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Salient monetary policy decisions and non-experts' trust in central banks

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ABSTRACT

Objective: The objective of the article is to shed new light on the relationship between central bank communication and the trust monetary institutions can obtain from ordinary citizens via a comparison of the European Central Bank (ECB) with the Federal Reserve (the Fed).

Research Design & Methods: We used the Eurobarometer and Booth Chicago/Kellogg School Financial Trust Index to study the evolutions of trust by non-experts in the Fed and the ECB during two episodes of salient monetary policy decisions: 2012-2013 and 2020-2021. Utilizing logistic regressions on representative samples of American and EU citizens, we show which among the recent key decisions in monetary policy by the two major central banks significantly affected the levels of trust (and in which directions).

Findings: Our findings suggest that the 'taper tantrum' speech by Ben Bernanke negatively impacted the trust in the Fed, whereas the 'whatever it takes' speech by Mario Draghi significantly increased the trust in the ECB. On the other hand, significant policy reactions to the COVID-19 pandemic did not affect trust in central banks as could have been expected neither for the ECB nor the Fed. Our inference is based on the estimates considering the standard control variables and for both central banks are robust to a relevant placebo test.

Implications & Recommendations: Our results suggest that well-communicated salient monetary policy decisions can boost public trust in central banks, notably in the contexts where the central banks are perceived as the key actors.

Contribution & Value Added: Thus, our analysis contributes to the literature, by focusing on how salient decisions can influence the degree of trust in the central bank by non-experts.

Article type: research article
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INTRODUCTION

Are non-experts influenced by central banks' messages? Although the question is of importance if only for the realization of central banks' mandates, the response is not fully settled yet. If the reaction of financial markets (bond markets, stock markets, currency markets, *etc.*) to monetary policy decisions has fed a long tradition of research, the influence central banks can have on lay persons or non-experts, is less ensured, and the recent results are not that reassuring for central banks.

De Fiore *et al.* (2021), for example, study the impact of the Federal Reserve's monetary policy decisions on households' expectations, and analyze the evolution of responses to the Survey of Consumer Expectations before and after Federal Open Market Committee (FOMC) meetings, over the period 2013-2019. They show that the Fed's decisions affect the expectations of interest rates on savings accounts, but that the response is conditional on respondents' levels of financial and numerical liter-

acy. More troubling, they show that monetary policy announcements have a much more limited impact on inflation expectations. Hirsch *et al.* (2023) also find that if central bank decisions are not covered by the media, their impact on the general audience is almost lost.

These results converge with those of the literature survey on central bank communication with the general public realized by Blinder *et al.* (2024). The authors insist on the fact that getting ordinary people to listen and understand central banks is no easy task, as central banks are competing for attention with numerous other message providers. This may explain another lesson the authors take from the literature: that central bank messages are poorly understood by non-experts. In turn, this may feed a public distrust in the central bank, or at least put trust at threat. Blinder *et al.* (2024) thus conclude that 'building trust may be the most important objective of central bank communication with the general public,' even though 'no country will ever become a nation of monetary policy experts'. In other words, central bank communication with the general public is desirable and feasible, but still in its infancy (Haldane & McMahon, 2018).

These conclusions tend to contrast with the results obtained in experimental settings. For example, in the spirit of Cavallo *et al.* (2017), Angino and Secola (2022) first define 'instinctive trust,' the on-the-spot judgement on the institution's trustworthiness, and 'reflective trust,' *i.e.* a more pondered opinion on the matter. Using a (representative) survey experiment, they show that instinctive trust reacts more strongly than reflective one. However, the question can be raised of the specificity of the experiment concerning the way central banks tend (and have) to communicate in real-life situations. Moreover, it can be argued that trust has several dimensions, including an ethical and a hierarchical one, when it comes to money (Vallet, 2022), which may not be fully captured in lab experiments.

We aimed to contribute to this new and burgeoning literature on the relationship between central bank communication and the trust monetary institutions can obtain from ordinary citizens. We first compared the situation of the European Central Bank (ECB) with the one of the Federal Reserve Board (the Fed), as they are arguably among the most important central banks presently, as well as being among the most aware of the importance of communicating to large audiences to enhance their credibility and the effectiveness of their policies.

Secondly, we focused on specific historical episodes, providing background contexts in which central banks have communicated strongly, allowing us to focus on the most salient monetary policy decisions that these institutions had to take. We thus selected the following declarations: the 'taper tantrum' by Ben Bernanke in May 2013, the 'whatever it takes' by Mario Draghi in July 2012, and the announcements by Christine Lagarde and Jerome Powell of policy packages in response to the COVID-19 crisis. We based our choice on the fact that these episodes are the most important recent ones, with clear dates and essential consequences, with important communication implications for the general public.

Our focus was on non-experts' degree of trust in central banks, and we thus made use of survey data. Their advantage was the degree of information they allowed one to obtain. The drawback is that the date of collection of the answers was not necessarily close to the policy decisions on which we will focus. However, we considered this as an advantage given our research question: if the trust in central banks is impacted, it has to be by very important decisions taken by these institutions. In other words, the degree to which monetary policy decisions will impact non-experts' views should persist over time, especially because we consider salient decisions.

Hence, by focusing on fundamental decisions taken in different contexts, and using non-experts' reactions in a before-and-after setting, we aimed to clarify if the non-experts targeted by the central banks in their communication react by changing the degree of trust they have in these institutions. In other words, we aimed to respond to the following research question: are central banks able to win hearts and minds in hard times (requiring salient decisions)?

Thus, this article contributes to the literature by demonstrating that significant decisions in monetary policy can substantially impact the general public's trust in the central bank. This result holds while confirming that the usual control variables in such a setup are also significant and have expected signs. It is also robust to a placebo test, in which the impact on the trust towards other institutions proves nil.

The structure of the paper is as follows. Firstly, we will review the literature, then we will describe our data and methodology, to subsequently present our results. We will do this separately for the two

episodes of salient monetary policy decisions by the Fed and the ECB. Finally, we will discuss some alternative specifications allowing for placebo effects. The concluding remarks will close the article.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The bulk of attention of the extant research on central bank communication has focused on its influence on financial markets (see, *e.g.* Gertler & Horvath, 2018; Grabowski *et al.*, 2023; Hayo *et al*., 2010; Leombroni *et al.*, 2021; or Rosa, 2011), financial stability (*e.g.* Born *et al.*, 2014) or experts such as professional forecasters (*e.g.* Bauer *et al*., 2024; Dräger *et al.*, 2016; Goyal & Parab, 2021). These studies in general conclude that changes in the policy rate impact financial markets (stock prices or expectations, risk premia on Treasury bonds, *etc*.). This is in many ways reassuring, as experts should be able to interpret the decisions taken by the central banks (even if sometimes not perfectly or not without surprises). This may also be helped by the fact that central bankers stick to a strongly defined goal of price stability, even after the financial crisis (Johnson *et al*., 2019).

Concerning non-experts, the study of determinants of trust in institutions in general, and in central banks in particular, predominantly relies on survey data. Most of the analyses focused on the ECB, notably because the Eurobarometer survey waves regularly include questions on trust in a number of European institutions, including the European Central Bank (ECB). Some of the early works utilizing this type of data aimed at studying the impact of the Global Financial Crisis and the crisis in the euro area on trust in the ECB (*e.g.* Ehrmann *et al*., 2013; Roth *et al*., 2014). These studies show that there are deep determinants of trust, and that among them education, income, and political placement of the respondents are strongly significant. Concretely, more education, a higher level of income, and more conservative political preferences are associated with higher levels of trust in the central bank. These have been confirmed regularly as storing determinants of trust and can be considered as long-run factors influencing the degree of trust – see, for example, Farvaque *et al.* (2017), or Brouwer and de Haan (2022), for a confirmation, and Angino *et al*. (2022) for the relation between culture and trust in central banks.

Furthermore, it has been shown that more aggressive actions by the central bank can have adverse effects on the degree of trust emanating from the more pessimistic households (Albinowski *et al*., 2014). Moreover, van der Cruijsen and Samarina (2022) found that during the COVID-19 pandemic, a loss in trust in the ECB can be associated with a decrease in working hours, whereas higher levels of education, income, and wealth are associated with a higher level of trust in the central bank. This contrasts with Coibion *et al*. (2022), who show that communication between central banks and governments during the COVID-19 period has not impacted households' plans. Moreover, the degree of engagement of the media with the central bank has also been revealed to increase with the clarity of their messages (Ferrara & Angino, 2022) while, in a more general context, political and religious beliefs have been shown to interact strongly with economic messages, messing up an already weak level of knowledge (Nordhaus & Rivers, 2023).

However, the evidence on how the communication by the central bank can influence non-experts' degree of trust in the institution is much scarcer and somewhat less conclusive. There are some hints that more informed households' inflation expectations are more anchored following the announcement of the 2% inflation target by the Fed (Binder, 2017). Nevertheless, as mentioned in the introduction, De Fiore *et al.* (2021) find a very limited (if any) impact of the Fed's decisions on inflation expectations, while Rumler and Valderrama (2020) show that more literate people have lower inflation expectations and trust more the central bank. This can mean, which we subsequently try to formally test, that only salient decisions in monetary policy which are extensively communicated, can influence the general public's perceptions and, ultimately, trust in the institution. Moreover, some recent experimental evidence also suggests that well-designed central bank communication has a stabilizing effect on individual and aggregate outcomes (Kryvtsov & Petersen, 2021). Thus, our analysis contributes to this strand of the literature, by focusing on how salient decisions can influence the degree of trust in the central bank by non-experts.

These prior empirical results allowed us to hypothesize:

H1: Salient monetary policy decisions are the ones which are highly commented on or debated, due to their importance in the context they are announced. For the public, they are thus more publicized than regular decisions (on policy rates, typically). They should thus exert an impact on the level of trust expressed by the general public towards the central bank.

H2: Salient monetary policy decisions should have a positive impact on the public's trust in the central bank.

RESEARCH METHODOLOGY

Our strategy relied on identifying key monetary policy decisions, important by themselves, but also the most susceptible to have received coverage in the media. This ensures that our respondents have been aware of the decisions, and of their impact(s), potential or realized, at the time of the survey. Table 1 summarizes the information on the episodes we have selected that cover the ECB and the Fed, the global financial crisis and its European consequences, and the COVID-19 crisis. Both periods have been associated with important decisions by each central bank.

Salient Monetary Policy Decisions

Below, we will first describe the monetary policy episodes covered by our analysis and then detail the corresponding datasets, to elaborate subsequently on the identification and estimation strategies.

Table 1. Summary of salient monetary policy decisions under scrutiny

Central bank	Financial Crisis	COVID-19 Crisis
Fed	22/05/2013: 'Taper tantrum' Declaration by Ben Bernanke 1 survey per quarter of 2013 (Q1 reference, Q3 of main interest)	15/03/2020: Policy package Declaration by Jerome Powell (November) 2020 vs. (November) 2019
ECB	26/07/2012: 'Whatever it takes' Declaration by Mario Draghi November 2012 vs. May 2012	12/03/2020: Policy package Declaration by Christine Lagarde August 2020 vs. Nov-Dec 2019

Source: own study.

In the case of the Global Financial Crisis, the episode we looked at for the Fed was the declaration by Ben Bernanke, then Chairman of the Board of Governors, made in May 2013. As stated by, *e.g.* Jensen and Robertson (2021) 'no substantive discussion about the Fed shrinking its asset purchases had taken place.' In between two meetings of the Federal Open Market Committee, Ben Bernanke testified to Congress that the FOMC 'could in the next few meetings... take a step down in our pace of purchases' (congressional testimony, made on 22 May 2013). Bernanke's comments have triggered an important uncertainty, reflected in market expectations, for when the Fed would end its accommodative policy, creating the now-so-called 'taper tantrum' disorder in the Treasury market. One can expect this episode to affect negatively the level of trust in the institution.

Though we can see it as a speech with a purely financial impact, Figure 1 illustrates the importance of the fact that the influence of this talk by Bernanke goes beyond the markets and attracts a large public interest. We used Google trends to compare the importance of searches for 'taper tantrum' and 'Boston marathon' (where a terrorist attack took place on April 15, 2013). As we can see, the subject reached in some periods (between April and December 2013) an even greater importance than the Boston attack, and searches did not stop after the next meeting (in June 2013) of the FOMC.

For the ECB, the important moment we looked at was the declaration by Mario Draghi, the ECB's Governor that the institution will do 'whatever it takes,' on July 26, 2012, to save the euro. This comment is generally acknowledged as one of the defining ones for the euro area and the institution chaired by Draghi.

This comment is generally considered to have had a huge impact on (calming) speculative attacks taking place at that time. More generally, it has been shown to have strongly reduced financial risk premia (Cieslak & Schrimpf, 2019), bond yields (Afonso *et al*., 2018), and influenced stock markets (Haitsma *et al*., 2016). We here expect a positive impact on trust.

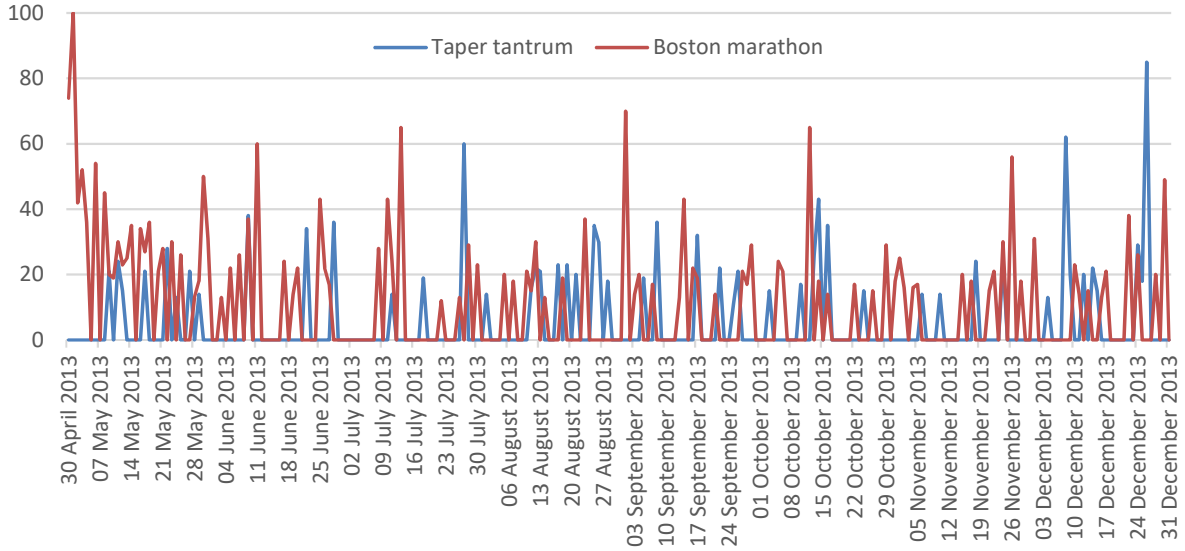

Figure 1. Google Trends searches: Taper tantrum (May to December 2013)

Note: Google Trends is a publicly available search activity tool (see Stephens-Davidowitz & Varian, 2015 for a description), allowing to check how a search term (or set of terms) tends to be searched for relative to other terms within a region, country, or globally (see, for example https://support.google.com/trends/answer/4365533?hl=en); Left-hand axis: number of occurrences. Numbers are scaled on a range of 0 to 100 based on a topic's proportion to all searches on all topics.
Source: own elaboration based on Google trends analytics.

The significance of this moment for the general public cannot be discarded, as exemplified in Figure 2. We used Google trends to compare the importance of searches for 'whatever it takes,' 'Draghi' and 'London Olympics' (as these took place in July 2012). As we can see, if the ECB-related subjects did not beat the Olympics as they take place, the interest for them would last for much longer, confirming the importance of this episode for our purposes.

Figure 2. Google Trends searches: 'Whatever it takes' (May to December 2013)

Note: Left-hand axis: number of occurrences. Numbers are scaled on a range of 0 to 100 based on a topic's proportion to all searches on all topics; see also Figure 1.
Source: own elaboration based on Google trends analytics.

Our second period of observation was the COVID-19 crisis. There is probably no need to convince of the importance of this period for the economy and the general public. Interestingly, in front of this crisis, the two central banks have taken relatively comparable decisions, in about the same period. Both announced in March 2020, that they would support their economy. Which we expect to have a positive impact on the level of trust they receive from non-experts.

For the Fed, the FOMC declaration dates from 15 March 2020 (https://www.federalreserve.gov/newsevents/pressreleases/monetary20200315a.htm.).

The ECB made an almost parallel declaration, on 12 March 2020 (https://www.ecb.europa.eu/press/pressconf/2020/html/ecb.is200312~f857a21b6c.en.html.)

Our premise in the analysis presented below is that these four policy decisions have been important, even salient ones. We have shown that this is indeed the case, and the related literature validates the argument (see, *e.g.* Ortmans & Tripier, 2021). Besides, the four salient decisions have been announced by different chairpersons (in chronological order: Mario Draghi, Ben Bernanke, Christine Lagarde, and Jerome Powell). This precludes that any change in the impact of the decisions taken on trust that we could observe is not related to a change in the personal 'confidence capital' of one of the central bankers present in the period we cover.

Trust Data for the Fed

We rely on the Booth Chicago/Kellogg School Financial Trust Index that is a quarterly measure of Americans' confidence in the private institutions in which they can invest their money. The Financial Trust Index measures investors' trust in the stock market, banks, mutual funds, and large corporations. In different quarters, this information is supplemented with data on additional topics (*e.g.* real estate investment, and opinion about recent events). Trust is defined as an expectation that a person (or institution) will perform actions that are beneficial or at least not detrimental to others. Data is collected on a quarterly basis, based on interviews of more than 1000 American households, randomly chosen, and surveyed via phone by Social Science Research Solutions.[1] To our knowledge, this is the first time that this data has been used in such a context.

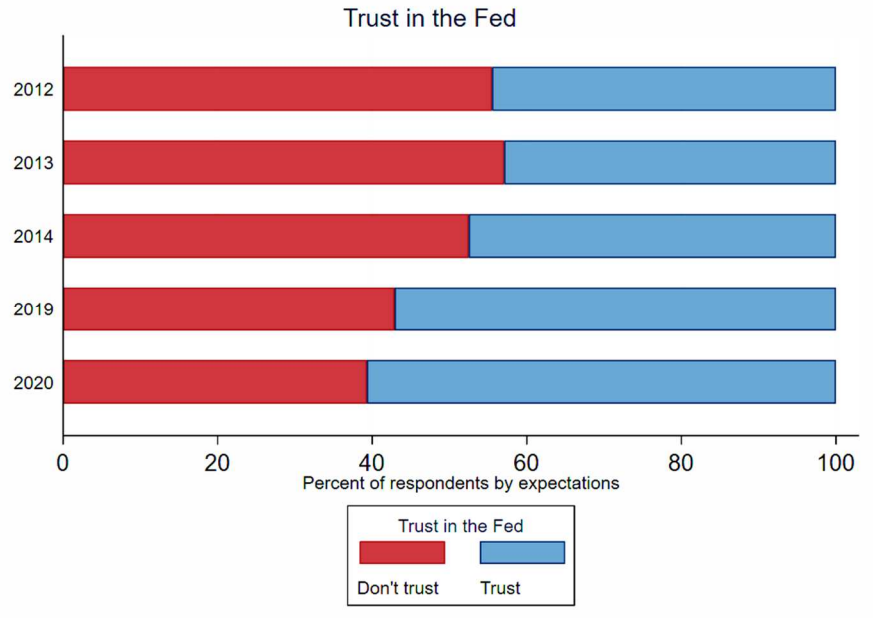

Figure 3. Trust in the Fed, 2012-2014, and 2019-2020
Source: own elaboration based on the Financial Trust Index project and elaborated with Stata.

[1] The data were originally published on the Financial Trust Index website (http://www.financialtrustindex.org/), and has been used in, *e.g.* Guiso *et al.* (2008).

Table A3 in the Appendix delivers the descriptive statistics for this dataset, and the Appendix also contains the glossary of variables, while Figure 3 displays the data on trust in the Fed around the two periods we consider. For the Global Financial Crisis period, the surveys we used are available on a quarterly basis, which made it possible to compare the evolution of trust in the central bank over time, during the three years (2012 to 2014), and inside each year, over the quarters. This was not the case for the COVID-19 period, during which the surveys have been realized on a yearly basis, forcing us to compare the year 2019 to 2020. As the respondents were surveyed after the above-reported decisions taken by the Fed, we can look at how the degree of trust has been impacted by the March 2020 decisions.

As Figure 3 shows, the degree of trust was much higher in the last period compared to the first one, as it barely reached 50% in 2014, while it was largely over 50% in 2019 and 2020. Moreover, 2013 seems to be a bad year for the Fed, as distrust reached a maximum that year. Table 2 details for each period the personal characteristics of the surveyed person in the samples. Even though there were fewer observations in the second sample, the characteristics did not appear different from one period to the other, which supports the use of both samples in the analysis.

Trust Data for the ECB

Concerning the ECB, we used Eurobarometer survey waves, selecting those waves of the survey that included the question on trust in the ECB we were interested in. Precisely, these were 77.3 (May 2012) and 78.1 (November 2012) for the first period, and survey waves 92 (Autumn 2019) and 93.1 (July-August, 2020). The waves of the survey we employed (Table 2) covered all then-current euro area member countries. Among other questions, we asked respondents about the importance of the major European institutions, and their trust in them, in particular in the ECB (*e.g.* Question A17 in Eurobarometer 77.3). The responses were recorded in the following way: 1 for 'Tend to trust,' 2 for 'Tend not to trust,' and 3 for 'Don't know.' We measured the trust in the European Central Bank by transforming this categorical variable into a binary one, excluding the responses coded 3 that did not express an explicit opinion. The binary discrete choice variable thus obtained became our dependent variable for the ECB case.

Figure 4 displays a summary view of the degree of trust in the two periods under consideration. As in the case of the Fed, the degree of trust is superior in the last period, compared to the first one, with much more than 50% of the surveyed population declaring to have trust in the ECB. Interestingly, the level of trust is strongly similar, for both periods, before and after the salient decisions we considered. Table 2 presents the summary statistics on the degree of trust in the ECB.

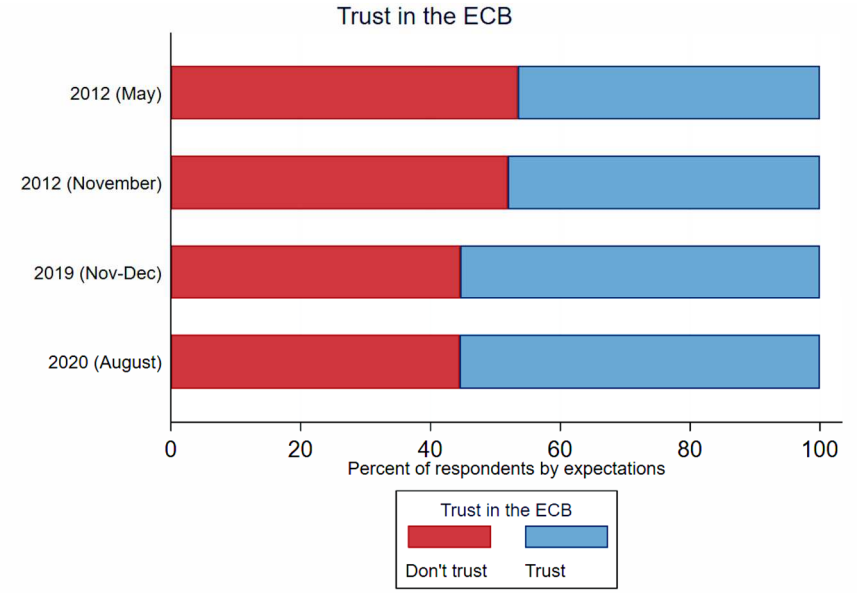

Figure 4. Trust in the ECB (2012, and 2019-2020)
Source: own elaboration based on Eurobarometer data and elaborated with STATA.

Table 2. Descriptive statistics: Trust in the ECB

Variables	Financial Crisis				COVID-19 Crisis			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Married	0.650	0.477	0	1	0.645	0.478	0	1
Employed	0.568	0.495	0	1	0.542	0.498	0	1
Age categories								
25-34 years	0.151	0.358	0	1	0.118	0.323	0	1
35-44 years	0.182	0.386	0	1	0.146	0.353	0	1
45-54 years	0.190	0.392	0	1	0.173	0.379	0	1
55-64 years	0.169	0.375	0	1	0.201	0.401	0	1
65 years and older	0.206	0.405	0	1	0.280	0.449	0	1
Male	0.480	0.500	0	1	0.476	0.499	0	1
Education	2.700	2.175	1	4	4.365	2.865	1	4
Observations	27284	27284	27284	27284	29824	29824	29824	29824

Source: own elaboration based on Eurobarometer data.

Logistic Regressions' Specifications

The two types of surveys we used were not completely comparable. This is understandable as their goals are different (the American survey is financial institutions-oriented, while the European one is more general), but this induces that, to make our analysis as comparable as possible over the two institutions, we restricted the set of characteristics of the respondents to the core of variables that were available or comparable in the two cases. This means that we considered age, education, employment status, gender, and marital status as our core variables. Moreover, given their importance in the American context, and thanks to their availability, we also included in the American estimates the respondents' declared ethnicity and some variables related to their political placement and registration.

Therefore, our baseline empirical model took the following form:

$$Trust_{i(t)j} = f\left(Dem'_{i(t)j}; Pol'_{i(t)j}; D_{it}; C_t; c\right) + \varepsilon_{i(t)j} \quad (1)$$

in which:

$$Dem'_{i(t)j} = \left(GD_{i(t)j}; Age_{i(t)j}; \left[Edu_{i(t)j};\right] Empl_{i(t)j}; \left[Inc_{i(t)j}\right]\right)'$$
$$Pol'_{i(t)j} = \left(Democrat_{i(t)j}; Registered_{i(t)j}\right)'$$

$Trust_{i(t)j}$ is the opinion of a respondent *i* at time/wave *t* of the survey in country / zone *j*. The 'demographic' vector $Dem'_{i(t)j}$ contains the gender of the *i*-th respondent to the *t*-th survey wave – the dummy $GD_{i(t)j}$ -, and other categorical variables: $Age_{i(t)j}$ is the age group of the respondent, either in ordered categories: 15-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years, 65+ years or as a continuous variable; $Edu_{(t)j}$ is the education level of the respondent in number of years of education at the time of obtaining the highest degree; $Empl_{i(t)j}$ is the dummy for the employment status; $Inc_{i(t)j}$ is the income of the respondent, for the US case. The 'political' vector $Pol'_{i(t)j}$ contains, for the US case, the variables related to the political placement, $Democrat_{i(t)j}$, and a dummy for the registered voters, $Register_{i(t)j}$. State and country (for the euro case) fixed effects, C_t, capture unobservable specific variables. $\varepsilon_{i(t)j}$ is the individual disturbance in the regression and *c* – the constant term.

We also add other dummies, D'_{jt}, in the versions of *(1)* we estimate. These are our variables of interest, as they will capture the impact of the period in which the survey has been rolled out on the average level of trust in each institution, for each period we analyzed. Hence, for the Global Financial Crisis period, in the American case, we associated each dummy with a specific quarter for each of the years 2012 to 2013, the first quarter being the reference for each year (for 2014, we only had observations for the fourth quarter). In the European case, we associated the dummy with the surveys taken in November 2012, to be compared to May. For the COVID-19 crisis, the dummy, in the American case, was for each of the years covered, 2020 being compared to the answers given in 2019. For the European case, it corresponded to August 2020, to be compared with November – December 2019.

Everything else being equal, this method boils down de facto to a before vs. after method: we compared the probability of declaring to have trust in each respective central bank after the salient monetary policy decision, comparing it to the before-the-event level. Note that, as events that would have mattered can have happened between the central bank's action and the survey waves, our results would probably suffer from an underestimation bias.

We utilized dynamic logit regressions, following the prevailing micro-econometric literature on binary-choice dependent variables, to estimate the parameters of our general empirical model in equation (1).

Consequently, we assumed that our measure of trust in the central bank, $Trust_{i(t)j} \equiv Y_{i(t)j}$ – which can be thought of as the conditional probability of a 'yes' response $P(Y_{i(t)j} = 1 \mid x_{i(t)j})$ to the relevant survey question given the covariates, or 'predictors,' collected in the vector of explanatory variables, $x_{i(t)j}$ – more specifically follows a logistic distribution, so that:

$$P\left(Y_{i(t)j} = 1 \,\middle|\, x_{i(t)j}\right) = \frac{1}{1 + e^{-(c + T_t + \beta' x_{i(t)j})}} \quad (2)$$

Then, a higher level of $c + T_t + \beta' x_{i(t)j}$ would imply a higher level of trust for the particular definition of the employed (sub)sample, with β denoting the vector of estimated coefficients.[2]

RESULTS AND DISCUSSION

The Fed's Case

Table 3 contains the results of the estimates for both periods in the case of the Fed. The control variables had the expected signs (Democrats, for example, expressing more support for the Fed than their Republican and Independent counterparts, as well as more educated Americans).

However, for the next period under review, the policy package announced in March 2020, whatever its importance, has not moved the level of trust of the respondents to the Financial Trust Index survey. This result is similar to the ones obtained by Coibion *et al.* (2022), and it may be because the level of trust was already high (as we commented above), that the central bank has not reached the audience it targeted, or that other actors have played a more important role during this specific period. Below, we will test these alternative interpretations by running placebo estimates.

To sum up, if our estimates for the first period capture an impact of monetary policy communication on non-experts' perception when the decision is a salient one, this is not the case for the second period. Moreover, the influence of the regressors is unstable over time. We now turn to the ECB, to check if the observed pattern is repeated for this institution.

Results for the ECB

As for the Fed's case, the variables of control had signs and significance levels that conformed with the observations from studies using similar data types (Brouwer & de Haan, 2022; *e.g.* Farvaque *et al*., 2017; van der Cruijsen & Samarina, 2022), both in the absence (in columns 1 and 3 of Table 4) or presence (respectively, in columns 2 and 4) of country-specific fixed effects. For example, employed and young people tend to express a higher level of trust in the institution and a higher level of education brings a higher degree of trust.

With regard to the variables of interest, we observed that the policy decision of 2012 was associated with a positive (and strongly significant) impact on the level of trust expressed by respondents to the Eurobarometer survey. This was expected but acts as confirmation that the salient monetary policy declaration by Draghi has been strongly perceived (and positively interpreted) by the European general audience.

[2] See *e.g.,* Moulton (1990), for a methodological description of the type of analysis we implemented.

Table 3. Determinants of trust in the Fed

Dependent Variable: Trust in the Fed	Financial Crisis			COVID-19 Crisis
	2012	2013	2014	2019 and 2020
Married	-0.032 (0.024)	-0.022 (0.023)	-0.008 (0.033)	-0.001 (0.031)
Employed	0.022 (0.025)	0.027 (0.025)	-0.061* (0.036)	0.081** (0.038)
Age	0.001 (0.001)	0.002*** (0.001)	0.000 (0.001)	0.003*** (0.001)
Democrat	0.258*** (0.028)	0.251*** (0.028)	0.169*** (0.042)	0.159*** (0.037)
Others	0.042 (0.026)	0.043 (0.026)	-0.009 (0.038)	-0.024 (0.038)
Register	-0.060* (0.034)	-0.086** (0.034)	-0.080* (0.043)	-0.013 (0.050)
Male	-0.042* (0.021)	-0.030 (0.021)	-0.030 (0.030)	-0.033 (0.030)
White Non-Hispanic	0.098* (0.055)	0.076 (0.053)	0.190*** (0.061)	0.070 (0.058)
Black Non-Hispanic	0.096 (0.066)	0.085 (0.061)	0.150** (0.074)	-0.021 (0.084)
White Hispanic	0.302*** (0.071)	0.272*** (0.068)	0.294*** (0.083)	0.099 (0.079)
Black Hispanic	0.330** (0.131)	0.205* (0.117)	0.364** (0.143)	0.297** (0.119)
Unspecified Hispanic	-0.002 (0.143)	0.042 (0.127)	0.443*** (0.109)	0.027 (0.107)
Income	0.009* (0.005)	0.010** (0.005)	0.008 (0.007)	0.007 (0.007)
Education	0.029*** (0.007)	0.035*** (0.007)	0.041*** (0.010)	0.021* (0.011)
Q2	0.009 (0.030)	-0.029 (0.030)	–	–
Q3	0.060** (0.030)	-0.088*** (0.029)	–	–
Q4	0.022 (0.030)	-0.071** (0.029)	0.038 (0.029)	–
Year = 2020	–	–	–	0.023 (0.029)
State F.E	Y	Y	Y	Y
Observations	2108	2120	1093	1095

Notes: The Table presents marginal effects from a logit regression on the determinants of trust in the Fed. Standard errors (in brackets) are robust to arbitrary heteroskedasticity, clustered at the state level. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.
Source: own elaboration in STATA.

However, we did not observe this result in the case of the COVID-19 crisis, for which we observed the pattern found in the American case and also in the European one (*i.e.* no significant response when country-fixed effects are included in the estimate). As this comes unexpectedly with regard to our working assumption, while the COVID-19 policy packages can clearly be considered as important and significant policy decisions, we now look to alternative estimates that can bring further explanation to these results.

Table 4. Determinants of trust in the European Central Bank

Dependent Variable: Trust in ECB	Financial Crisis		COVID-19 Crisis	
	1	2	3	4
Married (ref: unmarried)	0.026*** (0.007)	0.032*** (0.006)	0.024*** (0.006)	0.026*** (0.006)
Employed (ref: unemployed)	0.116*** (0.008)	0.080*** (0.008)	0.049*** (0.007)	0.036*** (0.007)
Age				
25-34 years	0.068*** (0.014)	0.046*** (0.014)	-0.101*** (0.014)	-0.108*** (0.013)
35-44 years	0.081*** (0.015)	0.056*** (0.014)	-0.113*** (0.014)	-0.117*** (0.013)
45-54 years	0.092*** (0.015)	0.059*** (0.015)	-0.118*** (0.013)	-0.128*** (0.013)
55-64 years	0.144*** (0.015)	0.088*** (0.015)	-0.76*** (0.013)	-0.103*** (0.012)
65 years and older (ref: 15-24 years)	0.213*** (0.015)	0.145*** (0.015)	-0.014 (0.012)	-0.054*** (0.012)
Male (ref: female)	0.025*** (0.006)	0.027*** (0.006)	-0.002 (0.006)	0.002 (0.006)
Education	0.042*** (0.002)	0.032*** (0.002)	0.033*** (0.001)	0.024*** (0.001)
November 2012 (ref: May 2012)	0.013*** (0.006)	0.013*** (0.006)	–	–
August 2020 (ref: November – December 2019)	–	–	-0.123*** (0.008)	-0.093 (0.008)
Country F.E	N	Y	N	Y
Observations	27703	27703	29824	29824

Notes: The Table presents marginal effects from a logit regression on the determinants of trust in the Fed. Standard errors (in brackets) are robust to arbitrary heteroskedasticity, clustered at the country level. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.
Source: own computations in STATA.

Alternative Hypotheses: Placebo Estimates

Tables 5 and 6 expose the results of alternative estimates, in which the trust in the central bank is replaced by the trust in the government as the dependent variable. More precisely, for the American case, the question is about the trust in the federal government, while the corresponding question considered for the European case is the trust in the national government of each respondent. The methodology and the variables are the same as previously, allowing one to easily compare the results. Hence, these alternative estimates provide both robustness and placebo tests of the previous results.

Interestingly, for each case, we observed a pattern which is symmetric to the one obtained for the trust in the central bank: for the first crisis period, trust in the government was either not affected (estimates for the dummies associated with, respectively, 2013 and 2014, for the US) or negatively affected (in the European case). On the opposite, for the US case, the trust stated by respondents was significantly higher in 2020. For the euro area, the response was negative, which may be related to distrust towards the national governments, with debates about how they have dealt with the restrictions related to the COVID-19 crisis (François *et al*., 2023).

In our view, this confirms that, if salient monetary policy decisions can affect the level of trust expressed by non-experts, the COVID-19 crisis may stand apart. Firstly, the central banks have articulated their decisions as being taken in consultation with, or in support of, their respective governmental policy packages. Secondly, it may be the case that the communication channel of the central bank with the general public may have been broken during this period, if only because the other branches of policy-making have also communicated a lot during this period. This interpretation would be sup-

ported by the results of, *e.g.* Leibrecht and Scharler (2022), who showed how trust evolves in strong relation with GDP. However, a third interpretation, less favourable and for the moment untested, is that the public has understood that given the fiscal policies implemented, central banks were entering a phase of 'fiscal dominance,' in which governments have logically a more important role to play than monetary authorities. For example, Benigno *et al*. (2022) analyzed the fiscal space the ECB may have opened by its decisions, while Dimakopoulou *et al*. (2022) showed the importance of trust in the success of fiscal policy package. This would unfortunately mean that the barriers put in front of the 'road to nowhere' of central bank communication with non-experts would have been reinforced, to use the analogy of Ehrmann and Wabitsch (2022).

Table 5. Placebo test – US: Determinants of trust in the federal government

Dependent Variable: Trust in Government	**Financial Crisis**		**COVID-19 Crisis**	
	2012	**2013**	**2014**	**2019 and 2020**
Married	0.028 (0.019)	-0.009 (0.019)	-0.026 (0.028)	0.074** (0.030)
Employed	0.008 (0.020)	0.028 (0.020)	-0.022 (0.029)	0.157*** (0.034)
Age	0.001* (0.001)	0.001** (0.001)	0.002** (0.001)	0.001 (0.001)
Democrat	0.346*** (0.025)	0.295*** (0.025)	0.284*** (0.038)	-0.012 (0.037)
Others	0.056*** (0.020)	0.052*** (0.020)	0.091*** (0.030)	-0.103*** (0.035)
Register	-0.070** (0.030)	-0.053* (0.029)	-0.035 (0.037)	0.030 (0.049)
Male	-0.013 (0.018)	0.029 (0.018)	0.010 (0.026)	-0.001 (0.029)
White Non-Hispanic	-0.070 (0.048)	-0.071 (0.048)	0.081* (0.047)	-0.051 (0.060)
Black Non-Hispanic	0.033 (0.057)	-0.005 (0.054)	0.144** (0.062)	-0.095 (0.074)
White Hispanic	0.200*** (0.068)	0.119* (0.065)	0.447*** (0.076)	-0.005 (0.082)
Black Hispanic	0.311** (0.137)	0.082 (0.095)	0.364** (0.148)	0.434** (0.171)
Unspecified Hispanic	0.074 (0.125)	0.102 (0.122)	0.346*** (0.104)	0.003 (0.113)
Income	-0.001 (0.004)	-0.005 (0.004)	0.000 (0.006)	-0.014** (0.007)
Education	0.030*** (0.006)	0.021*** (0.006)	0.030*** (0.009)	0.006 (0.011)
Q2	0.009 (0.024)	0.022 (0.026)	–	–
Q3	0.052** (0.025)	-0.037 (0.025)	–	–
Q4	-0.006 (0.024)	-0.040* (0.024)	-0.011 (0.025)	
Year = 2020	–	–	–	0.091*** (0.029)
State F.E	Y	Y	Y	Y
Observations	2207	2251	1114	1097

Notes: The Table presents marginal effects from a logit regression on the determinants of trust in the federal government. Standard errors (in brackets) are robust to arbitrary heteroskedasticity, clustered at the state level. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.
Source: own elaboration in STATA.

Table 6. Placebo test – Euro area: Trust in national government

Dependent Variable: Trust in government	Financial Crisis		COVID-19 Crisis	
	1	2	3	4
Married (ref: unmarried)	0.023*** (0.006)	0.031*** (0.006)	0.036*** (0.006)	0.029*** (0.006)
Employed (ref: unemployed)	0.087*** (0.007)	0.053*** (0.007)	0.025*** (0.007)	0.011 (0.007)
Age				
25-34 years	0.048*** (0.012)	0.022*** (0.012)	-0.052*** (0.014)	-0.060*** (0.013)
35-44 years	0.072*** (0.013)	0.041*** (0.013)	-0.060*** (0.014)	-0.068*** (0.013)
45-54 years	-0.082*** (0.013)	0.039*** (0.013)	-0.053*** (0.013)	-0.065*** (0.013)
55-64 years	0.138*** (0.013)	0.072*** (0.013)	-0.03 (0.013)	-0.029*** (0.012)
65 years and older (ref: 15-24 years)	0.265*** (0.014)	0.175*** (0.014)	0.084*** (0.012)	0.042*** (0.012)
Male (ref: female)	0.012** (0.006)	0.012** (0.005)	0.002 (0.006)	-0.004 (0.005)
Education	0.036*** (0.002)	0.024*** (0.002)	0.021*** 50.001)	0.014*** (0.001)
November 2012 (ref: May 2012)	-0.021*** (0.006)	-0.020*** (0.005)	–	–
August 2020 (ref: November – December 2019)	–	–	-0.025*** (0.008)	-0.06*** (0.008)
Country F.E	N	Y	N	Y
Observations	28995	28995	29824	29824

Notes: The Table presents marginal effects from a logit regression on the determinants of trust in the national government. Standard errors (in brackets) are robust to arbitrary heteroskedasticity, clustered at the country level. *, **, and *** indicate statistical significance at the 10%, 5% and 1% level, respectively.
Source: own elaboration in STATA.

CONCLUSIONS

Our findings suggest that the 'taper tantrum' speech by Ben Bernanke negatively impacted the trust in the Fed, whereas the 'whatever it takes' speech by Mario Draghi significantly increased the trust in the ECB. On the other hand, significant policy reactions to the COVID-19 pandemic did not affect trust in central banks on either side of the Atlantic, while it affected one of the government(s), as they have probably been considered as 'dominating' the respective central bank in such circumstances. Thus, we were able to positively verify the research hypothesis H1 that salient monetary policy decisions may impact the general public's trust towards the central bank. However, under some communication mishaps (surrounding 'taper tantrum') the effect turned out to be negative, whereas the governments' dominance (over the COVID-19 policy reaction and communication) resulted in a muted response of trust. These remarks confirm the research hypothesis H2.

Overall, our results are striking and, for policymakers, indicate that, if non-experts can be reached in extraordinary times (what we have called here 'salient decisions'), it can however never be considered that their attention is easy to keep, especially in periods where the monetary and fiscal policies are aligned – in which case our results show that the public attributes the moves to the government, not to the central bank. Our results can thus be considered as a rejoinder to Romer and Romer's (2013) conclusion: as central banks have to navigate between humility and hubris, one of the pitfalls to avoid would be to consider that non-experts' trust is established. Central banks have to win the hearts and minds of large audiences. This is even more important as people tend to have biased beliefs about

economics and economic policies (Stantcheva, 2020), and communicating rightly thus has far-reaching consequences, as shown for example by the experiment reported by Mochhoury (2023).

Nevertheless, it has to be considered that our results are probably partial, as it has also been shown in the literature that, as long as inflation is low, households do not pay attention to monetary policy. For instance, Hayo and Neumeier (2020) show that in New Zealand, the country with the longest tradition of inflation targeting, even after a public debate on a reform of the monetary policy objectives, less than 10% of the population are able to state the official inflation target. It is also possible that central bank trust may not easily change, even when people are delivered information about monetary policy. For instance, Brouwer and de Haan (2022) do not find any impact in their information treatment and Hayo and Méon (2024) only do after conditioning a specific group of respondents. This provides a limitation to our study.

Another potential limitation is that we assumed that trust in the central bank mainly arises out of monetary policy communications. However, as it can be claimed that people's understanding of monetary policy is rather unclear, other events may potentially influence their trust. For example, Hayo and Neuenkirch (2014) found that the most important predictor of trust in the ECB is trust in institutions. It could then happen that an increase in people's institutional trust benefits the central bank.

As a consequence, an interesting extension of our study would be also to compare the reaction of 'laymen' and 'expert' opinions in the spirit of the research on the effects of free trade areas by Beck *et al.* (2019).

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Appendix I: Trust in the FED

Variable	Definition
Trust in the FED	Dummy variable code as 1 if respondent reports trust in the FED and 0 otherwise.
Married	Dummy variable coded as 1 if respondent is married and 0 otherwise.
Employed	Employed is dummy variable and coded as 1 if respondent is employed and 0 otherwise.
Age	Age of respondent.
Political affiliation	The political affiliation of respondent: Republican, Democrat, and other.
Registered voter	Dummy variable coded as 1 if respondent is registered to vote and 0 otherwise.
Male	Male vs. female. It is a dummy variable coded as 1 if respondent is male and 0 otherwise.
Ethnicity	Ethnicity of respondent: White Non-Hispanic, Black Non-Hispanic, White Hispanic, Black Hispanic, Unspecified Hispanic and other / mixed.
Income	An ordinal variable ranging from 1 to 11 for different ranges of income.
Education	Highest school class that is passed by respondent.

Variable	Definition
Trust in ECB	Dummy variable code as 1 if respondent tends to trust ECB and 0 otherwise.
Married	Dummy variable coded as 1 if respondent is married and 0 otherwise.
Employed	Employed is dummy variable and coded as 1 if respondent is employed and 0 otherwise.
Age	Age of respondent in different categories.
Male	Male vs. female. It is a dummy variable coded as 1 if respondent is male and 0 otherwise.
Income	Dummy variable code as 1 if household live in a rural area and 0 otherwise. Source: Pakistan Time Use Survey.
Education	A variable indicating the different education levels of respondents.

Appendix II: Trust in the ECB

Table A3. Descriptive statistics – Trust in the Fed

Variables	Financial Crisis				Covid-19 Crisis			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Married	0.572	0.495	0	1	0.553	0.497	0	1
Employed	0.564	0.496	0	1	0.624	0.485	0	1
Age	55.300	16.903	18	99	54.001	18.215	18	99
Democrat	0.346	0.476	0	1	0.359	0.480	0	1
Others	0.358	0.479	0	1	0.325	0.469	0	1
Register	0.875	0.331	0	1	0.895	0.307	0	1
Male	0.513	0.500	0	1	0.531	0.499	0	1
White Non-Hispanic	0.798	0.402	0	1	0.758	0.428	0	1
Black Non-Hispanic	0.099	0.299	0	1	0.068	0.251	0	1
White Hispanic	0.049	0.217	0	1	0.065	0.246	0	1
Black Hispanic	0.008	0.089	0	1	0.007	0.085	0	1
Unspecified Hispanic	0.005	0.072	0	1	0.030	0.171	0	1
Income	6.687	2.830	1	11	7.395	2.604	1	11
Education	3.521	1.628	1	6	3.939	1.532	1	6
Observations	2108	2108	2108	2108	1095	1095	1095	1095

Source: Authors' calculations based on the Financial Trust Index project data.

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The contribution share of authors is equal and amounted to 25% for each of them.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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