Who Supports the ECB? Evidence from Eurobarometer Survey Data

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Who Supports the ECB?
Evidence from *Eurobarometer* Survey Data

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Abstract

This paper contributes empirically to the long-debated issue of the legitimacy of the European Central Bank (ECB) with regard to European polities. Using micro-level data from the *Eurobarometer* survey, we shed light on the socio-demographic determinants of public-opinion support for the ECB. We find that people with higher level of education and income and centre to right-wing political orientation tend to support the ECB, as well as people with optimistic expectations on the economic situation. By contrast, the unemployed tend to distrust the ECB. The policy relevance of such results is important for ECB's communication strategy with the general public.

JEL Classification: C23, E58, F33, H11, Z13

Keywords: institutional trust, *Eurobarometer* survey, European Central Bank, European (Monetary) Union, quasi-panel logistic regression

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1   Introduction

Price stability has been the main goal of central banks since the high-inflation experience known even in developed economies in the 1970s and up until the recent global financial crisis. Accordingly, monetary authorities across the world have been granted a considerable degree of – mostly, operational – independence (Crowe and Meade, 2007; Arnone *et al.*, 2009; Carlstrom and Fuerst, 2009). More precisely, many governments have chosen to delegate monetary policy and/or commit to inflation targets in order to increase policy credibility and arrive at a lower rate of average inflation.

However, there is an inherent risk in delegating monetary policy and, for the delegation to be sustainable, one needs to ensure at least the medium-and-long run compatibility of monetary policy with the society's preferences. This is all the more obvious and important right now, when the global financial crisis and the Euro-area debt sustainability problems have undermined the policies and reputation of perhaps the most independent central bank in the world, the European Central Bank (ECB). Under circumstances like those the independence of monetary authorities is being confronted with doubts and criticism from politicians.[1] Such attacks on the technocratic autonomy of central banks could be seriously threatening or impairing the effectiveness of their present and future policies, as well as their anchoring role regarding market inflation expectations. In particular for a supranational institution as the ECB, whose powers are only limited by the Treaty of Maastricht and not by any given national government or parliament, its legitimacy is at stake.

Of course, these considerations rely on the incentives of politicians to bash the central bank and to exercise pressures on it. Hence, the larger the support from the population, the lower the risk for the central bank to be threatened. Public support is particularly relevant and pressing for a young institution such as the European Central Bank, the more so in the wake of the deepest depression for nearly a century. It still stands accused of a lack of accountability – and, consequently, of misaligned interests and policies with respect to national governments and electorates, especially during the financial and Euro-debt crisis. In a nutshell, if people trust the ECB, although such support would be most likely sensitive to the business cycle (Stevenson and Wolfers, 2011), then its legitimacy as an institution and the credibility of its monetary policy will be higher; in addition, the attraction of the Euro as a world currency, and/or of the Euro-area for candidate countries will be stronger too. It can furthermore be argued that trust in the ECB and support for its policy could be enhanced by active communication with the European polities explaining its objectives, constraints, instruments and effects. Communication by central banks is gaining increasing importance in policymaking. A clear and transparent communication strategy is essential if the population's support for a central bank's policy declines, as it seems to be the case in the recent years, and not just in Europe. But, as Blinder *et al.* (2008) show, there still exists large variation in communication strategies across central banks, and no consensus has shaped out either on an optimal communication strategy or on an optimal degree of transparency.

In the case of the European Central Bank which we explore here, though some papers have attempted to check how its communication is received by the markets, very few have been able to ascertain the width of the support for the ECB in the European

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[1] On the anecdotal side, this is illustrated by the 'End the Fed' campaign of US Congressman and former presidential candidate Ron Paul or by former French President Nicolas Sarkozy who criticized repeatedly the ECB during his election campaigns in 2007 and 2012. On the empirical side, among others, Havrilesky (1991) and Mixon and Gibson (2002), but also Coleman (2001) and Siklos (2010) document the fact of 'signaling' from political leaders to central bankers. On the theoretical side, Lohmann (1992) has demonstrated that, in some situations such as the occurrence of a negative supply shock, the probability of a conflict between the government and the central bank increases.

population at large. For example, studying the pattern of communication strategies of several central banks, Ehrmann and Fratzscher (2007) find that the ECB Governing Council members step up the frequency of communication if there is a need to explain the monetary policy decision taken in the preceding Governing Council meeting. While they show that financial markets tend to respond significantly stronger to communication prior to interest rate changes, their evidence is limited to financial markets' reactions. Extending the scope, Maier and Bezoen (2004) argue that external pressure on the ECB stems mainly from politicians or from international organizations such as the International Monetary Fund (IMF). Moreover, in contrast with their own evidence for the Bundesbank, they also establish that interest groups (such as commercial banks) hardly attempt to influence European monetary policy.[2]

Notwithstanding their intrinsic interests, these papers have focused on given segments of the population, while it can certainly be affirmed that monetary policy impacts everyone's everyday life. Starting from such a premise, the study of attitudes and values is now recognized as an important source of information for economists, and the availability of the *Eurobarometer* survey data has put the European integration process under the magnifying glass more than once (see, e.g., Gabel, 1998, or Nelsen and Guth, 2000). Concerning monetary issues in particular, the emergence of the Euro as a currency and its popular support has been examined, among others, by Gärtner (1997), Hayo (1999) and Jonung (2004). But the trust of the Europeans in the ECB based on the socio-demographic determinants of their support for it has not yet been exhaustively explored. In fact, such literature is only emerging, and consists of the few papers we refer to as being the closest to our work here below.

Kaltenthaler and Anderson (2001) analyze the support for a European monetary policy, but in a sample over 1994–1997 when the single currency was not yet born. Using the data from *Eurobarometer* waves 41-47, they conclude that national attitudes dominate, and that the more people are attached to their national identity, the lower their support for a common currency. An exploration along similar lines but larger in scope is attempted by Hudson (2006), who presents some evidence with respect to trust, showing that changes in an individual's personal circumstances can also have an impact on trust. Importantly, trust appears to build over time, experience being a key driver of one's trust. For example, unemployed people tend to have lower levels of trust not only in the main economic institutions, but in other state institutions too, such as the police and the law. Trust also differs in a systematic manner with respect to education and household income. Age too has an impact on trust: it tends to increase as people grow older. Hudson (2006) also provides some evidence on trust in the ECB, showing that the standard socio-demographic variables are significant for trust. However, the data used is for year 2001 only.

Banducci *et al.* (2009) examine the evolution of trust in the Euro, analyzing how the inflationary effects of the transition to the new currency have been perceived by the Europeans. They show that rising prices have reduced the support for the Euro, although most of the surveyed people (two-thirds) still have a positive opinion of the new currency. While this study is somewhat related to ours, its coverage (2000–2007) and focus (on the Euro, and not on the European Central Bank) are more limited. Yet very recently Kaltenthaler *et al.* (2010) have evaluated the distrust of the public opinion in the ECB. They find that the distrust towards the ECB is stronger when people consider that the bank is too autonomous to reflect their own preferences. Their results show in

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[2]See also Maier *et al.* (2002) and Maier and Knapp (2002) for analyses of, respectively, the political pressure on, and the support for, the Deutsche Bundesbank. There is, to our knowledge, no equivalent study for the US, although Carvalho and Nechio (2012) look at the way lay people and professional forecasters understand monetary policy, would the Fed follow a Taylor rule.

particular that women are less likely to trust the ECB, whereas being older, and having a higher education level improved the score. More surprisingly, at the background of the extant literature on public support, they find no significant statistical evidence of a role for unemployment, religious belief, and political orientation. However, differently from our work here, they rely on a single survey wave (*Eurobarometer* 65.2 of 2006) and do not consider inflation as an explanatory variable. Moreover, distrust is considered with regard to the degree of independence the ECB enjoys, and not with regard to the policy it implements.

Fischer and Hahn (2008) also measure trust in the ECB from answers to the *Eurobarometer* opinion polls conducted on representative samples of the whole European population. Using the proportion of trust in the ECB as their dependent variable, they show that higher inflation reduces the trust in this institution. They also find that (lagged) national income, proxied by GDP per capita, and GDP growth both influence trust in the ECB positively, while unemployment-related variables do not seem to have an effect. Their study, however, considers only macro-determinants of the support for the ECB. Roth (2009), Gros and Roth (2010), Ehrmann *et al.* (2010) and Wälti (2012) have revisited such findings, yet focusing on the impact of the recent financial crisis on the support for the ECB, and argue that the banking distress and the fiscal turmoils have affected negatively the degree of trust in the ECB. Their results are in line with the procyclical nature of trust in institutions highlighted by Stevenson and Wolfers (2011).

In a related empirical study Berggren *et al.* (2012) explore social trust as a key determinant of central bank independence. They summarize the large and growing literature on trust, pointing out to the distinction between social trust and particularized trust (Bjørnskov, 2007). Their focus is on social trust, understood as capturing the basic outlook on people in general, unrelated to information about specific persons or organizations. Berggren *et al.* (2012) find a U-shaped link between central bank independence and social trust: at low trust levels, the need for central bank independence in a society is strong enough and dominates its low ability to implement reforms; at high trust levels the ability for reforms is high and dominates the low need; at intermediate trust levels there is neither need nor ability strong enough to generate independent central banks. By contrast, our interest here is in studying the socio-demographic determinants of particularized trust, more precisely as reflected in the survey-documented public opinion on a specific supranational and very influential institution, the ECB. To narrow down further our domain of investigation, we focus on institutional trust that is delimited by the question of how an institution, the ECB in particular, would benefit individuals, the European citizens in particular. This may be denoted as a utilitarian dimension of institutional trust that is important in economic and monetary decisions, but it is certainly not the only aspect of trust worth examining.

While the above-cited papers appear to be the closest to ours, our approach is empirically more encompassing. We rely on micro-level data with the aim to elicit from the *Eurobarometer* survey responses the most relevant socio-demographic determinants of support for the ECB (i) over its *entire* history back to 1999 and (ii) covering *all* current EU members (27 countries). One has to bear in mind that all EU members are supposed to adopt the single currency (except Denmark and the United Kingdom, which benefit from a special status). This perspective justifies the use of data not only from the present Euro-area members but also from the whole EU. Consequently, we hypothesize that such individual characteristics would matter beyond the national business cycle in enhancing or not the trust of the European public in the ECB. We, therefore, apply a pseudo-panel logistic regression model with both country fixed effects and time fixed effects that isolates the variation in the data due to unobserved time-invariant cross-country heterogeneity or common shocks and enables us to focus on which among the

socio-demographic individual characteristics we are interested in matter most in influencing the trust of the Europeans in the ECB.

Analyzing statistically the trust different segments of the population accord to the ECB and its evolution over time and across groups of countries, we present evidence that people with higher level of income and education and centre to right-wing political orientation tend to support a conservative institution such as the ECB, mostly because of a tighter alignment of views and interests. It may not come as a surprise that the unemployed are among the socio-demographic groups that distrust the ECB the most, together with the bottom quartiles of the income distribution and the people with the minimum level of education. However, the main import of the present paper is to establish that socio-demographic determinants of the trust of the European population in the ECB matter in a strong way, in addition and beyond the influence of inflation or other macrovariables revealed in other studies. Consequently, our findings can help the ECB to better formulate and implement its communication strategy with the EU public in order to ensure its longer-run legitimacy, recently endangered by the EMU debt crisis and the global depression, as our results also show.

The paper is structured as follows. The next section presents our data by a general statistical analysis of the evolution of trust in the ECB extracted from the *Eurobarometer* waves. Against this background, section 3 first motivates the socio-demographic determinants of trust in the ECB, the macroeconomic control variables, and the econometric methodology we employ, namely, survey-based pseudo-panel logistic regressions; it then discusses our baseline estimation results and reports appropriate robustness checks. We conclude by summarizing our key empirical findings and their policy implications.[3]

2   Evolution of Trust in the ECB: Data and Statistical Summary

Our data comes from the *Eurobarometer* survey. This survey, dealing with issues of general interest, is conducted on behalf of the European Commission since 1973. The results are published in *Eurobarometer* and are now made available on the Gesis website.[4]

2.1   Measuring Trust in the ECB from the *Eurobarometer* Survey

We have used *Eurobarometer* surveys 52.0 (November 1999) through 75.3 (May 2011), selecting those waves of the survey that include the question on trust in the ECB we are interested in. Table 1 provides the exact details.

[Table 1 about here]

The waves of the survey we employ cover all current EU member countries. Table 2 lists them by subgroup, as well as the relevant period coverage.

[Table 2 about here]

Among other questions, the respondents are asked about the importance of the major European institutions, including the ECB, and their trust in them, in particular in the ECB (Question n° 28_6 in *Eurobarometer* 52.0), which is of our direct interest here, as follows:

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[3]For replication purposes, our *Stata* dataset, codes and estimation output are available upon request.

[4]http://zacat.gesis.org/webview/index.jsp

"Q.28 *And, for each of them, please tell me if you tend to trust it or tend not to trust it?*

Q.28_6 *The European Central Bank*"

The responses are recorded in the following way: 1 for 'Tend to trust', 2 for 'Tend not to trust', and 3 for 'Don't know'. We measure the trust in the European Central Bank by transforming this categorical variable into a binary one, excluding the responses coded 3 that do not express an opinion. The binary discrete choice variable thus obtained becomes our dependent variable in the logistic regressions we report later on. However, just excluding the 'Don't know' category raises a problem, as people could be more interested in economic matters when things turn bad. Looking at the data, we confirm this cyclical nature of trust in the ECB: fewer people declare themselves in this third category near the end of our sample period. Moreover, it may also be that people decide first to express an opinion or not, and then on what their opinion would be, creating a potential sample selection bias (no matter that the survey sample would be designed as random). For these reasons our main estimation was complemented by two alternative ones, relying on standard techniques in similar studies: (i) imputation to handle missing data in a way resulting in valid statistical inference (Rubin, 1987); (ii) two-step correction for sample selection bias (Heckman, 1976, 1979). Both alternative estimation methods delivered qualitatively similar results, and we return to them with more detail in the robustness analysis further below.

We have divided our country sample into two groups: 'old EU15' are the older 15 EU member states for which data is available in the *Eurobarometer* survey from 1999 through 2011; while 10 of the 'new EU12' joined EU in 2004 and two[5] in 2007, and data for the new EU12 countries is available in the *Eurobarometer* survey as from 2004.

Attitudes by country towards trust in the ECB are illustrated in Figure 1, in terms of the proportion of those respondents who trust the central bank, taken as a long-run average across the (relevant, for each EU member state) *Eurobarometer* survey waves.

[Figure 1 about here]

This average level of trust in the ECB is higher in the Netherlands (1999-2011) and Malta and Estonia (2004-2011), where close to 80% of the respondents tend to trust the ECB, while in the United Kingdom (1999-2011), by contrast, only a bit more than 40% of the people admit they trust the ECB. Note, however, that except in the United Kingdom, in all remaining countries in our sample the (average, across the relevant waves) support for the ECB according to the *Eurobarometer* survey exceeds half of the respondents. In the top half of our sample in Figure 1, the average support for the ECB is stronger than two-thirds of the respondents by nation. From this, it appears that the ECB enjoys high credibility among the European population. As clear from the figure too, the level of trust of people living in countries which joined the EU in 2004 or 2007 is generally higher than that in its founding members. Another important fact apparent from Figure 1 is that Denmark and Bulgaria are two non-Euro-area countries which are among the top ten countries with high average trust in the ECB.[6] This justifies further our decision to consider the non-Euro-area countries in our analysis, as well as to examine possible differences of exchange rate peggers versus floaters among them.

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[5]Bulgaria and Romania.

[6]Note, however, that both these countries maintain a fixed exchange rate regime of their national currencies to the Euro, so they are *de facto* in the Euro-area and ECB's monetary policy affects them directly.

2.2   Evolution of Trust in the ECB across Time and Country Subsamples

We first look at the annual evolution of the level of trust in the ECB by individual country in our two subsamples of EU member countries, the old EU15 and the new EU12, as documented by the *Eurobarometer* survey data plotted in figures 2 and 3, respectively.

[Figures 2 and 3 about here]

A considerable amount of variation is exhibited in the old EU15 subsample, while the level of trust in the new EU12 subsample is less dispersed, and remaining above 60 percent until 2008. A drop in the trust in the ECB that can be attributed to the financial crisis is observed after 2008 in all EU27 member states. On an individual country level, figures 2 and 3 reveal that the lowest trust in the ECB, though fluctuating, has been systematically recorded in the UK, followed by France, and recently Greece, among the old EU15, whereas the highest level of support for the central bank has been attained in the Netherlands, Ireland before the 2008 banking crisis there, and Denmark after 2005; among the new EU12, the trust in the ECB has persistently been weak and declining in Latvia and Hungary, while remaining high, yet also declining, in Estonia and Malta.

[Tables 3 and 4 about here]

We now briefly discuss the key features of our data in terms of summary statistics characterizing the evolution of the distribution of the support for the ECB. Table 3 provides a first glance on the trust summary statistics in the *Eurobarometer* survey across its main socio-demographic categories and groupings within. The respective means suggest, in a preview before any econometric estimation to check for statistical significance, a broad picture of who supports the ECB more, and who less, consistent with most of our results highlighted in the introduction. Table 4 then reports the descriptive statistics characterizing the support for the ECB by key subgroups and corresponding survey waves, also thus outlining the evolving trends in its distribution. These trends and the shape of the distribution over time are illustrated in the several figures we comment next.

[Figures 4 and 5 about here]

Figure 4 illustrates, in terms of boxplot diagrams, the change in the distribution of trust in the ECB by the old EU15 countries between the earliest *Eurobarometer* wave in our dataset, of Oct-Nov 1999 (*Eurobarometer* 52.0), and Feb-Mar 2004 (*Eurobarometer* 61.0), the last wave before the new EU member states were included too. It is clear that trust in the ECB by the EU15 has become stronger during 1999-2004 (the mean goes up from 66.14% to 68.44% and the median from 64.00% to 67.13%) and less dispersed (the standard deviation falls from 12.20% to 9.78%, and the maximum falls whereas the minimum rises, thus decreasing the spread between them from 49 down to 35 percentage points). This reveals a build-up of credibility by the newly-created ECB.

Figure 5 illustrates, in turn, the corresponding change in the distribution of trust in the ECB by all EU27 countries between the earliest *Eurobarometer* wave in our dataset where data on trust for the new EU member states are available (Oct-Nov 2004, *Eurobarometer* 62.0), and the latest wave in our dataset for all these countries (May 2011, *Eurobarometer* 75.3). Now a reversal in the trend in the distribution of trust in the ECB by the EU27 is apparent during 2004-2011: trust has become weaker (the mean drops from 73.89% to 57.81% and the median from 73.23% to 59.61%) and more dispersed (the standard deviation rises from 8.34% to 12.97%, with both the maximum and the minimum falling but increasing the spread between them, from 33 up to 53 percentage

points). Yet a comparison between the old EU15 and the new EU12 reveals that the new members have a higher level of trust in the ECB. In both survey waves (*Eurobarometer* 62.0 and *Eurobarometer* 75.3), the new EU12 are characterized by summary trust statistics that are superior to the respective ones for the old EU15, notwithstanding the drop in the support for the ECB the financial crisis caused in both groups of countries.

[Figure 6 about here]

Another illustration regarding the evolution of the shape of the distribution of trust in the ECB among the EU member states is suggested in Figure 6. It provides the kernel density function (kdf)[7] for the same four waves of the *Eurobarometer* survey. What is easy to notice in the left-panel graph in Figure 6, concerning the old EU15 subgroup between 1999 and 2004, is the clear tendency of an increasing trust in the ECB revealed in Figure 4. Namely, the support of the kdf narrows down while the mode moves both right and up. The opposite tendency is displayed by the right-panel graph in Figure 6, concerning all EU27 member countries between 2004 and 2011, of a decreasing and more dispersed trust in the ECB, consistent with Figure 5. The support of the kdf this time shifts leftward, especially the lower tail, and its spread is consequently increased, while the shape of the kdf flattens, with the mode moving down and left, and skews into a less symmetric distribution, with mass shifting leftward.

The likely explanations for the observed trends in the distribution of trust in the ECB we summarized include, as few recent studies we already quoted have emphasized, the tensions that arise fundamentally from potential asymmetry of shocks across the E(M)U member states and, hence, from the ensuing diverging national policy requirements. In essence, while the new EU member states brought in, on average, increased trust in the ECB, they also brought in many additional problems and debates about the social cohesiveness of the political, economic and monetary union. Moreover, the global financial crisis since August 2007 and the subsequent aggravation of the sovereign debt problems of several European nations have further threatened even to disintegrate the Euro-area.

3 Determinants of Trust in the ECB: Econometric Estimation

Having summarized the evolving distribution of trust in the ECB, we next estimate the determinants of these changes. Along the lines of the existing literature dealing with public preferences for economic issues, socio-demographic variables are particularly considered, in addition to business cycle and institutional controls.

3.1 Variables Entering the Logistic Regressions

The role of individual characteristics is measured through categorical variables such as education, income, employment status, economic expectations, political placement, gender, age. Hyperinflation and fiscal/SGP dummies and certain interaction terms are also employed, as we discuss next.

Walstad (1997) and Walstad and Rebeck (2002) observe that education is an important determinant of an individual's preference concerning an economic issue, as well as measuring labor market skills and cognitive abilities (Scheve, 2004). But there is no consensus about the effect of education on an economic issue: Hainmüller and Hiscox (2006) find that people with college education are more pro-trade while other forms of education are not significant in evaluating trade policy. In our case, education is hypothesized to be linked to an understanding of the costs of inflation, of the operation of the

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[7]Using Epanechnikov (optimal) weighting and Silverman (data-determined) bandwidth.

monetary policy transmission mechanism, and of the macroeconomic role and institutional mandate of the central bank. Assuming that a higher level of education is related, among other things, to a better understanding of economics, education would thus be one main determinant of support for the ECB. In the *Eurobarometer* survey, 'education' is measured by the age of the respondent when s/he stopped full-time education and is an ordered categorical variable on a scale of 1 to 4; 1 for 'up to 15 years', 2 for '16 to 19 years', 3 for '20+ years' and 4 for 'still studying'.

The income variable in the *Eurobarometer* survey ranges from 1 to 4 indicating whether the respondent is in the first, second, third, or fourth quartile of the income distribution for the respondent's country. This variable proved influential in Jayadev (2006) for people's attitude towards inflation. In our case, income is hypothesized to pertain to an individual's self-interest: for example, if they own nominal assets and aim to preserve their purchasing power. Such a motivation suggests that individual income should be among the main socio-demographic determinants of ECB support.[8]

The literature has suggested that employment status could also be important, with the unemployed people less supportive of an inflation-bashing central bank, as low inflation levels could lead to a distortion of the Phillips curve trade-off (see Akerlof *et al.*, 1996). Such a distortion may push up the sacrifice ratio, and be perceived as costly by (part of) the electorate, notably the unemployed and retired people. To capture differences across employment status, we therefore include 'occupation' dummies for the unemployed and the retired. As the probability of being unemployed, or to have one's income reduced, is linked to business cycle fluctuations, we also take into account the economic expectations the surveyed declare. This variable is coded as to whether economic conditions are anticipated to 'get worse', 'improve' or 'stay the same'.

Political ideology is proxied by a political placement indicator, i.e. the way people position themselves on the political axis from 'left' to 'right' through 'centre'. Political placement can obviously change individual attitudes towards important economic issues and institutions, notably inflation and the central bank. As trust in the ECB could be related to a pro-European or pro-integration bias, we also include a dummy variable to capture trust in the European Commission, constructed out from the same response categories in the *Eurobarometer* survey as the ones for trust in the ECB.

Previous studies (Nelsen and Guth, 2000; Scheve, 2004) have revealed that women are less concerned about economic issues, so we add gender in our regressions. Age can also be important with respect to inflation aversion and, hence, central bank independence issues related to the role of the ECB. Farvaque *et al.* (2010) and Farvaque and Mihailov (2009) show that an older population acts as a strong weight against inflation, while Malmendier and Nagel (2009) present evidence that individuals of different ages react differently to past inflation experiences.

Related to the two preceding considerations could be the experience of hyperinflation some people might have lived through. We thus include in our estimates a dummy variable with value 1 if the country has known a hyperinflation episode in the 20th century. This is the case for Germany, Greece and Hungary for the immediate aftermath of World War I and/or II and for Bulgaria, Poland, Romania and Slovenia in specific periods during their transition from a centrally-planned to market economy over the last decade of the past century. As many hyperinflation episodes are related to fiscal policy outcomes, we also include dummy variables to account for the fulfillment of the Stability and Growth Pact (SGP) fiscal criteria: SGPDEBT has a value equal to one if the country shows a public debt to GDP ratio superior to the 60% limit, while SGPDEF is equal to one if the country shows a public deficit to GDP ratio superior to the 3% threshold.

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[8]Ideally, data on wealth and on asset detention would be preferable, but are not available.

We control for the role of macroeconomic variables by including regressors such as inflation, real GDP growth, the unemployment rate and some transformations of these variables (lags, expectations, perceptions or other). However, with view to the price stability goal of the ECB, actual inflation is the most natural macroeconomic determinant of trust in the ECB, which we report further down in our regressions.[9] Data on inflation comes from the Eurostat, measured as the annual percentage change in the Harmonized Index of Consumer Prices (HICP). Focusing attention on actual inflation as the key business cycle control is even more important with regard to the question at hand, since inflation experience can strongly shape people's preferences and, thus, their attitudes to the central bank, as Erhmann and Tzamourani (2012) show. Given that our EU sample is larger than the EMU subsample of countries, we also include dummy variables to control for the potential differences in the public support for the ECB arising from inflation targeting monetary policy frameworks with floating exchange rates versus fixed exchange rate monetary policies among the non-Euro-area EU countries.

Since our dependent variable is a binary categorical variable – taking the values of one and zero according to whether a particular respondent tends to trust or not, respectively, the European Central Bank – a survey-based quasi-panel logistic regression model with both country fixed and time fixed effects is well-suited for our purpose here of isolating away the aggregate variation in the data and focusing on the effect of specific socio-demographic determinants on trust in the ECB.[10] Our baseline model therefore takes the following form:

$$Trust_{ijt} = f(Inf_{jt}, Dem'_{ijt}, Pol'_{ijt}, EcoExp_{ijt}, D_{jt}, C_j, T_t, c) + \epsilon_{ijt} \tag{1}$$

$Trust_{ijt}$ is the opinion of a respondent i in country j at the time/wave t of the *Eurobarometer* survey. Inf_{jt} is the measure of inflation at t in the j-th country.[11] Dem'_{ijt} is a vector of 'demographic' variables such as gender, age, education, employment status and income, Pol'_{ijt} is a vector of 'political' variables such as the political ideology of the i-th respondent in the j-th country at t, and the trust in the European Commission, and $EcoExp_{ijt}$ are the expectations regarding the future economic situation by the respondent. Given our task, we allow for unobserved cross-sectional heterogeneity by including country fixed effects, C_j, in our estimation as well as for time/wave fixed effects, T_t, that capture time trends common to all countries. ϵ_{ijt} is the error term of the regression, c the constant term, and we also add some dummies, D_{jt}, discussed further below in the versions of (1) we estimated (see the reported tables with results).

As is standard in panel-data regressions, country fixed effects, C_j, are intended to pick up unobserved time-invariant country heterogeneity. Fischer and Hahn (2008) stress that trust in the ECB is likely to depend on national differences in mentality, history and institutions. In the *Eurobarometer* survey data we employ, any time-invariant framing effects will also be reflected in the country fixed effects. As is standard in panel-data analysis too, time fixed effects, T_t, are meant to control for unobserved aggregate shocks that would otherwise introduce omitted variable bias and impair statistical inference. Wälti (2012) argues in favor of a similar estimation strategy in a context close to ours, but using a measure of net trust (while we use a 0-1 dependent variable), ignor-

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[9]Preliminary estimates (available upon request) with lags of the inflation rate, with inflation and inflation squared, or replacing inflation by other business cycle controls such as GDP growth (lagged or not) or unemployment (lagged or not) delivered similar qualitative results: at best, the marginal effect of these alternative macroeconomic variables is very small and rarely significant.

[10]It should be kept in mind that the *Eurobarometer* survey is not a true panel, i.e. the respondents are changed in each wave.

[11]In our empirical implementation, it is taken to be proxied by the average HICP annual inflation rate in the respective year of the *Eurobaromater* survey. Alternative measures of observed and perceived (or expected) inflation are reported in the robustness section further below.

ing to correct for selection bias (while we do that) and focusing only on 12 Euro-area countries (while we look at all 27 EU members).

We estimate the parameters of our empirical model in (1) using logit regressions. Since we are merging country-level inflation with micro-data, it is important to consider the possibility that disturbances will be correlated across countries. Hence, standard errors are clustered by country and require the much weaker assumption that errors are independent across countries but not necessarily across every survey respondent within a country (Moulton, 1990).

Another issue in the analysis is the weighting of the survey data. We follow the proposal of DuMouchel and Duncan (1983) to include sampling weights and interaction terms between the weights and the independent variables in the regressions to detect possible misspecification. In almost all cases, we cannot reject the hypothesis that the coefficients of the sampling weights and the interaction terms are equal to zero. This indicates that our results are not sensitive to the weighting and thus we report them on unweighted data.

3.2   Baseline Empirical Results

As described above, for the older 15 EU member states data is available for the whole 1999-2011 period. However, as the new 12 EU member states are covered only from 2004 on, we provide, as a point of departure, estimates for the earlier subperiod 1999-2004 and, for comparison purposes, also estimates for the whole period. More precisely, we estimated the following version of our baseline logistic regression (1):

$$
\begin{aligned}
Trust_{ijt} \;=\;& f(Inf_{jt}, Dem'_{ijt}, Pol'_{ijt}, [EcoExp3_{ijt}], C_j, T_t, D_{jt}, c) + \epsilon_{ijt}, \qquad (2)\\
\text{where } Dem'_{ijt} \;=\;& (Age4_{ijt}, Edu4_{ijt}, [Inc4_{ijt}], Gen_{ijt}, Unem_{ijt}, Rtd_{ijt})'\\
\text{and } Pol'_{ijt} \;=\;& (Pol3_{ijt}, EUCom_{ijt})'.
\end{aligned}
$$

The 'demographic' vector contains ordered categorical variables and dummies: $Age4_{ijt}$ is the age group of the respondent in 4 categories: 15-24 years, 25-44 years, 45-64 years, 65+ years; $Edu4_{ijt}$ is the education level of the respondent in 4 categories: up to 15 years of age at the time of obtaining the highest degree, 16-19 years, 20+ years, still studying; $Inc4_{ijt}$ is the income quartile of the respondent (in 4 categories). The 'political' vector contains the trust in the EU Commission and one ordered categorical variable: $Pol3_{ijt}$ is the political placement of the respondent in 3 categories: left, centre and right. $EcoExp3_{ijt}$ indicates the expectation of the respondents about the economic situation in the next twelve months with response options given by 'better', 'worse' or 'same'. The key dummies we use refer to the gender of the respondent, Gen_{ijt}, and whether s/he is unemployed, $Unem_{ijt}$, or retired, Rtd_{ijt}; $EUCom_{ijt}$ is the dummy for trust in the EU Commission. The variables in square brackets are available only for certain subsamples, as we explain next.

Table 5 presents the regression results from estimating (2) in four specifications, the second one including income quartiles and the fourth one including economic expectations.[12]

[Table 5 about here]

As the *Eurobarometer* surveys discontinue publishing these income quartile characteristics of the respondents after 2004, our income quartile regressors appear only in

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[12]The data on economic expectations is not available in most of the survey waves before 2004. Its significance has been checked by excluding/including it in specifications (3) and (4) in Table 5.

specification (2) in Table 5 and not when estimates are reported up through 2011. Such a discontinuity causes concern, though, as our results confirm that income is a significant determinant of trust in the ECB. More precisely, as can be read off in specification (2) in Table 5, trust in the ECB is an increasing function of income (quartile): the richer the respondents are, the more they trust the ECB. Due to the mentioned limitation in the *Eurobarometer* survey waves after 2004, not containing income quartile data, we cannot further exploit and cross-check this particular finding in our 'updated' samples through 2011, also including the 12 new EU member states. Comparing specifications (1) and (2) in Table 5, one can say that although accounting for income quartiles is clearly justified, it does not modify substantively the other regression results. That is, apart from the loss of statistical significance of inflation in specification (2) relative to (1), the rest of the regression results look pretty much the same except for some minor nuances.

We find that: women trust less the ECB than men; age appears as a significant variable when the sample period is the largest, with the older people showing stronger support for the ECB; education clearly matters too, as people with a higher level of education (and those still studying) trust the ECB more than those with lower education levels. Furthermore, trust in the ECB monotonically increases as one goes from 'left' through 'centre' and to 'right' in the political spectrum. This result might have been expected given that the European Central Bank is generally considered as a rather conservative institution. Consistent with related earlier findings, our occupation dummy convincingly shows that unemployed people distrust the ECB. Economic expectations are also strongly significant, with the expected sign: the better the expected future, the higher the degree of trust in the ECB.

Most importantly, actual inflation is not significant at the 1% level in our estimated specifications (2), (3) and (4) of Table 5 once the socio-demographic characteristics of the respondents are taken into account. These added socio-demographic regressors thus complement, and look beyond the influence of, the few macrovariables employed in, for example, Fischer and Hahn (2008) and Wälti (2012) as potential determinants of the trust in the ECB. And, among the socio-demographic variables with the strongest effect on the support for the ECB by the European population at large are, notably, the higher-level education, the unemployment status, the two top income quartiles and the center-to-right political orientation.[13]

All in all, a major outcome of these first estimates is that the impact of most if not all of our various socio-demographic variables remains statistically significant and economically interpretable, in addition and beyond the simultaneous impact of inflation or lack of it.[14] These two types of determinants of the support the European population accords to the ECB, macroeconomic versus socio-demographic ones, have so far been studied in the literature mostly in separation. A comparison of regression (1) to its wider sample versions in (3) and (4), in Table 5, confirms that actual inflation is not found empirically to be among the key determinants of trust in the ECB based on the *Eurobarometer* survey waves. Another change is that older people (45-64 and 65+) are now supportive of the central bank too (at the 1% level of significance). This is the only

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[13]It could be argued that, given the relatively low level of inflation in the Euro-area, its low variance during our sample period, and the fact that the Euro-area is also characterized by persistent intra-zone dispersion in inflation rates (see, e.g., Altissimo *et al.*, 2011; Gregoriou *et al.*, 2011), inflation does not appear significant because its impact is already captured by the fixed effects. Nevertheless, our estimates show that including other socio-demographic variables is essential to have a better understanding of the issue at stake.

[14]Removal of inflation terms that come out statistically insignificant from the reported regressions does not change the essence of the results for the significant variables kept in. Additional tables confirming these robustness findings are available from the authors.

qualitative modification of the results we reported when comparing earlier specifications (1) and (2) in Table 5, as well as some changes in the degree of significance of the dummies related to the SGP criteria. We return to these particular findings with a likely interpretation later on, after considering analogous estimates for the 12 new EU member states, separately as the 'new EU12' subgroup and together with the 'old EU15' countries, as 'all EU27'.

We next estimated an analogous version of model (2) for the new EU12 countries separately and together with the old EU15 countries, but excluding the income categorical variable (discontinued in 2004 and, thus, not available for the new EU12 member states) from the 'demographic' vector, which now contains the remaining categorical variables, as below:

$$
\begin{aligned}
Trust_{ijt} &= f(Inf_{jt}, Dem'_{ijt}, Pol'_{ijt}, EcoExp3_{ijt}, C_j, T_t, D_{jt}, c) + \epsilon_{ijt}, \qquad (3) \\
\text{where } Dem'_{ijt} &= (Age4_{ijt}, Edu4_{ijt}, Gen_{ijt}, Unem_{ijt}, Rtd_{ijt})' \\
\text{and } Pol'_{ijt} &= (Pol3_{ijt}, EUCom_{ijt})' .
\end{aligned}
$$

Table 6 presents the results for the new EU12 countries in 2004-2011, specification (1), as well as for the whole sample, i.e. all EU27, over two periods of time, 2004-2011 (specification (2)) and 1999-2011 (specifications (3) and (4)).

[Table 6 about here]

The age categories do not influence trust in the ECB in the new EU12 countries. The rest of the results are qualitatively similar, for the political, education and occupation variables. Also, while gender still significantly and negatively affects the support for the ECB, the coefficient's magnitude for the average marginal effect is almost three times weaker in the case of the new EU12 estimates. These differences in the results can partly be due to the much shorter sample, 14 waves of the *Eurobarometer* only in 2004-2011, versus 24 waves for the old EU15 group in 1999-2011, and partly to the fact that except Malta and Cyprus (as from 2004), Slovenia (as from 2007) and Slovakia (as from 2010) the remaining eight countries in the new EU12 group do not (yet) share the common currency, the Euro, issued by the ECB and directly influenced by its monetary policy (to which we come back further in the robustness section below).

More importantly, our main conclusions from Table 5 carry over to Table 6. Namely, the estimated trust in the ECB does not appear affected by the inflation rate, but rather by the same set of key socio-demographic characteristics of the *Eurobarometer* respondents we employ. We again find, now in the new EU12 subgroup of countries (as it was in the old EU15 subgroup), that the ECB is mostly supported by people with right political orientation and the highest level of education (and still studying). At the same time, and by analogy with the results reported in all specifications in Table 5, women and unemployed distrust the ECB the most.

Having presented our results so far by distinct country subsamples, that is, for the old EU15 region versus the new EU12 region, it is finally not surprising what 'blending' these EU subgroups altogether produces, as reflected in the last three columns of Table 6. We first estimate the same baseline logistic regression for all our 27 countries, all EU27, over the subperiod 2004-2011 when data for the new EU12 becomes available in the *Eurobarometer* survey waves, and our results are reported in the column under specification (2) in Table 6. We then pool the subperiods and subgroups together, and re-estimate for the whole 'all EU27' country sample over the entire 1999-2011 time period (with 24 waves for the old EU15 and only the latest 14 waves for the new EU12 in the

whole group of all EU27). Specification (2) in Table 6 looks very similar to specification (1) in Table 5, with only retirees now – i.e. when the new EU12 and the later subperiod 2004-2011 are allowed to shape out our findings – becoming statistically significant. Specifications (3) and (4), in turn, are very close to specification (2) in Table 6. Most importantly, considering together all data does not restore the statistical significance and the sign and magnitude relevance of the key macroeconomic variable affecting the trust in the ECB, namely, observed inflation: compare specification (3) in Table 6 with specification (1) in Table 5, as was noted earlier.

Let us sum up next what we learn from employing the various dummy variables and certain interaction terms. Beginning with the dummy for countries having experienced hyperinflation, it appears as statistically significant only in the old EU15 subsample in Table 5, in all four columns. Its average marginal effect coefficient has a negative sign, which implies that trust in the ECB is lower in countries such as Germany where after the hyperinflation history in the 1920s and 1940s a credible central bank had emerged and consolidated, the Deutsche Bundesbank. The hyperinflation dummy is not statistically significant, however, for the new EU12 subsample and for all EU27 countries in Table 6.

Our 'fiscal profligacy' dummies, capturing higher deficit or debt ratios to GDP than those imposed by the SGP, seem more informative. In particular, the average marginal effect coefficient of the dummy for higher level of debt to GDP than the SGP limit is statistically significant and negative in the old EU15 subgroup over the whole period, 1999-2011 (the last two columns in Table 5). This means that the old EU15 population in countries with highly indebted governments does not support the ECB as much as the population in the remaining, less indebted old EU15 member states. The same is true for all EU27 countries over the entire sample, 1999-2011 (the last two columns in Table 6). Yet, it seems that the ECB may be considered as a check on profligate governments in the new EU12 subsample (the first column in Table 6), as the dummy related to the SGP debt criterion is now coming out with a significant positive coefficient. The changing sign on this coefficient as one moves from specification (1) to the other in Table 6 also reveals perhaps the rationality of respondents, who appear even more worried by the lack of discipline in public finances many EU27 countries now face. Important deficits and/or debt levels, especially as the financial and Euro-debt crisis has hit the old EU15 members more severely than the new EU12 ones, have impacted their public finances more strongly, and then the trust in the ECB as revealed by our estimates (see also below our robustness check on the financial and Euro-debt crisis period). As for the group of 10 new EU members that joined in 2004, our dummy EU2004 comes out with a significant and negative coefficient over 2004-2011 in most variants of the estimation (including the robustness checks to be discussed later), which indicates a lower degree of trust in the ECB in these 10 countries.

The interaction terms we employed checking for various possible combined effects on the trust in the ECB proved not statistically significant most of the time, unless on a few occasions that are reported in our tables. Just two such interaction terms, namely, hyperinflation × SGP debt and hyperinflation × old EU15 were found statistically significant in some of our econometric specifications, including the robustness checks discussed in the subsection to follow. As far as the baseline estimation in tables 5 and 6 is concerned the interaction of hyperinflation with SGP debt is hard to interpret, while the interaction of hyperinflation with the old EU15 subgroup results in a significant negative average marginal effect when the whole sample of 27 EU members is estimated over the entire period of 1999-2011 as well as over the more recent subperiod of 2004-2011 (see the last three columns in Table 6).

Interestingly, our dummy for the original EU6 founding countries comes out systematically across the variants of our estimation with a negative and significant average

marginal effect coefficient, while our dummy for the EMU member states displays the opposite significant sign, and roughly three times lower magnitude of the respective coefficients. These econometric findings seem to reflect some opposite trends in the public opinion concerning the ECB in the founding EU6 versus the much larger sub-group of the current EMU members.

Finally, our dummies for inflation targeting countries with floating exchange rate regimes and for fixed exchange rate regimes within the EU27 are generally insignificant in the largest sample.

All in all, the results we discussed show that higher education and/or income levels seem the dominant determinant of support for the ECB, coming out with statistically significant coefficients for the average marginal effects and the expected positive sign in our regressions. Our empirical work thus corroborates the two key socio-demographic sources of trust in the ECB we hypothesized. The findings we reported also reveal that the usual macrovariable to help evaluate central bank performance and build up support for its monetary policy, actual inflation, matters less (or even often does not matter statistically) for maintaining trust in the ECB once socio-demographic characteristics of the *Eurobarometer* survey respondents are also included in the regressions.

3.3   Robustness Checks

The definition of the dummies we used for hyperinflation as well as for SGP debt and SGP deficit may appear as taking out a lot of variability in the data from the outset and/or could raise doubts for under-identification problems, when they are coupled with the fixed effects, even though the non-linear estimation method would allow the convergence of the algorithm. We have, thus, re-estimated the same regressions as the ones we reported in the preceding subsection without these dummies and their interaction terms, and can confirm the robustness of the results to their inclusion/absence.[15]

As was noted when defining our binary measure of trust in the ECB, the estimates we presented above do not take into account the 'Don't know' category in the *Eurobarometer* survey response coding. While Wälti (2012) in his related panel-data work with a focus on the impact of the global financial crisis on a different measure of net trust neglected the implications of the mentioned category altogether, we did check for the robustness of our empirical findings along this dimension. More precisely, the respondents in the 'Don't know' category were imputed using standard techniques (Rubin, 1987) and all equations were re-estimated. This did not lead to any qualitative modifications of the results we reported in the preceding subsection.[16]

Yet, one cannot completely ignore the possibility that respondents, even in a random survey sample, first decide to have an opinion or not, and only then which opinion to have. Therefore, as an alternative of the imputation analysis, we also ran a Heckman (1976, 1979) selection model, as is common in the literature.[17] We concluded in favor of the absence of a selection bias in our analysis.[18]

Furthermore, the estimates we presented make use of the survey respondents' na-tional inflation rate. Yet, as our goal is to analyze the trust in the ECB by European

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[15]Full results are available upon request.

[16]Full results are available upon request.

[17]When the correlation between the error terms in the regression and estimation equations in a Heckman (1976) selection model is nonzero, standard regression techniques applied to the regression equation yield biased results. To obtain consistent, asymptotically efficient estimates for the parameters of interest, we applied the Heckman (1979) two-step efficient estimator. This approach is an appropriate alternative with large datasets as ours, in which maximum likelihood estimation of the parameters may be time consuming. We, therefore, performed the estimation with Heckman (1979) correction for selection bias.

[18]Full results are available upon request.

polities, a natural question arises about the relevant inflation rate that should be considered. For a resident of a country belonging to the Euro-area (or linked to it by a fixed exchange rate), the relevant inflation rate is the one targeted by the ECB. However, for a respondent from a country outside the Euro-area (and not linked to it by a peg regime), the support delivered to the ECB could depend on the difference between the Euro-area inflation rate and the domestic one. This is so especially given the fact that the ECB has been quite successful in achieving its 2% inflation target, except for the last few years, due to the crisis.

To deal with these other aspects of robustness, we next present estimates based on three alternatives. The first series of estimates, regressions (1) to (4) in Table 7, use the subsample of countries that are not members of the European Monetary Union, and consider the difference between their national inflation rate and the Euro-area inflation rate. As can be seen, the results are fundamentally similar to the preceding ones. The second series of robustness checks, regressions (1) to (4) in Table 8, consider expected inflation in the EMU subsample, and not realized inflation.[19] Here again, as can be seen, the qualitative essence of our empirical results remains robust. Moreover, comparing this particular estimated specification on a restricted sample of just the Euro-area countries with the baseline empirical findings concerning all EU members reveals no substantive difference between these two groups along the issue we investigate. To expand on this dimension of potential divide of EMU vs non-EMU states, the third series of robustness checks, regressions (1) to (4) in Table 9, finally look for a possible role of inflation perceptions by using the national inflation rate for the countries that do not belong to the Euro area, but the Euro-area inflation rate for the EMU members. As can be seen, again, no significant difference emerges from those estimates and the preceding ones. Hence, inflation (whatever the measure we consider) remains mostly insignificant in our regressions. Concerning the socio-demographic variables, the results show that the effect of education is the same (the higher the education level, the higher the support), people from the right are still more supportive of the ECB, while unemployed, retirees and women tend to be less supportive of the ECB.[20]

[Tables 7, 8 and 9 about here]

To judge about the impact of the global financial crisis on the support for the ECB accorded by the population in the EU, we ran estimates on the last subperiod of our sample, i.e. 2007 to 2011. Roth (2009) and Wälti (2012), for example, show that the support for the ECB has strongly decreased over the last years of our sample, so we checked if our own reported results are robust to the crisis period. As can be seen from Table 10, our findings are mostly unchanged, except for the dummies related to the hyperinflation episodes and the fiscal stance. The hyperinflation dummy is now significant and negative in both types of countries, as well as its interaction with the dummies related to the SGP criteria. This seems to indicate certain disapproval by the respondents with regard to the policies the ECB has implemented during the crisis to back up the sovereign issuers in the Euro area, and also a good understanding of the fact that such policies may fuel inflation if they are not reversed.

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[19]The definition and source of inflation expectations in the Euro area are taken from the ECB Survey of Professional Forecasters (SPF). This is a quarterly survey of expectations for the rates of inflation, real GDP growth and unemployment in the euro area for several horizons, together with a quantitative assessment of the uncertainty surrounding them. The data are available at http://www.ecb.int/stats/prices/indic/forecast/html/index.en.html

[20]A minor difference with respect to our baseline results is that the interaction of hyperinflation with SGP debt now appears with a statistically significant positive, not negative, coefficient once economic expectations are included as an additional regressor over the whole period as well as over 2004-2007, and given that actual inflation in Table 7 is measured in a perhaps more directly relevant way to national perceptions of what the ECB can do about it or not.

[Table 10 about here]

Finally, as far as potential combined effects are concerned, we ran the regressions we have reported also including additional interaction terms, namely gender × income, gender × education and income × education.[21] The terms interacting with income came out insignificant, while gender × education was found statistically significant only for high levels and negative.[22]

All in all, then, these robustness checks confirm quite convincingly the spirit of the preceding results and interpretations. They show, more precisely, that one principal source of trust in the ECB we hypothesized, the understanding of the costs of inflation, of monetary policy transmission and of the institutional role of the central bank, with education being its key determinant, is the most supported by the sample we used. Although we cannot neglect the relevance of another major source of trust in the ECB, income, our exploration along these lines was less conclusive due to the lack of data.

4   Concluding Comments

Our empirical answers to the question we posed in the title to this paper can be summarized as follows. Who supports the ECB? People with higher – rather than lower – level of education, perhaps because these can better appreciate the role of the ECB within the E(M)U; people with higher – rather than lower – level of income, possibly because these tend to be more concerned that price stability is protected, which is the mandate of the ECB; people with centre to right-wing – rather than left-wing – political orientation, as these are likely to be more conservative and, thus, more 'aligned' with the usual central banking functions and policies; people with optimistic expectations on the economic situation, perhaps because these see the ECB as partly contributing to shaping out economic trends in the E(M)U; men – rather than women – as they might overall be more politics- or business-inclined. Not surprisingly, perhaps, the unemployed are among the socio-demographic groups that distrust the ECB the most, as they would care primarily to find a job, and so a source of income. By analogy, the bottom quartiles of the income distribution and people with the minimum level of education also belong to the social layers that display the weakest support, if at all, for the ECB and its priority policies.

Our findings also make another important point: most of the micro-characteristics of the European population we employed in our empirical work matter for its trust in the ECB, while the control for actual (as well as expected, perceived, lagged or transformed) inflation in the Euro area or relative to the non-Euro part of the EU was surprisingly not found statistically significant most of the time. Simply studying macroeconomic determinants of trust in the ECB, as common in this emerging literature so far, would therefore miss a whole set of micro-based socio-demographic determinants. As our results show, these latter determinants led to statistically significant and economically interpretable results in a broader context of investigating the support for the ECB by the population of the EU member states that looks beyond the business cycle and national institutional context using the data from the *Eurobarometer* survey waves.

The implications of such results are clearly essential when it comes to formulating and implementing a central bank's communication policy, and in particular the communication strategy of the ECB. Over the recent years, the intense debates on the EMU debt crisis together with the weak global economy have led to a decline of the trust in the

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[21]These additional results are available from the authors.

[22]Such a result may imply that women with higher degrees of education tend to be less supportive of the ECB when compared to less educated women, a curious minor reversal of what we reported for men and for both sexes in general.

ECB. Our results, in effect, identify the groups that should be targeted in such communication with the public if the ECB has to improve its policy credibility and longer-run legitimacy. Their relevance for ECB's communication strategy is especially high in the years ahead of further challenges and likely reforms of the EMU.

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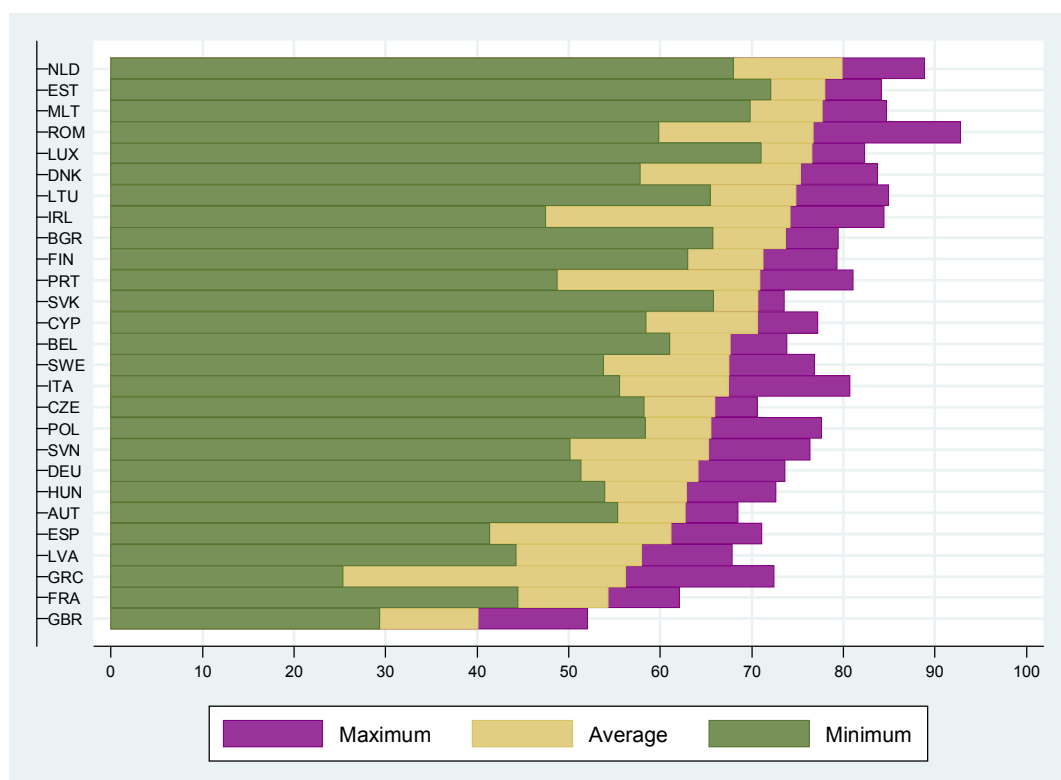
Figure 1: Average Support for the ECB by Country, % – All EU27. Note: Statistics for the old EU15 countries are based on 1999-2011 (24 *Eurobarometer* survey waves between EB52.0, Oct-Nov, 1999 and EB75.3, May 2011), while statistics for the new EU12 member states are based on 2004-2011 (14 *Eurobarometer* survey waves between EB62.0, Oct-Nov, 2004 and EB75.3, May 2011). Source: Authors' calculations based on *Eurobarometer* survey data.
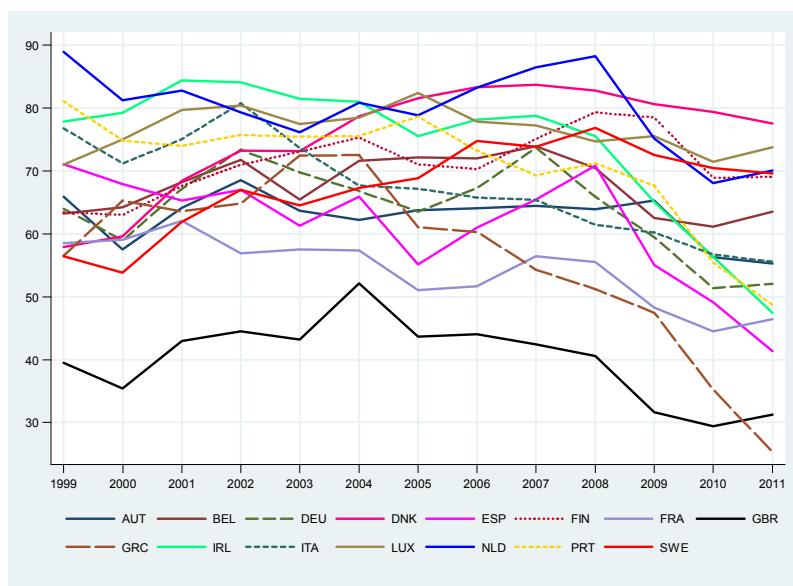
Figure 2: Trust in the ECB by Country, % – Old EU15, 1999-2011. Source: Authors' calculations based on *Eurobarometer* survey data.
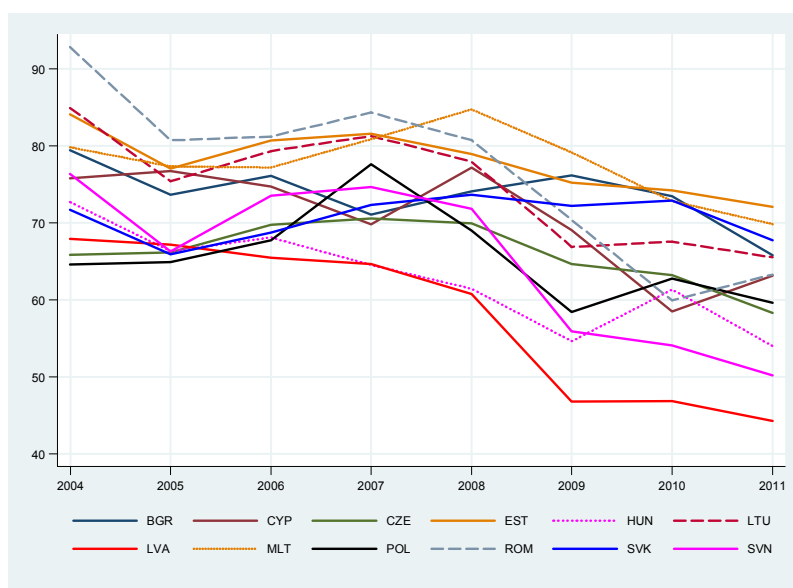
Figure 3: Trust in the ECB by Country, % – New EU12, 2004-2011. Source: Authors' calculations based on *Eurobarometer* survey data.
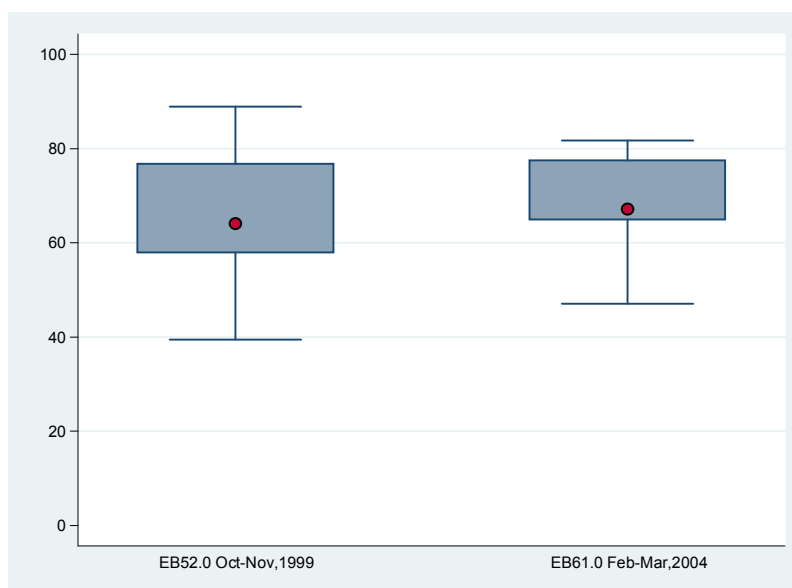
Figure 4: Distribution of Trust in the ECB, %, Old EU15, 1999-2004 – Boxplots. Source: Authors' calculations based on *Eurobarometer* survey data.
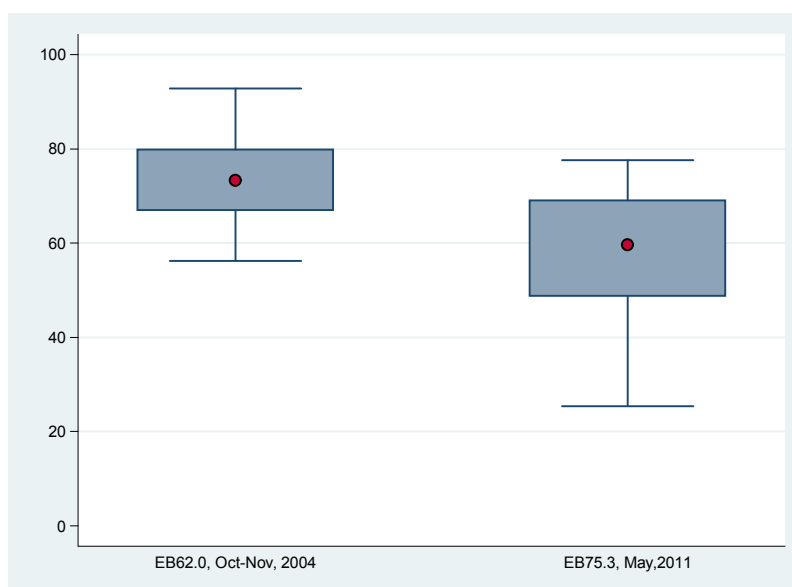
Figure 5: Distribution of Trust in the ECB, %, All EU27, 2004-2011 – Boxplots. Source: Authors' calculations based on *Eurobarometer* survey data.
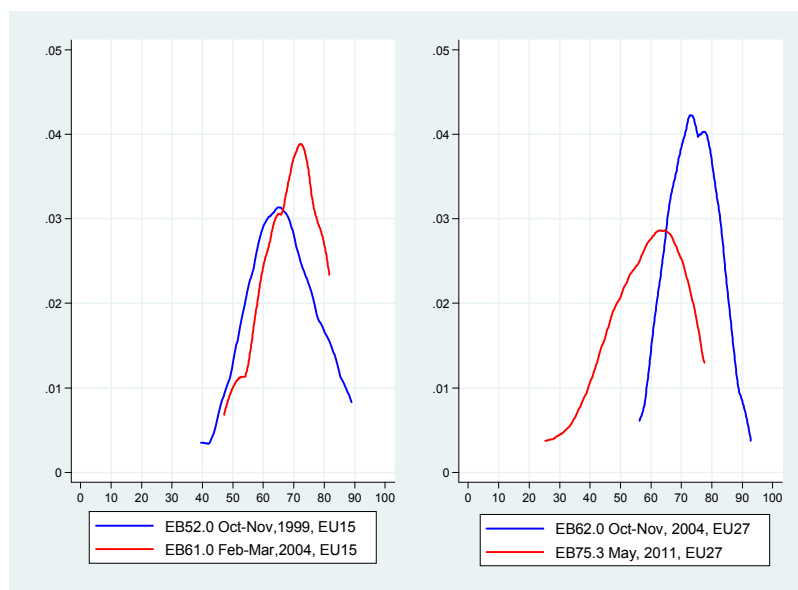
Figure 6: Distribution of Trust in the ECB, %, Old EU15 and All EU27, 1999-2004-2011 – Kernel Densities. Source: Authors' calculations based on *Eurobarometer* survey data.

Table 1: Eurobarometer Data Coverage by Survey Wave

No in Our Sample	Original No	Original 4-Digit Code	Period	Year	Year Wave
1	52.0	3204	Oct-Nov	1999	2nd
2	53.0	3296	Apr-May	2000	1st
3	54.1	3387	Nov-Dec	2000	2nd
4	55.2	3507	Apr-May	2001	1st
5	56.2	3627	Oct-Nov	2001	2nd
6	57.1	3639	Mar-Apr	2002	1st
7	58.1	3693	Oct-Nov	2002	2nd
8	59.1	3904	Mar-Apr	2003	1st
9	60.1	3938	Oct-Nov	2003	2nd
10	61.0	4056	Feb-Mar	2004	1st
11	62.0	4229	Oct-Nov	2004	2nd
12	63.4	4411	May-Jun	2005	1st
13	64.2	4414	Oct-Nov	2005	2nd
14	65.2	4506	Mar-Apr	2006	1st
15	66.1	4526	Sep-Oct	2006	2nd
16	67.2	4530	Apr-May	2007	1st
17	68.1	4565	Sep-Nov	2007	2nd
18	69.2	4744	Mar-May	2008	1st
19	70.1	4819	Oct-Nov	2008	2nd
20	71.3	4973	Jun-Jul	2009	1st
21	72.4	4994	Oct-Nov	2009	2nd
22	73.4	5234	May	2010	1st
23	74.2	5449	Nov-Dec	2010	2nd
24	75.3	5481	May	2011	1st

Table 2: Eurobarometer Data Coverage by Country

Old EU15: 1999-2011 (24 waves)		New EU12: 2004-2011 (14 waves)	
Code	Name	Code	Name
AUT	Austria	BGR	Bulgaria
BEL	Belgium	CYP	Cyprus (Republic)
DNK	Denmark	CZE	Czech Republic
FIN	Finland	EST	Estonia
FRA	France	HUN	Hungary
DEU	Germany (East+West)	LVA	Latvia
GBR	Great Britain	LTU	Lithuania
GRC	Greece	MLT	Malta
IRL	Ireland	POL	Poland
ITA	Italy	ROM	Romania
LUX	Luxembourg	SVK	Slovakia
NLD	Netherlands	SVN	Slovenia
PRT	Portugal		
ESP	Spain		
SWE	Sweden		

Table 3: Trust in the ECB by Socio-Demographic Category – Summary Statistics

	Mean	Std.Dev.	Obs.
Full Sample	0.67	0.47	398,379
Gender			
Male	0.69	0.46	194,238
Female	0.65	0.47	204,141
Age			
15-24	0.70	0.46	51,199
25-44	0.67	0.47	137,345
45-64	0.66	0.47	133,504
65+	0.65	0.48	76,288
Education			
Up to 15	0.58	0.49	80,404
16-19	0.65	0.48	162,510
20+	0.74	0.44	115,883
Still studying	0.74	0.44	35,219
Political Placement			
Left	0.65	0.48	103,050
Center	0.68	0.46	136,544
Right	0.73	0.44	93,205
Economic Expectations			
Better	0.78	0.42	78,731
Same	0.70	0.46	134,307
Worse	0.57	0.49	127,108
Income			
Q1	0.62	0.48	17,878
Q2	0.66	0.47	20,755
Q3	0.70	0.46	20,415
Q4	0.74	0.44	21,961
Occupation			
Unemployed	0.56	0.50	25,297
Retired	0.65	0.48	101,065

Source: Authors' calculations based on *Eurobarometer* survey data.

Table 4: Trust in the ECB, %, by Country Subgroup – Descriptive Statistics

| | EB52.0 Oct-Nov, 1999 | | | EB61.0 Feb-Mar, 2004 |
	Old EU15			Old EU15
Mean	66.14			68.44
Median	64.00			67.13
Maximum	88.93			81.69
Minimum	39.50			47.09
Std. Dev.	12.20			9.78
Skewness	-0.14			-0.62
Kurtosis	3.05			2.63
Jarque-Bera	0.05			1.04
Probability	0.97			0.59
Observations	15			15
	EB62.0 Oct-Nov 2004			
	All EU27	Old EU15		New EU12
Mean	73.89	71.93		76.33
Median	73.23	71.91		76.08
Maximum	92.82	84.14		92.82
Minimum	56.23	56.23		64.59
Std. Dev.	8.34	7.99		8.43
Skewness	0.02	-0.36		0.33
Kurtosis	2.74	2.28		2.35
Jarque-Bera	0.08	0.64		0.44
Probability	0.96	0.73		0.81
Observations	27	15		12
	EB75.3 May 2011			
	All EU27	Old EU15		New EU12
Mean	57.81	55.14		61.14
Median	59.61	55.31		63.20
Maximum	77.54	77.54		72.06
Minimum	25.36	25.36		44.29
Std. Dev.	12.97	15.53		8.27
Skewness	-0.72	-0.32		-0.67
Kurtosis	2.98	2.19		2.54
Jarque-Bera	2.33	0.68		1.02
Probability	0.31	0.71		0.60
Observations	27	15		12

Source: Authors' calculations based on *Eurobarometer* survey data.

Table 5: Baseline Logistic Regressions – Old EU15

Regressors	1999-2004		1999-2011	
	(1)	(2)	(3)	(4)
Inflation(t)	-0.009**	-0.006	0.004**	0.004*
	(0.004)	(0.005)	(0.002)	(0.002)
Gender Dummy	-0.030***	-0.030***	-0.038***	-0.040***
	(0.006)	(0.006)	(0.006)	(0.006)
Age (BL: 15-24)				
25-44	0.003	0.003	0.008	0.010*
	(0.007)	(0.007)	(0.006)	(0.006)
45-64	0.014*	0.011	0.022***	0.026***
	(0.008)	(0.007)	(0.005)	(0.005)
65+	0.011	0.014	0.033***	0.040***
	(0.009)	(0.009)	(0.007)	(0.007)
Education (BL: Up to 15)				
16-19	0.016***	0.005	0.026***	0.029***
	(0.005)	(0.005)	(0.004)	(0.004)
20+	0.049***	0.033***	0.068***	0.071***
	(0.007)	(0.006)	(0.008)	(0.008)
Still studying	0.029***	0.028***	0.041***	0.040***
	(0.007)	(0.008)	(0.005)	(0.005)
Political Placement (BL: Left)				
Centre	0.023***	0.023***	0.022***	0.022***
	(0.006)	(0.006)	(0.005)	(0.005)
Right	0.036***	0.034***	0.037***	0.037***
	(0.011)	(0.013)	(0.008)	(0.008)
Occupation Dummies				
Unemployed	-0.039***	-0.023***	-0.037***	-0.037***
	(0.008)	(0.007)	(0.007)	(0.007)
Retired	-0.006	0.007	-0.010*	-0.011*
	(0.007)	(0.005)	(0.006)	(0.006)
Income (BL: Q1)				
Q2		0.022***		
		(0.006)		
Q3		0.041***		
		(0.006)		
Q4		0.067***		
		(0.008)		
Economic Expectations (BL: Same)				
Better				0.021***
				(0.004)
Worse				-0.038***
				(0.005)
Other Dummies and Interactions				
Trust in EU Commission	0.401***	0.402***	0.401***	0.392***
	(0.004)	(0.004)	(0.004)	(0.005)
Hyperinflation	-0.038***	-0.053***	-0.106***	-0.095***
	(0.011)	(0.009)	(0.005)	(0.006)
EMU	0.037***	0.035***	0.000	0.024***
	(0.009)	(0.007)	(0.008)	(0.007)
EU6	-0.094***	-0.089***	-0.115***	-0.119***
	(0.005)	(0.006)	(0.003)	(0.004)
SGPDEF	-0.020***	-0.012	-0.010	-0.006
	(0.007)	(0.014)	(0.007)	(0.008)
SGPDEBT	-0.009	-0.017	-0.035***	-0.036***
	(0.011)	(0.017)	(0.011)	(0.013)
IT/Float Countries	0.028***	0.034***	-0.018**	-0.016*
	(0.010)	(0.010)	(0.009)	(0.009)
Peg Countries	0.065***	0.065***	-0.028***	-0.010
	(0.011)	(0.010)	(0.009)	(0.009)
Hyperinflation x SGPDEBT	0.021*	0.023*	-0.003	-0.011
	(0.013)	(0.014)	(0.010)	(0.010)
Observations	99,578	66,701	229,197	188,644
Adjusted Pseudo R-Sq	0.33	0.33	0.35	0.35

Notes: Average marginal effects are reported. Standard errors clustered by country are in parentheses. All specifications are estimated using country and time fixed effects.
BL: Baseline; * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 6: Baseline Logistic Regressions – New EU12 and All EU27

Regressors	2004-2011		1999-2011	
	New EU12	All EU27	All EU27	
	(1)	(2)	(3)	(4)
Inflation(t)	-0.000	-0.000	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Gender Dummy	-0.012***	-0.033***	-0.032***	-0.032***
	(0.003)	(0.006)	(0.005)	(0.005)
Age (BL: 15-24)				
25-44	0.002	0.011***	0.007	0.008**
	(0.005)	(0.004)	(0.004)	(0.004)
45-64	0.001	0.022***	0.016***	0.020***
	(0.006)	(0.005)	(0.005)	(0.005)
65+	0.000	0.033***	0.024***	0.029***
	(0.008)	(0.007)	(0.006)	(0.006)
Education (BL: Up to 15)				
16-19	0.015***	0.027***	0.023***	0.025***
	(0.004)	(0.004)	(0.003)	(0.003)
20+	0.035***	0.063***	0.060***	0.061***
	(0.007)	(0.008)	(0.007)	(0.007)
Still studying	0.023***	0.037***	0.037***	0.035***
	(0.007)	(0.005)	(0.004)	(0.004)
Political Placement (BL: Left)				
Centre	0.015**	0.019***	0.021***	0.021***
	(0.007)	(0.005)	(0.004)	(0.004)
Right	0.023**	0.035***	0.037***	0.036***
	(0.010)	(0.006)	(0.007)	(0.006)
Occupation Dummies				
Unemployed	-0.013**	-0.025***	-0.030***	-0.029***
	(0.006)	(0.005)	(0.006)	(0.005)
Retired	-0.006	-0.009**	-0.010**	-0.010**
	(0.005)	(0.004)	(0.004)	(0.004)
Economic Expectations (BL: Same)				
Better	0.031***	0.026***		0.025***
	(0.003)	(0.003)		(0.003)
Worse	-0.035***	-0.035***		-0.037***
	(0.005)	(0.003)		(0.004)
Other Dummies and Interactions				
Trust in EU Commission	0.363***	0.387***	0.398***	0.389***
	(0.004)	(0.002)	(0.002)	(0.002)
Hyperinflation	0.005	0.020*	0.014	0.018
	(0.010)	(0.012)	(0.011)	(0.012)
EMU	0.029***	0.038***	0.031***	0.035***
	(0.008)	(0.012)	(0.011)	(0.012)
EU6		-0.120***	-0.112***	-0.115***
		(0.004)	(0.003)	(0.003)
EU2004		-0.048**	-0.045***	-0.044***
		(0.021)	(0.014)	(0.015)
SGPDEF	-0.006	-0.005	-0.014***	-0.009*
	(0.007)	(0.006)	(0.005)	(0.006)
SGPDEBT	0.014***	-0.035*	-0.032***	-0.033***
	(0.001)	(0.019)	(0.011)	(0.012)
IT/Float Countries	-0.002	-0.015	-0.016*	-0.018*
	(0.010)	(0.010)	(0.010)	(0.010)
Peg Countries	0.020**	0.008	-0.009	0.001
	(0.010)	(0.010)	(0.011)	(0.010)
Hyperinflation x SGPDEBT	-0.014*	0.037**	0.001	0.002
	(0.008)	(0.017)	(0.011)	(0.014)
Hyperinflation x EU15		-0.164***	-0.114***	-0.117***
		(0.019)	(0.014)	(0.015)
Observations	77,748	223,100	309,461	266,392
Adjusted Pseudo R-Sq	0.45	0.39	0.37	0.38

Notes: Average marginal effects are reported. Standard errors clustered by country are in parentheses. All specifications are estimated using country and time fixed effects.
BL: Baseline; * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 7: Robustness Checks – Non-EMU Subsample, Difference with Euro-Area Inflation in Place of Actual Inflation

Regressors	1999-2004	2004-2011	1999-2011	
	(1)	(2)	(3)	(4)
Difference with EMU inflation (t)	-0.006	-0.001	-0.000	-0.001
	(0.009)	(0.002)	(0.002)	(0.002)
Gender Dummy	-0.050***	-0.028***	-0.034***	-0.031***
	(0.008)	(0.008)	(0.009)	(0.008)
Age (BL: 15-24)				
25-44	-0.010	0.012	0.003	0.008
	(0.014)	(0.008)	(0.008)	(0.007)
45-64	0.001	0.015	0.006	0.012
	(0.013)	(0.010)	(0.008)	(0.008)
65+	-0.005	0.022*	0.011	0.017*
	(0.018)	(0.012)	(0.010)	(0.010)
Education (BL: Up to 15)				
16-19	0.022***	0.022***	0.023***	0.022***
	(0.007)	(0.007)	(0.005)	(0.006)
20+	0.057***	0.047***	0.051***	0.050***
	(0.005)	(0.014)	(0.010)	(0.012)
Still studying	0.027***	0.038***	0.036***	0.038***
	(0.009)	(0.013)	(0.008)	(0.009)
Political Placement (BL: Left)				
Centre	0.033**	0.023***	0.026***	0.025**
	(0.015)	(0.009)	(0.010)	(0.010)
Right	0.066**	0.036***	0.045***	0.042***
	(0.026)	(0.013)	(0.015)	(0.014)
Occupation Dummies				
Unemployed	-0.040***	-0.021***	-0.026***	-0.023***
	(0.010)	(0.006)	(0.006)	(0.005)
Retired	-0.016	-0.015***	-0.015**	-0.015**
	(0.016)	(0.004)	(0.006)	(0.006)
Economic Expectations (BL: Same)				
Better		0.025***		0.029***
		(0.005)		(0.005)
Worse		-0.031***		-0.031***
		(0.004)		(0.004)
Other Dummies and Interactions				
Trust in EU Commission	0.413***	0.375***	0.393***	0.381***
	(0.004)	(0.001)	(0.001)	(0.001)
Hyperinflation	-0.226**	0.002	-0.006	0.001
	(0.112)	(0.011)	(0.008)	(0.009)
EU2004	0.214	-0.110***	-0.098***	-0.098***
	(0.163)	(0.013)	(0.014)	(0.013)
SGPDEF	-0.235***	-0.003	-0.014*	-0.008
	(0.077)	(0.007)	(0.007)	(0.007)
SGPDEBT	0.018	-0.019**	-0.019*	-0.027***
	(0.045)	(0.008)	(0.011)	(0.009)
IT/Float Countries	0.154**	0.009	0.019*	0.013
	(0.076)	(0.011)	(0.010)	(0.010)
Peg Countries	0.050**	0.027**	0.023**	0.028**
	(0.023)	(0.011)	(0.011)	(0.012)
Hyperinflation x SGPDEBT		0.023***	0.014	0.026***
		(0.006)	(0.009)	(0.007)
Observations	27,431	85,812	115,841	104,690
Adjusted Pseudo R-Sq	0.36	0.42	0.41	0.41

Notes: Average marginal effects are reported. Standard errors clustered by country are in parentheses. All specifications are estimated using country and time fixed effects.
BL: Baseline; * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 8: Robustness Checks – EMU Subsample, Expected Inflation in Place of Actual Inflation

Regressors	1999-2004	2004-2011	1999-2011	
	(1)	(2)	(3)	(4)
Expected inflation (at t)	-0.039	0.010	0.008	0.012*
	(0.038)	(0.007)	(0.007)	(0.007)
Gender Dummy	-0.021***	-0.035***	-0.030***	-0.031***
	(0.005)	(0.008)	(0.006)	(0.006)
Age (BL: 15-24)				
25-44	0.008	0.010**	0.008	0.008
	(0.007)	(0.004)	(0.005)	(0.005)
45-64	0.019**	0.028***	0.022***	0.025***
	(0.008)	(0.005)	(0.005)	(0.005)
65+	0.015	0.046***	0.031***	0.036***
	(0.010)	(0.008)	(0.007)	(0.007)
Education (BL: Up to 15)				
16-19	0.014***	0.031***	0.025***	0.027***
	(0.005)	(0.005)	(0.004)	(0.004)
20+	0.046***	0.078***	0.067***	0.069***
	(0.008)	(0.010)	(0.008)	(0.009)
Still studying	0.031***	0.039***	0.038***	0.034***
	(0.008)	(0.004)	(0.005)	(0.004)
Political Placement (BL: Left)				
Centre	0.020***	0.015***	0.018***	0.017***
	(0.004)	(0.004)	(0.003)	(0.004)
Right	0.025***	0.030***	0.030***	0.030***
	(0.006)	(0.005)	(0.004)	(0.005)
Occupation Dummies				
Unemployed	-0.033***	-0.031***	-0.033***	-0.033***
	(0.009)	(0.009)	(0.008)	(0.008)
Retired	0.002	-0.008	-0.004	-0.005
	(0.005)	(0.006)	(0.004)	(0.005)
Economic Expectations (BL: Same)				
Better		0.024***		0.022***
		(0.005)		(0.004)
Worse		-0.037***		-0.041***
		(0.006)		(0.005)
Other Dummies and Interactions				
Trust in EU Commission	0.393***	0.396***	0.400***	0.393***
	(0.005)	(0.005)	(0.004)	(0.005)
Hyperinflation	-0.051***	-0.029***	-0.028***	-0.031***
	(0.009)	(0.008)	(0.007)	(0.008)
EU6	-0.094***	-0.124***	-0.115***	-0.119***
	(0.005)	(0.008)	(0.004)	(0.005)
EU2004		-0.039	-0.017	-0.019
		(0.030)	(0.016)	(0.019)
SGPDEF	-0.016**	-0.006	-0.013*	-0.009
	(0.008)	(0.013)	(0.008)	(0.009)
SGPDEBT	-0.005	-0.041	-0.027**	-0.030**
	(0.012)	(0.029)	(0.012)	(0.015)
Hyperinflation x SGPDEBT	0.020		0.003	-0.005
	(0.013)		(0.011)	(0.011)
Observations	77,662	113,571	193,620	161,702
Adjusted Pseudo R-Sq	0.32	0.37	0.35	0.36

Notes: Average marginal effects are reported. Standard errors clustered by country are in parentheses. All specifications are estimated using country and time fixed effects.
BL: Baseline; * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 9: Robustness Checks – All EU27, National Inflation for Non-EMU EU Countries but Euro-Area Inflation for EMU Countries in Place of Actual Inflation

Regressors	1999-2004	2004-2011	1999-2011	
	(1)	(2)	(3)	(4)
National (if non-EMU member) or Euro-Area (if EMU member) inflation (t)	-0.017	-0.000	0.000	-0.000
	(0.011)	(0.002)	(0.001)	(0.001)
Gender Dummy	-0.029***	-0.032***	-0.032***	-0.032***
	(0.006)	(0.006)	(0.005)	(0.005)
Age (BL: 15-24)				
25-44	0.004	0.011**	0.006	0.008*
	(0.007)	(0.005)	(0.004)	(0.004)
45-64	0.014**	0.022***	0.016***	0.020***
	(0.007)	(0.006)	(0.005)	(0.005)
65+	0.011	0.035***	0.024***	0.029***
	(0.009)	(0.008)	(0.006)	(0.006)
Education (BL: Up to 15)				
16-19	0.016***	0.027***	0.023***	0.025***
	(0.004)	(0.004)	(0.003)	(0.003)
20+	0.049***	0.064***	0.060***	0.061***
	(0.006)	(0.009)	(0.007)	(0.007)
Still studying	0.029***	0.039***	0.037***	0.035***
	(0.006)	(0.006)	(0.004)	(0.004)
Political Placement (BL: Left)				
Centre	0.024***	0.019***	0.021***	0.021***
	(0.005)	(0.004)	(0.004)	(0.004)
Right	0.037***	0.034***	0.037***	0.036***
	(0.010)	(0.006)	(0.007)	(0.006)
Occupation Dummies				
Unemployed	-0.035***	-0.026***	-0.030***	-0.029***
	(0.007)	(0.006)	(0.006)	(0.005)
Retired	-0.004	-0.012***	-0.010**	-0.010**
	(0.007)	(0.004)	(0.004)	(0.004)
Economic Expectations (BL: Same)				
Better		0.025***		0.025***
		(0.003)		(0.003)
Worse		-0.034***		-0.037***
		(0.004)		(0.004)
Other Dummies and Interactions				
Trust in EU Commission	0.399***	0.388***	0.398***	0.389***
	(0.003)	(0.002)	(0.002)	(0.002)
Hyperinflation	-0.053	0.017	0.018*	0.021*
	(0.040)	(0.012)	(0.011)	(0.012)
EMU	0.017	0.039***	0.031***	0.035***
	(0.011)	(0.012)	(0.011)	(0.012)
EU6	-0.095***	-0.120***	-0.112***	-0.115***
	(0.004)	(0.004)	(0.003)	(0.003)
EU2004	0.066	-0.051**	-0.043***	-0.043***
	(0.056)	(0.024)	(0.013)	(0.015)
SGPDEF	-0.019***	-0.004	-0.014***	-0.010*
	(0.007)	(0.007)	(0.005)	(0.006)
SGPDEBT	-0.013	-0.036	-0.032***	-0.033***
	(0.009)	(0.023)	(0.011)	(0.012)
IT/Float Countries	0.247***	-0.015	-0.016*	-0.018*
	(0.088)	(0.010)	(0.010)	(0.010)
Peg Countries	0.075***	0.009	-0.006	0.003
	(0.026)	(0.010)	(0.011)	(0.010)
Hyperinflation x SGPDEBT	0.022*	0.043**	0.002	0.002
	(0.013)	(0.020)	(0.011)	(0.014)
Observations	105,093	199,383	309,461	266,392
Adjusted Pseudo R-Sq	0.34	0.39	0.37	0.38

Notes: Average marginal effects are reported. Standard errors clustered by country are in parentheses. All specifications are estimated using country and time fixed effects.
BL: Baseline; * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 10: Evolution of Trust in the ECB after the Financial Crisis – All EU27

Regressors	2007$^\xi$-2011		
	Old EU15	New EU12	All EU27
	(1)	(2)	(3)
Inflation(t)	0.003	0.002	0.000
	(0.005)	(0.001)	(0.002)
Gender Dummy	-0.044***	-0.012***	-0.033***
	(0.008)	(0.003)	(0.006)
Age (BL: 15-24)			
25-44	0.018**	0.005	0.013**
	(0.008)	(0.006)	(0.005)
45-64	0.035***	-0.001	0.021***
	(0.007)	(0.007)	(0.006)
65+	0.060***	0.003	0.038***
	(0.010)	(0.012)	(0.009)
Education (BL: Up to 15)			
16-19	0.034***	0.010***	0.025***
	(0.007)	(0.004)	(0.005)
20+	0.085***	0.030***	0.065***
	(0.012)	(0.006)	(0.010)
Still studying	0.047***	0.028***	0.040***
	(0.010)	(0.009)	(0.007)
Political Placement (BL: Left)			
Centre	0.019***	0.012*	0.018***
	(0.006)	(0.006)	(0.005)
Right	0.038***	0.027***	0.037***
	(0.007)	(0.008)	(0.006)
Occupation Dummies			
Unemployed	-0.037***	-0.011*	-0.026***
	(0.010)	(0.006)	(0.007)
Retired	-0.018***	-0.008	-0.014***
	(0.007)	(0.007)	(0.005)
Economic Expectations (BL: Same)			
Better	0.022***	0.023***	0.023***
	(0.005)	(0.005)	(0.004)
Worse	-0.029***	-0.029***	-0.029***
	(0.007)	(0.007)	(0.005)
Other Dummies and Interactions			
Trust in EU Commission	0.393***	0.373***	0.393***
	(0.006)	(0.004)	(0.002)
Hyperinflation	-0.140***	-0.034***	-0.009
	(0.011)	(0.011)	(0.017)
EMU	0.068**	0.007	0.026
	(0.033)	(0.011)	(0.016)
EU6	-0.117***		-0.119***
	(0.007)		(0.005)
EU2004			-0.065**
			(0.026)
SGPDEF	-0.018	0.014	-0.007
	(0.018)	(0.009)	(0.013)
SGPDEBT	-0.047*	-0.004	-0.049*
	(0.026)	(0.003)	(0.027)
IT/Float Countries	-0.012	-0.011	-0.015
	(0.014)	(0.008)	(0.010)
Peg Countries	0.024	0.003	0.008
	(0.016)	(0.008)	(0.011)
Hyperinflation x SGPDEBT		-0.033***	0.009
		(0.004)	(0.027)
Hyperinflation x EU15			-0.141***
			(0.031)
Observations	79,346	45,962	125,308
Adjusted Pseudo R-Sq	0.37	0.46	0.40

Notes: Average marginal effects are reported. Standard errors clustered by country are in parentheses. All specifications are estimated using country and time fixed effects.
$^\xi$ Second wave of 2007.
BL: Baseline; * $p < .1$, ** $p < .05$, *** $p < .01$.

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