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The End Justifies the Means? The Impact of the ECB's Unconventional Monetary Policy on Citizens' Trust

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Abstract

Since 2010, the European Central Bank (ECB) has established a range of unconventional monetary policies in the context of several crises, including cheap and long-term refinancing operations and several forms of asset purchases. This ECB action has been legally and politically challenged, raising the question as to how the public has perceived the ECB's mandate widening. This article assesses the legitimacy of the ECB's unconventional monetary policy through the lens of public trust using Eurobarometer data from 1999 to 2023. This approach follows the theoretical argument that the legitimacy of non-elected independent public institutions derives from the citizens' trust in the fulfilment of the institutions' tasks. Through panel regression analysis, this article first finds that trust in the ECB is commonly pooled with trust in other EU institutions, which makes a singular assessment of public support of the ECB and its policies difficult. Second, macroeconomic factors, which are partially influenced by ECB policies, but which are mostly dependent on national decision-making, are the key factors influencing citizens' trust in EU institutions, including the ECB. Thus, citizens' trust in the ECB or the lack thereof is not determined by the ECB's use of contested unconventional monetary policy, but rather by the macroeconomic performance of their respective national economy.

Keywords

Eurobarometer; European Central Bank; output-legitimacy; public trust; unconventional monetary policy

1. Introduction

With the beginning of the financial and sovereign debt crisis in the euro area, the European Central Bank (ECB) established a range of unconventional monetary policy (UMP) tools including several rounds of very

cheap and long-term refinancing operations (LTROs) and large-scale bond purchases in the secondary market (quantitative easing [QE]), leading to a balance sheet stretch of additional €4 trillion between 2010 and 2023 (with a peak in 2021 of about €6 trillion due to Covid-19 responses by the ECB). In 2010, the ECB began to purchase bonds of highly indebted euro area governments through its Securities Market Programme (SMP). In the following years, the ECB engaged in QE through several programmes of bond purchases to safeguard price and financial stability (Amtenbrink, 2019, p. 168).

With the introduction of bond purchases and very low interest-bearing refinancing operations, the ECB ventured into a new interpretation of its mandate of price stability and included potentially limitless interventions in sovereign debt markets. This new interpretation has been heavily contested by politicians and policy experts and led to two legal cases in front of the European Court of Justice (Chang et al., 2024). Within the governing council of the ECB, the former German Bundesbank President Axel Weber stepped down over the ECB's SMP. Jens Weidmann, Weber's successor called bond purchases "tantamount to financing governments by printing banknotes" (Evans, 2012), indicating that the ECB was overstepping its mandate by engaging in prohibited monetary financing, and by blurring the distinction between monetary policy and financial assistance (Amtenbrink, 2019, p. 172). German media coverage of ECB policy was critical (Hayo & Neuenkirch, 2014), with the popular German tabloid *Bild* running the headline "ECB Writes Blank Check for Debtor States" (Blome, 2012). Indeed, the ECB not only purchased government bonds of highly indebted states, but also supranational bonds of the European Union (EU) and the European Financial Stability Facility and the European Stability Mechanism, which were directly linked to financial assistance to states at default risk such as Greece, Cyprus, Spain, Ireland, and Portugal (Claeys et al., 2015). During the Covid-19 pandemic, the ECB explicitly emphasised the easing impact on government refinancing conditions in defending a new round of QE.

In 2015, the ECB was accused by the heads of the German and Dutch central banks of allowing states to ditch unpopular economic reforms through the lowering of borrowing rates for euro area governments (C. Jones, 2015) and creating moral hazard between QE and governments' dependence on low yields (see also Chang et al., 2024, p. 1). The ECB itself was similarly worried in 2011, stating that:

> [I]f non-standard measures are maintained for too long, however, they may encourage excessive risk-taking by financial market participants, distort incentives and delay the necessary process of balance sheet adjustment by private and public sector entities. This would ultimately undermine price stability over the medium term, with detrimental effects on economic growth. (ECB, 2011, p. 55)

ECB action was contested by politicians and national governments with the then German finance minister Wolfgang Schäuble accusing the ECB of being partially responsible for the success of the rise of the far-right party AfD in German elections (Trauthig, 2016). Trust in the ECB declined during the financial crisis. When asked in the Eurobarometer whether they tend to trust the ECB or not, respondents' overall trust rate fell below 50 percent for the first time since 1999 (see Figure 1).

Next to QE, the purpose of low-interest-bearing LTRO was to encourage credits to the real economy. From the outset, banks profited from these ultra-cheap central bank credits to turn a profit through the purchase of higher-yielding sovereign bonds instead of passing the financing terms to the real economy (Culpepper & Tesche, 2019). In 2020, the ECB used negative rates on its LTROs, incentivising banks to purchase

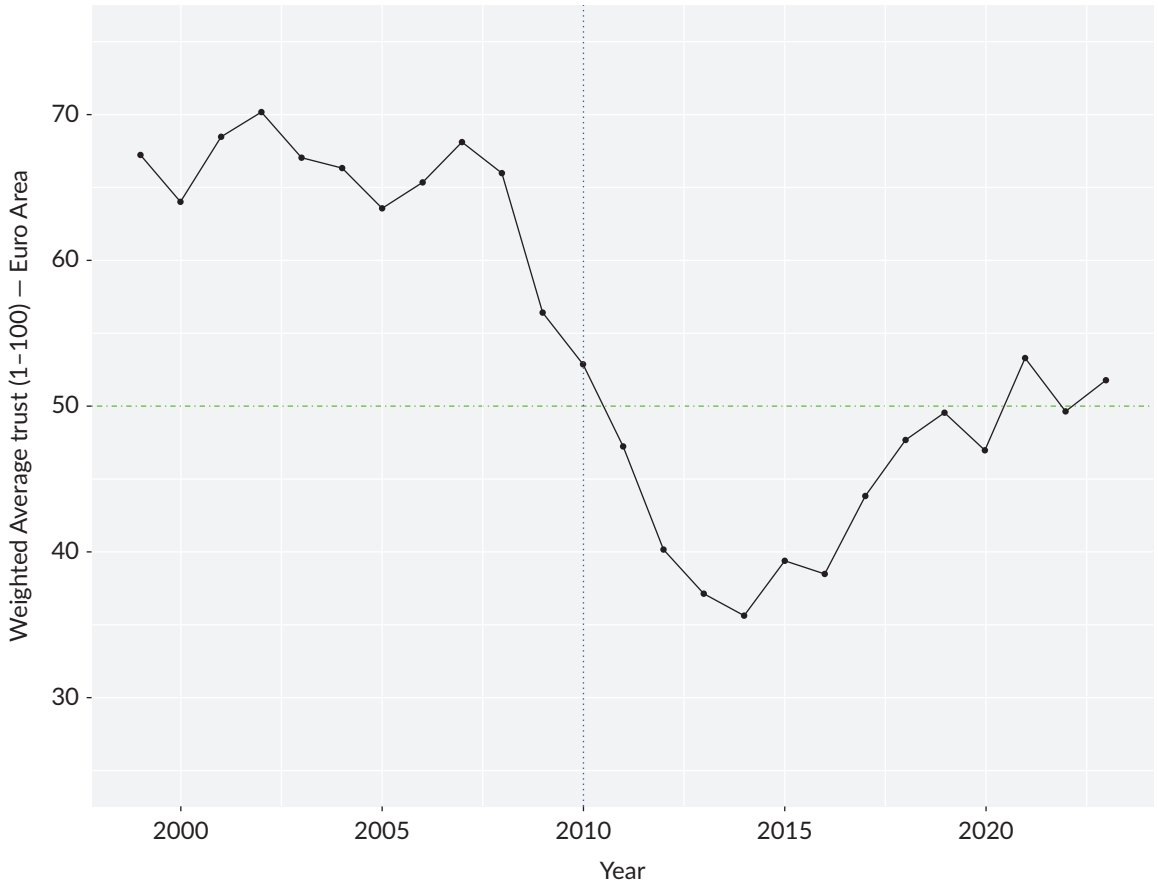

Figure 1. Weighted average trust (in %) in the ECB in the euro area per year.

government bonds at very low (or sometimes negative) yields, increasing the exposure of banks to their countries' public debt (Arnold, 2020), and costing the ECB several billion euros in interest rate loss in the following years. The impact of QE on the economy was also scrutinised more publicly in 2021, with the German Federal Constitutional Court ruling that QE needed to be justified by the ECB as proportionate, otherwise, the Bundesbank was forbidden to further partake in it and even had to sell its purchased bonds, which would have rendered the policy much less effective.

In addition, more recently, the balance sheet stretch was foreseen by experts to bear €700 billion in losses in the upcoming decade, with the highest costs being borne by the taxpayers of euro area countries with previously low bond yields, i.e., Germany and the Netherlands (Gros & Shamsfakhr, 2022; see also De Grauwe & Ji, 2024; Reuters, 2015). Indeed, the Bundesbank ran a large deficit in 2023 (Bundesbank, 2024; Bundesrechnungshof, 2023), which reduced funds for investment in the German budget financed by Bundesbank profits—and thus had and will have a fiscal impact on current and future government expenditure. Most criticism of ECB policy appears to be voiced in Northern euro area states as they fear the potential cost of ECB policies on their taxpayers (cf. Amtenbrink, 2019; Ji & De Grauwe, 2015).

Opposite to the above-mentioned criticisms, policy experts were vocal in defending the ECB's policy as necessary to achieve price and financial stability (Schnabel, 2020; see also Chang et al., 2024, p. 14), pointing out that criticism of the ECB was unwarranted, as inflation risks related to QE did not materialise

(Ashworth, 2020). Initially, some argued that the ECB should even engage in QE to achieve the appropriate level of inflation (Ji & De Grauwe, 2015).

Since its beginning, the ECB's UMP has become a highly politicised issue, particularly in Germany, the Netherlands, and Austria. Yet, after the fall in trust during the financial crisis, overall trust in the ECB has been increasing again since 2014, and it even rose further during the Covid-19 pandemic, despite the ECB's renewed engagement in large-scale UMP (Figure 1). Through ECB action during the Covid-19 pandemic, governments remained able to finance their increased expenditure linked to healthcare and furlough schemes during the pandemic, directly impacting people's lives. Thus, the question arises whether people consider the detailed policy tools used by the ECB or, rather, the outcomes of those policies to be more relevant. In other words, did the ends justify the means of the ECB in achieving its policy objectives? This article thus tackles the research question: Did the ECB's use of UMP influence the people's trust in the ECB?

In the following section, this article discusses the theory of output-oriented legitimacy and presents the hypotheses derived from this literature. The third section presents the methodology and data used in this research. The fourth section provides the results of the country panel regression analysis, the fifth section applies a different periodisation to test for robustness, and the final section concludes the article discussing the results and their implications for ECB policy.

2. ECB Monetary Policy: Legitimacy Through Output

The ECB is the most independent institution in the EU (cf. Kaltenthaler et al., 2010). Its structure is inherently output-oriented and conservative, with its primary objective of price stability enshrined in the Treaty on the Functioning of the European Union. Until July 2021, this objective was interpreted as an inflation rate close but lower than two percent. As of July 2021, this interpretation changed to two percent. The ECB cannot be sanctioned by a political body, apart from cumbersome treaty change or recourse to the highest European and national courts (cf. Fontan & Howarth, 2021), which means that procedures and control mechanisms associated with democratic accountability (associated with input-oriented legitimacy) are comparably weak for the ECB (cf. Amtenbrink, 2019, p. 177; Braun, 2016, p. 1065; Schmidt, 2015, p. 104;). As citizens are by and large exposed to ECB action without means to punish the incumbents of power directly, their trust in the institution's action is crucial to avoid popular resistance and negative sentiment against the ECB, and, by extension, against the EU (cf. Wälti, 2012). Trust in political institutions is a core element of their legitimacy (Kaltenthaler et al., 2010) and the key to their survival (Easton, 1965, pp. 157–161, 220–224; Easton, 1975, pp. 444–445; Kaltenthaler et al., 2010; Risse & Kleine, 2007, p. 78). This element is even more relevant for the ECB, as it must consolidate a "one-size-fits-none" uniform monetary policy with disparate effects across the monetary union (Schmidt, 2015, p. 105). It is therefore relevant that the citizens trust the ECB to ensure the political stability of the Economic and Monetary Union in the long term (cf. Roth et al., 2016, p. 945).

Easton (1975, p. 449) argues that citizens' trust in polities is explained by experience with the output of authorities in the longer term (see also Eichenberg & Dalton, 1993, p. 512), linking the longer-term performance to trust. This argument was evidenced by Foster and Frieden (2021, p. 287) who have found that macroeconomic performance works as a predictor of support for the EU in general, and by C. J. Anderson and Kaltenthaler (1996, p. 193) who argued that this support fluctuates with favourable economic conditions and hardship. Citizens' trust in an institution's ability to effectively achieve favourable

economic outputs builds its legitimacy. This notion of support is based on the individuals' (satisfactory) experience with a polity over a longer term (Easton, 1975, p. 449). One would therefore expect that the degree of trust in the ECB has to do with its output performance, which ultimately legitimises ECB policy. Hence, the ECB is much more dependent on the achievement of its treaty-based objectives, to gain and maintain the citizens' trust over the long term and to claim the legitimacy of its actions (see also Ehrmann et al., 2013).

The ECB has justified its decisions on UMP tools with the proper function of the monetary transaction mechanism required for the achievement of its primary objective of price stability. UMP had the purpose of lowering the interest rates which are passed from banks to consumers and companies, which stimulates economic activity and contributes to price stability (through inflation) in a deflationary economy (see also ECB, 2020; Gagnon, 2016). The use of low-interest-bearing refinancing tools and asset purchases also put downward pressure on bond yields, particularly positively influencing rates of periphery states, and thus improving governments' fiscal space (see, e.g., Krishnamurthy et al., 2018). Thus, on the first level, the impact of UMP should be perceivable directly through the national inflation rates and the yields of government bonds. We therefore include price stability and government refinancing rates in the first hypothesis.

Scholars have found that achieving an inflation rate of close to two percent increases people's trust in the ECB (Ehrmann et al., 2013; Fischer & Hahn, 2008), while others did not find an effect of inflation on trust (Bursian & Fürth, 2015). While UMP had the purpose of raising inflation to the target level, an output rationale suggests that people's trust in the ECB is dependent on the achievement of this goal, independent of the policy tools applied. Thus, the use of UMP to achieve price stability should not negatively impact trust if price stability is achieved. In addition, the improvement of the fiscal position of governments could be positively assessed by the citizens, and one can therefore expect that governments' refinancing rates, and thus their fiscal position, increase their citizens' trust in the ECB. Blyth (2016, p. 217) argues that the ECB's policy had the purpose of reducing government debt through lower yields, higher inflation, and smoothing the effect of austerity policies. Wälti (2012, p. 601) found that rising government bond yields reduced trust in the ECB. QE was particularly criticised for its fiscal easing impact, but reversely, the lower yields of government bonds made it easier for indebted states to refinance their debt. Thus, as both inflation and government refinancing rates have direct and indirect financial consequences for citizens of euro area countries (Banque de France, 2017, p. 2), we derive the following hypothesis:

> H1: The deviation from the target level of inflation and the rising of government bond yields decrease citizens' trust in the ECB.

Next to price stability, monetary policy is targeted at the economy as a whole. The effect of central bank policy is therefore, apart from inflation, mostly perceived indirectly through macroeconomic conditions. The ECB's UMP was targeted to increase credit to the real economy and stimulate growth through lower interest rates for economic actors (Banque de France, 2017). Monetary policy thus complemented national economic policies to facilitate growth in times of crisis. Citizens of euro area countries might assess the performance of the ECB not only based on its primary target but through the macroeconomic position and the fiscal burden of their country (Dellmuth & Schlipphak, 2020, p. 934; see also Bursian & Fürth, 2015, p. 1512; Ehrmann et al., 2013, p. 787; Fischer & Hahn, 2008, p. 3), considering the general economic situation when placing (or not placing) their trust on the ECB (Kaltenthaler et al., 2010, p. 1279).

Studies on the impact of exchange rates on public support for joining a currency have shown that the strength of a currency also has an impact on the popular support for monetary integration and on support for the euro as such (Hobolt & Leblond, 2009; see also Hobolt & Leblond, 2014; Roth et al., 2016). Their findings suggest that the exchange rate, particularly with other major currencies, might determine the level of public support. As the macroeconomic position of the euro area can also be assessed through these exchange rates, citizens' trust in the ECB might also be influenced by the euro's exchange rate.

One could therefore expect that trust is higher during economically favourable times and in economically stronger countries. Indeed, Roth et al. (2013) found that at the beginning of the financial crisis, trust in EU institutions particularly dropped in countries facing fiscal difficulty (see also Wälti, 2012). In detail, scholars analysing trust in EU institutions argued that macroeconomic factors, such as the national unemployment rate, fiscal conditions, as well as receiving financial assistance from the EU and the International Monetary Fund in the sovereign debt crisis, negatively impact people's trust in EU institutions (Drakos et al., 2019, p. 1243; Roth et al., 2016, p. 945). We integrate the relationship between the macroeconomic factors and trust in our second hypothesis:

> H2: Citizens' trust in the ECB increases with better macroeconomic performance of their respective country.

However, arguing that individuals gain or lose trust in the ECB based on their country's economic situation presupposes that individuals assess the ECB's performance independently from other EU institutions. This is questionable, even though some research on ECB trust has presumed an ECB-isolated assessment by citizens (e.g., Bergbauer et al., 2020; Bursian & Fürth, 2015; Fischer & Hahn, 2008; Kaltenthaler et al., 2010; Wälti, 2012). However, the clarity of responsibility hypothesis states that the role that economic conditions play in voting behaviour depends on how easy it is for individuals to attribute responsibility for these economic conditions to specific parties or institutions (Powell & Whitten, 1993, pp. 398–404). The easier it is for individuals to attribute responsibility, the more important economic conditions become in predicting party choice (Hobolt et al., 2013, pp. 175–178) and government support (C. D. Anderson, 2009, pp. 40–43; C. J. Anderson, 2000, pp. 161–168; de Blok & van der Burg, 2022, pp. 872–874).

In general, attributing responsibility for policies to the correct political actor or institution is a difficult task for most individuals on the national level. This is especially true for political systems with complex institutional structures and shared responsibilities (C. J. Anderson, 2000, pp. 455–458; Cutler, 2004, pp. 28–36; Léon, 2012, pp. 126–127). Regarding the EU, the less political knowledge individuals have, the more difficulty they have in attributing responsibility for policy outcomes to either their government or the EU (Hobolt & Tilley, 2014, p. 807; Wilson & Hobolt, 2014, pp. 108–110). The distinction between policy-relevant institutions on the EU level might therefore be even more difficult (Tuschhoff, 1999).

This consideration leads to the assumption that individuals rate the EU as one cohesive system, rather than attributing responsibility separately to the ECB and other European institutions (see Figure 2). Thus, instead of expecting that policy output influences citizens' trust in the ECB, one would alternatively expect that financial and macroeconomic output explains citizens' trust in the EU system, as the attribution of responsibility might be more diffused at the EU level. Indeed, scholars have found that trust in other European institutions is strongly associated with trust in the ECB (Dreher, 2024, p. 91; Ehrmann et al., 2013, p. 795; Farvaque et al.,

2017, p. 675), suggesting that citizens understand the ECB as part of a construct with other EU institutions, rather than as an isolated institution with its own tasks and output. This leads to our third hypothesis:

H3: Citizens' trust in the ECB correlates with their trust in other EU institutions.

Following H3, we assume that the financial and macroeconomic indicators from the previous hypotheses (H1 and H2) apply mutatis mutandis to trust in EU institutions collectively. Figure 2 summarises our hypotheses graphically.

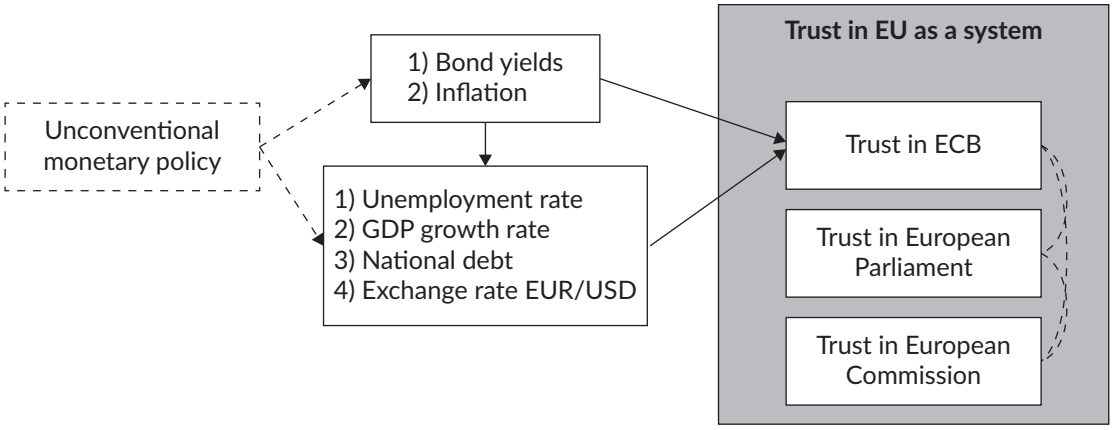

Figure 2. Visualisation of the three hypotheses.

3. Data and Method

For our analysis, we use a merge of 50 bi-annual Eurobarometer surveys from 1999 to 2023. We measure citizens' trust in the ECB in line with previous research by using Eurobarometer variables on institutional trust for the European Parliament (EP), the ECB, and the European Commission (Arnold et al., 2012; Bergbauer et al., 2020; Bursian & Fürth, 2015; Dellmuth & Schlipphak, 2020; Drakos et al., 2019; Farvaque et al., 2017; Fischer & Hahn, 2008; Hwang et al., 2022; Kaltenthaler et al., 2010; Moschella et al., 2020). The wording of the questions was: "And please tell me if you tend to trust or tend not to trust these European institutions." These variables are coded binary (0 = tend not to trust; and 1 = tend to trust). Since our hypotheses focus on the impact of macroeconomic variables on the populations' level of trust in the ECB, we aggregate the individual respondents' trust per country and year into a mean score for each country and year. We multiply this trust score by 100 to gain the percentage of citizens that trust each of the three EU institutions at any given time per country.

Our macroeconomic variables are from the ECB Data Portal and Eurostat. We measure inflation as a change in the Harmonized Index of Consumer Prices and as a deviation from the ECB's two percent target in absolute numbers, thus the deviation is always a positive number. This approach is similar to previous research (e.g., Bursian & Fürth, 2015; Ehrmann et al., 2013). Countries' refinancing capabilities are measured by the interest rates of 10-year government bonds (derived from the ECB's Harmonised long-term interest rates for convergence assessment purposes), as this is the benchmark and thus a useful indicator of how costly it is for a country to access money on financial markets. The unemployment rate is measured as the number of people unemployed as a percentage of the labour force, GDP growth is measured as the

percentage change from the previous year's value, and government debt as a percentage of GDP. These measures give a good sense of the performance of national economies and their impact on the population. Some of these measures are used in the media to describe the economic situation and some by the EU to measure compliance with the Maastricht criteria. We also included a measurement for the strength of the euro through its exchange rate with the US Dollar (USD; cf. Hobolt & Leblond, 2009, 2014; Roth et al., 2016), which is a euro area-wide factor. For this measure, a higher number means a higher value of the euro vis-à-vis the USD. All financial and macroeconomic indicators, which were monthly (unemployment rate, 10-year bond yield, inflation, and exchange rate) or quarterly (GDP growth), have been harmonised to average annual values per country. The data was weighted per country and according to the Eurobarometer weight variables. Table 1 lists descriptive statistics for our variables of interest.

For our main analysis, we run country fixed-effects panel regressions (Brüderl & Ludwig, 2015) with robust standard errors which are heteroscedasticity robust to estimate countries' within-variation in trust in the ECB across time. These models are appropriate for our research question because we focus on the impact of the countries' macroeconomic conditions on their population's average trust in the ECB. Hence, our dependent variable is an aggregate from the individual to the country level and the countries serve as our primary units of analysis.

We test hypothesis H1 by measuring the impact of the countries' 10-year bond yield and inflation rate in model 1 (see Table 2). We test hypothesis H2 by calculating the impact of macroeconomic performance (GDP growth, unemployment rate, government debt to GDP levels, and the EUR/USD exchange rate). We first test hypothesis H3 by calculating the impact of an index, combining the average trust in the EP and European Commission. Other scholars solely relied on testing trust in the European Commission (Ehrmann et al., 2013; Farvaque et al., 2017). This index allows us to capture the potential explanatory value of the EU institutions as seen as collective. In a second step, an overall trust index from the three supranational policy-making institutions (Commission, EP, and ECB) is used to assess the impact of financial and macroeconomic factors on trust in general.

Table 1. Summary of panel data.

Variable	N	Mean	Std. Dev.	Min	Pctl. 25	Pctl. 75	Max
Mean Trust in ECB	397	0.59	0.15	0.16	0.48	0.71	0.88
Mean Trust in EP	397	0.6	0.13	0.23	0.5	0.7	0.88
Mean Trust in COM	397	0.59	0.14	0.19	0.49	0.69	0.86
Government debt level	397	73	38	6.2	48	100	207
Deviation from inflation target	397	1.6	2.1	0	0.47	1.9	17
10-Year government bond yield	387	3.1	2.4	−0.51	1.1	4.4	22
GDP growth rate	397	2	3.7	−11	0.69	3.8	23
Unemployment rate	397	8.4	4.2	1.9	5.6	9.7	28
Exchange rate EUR/USD	397	1.2	0.14	0.9	1.1	1.3	1.5
weight variable EB	397	0.94	1.1	0.03	0.15	1.7	3.6

4. Results

Model 1 (Table 2) tests our first hypothesis, which states that citizens attribute trust based solely on the outcome of their country's level of inflation and the refinancing rates for their governments, which the ECB influenced through its (unconventional) monetary policy. This model indicates that off-target inflation is linked to lower trust in the ECB, as each additional percentage over or below the two percent target reduces the average trust in the ECB per country by 1.30 percentage points. At the same time, the refinancing rates for governments linked to benchmark 10-year bonds do not have an impact on trust in the ECB. This finding indicates that citizens are either not aware of their government's refinancing rates, do not see the change in rates as the result of ECB policy in general, or do not find it relevant in their allocation of trust. While only inflation appears statistically significant ($p < 0.01$), the within-adjusted r^2 of model 1 is, with 0.13, rather low. Thus, these two variables explain little variance in citizens' trust in the ECB. So, we can only partially confirm our first hypothesis, that citizens' trust in the ECB is dependent on the ECB's performance. While inflation remains statistically significant throughout our calculations, its effect is comparably weak. We therefore argue that the effect of monetary policy, including UMP, on inflation and refinancing rates only marginally impacted euro area citizens' trust in the ECB.

Model 2 shows that the macroeconomic situation of a country is a stronger factor in explaining citizens' trust in the ECB (Table 2). High levels of the country's unemployment rate and government debt levels, in particular, reduce trust in the ECB. These factors are particularly relevant, as an increase in the unemployment rate by one percentage point reduces trust in the ECB by 1.39 percentage points ($p < 0.05$), and each increase in government debt by one percentage point reduces trust by 0.30 percentage points ($p < 0.001$). These effects are statistically significant. The exchange rate EUR/USD and GDP growth have no impact on trust in this model. At the same time, inflation remains significant with a negative impact on trust of 1.03 percentage points for

Table 2. Fixed-effects panel regression models for trust in the ECB.

	model1		model2		model3	
Predictors	*Estimates*	*CI*	*Estimates*	*CI*	*Estimates*	*CI*
10Y bond yield	2.08	[−0.14; 4.31]	1.51	[−0.01; −3.04]	0.72	[−0.35; 1.80]
Deviation from inflation target	−1.30 **	[−2.25; −0.36]	−1.03 ***	[−1.50; −0.57]	−0.02	[−0.31; 0.28]
Unemployment rate			−1.39 *	[−2.61; −0.18]	0.19	[−0.64; 1.02]
GDP growth rate			0.28	[−0.04; −0.61]	0.12	[−0.19; 0.44]
Government debt level			−0.30 ***	[−0.43; −0.17]	0.05	[−0.05; 0.15]
Exchange Rate EUR/USD			−10.81	[−22.75; −1.13]	5.18	[−1.62; 11.98]
Mean trust in EP and COM (index)					1.05 ***	[0.86; 1.24]
Observations	387		387		387	
Within Adj. R^2	0.13		0.623		0.889	
AIC	3,053.746		2,669.294		2,247.702	

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

each percent deviation from the ECB's target level ($p < 0.001$). However, the comparable effects indicate that macroeconomic variables, such as unemployment and government debt rates, have a much larger impact on trust in the ECB than inflation does (see Figure 3 for standardised estimates to compare effects strengths).

Since these factors provide insight into how well an economy is performing, it is hardly surprising that they exert the strongest explanatory effect in our models. The effects of government debt and unemployment on trust are much stronger than the effects of inflation. The within-adjusted r^2 of model 2 is 0.62—four times higher than in model 1—indicating a better model fit for explaining which policy outcomes impact citizens' trust in the ECB. Thus, it appears that macroeconomic factors, on which the ECB has only a contributory and indirect impact through its policies, determine citizens' trust in the ECB to a much larger extent than factors which are directly influenced by the ECB's (unconventional) monetary policy, namely inflation and refinancing rates. These results suggest that citizens do not seem to attribute trust based on the impact of policies adopted by the ECB, including UMP. Thus, the results confirm our second hypothesis.

The explanation for this can be found in model 3. When including trust in other supranational EU institutions (EP and Commission), macroeconomic variables lose their significance. This suggests that, after we control for trust in other institutions, there is no leftover variance in trust in the ECB explained by financial or

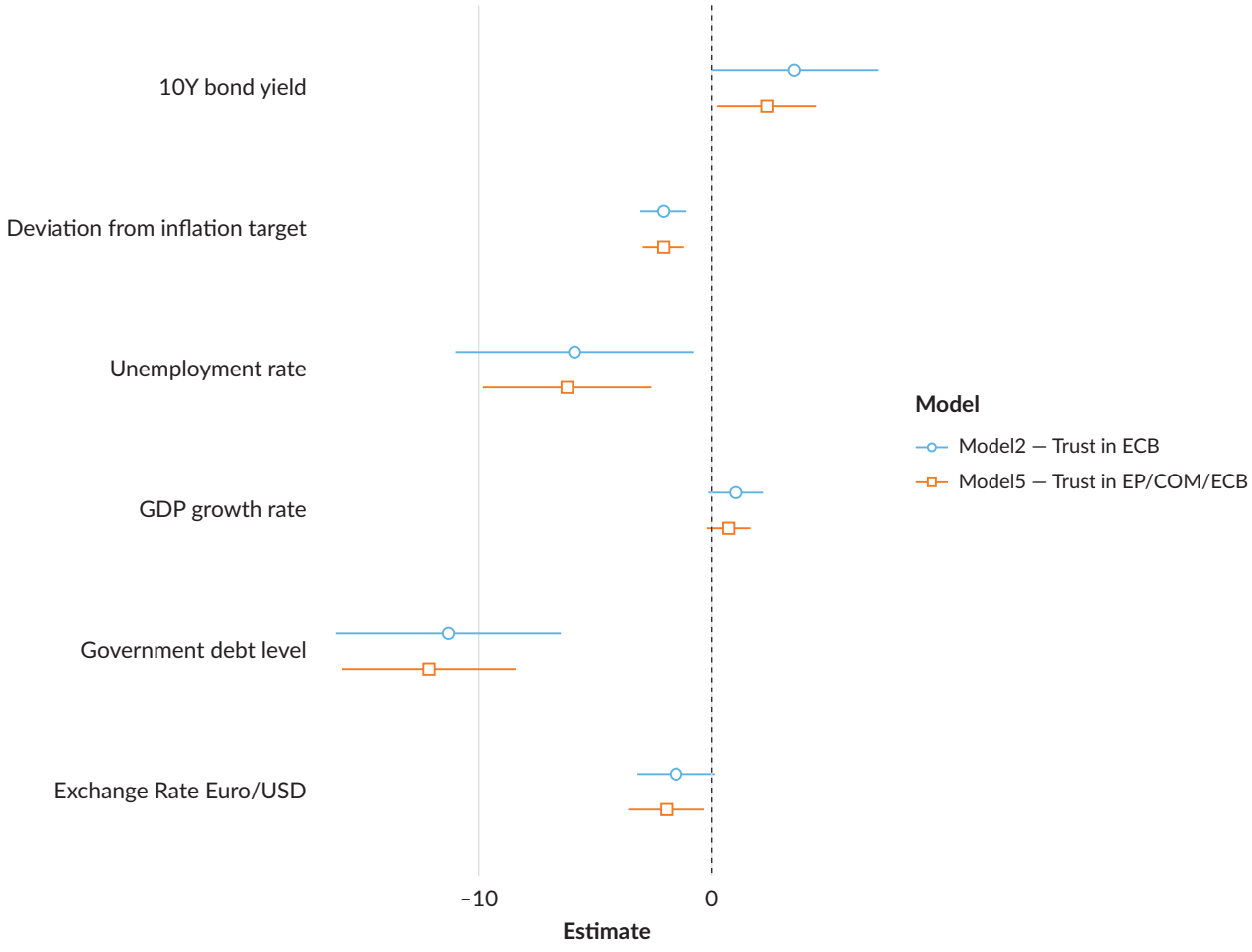

Figure 3. Standardised marginal effects on trust in EU institutions and the ECB.

macroeconomic factors. Thus, we contest claims that euro area citizens distinguish between the ECB and other EU institutions when placing their trust. This confirms our third hypothesis.

Similar to previous studies, our findings suggest that trust in the ECB is strongly correlated with trust in the other EU institutions. The Cramér's V between trust in the ECB and the EP is V = 0.67 across the sample, while trust in the ECB and the European Commission correlates with V = 0.70. This is also demonstrated by how the trust rates for these three institutions have developed in euro area countries over time (Figure 4). While there are country differences in the change of the trust scores, they move similarly within the same country. Trust in the European Commission and the EP correlate even more strongly (V = 0.82), indicating that citizens make little distinction between these institutions—too little to assume that the majority judges the ECB as a single entity because of its performance or range of policies and outside of the pool of other institutions.

Thus, citizens might consider the ECB as part of a cohesive EU system. We, therefore, use an average trust score based on the three trust variables linked to the EP, Commission, and ECB, and re-calculate our models 1 and 2 with this collective EU trust score as the dependent variable (models 4 and 5 respectively). The reason for doing this is that if trust in the ECB is part of trust in the overall EU institutional system, then the impact of ECB policy on financial and macroeconomic factors might impact trust in this collective trust variable rather than trust in the ECB alone.

Figure 4. Average trust (in %) in EU institutions by euro area country per year.

Model 4 confirms that inflation has an impact on the trust in the EU system, while 10-year bond yields are still statistically insignificant (Table 3). Model 5 replicates the results of model 2 with a strong relationship between macroeconomic factors and trust in the collective EU system. Apart from GDP growth, the effect and significance of inflation ($p < 0.05$), bond yields ($p < 0.05$), unemployment rate ($p < 0.01$), and government debt ($p < 0.001$) remain stable, and similar, in the effect size of model 2 (Figure 3). In addition, the exchange rate between the euro and the USD also became statistically significant for the attribution of citizens' trust in the EU system. The surprising finding is that bond yields are positively associated with trust. However, the effect size of the exchange rate and 10-year bond yields are comparably small.

Table 3. Fixed-effects panel regression models for trust in the EU institutions.

	model4		model5	
Predictors	*Estimates*	*CI*	*Estimates*	*CI*
10Y bond yield	1.63	[−0.44; 3.69]	1.00 *	[0.10; 1.91]
Deviation from inflation target	−1.23 *	[−2.26; −0.20]	−0.99 ***	[−1.43; −0.55]
Unemployment rate			−1.46 **	[−2.32; −0.61]
GDP growth rate			0.20	[−0.05; 0.44]
Government debt level			−0.32 ***	[−0.42; −0.22]
Exchange Rate EUR/USD			−13.72 *	[−25.12; −2.32]
Observations	387		387	
Within Adj. R^2	0.096		0.711	
AIC	3,001.037		2,577.269	

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.

The results of model 5 are almost congruent with the findings in model 2, which only included trust in the ECB, illustrating that the determining factors for trust in the ECB and in the collective EU institutional system are strikingly similar. Thus, citizens not only do not distinguish the institutions when placing their trust but also macroeconomic factors, which are not directly or solely dependent on ECB (unconventional) monetary policy, determine, to a larger extent, trust in this collective EU system.

5. The Effect of the Crisis on Data Periodisation

While this study analyses the determinants for citizens' trust in the ECB, it also emphasises that the policies applied by the ECB, in particular, UMP since 2010, are not the main factor for public trust in this institution. To ensure the robustness of the above results, the periods before the introduction of UMP (1999–2009) and after (2010–2023) were analysed separately with the same models. The reason for this periodisation is to not overlook that our variables may have different effects on trust in the ECB before and after UMPs. In the following, we compare models 2 and 5, which were calculated with periodised data (1999 to 2009, 2010 to 2023, and 2008 to 2023), with models 2 and 5 from the main analysis above, which covered the period of 1999 to 2023.

The results of model 2 for the period between 1999 and 2009 are similar regarding the 10-year bond yields and the exchange rate (no statistical significance, see Figure 5). They deviate slightly from the findings of the main analysis regarding inflation, which has no effect on citizens' trust in the ECB, and GDP growth, which positively influences citizens' trust. A significant deviation from the main analysis is the reduced effect strength

of the government debt level and the change from the negative effect of the unemployment rate to a positive one in determining citizen's trust in the ECB. Model 5 in this period is slightly different to model 2 and has only government debt as a statistically significant factor, with a similar effect size as in model 2. Thus, models 2 and 5 for the data from 1999 to 2009 provide different results regarding the variables that are significant for explaining trust but underscore that factors directly influenced by the ECB are less statistically relevant than the other macroeconomic factors.

The results of model 2 for the 2010–2023 period also deviate from the main analysis, as only the unemployment rate remains statistically significant for determining the citizens' trust in the ECB. For model 5, the results shift slightly in comparison to model 2, with deviation from the inflation target and government debt levels also becoming statistically significant. The periodisation thus alters the results to a certain degree. The finding indicates that the rise in unemployment only became a relevant factor for reduced trust in the ECB and the EU system in 2010–2023, which is also the time when unemployment rose significantly. Similar to the finding for 1999–2009, the effect size and significance of the variables change to some extent, but the main argument holds, that factors directly influenced by the ECB's (unconventional) monetary policy are not or only very marginally explaining citizens' trust in the ECB.

Thus, even though the finding from this periodisation alters the effect of unemployment rate and government debt levels, the main finding, that trust in the ECB seems not to be linked to direct policy outcomes of ECB action, remains robust, and is even reinforced by the reduced effect of the deviation from the inflation target. The results of the periodisation reject hypothesis 1 and confirm hypothesis 2. The different results in the impact of macroeconomic variables between the periodised and non-periodised data could be explained by the rapidly worsening economic position starting in 2008 and the resulting salience of macroeconomic factors for the citizens in the following period. This would help to explain why unemployment became the main predictor for trust in 2010–2023 (for both the ECB and the EU system), while before it was much less relevant. The much lower within-adjusted $r^2 = 0.35$ for models 2 and 5 for the period 1999–2009 also indicates that trust in that time is much less explained by the financial and macroeconomic variables chosen in this analysis, than in 2010–2023, where the within-adjusted $r^2 = 0.53$ and 0.60 for models 2 and 5 respectively are much higher. This finding indicates that the model is a much better fit for the time after the introduction of UMP.

Given that for both analyses (periodised and non-periodised) the macroeconomic performance is more relevant for determining trust in the ECB and the EU system than the direct impact of ECB monetary policy, a new insight from the periodisation is that the effect of macroeconomic performance on trust in European institutions seems to be strengthened in times of economic crisis. When applying a periodisation based on the rapid worsening of macroeconomic performance (1999–2007 and 2008–2023), the results show that the macroeconomic variables of the unemployment rate and government debt levels are the sole and strongest predictors for trust in the ECB and the EU system in models 2 and 5 for the 2008–2023 period, while neither of them is statistically significant for predicting trust in the ECB or the EU system in the period before 2008. In fact, almost no variable seems to explain the change in trust in the period between 1999 and 2007 (within-adjusted $r^2 = 0.14$ and 0.24), underscoring the explanation that the salience of economic crisis shifts the citizens' focus onto economic aspects to attributing trust, not the introduction of the ECB's UMP (see also Roth et al., 2013).

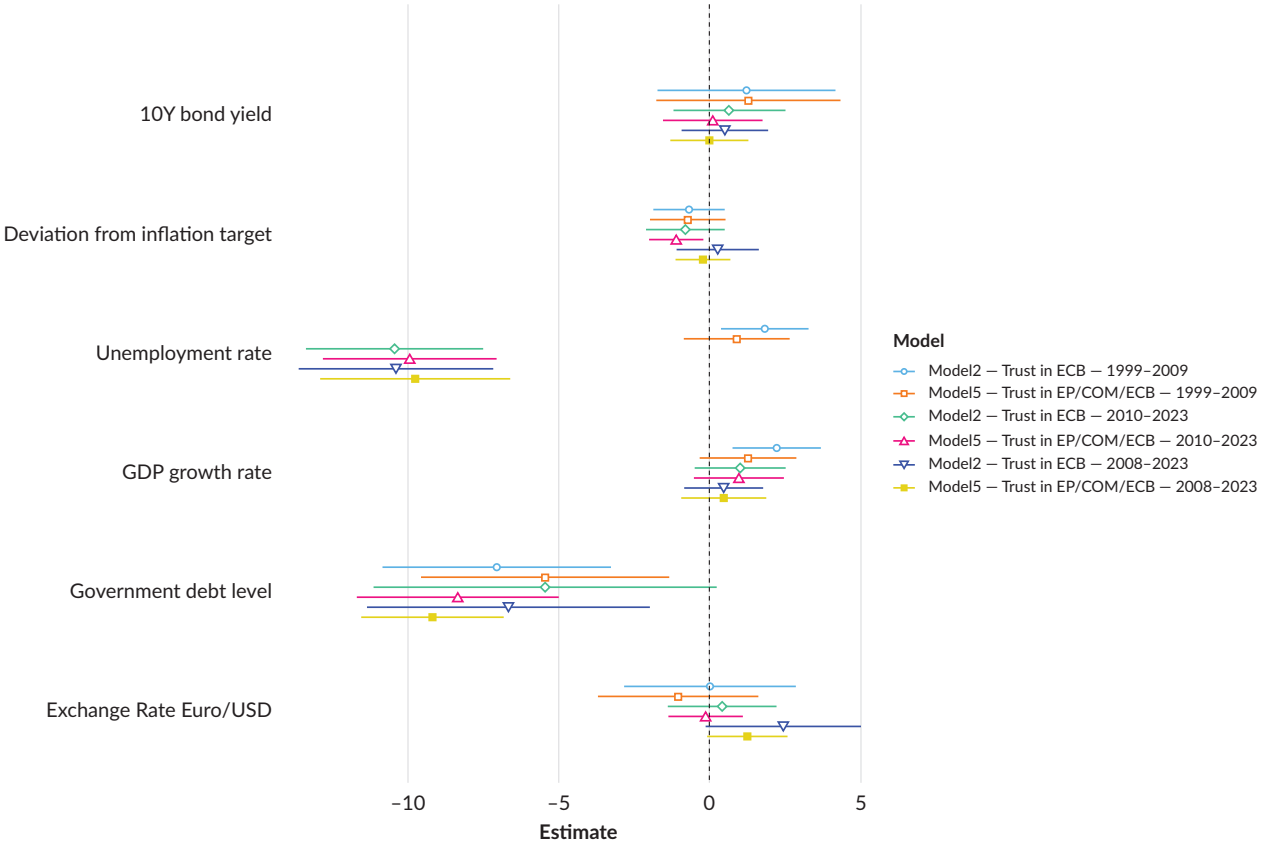

Figure 5. Standardised marginal effects on trust in EU institutions and the ECB by periods.

6. Conclusion

This article answers the question of whether the UMP of the ECB that started with the financial crisis in 2010 influenced citizens' trust in the ECB. We find that citizens do not sufficiently distinguish between the ECB and other EU institutions, or between direct outcomes of (unconventional) monetary policy and overall macroeconomic factors. Hence, we cannot argue that citizens trust or distrust the ECB based on its monetary policy. Instead, the results suggest that in trusting or not trusting the ECB, citizens either do not know what the ECB is doing, or they consider the overall economic situation more relevant than the outcomes of the ECB's (unconventional) monetary policy.

Our findings shed light on citizens' trust and the ECB's use of UMP. First, while UMP impacted inflation and government refinancing rates, these factors were marginal concerning citizens' trust in the ECB, even though they were directly linked to ECB action. Thus, although UMP contributed to achieving the inflation target and thus to the primary objective of the ECB, the change in, or stability of consumer prices was only weakly related to trust. The same goes for government bond yields. This result weakens previous findings by Fischer and Hahn (2008) and Ehrmann et al. (2013) who argued that inflation especially impacts trust in the ECB, as well as findings by Wälti (2012) emphasising the effect of bond yields on trust in the ECB. We could also find no, or only a marginal, effect of the EUR/USD exchange rate on trust. Second, while the ECB's UMP was only weakly related to public trust, macroeconomic factors, which are strongly influenced by national governments' employment, or fiscal policies were significant in determining trust levels in the ECB. This finding is underlined

by the congruent effect of the unemployment rate on trust in the collective of EU institutions. The impact of unemployment also illustrates that detailed ECB policy seems to be much less relevant for citizens' trust in the ECB. Thus, our results confirm previous findings by Drakos et al. (2019), Bursian and Fürth (2015), Wälti (2012), and Kaltenthaler et al. (2010), who argue that trust in the ECB is impacted by the overall economic situation, attributing it a shared responsibility in the domestic economic output, rather than as a central bank which is predominantly responsible for price stability.

While UMPs have made high government debt levels fiscally sustainable, and thus support indebted euro area countries, debt levels were together with unemployment rates the strongest negative factor for trust in EU institutions. This finding suggests that citizens tend to be more focused on negative aspects related to high government debt levels, rather than on more positive outcomes of the ECB's monetary policy that keeps the costs of debt levels low, thus indirectly supporting their country. This could be explained by the intermediary effect of the press, politicians, and policymakers, which might emphasise debt-to-GDP levels rather than debt sustainability. Further research could be helpful to shed light on this potential intermediary effect (see also E. Jones, 2009).

The reason why lower bond yields are associated with loss of trust can be attributed to UMP. Citizens in fiscally conservative countries, who have low refinancing rates due to their sound fiscal policy, might see the ECB policy more critically than citizens in countries where government debt levels have been traditionally higher. This could be linked to a fear that the ECB's UMP gives false incentives to not consolidate fiscal leniency. However, the effect is still significantly smaller than the effect of government debt and unemployment, and it even disappears in the analysis of the periodised data.

In line with Tuschhoff (1999), we see that there is an institutional blur at the EU level, as trust in the ECB correlates strongly with trust in other EU institutions. Including the trust in other EU institutions in our calculation also renders the effects of macroeconomic variables insignificant (only in model 3 for 1999–2009 do government debt levels and the EUR/USD exchange rate have small effects). This finding confirms previous arguments by Ehrmann et al. (2013), arguing that people see the ECB as part of "Europe," and contradicts results from Fischer and Hahn (2008, p. 15), who argue that the trust in supranational institutions does not mediate the effect of macroeconomic factors on trust in the ECB. Indeed, citizens tend to see the ECB as part of the EU's economic and institutional system.

While inflation also impacts the euro area citizens' trust in the common institutional structure of the EU, unemployment and government debt levels exerted the strongest influence on the level of trust for the ECB and the EU institutional structure as such. This finding suggests that citizens base their trust predominantly on factors describing the well-being of their national economy, rather than on explicit and detailed policy decisions. Thus, as long as macroeconomic conditions are improving or not deteriorating, citizens seem relatively unconcerned with the specific policies employed by the ECB to achieve or contribute to these conditions. This argument is substantiated by the overall drop in ECB trust in the euro area since 1999, even in countries with less ordoliberal views and which benefitted significantly from QE regarding their fiscal position, such as Italy, Spain, or France. The analysis of the periodised data furthered this argument by emphasising that attention seemed to shift towards macroeconomic aspects when the crisis began in 2008, while economic performance was less relevant for determining citizens' trust in the period before the crisis.

Overall, these findings underscore the relationship between economic performance and citizens' trust in a political system (Easton, 1975; Eichenberg & Dalton, 1993) and are in line with findings by Foster and Frieden (2021) linking support to the EU to macroeconomic output.

So, in what way did the end justify the means when it comes to monetary policy? Considering that citizens' trust in the ECB is influenced by macroeconomic factors to which it only indirectly contributed, one can argue that the ECB's UMP is justified by the output on the macroeconomic level, but also that the ECB is not solely responsible for this "end." Thus, while we argue that neither UMP nor other direct ECB policy outcomes influence citizens' trust, the ECB has considerable room to manoeuvre in choosing specific policy decisions to stimulate growth and achieve price stability. This contributory role did, however, not allow the ECB to stand out as an individual and different policy actor from the pool of other European institutions. If the economy is lopsided, citizens tend to lose trust in the ECB and the EU as a whole. So, while this margin of manoeuvre over the "means" exists, the "end" is not entirely in the ECB's hands, as its trust levels also depend on the performance of national governments. More importantly, citizens tend to pool their trust in EU institutions collectively, not distinguishing between the independent ECB and its monetary policy and other EU institutions. Thus, whatever policy the ECB is employing is less relevant to citizens' trust than the overall economic situation. This poses a challenge for the ECB regarding whether it should or should not communicate its policies and contributions, as, so far, it has not managed to stand out among the other EU institutions in the citizens' eyes.

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Conflict of Interests

The authors declare no conflict of interest.

Data Availability

Eurobarometer data is available from GESIS Leibniz Institute of Social Science: https://www.gesis.org/en/eurobarometer-data-service/data-and-documentation/standard-special-eb

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