aggregated level), 1999–2014

Regression	(1)	(2)	(3)
Dependent variable	Net support euro	Net support euro	Net support euro
Sample	FS	BC	C
Inflation	−4.3*	−10.2**	−2.3
	(2.55)	(4.84)	(2.78)
Unemployment	−1.5**	−1.5	−1.5**
	(0.59)	(1.97)	(0.68)
GDP per capita growth	−1.9	0.3	−3.4**
	(1.15)	(2.54)	(1.45)
Change in euro/	0.9***	1.0***	0.5
US dollar exchange rate	(0.24)	(0.36)	(0.77)
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order correlation	Yes	Yes	Yes
Durbin–Watson statistic	2.43	2.47	2.22
Observations	331	211	120
Number of countries	12	12	12
Adjusted R^2	0.80	0.79	0.85

Notes: FS = full sample; BC = before crisis; C = crisis. Data on GDP per capita are missing for Greece from the second semester of 2011 and for Portugal and Ireland from the first semester of 2013 onwards. Standard errors are in parentheses. *** $p < =0.01$, ** $p < =0.05$, * $p < =0.10$.

Table 4.A11 Inflation, unemployment, GDP per capita growth and net support for the euro: FE-DFGLS estimations (aggregated level), EA-18, 1999–2014

Regression	(1)	(2)	(3)
Dependent variable	Net support euro	Net support euro	Net support euro
Sample	FS	BC	C
Inflation	−4.3**	−13.0***	−4.4**
	(2.15)	(4.75)	(2.01)
Unemployment	−1.8***	−1.6	−2.1***
	(0.53)	(2.05)	(0.43)
GDP per capita growth	−0.14	−1.5	−1.4
	(1.03)	(2.41)	(1.01)
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order correlation	Yes	Yes	Yes
Durbin–Watson statistic	2.32	2.50	2.15
Observations	385	216	169
Number of countries	18	15	18
Adjusted R^2	0.81	0.79	0.88

Notes: FS = full sample; BC = before crisis; C = crisis. Data on GDP per capita are missing for Greece from the second semester of 2011 and for Portugal and Ireland from the first semester of 2013 onwards. Standard errors are in parentheses. *** $p < =0.01$, ** $p < =0.05$, * $p < =0.10$.
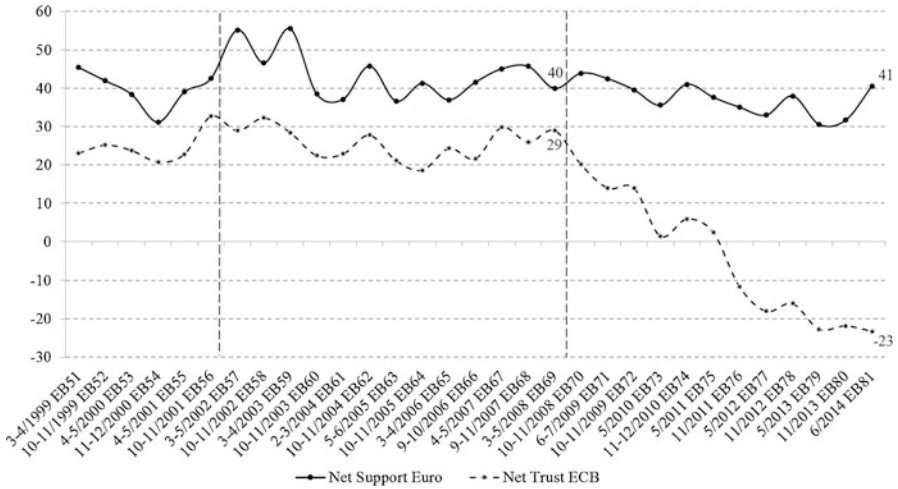
Fig. 4.A4 Average net support for the euro and net trust in the ECB, EA-12 countries, 1999–2014
Notes: Net support/trust levels for/in the euro/ECB above 0 indicate that a majority of citizens supports/trusts the euro/ECB. Net trust levels in the ECB below 0 indicate that a majority of citizens mistrust the ECB. The dashed lines distinguish the second, third and fourth periods in the history of the euro. Values on the x-axis depict the month(s) of fieldwork in the respective year.
Data sources: EB51–EB81.
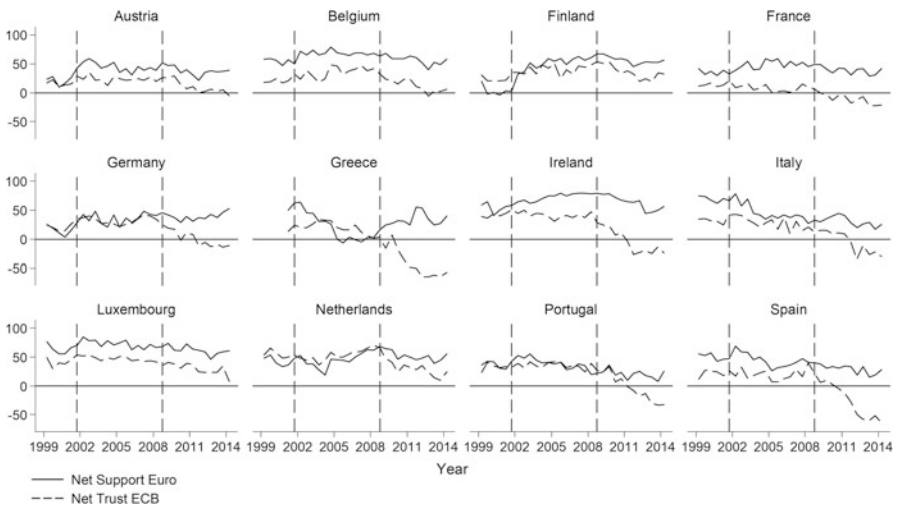
Fig. 4.A5 Net support for the euro and net trust in the ECB, EA-12 countries, 1999–2014
Notes: Net support/trust levels for/in the euro/ECB above 0 indicate that a majority of citizens supports/trusts the euro/ECB. Net trust levels in the ECB below 0 indicate that a majority of citizens mistrust the ECB. The dashed lines distinguish the second, third and fourth periods in the history of the euro. For Greece, the time series is displayed from 2001 onwards.
Data sources: EB51–EB81.

Fig. 4.A6 Unemployment and net support for the euro, EA-12 countries, 1999–2014
Notes: The left-hand y-axis depicts the scale for unemployment ranging from 0 to 30. The right-hand y-axis depicts the scale for net support for the euro ranging from 0 to 80. The dashed line distinguishes the pre-crisis situation from the crisis times. The 0-line is adjusted for unemployment. For Greece, the time series is displayed from 2001 onwards.
Data sources: EB51–EB81 and Eurostat.

Fig. 4.A7 Inflation and net support for the euro in the individual EA-12 countries, 1999–2014
Notes: The left-hand y-axis depicts the scale for inflation ranging from −2 to 4. The right-hand y-axis depicts the scale for net support for the euro ranging from 0 to 80. The dashed line distinguishes the pre-crisis situation from the crisis times. The 0-line is adjusted for inflation. For Greece, the time series is displayed from 2001 onwards.
Data sources: EB51–EB81 and Eurostat.

Fig. 4.A8 Unemployment and net trust in the ECB, EA-12 countries, 1999–2014
Notes: The left-hand y-axis depicts the scale for unemployment ranging from 0 to 30. The right-hand y-axis depicts the scale for net trust in the ECB ranging from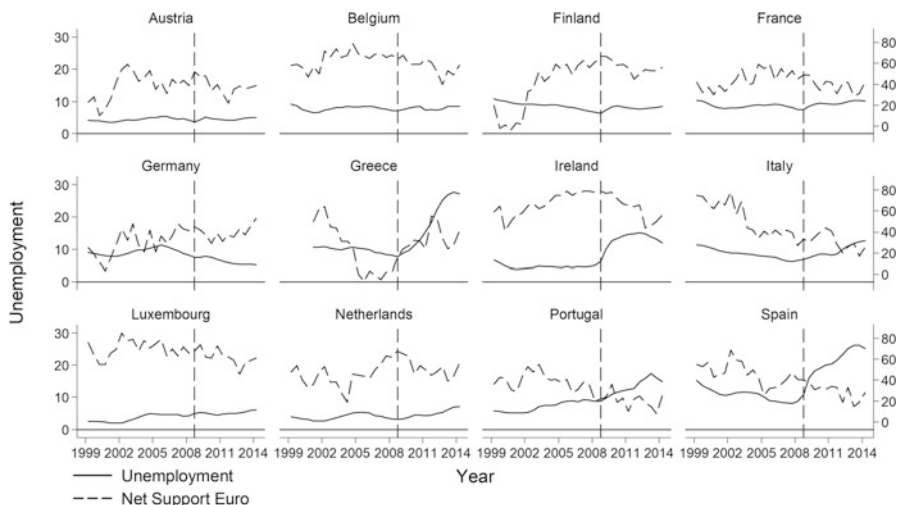 −100 to 100. The dashed line distinguishes the pre-crisis situation from the crisis times. The 0-line is adjusted for unemployment. For Greece, the time series is displayed from 2001 onwards.
Data sources: EB51–EB81 and Eurostat.
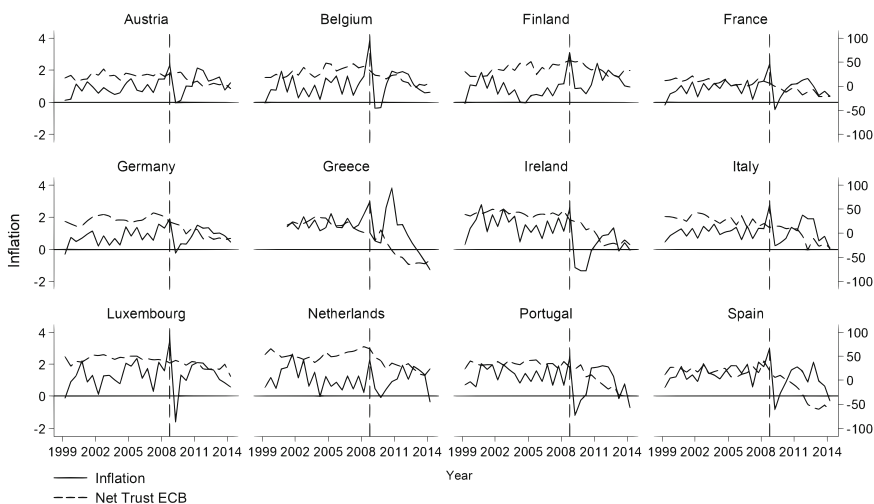
Fig. 4.A9 Inflation and net trust in the ECB in the individual EA-12 countries, 1999–2014
Notes: The left-hand y-axis depicts the scale for inflation ranging from −2 to 4. The right-hand y-axis depicts the scale for net trust in the ECB ranging from −100 to 100. The dashed line distinguishes the pre-crisis situation from the crisis times. The 0-line is adjusted for inflation. For Greece, the time series is displayed from 2001 onwards.
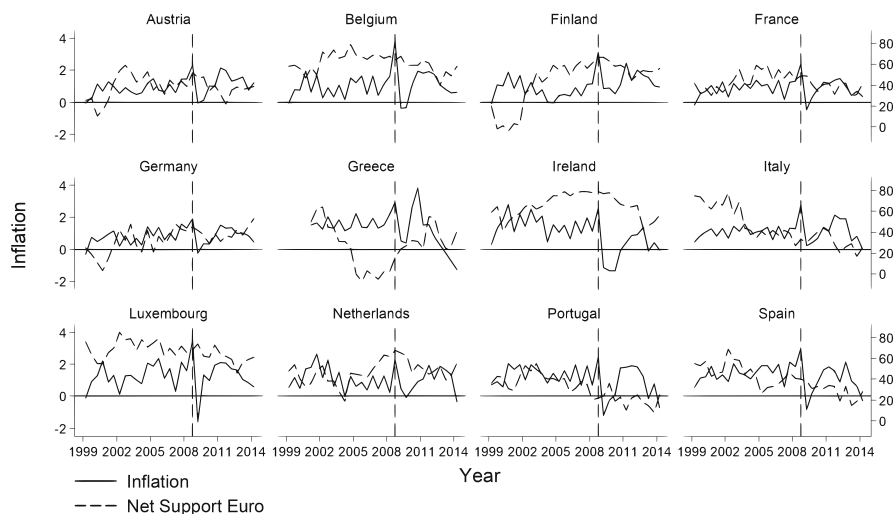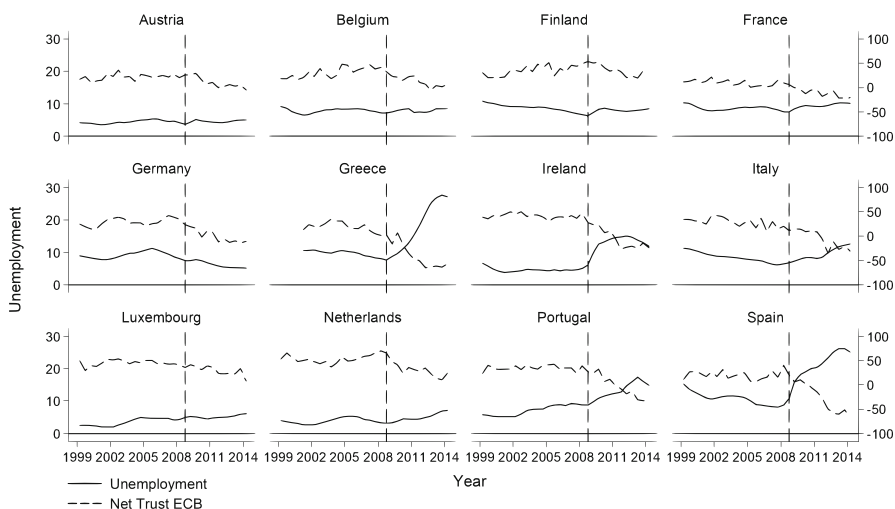Data sources: EB51–EB81 and Eurostat.
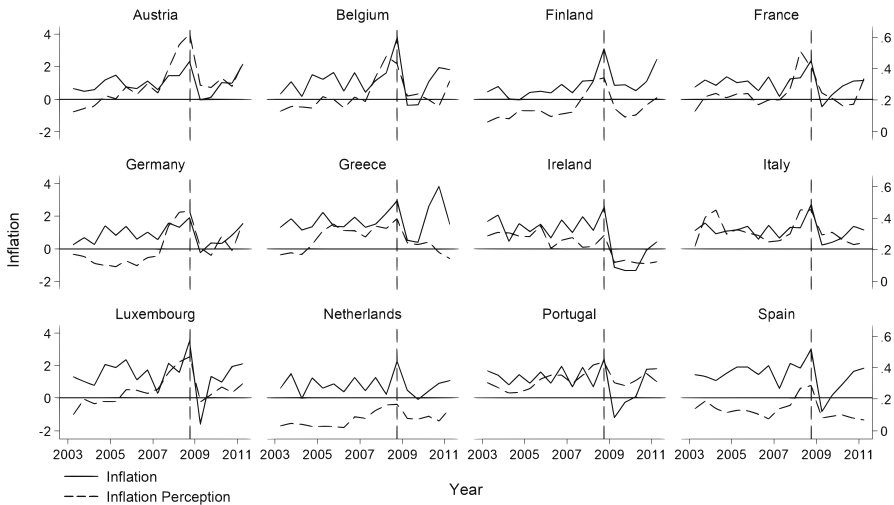
Fig. 4.A10 Inflation and inflation perceptions, EA-12 countries, 2003–2011
Notes: The left-hand y-axis depicts the scale for inflation ranging from −2 to 4. The right-hand
y-axis depicts the scale for inflation perception ranging from 0 to 0.6. The dashed line distinguishes
the pre-crisis situation from the crisis times. The proxy for individual perceptions about inflation in
the context of the national economic situation (PNE) has been available within the standard EBs
from 3–4/2003 (EB59) onwards.
Data sources: EB59–EB75.

Appendix 4: Detailed Steps Leading from Eqs. (4.1)–(4.2)

In the baseline model (4.1), aggregated net support for the euro is estimated as a
function of inflation, growth of GDP per capita, unemployment and macro-economic
control variables deemed of importance:

$$\text{Support\_euro}_{it} = \alpha_i + \beta_1 \text{Inflation}_{it} + \chi_1 \text{Growth}_{it} + \delta_1 \text{Unemployment}_{it} \\ + \phi_1 Z_{it} + w_{it}, \tag{4.1}$$

where i represents each country and t represents each time period; Support_euro_{it} is
the net support for the euro in country i during period t; Inflation_{it}, Growth_{it},
Unemployment_{it} and Z_{it} are respectively inflation, growth of GDP per capita,
unemployment and macro-economic control variables, such as the change in the
euro/US dollar exchange rate for country i during period t. α_i depicts a country-
specific constant term and w_{it} is the error term. As we utilize a Feasible Generalized
Least Square (FGLS) estimation approach, time dummies are not included within
our baseline estimation, as they are mutually exclusive with FGLS using EViews
(version 7.2).

The Issue of Endogeneity

When running regressions such as in Eq. (4.1), one must be aware of the possibility that the right-hand side variables (inflation, growth and unemployment) might be endogenous (affected by a common event) or stand in a bi-directional relationship with support for the euro (a low level of support might lead to a self-fulfilling prophecy, speeding up and worsening an existing downturn). Therefore, we estimate the model by means of dynamic ordinary least squares (DOLS), a method that controls for the endogeneity of the regressors (Stock & Watson, 1993; Wooldridge, 2009).

It can be shown that by decomposing the error term and 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 baseline regression, which does not control for endogeneity and reflects a situation whereby all adjustments have come to an end, has already been depicted in Eq. (4.1) above. Within Eq. (4.1) w_{it} is the iid-N error term with the properties of the classical linear regression model. Controlling for endogeneity requires the decomposition of the error term w_{it} into the endogenous changes of the right-hand side variables, which are correlated with w_{it} (the changes in the variables) and the exogenous part of the error term v_{it}; with

$$
\begin{aligned}
w_{it} = &\sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Inflation}_{it-p} + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Growth}_{it-p} \\
&+ \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Unemployment}_{it-p} + \sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p} + v_{it}
\end{aligned}
\tag{4.1a}
$$

Inserting Eq. (4.1a) into Eq. (4.1) leads to the following Eq. (4.1b) in which all explanatory variables from the baseline model can be considered exogenous:

$$
\text{Support\_euro}_{it} = \alpha_i + \beta_1 \text{Inflation}_{it} + \chi_1 \text{Growth}_{it} + \delta_1 \text{Unemployment}_{it} + \phi_1 Z_{it} +
$$
$$
\sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Inflation}_{it-p} + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Growth}_{it-p} + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Unemployment}_{it-p} +
$$
$$
\sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p} + v_{it}
$$
$$
\tag{4.1b}
$$

with α_i representing country fixed effects and Δ indicating that the variables are in first differences; the error term v_{it} *should* fulfil the requirements of the classical linear

regression model. Inflation, growth and unemployment become exogenous and the coefficients $\beta_1, \chi_1, \delta_1$ and ϕ_1 follow a t-distribution. This property allows us to draw statistical inferences on the impact of inflation, growth and unemployment on support for the euro.

Omitted Variables and Autocorrelation

Having found that net support for the euro and the economic variables (inflation, growth and unemployment) are non-stationary and cointegrated, we can be confident that omitted variables (which are lumped together in the error term) do *not* systematically influence our long-run relationship between support for the euro and macroeconomic variables. Omitted variables could include: socio-political factors such as positive attitude towards EU membership (Banducci et al., 2009; Hobolt & Leblond, 2014), mass media attention (Brettschneider et al., 2003), consumer confidence (Hobolt & Leblond, 2014), or macro-economic variables of importance, such as the change in the euro/US dollar exchange rate and the interest rate (Banducci et al., 2003, 2009; Hobolt & Leblond, 2014), as well as social indicators,[39] such as measures of income inequality and poverty rates, which have most likely deteriorated within the periphery countries of the EA-12.

Even though the error term is stationary [I(0)], a characteristic of cointegration, autocorrelation of the error terms might still be a problem that must be fixed. We do so by applying the two-step FGLS procedure. In a first step, we collect the $\widehat{v}_{it}$s from Eq. (4.1b), which has been estimated by means of DOLS. Thereafter, we estimate ρ_1 the first-order autocorrelation[40] coefficient, via OLS based on Eq. (4.1c).

$$\widehat{v}_{it} = \rho_1 \widehat{v}_{it-1} + u_{it} \qquad (4.1c)$$

Since the coefficient ρ_1 is usually unknown (as in our case), it has been estimated (giving us $\widehat{\rho}_1$) by means of the Cochrane–Orcutt method (Pindyck & Rubinfeld, 1991), which is an FGLS procedure. In a second step we transform all variables of Eq. (4.1b), which can be described by the following formulas (4.1d):

---

[39] Another serious problem for an inclusion of social indicators such as the income inequality and the poverty rate within the analysis is the fact that such data are only available on a yearly base and thus cannot be adequately matched to the biannual Eurobarometer data.

[40] Higher orders of autocorrelation were not present.

$$\text{Support\_euro}^*_{it} = \text{Support\_euro}_{it} - \widehat{\rho}_1 \text{Support\_euro}_{it-1},$$
$$\text{Growth}^*_{it} = \text{Growth}_{it} - \widehat{\rho}_1 \text{Growth}_{it-1},$$
$$\text{Inflation}^*_{it} = \text{Inflation}_{it} - \widehat{\rho}_1 \text{Inflation}_{it-1}, \quad \quad (4.1d)$$
$$\text{Unemployment}^*_{it} = \text{Unemployment}_{it} - \widehat{\rho}_1 \text{Unemployment}_{it-1},$$
$$Z^*_{it} = Z_{it} - \widehat{\rho}_1 Z_{it-1}$$

where the differences of the explanatory variables are transformed in exactly the same way as the variables in levels. Correcting for autocorrelation in the error term via FGLS leads to Eq. (4.2):

$$\text{Support\_euro}^*_{it} = \alpha_i + \beta_1 \text{Inflation}^*_{it} + \chi_1 \text{Growth}^*_{it} + \delta_1 \text{Unemployment}^*_{it} + \phi_1 Z^*_{it} +$$
$$\sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Inflation}^*_{it-p} + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Growth}^*_{it-p} + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Unemployment}^*_{it-p} +$$
$$\sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z^*_{it-p} + u_{it}$$

$$(4.2)$$

with α_i being the country fixed effect and Δ indicating that the variables are in first differences; * indicating that the variables have been transformed (purged from autoregressive processes) and that new error term u_{it} ($u_{it} = v_{it} - \widehat{\rho}_1 v_{it-1}$) fulfils the requirements of the classical linear regression model (it is free from autocorrelation). Equation (4.2), which is an improved version of Eq. (4.1b), represents the fixed effects dynamic feasible generalized least squares (FE-DFGLS) approach.

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Chapter 5
Political Economy of EMU: Rebuilding Systemic Trust in the Euro Area in Times of Crisis

Felix Roth

Abstract This contribution revisits the empirical evidence of a decline in citizens' systemic trust in times of crisis for a 12-country sample of the euro area (EA12) from 1999 to 2014. The findings affirm a pronounced decline in trust in the periphery countries of the EA12, leading to particularly low levels in the national government and parliament in Spain and Greece. The consequences of this decline for the political economy of Economic and Monetary Union are examined, corroborating the strong and negative association between unemployment and trust. The author provides evidence of the increase in unemployment in Spain and examines policy measures at the national and EU level to tackle unemployment. Finally, he revisits the evidence of the enduring support for the euro and discusses its relevance to crisis management, elaborating upon the question of how to restore systemic trust both without and with treaty change.

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1 Introduction

Empirical analyses that focus on the impact of the financial and sovereign debt crisis on citizens' systemic trust (see Appendix 1 for a definition of systemic trust) at the national and EU level within the original member countries of the euro area (EA12)[1] detect a significant and pronounced decline within its periphery, namely in Spain, Greece, Ireland and Portugal (Roth, Nowak-Lehmann D. and Otter, 2013; Roth, Gros and Nowak-Lehmann D., 2014. For similar findings, but including Italy within the periphery country sample, see also Alonso, 2015).[2] In those four countries, trends[3] in citizens' systemic trust departed from their long-term trajectory and began to steadily decline starting from the crisis in September 2008. In this respect, the econometric estimations in this literature find that the pronounced increases in unemployment rates in Spain, Greece, Ireland, and Portugal throughout the crisis have been a key driver behind the steady and significant decline in systemic trust. In comparing the magnitude of decline among all trust trends analysed, the literature concludes that it is the steady decline in citizens' trust in the Spanish and Greek national parliaments that is the most pronounced. Interestingly, in contrast to the significant decline in systemic trust, an empirical study analysing the impact of the crisis on popular support for the euro from 1990 to 2012 (Roth et al., 2012a) finds that within an EA-12 country sample, levels of support for the European Economic and Monetary Union with one single currency, namely the euro, have only marginally declined and remained at high levels throughout the crisis, even in its periphery countries.[4]

In light of these overall empirical results, four sets of questions emerge. First, what are the consequences of the significant decline in systemic trust for the political economy of EMU? Why should national and European policymakers worry about this decline and the low levels of systemic trust revealed in times of crisis? Second, how can citizens' systemic trust in the countries of the euro area periphery be restored? What is the role for member states? What is the role for collective action within the euro area? Third, to what extent is substantial and enduring popular support for European Economic and Monetary Union (EMU) and the euro a

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[1] The EA12 includes the 12 original member states that formed the euro area from 1999 (for Greece from 2001) onwards, namely Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

[2] For analyses on trust in the national parliament and trust in the EU for a wider EU27 country sample, see Armingeon and Guthmann (2014), Armingeon and Ceka (2014) and Gomez (2015).

[3] The author is aware of the fact that the term trend normally denotes long-run patterns covering at least two to three business cycles. The time series on net trust, however, is restricted to a 15-year time span per country due to data restrictions from the Eurobarometer surveys. Given this limitation in extending the time coverage in order to analyse longer time series, for pragmatic reasons, the term trend will still be applied to the given time series.

[4] For a range of analyses whose results differ from those of Roth et al. 2012 (a), see among others, Debomy, 2013; Guiso et al., 2014; Hobolt & Le Blond, 2014; Hobolt & Wratil, 2015; and Clements et al., 2014 for the Greek case.

prerequisite to overcome the systemic trust crisis in the periphery of the euro area? Finally, how can systemic trust be restored in a scenario without treaty change and in one with treaty change?

To answer this set of related questions, this contribution is structured in the following manner. The next section revisits the empirical evidence of a pronounced decline in systemic trust in the institutions of democratic governance at the national and EU level in the periphery countries of the EA12 in times of crisis. Section 3 provides further empirical evidence of declining systemic trust in European institutions as well as satisfaction in democracy at the national and European level. It also discusses the validity of Eurobarometer data compared to other international datasets. Section 4 discusses the consequences of this significant decline in systemic trust in the case of institutions of democratic governance at the national level. Two theoretical arguments are developed and applied to the most recent Eurozone crisis. Section 5 elaborates on how to restore citizens' systemic trust in times of crisis. It identifies the significant increase in unemployment rates as a key driver of the decline in systemic trust and discusses the evolution of unemployment in the case of Spain. Section 6 revisits the empirical evidence concerning citizens' support for EMU and the euro in times of crisis. The section clarifies that in contrast to the pronounced decline in systemic trust, public support for the euro has persisted in times of crisis. Section 7 discusses the question of how to restore citizens' systemic trust without resorting to treaty change and with treaty change.

2 The Empirical Evidence Revisited: Citizens' Declining Systemic Trust in the EA12

2.1 Before–After Analysis of Aggregated Country Trends of the EU27

This section reviews the basic empirical findings, which point towards a pronounced decline in systemic trust in the peripheral countries of the EA12,[5] especially in Spain and Greece. The analysis starts by comparing selected country samples within the EU27.[6] Table 5.1 depicts an updated version (until 11/2014) of a before and after

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[5]The EA12 includes the 12 original member states that formed the euro area from 1999 (for Greece from 2001) onwards, namely Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

[6]The EU-27 contains all EU member states except Croatia. The designation encompasses the EA12 countries plus the three non-EA countries Denmark, Sweden and the UK and the 12 new member states (NMS12), as defined below. The EA12 and the three non-EA countries Denmark, Sweden and the UK form the old member states—the EU15.

Table 5.1 Net trust levels and changes in net trust in the EA12, EU15, NMS12 and EU27, 2008–2014

Sample	Trust	Level: 3–5/2008	Level: 11/2014	Changes: 11/2014–3-5/2008
EA12	NG/NP	−25/−16	−39/−33	−14/−17
EU15	NG/NP	−28/−17	−36/−29	−8/−12
EU27	NG/NP	−31/−25	−36/−33	−5/−8
NMS12	NG/NP	−44/−55	−37/−51	7/4
EA12	EC/EP	21/27	−11/−6	−32/−33
EU15	EC/EP	14/19	−11/−8	−25/−27
EU27	EC/EP	19/23	−5/−2	−24/−25
NMS12	EC/EP	34/38	20/22	−14/−16

Notes: EA = euro area; EU = European Union; NMS = New Members States; NG = National Government; NP = National Parliament; EC = European Commission; EP = European Parliament. Values are population-weighted trust trends. Net trust values below 0 show a lack of trust by the majority of citizens. Values reflecting the lowest levels and strongest decline in trust in the NP and EP are shaded in light grey.

Source: Table 5.1 is an updated version of Table 1 until 11/2014 (by EB's 79 to 82), in Roth et al. (2013).

comparison of net trust[7] in institutions of democratic government at the national and EU level for an EU27, EU15, NMS12, and EA12 country sample.[8,9]

The four institutions of democratic government displayed in Table 5.1 include the National Government (NG), National Parliament (NP), European Commission (EC) and European Parliament (EP).[10,11] While the third column in Table 5.1 shows the net trust level in 3–5/2008, before the actual start of the financial and economic

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[7] Net trust is a concept as proposed by Gärtner (1997: 488–489). A net trust measure is obtained by subtracting the percentage of those who trust from those who do not trust the institution according to the following equation: Net trust $= \frac{\text{Trust}}{\text{Trust} + \text{Mistrust} + \text{Don't Know}} - \frac{\text{Mistrust}}{\text{Trust} + \text{Mistrust} + \text{Don't Know}}$.

[8] The NMS12 country sample consists of the 12 NMS that acceded to the EU from 2004 onwards and include Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia.

[9] All 27 individual time series, as well as the six aggregated time series are displayed in Fig. 5.A1 in Appendix 2.

[10] Measures for trust in the NG, NP, the EC, and the EP were based upon the biannual Standard Eurobarometer (EB) surveys from spring 3–5/1999 (EB51) to 11/2014 (EB82) by asking respondents the following question: '*I would like to ask you a question about how much trust you have in certain institutions. For each of the following institutions, please tell me if you tend to trust it or tend not to trust it*'. The respondent is then presented a range of institutions. With respect to the answers '*Tend to trust it*' and '*Tend not to trust it*', a third category, '*Don't know*', can be selected by the respondents.

[11] Although the European Commission is not directly elected by European citizens, it still seems appropriate to include the European Commission together with national governments, national parliaments and the European Parliament under the term "institutions of democratic government at the national and European level". The European Commission is seen to be the best-fit counterpart to the national government at the European level.

crisis,[12] the fourth column shows the net trust level in the sixth year of the crisis in 11/2014. The fifth column shows the changes in net trust levels (11/2014–3-5/2008).

Focusing our analysis on the EA12 countries, three observations from Table 5.1 are of particular importance. First, the most pronounced declines in trust throughout the crisis, with declines in the NG/NP of 14/17% points and in the EC/EP with 32/33% points, can be detected among the EA12 country sample. Second, within the EA12, the decline in the NG/NP of 14/17% points is less pronounced than the decline in the EC/EP of 32/33% points. Third, within the EA12, the actual net levels of trust in the EC/EP in 11/2014 with values of −11/−6 are significantly higher than those in the NG/NP with values of −39/−33. Thus, although the decline in net trust in the EC/EP has been more pronounced, the EC/EP still enjoy a significantly higher level of net trust in the sixth year of the crisis in 11/2014 than the NG/NP.

2.2 Before–After Analysis of Single Country Trends within the EA12

Given the fact that the EA12 faces the most pronounced decline in systemic trust among the four country samples, Table 5.2 disaggregates the EA12. The disaggregated data expose a large variance of the changes in net trust throughout the crisis among the individual member countries. In the peripheral countries of the EA12, that is the EA4 (Greece, Ireland, Portugal, and Spain), one detects a large decline in trust in the NG/NP of 76/79% points throughout the crisis.

In contrast, in the core countries of the EA12, that is the EA8 (Austria, Belgium, Finland, France, Germany, Italy, the Netherlands, and Luxembourg), one actually detects an increase in net trust in the NG/NP of 4/1% points. Thus, whereas we find a pronounced decline in trust within the EA4, we actually detect an increase in trust in the EA8.[13,14] Among the EA12, the evolution of net trust in the national parliament in Spain and Greece seems to be particularly noteworthy. The two most pronounced

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[12] Note that the bankruptcy of Lehman Brothers in September 2008 is considered here as the start of the financial and economic crisis (c.f. Stiglitz, 2012, p. 1). Empirical evidence from the literature on international finance (Xin et al., 2009) highlights the significant impact of the bankruptcy of Lehman Brothers on financial stress, unleashing the full potential of the financial and economic crisis.

[13] Two countries within the EA12 in particular are driving these diverging results for the EA4 and EA8: whereas an overall decline in net trust in the NG/NP of 96/94% points can be detected in the peripheral country Spain, in the core country Germany an increase of 29/23% points can be observed.

[14] It should be noted here that although France's decline in net trust in the NP is only moderate (25% points) and Italy's non-existent (0% points), net trust levels of −46 and −57 indicate that large majorities of citizens mistrust their national parliaments in the second and third largest economies of the EA. The low net trust levels in France and Italy are in contrast to higher net trust levels in Germany, with a value of 8 in 11/2014. This indicates that a majority of German citizens trust their national parliament in the sixth year of the crisis. Similar and even higher net trust levels in the national parliament of 27% can be found in Finland. Empirical evidence suggests that governance indicators play an important role in explaining the cross-sectional variance in systemic trust (Arnold et al., 2012; Guiso et al., 2014; Munoz et al., 2011; Roth, 2009a). As we are primarily interested in analysing changes in trust (within-variance), the cross-sectional variance will not discussed further.

Table 5.2 Net trust levels and changes in net trust in the EA8 and EA4 and across EA12 countries, 2008–2014

Country	Trust	Levels: 3–5/2008	Levels: 11/2014	Changes: 11/2014–3-5/2008
EA-4	NG/NP	3/10	−73/−69	−76/−79
EA-8	NG/NP	−33/−23	−29/−22	4/1
Spain	NG/NP	20/20	−76/−74	−96/−94
Greece	NG/NP	−31/−2	−78/−71	−47/−69
Ireland	NG/NP	−14/−3	−49/−47	−35/−44
Portugal	NG/NP	−29/−15	−63/−56	−34/−41
France	NG/NP	−38/−21	−61/−46	−23/−25
Belgium	NG/NP	−21/−4	−30/−22	−9/−18
Luxembourg	NG/NP	22/24	12/9	−10/−15
Finland	NG/NP	19/32	0/27	−19/−5
Italy	NG/NP	−59/−57	−57/−57	2/0
Netherlands	NG/NP	1/10	8/14	7/4
Austria	NG/NP	−6/6	5/14	1/20
Germany	NG/NP	−25/−15	4/8	29/23
EA-4	EC/EP	38/37	−29/−24	−67/−61
EA-8	EC/EP	16/22	−6/0	−22/−22
Spain	EC/EP	42/46	−32/−31	−74/−77
Greece	EC/EP	13/21	−49/−33	−62/−54
Ireland	EC/EP	43/51	−3/2	−46/−49
Portugal	EC/EP	42/46	−3/−3	−45/−49
Belgium	EC/EP	41/42	4/6	−37/−36
Italy	EC/EP	29/29	−11/−5	−40/−34
France	EC/EP	11/19	−11/−6	−22/−25
Germany	EC/EP	6/18	−8/1	−14/−17
Netherlands	EC/EP	36/30	22/14	−14/−16
Luxembourg	EC/EP	35/40	29/29	−6/−11
Austria	EC/EP	−3/6	12/12	15/6
Finland	EC/EP	16/17	26/32	10/15

Notes: EA = euro area; NG = national government; NP = national parliament; EC = European Commission; EP = European Parliament. EA4 and EA8 Values are population-weighted trust trends. All values below 0 show a lack of trust by a majority of citizens. The most pronounced declines and levels of net trust are shaded in light grey. Countries are ranked according to their magnitude in the decline in changes in net trust in the NP and EP.
Source: Updated and slightly modified version of Table 2 until 11/2014 (by EB's 79 to 82) in Roth et al. (2013).

declines in net trust in the national parliament among the EA12 countries (94 and 69% points) have led to the lowest values of net trust (−74 and −71) across the EA12 members in the sixth year of the crisis (11/2014) in those two countries.[15]

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[15] The analysis of the mean levels in Table 5.A1 in Appendix 2 confirms our results from the before-and-after analysis. Greece and Spain display the most pronounced drop in net trust, as well as the lowest levels of net trust when comparing the evolution of the means in the before crisis sample with those of the crisis sample.

A similar but distinct picture appears in analysing the changes in net trust in the EC/EP. In the EA4, net trust in the EC/EP declined by a pronounced 67/61% points. In contrast, in the EA8, one detects only a moderate decline by 22% points.[16,17] Two points are noteworthy. First, although net trust in the EC/EP in the EA8 declined more dramatically than in the NG/NP throughout the crisis, in six out of eight countries of the EA8 (except for Germany and Austria), net trust levels in the EC/EP in 11/2014 are still significantly higher than those in the NG/NP. Second, although Spain and Greece again faced the most pronounced decline in net trust in the EC/EP (74/77 and 62/54% points) leading to the lowest net values in 11/2014 (−32/−31 and −49/−33%), they are still significantly higher than those in the NG/NP with (−76/−74 and −78/−71%). Whereas in 11/2014, only 10% and 14% still trusted their national parliament, 28% and 32% still trusted the European Parliament.[18] This indicates that the pronounced declines in trust in Spain and Greece are particularly worrying for trust in the NG/NP.

2.3 Analysing the Net Trust Trends of the EA12 in the Long Run

While the before–after comparison in Table 5.2 focused only on two single points in time, Figure 5.1 displays the four long-term net trust trends (NG, NP, EC and EP) for the EA12, EA4, EA8 and the 12 individual country time series from 3–4/1999 to 11/2014.

Figure 5.1 clarifies that all four net trust trends in the EA8 follow their long-term trends, with moderate declines in mean values in net trust in the NG/NP and EC/EP of 8/11 and 19/24, but almost no change in the standard deviations in the before

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[16]This slight decline of 22% points in the EC/EP is in contrast to the increase in net trust in NG/NP of 4/1% points and is driven by the pronounced differences in Italy and Germany in which net trust in the NG/NP remained stable and even increased (ranging from 0% points in Italy to 29% points in Germany) but net trust in the EC and EP declined (ranging from −40% points in Italy to −14% points in Germany). Indeed if one compares a change in mean values of the pre-crisis sample (from 3–4/1999 to 3–5/2008) with those of the crisis-sample (from 10–11/2008 to 11/2012) for the national and European institutions (as displayed in Table 5.A1 in Appendix 2), the most pronounced difference in the evolution of trends can be detected in Germany (14/28), where one detects a steady increase towards net trust in the national institutions but a steady decline towards the European institutions (see here also Alonso, 2015).

[17]This already indicates that those authors who claim to have found a universal trust crisis in the European institutions (Torreblanca & Leonard, 2013a, 2013b) across the continent among the "northern creditors" and "southern debtors" seem to have misinterpreted their data. Our results indicate quite the opposite.

[18]This result actually questions all those authors who claim the crisis is per se a trust crisis in the European institutions (Pew Research Center, 2013; Torreblanca & Leonard, 2013a, 2013b; Traynor, 2013) and fail to recognise the trust crisis in the national democratic institutions, which is far more worrying.
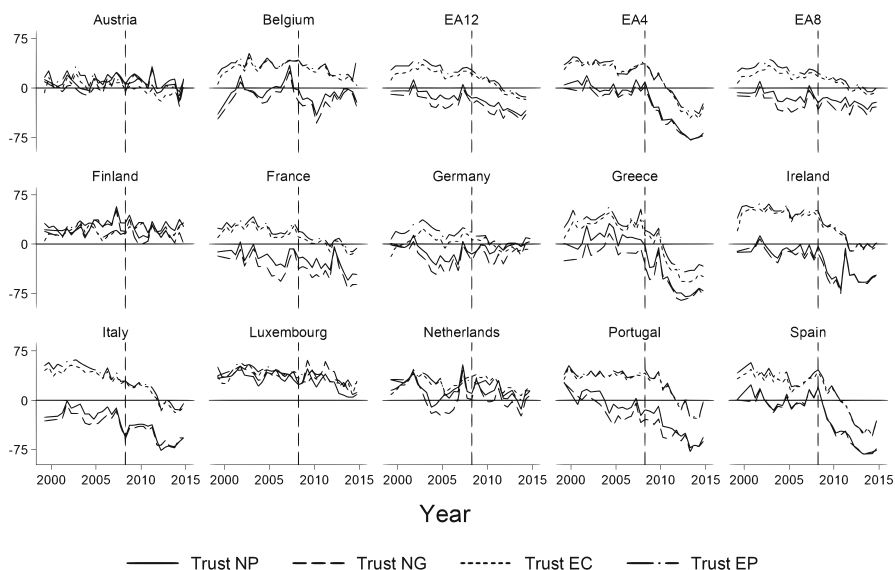
Fig. 5.1 Net trust trends in the EA12, EA4, EA8 and individual countries, 1999–2014
Notes: EA = euro area; NG = national government; NP = national parliament; EC = European
Commission; EP = European Parliament. The dashed line represents the start of the crisis in
September 2008. Values are population-weighted trust trends. As the figure presents data on net
trust, all values below 0 show a lack of trust by the majority of citizens.
Source: Updated and merged versions of Figures A1, A2, A3, and A4 until 11/2014 (by EB's 79 to
82) in Roth et al. (2013).

crisis and crisis samples (all mean values and standard deviations of pre-crisis and
crisis trends, as well as the respective changes can be found in Tables 5.A1 and 5.A2
in the Appendix). In contrast, all four trust trends of the EA4 country sample have
departed from their long-term trends with mean levels in the NG/NP and EC/EP,
declining by 53/57 and 49/47% points and standard deviations almost tripling for the
NG, NP and EP and even quadrupling in the case of the EC.

Within the EA4 country sample, the most noteworthy trends can be detected in
Spain and Greece. In Spain, all four pre-crisis trust trends tended to be very stable
with mean levels of 0/2% in the NG/NP and 32/39% in the EC/EP and average
standard deviations of around 11%. Since the start of the crisis in September 2008,
all four forms of trust have steadily and significantly declined (with a decline in mean
levels in the NG/NP of 58/59% and in the EC/EP of 49/55% among the EA12), with
the standard deviation doubling for the NG/NP and tripling for the
EC/EP. Interestingly, when analysing the time trends from 5/2013 onwards, one is
able to observe the first slight increases in all four trust trends since the start of the
crisis. Similar patterns to those found in Spain can be detected in Greece. Pre-crisis
trends for all four institutions tended to be stable (average standard deviations of 11)
with mean levels for the NG/NP of −8/10 and for the EC/EP of 29/38%. Since the
start of the crisis in September 2008, mean levels of net trust have declined by 56 to

68% across the four institutions and standard deviations have doubled and tripled. Similar to Spain, trust levels slightly recovered from 5/2013 in Greece.

Trust trends in Ireland and Portugal declined markedly but more moderately compared to Spain and Greece, with a decline in average mean levels of 40% points and overall higher mean net values throughout the crisis. Similar to Spain and Greece, in Ireland, all four trust trends were very stable in pre-crisis times and declined markedly since the start of the crisis in 2008. Interestingly, in Portugal, standard deviations in net trust in the EC/EP quintupled from 5 to 24 but remained stable in trust trends in the NG/NP. This indicates that whereas the net trust decline in the NG/NP had been ongoing in the pre-crisis period, trust in the EC/EP declined sharply since the start of the crisis.

Within the EA8 countries, a similar although less pronounced trend than in Portugal can be detected in Italy, in which a deterioration of net trust trends in the NG and NP started before September 2008, with standard deviations remaining stable in times of crisis, but in which the crisis had a more pronounced impact on the EC/EP with standard deviation doubling. France's net levels of trust declined moderately among all four trust trends and all four crisis trends follow their pre-crisis trends with standard deviations remaining very stable. Thus, Italy and France both encounter moderate losses of net trust in all four institutions, with almost all trust trends following their pre-crisis trends. It should be noted, however, that the (moderate) declines of trust in NG/NP in Italy and France, starting at significantly lower levels than Spain and Greece, have still led to mean values as low as $-54/-53$ in the case of Italy and $-45/-33\%$ in the case of France. Thus, in Italy, these net levels in times of crisis are closely located at net values of Spain and Greece.

In contrast to Italy and France, one detects in Germany the very exceptional pattern of diametric trends. Whereas net trust in the NG/NP actually increased throughout the crisis with an increase in the mean levels by 4/10% points, net trust in the EC/EP declined by 10/18% points (with a difference in changes between the NP and EP of +28% points). In 11/2014, Germany became the only country within the EA12 in which net trust levels in both the NG/NP were higher than in the EC/EP. The five remaining countries of the EA8—Austria, Belgium, Finland, Luxembourg, and the Netherlands—faced moderate declines or actual slight increases in trust with very stable crisis trends.

3   Further Empirical Evidence of a Decline in Systemic Trust

3.1   Net Trust in the ECB

The above-analysed trust crisis in the EA4, however, has not been exclusive to institutions of democratic governance. Amongst others, the financial and sovereign

Table 5.3 Net trust levels and changes in net trust in the ECB in the EA12, 2008–2014

Country	Levels ECB/euro 3–5/2008	Levels ECB/euro 11/2014	Changes ECB 11/2014–3-5/2008
EA-12	29	−20	−49
EA-4	34	−42	−76
EA-8	27	−13	−40
Spain	40	−48	−88
Ireland	47	−20	−67
Greece	1	−54	−55
Portugal	39	−14	−53
Germany	35	−18	−53
Belgium	42	−5	−47
Italy	21	−22	−43
Netherlands	70	28	−42
France	10	−18	−28
Luxembourg	42	18	−24
Finland	49	37	−12
Austria	20	9	−11

Notes: EA = euro area; ECB = European Central Bank. Values for EA12, EA4 and EA8 are population weighted. As the table presents data on net trust, all values below 0 show a lack of trust by the majority of citizens. The two most pronounced declines and levels of net trust in the ECB are highlighted in light grey.
Source: Updated version of Table 1 until 11/2014 (by EB's 79 to 82) in Roth et al. (2014).

debt crisis has also affected citizens' trust in the European Central Bank (see, amongst others, Albinowski et al., 2014; Bursian & Faia, 2015; Bursian & Fuerth, 2011; Ehrmann et al., 2013; Guiso et al., 2014; Gros & Roth, 2009; Farfaque et al., 2012; Roth, 2009a, 2009b; Roth et al., 2014; Wälti, 2012 for empirical evidence). As can be detected in Table 5.3 with a decline of 49, 76 and, respectively, 40% points net trust in the ECB actually declined the most dramatically among the three analysed European institutions in the EA12, EA4 and EA8 (see here comparative results in Tables 5.1 and 5.2). However, similar to the pattern in Table 5.2, the decline in the EA4 of 76% points has been more pronounced than the one in the EA8 with 40% points. In Spain, Ireland, Greece and Portugal, net trust in the ECB declined by 88, 67, 55 and 53% points, respectively, from 3–5/2008 to 11/2014.

While the before and after comparison in Table 5.3 already highlights a distinct decline in net trust in the ECB in the four periphery countries of the EA12, this pattern becomes even more pronounced when analysing the time trends in net trust in the ECB in Figure 5.2 and the mean values and standard deviations and the respective changes for pre-crisis and crisis trends in Table 5.A3 in Appendix 2. Figure 5.2 and Table 5.A3 clarify that mean values of net trust in the ECB declined the most in Greece, Ireland, Spain, and Portugal. In addition, in these four countries, standard deviation tripled and quadrupled. Even though one also finds empirical evidence for a significant decline in EA8 countries such as Italy and Germany, this
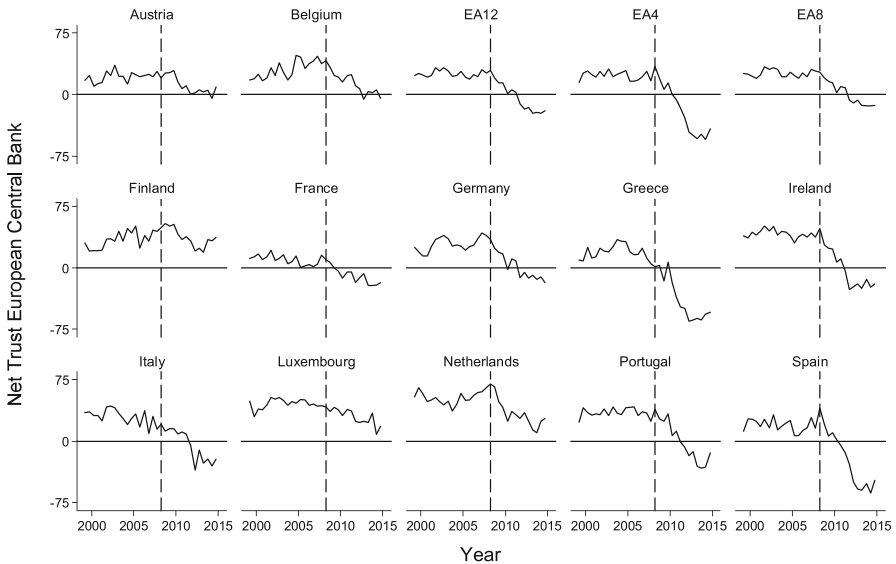
Fig. 5.2 Net trust trends in the ECB in the EA12, EA4, EA8 and individual countries, 1999–2014
Notes: The dashed line represents the start of the crisis in September 2008. Values are population-weighted trust trends. As the figure presents data on net trust, all values below 0 show a lack of trust by the majority of citizens.
Source: Updated and slightly modified version of Fig. A1 until 11/2014 (by EBs 79–82) in Roth et al. (2014).

decline is less pronounced and standard deviation only doubled. It should be noted, however, that only Greece and Spain have pronounced negative mean levels of net trust of -40 and -26 in times of crisis.

3.2   Net Trust in the EU

To further corroborate the empirical evidence of a distinct trust crisis in the periphery countries of the EA12, particularly in Spain and Greece, we compare the above results with a before and after analysis for net trust in the EU. Concerning the evolution of trust in the EU, it has been widely claimed that trust in the EU has declined in a universal manner across the continent, including 'southern debtors' and 'northern creditors' of the EA12 (Pew Research Center, 2013; Torreblanca & Leonard, 2013a, 2013b; Traynor, 2013). The existing empirical literature has already challenged such claims by showing that the largest losses of trust in the EU have indeed been taking place in the periphery area of the EA12, particularly in Greece and Spain (see Table 1 in Armingeon & Ceka, 2014, p. 93; Zalc, 2013, p. 3).

However, in order to further corroborate our claim that a decline in systemic trust has been more pronounced in the periphery area of the EA12 than in the core countries of the EA12, Table 5.4 shows a before and after comparison between net

Table 5.4 Changes in net trust in the EU in the EA12, 2008–2014

Country	Trust	Levels: 3–5/2008	Levels: 11/2014	Changes: 11/2014–3-5/2008
EA12	EU	14	−20	−34
EA4	EU	39	−30	−69
EA8	EU	7	−16	−23
Spain	EU	46	−31	−77
Greece	EU	18	−53	−71
Ireland	EU	43	−10	−53
Belgium	EU	39	−6	−45
Portugal	EU	29	−12	−41
Italy	EU	4	−25	−29
Netherlands	EU	28	1	−27
France	EU	10	−16	−26
Germany	EU	−1	−19	−18
Luxembourg	EU	19	15	−4
Austria	EU	−10	−7	3
Finland	EU	9	20	11

Notes: EU = European Union. Values for EA12, EA4 and EA8 are population weighted. As the table presents data on net trust, all values below 0 show a lack of trust by a majority of citizens. The two most pronounced declines and levels of net trust in the ECB are highlighted in light grey.

trust in the EU from 3–5/2008 to 11/2014. Table 5.4 clarifies that when analysing net trust trends in the EU, one detects a similar although slightly different picture compared with net trust in the EC/EP, as well as the ECB. Similar to the results by Armingeon and Ceka (2014, p. 93), who analysed the differences from 2007 to 2011, and Zalc (2013), who analysed the differences from 2007 to 2012, when analysing the differences between 2008 and 2014, the largest decline in trust is found in Spain and Greece with net trust declines of 77% and 71% points, respectively. Within our EA12 country sample, Spain and Greece are then followed by Ireland, Belgium and Portugal. Core countries such as Germany and Luxembourg have faced only moderate losses or even increased their net trust levels, as in the case of Austria and Finland. Table 5.4 once more clarifies that the claim that periphery and core countries from the EA12 face the same universal trust crisis in the EU is not substantiated. In addition, Table 5.4 clarifies that there are primarily two distinct cases with very large losses of trust in the EU, namely Spain and Greece.

3.3   Validity of the Eurobarometer Data

In analysing time series data on trust trends in the national and EU institutions among a sample of European countries, the best data available are those published in the Eurobarometer (EB) surveys. Conducted since 1973, the EB surveys offer

consistent data on trust in national and EU institutions from 1999 onwards.[19] The advantage of the Eurobarometer data is that they offer bi-annual data with an overall number of time series observations per EA12 country of 32 (19 pre-crisis observations and 13 crisis observations—until 11/2014) within the standard EBs. In addition, EB data measure systemic trust for the relevant European institutions such as the EC, EP and ECB. Other datasets utilised for measuring trust (confidence) in institutions are produced by the Gallup World Poll (Gallup, 2014). The disadvantage of the Gallup data is first that they only measure confidence in the national government, but provide no information on the European institutions, nor national parliaments. Another disadvantage of using Gallup data on confidence in the national government is that they start from 2006 onwards and only offer yearly data. Thus, by utilising Gallup data, it is not possible to adequately compare a long-enough pre-crisis trend with sufficient information (1999–2008) with those of a crisis trend.

On the other hand, the advantage of the Gallup data is that one is able to compare European data with those of other international and OECD economies, such as the United States and Japan. In general, it should be noted that Gallup utilizes a confidence question in comparison to a trust question. In the standard academic literature, the confidence question is normally used to measure systemic or institutional trust (see e.g. Newton, 2008; Tonkiss, 2009). However, even if using a different questionnaire (trust vs. confidence), it should be expected that the main trends over time behave in a similar manner in both datasets. The Gallup data would thus offer a basic test to corroborate the findings on the pronounced decline in trust trends in the periphery countries of the EA12, as displayed above, within the Eurobarometer data. And indeed, when comparing both datasets, similar trends emerge. According to Gallup data (Manchin, 2013), confidence in the Spanish government dropped from 58% in 2008 to 18% in 2013 (decline of ~80% of net confidence) and Greek citizens' confidence dropped from 38% to 14% (a ~48% decline in net confidence).[20,21] The drop in Portuguese citizens' confidence was less pronounced than shown in the EB trust data, from 24% to 15%.

Interestingly, in contrast to the Eurobarometer data, which show a pronounced decline in trust in the Spanish government as early as 2012, Gallup data are only able to depict this decline in 2013. This led to the fact that the OECD's Government at a Glance report from the year 2013 (OECD, 2013), which among others focused on the changes in confidence levels in OECD countries throughout the crisis from 2007 to 2012 (OECD, 2013, p. 25), was not been able to identify the pronounced decline

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[19]Guiso et al. (2014, p. 42) actually detected one more point in time for trust in the national institutions as early as 1997 (EB 48). As the two observations from EB 49–50 would be missing, it seems appropriate to start analysing the trust data from 1999 (EB51) onwards. In addition, the trust time series for the EC and EP only start from 1999 onwards.

[20]Gallup includes Italy in a "southern" Europe country sample. According to Gallup data, Italian citizens' confidence in the national government declined from 36% to 15% points.

[21]Declines/increases in net trust (confidence) values are approximately twice the size as those in simple trust (confidence).

in confidence in the national government in Spain. The OECD report correctly identified the pronounced declines in confidence in Ireland, Greece and Portugal, but was not yet able to identify the pronounced decline in Spain. If the OECD report had utilised the 2013 Gallup data, the pronounced decline in Spain as shown in the EB data would have been detected. Overall, when comparing the two data sources, one can conclude that the trust crisis in the periphery is valid and is not based on measurement error due to a lack of quality in the Eurobarometer data. There exists indeed a pronounced decline in systemic trust in the periphery countries of the EA12. Similar results of a pronounced decrease in trust in the periphery countries of the EA12 are found when analysing the European Social Survey (ESS). Researchers find a marked decline in trust in the national parliament from 2008 to 2012 for Spain, Greece and Portugal (Torcal, 2014), but also for Ireland (O'Sullivan et al., 2014; c.f. Torcal, 2014).

3.4 Satisfaction with Democracy at the National and European Level

We argue below that a pronounced decline in systemic trust might lead to a loss of legitimacy on the part of the respective (policymaking) institution. Another indicator for the legitimacy of democratic governance is the degree to which citizens are satisfied with the democratic structures (see here Armingeon & Guthmann, 2014, who use trust in the national parliament and satisfaction with democracy for constructing an index entitled "Support for Democracy" for an EU27 country sample from 2007 to 2011). A comparison between net trust trends and trends in the satisfaction at the national and European level will thus be helpful to add robustness to the empirical results on the pronounced decline in net trust in the periphery countries of the euro area.

Table 5.5 compares the levels of satisfaction with democracy at the national level and those at European level before the crisis in 9–11/2007 with those in 11/2014 and displays the changes in between. The empirical findings are similar but different from those obtained when analysing changes in net trust trends.[22] Three findings are particularly noteworthy. First, similar to the existing empirical results (Armingeon & Guthmann, 2014, p. 432) and to the changes in net trust in the NP in Table 5.2, one detects the largest decline in satisfaction with democracy at the national level in Spain and in Greece, with declines of 55% and 44% points (~110% and 88% point decline in net satisfaction), respectively. Whereas three out of every four citizens

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[22]Note that the results for changes in the national and European democracy in Table 5.5 cannot directly be compared with those of net trust. Whereas Table 5.5 displays absolute values in satisfaction, Table 5.2 displays net trust levels. Net levels are approximately twice the size as absolute values. Thus, a decline in satisfaction in democracy at the country level in Spain of 48% points relates to a decline of approximately 96% points in net satisfaction.

Table 5.5 Changes in satisfaction with democracy in the EA12, 2007–2014

Country	Satisfaction	Levels: 9–11/2007	Levels: 11/2014	Changes: 11/2014–9-11/2007
Spain	SDN/SDE	77/66	22/25	−55/−41
Greece	SDN/SDE	63/58	19/25	−44/−33
France	SDN/SDE	65/50	49/41	−16/−9
Austria	SDN/SDE	80/47	64/47	−16/0
Portugal	SDN/SDE	36/46	25/27	−11/−19
Italy	SDN/SDE	40/48	30/32	−10/−16
Ireland	SDN/SDE	69/58	59/54	−10/−4
Netherlands	SDN/SDE	80/44	74/44	−6/0
Belgium	SDN/SDE	66/66	63/59	−3/−7
Finland	SDN/SDE	77/40	75/51	−2/11
Luxembourg	SDN/SDE	73/55	76/62	3/7
Germany	SDN/SDE	66/52	70/47	4/−5

Notes: EB 68 & EB82. SDN = Satisfaction with Democracy at the National level; SDE = Satisfaction with Democracy at the European level. Values that are displayed in light grey reflect two pronounced declines and levels. Values from 9 to 11/2007 (EB68) are displayed as no data were available for 3–5/2008 (EB69).

(77%) were still satisfied with democracy at the national level in 9–11/2007 in Spain, only one-fifth (22%) was still satisfied in 11/2014. In Greece, the situation changed from 2/3 of citizens (63%) being satisfied with democracy at the national level to one-fifth (19%) of citizens. In addition, in Greece, the situation partially recovered in 11/2014, as in 11/2012, only 11% were still satisfied. Spain and Greece also display the largest decline in satisfaction with democracy at the European level (with a decline of 41% and 33% points, respectively, or ~82% and 66% points decline in net satisfaction). These patterns in Spain and Greece are in contrast to those in Ireland and Portugal, where satisfaction with democracy at the national and European level has declined only moderately. Second, similar to the increase in net trust in the NP in the core countries of the EA12, some countries such as Germany were actually able to increase citizens' satisfaction with democracy at the national level by 4% points. Similar to the trends in trust in the EC and EP, Finland managed to increase satisfaction with democracy at the European level (+11% points). Third, satisfaction levels with democracy at the national level in 11/2014 in Spain are still higher than trust levels in the national parliament (22% vs. 10%).

Overall, Table 5.5 shows that within the EA12, the crisis has only moderately dented satisfaction with democracy at the national and European level. In 11/2014, a significant share of citizens were still satisfied with democracy at the national and European level. But there are two clear outliers to this trend in the EA12: in Spain and Greece, satisfaction with democracy at the national and European level has declined comparably to the one in trust. The losses in those countries are pronounced and the low net levels in 11/2014 should be considered a source of worry for national and European policymakers.

4 Consequences of Declining Systemic Trust for the Political Economy of EMU

4.1 Theoretical Arguments

One can observe from the descriptive results presented in the previous section that the decline in systemic trust in the national and European Union institutions in the periphery countries of the euro area has been pronounced. However, whereas there remains a significant level of trust towards the EU institutions, the steady decline in net trust in the national parliament has already reached levels as low as −74 (or 10% who still trusted the NP) in Spain and −71 (or 14% who still trusted the NP) in Greece in 11/2014.[23] But what are the consequences of a significant decline in systemic trust in the periphery countries of the EA12 for the political economy of EMU? Why should national and European policymakers worry about this decline? Below, we follow two sets of arguments why these declining trends in trust and low levels of trust deserve attention. Both arguments are then applied to the most recent crisis in the Eurozone.

4.1.1 The Loss of Legitimacy

Scholars from academic disciplines, including sociology, political science and economics, agree on the fact that citizens' systemic trust is crucial for the legitimacy of (policymaking) institutions (Kaltenthaler et al., 2010, p. 1262; Kosfeld et al., 2005, p. 673; Luhmann, 2000, p. 69; Newton, 2008, p. 243; Scharpf, 2003, p. 3, Stiglitz, 2012). In the absence of systemic trust, this legitimacy might be threated (Kaltenthaler et al., 2010, p. 1262; Kosfeld et al., 2005, p. 673; Newton, 2008, Scharpf, 2003), leading ultimately to the break-up of one of these (policymaking) institutions (Giddens, 1996, p. 166). In this respect, Newton (2008) differentiates between trust in mere persons, for example, politicians, and trust (or confidence) in the institutions and system of government (p. 243). Whereas a decline in trust in politicians is of less concern, according to Newton, a 'deep-seated lack' of trust 'in the institutions and system of government' should be worrying as it endangers its very foundations. Similar arguments are put forward by the author in other publications in which he claims that trust in institutions is the basic foundation of society and 'if they begin to crumble there is indeed cause for concern' (Newton, 2001, p. 205; Newton & Norris, 2000, p. 53).

The literature has identified two scenarios as a source of concern for the legitimacy of (policymaking) institutions. First, taking the arguments into consideration advanced by Kaltenthaler et al. (2010, p. 1262), who develop their argument in an

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[23] After less pronounced declines in net trust, levels have reached −46% and −57% in France and Italy, respectively. Although these levels should also be considered problematic, they are not as acute as those in Spain and Greece.

application concerning trust in the ECB, it would be worrying for the legitimacy of a (policymaking) institution if a large majority of citizens would start to mistrust it. Second, according to Newton (2001, p. 205), who develops his application concerning trust in the national parliament, 'a sudden or consistent decline in confidence (...) is a serious matter'. As we are dealing primarily with the changes in net trust throughout the crisis for our discussion, Newton's approach seems more appropriate for analysing whether the legitimacy of the above-discussed (policymaking) institutions at the national and European level might be endangered in times of crisis. However, in order to also assess the argument by Kaltenthaler et al. (2010, p. 1262), a combination of both scenarios might be called for. Combining both scenarios, one could then state that it would be worrying for the legitimacy of a (policymaking) institution if a sudden or consistent decline in trust leads to very low levels of trust on the part of a large majority of citizens.

In practice, however, how would a loss of legitimacy of a (policymaking) institution lead to its potential break-up and what would be the consequence for the political economy of EMU? Given that the trust crisis in the national institutions of democratic governance in the EA4, particularly in Spain and Greece, is more pronounced than that vis-á-vis the European institutions, we try to answer this question by focusing on the decline in net trust in the NG and NP.

A less-problematic case would arise if trust in the NG declines but trust in the NP remains constant. If trust in the NG steadily declines but trust in the NP remains stable, citizens could easily punish the NG by electing historically well-established democratic opposition parties within the NP. This would then lead to a break-up of the NG (a potential scenario as highlighted by Giddens, 1996, p. 166) but would not yet affect the NP. According to Newton (2001, p. 205), distrust in the NP is a different issue, as such distrust would include both the ruling and the opposition parties. In a scenario of steady decline in trust in the NP, the parliamentary system as such might be in danger of losing its legitimacy. Given the steady decline in trust in the NP to very low levels, it seems realistic that the well-established democratic parties would lose ground to newly established populist parties from the right or the left, which might be able to secure a majority of votes from citizens and form a new government.[24]

But how would the establishment of a government formed by the newly elected populist parties affect the political economy of EMU? To maintain high rates of approval, such parties might tend to be inward-looking and give priority to national over EU objectives (Lachmann, 2010, p. 356). Moreover, the policies of such populist parties would most likely be short-term fixes (Györffy, 2013). If such a populist party, for example, would be confronted with an acute unemployment crisis in the country, involving a large amount of debt as a share of GDP, most likely it would consider ways to circumvent the established processes and treaties within

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[24] In an extreme scenario, such parties, once having seized power, might try to erode the parliamentary process from the inside (for two detailed analyses of the German case during the Weimar Republic, see Berman, 1997; Frey & Weck, 1983).

EMU. If such a party forms the government within a country that is in a debtor position, realistic measures might then include confronting member partners of EMU with a potential default on its debt, which might lead to a disorderly exit from EMU (and would most likely damage EMU as a whole). Most importantly, the mere intention of taking such measures would endanger the political unity among the political elites within the member countries of EMU. As frequently pointed out, however, the political unity of the political elites in EMU is the glue that holds EMU together (Jonung, 2002, pp. 420–421; Bordo & Jonung, 2003). In the absence of such glue, the long-term success of a currency union, such as EMU, would likely be threatened (Bordo & Jonung, 2003; Jonung, 2002, pp. 420–421).

4.1.2   Trust as a Prerequisite for an Economy's Long-Term Fiscal Sustainability

Following the arguments by Jonung (2013a, 2013b, p. 114) and Györffy (2007, 2013), it can be argued that a loss of trust in the institutions of democratic governance at the national level endangers an economy's long-term fiscal sustainability. The argument is made explicit by Györffy (2013, pp. 47–50), who discusses two potential cycles: the virtuous and vicious cycles between systemic trust and growth. The virtuous cycle works in the following manner. If citizens' trust in public administration is high, citizens' will obey the law and pay their taxes (see here also Nye 1997 and Scholz, 1999). These resources can then be used by the public administration to implement long-term planning and policies based upon a stable budget. These conditions moderate uncertainty and create a positive business environment providing predictability and reliability for entrepreneurs, which will encourage higher business investments, leading to higher growth and lower unemployment levels. This sequence of developments again generates systemic trust in the public administration. The completely opposite scenario, the vicious cycle, can materialise if citizens' trust in the public administration is low. In this scenario, compliance with the law and willingness to pay taxes will be low, leading to short-term planning and political business cycles. This situation hampers entrepreneurial activity and leads to lower growth and higher unemployment, which again leads to a decline of systemic trust on the part of citizens.

In this respect, another important point, as highlighted by Jonung (2013a, 2013b) and Györffy (2007, 2013), is the relationship between low levels of systemic trust and the effective implementation of structural reforms within an economy to regain competitiveness. Both authors conclude that in countries in which citizens' systemic trust is low, governments will find it more difficult to be able to implement structural reforms in order to regain competitiveness. Györffy and Jonung illustrate this fact by comparing the case of Sweden with that of Portugal (Györffy, 2013, pp. 82–91; Jonung, 2013b, p. 114) and Hungary (Györffy, 2007, pp. 10–20). Sweden, which had a financial crisis in the 1990s, was able to successfully implement structural reforms to regain competitiveness after only several years. The key to these structural reforms was the fact that citizens trusted the government and did not boycott the

reforms. The structural reforms were implemented with citizens' support and not their opposition to them. In contrast, Portugal and Hungary, two low-trust countries, when faced with economic crisis, were not able to regain competitiveness and were exposed to political cycles that led to the installation of populist parties, political instability, and short-term policy fixes. Although this field of research is still largely underdeveloped and needs more basic empirical work, the first econometric results between systemic trust and fiscal adjustments point towards a positive relationship (Weichenrieder et al., 2014).

4.2 Application of Theoretical Arguments to the Most Recent Euro Area Crisis

Given the theoretical arguments, we now apply these arguments to the most recent Eurozone crisis. The question guiding the discussion is: how far can a significant decline in systemic trust affect the political economy of EMU?

4.2.1 Loss of Legitimacy

Applying the combined scenario by Kaltenthaler et al. (2010, p. 1262) and Newton (2001, p. 205) described above with the rich empirical evidence as presented in sections 2 and 3 clarifies that the Spanish and Greek trends in net trust in the national government and parliament in times of crisis should be considered particularly worrisome for the legitimacy of these two institutions. As elaborated above, the trends in Spanish and Greek trust in the NG/NP have faced the most pronounced decline in net trust among the EA12 since 2008 and have reached the very low net levels of trust of -74 and -71 in 11/2014 (significantly lower than in EC/EP). In addition, in both countries, this pronounced decline in trust in the NP is associated with a pronounced decline in satisfaction with democracy, an incidence exclusively detected in those two countries within the EA12 (see Table 5.5). Having established that the legitimacy of the Spanish and Greek national government and parliament has been endangered in times of crisis, how will this affect the political economy of EMU? We first discuss the Greek case and then continue with the Spanish case.

The Greek case has strongly evolved as laid out within our theoretical arguments. The pronounced and steady decline in Greek citizens' net trust in the national parliament throughout the crisis to very low levels in 11/2014 has led as a consequence to the new establishment of a populist party from the left (Syriza), as well as the strengthening of a party from the radical right (Golden Dawn) within the Greek national parliament and crowded out the historically well-established social democratic party from the moderate left (Pasok). This trend had already manifested itself in the national elections in June 2012, in which Syriza managed to win a 16.8% share and Golden Dawn a 7% share. It continued in the European Parliament elections in

May 2014, in which Syriza managed to gain the largest share with 26.6%, ahead of the then ruling New Democracy Party with 22.8%. In addition, parties from the radical right, Golden Dawn, achieved 9.4%. Thus, since June 2012, the historically well-established democratic parties at the center of the parliamentary democratic process were pressured from the populist left and radical right party spectrum. After the Greek national parliament failed to elect a new president in December 2014, new elections were scheduled for January 2015. In the seventh year of the crisis, at a time when net trust in the national parliament had already declined by 69% points and stood at a net level of −71%, a newly established party from the populist left (Syriza) managed to form the government with an almost-absolute majority.

And now that a newly established party from the populist left formed the government in January 2015, let us examine how this has affected the political economy of EMU. Being a debtor country within EMU and confronted with 26% unemployment and a debt load of 174% of GDP, the newly established government from the populist left repeatedly stressed its willingness to default on its debt, if necessary. More importantly than the fact that the Greek government has not yet defaulted on its debt, the ongoing discussions on a potential default have already created strong political tensions among the member countries of EMU. If these political tensions do not ease in the short-to-medium run, they will most likely affect the unity among the political elites of the member countries and will thus weaken the glue that holds currency unions such as EMU together (Bordo & Jonung, 2003; Jonung, 2002).

Whereas in Greece, the new establishment of parties from the populist left and the strengthening of parties from the radical right constituted a steady process throughout the crisis, in Spain, an opposition to the well-established democratic parties (Peoples Party and Spanish Socialist Workers Party) in the national parliament emerged from outside the Spanish party system within the 15-M social movement. In January 2014, this social movement established itself as a new party from the populist left under the name Podemos. The party has won a 5% share of the vote in the European Parliament elections in May 2014 and a 15% share of the vote in the regional election in Andalusia in March 2015. Whereas polls by El Mundo in November 2014 predicted that Podemos would be able to win the largest share of votes (28.3%) in the upcoming national parliamentary elections (Buck, 2014), polls by Metroscopia in March 2015 indicate that Podemos has already lost a significant share of votes (22.5%), although still securing the largest share of votes (Kennedy, 2015). The Spanish national elections will be held at the end of 2015. If a populist leftist party such as Podemos manages to become the strongest political force in Spain, and if it manages to form the new government within a coalition government, this would increase the existing political tensions between the member countries of EMU. With Spain being the fourth-largest economy in EMU, such tensions would more significantly affect the political unity of the member countries of EMU than was experienced in the Greek case.

4.2.2 Trust as a Prerequisite for an Economy's Long-Term Fiscal Sustainability

Applying the above theoretical arguments to the most recent empirical evidence within the periphery countries of the euro area, we find that low levels of systemic trust are indeed an important obstacle to the long-term fiscal sustainability of a country. We try to illustrate this reasoning in the case of Greece. The Troika (EC, ECB and the International Monetary Fund) bailed out Greece in 2010 under the conditionality of implementing deep structural reforms in the Greek economy. A crucial point that all three institutions did not take into consideration was the fact that Greek citizens' trust in the national parliament had already declined markedly in the aftermath of the financial crisis and more importantly during the first months of the Papandreou government—from −5% in 10–11/2009 to −53% in 5/2010 (see here also Roth, 2011). Thus, at the time, the structural reforms should have been implemented by the Papandreou government from May 2010 onwards, a large majority of Greek citizens already mistrusted their parliament. Taking these low levels of systemic trust into consideration, it was clear that implementation of the structural reforms as envisaged by the Troika had a high probability of failing, as they were implemented in opposition to citizens' wishes and not with their mutual consent (such as occurred in Sweden in the 1990s). Indeed, in line with the theoretical arguments, the opposition of Greek citizens provoked a boycott of the implemented austerity measures and led to a political business cycle. Similar problems occurred in Spain, Ireland and Portugal, in which austerity measures were implemented at a time when citizens' net trust in their national parliaments had already declined significantly in the aftermath of the financial crisis and stood at −50%, −49%, and −39%, respectively, in May 2010.

In general, it should be noted that the low levels of trust in the national parliaments in the EA12 countries, including those of two large economies France and Italy, pose an obstacle to implementing structural reforms in these economies in times of crisis. It seems common sense that deep structural reforms should not be initiated, given such low levels of systemic trust in order to back the political stability/legitimacy of their respective national parliaments. A destabilisation of these respective national parliaments in times of crisis would only add fuel to the fire of parties from the radical right in France (Front National) and the populist left in Italy (Five-Star Movement). As discussed in more detail below, given these conditions of political uncertainty in France and Italy, the widening competitiveness gap vis-à-vis Germany needs to be largely closed via a German revaluation.

5   Restoring Citizens' Systemic Trust in the Euro Area Periphery

5.1   *Empirical Findings of the Relationship between Unemployment Rates and Systemic Trust in Times of Crisis*

In sections 2 and 3, we have identified a pronounced decline of systemic trust in the EA4, here in particular in Spain and Greece, in times of crisis. How can this loss in systemic trust be restored? What are the key drivers of this decline in systemic trust in the EA4, especially in Spain and Greece?

Econometric findings for the United States and for an EA12 country sample suggest that among others an increase in unemployment rates throughout the crisis is significantly and negatively related to a decline in systemic trust (Stevenson & Wolfers, 2011; Roth et al., 2013, 2014; cf. Wälti, 2012).[25] Table 5.6 displays updated econometric findings of a fixed-effects DFGLS estimation between unemployment and net systemic trust for the six-year crisis period (10–11/2008 to 11/2014), for an EA12 country sample utilising a model specification and a research design as developed within the existing literature.[26] Table 5.6 clarifies that within the EA12 in times of crisis, a 1% increase of the unemployment rate is associated with a decrease of 7.5% and 7.3% points of net trust in the NG and NP, and a decrease of 4.1% and 4.2% points in the EC and EP. With an unemployment coefficient of −6.5, the association between unemployment and net trust in the ECB in times of crisis is significantly higher compared to those in the EC and EP. Within the EA12 in times of crisis, a 1% increase of the unemployment rate is associated with a decrease of 6.5% points of net trust in the ECB.

Whereas the unemployment rate is the sole significant variable that is able to explain the decline in trust in the national institutions in the EA12, in the case of the EC and EP, there exists a second significant variable contributing to a decline in trust in times of crisis. Indeed, as can be seen in Table 5.6, an increase of 10% points of government debt in times of crisis is associated with a decline of 6.6% and 5.1% points in trust in the EC and EP. Thus, in contrast to trust in the national institutions, trust in the EC and EP in times of crisis seems to be driven by both an increase in unemployment and an increase in debt over GDP. The negative and significant coefficients of −6.9 and −11.8, respectively, for inflation and trust in the

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[25]The importance of the unemployment coefficient is in line with Gomez (2015), who finds a significant effect of unemployment on an index for support for the EU for an EU27 country sample (c.f. Armingeon & Ceka, 2014; Armingeon & Guthmann, 2014). In addition to the unemployment rate as published by the European statistical office Eurostat, citizens' perceptions of the personal unemployment situation (Guiso et al., 2014; Polavieja, 2013; c.f. Torcal, 2014) have also been found to be a significant determinant of the decline in trust.

[26]For a detailed description of the research design, model specification and econometric estimation strategy, see Roth et al. (2012a, 2013, 2014).

Table 5.6 Unemployment and net systemic trust, fixed-effects DFGLS estimation, 2008–2014, EA12

	1	2	3	4	5
Dependent variable	NG	NP	EC	EP±	ECB±
Source	EUI	EUI	EUI	EUI	JEI
Unemployment	−7.5***	−7.3***	−4.1***	−4.2***	−6.5***
	(1.81)	(1.36)	(1.11)	(0.95)	(1.25)
Growth	−3.1	−2.8	0.69	0.01	0.6
	(2.59)	(2.07)	(1.41)	(1.28)	(1.63)
Inflation	−1.9	−3.1	−4.8	−6.9***	−11.8***
	(5.32)	(4.15)	(3.00)	(2.71)	(3.52)
Government debt	0.44	0.2	−0.66***	−0.51***	–
	0.32	(0.24)	(0.20)	(0.17)	–
Election dummy	Yes	Yes	–	Yes	–
Durbin-Watson statistic	2.02	1.95	2.14	2.15	2.38
Adjusted R-squared	0.87	0.89	0.89	0.89	0.89
Country fixed effects	Yes	Yes	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes	Yes	Yes
Elimination of first order autocorrelation	Yes	Yes	Yes	Yes	Yes
Observations	119	119	119	119	119[a]
Number of countries	12	12	12	12	12

[a]To estimate net trust in the ECB with 119 observation, the country case of the Netherlands in 5/2011 was dropped. This does not alter the results in any significant manner.

Notes: NG = net trust in national government; NP = net trust in national parliament; EC = net trust in European Commission; EP = net trust in European Parliament; ECB = net trust in European Central Bank.

Sources: Updated and merged econometric results until 5/2011 (by EBs 79–81) in Roth, Nowak-Lehmann and Otter (2013); Roth, Gros and Nowak-Lehmann (2014).

European Parliament and European Central Bank lack robustness. Excluding the two time periods (EB 70 and 71) in the direct aftermath of the financial crisis renders insignificant coefficients. In particular, in the case of the ECB, an insignificant relationship between inflation and trust is in line with theoretical considerations as the ECB successfully muted inflation in times of crisis. The econometric results in Table 5.6 thus seem to suggest that among the four depicted macroeconomic variables (unemployment, growth of GDP per capita, inflation, and debt as a share of GDP), it is in particular the unemployment rate in times of crisis that is highly significantly and strongly negatively associated with systemic trust at the national and European level.

5.1.1 Graphical Analysis

The econometric findings in Table 5.6 clarify the important role of unemployment rates in explaining the pronounced decline in trust in the periphery countries of the EA12. To assess whether this relationship is driven universally across all
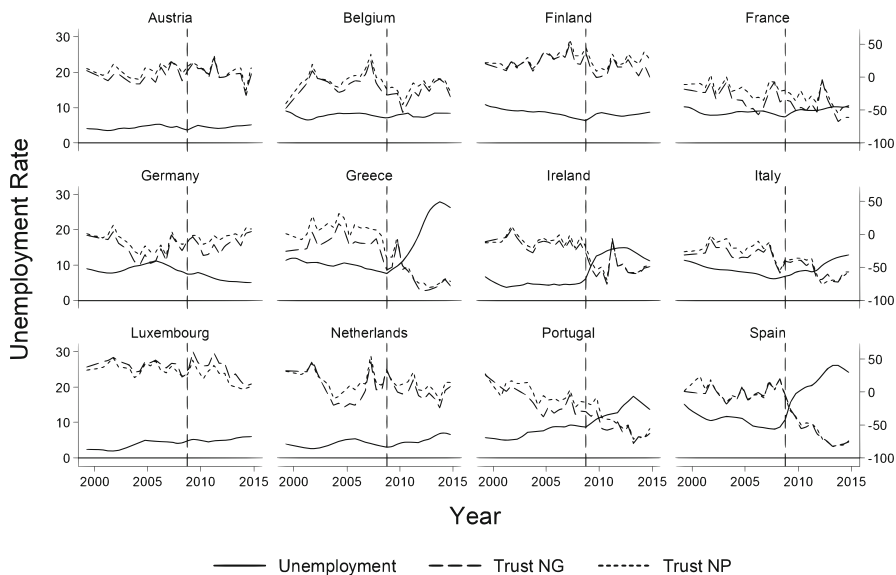
Fig. 5.3 Unemployment and net trust in the national government and parliament in the EA12, 1999 to 2014

Notes: The left hand x-axis displays the percentage of unemployment rate, ranging from 0 to +30. The right-hand side displays the levels of net trust ranging from −100 to +50.

12 countries, Fig. 5.3 plots the unemployment trends from 3–4/1999 to 11/2014 against the net trust trends in the NG/NP.

Figure 5.3 together with the table of correlation coefficients in Table 5.A4 in Appendix 2 clarify that whereas trust trends in the NG/NP are almost all negatively related to unemployment trends (with Belgium being the only exception), the strength of this association varies across the 12 countries. The negative relationship is particularly strong in the three EA4 countries Spain, Portugal and Greece. The case of the former country is of particular interest. In Spain, the correlation coefficients for both relationships, the one between unemployment and net trust in the NG/NP, are as high as −0.99, and thus resemble almost a perfect negative correlation in times of crisis. It is noteworthy, as can be identified in Fig. 5.3, that this perfect negative relationship not only holds during the steady increase in unemployment rates since the start of the crisis in 10–11/2008, in which net trust steadily declined, but also once unemployment rates started falling from 5/2013 onwards, in which net trust started to slightly recover. Similarly perfect, although slightly less pronounced patterns can be identified in the cases of Greece and Portugal (with correlation coefficients ranging from −0.90 to −0.75). In both cases, the steady increase in unemployment rates from 10–11/2008 to 5/2013 was associated with a steady decline in trust. The decrease of unemployment rates from 5/2013 onwards is then associated with a slight recovery in net trust. The same patterns with lower magnitude can be detected in Ireland and all EA8 countries, with the exception of
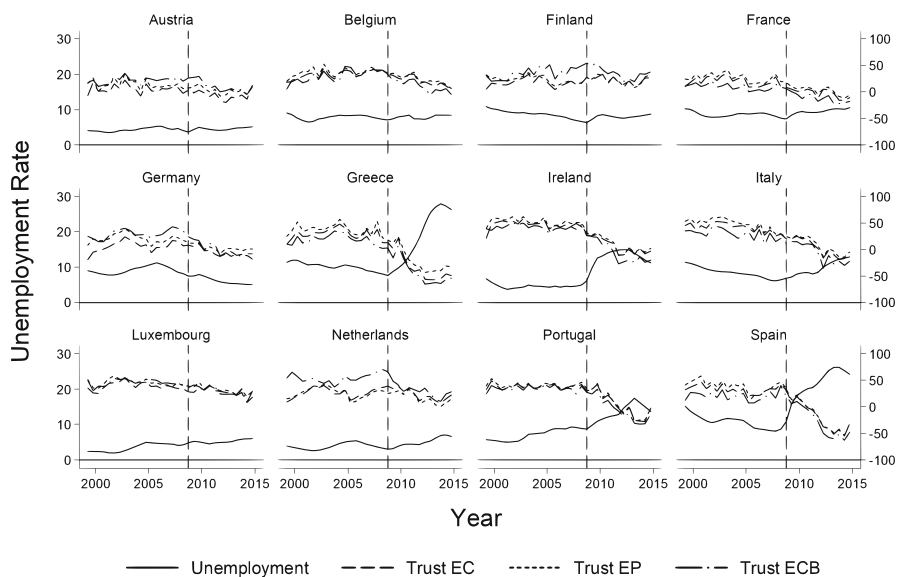
Fig. 5.4 Unemployment and net trust in the EU institutions in the EA12–1999 to 2014
Notes: The left hand x-axis displays the percentage of unemployment rate, ranging from 0 to +30.
The right hand side displays the levels of net trust ranging from −100 to +100.

Austria and Belgium. For Germany, it is noteworthy that the negative correlation coefficient is actually driven by a reverse effect—an actual reduction in unemployment rates throughout the crisis—which has led to an increase in net trust.

Similar but distinct patterns can be found when analysing trust in the EC and the EP in Fig. 5.4 and Table 5.A4. In the three periphery countries Spain, Portugal and Greece as well as in Italy and France, one detects large negative correlation coefficients between an increase in unemployment and a decline in net trust. In particular, in Spain, with correlation coefficients of −0.94 and −0.95, an almost perfect negative correlation between unemployment and net trust in the EC/EP can again be found. In contrast to the patterns in the NG/NP within the three core countries Germany, Austria and Finland, one actually finds a positive correlation between unemployment and net trust in the EC/EP, with a particularly strong correlation in Germany with 0.84 and 0.71.

Thus, Germany is the real exception among the EA12 countries (see here also Alonso, 2015). In Germany, a reduction in unemployment rates throughout the crisis is associated with a decline in net trust in the EC/EP. This exceptional status of Germany becomes even more apparent concerning net trust in the ECB (also shown in Fig. 5.4 and Table 5.A4). Whereas in Spain, Portugal, Greece, Italy and France, with negative correlation coefficients ranging between −0.93 to −0.80, an increase in unemployment rates is negatively associated with declines in net trust, Germany's situation is nearly the exact opposite. With an appositive correlation coefficient of 0.88, a reduction in unemployment rates is positively associated with a decline in net trust in the ECB.

5.1.2   Fairness as an Intermediating Effect between Unemployment and Systemic Trust in Times of Crisis

As highlighted by Stiglitz (2012), the pronounced increases in unemployment might lead to a significant decline in systemic trust via the intermediating factor of fairness. The role of fairness might be one of the reasons why the unemployment coefficient on trust is lower and only weakly significant in pre-crisis times but becomes highly significant and negative in times of crisis, particularly from the second year onwards of the sovereign debt crisis (Roth et al., 2013, pp. 15–16). Given that the financial crisis has been largely responsible for the emergence of the sovereign debt crisis within the EA and given that a significant amount of *public* resources at the national level has been spent on aiding/bailing out the *private* financial sector (De Grauwe, 2010, p. 344), the austerity measures implemented in Spain, Greece, Portugal and Ireland aimed at building *confidence* (see e.g., the debate in Corsetti, 2012 and De Grauwe & Ji, 2013), with their pronounced increase in unemployment rates, have most likely created perceptions of significant unfairness among the citizens in those countries.

This fairness problem also concerns the growing income inequality in those countries caused among others by the pronounced increase in unemployment rates (see European Commission, 2014a, p. 40 for the case of Spain). It is most likely this parallel action by policymakers of aiding/bailing out the financial sector and implementing significant austerity measures, which have led to an increase in unemployment, that has created a strong sense of unfairness in the minds of citizens. In the Spanish case, for example, the (very) long-term unemployment rates (>2 years) have increased significantly throughout the crisis (European Commission, 2014a, p. 40). Given the fact that unemployment benefits are paid over a period of only two years, poverty rates increased significantly (European Commission, 2014a, p. 40). Connected to the concept of fairness might also be an increase in the perception of corruption in the periphery countries of the EA12 (Torcal, 2014), which has led to the large and significant unemployment coefficient in times of crisis. Thus, a needed reduction in unemployment rates should be associated with strengthening the governance structures by enhancing government effectiveness and the rule of law and effectively countering corruption. In this respect, the OECD has set up a broad trust strategy, identifying among others, the two dimensions of integrity (control of corruption) and fairness (OECD, 2014).

5.2   Increasing Unemployment throughout the Crisis: Factual Evidence in the Case of Spain

The econometric findings as displayed in Table 5.6 and the clear pattern between an increase in the unemployment rates and trust in the NP in Figs. 5.3 and 5.4 indicate that for most EA12 countries to regain citizens' systemic trust, among others, it

would be important to reduce unemployment rates in times of crisis. We have identified two problematic countries in particular, namely Spain and Greece (both are confronted with large increases in unemployment), but the sheer size of the former's economy makes it a more pivotal case for the EA12 than Greece. The following discussion will therefore focus on that country's case and the specific reasons for such a pronounced increase in Spanish employment in the first place.

The formation of the euro area in 1999 led to large capital inflows into the peripheral countries of the EA12, particularly Spain (Hale & Obstfeld, 2014; Sinn, 2014, pp. 39–40). These large capital inflows led to unsustainable housing investment (construction bubble) and household consumption in the run-up to the crisis (Hale & Obstfeld, 2014; Sinn, 2014, pp. 39–40, 67–68). The Spanish economy was severely hit in the aftermath of the financial and economic crisis once this lending stopped from September 2008 onwards (Sinn, 2014, p. 111). Although government debt had been relatively low when the crisis erupted, household debt and the debt of the financial industry were significant (De Grauwe, 2010, p. 344; Sinn, 2014, pp. 68–69).

As in other European/euro area countries, the Spanish government had to devote substantial resources in order to stabilise its banking sector (De Grauwe, 2010, p. 344). Together with the automatic stabilisers set in motion, this led to a fast increase in Spanish government debt in the first years of the crisis (De Grauwe, 2010, p. 344). From May 2011 onwards, significant amounts of capital investments were withdrawn from the Spanish economy (Merler & Pisani-Ferry, 2012; Sinn, 2014, p. 226). In addition, its competitive position vis-à-vis other economies within the euro area has deteriorated in the early years of EMU, here in particular, the relative labour unit costs vis-à-vis Germany (De Grauwe, 2014a, pp. 130–131). With Spain being a member of a currency union and having forfeited the possibility to conduct its own national monetary policy, the economy could not regain competitiveness via a large currency depreciation, as was available to the United Kingdom (Krugman, 2009; De Grauwe, 2014b). Instead, it had to go through a process of internal devaluation (cutting budgets + lowering wages), which led to a deepening of the depression and a further increase in unemployment rates (De Grauwe, 2014a, p. 132).

Given this overall economic situation, the financial markets were less willing to purchase Spanish government bonds and Spanish bond prices subsequently started to increase at the beginning of 2011 (De Grauwe, 2014a, p. 121). To calm the financial markets, austerity measures (in the form of further budget cuts) were implemented in the midst of an economic crisis to restore confidence (Corsetti, 2012; De Grauwe & Ji, 2013). This led to an intensification of the crisis and even higher unemployment rates (De Grauwe, 2014a, p. 132). To calm the markets, the European Central Bank decided to act as lender of last resort within the Spanish government bond market (De Grauwe, 2013a) and thereby achieved the subsequent decline in spreads vis-à-vis the Bund (De Grauwe & Ji, 2013). In the seventh year of the crisis, the Spanish unemployment rate increased by around 15% points, from 8% in 3–5/2008 to 24% in 11/2014. Even if the structural unemployment rate in Spain is sizeable (Van Ark, 2014) due to the existence of a pronounced skill gap (European Commission, 2014a) and rigid employment protection legislation (European

Commission, 2014a), a cyclical component of the Spanish unemployment increase was recognised by the central European institutional actors in the seventh year of the crisis (Draghi, 2014; European Commission, 2014b).

5.3   Tackling Unemployment in Times of Crisis

Given that this pronounced increase in unemployment rates in times of crisis endangers the legitimacy of the Spanish national parliament, it would be crucial for Spain and the long-term success of EMU to reduce a significant share of the cyclical unemployment rate over the coming years.

The structural unemployment in Spain would need to be tackled at the national level (Baldwin & Wyplosz, 2012: Chap. 8) through the implementation of structural labor market reforms and adequate policies fostering the re- and upskilling of the labor force (Draghi, 2014; European Commission, 2014a, 2014b). It was suggested that the cyclical component of unemployment in the euro area should be tackled by stimulating aggregate demand with a mix of monetary policy (Draghi, 2014) and expansive fiscal policy via an investment plan for Europe (European Commission, 2014c, 2014d; Fichtner et al., 2014). The importance of stimulating aggregate demand to kick-start growth and reduce cyclical unemployment in times of crisis has been underlined by Nobel laureates throughout the crisis (Krugman, 2014; Stiglitz, 2012). Most likely, this policy mix will successfully stimulate the aggregate economy of the euro area and tackle a part of the cyclical unemployment in Spain.[27]

However, such a policy mix is not able to solve problems of structural unemployment, nor can it tackle the underlying competitiveness gap indicated by the large spread in unit-labour-costs vis-à-vis Germany within the 12 euro area member states.

In the medium-term, in order to enhance growth and reduce unemployment in Spain, this gap in unit-labour-costs vis-à-vis Germany needs to be closed (De Grauwe, 2015). With Spain having joined the euro area in 1999 and having given up the possibility to regain competitiveness via a large devaluation of its currency (as in the case of the United Kingdom—see Krugman, 2009; De Grauwe, 2014a, pp. 9–10, De Grauwe, 2014b), two realistic options are available to the country to close the competitiveness gap vis-à-vis Germany. Either Spain continues its ongoing process of internal devaluation or Germany revaluates more strongly. Given the empirical evidence already of a pronounced decline in trust in the Spanish national parliament with very low levels of trust in times of crisis, a continuation of

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[27]This recommended policy mix, however, is not without criticism. For some commentators, it violates the subsidiary principle and leads to large market distortions, endangering the unity of Europe (Sinn, 2014). For others commentators, this policy mix is not far-reaching enough. They propose a targeted investment plan for the euro-area periphery that would be directly financed by the ECB (Varoufakis and Holland, 2012).

its ongoing process of internal devaluation would further endanger the legitimacy of the national parliament, and thus political stability. The view that the continuation of the ongoing internal devaluation is politically unsustainable for the periphery countries within the EA12 is supported by the most recent literature (De Grauwe, 2013b, pp. 39–40; O'Rourke & Taylor, 2013) and the important historical analogy of the fall of the Weimar Republic and the rise of German fascism (Sinn, 2014, pp. 138–139).

Given Spain's already unstable political situation, what is thus needed to close the competitiveness gap is a significant revaluation within the core countries of the EA12, particularly in Germany (see De Grauwe, 2013b, pp. 39–40; De Grauwe, 2015; Fratzscher, 2014).

6 Public Support for the Euro in Times of Crisis

As elaborated above, European policymakers have announced their intention to stimulate aggregate demand within the EA via a mix of monetary policy (Draghi, 2014) and expansive fiscal policy via an investment plan for Europe (European Commission, 2014a, 2014b) in order to stimulate aggregate demand and tackle cyclical unemployment at the euro area level. Given the empirical fact that systemic trust in the European institutions has declined throughout the crisis, one might argue that such collective action on behalf of the European institutions in the sixth year of the crisis lacks (political) legitimacy (see the general discussion of declining systemic trust and loss of legitimacy in Section 4). Although this argument certainly has its merits, from an EA12 perspective, the empirical reality is more nuanced. In this respect, one important indicator that has not yet been discussed above is citizen support for Economic and Monetary Union, with one single currency, the euro.[28]

Following Roth et al. (2012a), three strands of arguments in this field of research can be highlighted. First, according to Banducci et al. (2003, p. 686) and Kaltenthaler and Anderson (2001, pp. 140–141), the evolution of public support for the euro is a crucial test to determine the future process of EU integration and the prospect to move towards supranational governance. Second, according to Bordo and Jonung (2003) and Jonung (2002), public support for the euro is crucial for the political legitimacy of EMU and the euro and thus functions as an important prerequisite for the long-term success of EMU. Third, public support of the euro can be interpreted as a commonality of destiny (Baldwin & Wyplosz, 2012, p. 425), solidarity (De Grauwe, 2014a, p. 133) or political glue (Bordo & Jonung, 2003) among the member countries of EMU. According to Jonung (2002), it is rather the

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[28]To measure public support for the euro, survey participants were asked their opinion on several proposals: '*Please tell me for each proposal, whether you are for it or against it.*' One proposal was: '*A European Monetary Union with one single currency, the Euro*'. The interviewee person could then choose from the following set of answers: '*For*', '*Against*' or '*Don't Know*'.

Table 5.7 Comparison of changes between net support and net trust in the EA12, EA4 and EA8, 2008–2014

Sample	Trust/support	Level: 3–5/2008	Level: 11/2014	Changes: 11/2014–3-5/2008
EA12	Euro	40	40	0
EA12	EC	21	−11	−32
EA12	EP	27	−6	−33
EA12	ECB	29	−20	−49
EA4	Euro	34	34	0
EA4	EC	38	−29	−67
EA4	EP	37	−24	−61
EA4	ECB	34	−42	−76
EA8	Euro	42	42	0
EA8	EC	16	−6	−22
EA8	EP	22	0	−22
EA8	ECB	27	−13	−40

Notes: EA = euro area; EC = European Commission; EP = European Parliament; ECB = European Central Bank. EA12, EA4 and EA8 values are population-weighted trust trends. All values below 0 show a lack of trust by the majority of citizens. Minimum values are shaded in dark grey. Maximum values are shaded in light grey. Table ranked according to decline in changes.
Source: Updated and slightly modified version of Table 1 until 11/2014 (by EB's 79–82) in Roth et al. (2012a).

socio-political concept of commonality of destiny or solidarity or political glue that holds a currency union together, rather than standard economic arguments as developed in the literature on optimal currency areas.

Following the methodology proposed in Roth et al. (2012a), Table 5.7 compares the changes in net support in the euro before the crisis and in the sixth year of the crisis (11/2014–3-5/2008), with those of net trust in the EC, EP and ECB for an EA12, EA8 and EA4 country sample, respectively. Three findings are particularly noteworthy. First, in line with the original findings (Jonung et al., 2012; Roth et al., 2011, 2012a, 2012b) and similar findings (Debomy, 2013; Guiso et al., 2014; Hobolt & Le Blond, 2014; Hobolt & Wratil, 2015), Table 5.7 highlights that public support for the euro in all three country samples remained stable throughout the crisis. Second, as already elaborated above and shown in Table 5.7, this is in sharp contrast to net trust in the ECB, which suffered the greatest decline in trust among the three European institutions. In addition, the difference in net support and net trust is the most pronounced within the peripheral countries of the EA4 with an overall difference of a net value of 76% points. Third, with a value of +40, the levels of net support are surprisingly high in the sixth year of the crisis. Whereas in the sixth year of the crisis already a slim majority distrusted the European institutions within the EA12 (with net trust levels ranging from −20 to −6), a large majority supported EMU and the euro.

Since Table 5.7 only depicts a before-and-after comparison, it is interesting to also analyse the time trends of net support in comparison to net trust in the EC, EP and ECB from 1999 to 2014. Figure 5.5 compares the net support trend in EMU and the euro with the net trust trends in the ECB, EC and EP. With a decline in mean
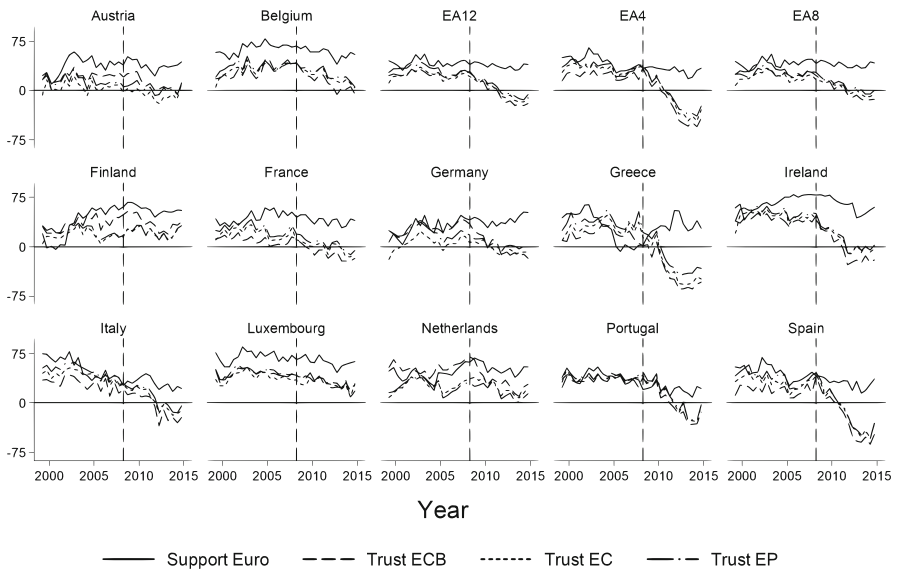
Fig. 5.5 Public support for the euro and trust in the ECB, EC and EP in the EA12, EA4, EA8 and individual countries for the euro in the EA-12, 1999–2014

Notes: EMU = economic and monetary union; ECB = European Central Bank; EC = European Commission; EP =European Parliament. The dashed line represents the start of the crisis in September 2008. Values for the EA12, EA8 and EA4 are population-weighted trust trends. As the figure presents data on net trust, all values below 0 show a lack of trust by the majority of citizens.

Sources: Updated and merged versions of figures until 11/2014 (by EB's 79–82) in Roth et al. (2012a); Roth et al. (2013); Roth et al. (2014).

levels of only 4% and 2% points, net support trends have remained almost stable in the EA12 and EA8 country sample (see Table 5.A5 in Appendix 2 for the mean values and standard deviations, as well as the respective changes of the before-crisis and crisis periods). In the EA8, these stable trends are driven by opposing trends, with Italy on the one hand facing a decline of 15% points, and the Netherlands, Germany, and Finland on the other hand facing increases of 9%, 10% and 21% points, respectively. In contrast with a decline in mean values of 13% points, net support has slightly declined in the EA4 country sample. This decline in mean levels of the EA4 has been driven by the decline in Spain of 16% points and of Portugal of 18% points.

In closely analysing Fig. 5.5, one detects that the decline in mean levels in Italy, Spain, and Portugal and the increase in mean levels in Finland, the Netherlands, and Germany are largely due to a significant decline/increase from relatively high/low levels of net support within the first years since the actual establishment of the euro area in 1999. As can be identified by the low standard deviations, with a crisis/ pre-crisis ratio of below 0 in the respective countries, net support trends stabilized in times of crisis. Throughout the period, only Germany managed to further increase net support for the euro, while Spain faced a moderate decline. The most pronounced decline throughout the crisis can be seen in Ireland. Remarkably, Greece actually

enjoyed a significant increase in net support throughout the crisis (see here also Clements et al., 2014). The net support trends are in stark contrast to trends in net trust in the EA4. Whereas net support only declined slightly in the EA4, we detect pronounced declines in mean levels and sharp increases in standard deviations in all three European institutions in the EA4, particularly in the ECB. Among the EA8, we only detect a significant contrast between net support for the euro and net trust in the ECB among the four stability-centered countries Austria, Finland, Germany, and the Netherlands. In those four countries, net trust trends in the ECB have started to decline from significantly higher levels in 3–5/2008 since the start of the crisis and are now located at lower levels compared to net trust in the EC and EP. Whereas net trust in the ECB has already turned negative in eight of the EA12 countries (EA4, Belgium, France, Germany, and Italy—see also Table 5.3), Fig. 5.5 clarifies that in each individual country of the EA12, a majority of citizens always supported the euro during the crisis (with a minimum level of eight in Portugal in 11/2013).

Given the empirical evidence in Fig. 5.5 that in times of crisis in each individual member country of the EA12 a majority of citizens supported the euro, including a large majority in Germany, it becomes apparent that it is not the euro itself that has been criticised by EA12 citizens. Rather, it is the management of the crisis by the European institutions that has been criticised. Given the significant decline in net trust, the enduring popularity of the euro within the EA12 should be considered an important prerequisite for collective action at the EA level to stimulate aggregate demand and tackle cyclical unemployment, as announced and currently undertaken by the European institutions (Draghi, 2014; European Commission, 2014c, 2014d).

7 Restoring Systemic Trust without Treaty Change and with Treaty Change

From the above line of argument, we have learned that the periphery countries of the EA12, particularly Spain and Greece, face an acute crisis of systemic trust in times of economic crisis. Levels of systemic trust in national parliaments have fallen in a such a pronounced manner that their legitimacy might be endangered. Econometric results indicate that among others, it is the sharp increase in unemployment rates that has been responsible for the sharp decline in systemic trust. Under the given conditions, how can systemic trust be restored in a scenario without treaty change and in one with treaty change?

7.1 Restoring Systemic Trust in the Short Run without Treaty Change

The policy mix initiated by the European institutions to stimulate aggregate demand in order to tackle cyclical unemployment within the EA via a mix of monetary policy (Draghi, 2014) and expansive fiscal policy via an investment plan for Europe

(European Commission, 2014c, 2014d; Fichtner et al., 2014) will most likely help to restore citizens' systemic trust. Given the empirical findings presented above, however, this will depend strongly on whether the policy mix will be successful in generating a sufficient number of jobs.

Such action however will most likely only help to restore citizens' systemic trust in the short-run. The ongoing discussion highlights that in order to reduce unemployment in the medium- to long-run, the competitiveness gap between the euro area periphery vis-a-vis Germany needs to be closed (De Grauwe, 2013b, 2015). Given the already unstable political situation in the periphery countries of the EA12 (but also problematic situation in France and Italy), a continuation of the asymmetric ongoing internal devaluation by the peripheral countries will be politically unsustainable and thus does not represent a viable option (De Grauwe, 2013b, p. 39, De Grauwe, 2014a, 2014b, p. 132; O'Rourke & Taylor, 2013; Sinn, 2014, pp. 138–139).

The ongoing discussion indicates that what is needed instead is a moderate internal devaluation within the periphery countries and a strong revaluation within core countries, in particular, the German economy (De Grauwe, 2015; Fratzscher, 2014). Such a revaluation in Germany might lead to a temporary and moderate strengthening of German anti-euro parties from the populist-right, but given the overall large support for the euro by German citizens, those parties will not benefit significantly in the medium- to long-run and pose no threat to the political stability of the German parliament (see also Heinen & Kreutzmann, 2015). Indeed, as has been shown, trust in the national parliament and support for EMU and the euro among German citizens is at an all times high in the sixth year of the crisis in 11/2014.

7.2   Restoring Systemic Trust in the Long Run with Treaty Change

In the medium run, the financial and sovereign debt crisis has underlined that the first steps towards deeper fiscal integration are essential in order to sustain the long-term success of EMU (Bordo et al., 2013; De Grauwe, 2014a, 2014b). Given that EMU currently lacks a) sufficient labour mobility, b) flexible wage setting, and c) sufficient financial market integration, the development of a fiscal union would be needed in order to mitigate the social and political costs of large asymmetric shocks among the individual economies of the euro area (as witnessed in the current ongoing crisis) (De Grauwe, 2014a, 2014b).

Different proposals have been brought forward on how to design the next steps of this fiscal union. The discussion is still going on. One proposal for mitigating the social and political costs of asymmetric shocks within the EA is the implementation of fiscal capacity (Van Rompuy, 2012) in the form of a European unemployment insurance scheme (Andor, 2013, 2014; European Commission, 2014b). This proposal has been criticised as inefficient and the creation of a banking union has been

proposed instead (Asatryan et al., 2015; Feld & Osterloh, 2013). Another proposal is the issuance of common euro bonds (De Grauwe, 2014a, 2014b, p. 125). The proposal has been criticised on moral hazard grounds (Sinn, 2014, p. 317). Bordo et al. (2013) proposed the issuing of common euro bonds but stressed the necessity of a non-bailout clause. Elsewhere the literature highlights the necessity to coordinate the wage costs within the EA via the creation of a European Competitiveness Council and a Euro System of Fiscal Policy to prevent the build-up of competitive gaps (Sapir & Wolff, 2015).

Regardless of which proposal will ultimately be implemented in the coming years, in order to build systemic trust, these proposals should manage to close the large heterogeneity in unemployment rates among the member countries of the euro area.

In addition, given the fact that a large proportion of the political legitimacy within the fiscal realms still lies with the national institutions of democratic government, further integration towards fiscal union would most likely need a reform of democratic governance within the euro area. One possibility is the establishment of a euro area parliament (potentially within the framework of the European Parliament) to be held accountable by citizens. Such a step would realistically entail a treaty change.

Another prerequisite for establishing one of the above-mentioned proposals towards a fiscal union would be the maintainance of high public support for EMU and the euro. Without such support, implementing these next steps towards a deeper fiscal integration would most likely endanger the long-term success of EA integration (Jonung, 2002).

Appendix 1: Conceptualisation of Systemic Trust

Trust can be conceptualized in one of three broad dimensions: thick, interpersonal or generalised trust, and systemic or institutional trust (Giddens, 1990, 1996; Khodyakov, 2007; Luhmann, 2000; Newton, 1997; Putnam, 2000). The term systemic trust[29] was specifically introduced into the discipline of sociology in the early work of Niklas Luhmann in the 1960s (Luhmann, 2000) and in the later work of Anthony Giddens (1990, 1996). Both authors stress that in today's modern differentiated societies the smooth functioning and stability of the societal, political and economic system relies on citizens' systemic trust (Luhmann, 2000) or trust in abstract systems (Giddens, 1990, 1996). The advantage of the term systemic trust in contrast to institutional (Stevenson & Wolfers, 2011) or political trust (Hetherington, 1998; Mishler & Rose, 2001) is that it is able to embed trust in the differentiated subsystems, including the political, economic, and financial systems.

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[29] Systemic trust is the author's own translation of the German term *Systemvertrauen* as coined by the sociologist Niklas Luhmann (2000). In the literature, *Systemvertrauen* has also been translated as "system trust" (see here a.o. Khodyakov, 2007: 123; Seligman, 1997: 19).

Judging from the magnitude of the ongoing financial, economic and sovereign debt crisis and the empirical evidence gathered to date within those countries hardest hit by the economic crisis, such as the EA4, it seems appropriate to conclude that trust in at least three subsystems, namely, the political, economic, and financial systems, has been adversely affected by the ongoing financial and sovereign debt crisis. Thus, although the effect of the crisis on citizens' trust in national parliaments is found (as elaborated in this contribution), the crisis cannot be reduced solely to a crisis of political trust. It has also strongly affected citizens' trust in the financial system (Ehrmann et al., 2013; Roth, 2009b; Roth et al., 2014; Schatz & Vollbracht, 2010; Sonnenschein, 2013; Wälti, 2012) and the economic system (Roth 2009 a, b; Stevenson & Wolfers, 2011). The term systemic trust, with its underlying theoretical framework, as developed within the discipline of sociology (Giddens, 1990, 1996; Luhmann, 2000), functions well as an umbrella term for citizens' trust in the various subsystems (including the financial, economic and political systems) having been affected by the ongoing financial, economic, and sovereign debt crises.

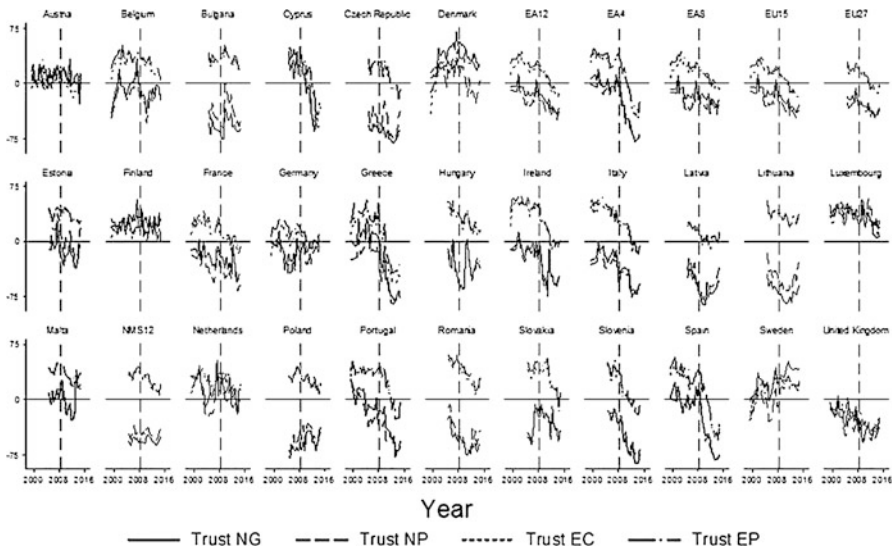## Appendix 2: Ancillary Figures and Tables

Fig. 5.A1 Individual time series of net trust in institutions of democratic governance at the national and EU level in the EU-27, 1999 to 2014
Notes: EU = European Union; NG = national government; NP = national parliament; EC = European Commission; EP = European Parliament. The dashed line represents the start of the crisis in September 2008. Values are population-weighted trust trends. Since the figure presents data on net trust, all values below 0 show a lack of trust by a majority of citizens.
Source: Updated and merged versions of Figs. A1, A2, A3, and A4 until 11/2014 (by EB's 79 to 82) in Roth et al. (2013).

Table 5.A1 Mean levels of net trust in institutions of democratic governance at the national and EU level, 1999–2014

Country	Mean level BC		Mean levels C		Changes mean levels (C - BC)		Difference in changes	
	NG	NP	NG	NP	NG	NP	NG-EC	NP -EP
EA12	−18	−9	−36	−29	−18	−20	8	10
EA4	−5	2	−58	−55	−53	−57	−4	−10
EA8	−22	−11	−30	−22	−8	−11	11	13
Greece	−8	10	−65	−59	−57	−69	3	−11
Spain	0	2	−58	−57	−58	−59	−9	−5
Portugal	−12	−2	−54	−45	−42	−43	−8	−8
Ireland	−10	−8	−50	−47	−40	−39	−1	4
Italy	−23	−21	−54	−53	−31	−32	7	9
France	−24	−17	−45	−33	−21	−16	1	8
Belgium	−7	−2	−23	−15	−16	−13	−4	0
Luxembourg	32	36	34	22	2	−14	13	0
Netherlands	4	17	2	11	−2	−6	1	4
Finland	20	28	13	24	−7	−4	−11	−4
Austria	1	10	6	10	5	0	17	12
Germany	−18	−13	−14	−3	4	10	14	28
Country	Mean level BC		Mean levels C		Changes mean levels (C - BC)		Difference in changes	
	EC	EP	EC	EP	EC	EP	EC-NG	EP -NP
EA12	24	32	−2	2	−26	−30	−8	−10
EA4	34	36	−15	−11	−49	−47	4	10
EA8	21	30	2	6	−19	−24	−11	−13
Greece	29	38	−31	−20	−60	−58	−3	11
Spain	32	39	−17	−15	−49	−54	9	5
Ireland	46	52	7	9	−39	−43	1	−4
Italy	41	48	3	7	−38	−41	−7	−9
Portugal	38	41	4	6	−34	−35	8	8
France	20	27	−2	3	−22	−24	−1	−8
Germany	6	21	−4	3	−10	−18	−14	−28
Belgium	33	37	21	24	−12	−13	4	0
Luxembourg	39	46	28	32	−11	−14	−13	0
Netherlands	26	27	23	17	−3	−10	−1	−4
Austria	6	15	−6	3	−12	−12	−17	−12
Finland	18	23	22	23	4	0	11	4

Notes: NG = national government; NP = national parliament; EC = European Commission; EP = European Parliament; BC = before crisis (3–4/1999 to 3–5/2008); C = crisis (10–11/2008 to 11/2014). Since the table presents data on net trust, all values below 0 show a lack of trust on the part of a majority of citizens. Table ranked according to decline of changes in mean levels in the NP and EP. The BC-sample includes 19 observations. C-sample includes 13 observations.
Source: Updated data in Roth et al. (2013).

Table 5.A2 Standard deviations of net trust in institutions of democratic governance at the national and EU level, 1999–2014

Country	Standard deviation BC		Standard deviation C		Changes standard deviation (C : BC)	
	NG	NP	NG	NP	NG	NP
EA12	10	9	9	8	0.9	0.9
EA4	8	8	20	21	2.5	2.6
EA8	12	10	7	6	0.6	0.6
Greece	12	11	21	22	1.8	2.0
Spain	11	12	23	23	2.1	1.9
Portugal	18	15	15	20	0.8	1.3
Ireland	9	9	17	16	1.9	1.8
Italy	12	13	13	16	1.1	1.2
France	16	11	16	14	1.0	1.3
Belgium	16	16	14	11	0.9	0.7
Luxembourg	8	8	17	14	2.1	1.8
Netherlands	25	17	15	12	0.6	0.7
Finland	11	11	13	13	1.2	1.2
Austria	10	9	12	11	1.2	1.2
Germany	17	13	12	7	0.7	0.5
Country	Standard deviation BC		Standard deviation C		Changes standard deviation (C : BC)	
	EC	EP	EC	EP	EC	EP
EA12	6	6	13	12	2.2	2.0
EA4	6	8	26	24	4.3	3.0
EA8	7	7	9	9	1.3	1.3
Greece	10	10	28	24	2.8	2.4
Spain	9	10	29	30	3.2	3.0
Ireland	8	7	15	16	1.9	2.3
Italy	8	10	17	16	2.1	1.6
Portugal	5	5	24	24	4.8	4.8
France	8	8	9	9	1.1	1.1
Germany	10	8	8	6	0.8	0.8
Belgium	10	8	10	9	1.0	1.1
Luxembourg	7	7	7	7	1.0	1.0
Netherlands	9	10	11	11	1.2	1.1
Austria	7	7	9	7	1.3	1.0
Finland	8	9	7	8	0.9	0.9

Notes: NG = national government; NP = national parliament; EC = European commission; EP = European parliament; BC = before crisis (3–4/1999 to 3–5/2008); C = crisis (10–11/2008 to 11/2014). Table ranked in the same order as Table 5.A1. BC-sample includes 19 observations. C-sample includes 13 observations.
Source: Updated data in Roth et al. (2013).

Table 5.A3 Mean levels and standard deviations in net trust in the ECB, 1999–2014

Country	BC		C		Changes	
	Mean	St. dev.	Mean	St. dev.	Mean (C - BC)	St. dev. (C: BC)
EA12	25	4	−6	16	−31	4.0
EA4	24	6	−24	28	−48	4.7
EA8	26	4	−1	13	−27	3.3
Greece	18	9	−40	26	−58	2.9
Ireland	42	5	−5	21	−47	4.2
Spain	20	9	−26	31	−46	3.4
Portugal	35	6	−4	23	−39	3.8
Italy	29	9	−6	19	−35	2.1
Germany	29	8	0	14	−29	1.8
Netherlands	54	8	32	15	−22	1.9
France	10	6	−11	9	−21	1.5
Belgium	31	11	12	12	−19	1.1
Luxembourg	45	6	29	10	−16	1.7
Austria	22	6	10	11	−12	1.8
Finland	35	10	36	11	1	1.1

Notes: BC = before crisis (3–4/1999 to 3–5/2008); C = crisis (10–11/2008 to 11/2014). Since the table presents data on net trust, all values below 0 show a lack of trust by the majority of citizens. Table ranked according to decline in the changes of mean value. BC-sample includes 19 observations. C-sample includes 13 observations.
Source: Updated data in Roth et al. (2014).

Table 5.A4 Correlation coefficients between unemployment trends and net trust in national and European institutions in times of crisis, 2008–2014

Country	NG	NP	EC	EP	ECB
Belgium	0.04	−0.08	−0.49	−0.48	−0.47
Austria	−0.24	−0.14	0.23	0.28	−0.17
Ireland	−0.22	−0.41	−0.53	−0.56	−0.61
Finland	−0.71	−0.47	0.14	0.19	−0.26
Netherlands	−0.59	−0.54	−0.77	−0.74	−0.80
France	−0.45	−0.57	−0.67	−0.78	−0.86
Germany	−0.34	−0.60	0.84	0.71	0.88
Luxembourg	−0.69	−0.66	−0.67	−0.60	−0.58
Italy	−0.70	−0.75	−0.88	−0.87	−0.86
Greece	−0.75	−0.82	−0.89	−0.88	−0.90
Portugal	−0.84	−0.90	−0.89	−0.90	−0.92
Spain	−0.99	−0.99	−0.94	−0.95	−0.93

Notes: NG = national government; NP = national parliament; EC = European Commission; EP = European Parliament; ECB =European Central Bank. Table ranked according to strength in the correlation coefficients with net trust in the NP. Positive correlation coefficients are depicted in light grey. Minimum levels are depicted in dark grey. Correlations coefficients between unemployment and systemic trust are based on 13 observations in times of crisis per country.
Source: Updated data in Roth et al. (2013) and Roth et al. (2014).

Table 5.A5 Mean levels and standard deviation – net support euro

Country	BC		C		Changes	
	Mean	St. dev.	Mean	St. dev.	Mean (C - BC)	St. dev. (C: BC)
EA12	42	6	38	4	−4	0.7
EA4	44	10	31	6	−13	0.6
EA8	42	7	40	4	−2	0.6
Portugal	39	9	21	7	−18	0.8
Spain	46	11	30	8	−16	0.7
Italy	53	17	38	8	−15	0.5
Luxembourg	70	8	62	7	−8	0.9
Belgium	64	8	57	7	−7	0.9
France	45	9	40	6	−5	0.7
Ireland	67	11	63	12	−4	1.1
Austria	38	13	39	8	1	0.6
Greece	28	25	32	12	4	0.5
Netherlands	44	11	53	9	9	0.8
Germany	30	13	40	7	10	0.5
Finland	36	25	57	6	21	0.2

Notes: BC = before crisis (3–4/1999 to 3–5/2008); C = crisis (10–11/2008 to 11/2014). As the table presents data on net support, all values below 0 show a lack of trust by the majority of citizens. Table ranked according to decline in the changes of mean value. BC-sample includes 19 observations. C-sample includes 13 observations.
Source: Updated data in Roth et al. (2012a).

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Chapter 6
Crisis and Citizens' Trust in the European Central Bank: Panel Data Evidence for the Euro Area, 1999–2012

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Abstract Throughout the crisis, citizens' trust in the European Central Bank has significantly declined throughout the Euro Area (EA-12). Although a decline in the core countries of the EA-12 has been distinct, a more pronounced decline has been taking place in the peripheral countries of the EA-12. Taking panel data and using a fixed effects DFGLS estimation for an EA-12 country sample over the time period 1999–2012 with a total of 305 observations, this paper detects a negative and significant relationship between unemployment and trust in times of crisis. The robustness analysis of the paper confirms that this decrease in trust is strongly driven by the significant increase in unemployment rates in the four peripheral countries Spain, Ireland, Greece, and Portugal.

Keywords Crisis · Trust · Unemployment · European Central Bank

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1 Introduction

The bankruptcy of Lehman Brothers in September 2008 triggered global crises of both trust (Guiso, 2010; Sapienza & Zingales, 2012) and confidence (Tonkiss, 2009) and acted as the starting point of a financial and economic crisis for most advanced economies worldwide, including the advanced economies in the Euro Area (EA) (European Economic Advisory Group, 2010). Within the EA, the financial and economic crisis culminated in a sovereign debt crisis from 2010 onwards (De Grauwe, 2010). The breeding ground of the financial crisis was mostly created by a lack of regulation within the institutional framework of the financial system in the United States as well as in Europe (Acharya et al., 2009; De Grauwe, 2009; Financial Crisis Inquiry Commission, 2011; Stiglitz, 2009). Since central banks are commonly identified as the major guardians of the financial system (Healy, 2001, p. 22), the financial and economic crisis will most likely have negatively affected citizens' trust in central banks. Indeed, it has been shown that citizens' trust in national central banks (Gros & Roth, 2009; Wälti, 2012) and in the European Central Bank (ECB) (Ehrmann et al., 2013; Jones, 2009; Roth, 2009a; Wälti, 2012) reached all-time lows in January/ February 2009 and May 2010. Based on these findings, it seems worthwhile to analyse the precise channels that caused and transmitted this loss of citizens' trust in central banks.

In this context this contribution focuses on the EA and citizens' trust in the ECB over a 13-year time period (from 1999 to 2012). It is structured in the following manner. It first embeds the concept of citizens' trust in the ECB within the overall concept of systemic trust and elaborates what might be the consequences of an enduring loss of citizens' trust in the ECB. In the next step, the paper tries to identify those factors that most likely led to the loss of citizens' trust in the ECB. Based upon these theoretical assumptions, the paper elaborates on the measurement of the data, the model specification and the research design. A description of the trend in citizens' trust is then followed by a discussion about methodological issues, a presentation of the econometric results and a discussion of our results in the context of previous empirical findings—as well as the underlying theoretical assumptions. The conclusions summarize the main findings.

2 Theoretical Links

2.1 The Consequences of an Enduring Loss of Citizens' Trust in the ECB

Trust can be conceptualized as one of three forms: thick, interpersonal, and systemic or institutional trust (Khodyakov, 2007; Roth, 2009b). As this paper will analyse

citizens' trust in the ECB, it will take the concept of systemic trust as its starting point. A prominent (and for our paper suitable) elaboration of systemic trust is given in the sociological discipline by Luhmann (2000) and Giddens (1996). Both authors stress the importance of systemic trust in today's modern complex societies (Giddens, 1996, p. 165; Luhmann, 2000, p. 26). For Luhmann, systemic trust is necessary to reduce the complexity of modern societies in order to stabilize their very foundations (Luhmann, 2000, p. 72). Giddens characterizes systemic trust as necessary to secure the functioning of modern societies and warns that decreasing levels of systemic trust have in some cases the potential to break apart institutional arrangements (Giddens, 1996, p. 166). Concerning the latter argument, political scientists such as Kaltenthaler et al. (2010) focus on trust in (policymaking) institutions. Alongside Kosfeld et al. (2005, p. 673), Kaltenthaler, Anderson and Miller (2010, p. 1262) argue that a certain level of citizens' trust in a policymaking institution is crucial for the legitimacy of that institution.

How do these arguments apply to the concept of trust in the ECB and what are the consequences of an enduring loss of citizens' trust in the ECB? As the ECB is a (policymaking) institution, it can be argued that a certain level of citizens' trust would be crucial to maintain its legitimacy. In addition, as the ECB is an *independent* institution that is not democratically elected (as highlighted in Article 130 TFEU of the Treaty of Lisbon (2010)), the legitimacy argument applies to an even greater extent than to other policymaking institutions. In this respect, a high level of citizens' trust in the ECB can be characterized as a proxy for a high approval rating among citizens, which ultimately secures the independence of the ECB. It follows from the above argumentation that a loss of trust will leave the ECB vulnerable to political influence, as citizens will most likely pressure politicians to minimize the ECB's independence (Kaltenthaler et al., 2010, p. 1261). This reasoning is shared by ECB policymakers. Via publicly available communications (ECB, 2010), an interview with the then president Wim Duisenberg (Wenkel, 2008) and other interviews with experts (Kaltenthaler et al., 2010, p. 1267), ECB policymakers confirm that they depend on citizens' trust in the ECB to resist pressures from politicians and to secure their independence.

As we have argued that a loss of trust in the ECB will endanger the ECB's independence, we still have to clarify why this granted independence is important for the ECB. Concerning the importance of the independence of central banks, a general and a crisis-embedded argument can be mentioned. In the context of the general argument, a detailed literature survey by Eijfinger and de Haan (1996) evaluating the pre-existing theoretical and empirical literature concluded that the independence of central banks is associated with lower inflation rates. And lower inflation rates entail fewer costs to long-term economic growth (Eijfinger & de Haan, 1996, p. 54). In the context of the crisis-embedded argument, the ECB's decision to become the lender of last resort in the government bond market (De Grauwe, 2013, p. 520) was pivotal in stabilizing the Eurozone in times of crisis (De Grauwe & Ji, 2013a, 2013b, p. 2). However, as the broadening of the ECB's mandate has provoked strong opposition (De Grauwe, 2013, p. 522; Fratzscher, 2013; Giavazzi et al., 2013), it seems

reasonable to argue that the ECB's granted independence has played a significant role in its continuing effort to stabilize the Eurozone in times of crisis.

2.2 Possible Drivers of Citizens' Trust in the ECB

Although citizens' perceptions might influence their systemic trust (Banducci et al., 2009, p. 572), this paper focuses on the impact of three macro-economic variables: 1) unemployment, 2) inflation, and 3) growth of GDP per capita when trying to identify those factors that led to an erosion of citizens' trust in the ECB. This undertaking seems to be reasonable as it is soundly rooted in economic theory when considering the literature on popularity functions (Bellucci & Lewis-Beck, 2011, pp. 192–94; Nannestad & Paldam, 1994, pp. 215–16) and the existing literature on trust in the ECB (Fischer & Hahn, 2008). Nevertheless, as the most recent economic literature linking institutional trust to business cycles stresses the important role of unemployment in explaining systemic trust (Stevenson & Wolfers, 2011) and given that the unemployment rate has increased significantly, particularly in the periphery countries of the EA, throughout the crisis (and not the inflation rate—which has been muted by the ECB), this contribution primarily focuses on the unemployment coefficient in depicting its econometric results.

3   Measurement of Data, Model Specification, and Research Design

3.1   Measurement of Data

Measures of trust in the ECB were based upon the biannual standard Eurobarometer (EB) surveys from spring 1999 (EB51) to autumn 2012 (EB78).[1] Respondents were asked the following question: 'I would like to ask you a question about how much trust you have in certain institutions. For each of the following European bodies,

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[1] Standard EB surveys are administered to about 1,000 respondents per EU country. The interviews are performed face-to-face in the home of the respondents. For each standard EB survey, new and independent samples are derived. To guarantee the polling of a representative sample of the population, the sampling design is multistage and random. The raw data are available on CD-ROM from Gesis ZA Data Service for Standard EBs 51–62 (Gesis, 2005a, 2005b) and were received on request from Gesis ZA Data Service for Standard EBs 63–69 (Gesis, 2009). Data for the Standard EBs 70–78 and Special EB 71.1 were taken from the European Commission's (EC) tables of results (2009a; , 2009b; , 2009c, 2010a, 2010b, 2011a, 2011b, 2012a, 2012b). Following Jones (2009) and Ehrmann et al. (2013), the observations from the Special EB 71.1 in 1–2/2009 were taken into consideration. For a detailed reasoning, see Roth et al. (2013, p. 4). The elimination of data from EB71.1 does not modify the econometric results in any significant way (see results in row 14 in Table 6.3).

please tell me if you tend to trust it or not to trust it'. Respondents were then presented with a range of institutions. Possible answers included the following three categories: 'Tend to trust it', 'Tend not to trust it' and 'Don't know'. Applying a concept introduced by Gärtner (1997, pp. 488–89), we utilize a 'net trust' measure, which is obtained by subtracting the percentage of those who trust from those who do not trust.[2] In order to make our trust data match with our macroeconomic data, a procedure proposed by Wälti (2012, p. 597) is applied.[3] Monthly data on unemployment, inflation (change of HICP) and sovereign bond yield rates were retrieved from Eurostat. The values for unemployment were adjusted seasonally. Quarterly data on GDP and population size were taken from Eurostat's data.[4,5] The quarterly data were interpolated to gain monthly observations in order to utilize the monthly matching approach.[6]

3.2   Model Specification

Within our baseline model, an unbalanced panel, net trust in the ECB is estimated as a function of unemployment, inflation, growth of GDP per capita, and other important control variables. As this contribution is interested in explaining the 'within variation' throughout the crisis period, a fixed-effects estimation approach is utilized. The baseline model for our estimation, which holds in the long term when all adjustments have come to an end, reads as follows:

$$\text{Trust\_ECB}_{it} = \alpha_i + \beta \text{Unemployment}_{it} + \chi \text{Inflation}_{it} + \delta \text{Growth}_{it} + \phi Z_{it} + w_{it}$$

$$(6.1)$$

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[2] A net trust measure seemed adequate as the 'Don't Know' answers varied over a wide range from 0% in Greece in EB 71 to 44.6% in Portugal in EB 51 with an overall mean value of 20.5%. However, it should be pointed out that net trust and trust measures correlate as high as 0.92. For an equation showing how to calculate net trust, see Roth et al. (2013, p. 4).

[3] Although the monthly matching methodology by Wälti (2012, p. 597) correlates as high as 0.99 for the variables unemployment and inflation and 0.95 for the variable growth of GDP per capita, when comparing it to a semester-matching methodology, the monthly methodological approach seems to be preferable in order to prevent any potential overlap between the explanatory macro-economic variables and the EB data. The exact months of polling for the EBs surveys are displayed in the legend of the x-axis in Fig. 6.1.

[4] GDP data were chain-linked, the reference year being 2005, and seasonally adjusted. Data on GDP were missing for Greece from the second quarter of 2011 onwards.

[5] Due to inconsistent data on population size and breaks in some country time series within the official Eurostat data, values had to be exchanged by means of interpolation whenever required.

[6] Possible measurement errors from the performed interpolation seem improbable, as the monthly constructed variables correlate with the semester data as high as 0.95 for growth of GDP per capita.

where i characterizes each country and t represents each time period. Trust_ECB$_{it}$ is the net trust amount in the ECB for country i during period t. Unemployment$_{it}$, Inflation$_{it}$, Growth$_{it}$ and Z_{it} are accordingly unemployment, inflation, growth of GDP per capita and important control variables such as indicators of financial stress, e.g. sovereign bond yields. α_i depicts a country-specific constant term and w_{it} is the error term. As we utilize a Feasible Generalized Least Square (FGLS) estimation approach, time dummies are not included within our baseline estimation as they are mutually exclusive with FGLS.

3.3   Research Design

Our baseline econometric analysis will estimate Eq. (6.1) with the aid of an EA-12 country sample (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain) over the 13-year time period from 1999 to 2012.[7] With 29 time periods ($t = 29$) and 12 countries ($n = 12$) and thus with a ratio of t/n of 2.4, estimation of Eq. (6.1) will be performed via time series econometrics. As we identify the events associated with the bankruptcy of Lehman Brothers in September 2008 as the start of the crisis, a pre-crisis period (3–4/1999–3-5/2008) will be differentiated from a crisis period (10–11/2008–11/2012) within the descriptive and econometric analysis. In addition, throughout the analysis, a *core* country sample, the EA-8 (Austria, Belgium, Finland, France, Germany, Italy, Luxembourg, and the Netherlands) will be differentiated from a *periphery* country sample, the EA-4 (Greece, Ireland, Portugal, and Spain).

4   Descriptive Statistics

Table 6.1 shows the levels of net trust in the ECB before the crisis (3–5/2008) and in the fourth year of the crisis (11/2012) and the values for the changes in net trust (11/2012–3-5/2008) for all EA-12 countries, as well as an EA-12, EA-4 and EA-8 country sample.[8] Table 6.1 clarifies that in the EA-12 net trust in the ECB has declined significantly throughout the crisis by no less than 45% points. Whereas a majority of citizens still trusted the ECB before the crisis (+29%), in the fourth year of the crisis a

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[7] For Greece, time trend data from 2001 onwards were taken. The five countries Slovakia, Slovenia, Malta, Cyprus, and Estonia were not analysed as their accession occurred only recently and thus time trend data would not have been available from 1999 onwards.

[8] For reasons of validity, population-weighted trust trends are utilized for the EA-12, EA-4 and EA-8 country sample. However, population-weighted and non-population weighted aggregates are highly correlated.

Table 6.1 Net trust levels and changes in net trust in the EA-12, EA-4, EA-8, and individual EA-12 countries (2008–2012)

Country	Levels: 3–5/2008	Levels: 11/2012	Changes: 11/2012–3–5/2008
EA-12	29	−16	−45
EA-4	34	−50	−84
EA-8	27	−7	−34
Spain	40	−58	−98
Ireland	47	−20	−67
Greece	1	−64	−65
Portugal	39	−13	−52
Germany	35	−13	−48
Belgium	42	−6	−48
Netherlands	70	24	−46
Italy	21	−11	−32
Finland	49	24	−25
Luxembourg	42	24	−18
France	10	−7	−17
Austria	20	6	−14

Notes: EA-12, EA-4, and EA-8 are population weighted. As the table displays levels in net values, all level values below 0 indicate that a majority of respondents mistrust the ECB.
Sources: Standard EBs 69 and 78.

majority distrusted the ECB (−16%). However, with 34% points (from 27% to −7%), the decline is less pronounced in the EA-8 compared to a decline of 84% points (from +34% to −50%) in the EA-4. This significant difference in the aggregate trends can be explained by analysing the values for the individual countries. Whereas the four periphery countries Spain, Ireland, Greece, and Portugal have faced a significant decline in trust in the ECB with values of −98%, −67%, −65%, and −52% points, respectively, core countries such as Austria and France faced only a moderate decline by −17% and −14% points, respectively. Overall, comparing the decline in trust in the ECB to other European institutions, such as the European Commission and European Parliament (EP) over the same time frame, the decline in trust in the ECB is the more significant in all EA-12 countries (see here Roth et al., 2013, pp. 8–9).[9]

Given that Table 6.1 only depicts a before–after comparison for two points in time (3–5/2008 and 11/2012), Fig. 6.1 compares the 13-year time trends (from 1999 to 2012) for the EA-12 country sample with those from the EA-4 and EA-8 (for the time trends of all individual EA-12 countries (see Fig. 6.A1 in the Appendix). Four

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[9]With the exception of Greece's decline in trust in the EC, trust in the ECB has decreased more significantly than trust in the EC and EP in all EA-12 countries from 3–5/2008 to 11/2012. In comparison to the EC and EP, the decrease in trust in the ECB is significantly higher (one standard deviation above mean) in particular in the three core countries Germany, Netherlands and Finland. In those three countries, the additional trust decline varies from 29% to 38% points of net trust with respect to the EC and 29%–32% points of net trust with respect to the EP, with Germany showing the largest additional decline of 38% and 32% points, respectively.
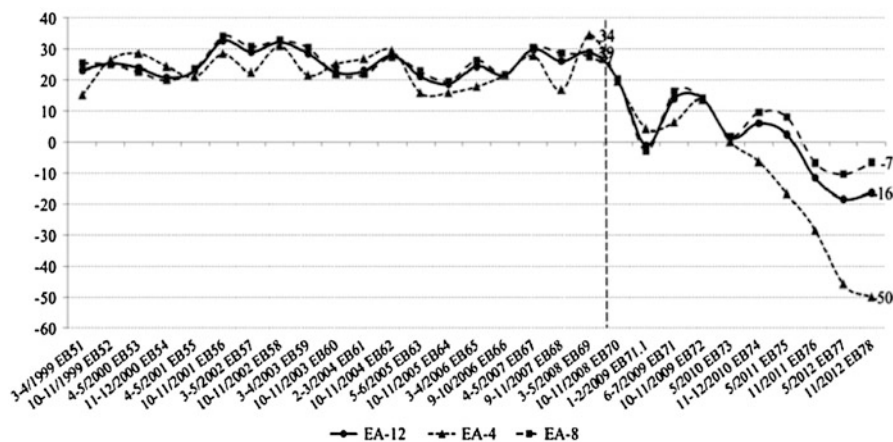
Fig. 6.1 Net trust in the ECB in per cent, EA12, EA4, and EA8, 1999–2012
Notes: As the figure depicts net values, all values below 0 indicate that a majority of respondents
mistrust the ECB. For the aggregation of the EA-12, EA-4, and EA-8, population weights were
applied. The dotted line represents the incidence of the bankruptcy of Lehman Brothers in
September 2008.
Sources: Standard EBs 51–78 and Special EB 71.1.

interesting findings emerge. First, trust significantly declined throughout the crisis
period (10–11/2008 to 11/2012) in the EA-12 in comparison to the pre-crisis period
(3–4/1999–3-5/2008, with mean levels declining by 24% points from 25% to 1%)
and departed from its long-term trend (with standard deviations tripling). Second, the
decline was more pronounced in the EA-4 with a drop in mean levels of 34% points
in comparison to 22% points in the EA-8 and standard deviations quadrupling in the
EA-4, but only doubling in the EA-8. Third, whereas the EA-4 and EA-8 trends are
highly correlated throughout the pre-crisis period and even in the direct aftermath of
the financial crisis until 5/2010, from 5/2010 [the start of the sovereign debt crisis
onwards (De Grauwe, 2010)], the decline in the EA-4 continued steadily, reaching a
level of −50% in 11/2012, in comparison to a level of −7% for the EA-8. Fourth,
taking aside the short time period from 1–2/2009 until 6–7/2009, a majority of
citizens mistrusted the ECB in the EA-12 and EA-8 from 11/2011 onwards. In the
EA-4, a majority of citizens already mistrusted the ECB from 11–12/2010 onwards.
However, whereas the majority of mistrust in the EA-8 is still narrow, with a net
value of −7% in 11/2012 (in Austria, Finland, the Netherlands and Luxembourg a
majority of citizens actually still trusted the ECB—see Table 6.1), already a large
majority mistrusted the ECB in 11/2012 in the EA-4 with a net value of −50%
(in Greece and Spain, in total values, 81% and 75% of citizens, respectively,
mistrusted the ECB in contrast to only 17% of citizens in both countries who still
trusted the ECB).

5 Econometric Analysis

5.1 Discussion of the Estimation Procedure

We estimated Eq. (6.1) by means of dynamic ordinary least squares (DOLS), a method that permits us to fully control for endogeneity of the regressors (Stock & Watson, 1993; Wooldridge, 2009).[10] In order to correct for autocorrelation,[11] we apply a FGLS procedure.[12] Both applications lead to the following Eq. (6.2)[13]:

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\begin{aligned}
\text{Trust\_ECB}_{it}^* = {} & \alpha_i + \beta_1 \text{Unemployment}_{it}^* + \chi_1 \text{Inflation}_{it}^* + \delta_1 \text{Growth}_{it}^* + \phi_1 Z_{it}^* + \\
& \sum_{p=-1}^{p=+1} \beta_{2p} \Delta \text{Unemployment}_{it-p}^* + \sum_{p=-1}^{p=+1} \chi_{2p} \Delta \text{Inflation}_{it-p}^* + \sum_{p=-1}^{p=+1} \delta_{2p} \Delta \text{Growth}_{it-p}^* + \\
& \sum_{p=-1}^{p=+1} \phi_{2p} \Delta Z_{it-p}^* + u_{it}
\end{aligned}
$$

$$(6.2)$$

with α_i being the country fixed effect and Δ indicating that the variables are in first differences. Unemployment, inflation and growth turn exogenous and the coefficients β_1, χ_1, δ_1 and ϕ_1 ensue a t-distribution. This property permits us to derive statistical inferences on the impact of unemployment, inflation and growth.[14] The asterisk (*) indicates that the variables have been transformed (purged from autoregressive processes) and that the error term u_{it} fulfils the requirements of the classical linear regression model (i.e. it is free from autocorrelation).

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[10] A prerequisite for using the DOLS approach is that the variables entering the model are non-stationary and that all the series are in a long-run relationship (cointegrated). In our case, all series are integrated of order 1, i.e. they are I(1) (and thus non-stationary, non-stationarity of inflation and growth of GDP per capita is due to non-stationarity (non-constancy) of the variance of these series) and they are cointegrated. Results for the panel unit root tests and Kao's residual cointegration test can be obtained from the authors on request.

[11] We found first-order autocorrelation to be present.

[12] FGLS is not compatible with time-fixed effects but picks up shocks and their influence over short to medium term periods. In addition, the potential inclusion of time dummies would not alter our results in any significant manner (see results in row 15 in Table 6.3), and it could be shown that time-fixed effects do not tackle the problem of autocorrelation of the error term.

[13] For a detailed explanation of all steps leading from Eq. (6.1) to Eq. (6.2) within a similar model specification, please see Roth et al. (2013), pp. 12–4).

[14] The coefficients $\beta 2p$, $\chi 2p$, $\delta 2p$ and $\phi 2p$ are linked to the endogenous part of the explanatory variables and do not result in a t-distribution. Since we are not interested in the influence of these 'differenced variables' on trust, they will not be depicted.

5.2 Econometric Results

Estimating Eq. (6.2), regression 1 in Table 6.2 reports the results for the full sample (FS) (from 3–4/1999 to 11/2012) for the association between unemployment and trust in the ECB. Trust in the ECB is negatively and significantly (99% level) associated with unemployment (−4.9). Given that we would expect a structural break caused by the crisis,[15] regressions 2 and 3 in Table 6.2 report the results for a pre-crisis (BC) sample (from 3–4/1999 to 3–5/2008) and a crisis (C) sample (from 10–11/2008 to 11/2012). In the pre-crisis period, one detects no significant relationship between trust and unemployment in regression 2. In the crisis sample (regression 3), trust in the ECB is strongly negatively (−5.5) and highly significantly (99% level) related to unemployment. With a coefficient of this size, one can conclude that in times of crisis a 1% point increase in unemployment is related to a decrease of 5.5 in net trust in the ECB. Furthermore, it becomes evident that the significant association for unemployment in the FS is strongly driven by the crisis period.

Table 6.2 Unemployment and net trust in the ECB, fixed-effects DFGLS estimations, EA12

	1	2	3
Dependent variable	Trust ECB	Trust ECB	Trust ECB
Period	FS	BC	C
Unemployment	−4.9***	1.0	−5.5***
	(0.79)	(0.95)	(0.84)
Inflation	Yes	Yes	Yes
Growth	Yes	Yes	Yes
Durbin-Watson statistic	2.40	2.25	2.10
Adjusted R^2	0.79	0.73	0.86
Country fixed effects	Yes	Yes	Yes
Control for endogeneity	Yes	Yes	Yes
Elimination of first-order autocorrelation	Yes	Yes	Yes
Observations	305	200	105
Number of countries	12	12	12

Notes: FS = full sample; BC = before crisis; C = crisis; ECB = European Central Bank.
***$p < 0.01$.
Standard errors are in parentheses.

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[15]In addition to the theoretical validity of differentiating a pre-crisis from a crisis period, empirically, a Chow-test showed a structural break between the pre-crisis period (3–4/1999–3-5/2008) and the crisis period (10–11/2008–11/2012). Results can be obtained from the authors on request.

5.3   Sensitivity of Results

As the highly significant (99% level) and strong relationship (-5.5) between unemployment and trust in times of crisis would have important policy implications (due to the fact that unemployment rates have increased significantly in the periphery countries), Table 6.3 conducts a sensitivity analysis on this relationship. Row 1 in Table 6.3 depicts the coefficient of unemployment from regression 3 in Table 6.2. Rows 2–5 exclude Spain, Ireland, Greece, and Portugal. After the consecutive exclusion of Spain and Ireland (row 3), the relationship decreases in size (-2.9) and significance (below the 90% level). Once all four countries are excluded, the overall size of the coefficient remains at -2.9, but with a standard error of 3.14 loses in significance (row 5). This indicates that the strong negative (-5.5) and highly significant (99% level) relationship between unemployment and trust is largely driven by the EA-4 countries. In Spain, Greece, Ireland and Portugal a significant increase in unemployment rates throughout the crisis (16.6%, 17.5%, 10% and 7.5%

Table 6.3 Sensitivity analysis between unemployment and trust in times of crisis

Row	Specification change	C. Un.	St. Err.	Obs.	Cou.	Ad.-R^2
Baseline regression						
1	No Change	-5.5***	0.84	105	12	0.86
Exclusion of outliers						
2	Spain	-5.6***	1.15	96	11	0.85
3	Spain + Ireland	-2.9	1.97	87	10	0.85
4	Spain + Ireland + Greece	-3.0	2.12	81	9	0.83
5	EA-4	-2.9	3.14	72	8	0.83
Restructuring of time sample						
6	9–11/2007–11/2012	-6.2***	0.99	129	12	0.84
7	10–11/2008–5/2012	-4.9***	0.82	94	12	0.86
8	10–11/2008–11/2011	-4.4***	0.94	83	12	0.86
9	10–11/2008–5/2011	-4.4***	1.00	72	12	0.86
10	10–11/2008-11-12/2010	-4.2**	1.68	60	12	0.84
Inclusion of additional variables						
11	Sov. bond yields	-5.4***	1.03	105	12	0.87
12	Sov. bond yields - 5/2011	-3.9**	1.41	72	12	0.86
13	Sov. bond yields - 11/12/2010	-3.4*	1.98	60	12	0.83
Various alterations						
16	Excluding Special EB 71.1	-5.2***	0.90	93	12	0.87
17	Including TD	-4.3***	0.66	105	12	0.88

Notes: C. Un. = coefficient on unemployment; St. Err. = standard error; Obs. = observations; Cou. = countries; Ad.-R^2 = adjusted-R^2; TD = time dummy.
***$p < 0.01$.
**$p < 0.05$.
*$p < 0.10$.

points from 3–5/ 2008 to 11/2012) is associated with a decline in trust of 98%, 65%, 67%, and 52% points (see results in Fig. 6.A2 and Table 6.1, respectively).[16]

Rows 6–10 analyse the robustness of the unemployment coefficient when altering the time periods utilized. Since the beginning of the financial and economic crisis can be located as early as 2007 (Stiglitz, 2012, p. 1), row 6 analyses a crisis sample starting from 9–11/2007. The unemployment coefficient slightly increases in size (−6.2). Excluding one period at a time and commencing with the observation in 11/2012 in rows 7–10, the coefficient remains robust throughout the crisis although steadily declines in size. We can be sure that our econometric analysis has not omitted any important variables, having found that our time series are cointegrated. However, to take up concerns over missing variables, row 11 includes the additional variable sovereign bond yields as most recent empirical results have stressed their importance for trust in the ECB (Wälti, 2012). After the inclusion of sovereign bond yields, the coefficient of unemployment (−5.4) remains robust.[17] In row 12, we keep the additional variable sovereign bond yields and shorten the time frame from 10–11/2008 to 5/2011. The coefficient of unemployment still remains highly significant (99% level) but declines in size to −3.9. However, by analysing a time frame from 10–11/2008 to 11–12/2010 in row 13, the relationship between unemployment and trust loses significance (90% level) and strength (−3.4). Hence, it appears reasonable to conclude that the highly significant and negative relationship between unemployment and trust in the ECB is driven by the time period from 5/2011 onwards (the second year of the sovereign debt crisis).

Rows 14 and 15 perform two additional robustness tests. By excluding the Special EB71.1 in row 14, the results remain robust (−5.2). The inclusion of time-fixed effects instead of utilizing the FGLS approach in row 15 produces a slightly smaller coefficient (−4.3) but yields a poor Durbin–Watson statistic.

6   Discussion of Results

6.1   Discussion of Results Compared to Previous Empirical Findings

Besides a cross-sectional empirical study (Kaltenthaler et al., 2010), a macro-economic panel analysis (Fischer & Hahn, 2008)—both of which focus exclusively on the pre-crisis period, and a publication and working papers that

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[16] The insignificant relationship between unemployment and trust in the EA-8 is largely driven by the German case in which an actual decrease in the unemployment rate of 2.8% points (from 3–5/2008 to 11/2012) is associated with a significant decline in net trust in the ECB of 48% points (see here also Fig. 6.A2). Once excluding the German case from the EA-8 country sample, the relationship between unemployment and trust regains significance (90% level) and the coefficient regains strength (−7.1).

[17] This is logical as in the case of Spain trust decreased significantly during the second year of the sovereign debt crisis, while its sovereign bond yields remained relatively stable.

conduct micro-based analyses (Bursian & Furth, 2011; Ehrmann et al., 2013; Farfaque et al., 2012), the only macro-based empirical evidence for the crisis period that can be directly compared to our results are the findings by Wälti (2012). With these findings, our empirical analysis comes to an ambivalent conclusion. On the one hand, it confirms the conclusion by Wälti (2012) that in the aftermath of the financial crisis from 10–11/2008 until 11–12/2010 unemployment was only weakly related to trust in the ECB.[18] On the other hand, we contradict this finding once analysing a longer crisis time period. Utilizing a crisis time period from 10–11/2008 to 11/2012, we find a strong negative relationship between unemployment and trust from 5/2011 onwards. This relationship is strongly driven by the four periphery countries Spain, Ireland, Greece and Portugal, in which a significant increase in unemployment rates is related to a significant decline in trust in the ECB.[19]

In this respect, it should be noted that the significant increase in unemployment rates in the EA-4 has not only affected trust in the ECB but also trust in the EC, EP and national institutions (see also Ehrmann et al., 2013; Roth et al., 2013).[20]

6.2 Discussion of Results in Light of the Underlying Theoretical Assumptions

Drawing upon the theoretical links, the empirical evidence showing that a majority of citizens in the EA-12 started to mistrust the ECB from 11/2011 onwards (in the EA-4 from 11–12/2010 onwards) should be worrying for the decision-makers of the ECB because it endangers the legitimacy of the ECB and thus ultimately its independence (Kaltenthaler et al., 2010, p. 1262).[21] Given the low approval rating, it becomes more likely that the ECB will become vulnerable to political influence (Torres, 2013) and that citizens will start to pressure politicians to minimize its independence (Kaltenthaler et al., 2010, p. 1267). Following the general argument, as the independence of central banks is associated with lower inflation rates

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[18]Whereas our econometric analysis actually still finds a weak (90% level) relationship, Wälti's (2012) findings point towards an insignificant relationship.

[19]This is in contrast to the German case where an actual reduction of the unemployment rate is associated with a significant decline in trust in the ECB. A plausible hypothesis for the German case might be that the broadening of the ECB's mandate to assure financial stability throughout the crisis has led to a decline in trust in the ECB.

[20]As the decline of trust in the ECB might be interpreted as part of a general crisis of trust in European institutions, it becomes debatable whether other trust variables, such as citizens' trust in the EC and the EP, should be included in the model specification. We excluded these variables for two reasons. First, as trust in the EC and the EP is equally determined by inflation, growth and unemployment (Roth et al., 2013), it is econometrically incorrect to include these trust variables in the regression, because doing so would lead not only to double counting but also to endogeneity. Second, the Durbin–Watson statistic (being around 2) did not give us reason to worry about omitted variables.

[21]It should be mentioned, however, that in 1–2/2009 net trust temporarily reached a value of −1%. In this instance, however, net trust recovered to a value of +14 only five months later in 6–7/ 2009.

(Eijfinger & de Haan, 1996) and as lower inflation rates are associated with long-term economic growth (Eijfinger & de Haan, 1996, p. 54), the loss of the ECB's independence would most likely harm long-term economic growth. Following the crisis-embedded argument, the ECB's independence permitted it to broaden its mandate to assure financial stability even against strong opposition (De Grauwe, 2013, p. 522; Fratzscher, 2013; Giavazzi et al., 2013). And as this broadened mandate continues to stabilize the Eurozone in times of crisis (De Grauwe & Ji, 2013a, 2013b, p. 2), a loss of the ECB's independence would most likely endanger the stability of the Eurozone.

One might now still want to reflect upon the question of whether the significant decline in trust in the ECB poses an obstacle or an opportunity for further EU/EA integration (Tosun et al., 2014). The answer to this question remains ambivalent. On the one hand, the loss of trust in the ECB across all EA-12 countries endangers the legitimacy of the ECB, an institution that has become one of the central actors in securing the stability of the Eurozone. On the other hand, some of the policy measures advocated within the EA, amongst others reducing the high unemployment rates in the EA-4, can most likely only be resolved by collective action and will thus trigger a process of deeper political integration within the EA. As such, the current crisis could be identified as a clear opportunity for further deepening of the EU/EA integration process. The empirical evidence that a majority of EA-12 citizens supports the euro in times of crisis (Roth et al., 2012; for the Greek case, see also Clements et al., 2014) should be viewed as an ideal prerequisite for the implementation of a deeper political integration process within the EA.[22]

7   Conclusions

This contribution has examined the trends and determinants of net trust in the ECB, focusing on unemployment and particularly on the crisis period from 10–11/2008 to 11/2012. Five findings deserve attention.

First, throughout the crisis net trust in the ECB has declined significantly in the EA-12 and has departed from its long-term trends. However, whereas this decline in trust has been distinct in the EA-8, the decline in the EA-4 has been even more pronounced.

Second, from 11/2011 onwards, a majority of citizens started to mistrust the ECB in the EA-12 and EA-8. In the EA-4, this trend already started from 11–12/2010 with large majorities mistrusting the ECB in 11/2012.

Third, with a majority of citizens mistrusting the ECB from 11/2011 onwards, the ECB's legitimacy might be endangered. With its legitimacy potentially endangered, it will prove more difficult for the policymakers of the ECB to resist pressures from politicians to minimize their independence. Concerning the general argument, a loss of the ECB's independence would endanger price stability and therefore harm long-

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[22]In contrast to the support for the euro, the support for the European Union actually declined more strongly (Braun & Tausendpfund, 2014).

term economic growth. Concerning the crisis-embedded argument, a loss of the ECB's independence would endanger the ECB's new mandate to assure financial stability and stabilize the Eurozone in times of crisis.

Fourth, taking panel data and using a fixed effects DFGLS estimation for an EA-12 country sample over the time period 1999–2012, this paper detects a strong and significant negative relationship between unemployment and trust in times of crisis. This relationship remains robust to a range of alterations and is strongly driven by the significant increase in unemployment rates in the EA-4 and from 5/2011 onwards.

Fifth, a reduction of the high unemployment rates in the EA-4 seems to be necessary in order to restore trust in the ECB in those countries. And this issue may determine the future of Eurozone integration and systemic trust.

Appendix
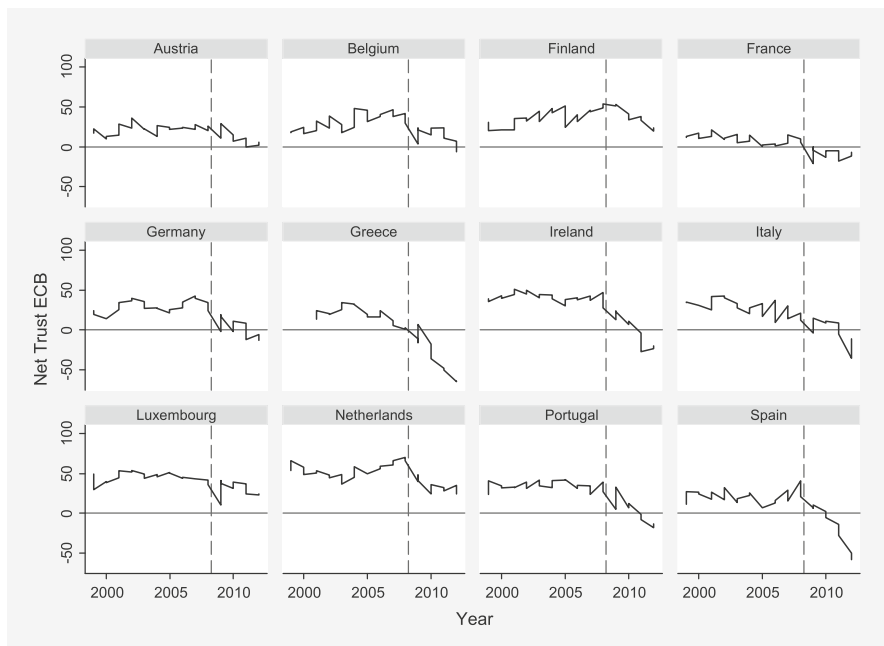
Fig. 6.A1 Net trust in the ECB in EA12 countries, 1999–2012
Notes: For Greece, the time trend is displayed from 2001 onwards. As the figure depicts net values, all values below 0 indicate that a majority of respondents' mistrust. The dotted line represents the incidence of the bankruptcy of Lehman Brothers in September 2008.
Sources: Standard EBs 51–78 and Special EB 71.1.
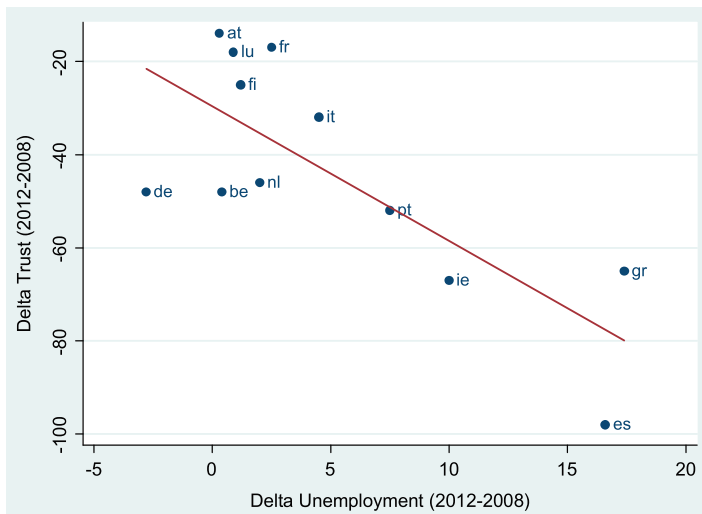
Fig. 6.A2 Scatterplot between delta unemployment and delta trust in the ECB, 2012–2008
Notes: Delta Unemployment and Delta trust comprise the changes in the unemployment rate and in
Trust from 3–5/2008 to 11/2012.
Sources: Standard EB 69 and 78 and Eurostat data.

Table 6.A1 Summary statistics EA12

Variable	Obs.	Time periods	Mean	Std. dev.	Min	Max
Net trust in ECB	344	29	23.3	21.5	−65	70
Unemployment	344	29	7.9	3.7	1.85	25.4
Inflation	344	29	1.10	0.78	−1.27	3.51
Growth of GDP per capita	341	29	0.6	1.5	−6.6	6.4
Sovereign bond yields	344	29	4.5	2	1.4	23.4

Notes: For Greece, the trust trend starts from 2001 onwards, and growth of GDP per capita is
missing from the second quarter of 2011 onwards.

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Chapter 7
Crisis and Public Support for the Euro

Felix Roth, Lars Jonung, and Felicitas Nowak-Lehmann D.

Abstract The Eurozone crisis has meant slow growth, rising unemployment and social unrest. This contribution gauges the impact of these negative developments on European citizens' opinion about the euro and the EU institutions. Using Eurobarometer surveys, the authors find that, within the Eurozone, the crisis has only marginally lowered support for the euro but has led to a sharp fall in public trust in the European Central Bank.

Keywords Financial crisis · Euro area crisis · Euro · Public support · Unemployment · Trust · ECB

1 Introduction

The euro is a unique currency in at least two ways. It is the first time that a group of democratic countries, has abolished their national currencies and replaced them with a single currency, which is managed by a common central bank, the European Central Bank (ECB). The euro is also unique in that data on public attitudes towards the euro have been collected for more than 20 years (European Commission, 2012). No such comprehensive set of data exists for any other currency in the world.

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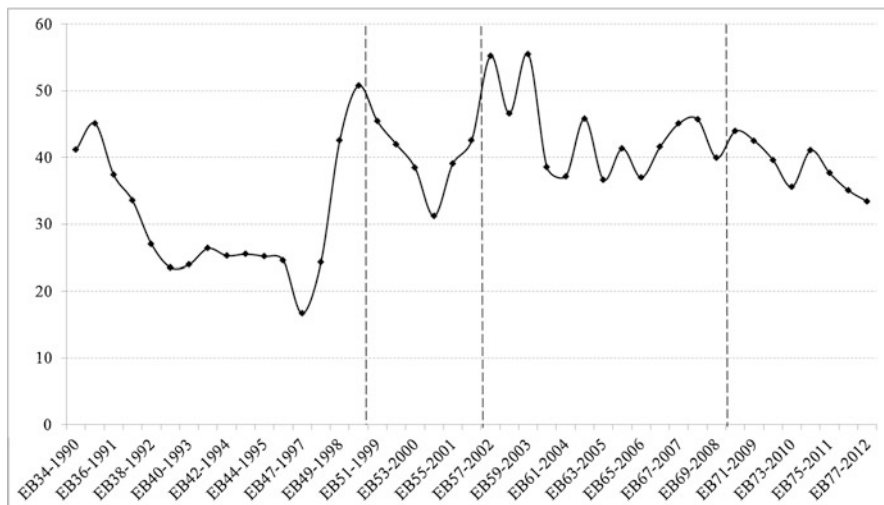
Fig. 7.1 Average net support (in %) for the single currency in the EA-12 countries, 1990–2012
Notes: Updated version of Fig. 1 (by EB77 from Spring 2012) in Roth et al. (2012). The measure for
net support is based upon over 500,000 individual responses As the figure depicts net support, all
values above 0 indicate that a majority of the respondents support the single currency. For the
aggregation of the 12 euro area countries, population weights were applied. The dotted vertical lines
mark four distinct stages of the history of the euro. The first one, from 1990 to 1999, covers the
period prior to the actual establishment of the euro. The second stage, from 1999 to 2002, is the
introduction of the euro as a bookkeeping identity. The third (from January 2002–spring 2008)
covers the physical introduction of the euro up to the outbreak of the financial crisis in September
2008. The fourth (autumn 2008–spring 2012) coincides with the financial crisis in Europe.

Uniquely, we are able to trace how public support for the euro has evolved over time
and how attitudes have changed during the current financial crisis.

We have constructed our measure of public support for the euro from responses to
the biannual Eurobarometer surveys, which have been carried out since autumn 1990
(starting with Standard EB 34). Note that our study includes the results from spring
2012 (that is, Standard EB 77).[1] To measure public support for the euro, the survey's
interviewers suggested a proposal – '[a] European Monetary Union with one single
currency, the euro'[2] – to which respondents could then choose 'for', 'against' or
'don't know'. Here, we focus on the average percentage of net support measured as
the number of 'for' responses minus 'against' responses.

In this research, we study public support for the single currency over a 22-year
period from 1990 to 2012 for the 12 Eurozone member states (Austria, Belgium,

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[1]Our approach is presented in Roth et al. (2012). Here the sources used to construct the data from
EB34 to EB77 are also shown.

[2]During the 22-year period examined in this contribution, this question has been modified slightly
over time as discussed in Roth et al. (2012). The responses to this survey question underlies most of
the literature on public attitudes towards the single currency.

Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain, the EA-12). The data are presented in Fig. 7.1, which shows citizens' net support for the single currency in EA-12 country samples for 1990–2012.

Figure 7.1 shows:

- Over 22 years, a clear majority of citizens within the EA-12 have always supported the euro (net support of at least 15%).
- Since the introduction of the euro as a physical currency in 2002, a large majority of EA-12 citizens have supported the euro (net support of more than 30%).
- In spring 2012, four years into the financial crisis and two years into the European sovereign debt crisis, a large majority (33%) of EA-12 citizens still supports the euro.
- During the financial crisis (2008–12), there has been only a small decline in popular support for the euro (−7% points).

2 Support for the Euro across Older, Larger Member States?

But what is support like in the older, larger Member States? Figure 7.2 focuses on the three largest Eurozone economies: France, Germany, and Italy. It brings out a common convergence in opinion with, notably, a clear catch-up process in Germany from 1993 onwards.
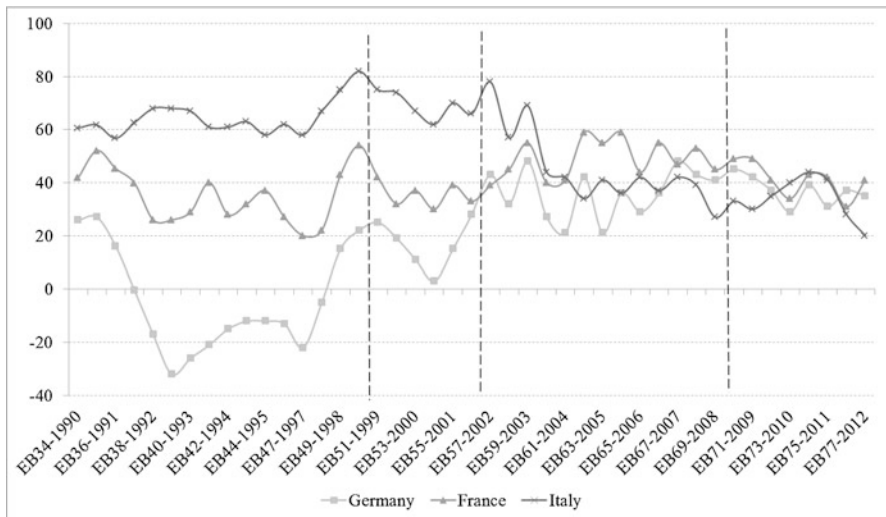

Fig. 7.2 Net support for the euro in France, Germany and Italy, 1990–2012
Notes: Updated version of Fig. 2 (by EB77–Spring 2012) in Roth et al. (2012).

Figure 7.2 shows that:

- In the spring of 2012, four years into the financial crisis and two years into the sovereign debt crisis, a large majority of German (35%) and French (41%) citizens and a clear majority of Italian citizens (20%) still support the euro.
- Since the introduction of the euro as a physical currency on 1 January 2002, a clear majority of German citizens (more than 20%) have continuously supported the euro.

3   Opinions in the Crisis Countries

How does the euro fare in the other more crisis-stricken Eurozone countries? Figure 7.3 compares the aggregated net support for Austria, Belgium, Finland, Ireland, Luxembourg, the Netherlands, Portugal and Spain – the EA-8 – as well as Greece. In the EA-8 countries, support for the euro remains high despite falling by 15 percentage points, from 48% in spring 2008 to 33% in spring 2012. This drop is to a large extent driven by developments in Spain, where support for the euro has declined by 22% points during the crisis. Interestingly, and by contrast, support for the euro has significantly increased in Greece during the current crisis, from 2% in spring 2008 to 54% in spring 2012.
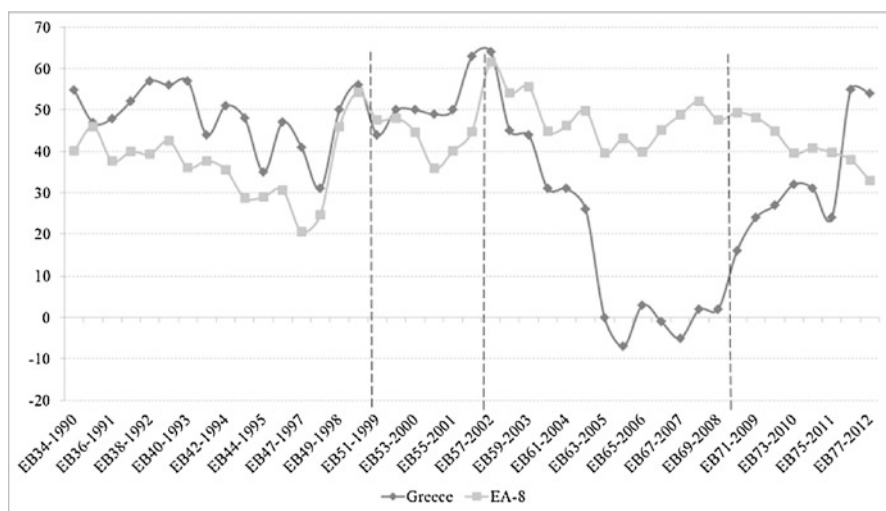
Fig. 7.3   Net support for the euro in the EA-8 and Greece, 1990–2012
Notes: Updated and modified version of Fig. A2 (by EB77–Spring 2012) in Roth et al. (2012).

4 What Does Support Look Like outside the Eurozone?

As highlighted in Fig. 7.4, euro support in the non-Eurozone countries is significantly lower than in the Eurozone. The financial crisis has also significantly eroded public support for the euro in the UK. Surveys suggest a −65% fall in support in autumn 2011, the biggest drop in the EU-27 countries.
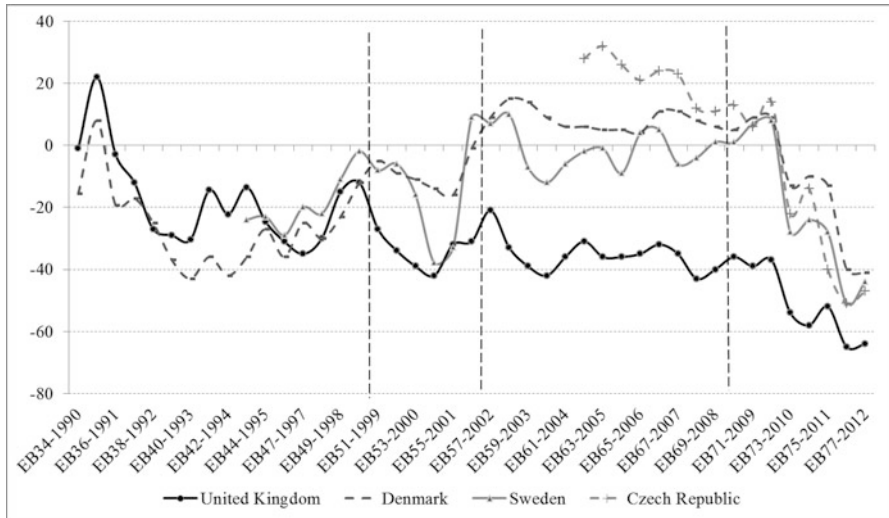
Fig. 7.4 Net support for the euro in the Czech Republic, Denmark, Sweden, and the UK, 1990–2012
Notes: Updated and modified version of Figs. A4 and A5 (by EB77–Spring 2012) in Roth et al. (2012).

5 Levels of Trust in the ECB

How do these results compare to the evolution of public trust in the ECB and other European institutions? As depicted in Table 7.1 and Fig. 7.5, net public trust in the ECB dropped by 47% points in 2008–2012. Public support for the EU dropped by a similar amount over the same period. There is also evidence – although less pronounced – of a loss of trust in the European Parliament and the European Commission. Notably, this decline in institutional trust stands in sharp contrast to the minor decline of 7% points in support for the euro during the same period.

Table 7.1 Changes in net trust in European institutions compared to changes in net support of the euro in the EA-12, 2008–2012

Comparison	Spring 2008	Spring 2012	Spring 2012–Spring 2008
Net trust in the ECB	29	−18	−47
Nett rust in the EU	14	−32	−46
Net trust in the EP	27	−7	−34
Net trust in the EC	21	−11	−32
Net support of the euro	40	33	−7

Notes: Updated version of Table 1 (by EB77–Spring 2012) in Roth et al. (2012). ECB = European Central Bank; EU = European Union; EC = European Commission; EP = European Parliament. Standard EB 69 and 77. On the issue of comparing trust with support in opinion polls, see Roth et al. (2012).
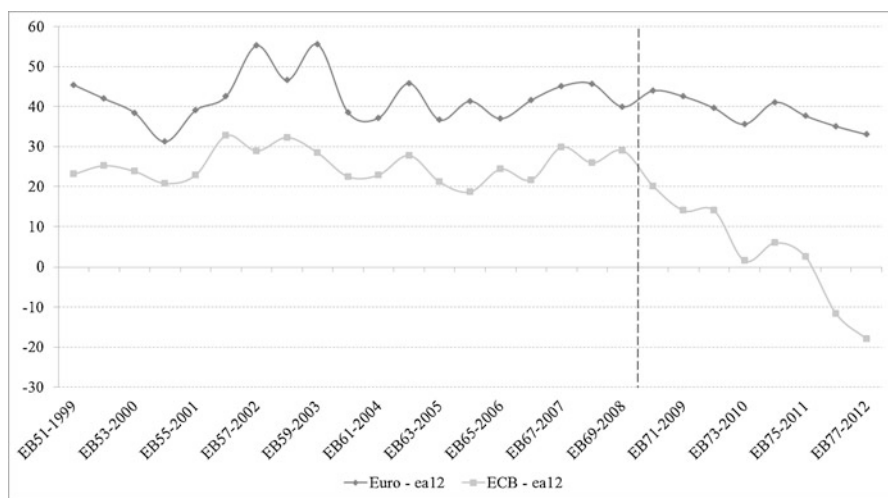
Fig. 7.5 Net trust in the ECB and net support in the euro, 1999–2012
Notes: Updated version of Fig. A1 by EB77–Spring 2012 in Roth et al. (2012).

6   Conclusions

These results highlight that, within the Eurozone, there has been no major erosion of citizens' support for the euro during the Eurozone crisis. This pattern contrasts with the strong decline in public trust for the ECB. Beyond the Eurozone – in countries like the UK, Denmark, Sweden, and the Czech Republic – public attitudes towards the euro have become significantly more negative. In these countries, the crisis is taken as proof that closer European monetary integration is a foolhardy route.

So far, the euro has enjoyed a consistent level of support throughout the crisis, which is astonishing in light of the significant fall in public trust suffered by the ECB and other EU institutions. Citizens in the Eurozone seem to want the euro, whilst

being highly critical of the policies of the ECB and the European institutions during the crisis. The data suggest that Eurozone citizens do not hold the euro responsible for the crisis. Rather, they hold policymakers and their institutions responsible. As such, the present support for the euro should be viewed as an asset for European policymakers facing difficult choices to improve the workings of the euro area.

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Chapter 8
The Eurozone Crisis and Citizens' Shattered Systemic Trust

Felix Roth

Abstract This contribution examines the impact of the first four years, 2008–2012, of the financial and economic crisis on trust in national and European institutions in the EU15 and EU27. It documents a pronounced decline in trust on the part of the public in the periphery countries of the eurozone, namely Spain, Ireland, Portugal, and Greece, and identifies the driving forces behind this phenomenon and discusses their immediate consequences. Potential policy options available to national and European policymakers to address this crisis are then explored. In conclusion, the contribution highlights the enduring and significant support shown for the euro in each individual eurozone country throughout the financial and eurozone crisis.

On 16 September 2008, the insolvency of the investment bank Lehmann Brothers triggered the worst worldwide financial and economic crisis since the 1930s. Scholars who were familiar with the notion of systemic trust have predicted that the greatest damage caused by the crisis is most likely that to citizens' systemic trust. Whereas trust in national governments and parliaments actually increased in the direct aftermath of the crisis in 2008/09, in year four of the financial crisis, and year two of the eurozone crisis, European citizens' trust in national and European government institutions reached new historical lows. particularly in autumn 2011 in the EU15 and the EU27. Considering the size and dimensions of the crisis, this decline in trust is certainly not astonishing. Moreover, until now, in most European

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economies the decline in trust in national and European government institutions has remained moderate. But when examining the periphery countries in the eurozone, particularly in Spain, Ireland, Portugal, and Greece, the negative impact of the financial and eurozone crisis on citizens' trust in national and European government institutions is startling.

According to the standard Eurobarometer, trust in their national government institutions (both government and parliament) has declined on a non-weighted average in these four countries by 51% from a net value of −7% before the crisis in spring 2008 to a net value of −58% in autumn 2011. Disturbing evidence can be found both in Spain, where citizens have lost a staggering 80% of net trust since the beginning of the crisis (from +20% to −60%) and in Greece, where citizens' trust in the national parliament declined by 62% and reached net values of −74% (86% mistrusted and only 12% still trusted it) and −82% in the national government (90% mistrusted and only 8% still trusted it) in autumn 2011. It should be pointed out that the net value of −82% in autumn 2011 depicts the lowest level ever recorded within an EU15 country since data on trust has been collected by the standard Eurobarometers (from 1999 onwards).

Trust in European government institutions (the European Commission and Parliament) has declined on a non-weighted average in these four countries by 55% from a net trust value of +38% before the crisis in spring 2008 to a net trust value of −17% in autumn 2011. Distressing records can be seen in Spain and Ireland, with Spanish citizens having lost 63% (from +44% to −19%) and Irish citizens 57% (from +47% to −11%) from before the crisis in spring 2008 to autumn 2011. However, on average the trust levels in the European governmental institutions remain, at a net level of −17%, significantly higher than −58% for the national government institutions.

Considering these trends in the eurozone's periphery three questions emerge. First, what are the immediate consequences of this decline in trust? Second, what are the driving forces of this decline in trust? Third, what could European and national policymakers do to stop this trust crisis?

First, the most recent political turmoil in Greece serves as an excellent example of the consequences of a fast and steady decline in citizens' systemic trust. It has led to the alienation of Greek citizens towards their national government institutions and has prepared the ideal breeding ground for the continuing radicalisation of the Greek political system with the expected winner being populist parties. These parties will most likely support purely national rather than EU interests with the potential immediate economic consequences that the future Greek government might not be willing to pay back its debt, and that Greek citizens will be successful in preventing the implementation of the austerity measures, which they have opposed since the beginning of the crisis.

Second, most recent empirical analysis has uncovered two channels that seem to be responsible for the significant loss of citizens' trust in national and European government institutions. Both an increase in unemployment and an increase in government debt have been associated with citizens' declining trust. In the EU15 the negative relationship of an increase in government debt seems to be driven by

countries that owe a larger share of government debt to the aiding/bailing out of their financial sector, resulting in the implementation of austerity measures.

Third, taking these two lines of thought into consideration, European and national policymakers should first gain awareness of the significant loss of trust and should pressure scholars and experts to start including measures such as citizens' systemic trust in economic modelling. The current political chaos in Greece was predictable. Trust in the national government and parliament had already noticeably declined in spring 2010, and an analysis of the trends in citizens' systemic trust from late 2010 onwards showed quite clearly that the austerity measures intended by the European Commission, European Central Bank and International Monetary Fund to be implemented in Greece would turn out to be unrealistic due to the growing opposition by Greek citizens. Back then, a range of experts and scholars had already predicted the political chaos at the end of the line and, taking recent events into consideration, seem to have correctly described the chosen policy measures in Greece, in analogy to historical events in the German Weimar Republic, as 'Brünning's domestic policy'.

Moreover, both European and national policymakers should start to admit that the pro-cyclical austerity measures chosen so far in Greece and the other periphery countries have shattered citizens' systemic trust. These austerity measures have to be accompanied by growth-enhancing investments and ensure that the unemployment rates in these four periphery countries are reduced. Unemployment rates in Greece and Spain of 22% and 24%, respectively, are unsustainable for political and social cohesion. Moreover, it is scandalous that the growth of GDP has been choked in Greece, with GDP in 2012 having shrunk by nearly 25% since the start of the financial crisis in 2008.

In addition, European and national policymakers should understand that a *commonality of destiny* among its member countries is a key prerequisite for the optimal functioning of a currency union. Without stronger solidarity among the eurozone member countries and an agreed process towards deeper political integration, the break-up of the eurozone will most likely be pre-programmed. This point is worth mentioning in particular when dealing with the short- and medium-term economic challenges of the Spanish and Italian economies. The breakaway of one of these two large Mediterranean countries would not only endanger the eurozone but most likely the entire process of European integration per se. As has been highlighted a couple of times within this and other journals, European policymakers could have chosen a range of options on how to stop the crisis, one of them being the issuance of common eurobonds.

One fact remains clear, however: the break-up of the eurozone would go against the will of the majority of citizens in every eurozone country. Since the implementation of the euro from 2002 onwards and throughout the financial and eurozone crisis a clear majority of European citizens have supported the Economic and Monetary Union and its single currency, the euro.

Chapter 9
The Enduring Popularity of the Euro throughout the Crisis

Felix Roth, Lars Jonung, and Felicitas Nowak-Lehmann D.

Abstract This paper analyses the evolution of public support for the euro from 1990 to 2011, using a popularity function approach, focusing on the most recent period of the financial and sovereign debt crisis. Exploring a huge database of close to half a million observations, covering the 12 original euro area member countries, we find that the ongoing crisis has only marginally reduced citizens' support for the euro – at least so far. This result is in stark contrast to the sharp fall in public trust in the European Central Bank. We conclude that the crisis has hardly dented popular support for the euro while the central bank supplying the single currency has lost ground in public trust. Thus, the euro appears to have established a credibility of its own – separate from the institutional framework behind the currency.

Keywords Euro · Monetary Union · Public support · Euro area · Financial and sovereign debt crisis · Trust · ECB

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Ever since the plans for a European Monetary Union and a single European currency were announced, social scientists have explored the determinants of public attitudes towards the new currency. This study falls into this expanding area by analysing public support for the euro over a 21-year period from 1990 to 2011 for 12 euro member states (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain – the EA-12), with a focus on the 2002–11 period in the econometric analysis. We compare the pre-crisis period 2002–08 with the crisis period 2008–11. In this way, we are able to evaluate the impact of the financial crisis (autumn 2008–spring 2011) on citizens' support for the euro. Our study is inspired by the observation that citizens' trust in the ECB has fallen sharply during the financial and sovereign debt crisis (Gros & Roth, 2009, 2010; Roth, 2009; Roth et al., 2011b). This raises the question: Has the euro, the currency supplied by the ECB, also suffered a loss in public support comparable to the fall in trust in the ECB?

Our study is based on the literature on popularity functions (Nannestad & Paldam, 1994). In this way we examine the determinants of public support behind the euro, focusing on inflation, unemployment, and growth of GDP per capita as our explanatory variables. We analyse the determinants of support for the euro on an aggregate level by using a fixed effects Dynamic Feasible Generalized Least Squares (DFGLS) panel analysis starting in 2002, when the euro became the transaction currency used in everyday life.

A graphic and econometric analysis reveals that there is no empirical evidence for a significant erosion of citizens' support (although we detect a small reduction) as a result of the ongoing financial and sovereign debt crisis, at least not so far. Euro support stays at a relatively high level even in times of crisis and seems not to be affected by the standard macroeconomic variables in the popularity approach. Citizens' support for the euro is also manifested by the fact that for the two decades covered by our analysis, the euro has always been supported by a majority of citizens in the euro area. The suggestion that "the global economic crisis has sapped support for the euro" (Jones, 2009) has very weak empirical support – so far as least.

1 Measuring Public Support for the Single Currency

We construct our measure of public support for the euro from data on responses to Eurobarometer (EB) surveys carried out bi-annually since the fall of 1990 (Standard EB 34) until the spring of 2011 (Standard EB 75). Eurobarometer surveys normally cover about 1,000 respondents per member country in the EU. The interviews are conducted face to face in the home of the respondents. For each Standard EB survey, new and independent samples are drawn. The basic sampling design in all EU member states is multi-stage and random (probability), thereby guaranteeing the polling of a representative sample of the population.

To measure public support for the euro we asked survey respondents their opinion on several proposals: "*Please tell me for each proposal, whether you are for it or*

against it". One proposal then states: "*A European Monetary Union with one single currency, the Euro*".[1] The respondent can then choose from the following answers: "*For*", "*Against*" or "*Don't Know*". The use of this survey question underlies the literature on public attitudes towards the single currency (see e.g. Kaltenthaler & Anderson, 2001; Banducci et al., 2003, 2009; Kaelberer, 2007; Jonung, 2011). As the response rate of the "*Don't Know*" answer fluctuates over the entire sample (ranging from 0 to 34 and a mean of 8 with a standard deviation of 3.5), we focus on the average percentage of net support measured as the number of "*For*" responses minus "*Against*" responses to the above question on the country level in our analysis. Figure 9.1 shows this measure of citizens' net support for the single currency in the EA-12 country sample from 1990 to 2011.

We identify four distinct phases in the history of the euro during the period 1990–2011 in Fig. 9.1. The first period covers the 1990s up to the actual launch of the euro area on 1 January 1999, with irrevocably pegged exchange rates among the euro area members. In autumn 1990, net support levels started with an overwhelming majority of citizens supporting the euro (41.1%). From autumn 1990 until spring 1993, net support for the euro deteriorated. This deterioration may be explained by exchange rate developments (Banducci et al., 2003, pp. 693–694). From autumn 1992 until autumn 1997, net support levels hovered in a narrow range with an average value of 24%. Thus, before the introduction of the euro in 1999, a clear majority of citizens supported the single currency. Within the first period – from autumn 1997 until autumn 1998 during the run-up to the euro launch – there was a rapid increase in net support to 51%. During this phase, the euro was favourably received in the media across Europe (see e.g. Brettschneider et al., 2003).

The second period starts with the introduction of the euro as a bookkeeping entity in January 1999 and ends with the launch of the euro as a fully-fledged currency and its introduction physically into circulation in January 2002. Initially, net support deteriorated by 21% points from 51% to 30% until spring 2000 in this second phase.

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[1]During the 21-year period studied by us, this question has been modified slightly over time. The wording of EB 34–37 was "Within this European Economic and Monetary Union, a single common currency replacing the different currencies of the Member States in 5 or 6 years time". The wording of the question from EB38 to EB40 was: "There should be a European Monetary Union with one single currency replacing by 1999 the (national currency) and all other national currencies of the Member States of the European Community". After the ratification of the Maastricht Treaty, the wording in EB41 was changed to: "(...) Member States of the European Union and European Community". From EB 42 onwards, "European Community" was dropped. From EB44 onwards, the "by 1999" was dropped. From EB 46 onwards, the "euro" is introduced and the wording "European monetary union" is taken out. From EB48 onwards, the word "should" is replaced by "has". From EB54 the wording "replacing the (national currency) and all other national currencies" is dropped. From EB 54 onwards, "European Monetary Union" is reintroduced. From EB 56 to EB72 onwards, "There has to be" is dropped. The question in EB56 to EB72 represents the wording as highlighted within our main text. From EB73 onwards, "European Monetary Union" was replaced by "Economic and Monetary Union". As we are of the opinion that these changes in the framing of the question over time are not responsible for any significant changes in the responses, we ignore these modifications of the survey question. A similar argument is made by Banducci et al., 2003, p. 690.
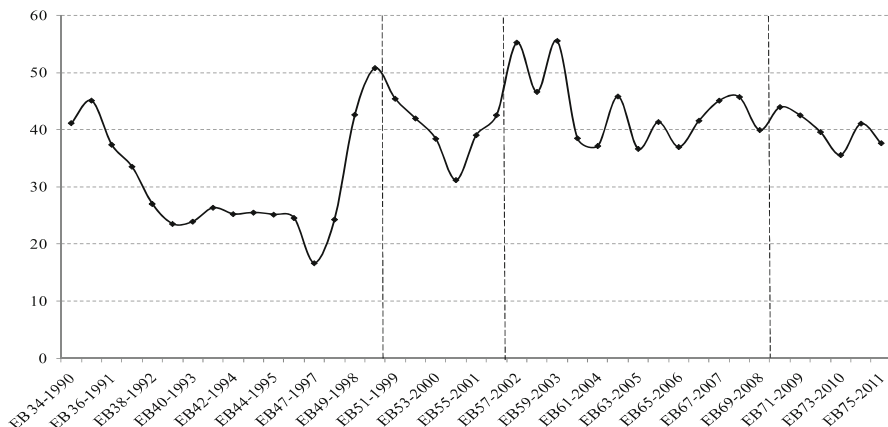
Fig. 9.1 Average net support for the single currency in the EA-12 countries, 1990–2011
Notes: The measure for net support is based upon approximately 497,800 individual responses. As the figure depicts net support, all values above 0 indicate that a majority of the respondents support the single currency. For the aggregation of the 12 euro area countries, population weights were applied.
Sources: Aggregated data from 1990 to 2011 include observations from EB34 to EB75. EB38–71 was purchased from TNS-Emnid. Data from EB34–37 were drawn from Gesis (2005). Data for EB72–75 from autumn 2009 to spring 2011 were drawn from Eurobarometer (2009, 2010a, b and 2011). The aggregated trend from 1990 to 1994 is based on 10 EA countries, that is EA-12 excluding Austria and Finland. Starting from spring 1995, Austria and Finland are included in the sample.

This deterioration is sometimes explained by the decline of the euro vis-à-vis the US dollar (Banducci et al., 2003; Banducci et al., 2009, p. 566; Hobolt & Leblond, 2009). We suggest that the decline may also be a backlash following its positive exposure in the media shortly before January 1999 (e.g. Brettschneider et al., 2003).

Our third period starts when the euro entered into circulation on the first of January 2002. Initially, net support increased by 12% points from 43% to up to 55%, similar to the pattern of 1997–98. From autumn 2003 onwards, net support remains stable at an average level of around 41% (with a standard deviation of 3%) until spring 2011. The stable trend and low standard deviation of 3% suggests that there is no structural break between the pre-crisis period, our third phase, and the financial and sovereign debt crisis period, our fourth phase. In the direct aftermath of the financial crisis, support for the euro actually increased from spring 2008 to autumn 2008 from 40% to 44%, followed by a decrease to 36% in the spring of 2010. In the midst of the sovereign debt crisis, support increased again to 41% in autumn 2010 and decreased to 38% in spring 2011.

Figure 9.1 demonstrates that starting from modest positive levels (24%) prior to its introduction, net support for the euro was stabilised at a significantly higher level (41%) after two decades. Most noteworthy, during the financial and sovereign debt crises in 2008–11, there is only a small decline in popular support for the euro.

How do these results compare to the evolution of public trust in the ECB? As depicted in Table 9.1 and Fig. 9.A1 (in the Appendix), public trust in the ECB

dropped from 29% in spring 2008 to 2% in spring 2011, while support for the euro declined only from 40% to 38% during the same period. Similarly, but less dramatic, a loss of institutional trust[2] in the European Commission, the European Parliament and the European Union is also registered.

One possible explanation for the diverging results between popular support behind the euro and popular trust in the ECB may be that the two measures cover different concepts. Thus, they should be compared with caution. Recent empirical findings on falling public trust in the euro in Germany (Köcher, 2010) suggest that this argument might be plausible. The question now is what do the two measures actually reflect: "trust" in the euro or "support" for the euro?[3] It seems reasonable to interpret "trust" in the euro as "trust" in the purchasing power of this type of money (see Kaelberer, 2007, pp. 625–626), similar to "trust" in the stability of the Deutsche Mark. "Support" for the euro would then mean support for the idea of a single European currency while not necessarily meaning that the respondent expects the euro to deliver a stable purchasing power. The support for the euro would then indicate that respondents are willing to "transfer power from the nation state to European institutions" (Kaltenthaler & Anderson, 2001, p. 141) and that they support the idea of a single European currency. In addition, the question is not only directed towards the euro but also towards the European Monetary Union as the relevant question in the survey (EB56–72) asks: "Are you for or against a European Monetary Union with one single currency, the euro". Thus, whereas the question about "trust" seems appropriate to capture the concept of institutional trust, such as trust in the ECB, the European Commission or the European Parliament, the Eurobarometer question concerning "support" for the euro and the EMU is most likely a better measure than "trust" to clearly distinguish the euro as being the single currency for Europe (including the transfer of monetary power to the ECB).

From the reasoning above, we interpret the decline in trust in the ECB to imply that European citizens blame the ECB for not preventing the economic, financial and political turmoil during the crisis and suspect that the crisis measures taken by the ECB and other European institutions have had an inflationary effect (see here Roth et al., 2011b). The almost constant popular support behind the euro during the crisis suggests that the respondents support the euro as their currency and that they do not blame the euro for the crisis.

To analyse the individual discrepancies behind the aggregated net support for the euro, Fig. 9.2 focuses on the three largest euro area economies; Germany, France and Italy. Figure 9.2 shows a common convergence in the support for the euro in all three countries, with a clear catch-up process in Germany from 1993 onwards. Whereas all three countries start off with values between 25% to 62% from 1993 onwards they differ largely on their level of net support, with Germany with −17%, France with 26% and Italy with 68%. These trends converge to levels of 31% to 42% in the

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[2]For a definition of institutional trust, see Luhmann (2000) and Giddens (1996).

[3]For a general discussion on the adequacy of using a "trust" or a "support" item in questionnaires, see Luhmann, 2000, p. 70.

Table 9.1 Changes in net trust in national and European institutions in comparison to the euro and EMU in the EA-12, 2008–11

	Spring 2008	Spring 2011	Spring '11–Spring '08
Net trust ECB	29	2	−27
Net trust EU	14	−8	−22
Net trust EC	21	1	−20
Net trust EP	27	7	−20
Net support for euro	**40**	**38**	**−2**

Notes: ECB = European Central Bank; EU = European Union; EC = European Commission; EP = European Parliament.
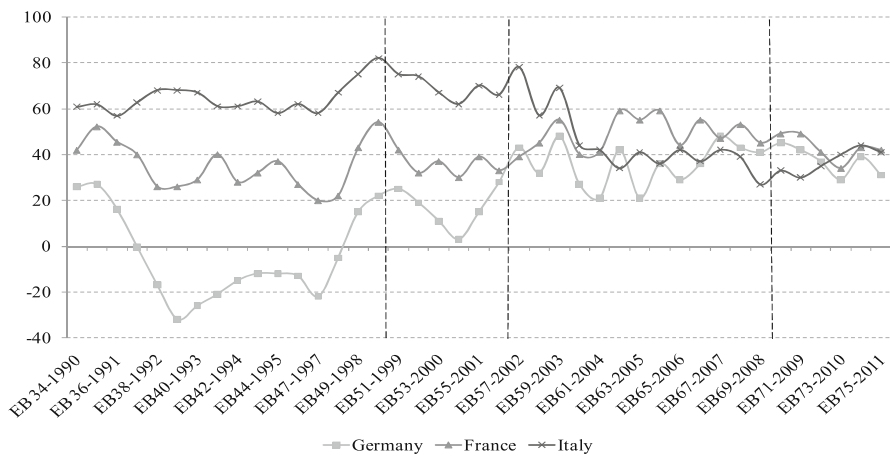Sources: Standard EB 69–75, Special EB 71.1.

Fig. 9.2 Net support for the euro in France, Germany and Italy, 1990–2011
Notes: The aggregated data for Germany are calculated from approximately 75,000, observations and 37,000 observations for France and Italy, respectively. As the figure depicts net support, all values above 0 indicate that a majority of the respondents support the single currency.
Sources: Aggregated data from 1990 to 2011 include observations from EB34 to EB75. EB38–71 was purchased from TNS-Emnid. Data from EB34–37 were drawn from Gesis (2005). Data for EB72–75 from autumn 2009 to spring 2011 were drawn from Eurobarometer (2009, 2010a, 2010b, 2011).

aftermath of the euro's introduction and remain relatively stable from 2006 onwards at levels of around 40%.[4] In spring 2011, German respondents display a net support of 31%, French citizens a net support of 42% and Italian citizens of 41%. These numbers are in sharp contrast to trust in the ECB, which reached levels of 8, −5 and 9, respectively in spring 2011 (Roth et al., 2011b). Most astonishingly, a clear majority of German respondents supported the euro in autumn 1990. The steady

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[4]This result is consistent with evidence in Jonung and Conflitti (2008) on popular support for the euro.

fall from 1990 to 1993 is explained in the literature by the rise in the German exchange rate (Banducci et al., 2003, p. 694). The corresponding data for other euro area countries and non-euro area countries are depicted in Figs. 9.A2, 9.A3, 9.A4 and 9.A5. The pattern for Greece is especially noteworthy. In contrast to a massive drop in Greece in trust in almost all national and European institutions (Roth et al., 2011a), the support for their own (European) currency has been increasing throughout the European debt crisis. Whereas net support for the euro was 2% in spring 2008, it rose during the sovereign debt crisis to 24% in spring 2011. In addition, Figs. 9.A4 and 9.A5 demonstrate that levels of euro support in the non-euro area countries are significantly lower than in euro area countries and that the sovereign debt crisis has significantly eroded support for the euro in the non-euro countries, in particular in the UK (with a record low in all EU-27 countries of −58% in autumn 2010), Sweden, Denmark and the Czech Republic.

2   Determinants of Euro Support

So far this contribution has summarised the evolution of popular support for the euro. Next, we try to identify the major economic determinants of support for the single currency. Here we adopt the approach embedded in the literature on popularity functions (Nannestad & Paldam, 1994). The popularity function is a key concept in public choice or political economy. The basic idea behind the popularity function is that the public/the voters hold the government in office responsible for the performance of the macro-economy and/or economic events in general. Usually the popularity of a government as revealed by public opinion polls is postulated as a function of a set of macroeconomic variables like inflation, unemployment, and growth of GDP per capita. The intuition is that inflation and unemployment are negatively related to the popularity of the government while GDP growth is positively related. In short, the government is rewarded/punished for the behaviour of the macro-economy.

There are obvious similarities between the popularity of a government and the popularity of a currency like the euro. The popularity of a government is influenced by its ability to manage the economy at large, in short by its economic governance. Likewise, we expect the governance of the euro – that is, the monetary governance of the ECB – to be a function of the outcome of monetary policy, first of all as it is reflected in the rate of inflation in the euro area as measured by official statistics. Much of the research on public support behind the euro and European political integration is focused on economic determinants – although political and historical factors also have an impact.[5]

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[5] See the review of Jonung (2011) on public attitudes towards the single currency and European integration.

The empirical tests of popularity functions generally confirm the significance of macroeconomic variables, in particular the rate of unemployment and inflation. However, the lack of stability of econometric results is a problem in this field of work (see e.g. Kirchgässner, 2009, who shows for the case of Germany that the popularity function has disappeared in recent times). Endogeneity is also a serious concern in the econometric analysis.

When estimating popularity functions for the euro, we contribute to the empirical literature in two respects. First, we explicitly take feedback effects between support for the euro and the macroeconomic environment into account. Tackling this issue (endogeneity, in technical terms), we are able to produce unbiased estimates. To this end, we adopt the Dynamic Ordinary Least Squares approach (Saikkonen, 1991; Stock & Watson, 1993; Wooldridge, 2009) in the aggregate analysis utilising a panel dataset with 228 aggregated observations from 2002 to 2011 (EB57–75). The results obtained are complemented at the individual level.

Second, in addition to the standard macroeconomic variables – namely, inflation, unemployment and growth – we explore the role played by country-level and personal perceptions and attitudes exploiting information from a cross-sectional database with a maximum of 157,899 individual observations from 2002 to 2011 (EB 57–74).

Table 9.2 captures the support for the euro over time, controlling for country characteristics that are time-invariant, for swings in the error term and for feedback between the macro-determinants of support and support itself. By applying panel time series, we can be sure not to have omitted important variables.[6] The finding that the error terms are stationary (without systematic influence on support for the euro) implies that our coefficient estimates are unbiased and remain unbiased if further controls are added to the regression.

Table 9.2 shows the results for the determinants of support for the euro in a panel analysis covering 12 countries i (I = 12) and at different points of time t for the period from spring 2002 to spring 2011. We view this time period as the theoretically most appropriate one as from January 2002 onwards European citizens could actually use the euro as a real money in daily business. As we have argued above, a distinction of four different time periods seems to be appropriate, our analysis will include the third and fourth time period. Similar to other studies in the field (Gärtner, 1997, Kaltenthaler & Anderson, 2001; Banducci et al., 2009, Kaelberer, 2007 and Hobolt & Leblond, 2009), we expect that the price stability (inflation) should be a key influence on support for the euro. However, based on the popularity function literature we would also expect unemployment and growth of GDP per capita to exert a significant influence (see here e.g. Kaltenthaler & Anderson, 2001; Banducci et al., 2009 and Hobolt & Leblond, 2009).

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[6] According to the literature, important variables could be for example the budget deficit (debt-to-GDP ratio), the current account deficit, the exchange rate, the volume of euros in circulation and beliefs such as "EU membership is a good thing", etc. (Banducci et al., 2003, 2009; Kaltenthaler & Anderson, 2001 and Gärtner, 1997).

Table 9.2 Relationship between inflation, unemployment, GDP per capita growth and net support for the euro. Panel analysis (aggregated level), 2002–11

Support for the euro	(1) Full sample spring 2002–spring 2011	(2) Before the crisis spring 2002–spring 2008	(3) After the crisis autumn 2008–spring 2011
Inflation	−0.51**	−1.27***	−0.50
	(−2.48)	(−3.66)	(−0.75)
Unemployment	−1.00*	−2.40	−0.66
	(−1.73)	(−1.53)	(−0.95)
GDP per capita growth	0.22	3.30**	−0.48
	(0.33)	(2.48)	(−0.70)
Durbin–Watson statistic	2.3	2.39	2.29
Observations	228	156	72
Number of countries	12	12	12
Adjusted R^2	0.82	0.81	0.89

Notes: FE-DFGLS: we utilise a fixed-effects model that we estimate by means of the DOLS-approach (accounting for endogeneity) and control for autocorrelation of the disturbances, which renders DFGLS estimates. No time-fixed effects are utilised because FGLS makes time-fixed effects redundant. T values are in parentheses. Model specification: EURO Net Support$_{i,t}$ = α_i + β Inflation$_{i,t-1}$ + γ Unemployment$_{i,t-1}$ + Ω Growth of GDP per Capita$_{i,t-1}$ + $w_{i,t}$, In Eq. 1 the 228 observations come from 12 countries and 19 time series. The sample ranges from spring 2002 to spring 2011. ***$p < =0.01$, **$p < =0.05$, *$p < =0.10$.

Equation 1 in Table 9.2 includes inflation, unemployment and growth of GDP per capita as the explanatory variables and analyses our full sample. Inflation is negatively and significantly related to support for the euro at the 95% level. Growth of GDP per capita is not significantly related to support for the euro when estimating the observations in our full sample. Unemployment is negatively related with net support for the euro at the 90% level. As we have argued, the pre-crisis period (2002–08) should be kept distinct from the crisis period (2008–11). Eqs. 2 and 3 split the full sample into a pre-crisis period and a crisis period to explore the impact of the financial crisis on popular support for the euro.[7] Splitting the full sample into a pre-crisis period and a crisis period reveals that the significant negative effect of inflation on support for the euro is driven by the pre-crisis period in which inflation exhibits a strongly negative and significant (99% level) effect on support for the euro. As expected from the literature on popularity functions, GDP growth is

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[7]We have tested for cointegration in all periods (full sample/pre-crisis/crisis period) and found cointegration for the full sample and the pre-crisis period, but we did not find cointegration for the crisis period. Therefore, we can conclude that cointegration in the full sample period is driven by the data of the pre-crisis period. The finding of "no" cointegration in the crisis period is in line with our finding of insignificant coefficients for inflation, unemployment and growth in the crisis period. (Results are available upon request.)

strongly and positively associated with support for the euro in the pre-crisis sample. In the crisis sample, column 3, we detect no impact of the three macroeconomic variables on support for the euro. We thus conclude that inflation is the most robust driver of support for the euro.

So far we have examined the macroeconomic determinants of popular support for the euro over time (within effects). In Table 9.3 we move to a micro-level approach to analyse the impact of inflation – our main determinant of support for the euro – based on a cross-section analysis of respondents in all EA-12 countries. Controlling for the socio-economic variables of age, gender, education, left/right placement and the macroeconomic variables of unemployment and GDP growth per capita as well as for country and time fixed-effects (including 157,899 individual observations), inflation has the expected effect in all three samples. Respondents in a country with higher inflation tend to support the euro less than respondents who live in a country with more moderate inflation. Banducci et al. (2003) and Hobolt and Leblond (2009) argue that support is determined by both socio-tropic and egocentric motives. Citizens are on the one hand concerned about the situation in their country, while at the same time they also care about their personal situation. Moreover, Banducci et al. (2009) posit that the actual economic reality – as summarised in official

Table 9.3 Inflation and support for the euro – Probit analysis (individual level), 2002–10

Full sample	Official inflation rate	Perception of the state of the national economy	Perception of the state of the private economy
Inflation	−0.003***	−0.151***	/
	(−9.7)	(−15.6)	/
Total observations	157,899	132,100	/
Before crisis	Official inflation rate	Perception of the state of the national economy	Perception of the state of the private economy
Inflation	−0.005***	−0.160***	/
	(−10.0)	(−13.9)	/
Total observations	113,615	92,389	/
After crisis	Official inflation rate	Perception of the state of the national economy	Perception of the state of the private economy
Inflation	−0.004***	−0.153***	−0.178***
	(−4.5)	(−9.0)	(−12.2)
Total observations	44,284	39,711	39,711

Notes: The data are from individual Eurobarometer files, available via Gesis Zacat. The reported coefficients originate from the following probit regression equation: support $EMU_{ict} = \alpha$ micro controls$_{ict}$ + β macro controls$_{(i)c}$ + λ inflation$_{(i)c}$ + η country$_c$ + θ semester$_t$ + ε_i, where controls are age, gender, political orientation, education, unemployment and GDP per capita growth. These controls are in line with the literature, for example Banducci et al. (2003, 2009). The dependent variable is support for EMU. T-statistics are placed beneath the coefficients between parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

economic statistics – does not necessarily agree with the perceived economic situation. Therefore, to account for citizens' perceptions towards inflation, columns 2 and 3 include citizens' perceptions towards their country's situation (socio-tropic view) and their personal situation (ego-centric view).[8] Columns 2 and 3 analyse whether perceptions of inflation also have an impact on net support. Our results confirm that this is the case. All coefficients have the expected signs. In a cross-section design, however, the official inflation rate also affects euro support negatively and significantly in the crisis sample.

2.1 What Is Novel about Our Findings?

The literature has not yet analysed the impact of the financial crisis on citizens' support for the euro. We find that the financial crisis – at least so far – has had no impact on public support for the euro when analysing aggregated data with a fixed-effects DFGLS panel analysis. Our findings from the pre-crisis period confirm a negative and significant relationship between inflation and support for the euro. For a pre-crisis sample, a similar result has been established, inter alia, by Banducci et al. (2009). In addition, in accordance with Banducci et al. (2009), perceived inflation also has the expected highly negative signs.

Beyond this consensus, we are able to show that on the aggregate level other variables, such as the budget deficit, the exchange rate, attitude towards the EU, euros in circulation, etc. are unable to influence the support for the euro in any consistent way. This result is in contrast to the findings of Banducci et al., 2003, 2009 and Hobolt & Leblond, 2009, who identify the exchange rate and the attitude towards EU membership as significant drivers of support for the euro.

Our analysis confirms that in contrast to a dramatic fall in citizens' trust in the ECB (Roth et al., 2011b) driven by the financial crisis, public support for the euro has remained stable so far.

3 Conclusions

Our analysis shows that the financial and sovereign debt crisis that started in Europe in 2008 has not affected popular support for the euro within the euro area. This finding is in contrast to the pronounced fall in public trust and support for European institutions, the European Union per se and in particular the ECB, the central bank

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[8]The best proxy for giving us information on individual perceptions about inflation is provided by the following question in the Eurobarometer surveys: "What do you think are the two most important issues (you are)/(OUR COUNTRY is) facing at the moment?" Several possible answers are then given, with "rising prices/inflation" and "unemployment" as two possibilities. The classic question asking about the "current situation" does not include inflation in the Standard Eurobarometers.

issuing the euro. At the aggregate level, support for the euro can be explained by adopting a popularity function approach, stressing the role of inflation and growth, when the economy runs smoothly as in normal times. During the recent crisis, these factors appear to no longer drive the support for the euro. Furthermore, we find no evidence that omitted variables (exchange rates, budget deficits, trust in the EU and European institutions) change our estimates.

The crisis has not reduced the support for the euro within the euro area. But outside the euro area, the public attitude towards the euro has become significantly more critical. Outside the euro area, the crisis is taken as proof that closer monetary integration is not the route to follow. Inside the euro area, the opposite holds.

To conclude, the European single currency, the euro, has so far enjoyed an astonishing overall support throughout the crisis, in sharp contrast to the pronounced fall in public trust in the ECB and also to the negative response among EU countries outside the euro area. This pattern is consistent with the view that Europeans in the euro area want the euro to continue to be their currency, while they are critical of the policies adopted by the ECB during the crisis. Thus, the data suggest that European public opinion does not hold the euro responsible for the crisis.

Appendix

Table 9.A1 Summary statistics for the aggregate data analysis, 2002–2011

Variable	N	Mean	Std. dev.	Min	Max
Net support for EMU	228	48.2	18.5	−7	85
GDP per capita growth	228	0.4	1.6	−6.5	4
Unemployment rate	228	7.7	3	2.1	20.6
HICP	228	102.3	6.3	89	119.7

Table 9.A2 Summary statistics for the individual analysis, 2002–2010

Variable	Obs	Mean	Std. dev.	Min	Max
Full sample					
Age	157,899	49.50	16.52	15	99
Gender	157,899	0.48	0.50	0	1
L–R placement	157,899	1.92	0.75	1	3
Education[a]	157,899	18.27	4.68	2	85
GDP per capita growth (obj.)	157,899	0.41	1.55	−6.45	4.01
Inflation (obj.)	157,899	101.85	5.79	88.95	118.27
Unemployment (obj.)	157,899	7.71	2.77	2.05	20.25
Before crisis					
Age	132,100	49.69	16.52	15	99

(continued)

Table 9.A2 (continued)

Variable	Obs	Mean	Std. dev.	Min	Max
Gender	132,100	0.48	0.50	0	1
L–R placement	132,100	1.92	0.75	1	3
Education	132,100	18.31	4.72	2	85
GDP per capita growth (ctry)	132,100	0.30	0.46	0	1
Inflation (ctry)	132,100	0.22	0.41	0	1
Unemployment (ctry)	132,100	0.43	0.50	0	1
After crisis					
Variable	Obs	Mean	Std. dev.	Min	Max
Age	39,711	50.54	16.49	15	97
Gender	39,711	0.48	0.50	0	1
L–R placement	39,711	1.92	0.75	1	3
Education	39,711	18.52	4.75	2	73
GDP per capita growth (pers)	39,711	0.28	0.45	0	1
Inflation (pers)	39,711	0.41	0.49	0	1
Unemployment (pers)	39,711	0.17	0.38	0	1

[a]Education is measured as "How old were you when you stopped full-time education?". Only a few observations had extreme values for education (like 85).
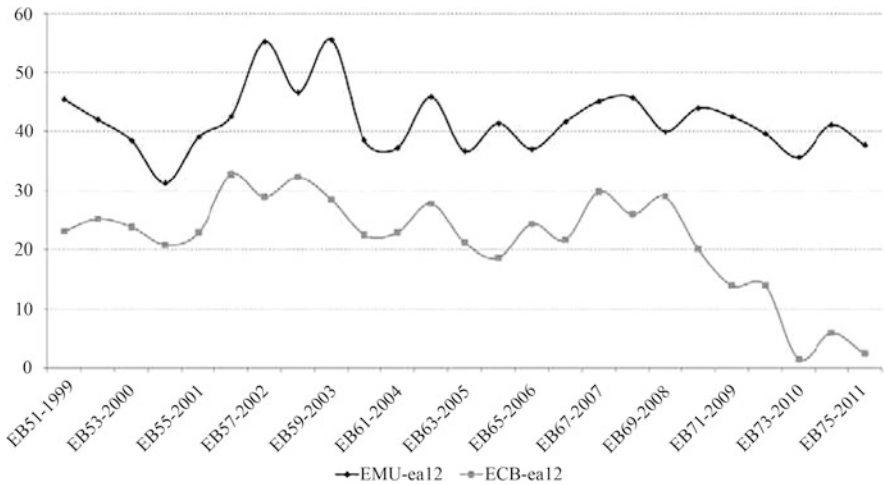
Fig. 9.A1 Comparison between net trust trend in the ECB and net support in the euro, 1999–2011 Notes: Net support levels above 0 indicate that a majority of citizens support the euro/trusts the ECB. Standard EB's 51–75. As Special EB 71.1 (January/February 2011) has no information on support for the euro, it was not included in the time trend. However, it has to be pointed out that the inclusion of the special EB 71.1 would show a dramatic decrease/structural break of citizens' trust in the ECB (see here also Gros & Roth, 2009, 2010, Roth, 2009 and Jones, 2009).
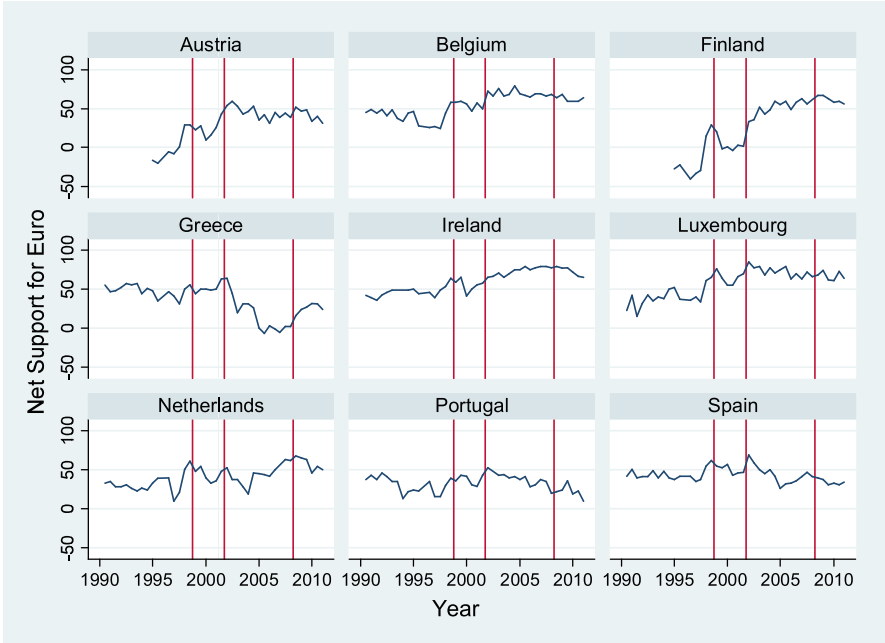
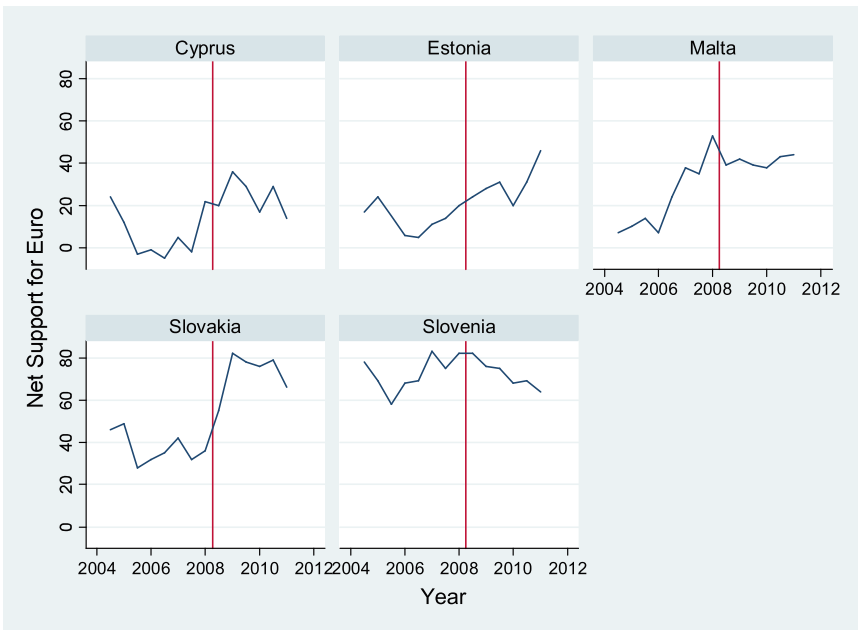**Fig. 9.A2** Individual trend data for the nine EA-12 countries, autumn 1990–spring 2011

Fig. 9.A3 Individual trend data for the five euro area countries that joined EMU after 2001, autumn 2004 – spring 2011
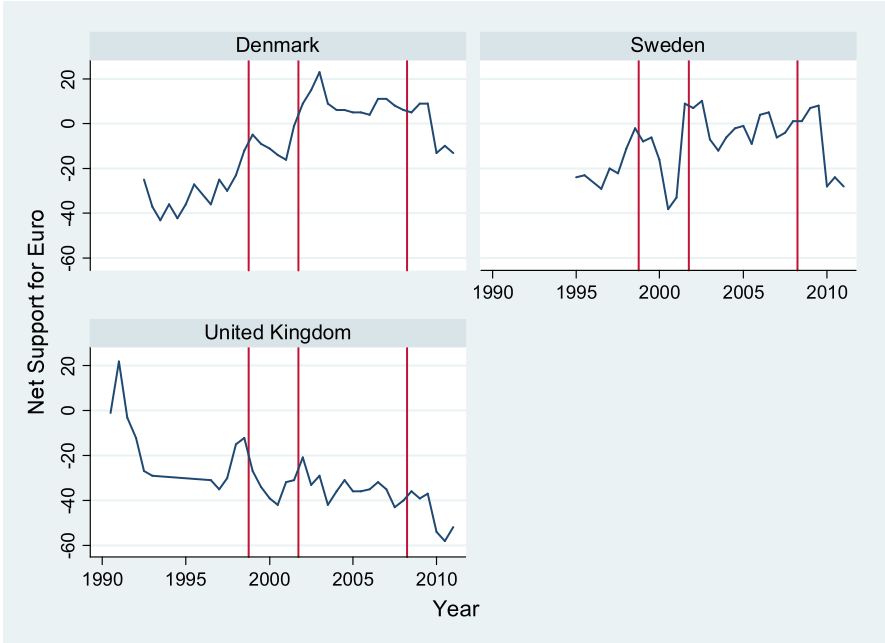
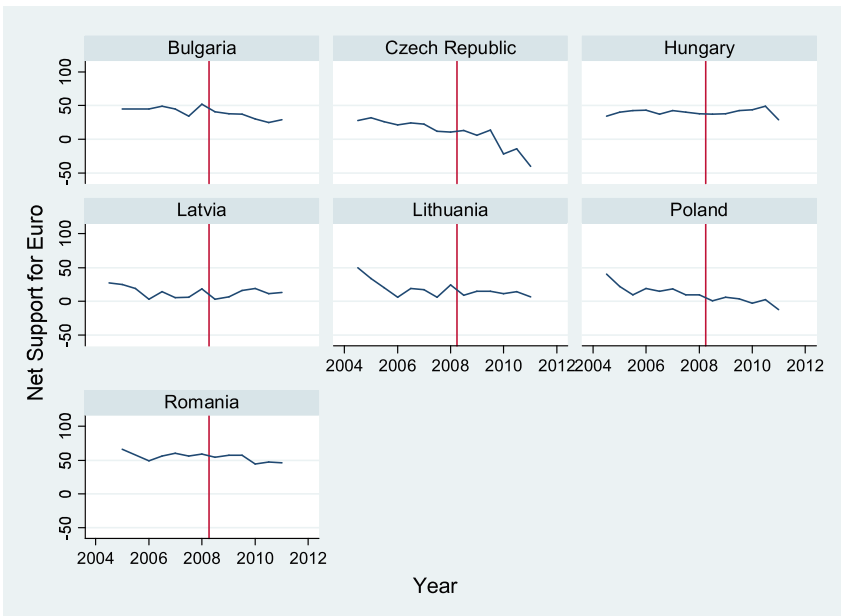**Fig. 9.A4** Individual trend data for the United Kingdom, Sweden and Denmark, autumn 1990 – spring 2011

Fig. 9.A5 Individual trend data for the seven transition and non-euro area countries, autumn 2004 – spring 2011

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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,

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[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]

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[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:

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

where i represents each country and t represents each time period; Trust$_{i,t}$ is the net trust amount for country i during period t; Inflation$_{i,t}$, Growth$_{i,t}$, Unemployment$_{i,t}$, 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

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[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

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[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

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[10]Data can be downloaded at http://www.electionguide.org/.
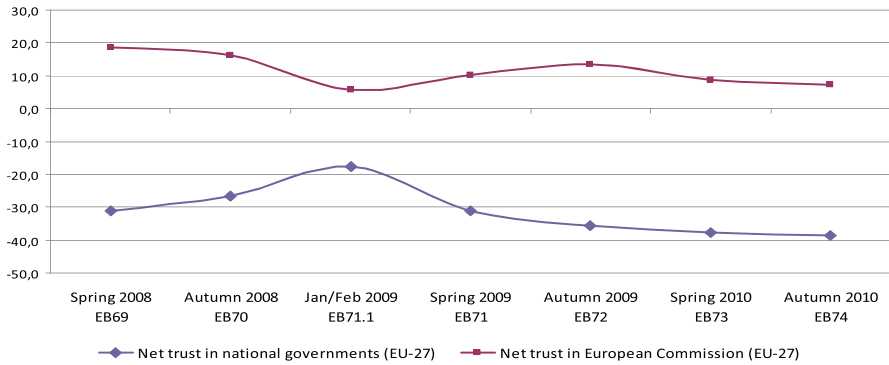
Fig. 10.1 Trust trends in the national government and European Commission in the aftermath of the financial crisis in the EU-27
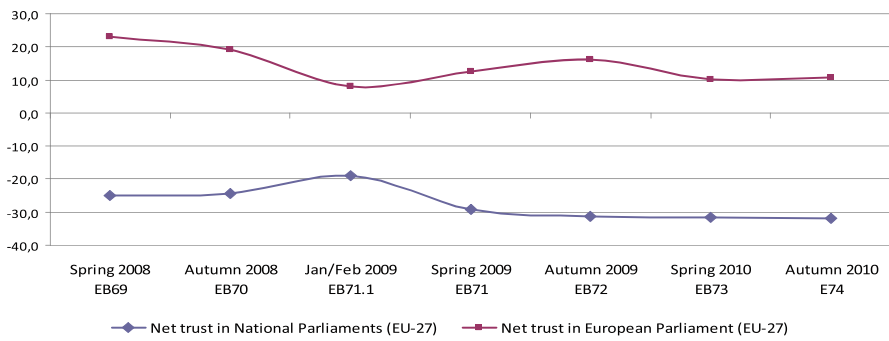Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

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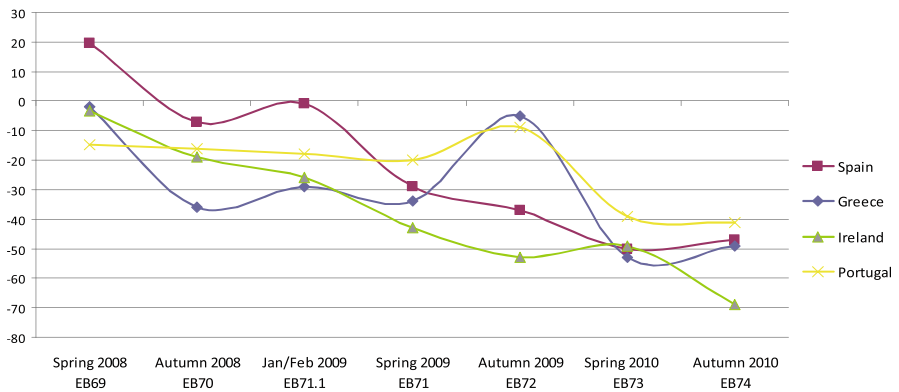Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

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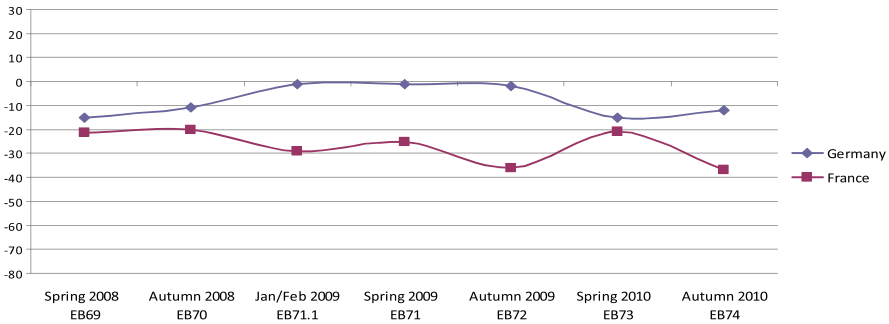Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1.

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,

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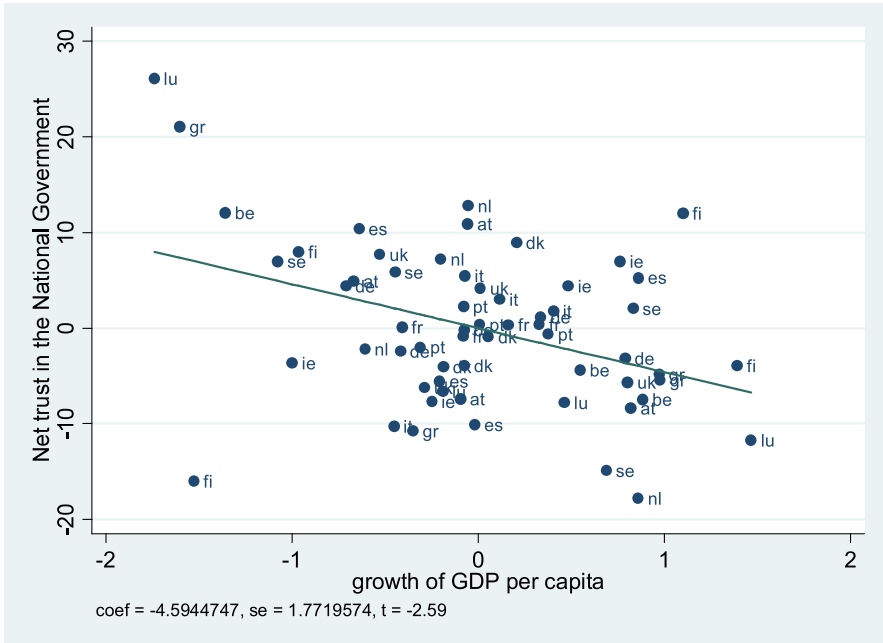
Fig. 10.5 Scatterplot between growth and trust in the national government in the aftermath of the financial crisis in the EU-15 (controlling for country-fixed effects)
Sources: Standard Eurobarometers 69–71 and Special Eurobarometer 71.1 and Eurostat data.

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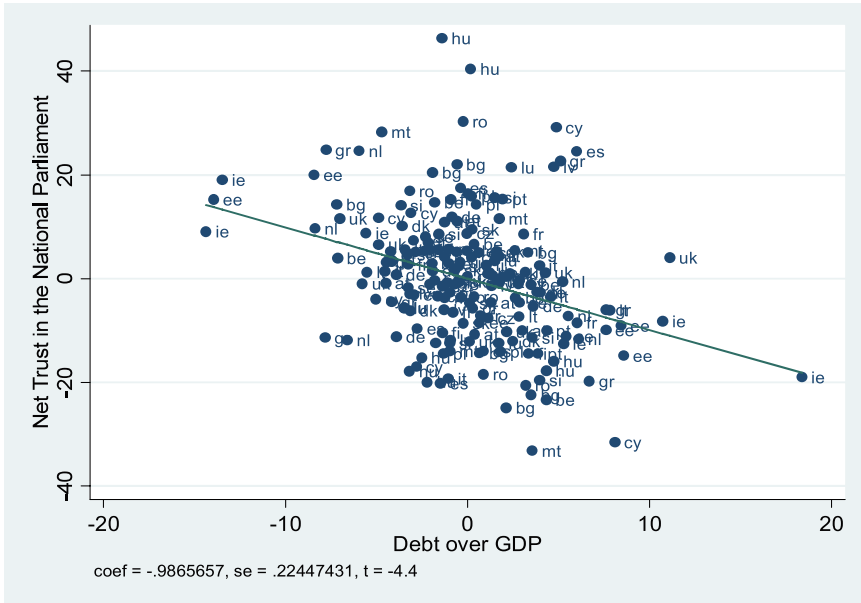
Fig. 10.6 Scatterplot between debt and trust in the national parliament during the financial crisis (controlling for country-fixed effects)
Sources: Standard Eurobarometers 69–74 and Special Eurobarometer 71.1 and Eurostat data.
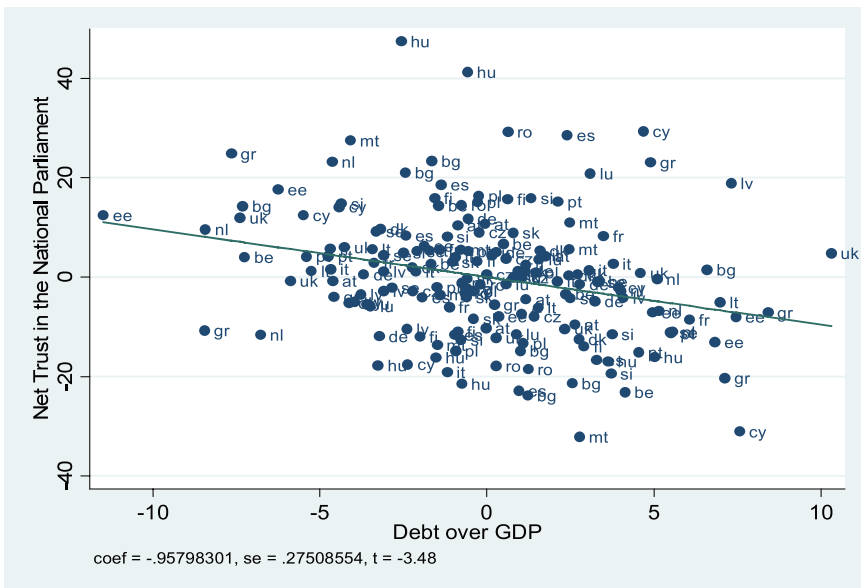

Fig. 10.7 Scatterplot between debt and trust in the national parliament during the financial crisis (controlling for country-fixed effects), excluding Ireland
Sources: Standard Eurobarometers 69–74, Special Eurobarometer 71.1 and Eurostat data.

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:

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

$$(10.2)$$

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).

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

$$(10.3)$$

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

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[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

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[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

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[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.

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[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

EB 51   **EB 52**

March—April 99   October—November 99

Sum of GDP per capita of the two quarters (October 98—March 99)

Sum of GDP per capita of the two quarters (April—September 99)

GDP per capita growth is matched with EB 52
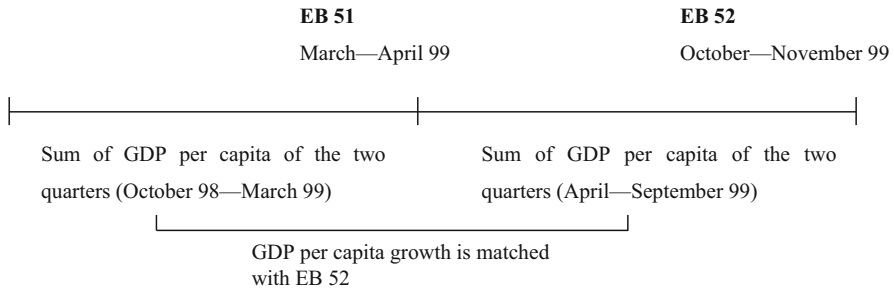
Fig. 10.A1 Research design for the construction of growth of GDP per capita

EB 51   **EB 52**

March—April 99   October—November 99

Sum of debt over GDP of the two quarters (October 98—March 99)

Sum of debt over GDP of the two quarters (April—September 99)
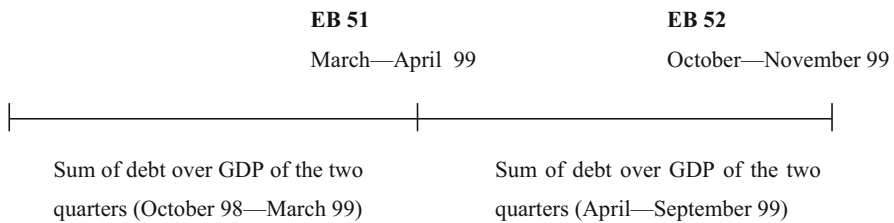
Fig. 10.A2 Research design for the construction debt over GDP

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)

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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Chapter 11
The Effect of the Financial Crisis on Systemic Trust

Felix Roth

Abstract Policymakers throughout Europe were faced with the challenge of re-establishing trust, and especially systemic or institutional trust that has been lost in the wake of the 2008/2009 financial crisis. This contribution looks at empirical evidence concerning the reaction to the financial crisis in terms of citizens' diminished levels of systemic trust. Special attention is paid to the confidence invested in political institutions at the European and the national level, on the one hand, and in the free market economy, on the other.

Keywords Financial crisis · Systemic trust · ECB · National government · Confidence · Market economy

The collapse of Lehmann Brothers in mid-September 2008 had an enormous impact on the financial markets and the global economy by undermining trust – trust in counterparties among banks and trust in the overall stability of the financial system, but also citizens' trust in their institutions – systemic trust – and the validity of the underlying principles. It is thus not surprising that re-establishing trust in the financial system has become a key task for policymakers throughout Europe (and the United States). This paper aims to contribute to the ongoing discussion of the impact of the financial crisis on trust by presenting recent empirical results concerning the reaction to the crisis as reflected in citizens' diminished levels of

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systemic trust. Within the paradigm of systemic trust, special attention is given to the confidence invested in 1) political institutions at the European and national level and 2) the free market economy.

The paper first briefly elaborates on the key role of systemic trust and cites some basic figures concerning public demand for more state intervention. Using time-series data[1] from the public opinion monitoring unit of the European Commission (Eurobarometer), the consequences of the financial crisis on public opinion vis-à-vis the three major European institutions – the European Central Bank, the European Commission and the European Parliament – are then demonstrated. This is followed by an examination of the relationship between European and national institutions using time trend data on trust towards national governments and national parliaments from Eurobarometer and the Edelman Trust Barometer. Finally, cross-country results for the five largest European economies and the United States and time trend data for Germany are presented to demonstrate how the confidence levels in social market economies per se have been falling after the financial crisis.

1   The Key Role of Sufficient Levels of Systemic Trust

Social scientists from all fields agree that a sufficient level of trust, especially systemic or institutional trust, plays a crucial part in the stability and maintenance of the social, political and economic system. When trust breaks down, the social system is threatened with unrest, the democratic legitimacy of the political system is endangered and the legitimacy of the market-based economy is called into question. The latter should be mentioned in particular. Citizens' loss of confidence in a market-based economy is often expressed in one of two ways. They pressure the government either to abolish the free-market system altogether or to intervene more heavily in the system. The likelihood of the first scenario materialising is rather small, as polls taken in the world's largest economies indicate that a majority of citizens are still content with a market-based economy. In some economies, however, notably Germany, anti-capitalist sentiments are growing stronger.[2] According to a GlobeScan

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[1]Raw data available on CD-ROM from: Gesis ZA Data Service: Eurobarometer 1970–2004, CD-Rom 2, EB 42-EB 51, 2005, and Gesis ZA Data Service: Eurobarometer 1970–2004, CD-ROM 3, EB 52-EB 62, and 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: First Results: Standard Eurobarometer 70, European Commission, Brussels, December 2008; and Eurobarometer: National Report: United Kingdom – Standard Eurobarometer 70, European Commission, Brussels, February 2009. Aggregated data for the EU27 for the Standard Eurobarometer 71 were taken from: Eurobarometer: Eurobarometer European Parliament (EB Standard 71).

[2]Financial Times/Harris P o 1 l: Poll on the Financial Market Crisis, https://www.ft.com/; Institut für Demoskopie Allensbach: Einstellungen zur sozialen Marktwirtschaft, https://www.ifd-allensbach.de/, 2008.

survey[3] conducted in May–August 2007, a significant decrease in the confidence in free-market economies had begun as early as 2002 in Germany, the United States, the United Kingdom and the emerging economies.

The second scenario in fact is more realistic, as evidenced by increasing calls for stronger state intervention. Citizens want more state intervention at the national and regional level and less integration of their economies in a more globalised context. Recent polls suggest that globalisation is seen as a threat by citizens throughout the world. According to the Edelman Trust Barometer[4] conducted in January 2009, for instance, 65% of all respondents (a figure that rises to 84% in France) agreed that their government should impose stricter regulations and greater control over businesses in all industries. According to an FT/Harris Poll[5] from mid-October 2008, 81% of Italian, 70% of German, 68% of French and 59% of British respondents support increased regulation by their governments of businesses' activities. Citizens had expressed strong fears about globalisation even before the financial crisis. A GlobeScan survey[6] conducted shortly before the financial crisis erupted indicated that a majority (72%) of respondents in 23 countries were in favour of measures to protect jobs and national industries, and 63% overall favoured restricting foreign ownership of national companies. And according to an FT/Harris Poll[7] in March 2009, already more US citizens tend to agree (30%) than to disagree (24%) that national protectionism is the correct instrument to end the economic recession.

2 Evidence from Eurobarometer

One of the crucial research questions emerging from the ongoing crisis is how strongly the crisis is affecting European citizens' level of confidence in various institutions. The collapse of the financial sector has made European citizens aware of the fact that capitalist systems are more fragile than they previously believed. But what is the concrete impact on their trust in European and national institutions? Time trend data on confidence levels are still scarce, but one possible source are the survey findings released by Eurobarometer (EB) on the European and national institutions. Thus, to answer the important question on the evolution of European citizens' confidence levels, time-series data from EB have been utilised to show the trend in trust for the EU15 and, starting in spring 2007, for the EU27, regarding:

- the European Central Bank (ECB)
- the European Commission (EC)
- the European Parliament (EP).

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[3]GlobeScan: Erosion of Support for Free Market system: Global Poll, https://globescan.com/ 2008.

[4]Edelman Trust Barometer, https://www.edelman.co.uk/, 2009.

[5]Financial Times/Harris Poll: Poll on the Financial Market Crisis, op.cit.

[6]GlobeScan: World Losing Faith in Globalized Economy: Global Poll, https://globescan.com/ 2008.

[7]Financial Times/Harris Poll: In the United States and Largest European Economies Public Opinion is split on Issues Economic Nationalism, Protectionism and Internationalism, https://www.ft.com/.
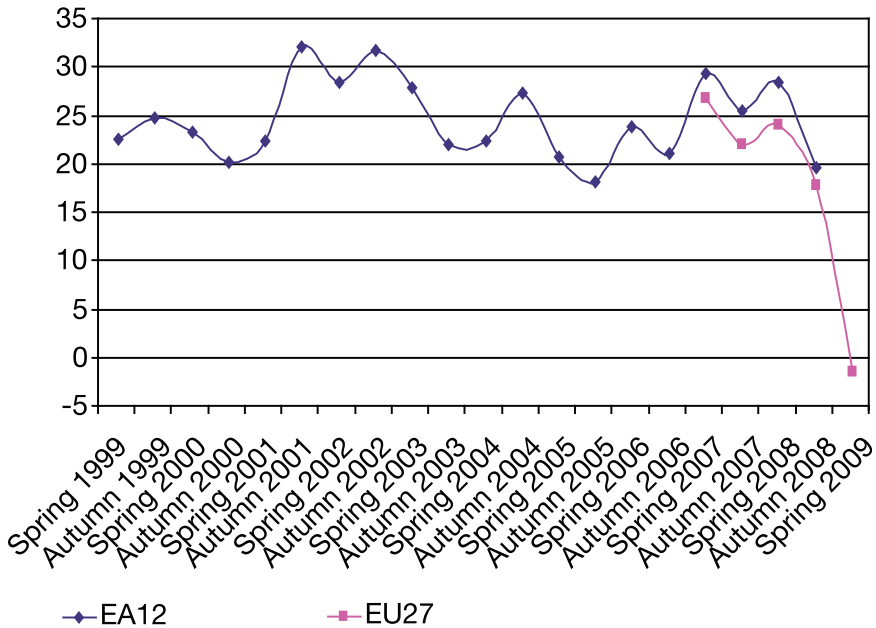
Fig. 11.1 Net trust in the ECB in the EA12 (EU27), 1999–2009
Source: Eurobarometer: Standard EB Nos. 51–71.

Figure 11.1 shows the time trend in net levels of trust[8] in the European Central
Bank for the 12 member states of the eurozone.[9] The two last observations in
Fig. 11.1 were gathered after the financial crisis. Interestingly, in autumn 2008,
(October–November 2008) poll (Standard EB 70),[10] one month after the financial
crisis first hit, the erosion of European citizens' confidence levels in the ECB was
still rather modest, whereas by January–February 2009 (Standard EB 71),[11] the

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[8] In order to control for the significant variations in the "Don't know" answers, net trust values are
given in this paper when using EB data. "Net trust" here looks only at those respondents who have
an opinion and subtracts the percentage of those who say they do not have trust from those who say
they have trust in the system. Thus a value above zero indicates that overall there are more people
who trust than distrust and a value below zero indicates that the majority of people distrust.

[9] The question of confidence in the ECB is really only relevant in the case of those countries that
have implemented the euro. Therefore, only data from the euro area member states (EA12) have
been used. However, the results do not differ significantly when using an EU15 or EU27 country
sample. As the time trend from 1999 to 2009 is of primary importance in Fig. 11.1, the four new
countries Slovenia, Cyprus, Malta and Slovakia, which joined the euro area recently, have not been
included in constructing the average.

[10] Eurobarometer: First Results: Standard Eurobarometer 70; op. cit.

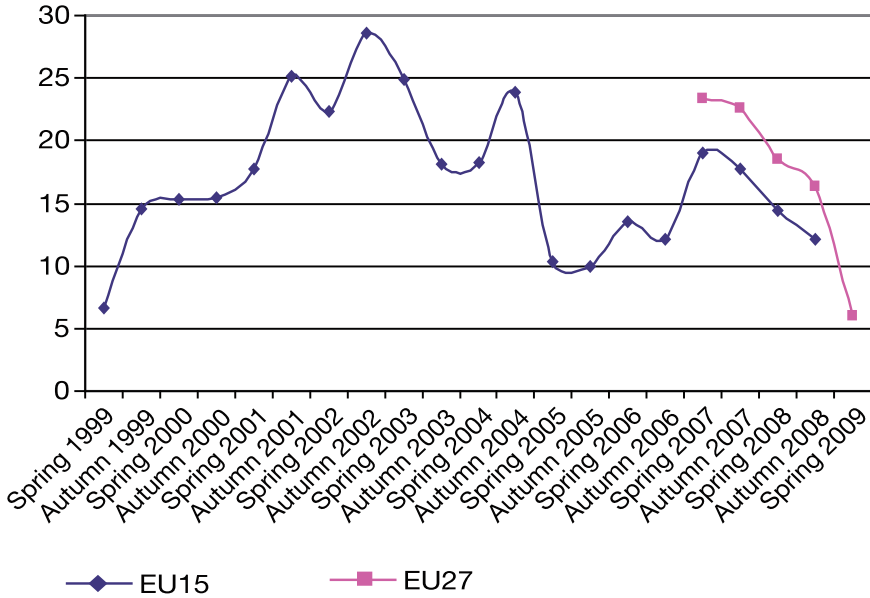[11] Eurobarometer: Eurobarometer European Parliament (EB Standard 71); op. cit.

Fig. 11.2 Net trust in the European Commission in the EA15 (EU27), 1999–2009
Source: Eurobarometer: Standard EB Nos. 51–71.

decline in confidence in the ECB reached a historically low level in the EU27.[12] For the first time since the creation of the ECB, more European citizens tend to mistrust the ECB than to trust it. One has to underline here that the ECB is directly relevant for the citizens in the EA12 countries, as their national central banks have given up their autonomy to this institution. We now have to wait for the results of the Standard EB 72 to know if this trend will continue as sharply as it did in the interval between Standard EB70 (October–November 2008) and Standard EB71 (January–February 2009) or whether it comes to a halt. One last remark on the interpretation of the data is necessary. The actual confidence level in the ECB with a net value of −1% is still higher than the confidence levels in national governments and parliaments with net values ranging from −27% to −24%.

To analyse whether this trend is also applicable to other European institutions, Fig. 11.2 shows the trend in net confidence towards the European Commission. Although the decrease in confidence towards this institution has not been as significant as that towards the ECB, it clearly supports the argument that there is a general

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[12]Construction of the average for the EA12 countries from the Standard EB 71 (January–February 2009) is not yet possible as the data have not yet been officially released. Up to now only the aggregated data for the EU27 have been published in the Analytical Summary of the Eurobarometer poll on "European Elections 2009" in: Eurobarometer: Eurobarometer European Parliament (EB Standard 71); op. cit.
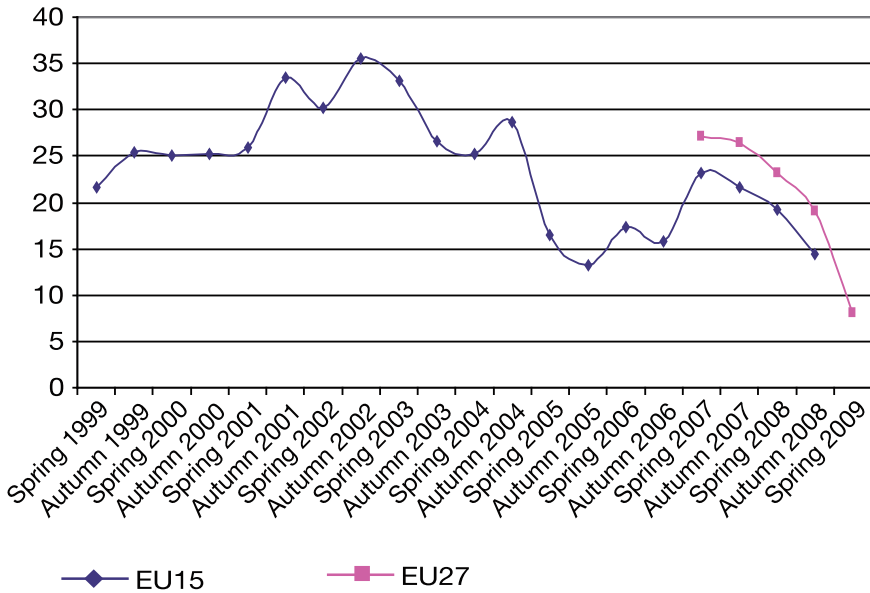
Fig. 11.3 Net trust in the European Parliament in the EU15 (EU27), 1999–2009
Source: Eurobarometer: Standard EB Nos. 51–71.

decrease in citizens' confidence in the European institutions since the financial crisis erupted in mid-September 2008. More concretely, the decrease in October–November 2008 was followed by a stronger decrease in the confidence levels in January–February 2009 for the EU27. In contrast to the results discussed above, the levels of confidence in the European Commission are still slightly higher than those in the ECB. However, citizens' confidence has reached the same low level as it did in spring 1999 and might reach its lowest confidence level in autumn 2009, once the data from the next Standard Eurobarometer can be evaluated. Again one should note that these confidence levels are still significantly higher than the confidence expressed in the national governments.

To get the full picture of the trends in confidence levels towards the European institutions, Fig. 11.3 shows net confidence levels in the European Parliament for the last decade. In a similar pattern to that observed with the ECB, the confidence level in the EP has reached a historical low with a net trust value of 8% in January–February 2009 on the part of the EU27.

3   Confidence in National Governments

The interesting question that now arises is whether this strong decrease in confidence levels in European institutions is accompanied by a similar pattern of declining confidence in national institutions.

Fig. 11.4 Trust in the National Government on the part of European G5 countries, 2004–2009 Source: Edelman Trust Barometer, 2004–2009.
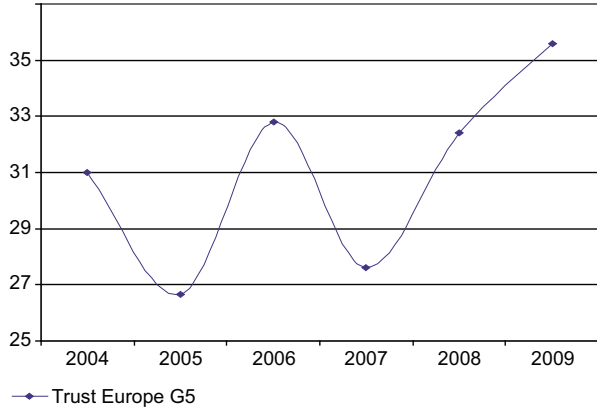
Two different sources of data are utilised to answer this question. One source is the set of time trend data taken from the Edelman Trust Barometers.[13] Respondents were asked how much they trusted the government to do what is right. Figure 11.4 shows the average time trend for the five European countries Germany, France, Italy, the United Kingdom and Spain. According to the Edelman Trust Barometers, trust in national government actually increased from 2008 – before the financial crisis – to November–December 2008 – after the financial crisis. In particular, the increases in Germany (from 27% to 35%) and the increases in the United Kingdom (from 34% to 41%) in confidence in the government were rather strong. This phenomenon is not precisely new as empirical evidence suggests that trust in the national government appears to increase after the occurrence of a national crisis. This could already be observed after the attacks on the United States in September 2001.[14] In times of severe crisis, citizens' confidence towards their national institutions seems to increase. However, it should be noted that, in contrast to the experiences of the five big European economies, there were significant decreases in levels of public trust, in the United States from 39% before to 30% after the crisis, in the United States.

Thus, the Edelman data suggest that the trend seems to be diametrically opposed to confidence towards the European institutions. But is this trend supported by evidence from Eurobarometer? Recent data from Eurobarometer seem to support

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[13] Data from the 2004 to 2009 period are provided by the Edelman Trust Barometer reports, which can be downloaded at https://www.edelman.co.uk/. Unlike the Eurobarometer surveys, the Edelman Trust Barometer surveys are not based on a representative sample of the population but are purposely constructed to monitor opinions of "elites". Therefore, the Edelman Trust Barometer population is college-educated and reports a household income in the top quartile of their country.

[14] See V. Chanley, Trust in the Aftermath of 9/11: Determinants and Consequences, *Political Psychology,* Vol. 23, No. 3, 2002, pp. 469–483. Although the September 11 attacks were not of an economic character, but rather were general attacks on the United States, these figures might nevertheless give some indication of the trend in government confidence in the aftermath of national crisis.

Fig. 11.5 Net trust in
national parliaments for
EU15 (EU27), 2001–2008
Source: Eurobarometer:
Standard EB Nos. 56-70.
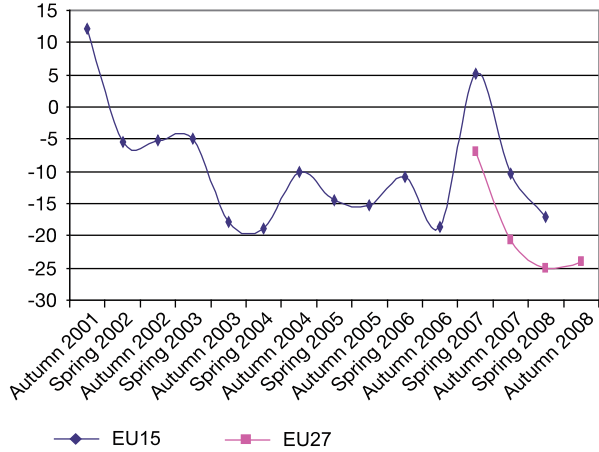
an inverse relationship between confidence in European institutions and national
institutions. The best analysis for testing the assumption is to compare the same
institution, in this case, the parliament on a European and national level. Thus
Fig. 11.5 shows the time trend data from Eurobarometer from 2001 to 2008[15] for
citizens' net confidence in national parliaments. Similar to the Edelman data, one can
observe an increase in confidence in the EU27 in national parliaments after the
financial crisis in October–November 2008.

But does this relationship also hold for confidence in other national institutions?
Also utilising Eurobarometer data, Fig. 11.6 plots data showing trends in confidence
in national governments. In examining the time trend data on confidence in national
governments from 2001 to 2008, shown in Fig. 11.6, one detects a significant
increase in the EU27. Thus data from both the Eurobarometer surveys and the
Edelman Trust Barometer support a diametrically opposed trend between citizens'
confidence towards European and national institutions after the financial crisis. The
datasets of the upcoming standard Eurobarometers 71 and 72 have to be examined
once they are available to shed more light on the confidence trend towards national
institutions.

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[15]Data on the confidence in national institutions from the Standard EB 71 have not even been
published in the analytical summary on the Eurobarometer European Parliament, in:
Eurobarometer: Eurobarometer European Parliament (EB Standard 71); op. cit. The data from
autumn 2008 (Standard EB 70) have only been released for the aggregated values for the EU27, in:
Eurobarometer: National Report: United Kingdom – Standard Eurobarometer 70; op. cit. Thus we
have to wait for the publication of the data from the Standard EB 71 to evaluate the trend of the net
trust levels towards national institutions.

Fig. 11.6 Net trust in national governments for EU15 (EU27), 2001–2008 Source: Eurobarometer, Standard EB Nos. 56–70.
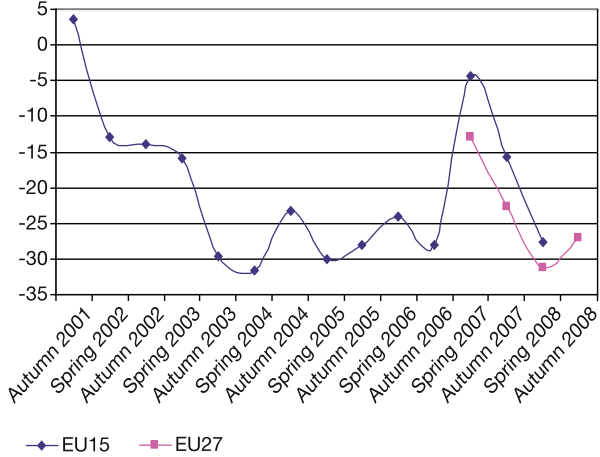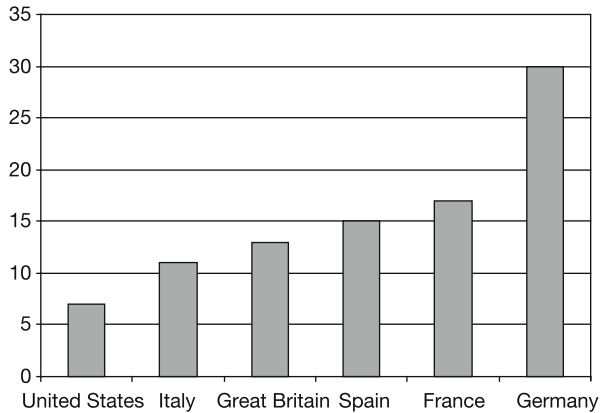

Fig. 11.7 Abuse or failure of capitalism? Anti-capitalist tendencies among G8 countries
Source: Financial Times/ Harris Poll: Poll on the Financial Market Crisis, https://www.ft.com/.

4 Confidence in the Market Economy

A certain level of citizens' confidence in market-based economies is crucial for the maintenance of social peace and the stability of the economic system. It guarantees citizens' support of an economic system in which the means of production are privately owned and operated for profit through free-market mechanisms. According to the results of an FT-Harris poll, as depicted in Fig. 11.7, the level of confidence towards capitalistic free-market economies is distributed differently throughout the different European countries and the United States. When asked in October 2008, directly after the beginning of the financial crisis, whether the current financial crisis had been caused more by 'abuses of capitalism' or by the 'failure of capitalism itself', an astonishing 30% of German respondents selected the latter explanation. This value is four times higher than the 7% obtained in the United States and nearly twice as high as that obtained in France, at 17%. These strong German anti-capitalist

Fig. 11.8 German social
market enconomy – Socially
just versus unjust
Source: Institut für
Demoskopie Allensbach:
Einstellungen zur sozialen
Marktwirtschaft, https://
www.ifd-allensbach.de/,
2008.
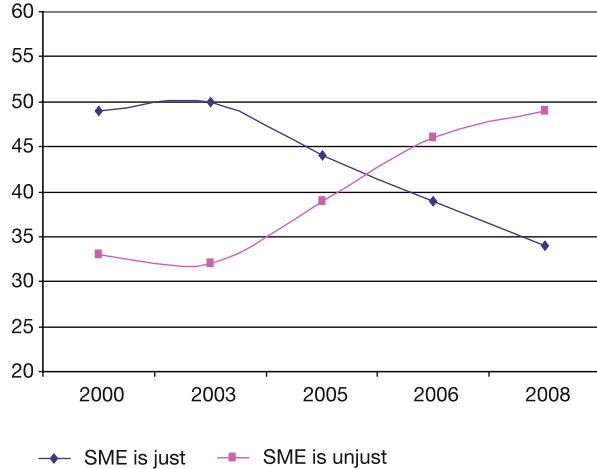
sentiments are accompanied by a significant increase in discontent expressed by German citizens with the concept of a social market economy (SME). Figure 11.8 shows the German trend data[16] towards trust in the social market economy. From 2003 until November 2008, there was a significantly steady increase in the number of German citizens who thought that the social market economy was unjust, from 34% to 49%. This increase in German citizens' discontent with the social market economy is also supported by time trend data and a poll conducted by the Bertelsmann Stiftung[17] in May 2008, which found that 73% of German citizens evaluated the income distribution in Germany as unfair. Similarly, according to the WIN Crisis Index[18] conducted in January 2009, German citizens have one of the lowest confidence levels towards banks, stock markets and their government compared to other G20 countries. However, these results could merely reflect the fact that the German economy has been hit the hardest among the world's largest economies by the financial crisis with an expected decrease of economic growth by a staggering 6%. Thus German citizens might have been aware of this fact from the earliest stages of the financial crisis.

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[16]Institut für Demoskopie Allensbach, op. cit.

[17]Bertelsmann Stiftung: Bürger Programm Soziale Marktwirtschaft –Ergebnisse einer repräsentativen Bürgerumfrage zu den Vorschlägen des Bürger Forums Soziale Marktwirtschaft, 2008.

[18]Win Crisis Index: Worldwide Barometer of the Financial Crisis, https://www.edelman.co.uk/, 2009.

5   Conclusions

As could be presumed, the financial crisis had a significant impact on the levels of trust that citizens place in the system and its institutions. Recent data show a significant fall in the confidence of European citizens in the EU's institutions. This sharp decline of confidence can be best observed in the case of the European Central Bank. For the first time since its creation, a majority of European citizens no longer trusts the ECB.

However, the significant decrease in European citizens' confidence in the two other European institutions – the European Commission and the European Parliament – is not replicated at the national level. Two independent data sources highlight that confidence levels in national governments have actually risen, supporting a contrasting trend between the confidence in European and in national institutions. It remains to be seen whether or not this first indication points towards a new trend of re-nationalisation. It can clearly be observed that the level of trust in the European institutions remains much higher than that for national institutions, but the advantage enjoyed by 'Europe' has been significantly reduced.

This decrease in confidence towards the ECB is flanked in the case of Germany by strong anti-capitalist sentiments and a sharp decline in support for the social market economy, with 30% of Germans identifying the current financial crisis as a failure of capitalism and around 50% characterising the social market economy as unjust, compared to around 35% who still identify it as just. We now have to wait for the release of the forthcoming data from Standard Eurobarometers 71 and 72, which will further help to evaluate more precisely the effects of the financial crisis on levels of systemic trust towards European and national institutions.