Anchoring Households' Inflation Expectations When Inflation Is High

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Abstract

This paper explores communication strategies for anchoring households' medium-term inflation expectations in a high inflation environment. We conducted a survey experiment with a representative sample of 4,000 German households at the height of the recent inflation surge in early 2023, with information treatments including a qualitative statement by the ECB president and quantitative information about the ECB's inflation target or projected inflation. Inflation projections are most effective, but combining information about the target with a qualitative statement also significantly improves anchoring. The treatment effects are particularly pronounced among respondents with high financial literacy and high trust in the central bank.

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"Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough for many people across the euro area - that is why we have to raise interest rates to tame inflation." Christine Lagarde, President of the ECB, October 31, 2022[1]

1   Introduction

Many advanced economies experienced persistently high inflation following the COVID-19 pandemic and the Russian attack on Ukraine. This led to concerns about the de-anchoring of inflation expectations in the population. De-anchored medium-term inflation expectations might raise the persistence of the inflation surge, thus further challenging central banks' efforts to return to the inflation target. To manage and anchor inflation expectations, central banks have started in recent years to increasingly communicate with the general public, for instance by providing information about inflation targets, policy rates, inflation projections as well as explanations for monetary policy decisions (Blinder et al., 2024; Dräger, 2023). In this paper, we thus ask which communication strategies are most effective in anchoring households' inflation expectations in times of high inflation.

To address this question, we conducted a randomized control trial (RCT) with a representative sample of about 4,000 German households in February, 2023, where we randomly allocated survey respondents into five different treatment groups and a control group. At the time of the RCT, the last available information on current inflation was from January, 2023, where inflation was measured at 8.7%, very close to the peak rates of 8.8% in October and November, 2022. The RCT was thus conducted at the height of the inflation surge in Germany, following a prolonged period of rising inflation rates that started around July, 2021. In this environment of high inflation, we test the effectiveness of different types of ECB communication on the anchoring of respondents' medium-term inflation expectations. The first treatment (T1 – *ECB inflation projections*) provides survey respondents with the average inflation rate in the euro area for 2022 and with the ECB's projections for euro area inflation in 2023, 2024 and 2025. The second treatment (T2 – *ECB target*) informs respondents about the ECB's inflation target. Treatments T1 and T2 are thus quantitative in nature and are regularly communicated with the aim of anchoring inflation expectations. The third treatment (T3 – *ECB president's statement*) gives a recent quote by ECB president Christine Lagarde, where she stresses the ECB's commitment to fight inflation, acknowledging that the current situation is difficult for many people and explaining that the ECB has to raise interest rates in order to tame inflation. This is thus a qualitative type of information. The last two treatments combine the two quantitative treatments in T1 and T2 with the qualitative statement

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[1]This text originates from Christine Lagarde's Twitter post on October 31, 2022. For more information, see https://twitter.com/Lagarde/status/1587083611677003777.

in T3 in order to measure whether qualitative treatments may strengthen the impact of quantitative information on the degree of anchoring. The control group receives no information.

While the concept of anchored inflation expectations is undisputed in theory, there exists no unified empirical measure of anchored expectations (Afrouzi et al., 2015; Dräger and Lamla, 2018). We thus analyze different measures. Under the first, admittedly strong, definition, fully anchored medium-term expectations should stay equal to the target of two percent even in the face of (transitory) shocks (Afrouzi et al., 2015). Since this is likely not fully the case in reality, we evaluate whether the information treatments reduce the absolute distance of posterior expectations from the target.

Second, we analyze whether the treatments reduce the individual forecast uncertainty of medium-term inflation expectations three and five years ahead. This aspect of anchored expectations argues that individuals with anchored expectations should exhibit low uncertainty around their medium-term inflation forecasts and also low cross-sectional disagreement (Afrouzi et al., 2015). Since we only evaluate one cross-section in our study, we focus on the former aspect regarding individual forecast uncertainty.

Our results show that in the full sample, treatment T1 showing ECB inflation projections with a downward trend until 2025 significantly reduces the absolute deviation in posterior expectations from target as well as the individual forecast uncertainty for both expectations three and five years ahead compared to the control group. The other treatments T2 and T3 are not effective by themselves in anchoring respondents' expectations in the full sample. However, combining quantitative treatments with the qualitative statement can strengthen the effect: while the projections do not become significantly more effective in anchoring expectations when the statement is added, combining the information about the inflation target and the statement leads to a significant improvement in the degree of anchoring. Since actual inflation was far from target at the time of our survey, this implies that the qualitative statement helped to improve the credibility of the ECB's commitment to the target. Taking into account the interaction of treatments with respondents' prior inflation expectations shows that all five treatments where informative in the sense that they reduced respondents' reliance on their priors. However, the treatments including containing the ECB projections reduce the reliance on priors significantly more compared to the other treatments.

Checking for potential heterogeneity in treatment effects, we find that the effectiveness of the information treatments differs across both levels of financial literacy and levels of trust in the ECB. All information treatments significantly improve the anchoring of medium-term inflation expectations in the sample with high financial literacy, while we find no treatment effects for those with low financial literacy. This implies that a certain level of financial knowledge is necessary in order for the information provided to affect posterior expectations in the desired way. The heterogeneity with respect to financial

literacy cannot be explained by heterogeneity regarding the general level of education or specific knowledge about the ECB's monetary policy. Moreover, we find that the treatments not containing projections only significantly improve the anchoring of posterior expectations for those with high trust in the ECB, suggesting that a certain degree of trust in the institution is necessary for this type of information to be effective in anchoring expectations when inflation is far from target. The heterogeneity of treatment effects regarding trust in the ECB is similar to heterogeneity with respect to respondents' social trust, but not related to heterogeneity regarding risk preferences or patience. Other personal characteristics like optimism, gender, age, income or region also do not explain the heterogeneity in treatment effects with respect to financial literacy or trust in the central bank.

In order to evaluate the transmission channels of the information treatments, we use survey questions asking respondents whether they found the information new and whether it was informative. Overall, a significantly higher share of respondents regards the treatment T1 showing the ECB inflation projections as both new and informative compared to the other treatments. Interestingly, the treatment showing the ECB's inflation target (T2) and the treatment combining projections with the qualitative statement (T4) are ranked about the same in terms of informativeness. While respondents with high financial literacy are less likely to view most of the treatments as new compared to those with low literacy, they are significantly more likely to find the treatment T1 (ECB projections) informative. This reiterates our previous finding that literacy improves the effectiveness of information treatments in our sample. Even more importantly, while respondents with high trust in the ECB are not significantly more likely to view the treatments as new information, they rank all treatments significantly higher in terms of their informativeness compared to those with low trust. This shows that trust in the central bank is a crucial ingredient for the effectiveness of both quantitative and qualitative information to affect the anchoring of expectations.

We further analyze the persistence of treatment effects on the anchoring of households' expectations by running a follow-up survey wave three months later in May, 2023. In line with similar RCT studies (Coibion et al., 2023, 2022; Dräger et al., 2024), we find no significant average treatment effects after three months. However, interacting the treatment dummies with respondents' initial prior expectations in February, 2023, shows that respondents receiving the treatment including the qualitative statement (T3) as well as the combination of projections and the qualitative statement (T4) still put significantly lower weight on their initial priors after three months. Crucially, though, those who received only quantitative information on either inflation projections or the target, reverse on this information after three months and put again a larger weight on their prior. Even though actual inflation fell in those three months in line with the projections, this suggests that respondents did not perceive this fully and so reversed on the information

originally provided in later months. Similar to the results in Dräger et al. (2024), this finding suggests that quantitative information can be powerful for households' inflation expectations on impact, but it is not clear *ex ante* whether this effect will persist and in times of strong inflation dynamics, the effect might even be reversed.

Our work closely relates and contributes to the growing and rich body of literature that studies the impact of of central bank communication on the formation of inflation expectations using RCT interventions within surveys (Coibion et al., 2018; Binder and Rodrigue, 2018; Coibion et al., 2022; Brouwer and de Haan, 2022a; Dräger et al., 2024). In the study of consumer and professional surveys, experts have been found to scrutinize every central bank statement, and exhibit on average well anchored inflation expectations (Blinder et al., 2024). On the contrary, households and firms seem to pay little attention to central bank communication, hold skewed inflation expectations and have on average medium to long-term inflation expectations that are not aligned with central bank targets (Coibion et al., 2020). The studies by Haldane et al. (2020) and Coibion et al. (2018) attribute households' and firms' misaligned inflation expectation partly to the fact that they might be under-informed, either due to the complexity of macroeconomic relationships or because non-experts simply have other things to think about in their daily activities.

While many previous RCT studies were conducted in a low inflation regime, recently more studies evaluate the impact of information treatments on inflation expectations in a more dynamic inflation environment. Investigating multiple rounds of RCT surveys across multiple countries with differing inflation environments, Weber et al. (2023) find that as inflation rates rise, both individuals and firms start to pay more attention to information related to inflation. Knotek et al. (2024) conduct five waves of RCT with online surveys following the FOMC meeting. They find that informing households about the latest interest rate hike on average reduces their expectations for inflation over the next five years. Dräger et al. (2024) find that under rising inflation rates forward-looking information on inflation can dampen the spillovers to short- and long-run inflation expectations. They further demonstrate that upon discovering that the provided outlook was too optimistic, consumers reverse the effect of the treatment-specific information and start to rely more on their priors. Our study contributes to this literature by analyzing the impact of information treatments on the anchoring of households' medium-term inflation expectations at the height of the recent inflation surge.

A majority of works in the previous literature focus on quantitative information treatments, such as inflation targets, forecasts and paths (Coibion et al., 2018; Binder, 2017; Binder and Rodrigue, 2018; Coibion et al., 2022). D'Acunto et al. (2019) investigate whether central banks should talk about solely their objectives or the instruments they have in their tool kits in the service of achieving their objective, suggesting that evidence points in favor of better managed expectations using exclusively information about objectives. Other evidence suggests that stating the ECB inflation target and how it plans

to achieve it brings consumers closer to the target (Brouwer and de Haan, 2022a). Our study adds to the discussion on how effective different types of information are by testing quantitative and qualitative statements on their own as well as treatments that combine both types.

When evaluating the role of information for inflation expectations, the informativeness of the information treatment and the role it plays in the magnitude of the effects is crucial. Indeed, in all the survey designs in this literature, the information used for the treatments is publicly available and could have been already observed by respondents. This is especially true in times of high inflation, when central banking news is more salient. Similarly to Knotek et al. (2024), we control for the newness of the information explicitly. However, our analysis goes a step further and asks the respondent to also grade the level of informativeness of the information treatment. This allows us to distinguish between the role of newness and informativeness in the transmission of information.

We further contribute to the literature examining the importance of financial literacy and trust in the central bank in shaping inflation expectations (Hayo and Neuenkirch, 2014; van der Cruijsen et al., 2015; Afrouzi et al., 2015; Mellina and Schmidt, 2018; Haldane et al., 2020; Rumler and Valderrama, 2020; Stanislawska and Paloviita, 2021; Brouwer and de Haan, 2022b; Christelis et al., 2020). Consumers with higher trust levels in the institution have been found to be more responsive to central bank communication as well as more likely to have anchored expectations (Hoffmann et al., 2022; Christelis et al., 2020). Credibility, a related concept to trust in the ECB, as argued in Ehrmann et al. (2023), is found to be significantly boosted when consumers receive explanations about the rationale behind the inflation target. As the inflation rate started to rise in Germany, Coleman and Nautz (2023) tracked the ECB target credibility between February 2019 and May 2022 and documented a decline in credibility coupled with de-anchored inflation expectations. Another beneficial factor in anchoring inflation expectation has been found to be financial literacy. Indeed, higher levels of financial literacy tend to coincide with more trust in the central bank and more accurate inflation expectations (Mellina and Schmidt, 2018; Rumler and Valderrama, 2020; Dräger and Nghiem, 2023). While existing studies predominantly focus on the direct impact of financial literacy and trust on consumers' inflation expectations, our research explores the role played by these factors in the degree of effectiveness of the information treatments for the anchoring of medium-term expectations.

Finally, our study relates to the broad literature on the anchoring of both experts' and households' inflation expectations. Where previous work evaluates repeated cross-sections of survey data (Beechey et al., 2011; Afrouzi et al., 2015; Dräger and Lamla, 2018) or expectations derived from financial markets (Gürkaynak et al., 2010; Jochmann et al., 2010; Ehrmann et al., 2011; Strohsal et al., 2016), we estimate causal effects information

treatments in a RCT on the degree of individual inflation expectations within one survey cross-section.

The rest of our paper is organized as follows. Section 2 discusses the set-up of the survey and the RCT experiment as well as some initial summary statistics. Section 3 presents the results of the empirical analysis of the treatment effects and section 4 concludes.

2 Survey experimental design and data

We conducted our survey using an internet-based panel provided by *Bilendi & respondi*, consisting of 4,000 German consumers during February 3-20, 2023. This sample is representative of the German population in terms of age, gender, income, and region. Three months later, from May 2-16, 2023, we conducted a follow-up survey, retaining 2,937 respondents from the initial wave.[2] Following Binder (2020), respondents were eligible to participate in the survey only if they responded affirmatively to the following question:

> We care about the quality of our data. In order for us to get the most accurate measures of your knowledge and opinions, it is important that you thoughtfully provide your best answers to each question in this survey. Do you commit to thoughtfully provide your best answers to each question in this survey?

In the first wave, our survey starts with a set of questions designed to elicit consumers' demographic characteristics.[3] We then ask three questions about financial literacy, including questions about (1) inflation and real consumption, (2) interest rate compounding, and (3) risk diversification. These questions are taken and slightly modified from Burke and Manz (2014) and Lusardi and Mitchell (2011). We then construct an index of financial literacy counting the number of correct answers to these three questions. Individuals who answer fewer than two financial literacy questions correctly are categorized as having low financial literacy. Conversely, those who answered all three financial literacy questions correctly are classified as having high financial literacy.

Before providing information treatments, we ask all respondents about their (prior) inflation expectations, measured as point forecast for average inflation in Germany in the years 2023, 2025, and 2027, respectively. For our analysis, we focus on medium-term expectations for the years 2025 and 2027. Since the survey was conducted in early 2023, we term these expectations three and five years ahead.

Additionally, before the treatments, we measure respondents' trust, economic preferences as well as behavioral traits such as patience and optimism using qualitative scales

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[2]Note that the sample size for our analysis is significantly lower at about 2,300-2,500 for the first wave and about 1,700-1,900 for the second wave. This is because many respondents chose not to report any prior inflation expectations.

[3]The full questionnaire is available in Appendix C.

between 0 and 10. For instance, we ask respondents to indicate their trust in the ECB on a scale ranging from 0 to 10, where 0 means no trust at all, while 10 means they fully trust in the ECB. We categorize individuals with low trust in the ECB as those who expressed their trust within the range of 0 to 3. Conversely, individuals were classified as having high trust in the ECB if they indicated their trust within the range of 7 to 10.[4]

We then divided the sample randomly into six groups, including one control group that did not receive any information, while the other five groups each received one of the following pieces of information:

1. **T1** (ECB inflation projections)[5]: Average inflation in the euro zone in 2022 was 8.4%. The European Central Bank (ECB) expects average inflation in the euro zone to be 6.3% in 2023, 3.4% in 2024 and 2.3% in 2025.

2. **T2** (ECB target)[6]: The European Central Bank (ECB) is committed to setting its monetary policy to ensure that inflation stabilizes at its 2% target in the medium term.

3. **T3** (ECB president's statement)[7]: The chairwoman of the European Central Bank (ECB) said "Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough for many people across the euro area - that is why we have to raise interest rates to tame inflation."

4. **T4**: (T1 +T3) Average inflation in the euro zone in 2022 was 8.4%. The European Central Bank (ECB) expects average inflation in the euro zone to be 6.3% in 2023, 3.4% in 2024 and 2.3% in 2025.

   The chairwoman of the European Central Bank (ECB) said "Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough for many people across the euro area - that is why we have to raise interest rates to tame inflation."

5. **T5**: (T2 + T3) The European Central Bank (ECB) is committed to setting its monetary policy to ensure that inflation stabilizes at its 2% target in the medium term.

   The chairwoman of the European Central Bank (ECB) said "Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough

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[4]The median trust expressed in our sample is at the middle range value of 5.

[5]This text originates from the ECB's monetary policy decisions, press released on December 15, 2022. For more information, see https://www.ecb.europa.eu/press/pr/date/2022/html/ecb.mp221215 f3461d7b6e.en.html.

[6]This text originates from the ECB's monetary policy strategy statement released on July 8, 2021 (paragraph 8). For more information, see https://www.ecb.europa.eu/home/search/review/html/ecb.strategyreview_monpol_strategy_statement.en.html.

[7]This text originates from Christine Lagarde's Twitter post on October 31, 2022. For more information, see https://twitter.com/Lagarde/status/1587083611677003777.

for many people across the euro area - that is why we have to raise interest rates to tame inflation."

Table 1: Summary Statistics: Control Group

Variable	Mean	Median	Std. Dev.	Min.	Max.	N
$\pi^{prior,3y}$	5.44	5	3.35	-5	20	457
$\pi^{posterior,3y}$	5.86	6	3.42	-2.8	23.5	428
$\lvert\pi^{posterior,3y} - 2\rvert$	4.02	4	2.92	0	19.25	421
$\pi^{prior,5y}$	4.78	5	3.78	-5	25	411
$\pi^{posterior,5y}$	5.05	5	3.29	-5	20.88	379
$\lvert\pi^{posterior,5y} - 2\rvert$	3.27	3.2	2.79	0	18.5	378

Note: Wave 1, February 2023. Huber-robust mean, standard deviation, as well as the minimum and maximum values are reported.

For those who received the information treatment, respondents were asked to indicate whether the provided information was new to them (yes or no) and to rate its informativeness on a scale from 0 to 10, where 0 signifies "not informative at all", and 10 represents "very informative".

We then asked all respondents again about their (posterior) inflation expectations. To avoid inducing survey fatigue or confusion by asking the same questions twice (D'Acunto et al., 2023), we follow Christelis et al. (2020) and measure posterior expectations by asking about respondents' expected minimum and maximum values of average inflation in 2023, 2025 and 2027 and prompting them to provide the probability on the scale from 0% to 100% that their inflation expectations will be higher than the mid-point between the reported minimum and maximum. We use this information to calculate the weighted mean and the standard deviation of posterior inflation expectations. The level of anchoring of inflation expectations is measured by the absolute distance of medium-run expectations from the 2% target of the ECB and the uncertainty of their predictions, measured by the weighted standard deviations.

In order to test the randomization across treatment groups, we report balance tests for both waves in Tables A1-A2 in the appendix. We conduct the tests with respect to all demographic characteristics used as controls in our regression analysis, namely age, gender, the log of household income, whether respondents currently live in East Germany, whether respondents hold at least a high school diploma, whether they are home owners and the number of persons living within the household. We generally find that the treatment groups do not significantly differ from the control group according to these characteristics. For the first wave, there are marginally significant differences in one treatment group with respect to gender, region and homeownership, whereas in the second wave there is only one marginally significant difference with respect to homeownership.

Figure 1: Inflation Expectations Distribution among the Control Group: Prior vs. Posterior

Kernel density estimate

kernel = epanechnikov, bandwidth = 1.1335

(a) *Inflation expectations 3 years ahead*

Kernel density estimate

kernel = epanechnikov, bandwidth = 1.0907
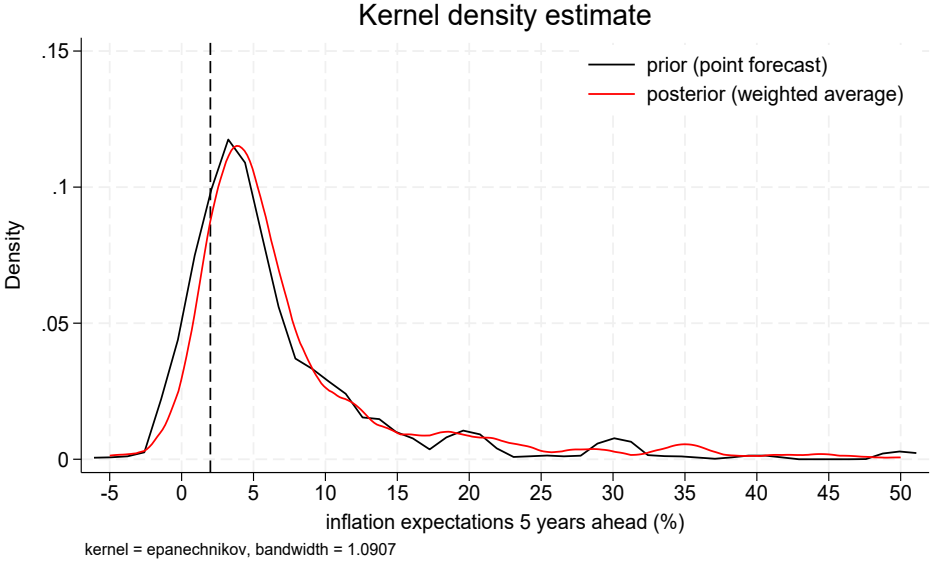
(b) *Inflation expectations 5 years ahead*

Note: Wave 1, February 2023.

Overall, we thus conclude that the randomization across these demographic characteristics worked well in all treatment groups.

To mitigate the effect of outliers, we first exclude individuals with inflation expectations below -5% or above 50% in our analysis. We further apply Huber (1964) weights in all regressions in order to endogenously weight outliers in expectations. Table 1 shows summary statistics with the median as well as Huber robust mean and standard deviation

9

Figure 2: Distributions of Posterior Inflation Expectations across Control and Treatment Groups
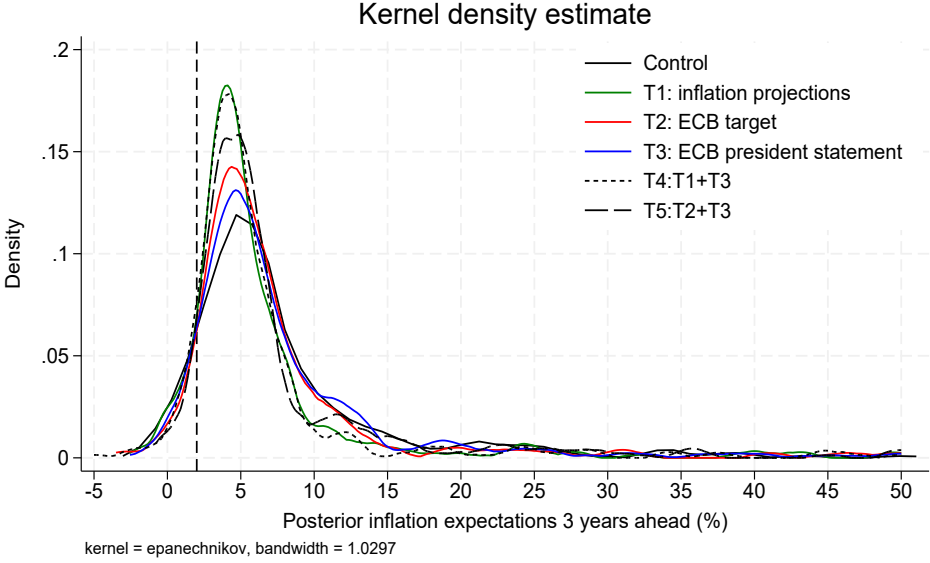
(a) *Inflation expectations 3 years ahead*
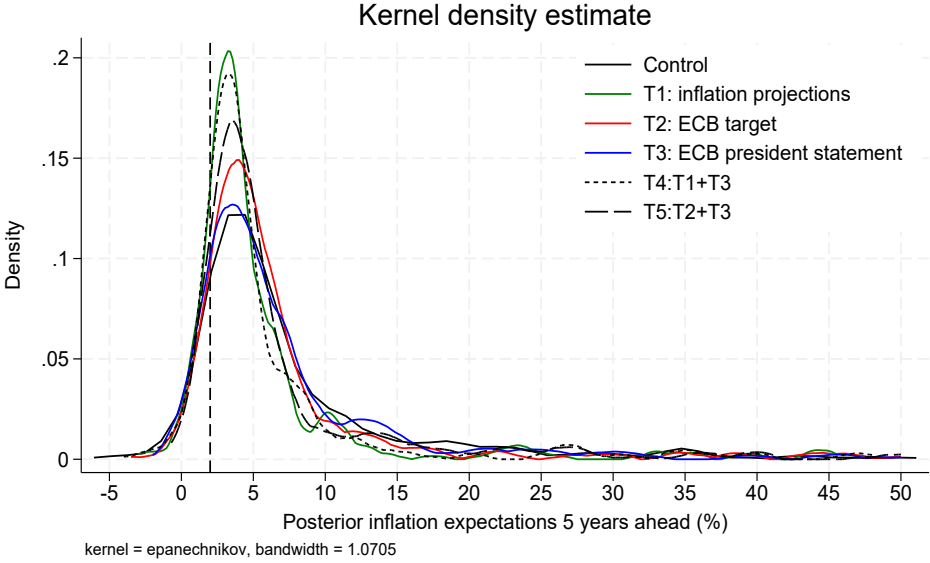
(b) *Inflation expectations 5 years ahead*

Note: Wave 1, February 2023.

for inflation expectations in the control group. Figure 1 shows the distribution of inflation expectations measured as point forecast and weighted average for the control group. Both Table 1 and Figure 1 show that the prior and posterior measurement of inflation expectations for the control group yield comparable outcomes. This is as expected, since the control group did not receive any information treatment. Moreover, we observe that in February 2023, German consumers showed strong de-anchoring in inflation expecta-

tions. The mean of inflation expectations 3 and 5 years ahead hovers at about 5.5-5.9% and 4.8-5.1%, respectively. This corresponds with an absolute distance of medium-term inflation expectations from the 2% inflation target at about 4 and 3.3 percentage points.

Before delving into regression estimations, we visualize the distributions of posterior inflation expectations for 3 and 5 years ahead across both control and treatment groups in Figure 2. Notably, all groups exhibit right-skewed distributions with a long right tail. However, we find that mean forecasts in the treatment groups tend to converge closer to the inflation target of 2%. This effect is particularly prominent for those who received the inflation projections treatment (T1) or the treatment combining projections with the qualitative statement (T4), while the effect is least pronounced for those who received the treatment including the qualitative statement from the ECB president (T3).

3 Results

3.1 Average Treatment Effects on the Distance from Target and Individual Forecast Uncertainty

In this section, we discuss the average treatment effects on our first two measures of anchored expectations, the absolute distance of posterior expectations from the target of 2 percent and the individual posterior inflation forecast uncertainty.

Equation (1) estimates the average treatment effects on the distance of posterior medium-term inflation expectations from target:

$$|\pi_{i,h}^{post} - 2| = \alpha + \beta|\pi_{i,h}^{prior} - 2| + \sum_{j=1}^{5} \eta_j Treatment_{j,i} + \zeta X_i + \epsilon_i \qquad (1)$$

Similarly, equation (2) measures the treatment effects on the posterior uncertainty of medium-term inflation forecasts:

$$\sigma\pi_{i,h}^{post} = \alpha + \beta\pi_{i,h}^{prior} + \sum_{j=1}^{5} \eta_j Treatment_{j,i} + \zeta X_i + \epsilon_i, \qquad (2)$$

where $|\pi_{i,h}^{prior} - 2|$ and $|\pi_{i,h}^{post} - 2|$ denote the absolute deviations from the target of 2 percent of individual i's prior and posterior expectations with horizon h, $\sigma\pi_{i,h}^{post}$ is the individual standard deviation of posterior expectations (not available for prior expectations), $\pi_{i,h}^{prior}$ measures prior expectations, $Treatment_{j,i}$ are the five treatment dummies for T1-T5 and X_i is a vector of socio-demographic control variables, including age, gender, education, household income, homeownership status, household size, and region.

We estimate both (1) and (2) using Huber (1964) robust regressions, in order to endogenously account for outliers in prior and posterior expectations.

11

Table 2 shows the results, where columns (1) and (2) present results from estimations of (1) and (2) for posterior expectations three years ahead, and columns (3) and (4) show results for expectations five years, respectively. Figure 3 shows the treatment effects graphically. Controlling for prior expectations as well as a range of socio-demographic controls, we find that informing respondents about the ECB's inflation projections, which forecast a fall in inflation from the high rates in 2022 to rates close to target in 2025, has a signficant impact on both the distance from target and the uncertainty of posterior expectations. Relative to the control group, this treatment significantly reduces the average distance from target by about 70 (80) basis points for three-year-ahead (five-year-ahead) expectations, and reduces posterior forecast uncertainty by about 0.07-0.08 standard deviations. By contrast, neither the information about the ECB's inflation target (T2), nor the qualitative statement about the ECB's commitment to the target of price stability (T3) by themselves affect the anchoring of posterior expectations in relation to the control group. This could imply that respondents realize that current inflation in early 2023 was far from target, so that this information by itself was not sufficient to affect the degree of anchoring in relation to the control group. Similarly, the qualitative commitment statement by ECB president Christine Lagarde seems not effective by itself in anchoring expectations. We also find that adding the statement of commitment to the ECB's projections (T4) yields similar results in anchoring of level expectations as well as forecast uncertainty in comparison to simply providing inflation projections (T1). However, the combination of the information about the ECB's inflation target with the statement of commitment (T5) yields a significant improvement in anchoring relative to the control group, even though this effect remains below the improvements in anchoring generated by the inflation projections.

In the appendix, we present additional results evaluating the robustness of our results in Table 2 concerning the time respondents spent reading the information treatments. We exclude participants who spent less than 7 seconds or less than 10 seconds on the treatment text, which corresponds to dropping the 5% and 10% of the sample with the lowest time spent reading the treatments, respectively. Table A3 demonstrates that our average treatment effects remain unchanged for expectations 3 years ahead. However, for models predicting expectations 5 years ahead, Table A4 reveals that treatment T3 about the ECB president's statement becomes marginally significant once we exclude participants who spent very little time reading the treatment. Moreover, the treatment effects on forecast uncertainty for expectations 5 years ahead becomes insignificant if we drop the lowest 10% of the sample. Nevertheless, the magnitude of the estimated effect remains similar to the baseline models. These findings overall suggest that our baseline results are not driven by participants who spent little time reading the treatments.

We also show further results evaluating potential heterogeneity of treatment effects with respect to the level of prior inflation expectations relative to the inflation target of

2%. Specifically, we examine treatment effects for the samples with prior expectations below 2%, at 2%, or above 2%. Table A5 shows the results for inflation expectations 3 years ahead. Notably, we find almost no significant treatment effects for individuals who previously held inflation expectations below or at 2%. However, it is important to acknowledge the small sample size within these two groups, which could contribute to the lack of statistical significance. Consequently, these findings suggest that the results of the overall sample are driven by those predicting inflation 3 years ahead above 2%.

Moving to table A6, which presents the results for inflation expectations 5 years ahead, we observe a notably larger sample predicting inflation below or at 2%. Here, we find significant treatment effects in line with those in Table 2 across all three levels of prior inflation expectations. Interestingly, among those who previously predicted inflation exactly at 2% in the next 5 years, also the treatments T2 and T3 significantly reduce the deviation of posterior inflation expectations from the 2% inflation target. Furthermore, only within this group do the treatments significantly decrease the uncertainty of inflation expectations relative to the control group.

Table 2: Average Treatment Effects on Posterior Inflation Expectations

	(1)	(2)	(3)	(4)
	3 years ahead		5 years ahead	
	$\lvert\pi^{post,3y}-2\rvert$	$\sigma\pi^{post,3y}$	$\lvert\pi^{post,5y}-2\rvert$	$\sigma\pi^{post,5y}$
$\lvert\pi^{prior}-2\rvert$	0.60***		0.68***	
	(0.01)		(0.01)	
π^{prior}		0.012***		0.018***
		(0.00)		(0.00)
T1: inflation projections	-0.70***	-0.078**	-0.82***	-0.070*
	(0.14)	(0.04)	(0.14)	(0.04)
T2: ECB target	-0.17	-0.037	-0.18	-0.043
	(0.14)	(0.04)	(0.13)	(0.04)
T3: ECB president statement	-0.0082	0.026	-0.18	-0.0014
	(0.14)	(0.04)	(0.13)	(0.04)
T4: T1+T3	-0.78***	-0.089**	-0.77***	-0.067*
	(0.14)	(0.04)	(0.13)	(0.04)
T5: T2+T3	-0.37***	-0.069*	-0.50***	-0.032
	(0.14)	(0.04)	(0.13)	(0.04)
N observations	2572	2572	2312	2312
R^2	0.811	0.097	0.883	0.118

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 3: Average Treatment Effects on Posterior Inflation Expectations
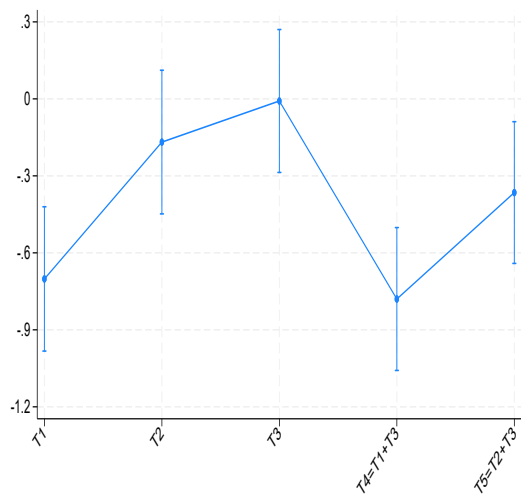
(a) *Inflation Expectations 3 years ahead*
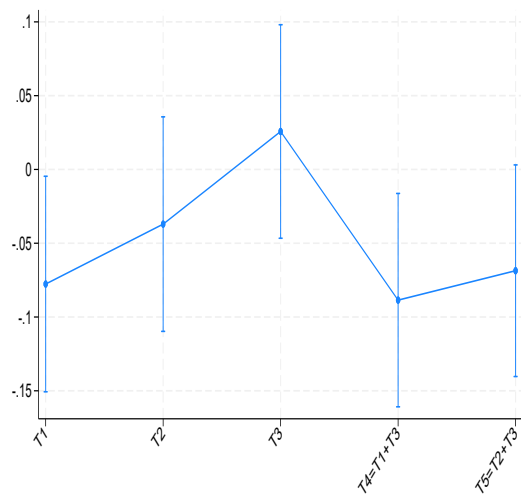
(b) *Uncertainty of Inflation Expectations 3 years ahead*
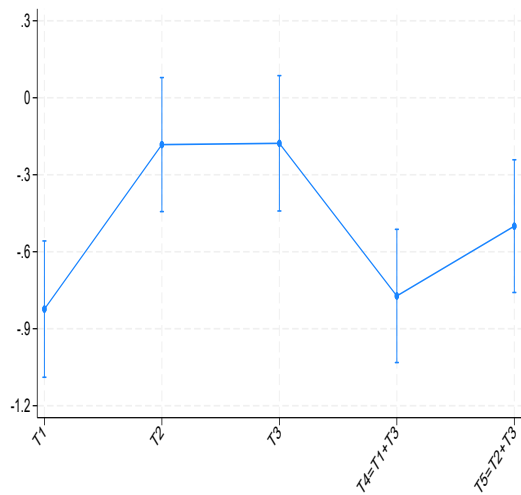
(c) *Inflation Expectations 5 years ahead*
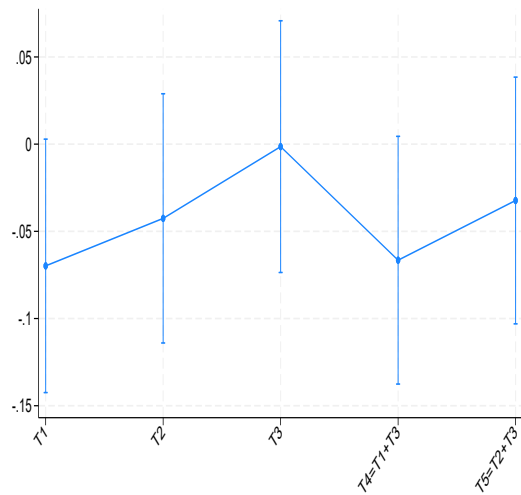
(d) *Uncertainty of Inflation Expectations 5 years ahead*

Note: All estimates are for wave 1 with 95% confidence intervals from Table 2.

14

3.2 Treatment Effects: Bayesian Updating Approach

Following Coibion et al., 2022, 2023 as well as Coibion et al., 2023, we next study the interaction of treatment effects with prior expectations. This allows us to account for heterogeneity in treatment effects depending on the prior degree of anchoring, i.e. the absolute prior deviation from target. Moreover, this specification may be interpreted in terms of Bayesian belief formation, where posterior beliefs are formed as a weighted average between prior beliefs and the information signal:

$$belief^{post} = G \times information + (1 - G) \times belief^{prior} \qquad (3)$$

In our study, prior and posterior beliefs are formed regarding the anchoring of expectations. In our specification, this refers to the absolute distance of expectations three and five years ahead from the target, respectively. The information treatments are the signals. For the control group, we would thus expect posterior beliefs to be equal to prior beliefs, since no information signal is provided. However, as discussed also in Coibion et al., 2022, 2023 as well as Coibion et al., 2023, since we measure prior and posterior beliefs with different questions in order to avoid survey fatigue, the correlation may be less than one. We estimate the relation in (3) for our set-up as follows:

$$|\pi_i^{post} - 2| = \alpha + \beta|\pi_i^{prior} - 2| + \sum_{j=1}^{5} \eta_j Treatment_{j,i}$$

$$+ \sum_{j=1}^{5} \lambda_j Treatment_{j,i} \times |\pi_i^{prior} - 2| + \zeta X_i + \epsilon_i \qquad (4)$$

The coefficient β estimates the persistence in expectations (measured as absolute distance from target) with respect to prior expectations within the control group. The sum of coefficients $\beta + \lambda_j$ then measures heterogeneity in the persistence relative to prior expectations across treatment groups. Thus, a negative λ_j coefficient for any treatment j implies that respondents in this treatment put a relatively lower weight on prior expectations compared to those in the control group. Thus, the treatment can be regarded as informative according to equation (3).

As before, we estimate (4) using Huber (1964) robust regressions. Figure 4 shows binscatter plots based on the Huber weights from (4). We also report the estimation results separately in Table 3. As expected, we observe a positive correlation between prior and posterior deviations in expectations from target with a correlation close to one. In line with our results from Table 2, the binscatter plots for expectations three and five years ahead are very similar. Also in line with the results above, we observe that respondents in T4 and T1 put significantly lower weight on the prior deviation

of expectations from target for any given level of prior anchoring. This reiterates our earlier finding that information about the downward trajectory in inflation projections by the ECB is particulary powerful in anchoring medium-term expectations. Interestingly, extending the signal of the projections with a qualitative statement of commitment reduces the dependence of respondents on the prior, particularly for expectations five years ahead. However, combining the qualitative statement with the information about the ECB's inflation target still yields a stronger impact on the anchoring, at least in the case of expectations three years ahead.

Figure 4: Updating of Inflation Beliefs by Information Treatments
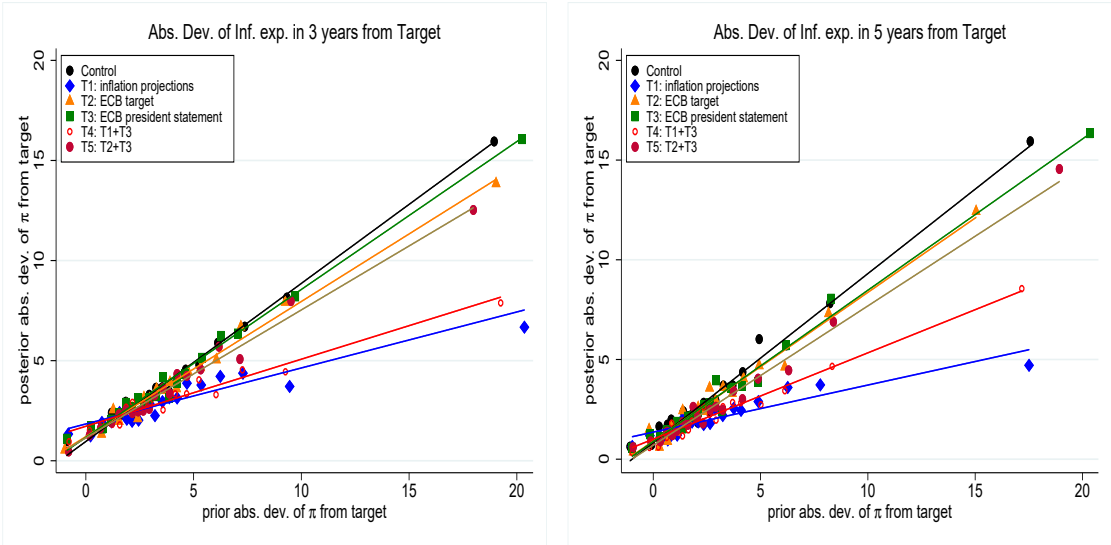
(a) *Expectations 3 years ahead*   (b) *Expectations 5 years ahead*

Note: All estimates are for wave 1. Binscatter plots weighted with Huber weights from the regressions in Table 3.

Table 3: Effect of Treatments on Posterior Expectations: Bayesian Updating Approach

	(1) $\lvert \pi^{post,3y} - 2 \rvert$	(2) $\lvert \pi^{post,5y} - 2 \rvert$
$\lvert \pi^{prior} - 2 \rvert$	0.78***	0.85***
	(0.01)	(0.01)
T1: inflation projections	0.84***	0.49***
	(0.18)	(0.16)
T2: ECB target	0.21	0.057
	(0.18)	(0.16)
T3: ECB president statement	0.15	0.039
	(0.17)	(0.16)
T4: T1+T3	0.72***	0.18
	(0.17)	(0.15)
T5: T2+T3	0.16	-0.12
	(0.17)	(0.15)
T1: inflation projections $\times \lvert \pi^{prior} - 2 \rvert$	-0.50***	-0.60***
	(0.02)	(0.02)
T2: ECB target $\times \lvert \pi^{prior} - 2 \rvert$	-0.11***	-0.097***
	(0.02)	(0.02)
T3: ECB president statement $\times \lvert \pi^{prior} - 2 \rvert$	-0.045**	-0.091***
	(0.02)	(0.02)
T4: T1+T3 $\times \lvert \pi^{prior} - 2 \rvert$	-0.45***	-0.42***
	(0.02)	(0.02)
T5: T2+T3 $\times \lvert \pi^{prior} - 2 \rvert$	-0.15***	-0.15***
	(0.02)	(0.02)
R^2	0.836	0.886
N observations	2572	2312

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.3 Heterogeneity in Treatment Effects

In this section, we study whether the treatment effects are heterogeneous across respondents' personal characteristics, focusing in particular on respondents' financial literacy and level of trust in the ECB, which were both measured before the treatments.[8]

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[8]We generally split the sample at the median value for each personal characteristic within our sample. For reasons of space limitation, we focus on heterogeneity for the anchoring of expectations 5 years ahead in this section.

The results in Table 4 suggest that the improvement in the absolute deviation of posterior expectations from target as well as the reduction in forecast uncertainty of posterior expectations due to the treatments is effective only for respondents with high financial literacy. For this group, all treatments significantly reduce the distance of five-years-ahead expectations from target and, except for T2, significantly reduce posterior forecast accuracy. As before, the treatments including the ECB's inflation projections are the most successful in improving the anchoring of medium-term expectations. While the treatment effects' confidence bands overlap between the groups due to the large standard errors of estimates in the low literacy group, none of the treatment effects are significantly different from zero in the low literacy group, and for T5 we even find a significantly positive treatment effect on forecast uncertainty. Overall, this implies that some basic knowledge regarding financial relationships is necessary for central bank information to be effective in anchoring expectations.

Moreover, Table 5 shows that the effectiveness of both quantitative and qualitative information for the degree of anchoring interacts with individuals' trust in the central bank: On the one hand, informing individuals about the ECB's inflation projections reduces the distance from target in their posterior expectations as well as forecast uncertainty for both groups with high and low trust. This is good news insofar as it implies a high degree of credibility of ECB predictions that does not depend on general trust in the ECB. On the other hand, the treatments showing the ECB inflation target (T2) or the qualitative statement (T3) are only significant in the high trust sample, suggesting that this information requires a certain degree of trust in the central bank to improve anchoring of expectations. This is plausible since actual inflation was far from target at the time of our RCT study.

Can we relate the heterogeneity in treatment effects across levels of financial literacy and trust in the central bank to other types of literacy, behavioral traits or demographic characteristics? First, we evaluate whether heterogeneity with respect to financial literacy might be related to knowledge about monetary policy or to general education. Splitting the sample between those without high school diploma ("Abitur") and those with a high school diploma or college degree (Table A7), we find no significant differences in the treatment effects across education levels. This suggests that it is not the general level of education, but specifically financial education, which is relevant for this type of information to affect the degree of anchoring. Moreover, Table A8 in the appendix presents results for a sample split according to low and high monetary policy literacy, derived from an index constructed from two dummy variables measuring whether respondents correctly identified the ECB's inflation target and whether they correctly chose "stabilize prices for goods and services" as the main objective of the monetary policy by the ECB. We also find that the treatment effects do not differ statistically between those with low and high monetary policy literacy. If anything, the estimated treatment effects are larger for

Table 4: Heterogeneous Treatment Effects: Financial Literacy

	(1)	(2)	(3)	(4)
	Low Financial Literacy		High Financial Literacy	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.62***		0.70***	
	(0.01)		(0.01)	
π^{prior}		0.024***		0.023***
		(0.00)		(0.00)
T1: inflation projections	-0.51	0.099	-1.03***	-0.18***
	(0.45)	(0.09)	(0.17)	(0.05)
T2: ECB target	-0.56	0.021	-0.46***	-0.087
	(0.44)	(0.09)	(0.17)	(0.05)
T3: ECB president statement	0.022	0.10	-0.46**	-0.15***
	(0.46)	(0.09)	(0.18)	(0.05)
T4: T1+T3	-0.53	0.067	-0.93***	-0.13**
	(0.45)	(0.09)	(0.17)	(0.05)
T5: T2+T3	0.067	0.23***	-0.69***	-0.14***
	(0.45)	(0.09)	(0.17)	(0.05)
R^2	0.779	0.186	0.815	0.159
N observations	661	661	806	806

Note: Estimates for wave 1. Demographic controls include age, gender, education, income, home owner, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize respondents with a level of financial literacy below the median of 2 in the low literacy group, and above 2 in the high literacy group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Heterogeneous Treatment Effects: Trust in the Central Bank

	(1) Low Trust in the ECB $\|\pi^{post,5y} - 2\|$	(2) $\sigma\pi^{post,5y}$	(3) High Trust in the ECB $\|\pi^{post,5y} - 2\|$	(4) $\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.69***		0.64***	
	(0.01)		(0.01)	
π^{prior}		0.015***		0.015***
		(0.00)		(0.00)
T1: inflation projections	-1.02***	-0.18**	-1.13***	-0.12**
	(0.27)	(0.07)	(0.21)	(0.06)
T2: ECB target	0.037	-0.11	-0.57***	-0.088
	(0.28)	(0.07)	(0.21)	(0.06)
T3: ECB president statement	-0.39	-0.10	-0.61***	-0.069
	(0.27)	(0.07)	(0.21)	(0.06)
T4: T1+T3	-0.64**	-0.15**	-1.10***	-0.11*
	(0.27)	(0.07)	(0.22)	(0.06)
T5: T2+T3	-0.43	-0.080	-0.81***	-0.10*
	(0.27)	(0.07)	(0.21)	(0.06)
R^2	0.892	0.149	0.898	0.114
N observations	703	703	688	688

Note: Estimates for wave 1. Demographic controls include age, gender, education, income, home owner, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize individuals with low trust in the ECB as those who expressed their trust within the range of 0 to 3. Conversely, individuals were classified as having high trust in the ECB if they indicated their trust within the range of 7 to 10. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

those with low knowledge about monetary policy (in line with the results in Dräger and Nghiem, 2023), and in the case of treatment T5, they are only significantly different from zero in the low monetary policy literacy group. Overall, the result in Table 3 thus cannot be explained by neither education in general, nor specific knowledge about the ECB's monetary policy. Rather, it seems to show that some basic understanding of financial relationships is important in order for specific information on monetary policy to affect respondents' posterior forecasts.

Second, we test whether heterogeneity with respect to trust in the central bank relates to behavioral traits, such as general trust in others, risk preferences, the level of patience or the level of optimism. The results are presented in Tables A9-A13 in the appendix. Splitting the sample with respect to high and low levels of trust in other people, which may be regarded as a proxy for social trust, yields similar results to those in Table 4 (Table A9). This suggests that the effectiveness of information, particularly the one not including the projections, for the anchoring of inflation expectations relates to both social trust and trust in the institution. Interestingly, however, the heterogeneity with respect to risk preferences and patience seems to work in the other direction. Even though both trust and willingness to take risks as well as trust and patience are positively correlated in the sample[9], we find that more treatments are effective for the anchoring of posterior expectations in the risk averse or impatient parts of the sample. In particular, treatment T3 showing the qualitative statement of commitment improves the anchoring only in the risk-averse samples (Tables A10-A11), and both treatments T2 and T3 improve the anchoring only in the impatient sample (Table A12). Finally, the treatment effects do not differ according to the level of pessimism or optimism (Table A13). Overall, the results for behavioral traits show that these matter for the effectiveness of the treatments, in particular those not including inflation projections. At the same time, the variation we find according to trust in the ECB is not related to other behavioral traits except social trust.

Finally, Tables A7-A17 in the appendix test for heterogeneity in the treatment effects with respect to demographic variation according to income, gender, age and region. The treatment effects on the distance of posterior expectations from the inflation target are not statistically different when we split the sample into either low ($< 2{,}500 €$ monthly household income) and high ($\geq 4{,}000 €$ monthly household income) income groups (Table A14) or according to gender (Table A15). However, the treatments T1, T2 and T4 significantly reduce forecast uncertainty of posterior medium-run expectations in the male sample, while the effects are not significant for the female sample. Table A16 shows treatment effects when splitting the sample into those below or above the age of 50. Here, we

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[9]Correlation coefficients in the full sample are 0.16 between trust in the ECB and the level of patience, 0.20 between general trust in others and the level of patience, 0.26 between trust in the ECB and willingness to take risks in general and 0.29 between trust in the ECB and willingness to take financial risks.

find that the treatment effects including inflation projections do not differ between the samples, while the treatment effects when informing about the ECB's inflation target (T2 and T5) in the overall sample seems to be driven by the younger respondents. Finally, Table A17 reports treatment effects when splitting the sample between regions. Respondents living in states that were part of the former German Democratic Republic (GDR) in East Germany are more responsive to the treatment informing about the ECB inflation target and the qualitative statement by Madame Lagarde (T2 and T3) compared to those living in states within West Germany. Again, the treatment effects including inflation projections do not differ across regions. Overall, the results show that the treatment effects of treatments including the inflation projections are independent of demographic characteristics, whereas there seems to be some variation in effectiveness of information about the inflation target and the qualitative statement according to respondents' age and region.

3.4   Transmission of Information

To assess the effectiveness of various information treatments, respondents were asked to indicate whether the provided information was new to them (yes or no) and to rate its informativeness on a scale from 0 to 10, where 0 signifies 'not informative at all' and 10 represents 'very informative'. We present the summary statistics of these variables graphically in Figure 5.

In light with the findings from the previous sections, we find that inflation projections are classified as new information by the largest share of respondents, with information about the target and the qualitative statement of commitment ordered after that. Still, about 55% of respondents in the full sample say the ECB's target was new information for them. Similarly, the ECB's projections are considered the most informative, with an informativeness mean rating of 7.1 on a scale from 0 to 10. This is followed by the ECB target at 6.4 and the qualitative statement of commitment at 5.5. Surprisingly, adding the statement of commitment to projections or the target makes this information less informative in the eyes of respondents.

To explore the reason for the heterogeneity of the information treatment effects across financial literacy and trust in the ECB, we estimate the correlation between these factors and respondents' assessment of the information treatment. Specifically, we use probit regressions to estimate the marginal effects of financial literacy and trust in the ECB on whether the provided information is new to them, while we use OLS regressions to estimate these effects on the informativeness of provided information, controlling for the full set of demographic variables. We show the results graphically in Figure 6. For financial literacy, we find that the financially literate respondents are significantly less likely to view the provided information treatment as new, except for treatment T4 (Figure 6a). Importantly,

Figure 5: Households' Assessment of Information Treatments

(a) *Is the information new? (Y/N)*

(b) *Is the information informative? (scale 0-10)*
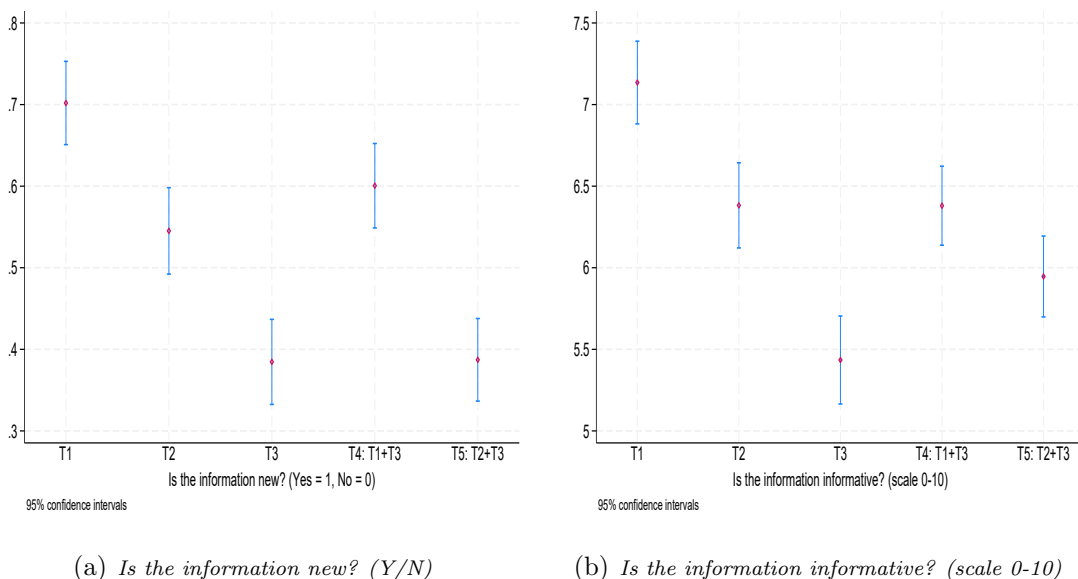
respondents with high literacy view the ECB projections as more informative than those with low literacy, reiterating our earlier interpretation that basic knowledge is important in order for the information to be effective. However, the differences in informativeness across literacy groups is less pronounced for all other treatments.

Regarding the trust in the ECB, Figure 6c shows the level of trust does not matter for whether respondents view the information treatments as new information. However, respondents with high trust give significantly higher ratings in terms of informativeness to all information treatments compared to those with low trust (Figure 6d). These results suggest that the response of consumers to provided information treatments in forming inflation expectations depends on the informativeness of the information rather than whether the information is new to them.[10]

3.5 The persistence of treatment effects

In order to evaluate the persistence of treatment effects on the degree of anchoring, we ran a follow-up wave with the same respondents in May, 2023, three months after the first wave. After inflation in Germany peaked at 8.8% in October and November, 2022, it was still close to the peak at 8.7% in January, 2023, the latest available data when we ran the first survey wave in February, 2023. Three months later during the second wave in May,

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[10]Table A18 in the appendix additionally estimates the correlation between demographic characteristics, financial literacy, and trust in the ECB and the time spent reading the information treatments. We observe that individuals with higher financial literacy on average spent more time reading the treatments, while there is a negative correlation between the level of trust in the ECB and the time spent reading the treatment. These results offer additional insights into the stronger treatment effects observed among individuals with high financial literacy.

Figure 6: The Effect of Financial Literacy and Trust in the ECB on the Assessment of Information Treatments

(a) *New information*

(b) *Informative information*

(c) *New information*

(d) *Informative information*
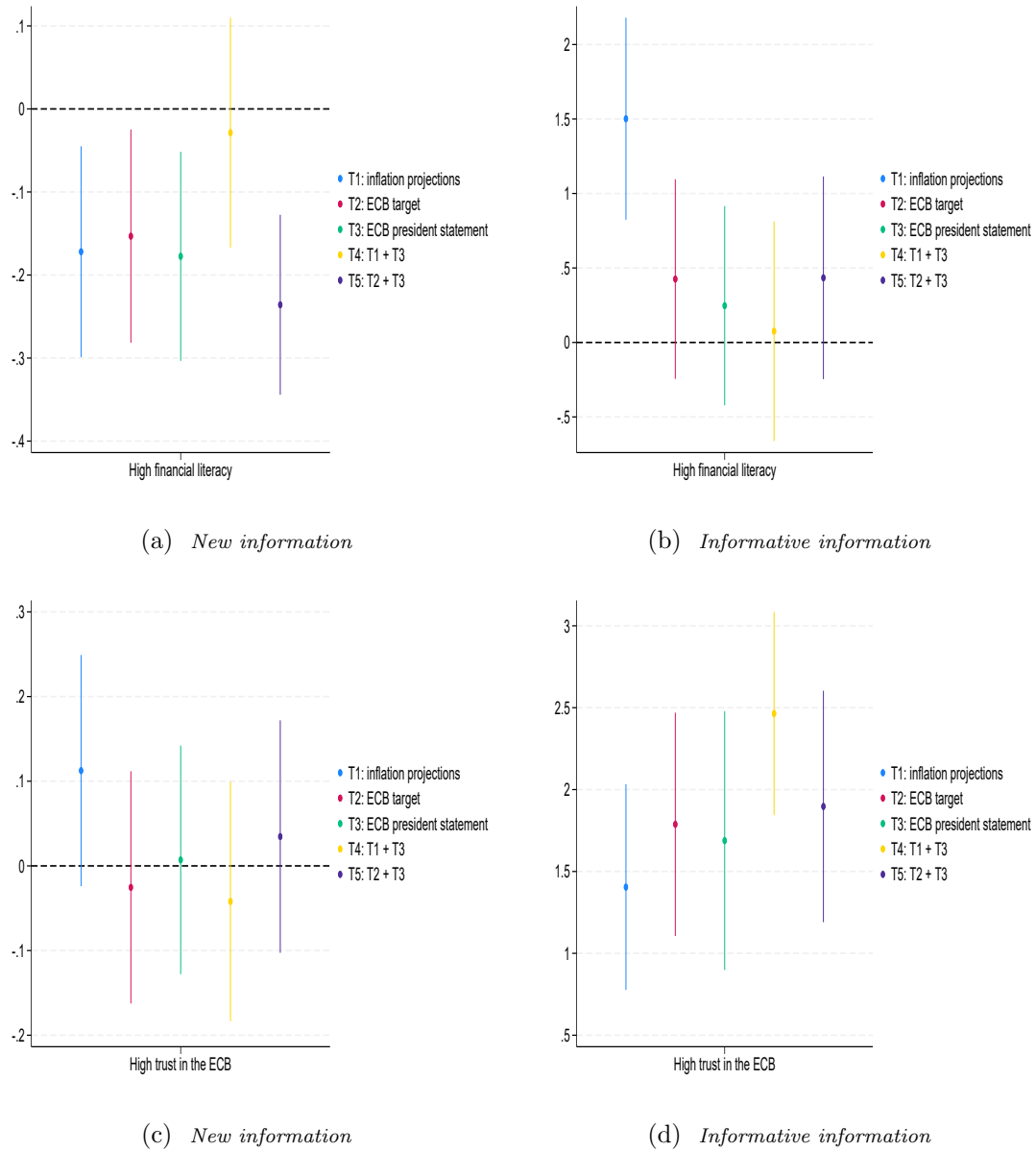
Note: All estimates are for wave 1. These figures present the marginal effects of financial literacy and trust in the ECB on on two aspects: whether the information treatment is new (using Probit regressions) and the informativeness of information treatment (using OLS regressions) with 95% confidence intervals. Demographic controls include age, gender, education, household income, homeownership status, household size, and region.

2023, the last available inflation data for April, 2023, already showed a downward trend and was measured at 7.2%.

The results evaluating the persistence of the treatment effects are shown in Tables A19-A22 as well as Figure A1 in the appendix. Both Tables A19 and A20 show that the reliance on prior expectations, measured in the first wave before the treatments, is still significant, but lower three months later. This is in line with similar RCT studies on

inflation expectations (Coibion et al., 2023, 2022; Dräger et al., 2024). While we find no significant average treatment effects on the absolute deviation of posterior expectations from target or on the posterior forecast uncertainty three months after the treatments (Table A19), there are significant interactions with prior expectations also after three months (Table A20 and Figure A1): Compared to the control group, respondents in the treatment showing the ECB president's statement (T3) or the combination of that treatment with the ECB projections (T4) still put significantly lower weight on their prior from three months ago. These treatments thus continue to be informative for respondents' posterior expectations after three months. By contrast, both treatment groups receiving only quantitative information with either the ECB projections (T1) or the ECB target (T2) put a larger weight on their prior compared to the control group. They thus reverse on the provided information three months after the treatment. This is surprising given the large weight assigned to the signal in the first wave, particularly regarding the projections in T1. Even though actual inflation fell in those three months in line with the projections, this suggests that respondents did not perceive this fully and so reversed on the information originally provided in later months.[11] A similar result was found by Dräger et al. (2024) for the period of rising inflation in 2021-2022 when inflation dynamics turned out to be much stronger than projected originally. Our result in Table A20 and Figure A1 implies that similar effects may arise even when the projections are close to later realizations of actual inflation.

Splitting the sample in the second wave again according to low and high financial literacy as well as trust in the ECB, we find in Table A21 that the negative treatment effects from the ECB projections (T1) and the ECB target (T2) on the absolute deviation from target remains significant after three months for respondents with high financial literacy. Similarly, T1 and T5 still significantly reduce forecast uncertainty in this sample. Regarding the split according to trust, the results in Table A22 are somewhat mixed: We still find that the ECB projections treatment (T1) significantly reduce the distance from target in posterior expectations for those with low trust even after three months, while none of the treatment effects remain significant for the group with high trust. Even more surprising, while T2 and T5 still reduce forecast uncertainty in the low trust group, we now find a significant increase in forecast uncertainty compared to the control group in several treatment groups in the high trust sample.

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[11]Indeed, the ECB Consumer Expectations Survey (CES) also reveals that perceptions of inflation over the past 12 months in Germany remained stable at high levels between January and May, 2023. The mean (median) values for inflation perceptions are 8.4%(8%) in January, 8.2% (7.9%) in February, 9.3% (8.1%) in March, 8.4% (7.5%) in April, and 7.2% (6.9%) in May.

4 Conclusion

In this paper, we evaluate the effectiveness of both quantitative and qualitative information provided by the ECB on the anchoring of medium-term inflation expectations within a representative sample of about 4,000 German households. During the height of the recent inflationary period in February, 2023, we ran a randomized control trial (RCT) where survey respondents were randomly allocated into five treatment groups and a control group. The control group received no information, while the treatment groups received either quantitative information about ECB inflation projections or the ECB inflation target, a qualitative statement of commitment to the target by ECB President Christine Lagarde, or a combination of quantitative and qualitative information.

The results show that all information treatments are informative, as they reduce participants' reliance on their prior expectations. Among all five information treatments, the inflation projections predicting a downward trend in inflation until 2025 are most effective in improving the anchoring of medium-term expectations three and five years ahead. However, combining the information about the inflation target with the qualitative statement of commitment also significantly improves the degree of anchoring. This shows that even when current inflation is far from target, such a combination of information may still be valuable for a better anchoring of inflation expectations.

Analyzing the potential heterogeneity of treatment effects, we report that the treatment effects are more pronounced for respondents with high financial literacy or high trust in the ECB. The heterogeneity with respect to financial literacy cannot be explained with heterogeneity regarding either general education or knowledge about the monetary policy of the ECB. The heterogeneity with respect to trust in the ECB is similar to heterogeneity regarding respondents' social trust ('trust in others in general'), but not related to heterogeneity regarding risk preferences or patience. Similarly, the heterogeneity we find regarding either financial literacy or trust in the ECB cannot be explained by other personal or demographic characteristics like optimism, household income, gender, age or region.

How is the information in the treatments transmitted to respondents? Respondents with high financial literacy rate the informativeness of the treatment with inflation projections significantly higher than those with low literacy. This suggests that this particular type of knowledge is relevant to the understanding of information about current and projected inflation. Importantly, respondents with high trust in the central bank rate the informativeness of all information treatments more highly than those with low trust. In line with other work showing that trust is relevant for the formation of inflation expectations (e.g. Stanislawska and Paloviita, 2021; Brouwer and de Haan, 2022a,b; Christelis et al., 2020), these results imply that trust is also important for both quantitative and

qualitative information to be viewed as relevant, and this interacts with how effective this information is for the anchoring of inflation expectations.

Overall, these results could inform monetary policy discussions on anchoring expectations in the general public. A note of caution must be given, however, as some of the treatment effects are reversed in a follow-up survey three months later in May, 2023. This is in line with similar results in Dräger et al. (2024), even though in the survey of this paper actual inflation did fall as predicted in the months after the first survey wave. One potential interpretation of this finding might be that households did not yet fully perceive the fall in actual inflation between February and May, 2023. Since respondents were treated with information only in the first wave, this potential reversal in inflation expectations reiterates that information effects may be powerful on impact, but tend to be short-lived and may need to be repeated in order to avoid reversal effects.

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A ONLINE APPENDIX

Table A1: Balance Tests for Demographic Charcteristics (Wave 1): Control Group vs. Treatment Groups

Variable	Groups						P-values from pairwise t-tests				
	(1) Control	(2) T1 Inf. proj.	(3) T2 ECB tar.	(4) T3 ECB pres. stmt.	(5) T4 T1+T3	(6) T5 T2+T3	(2)-(1)	(3)-(1)	(4)-(1)	(5)-(1)	(6)-(1)
Age	48.251	47.340	47.625	47.514	48.516	47.498	0.309	0.486	0.411	0.766	0.404
	(16.518)	(16.171)	(16.470)	(16.264)	(16.044)	(16.311)					
Male	0.514	0.478	0.496	0.466	0.498	0.514	0.188	0.496	0.079*	0.549	0.988
	(0.500)	(0.500)	(0.500)	(0.499)	(0.500)	(0.500)					
Log of household income	2.716	2.669	2.751	2.699	2.749	2.755	0.406	0.546	0.767	0.565	0.496
	(1.041)	(1.022)	(1.059)	(1.048)	(1.040)	(1.014)					
Living in East Germany	0.163	0.131	0.144	0.149	0.152	0.142	0.090*	0.321	0.463	0.550	0.272
	(0.370)	(0.337)	(0.351)	(0.356)	(0.359)	(0.349)					
High school diploma	0.337	0.347	0.359	0.335	0.325	0.346	0.695	0.402	0.940	0.643	0.737
	(0.473)	(0.477)	(0.480)	(0.472)	(0.469)	(0.476)					
House owner	0.458	0.452	0.482	0.468	0.490	0.511	0.842	0.367	0.714	0.230	0.053*
	(0.499)	(0.498)	(0.500)	(0.499)	(0.500)	(0.500)					
Household size	2.434	2.354	2.438	2.445	2.358	2.370	0.207	0.953	0.862	0.229	0.320
	(1.172)	(1.152)	(1.221)	(1.185)	(1.137)	(1.153)					

Note: Wave 1. Columns (1)-(6) show mean values of demographic characteristics within treatment groups, with standard errors in brackets. Columns (7)-(11) present p-values from pairwise t-tests for the null hypothesis of equal means between treatment groups and the control group.

Table A2: Balance Tests for Demographic Charcteristics (Wave 1): Control Group vs. Treatment Groups

| Variable | Groups | | | | | | P-values from pairwise t-tests | | | | |
	(1) Control	(2) T1 Inf. proj.	(3) T2 ECB tar.	(4) T3 ECB pres. stmt.	(5) T4 T1+T3	(6) T5 T2+T3	(2)-(1)	(3)-(1)	(4)-(1)	(5)-(1)	(6)-(1)
Age	49.978	48.872	49.364	48.778	49.512	49.140	0.287	0.549	0.248	0.643	0.413
	(16.630)	(15.719)	(15.815)	(15.695)	(15.307)	(15.236)					
Male	0.541	0.511	0.513	0.508	0.537	0.541	0.340	0.373	0.310	0.903	0.995
	(0.499)	(0.500)	(0.500)	(0.500)	(0.499)	(0.499)					
Log of household income	2.717	2.679	2.734	2.712	2.729	2.790	0.555	0.807	0.933	0.854	0.265
	(1.021)	(1.032)	(1.075)	(1.052)	(1.051)	(1.020)					
Living in East Germany	0.160	0.126	0.149	0.146	0.159	0.136	0.127	0.624	0.542	0.948	0.291
	(0.367)	(0.332)	(0.357)	(0.354)	(0.366)	(0.343)					
High school diploma	0.335	0.340	0.352	0.345	0.310	0.346	0.852	0.566	0.726	0.399	0.711
	(0.472)	(0.474)	(0.478)	(0.476)	(0.463)	(0.476)					
House owner	0.465	0.466	0.479	0.481	0.484	0.526	0.964	0.653	0.618	0.538	0.056*
	(0.499)	(0.499)	(0.500)	(0.500)	(0.500)	(0.500)					
Household size	2.395	2.309	2.410	2.390	2.300	2.367	0.235	0.843	0.946	0.181	0.706
	(1.149)	(1.108)	(1.209)	(1.133)	(1.099)	(1.162)					

Note: Wave 2. Columns (1)-(6) show mean values of demographic characteristics within treatment groups, with standard errors in brackets. Columns (7)-(11) present p-values from pairwise t-tests for the null hypothesis of equal means between treatment groups and the control group.

Table A3: Average Treatment Effects on Posterior Expectations 3 Years Ahead across Time Spent Reading Treatment

	(1) Whole sample	(2)	(3) Time on treatment > 6 seconds	(4)	(5) Time on treatment > 9 seconds	(6)
	$\|\pi^{post,3y} - 2\|$	$\sigma\pi^{post,3y}$	$\|\pi^{post,3y} - 2\|$	$\sigma\pi^{post,3y}$	$\|\pi^{post,3y} - 2\|$	$\sigma\pi^{post,3y}$
$\|\pi^{post,1y} - 2\|$	0.60***		0.60***		0.57***	
	(0.01)		(0.01)		(0.01)	
π^{prior}		0.012***		0.0093***		0.010***
		(0.00)		(0.00)		(0.00)
T1: inflation projections	-0.70***	-0.078**	-0.70***	-0.077**	-0.75***	-0.064*
	(0.14)	(0.04)	(0.14)	(0.04)	(0.14)	(0.04)
T2: ECB target	-0.17	-0.037	-0.18	-0.041	-0.19	-0.036
	(0.14)	(0.04)	(0.14)	(0.04)	(0.14)	(0.04)
T3: ECB president statement	-0.0082	0.026	-0.049	0.026	-0.075	0.029
	(0.14)	(0.04)	(0.14)	(0.04)	(0.14)	(0.04)
T4: T1+T3	-0.78***	-0.089**	-0.80***	-0.086**	-0.80***	-0.074**
	(0.14)	(0.04)	(0.14)	(0.04)	(0.14)	(0.04)
T5: T2+T3	-0.37***	-0.069*	-0.34**	-0.078**	-0.36***	-0.081**
	(0.14)	(0.04)	(0.14)	(0.04)	(0.14)	(0.04)
R²	0.811	0.097	0.811	0.092	0.794	0.095
N observations	2572	2572	2516	2516	2440	2440

Note: Estimates for wave 1. Demographic controls include age, gender, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. Columns (1) and (2) show the results for the entire sample as the baseline. Columns (3) and (4) show the results for those who spent more than 6 seconds reading the information treatment, corresponding to excluding 5% of sample size of the treated groups. Columns (5) and (6) show the results for those who spent more than 9 seconds reading the information treatment, corresponding to excluding 10% of sample size of the treated groups. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A4: Average Treatment Effects on Posterior Expectations 5 Years Ahead across Time Spent Reading Treatment

	(1) Whole sample $|\pi^{post,5y} - 2|$	(2) Whole sample $\sigma\pi^{post,5y}$	(3) Time on treatment > 6 seconds $|\pi^{post,5y} - 2|$	(4) Time on treatment > 6 seconds $\sigma\pi^{post,5y}$	(5) Time on treatment > 9 seconds $|\pi^{post,5y} - 2|$	(6) Time on treatment > 9 seconds $\sigma\pi^{post,5y}$
$|\pi^{post,1y} - 2|$	0.68***		0.67***		0.67***	
	(0.01)		(0.01)		(0.01)	
π^{prior}		0.018***		0.016***		0.017***
		(0.00)		(0.00)		(0.00)
T1: inflation projections	-0.82***	-0.070*	-0.84***	-0.070*	-0.85***	-0.060
	(0.14)	(0.04)	(0.13)	(0.04)	(0.13)	(0.04)
T2: ECB target	-0.18	-0.043	-0.19	-0.045	-0.20	-0.044
	(0.13)	(0.04)	(0.13)	(0.04)	(0.13)	(0.04)
T3: ECB president statement	-0.18	-0.0014	-0.22*	0.0032	-0.24*	0.0071
	(0.13)	(0.04)	(0.13)	(0.04)	(0.13)	(0.04)
T4: T1+T3	-0.77***	-0.067*	-0.80***	-0.065*	-0.80***	-0.059
	(0.13)	(0.04)	(0.13)	(0.04)	(0.13)	(0.04)
T5: T2+T3	-0.50***	-0.032	-0.49***	-0.041	-0.50***	-0.044
	(0.13)	(0.04)	(0.13)	(0.04)	(0.13)	(0.04)
R²	0.883	0.118	0.876	0.105	0.866	0.112
N observations	2312	2312	2255	2255	2184	2184

Note: Estimates for wave 1. Demographic controls include age, gender, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. Columns (1) and (2) show the results for the entire sample as the baseline. Columns (3) and (4) show the results for those who spent more than 6 seconds reading the information treatment, corresponding to excluding 5% of sample size of the treated groups. Columns (5) and (6) show the results for those who spent more than 9 seconds reading the information treatment, corresponding to excluding 10% of sample size of the treated groups. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

35

Table A5: Heterogeneous Treatment Effects: Prior Inflation Expectations 3 Years Ahead

	(1) $\pi^{prior} < 2$ $|\pi^{post,3y} - 2|$	(2) $\pi^{prior} < 2$ $\sigma\pi^{post,3y}$	(3) $\pi^{prior} = 2$ $|\pi^{post,3y} - 2|$	(4) $\pi^{prior} = 2$ $\sigma\pi^{post,3y}$	(5) $\pi^{prior} > 2$ $|\pi^{post,3y} - 2|$	(6) $\pi^{prior} > 2$ $\sigma\pi^{post,3y}$
$|\pi^{prior} - 2|$	0.31*** (0.09)				0.61*** (0.01)	
π^{prior}		-0.041 (0.04)				0.010*** (0.00)
T1: inflation projections	-0.27 (0.33)	-0.091 (0.13)	-0.69 (0.44)	-0.21 (0.14)	-0.80*** (0.16)	-0.087** (0.04)
T2: ECB target	0.074 (0.38)	-0.19 (0.14)	-0.69 (0.46)	-0.099 (0.15)	-0.20 (0.16)	-0.034 (0.04)
T3: ECB president statement	-0.080 (0.33)	-0.036 (0.13)	-0.62 (0.44)	-0.22 (0.14)	0.022 (0.16)	0.043 (0.04)
T4: T1+T3	-0.57* (0.32)	-0.065 (0.12)	-0.39 (0.42)	-0.055 (0.13)	-0.90*** (0.16)	-0.11*** (0.04)
T5: T2+T3	-0.54 (0.34)	0.19 (0.13)	-0.53 (0.43)	-0.14 (0.14)	-0.35** (0.16)	-0.099** (0.04)
R^2	0.108	0.123	0.123	0.175	0.824	0.099
N observations	269	269	130	130	2173	2173

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A6: Heterogeneous Treatment Effects: Prior Inflation Expectations 5 Years Ahead

	(1) $\pi^{prior} < 2$ $\|\pi^{post,5y} - 2\|$	(2) $\pi^{prior} < 2$ $\sigma\pi^{post,5y}$	(3) $\pi^{prior} = 2$ $\|\pi^{post,5y} - 2\|$	(4) $\pi^{prior} = 2$ $\sigma\pi^{post,5y}$	(5) $\pi^{prior} > 2$ $\|\pi^{post,5y} - 2\|$	(6) $\pi^{prior} > 2$ $\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.18***				0.69***	
	(0.06)				(0.01)	
π^{prior}		-0.033*				0.015***
		(0.02)				(0.00)
T1: inflation projections	-0.42*	-0.024	-0.35*	-0.13	-0.95***	-0.072
	(0.24)	(0.07)	(0.18)	(0.08)	(0.18)	(0.05)
T2: ECB target	-0.32	0.0039	-0.34*	-0.23***	-0.12	-0.024
	(0.25)	(0.07)	(0.18)	(0.08)	(0.17)	(0.05)
T3: ECB president statement	-0.32	-0.044	-0.54***	-0.23***	-0.10	0.050
	(0.25)	(0.07)	(0.17)	(0.08)	(0.18)	(0.05)
T4: T1+T3	-0.62**	-0.071	-0.42**	-0.18**	-0.88***	-0.033
	(0.24)	(0.07)	(0.18)	(0.08)	(0.17)	(0.05)
T5: T2+T3	-0.44*	0.096	-0.57***	-0.28***	-0.48***	-0.011
	(0.25)	(0.07)	(0.17)	(0.08)	(0.17)	(0.05)
R^2	0.106	0.091	0.084	0.188	0.880	0.099
N observations	362	362	249	249	1701	1701

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A7: Heterogeneous Treatment Effects: Education

| | (1) | (2) | (3) | (4) |
| | High Education | | Low Education | |
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.68***		0.68***	
	(0.01)		(0.01)	
π^{prior}		0.029***		0.011***
		(0.00)		(0.00)
T1: inflation projections	-0.88***	-0.079	-0.77***	-0.050
	(0.18)	(0.06)	(0.20)	(0.05)
T2: ECB target	-0.24	-0.053	-0.16	-0.029
	(0.18)	(0.06)	(0.20)	(0.04)
T3: ECB president statement	-0.093	0.059	-0.24	-0.031
	(0.18)	(0.06)	(0.20)	(0.04)
T4: T1+T3	-0.73***	-0.11*	-0.79***	-0.034
	(0.18)	(0.06)	(0.19)	(0.04)
T5: T2+T3	-0.55***	-0.059	-0.44**	-0.014
	(0.18)	(0.06)	(0.19)	(0.04)
R^2	0.873	0.133	0.882	0.074
N observations	988	988	1324	1324

Note: Estimates for wave 1. Demographic controls include age, gender, household income, home-ownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize individuals without high school diploma ("Abitur") into the low education group, and those with high school diploma ("Abitur") or college degree into the high education group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8: Heterogeneous Treatment Effects: Monetary Policy Literacy

| | (1) | (2) | (3) | (4) |
| | Low MPL | | High MPL | |
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.66***		0.78***	
	(0.01)		(0.01)	
π^{prior}		0.015***		0.012***
		(0.00)		(0.00)
T1: inflation projections	-1.02***	-0.078	-0.40*	-0.037
	(0.29)	(0.08)	(0.23)	(0.06)
T2: ECB target	-0.40	-0.067	0.14	-0.082
	(0.28)	(0.07)	(0.23)	(0.06)
T3: ECB president statement	-0.26	-0.039	-0.089	-0.036
	(0.28)	(0.07)	(0.22)	(0.06)
T4: T1+T3	-1.13***	-0.13*	-0.67***	-0.056
	(0.28)	(0.07)	(0.23)	(0.06)
T5: T2+T3	-0.63**	-0.032	-0.19	0.039
	(0.27)	(0.07)	(0.22)	(0.06)
R^2	0.867	0.111	0.905	0.073
N observations	756	756	864	864

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize respondents with a level of monetary policy literacy below the median of 1 in the low literacy group, and above 1 in the high literacy group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A9: Heterogeneous Treatment Effects: Trust in Others

	(1)	(2)	(3)	(4)
	Low trust		High trust	
	$\lvert \pi^{post,5y} - 2 \rvert$	$\sigma\pi^{post,5y}$	$\lvert \pi^{post,5y} - 2 \rvert$	$\sigma\pi^{post,5y}$
$\lvert \pi^{prior} - 2 \rvert$	0.65***		0.66***	
	(0.01)		(0.01)	
π^{prior}		0.0098***		0.013***
		(0.00)		(0.00)
T1: inflation projections	-0.83***	-0.058	-0.96***	-0.059
	(0.29)	(0.08)	(0.22)	(0.06)
T2: ECB target	-0.18	0.0037	-0.36*	0.0098
	(0.30)	(0.09)	(0.21)	(0.06)
T3: ECB president statement	-0.13	0.010	-0.57***	0.024
	(0.32)	(0.09)	(0.21)	(0.06)
T4: T1+T3	-0.52*	-0.12	-0.83***	-0.038
	(0.29)	(0.09)	(0.21)	(0.06)
T5: T2+T3	-0.53*	-0.028	-0.58***	-0.0068
	(0.30)	(0.09)	(0.21)	(0.06)
R^2	0.894	0.074	0.888	0.144
N observations	596	596	637	637

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize individuals with low trust in others as those who expressed their trust within the range of 0 to 3. Conversely, individuals were classified as having high trust in others if they indicated their trust within the range of 7 to 10. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A10: Heterogeneous Treatment Effects: Financial Risk Preference

	(1)	(2)	(3)	(4)
	Risk averse		Risk loving	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.66***		0.71***	
	(0.01)		(0.01)	
π^{prior}		0.0100***		0.018***
		(0.00)		(0.00)
T1: inflation projections	-1.01***	-0.013	-0.70***	-0.13**
	(0.22)	(0.06)	(0.19)	(0.06)
T2: ECB target	-0.22	0.038	-0.15	-0.081
	(0.22)	(0.05)	(0.19)	(0.06)
T3: ECB president statement	-0.41*	0.0094	0.22	0.061
	(0.21)	(0.05)	(0.19)	(0.06)
T4: T1+T3	-0.90***	-0.013	-0.61***	-0.082
	(0.21)	(0.05)	(0.19)	(0.06)
T5: T2+T3	-0.53**	0.021	-0.43**	-0.041
	(0.21)	(0.05)	(0.19)	(0.05)
R^2	0.873	0.095	0.898	0.113
N observations	886	886	1124	1124

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize respondents with a willingness to take financial risks below the median of 3 in the risk averse group, and above 3 in the risk loving group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A11: Heterogeneous Treatment Effects: General Risk Preference

| | (1) | (2) | (3) | (4) |
| | Risk averse | | Risk loving | |
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.68***		0.70***	
	(0.01)		(0.01)	
π^{prior}		0.012***		0.018***
		(0.00)		(0.00)
T1: inflation projections	-1.08***	-0.080	-0.43**	-0.0092
	(0.20)	(0.05)	(0.20)	(0.06)
T2: ECB target	-0.29	0.019	0.025	-0.042
	(0.20)	(0.05)	(0.20)	(0.06)
T3: ECB president statement	-0.53***	0.039	0.30	0.026
	(0.20)	(0.05)	(0.20)	(0.06)
T4: T1+T3	-1.09***	-0.072	-0.55***	-0.0032
	(0.19)	(0.05)	(0.20)	(0.06)
T5: T2+T3	-0.69***	0.010	-0.10	0.026
	(0.19)	(0.05)	(0.20)	(0.06)
R^2	0.883	0.098	0.894	0.126
N observations	999	999	1055	1055

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize respondents with a willingness to take risks below the median of 4 in the risk averse group, and above 4 in the risk loving group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A12: Heterogeneous Treatment Effects: Patience

	(1)	(2)	(3)	(4)
	Impatient		Patient	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.64***		0.72***	
	(0.01)		(0.01)	
π^{prior}		0.013***		0.026***
		(0.00)		(0.00)
T1: inflation projections	-0.83***	-0.083	-0.79***	-0.056
	(0.23)	(0.06)	(0.19)	(0.05)
T2: ECB target	-0.48**	-0.031	0.14	-0.032
	(0.21)	(0.06)	(0.19)	(0.05)
T3: ECB president statement	-0.52**	-0.047	0.066	0.067
	(0.21)	(0.06)	(0.19)	(0.05)
T4: T1+T3	-0.89***	-0.061	-0.60***	-0.041
	(0.21)	(0.06)	(0.19)	(0.05)
T5: T2+T3	-0.85***	-0.043	-0.33*	-0.0079
	(0.22)	(0.06)	(0.18)	(0.05)
R^2	0.864	0.086	0.906	0.207
N observations	1024	1024	1063	1063

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize respondents with patience below the median of 6 in the impatient group, and above 6 in the patient group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A13: Heterogeneous Treatment Effects: Optimism

	(1)	(2)	(3)	(4)
	Pessimist		Optimist	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.66***		0.69***	
	(0.01)		(0.01)	
π^{prior}		0.011***		0.019***
		(0.00)		(0.00)
T1: inflation projections	-0.90***	-0.085	-0.70***	-0.037
	(0.25)	(0.07)	(0.18)	(0.05)
T2: ECB target	-0.064	-0.0049	-0.18	-0.027
	(0.25)	(0.07)	(0.17)	(0.05)
T3: ECB president statement	-0.17	-0.024	-0.25	0.044
	(0.24)	(0.07)	(0.17)	(0.05)
T4: T1+T3	-0.91***	-0.098	-0.84***	-0.016
	(0.24)	(0.07)	(0.17)	(0.05)
T5: T2+T3	-0.79***	-0.029	-0.41**	-0.023
	(0.24)	(0.06)	(0.17)	(0.05)
R^2	0.882	0.103	0.880	0.128
N observations	917	917	1142	1142

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize respondents with optimism below the median of 6 in the pessimist group, and above 6 in the optimist group. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A14: Heterogeneous Treatment Effects: Household Income

	(1)	(2)	(3)	(4)
	Low Income		High Income	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.71***		0.68***	
	(0.01)		(0.01)	
π^{prior}		0.019***		0.021***
		(0.00)		(0.00)
T1: inflation projections	-1.07***	-0.068	-0.75***	-0.071
	(0.29)	(0.07)	(0.19)	(0.07)
T2: ECB target	-0.36	-0.013	-0.19	-0.090
	(0.29)	(0.07)	(0.18)	(0.07)
T3: ECB president statement	-0.27	0.017	-0.15	-0.063
	(0.29)	(0.07)	(0.19)	(0.07)
T4: T1+T3	-1.04***	-0.080	-0.44**	-0.095
	(0.29)	(0.07)	(0.19)	(0.07)
T5: T2+T3	-0.57**	0.0020	-0.45**	-0.12*
	(0.29)	(0.07)	(0.18)	(0.07)
R^2	0.886	0.154	0.870	0.093
N observations	741	741	777	777

Note: Estimates for wave 1. Demographic controls include age, gender, education, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorize individuals with low income as those who indicated their monthly household income to lie below 2,500 €. Conversely, individuals were classified as high income if they indicated their monthly household income to be ≥ 4.000 €. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A15: Heterogeneous Treatment Effects: Gender

	(1)	(2)	(3)	(4)
	Male		Female	
	$\lvert\pi^{post,5y} - 2\rvert$	$\sigma\pi^{post,5y}$	$\lvert\pi^{post,5y} - 2\rvert$	$\sigma\pi^{post,5y}$
$\lvert\pi^{prior} - 2\rvert$	0.74***		0.64***	
	(0.01)		(0.01)	
π^{prior}		0.032***		0.016***
		(0.00)		(0.00)
T1: inflation projections	-0.71***	-0.13***	-0.99***	0.048
	(0.15)	(0.04)	(0.26)	(0.07)
T2: ECB target	-0.13	-0.084**	-0.35	0.019
	(0.15)	(0.04)	(0.26)	(0.07)
T3: ECB president statement	-0.12	-0.065	-0.23	0.063
	(0.15)	(0.04)	(0.26)	(0.07)
T4: T1+T3	-0.54***	-0.091**	-1.03***	0.017
	(0.14)	(0.04)	(0.26)	(0.07)
T5: T2+T3	-0.42***	-0.062	-0.63**	0.032
	(0.14)	(0.04)	(0.26)	(0.07)
R^2	0.907	0.241	0.835	0.092
N observations	1270	1270	1042	1042

Note: Estimates for wave 1. Demographic controls include age, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We split the sample into male and female individuals. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A16: Heterogeneous Treatment Effects: Age

	(1)	(2)	(3)	(4)
	Age < 50		Age ≥ 50	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.68***		0.73***	
	(0.01)		(0.01)	
π^{prior}		0.024***		0.010***
		(0.00)		(0.00)
T1: inflation projections	-0.91***	-0.053	-0.74***	-0.067*
	(0.22)	(0.07)	(0.17)	(0.04)
T2: ECB target	-0.52**	-0.077	0.095	0.020
	(0.22)	(0.07)	(0.16)	(0.04)
T3: ECB president statement	-0.28	0.045	-0.067	0.0049
	(0.22)	(0.07)	(0.17)	(0.04)
T4: T1+T3	-1.05***	-0.070	-0.53***	-0.030
	(0.22)	(0.07)	(0.16)	(0.04)
T5: T2+T3	-0.84***	-0.069	-0.19	0.036
	(0.21)	(0.07)	(0.16)	(0.04)
R^2	0.878	0.102	0.874	0.059
N observations	1232	1232	1080	1080

Note: Estimates for wave 1. Demographic controls include gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We split the sample into individuals with age below 50 and 50 or older. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A17: Heterogeneous Treatment Effects: East vs. West Germany

	(1)	(2)	(3)	(4)
	East Germany		West Germany	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.73***		0.68***	
	(0.02)		(0.01)	
π^{prior}		0.021***		0.018***
		(0.00)		(0.00)
T1: inflation projections	-1.26***	0.070	-0.76***	-0.091**
	(0.32)	(0.11)	(0.15)	(0.04)
T2: ECB target	-0.80***	-0.025	-0.080	-0.041
	(0.30)	(0.10)	(0.15)	(0.04)
T3: ECB president statement	-0.57*	-0.0093	-0.13	-0.0017
	(0.31)	(0.10)	(0.15)	(0.04)
T4: T1+T3	-1.22***	-0.093	-0.68***	-0.066*
	(0.30)	(0.10)	(0.15)	(0.04)
T5: T2+T3	-1.05***	-0.0078	-0.40***	-0.034
	(0.30)	(0.10)	(0.15)	(0.04)
R^2	0.893	0.098	0.884	0.131
N observations	352	352	1960	1960

Note: Estimates for wave 1. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We split the sample according to the federal state where respondents currently live, grouping the states belonging to the former GDR into East Germany, and the remaining states into West Germany. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A18: Determinants of Time Spent Reading Treatment

	(1) Time spent reading treatment
Age 18 to 29 (reference group)	
Age 30 to 39	1.40*
	(0.84)
Age 40 to 49	2.57***
	(0.86)
Age 50 to 59	7.23***
	(0.84)
Age 60+	11.9***
	(0.85)
Male	-1.78***
	(0.50)
Log of household income	-0.76
	(0.51)
Living in East Germany	1.57**
	(0.71)
High school diploma	-1.33**
	(0.66)
House owner	-1.31**
	(0.52)
Household size	0.51**
	(0.25)
Financial literacy	2.50***
	(0.27)
Trust in the ECB	-0.20**
	(0.10)
Constant	21.7***
	(3.71)
R^2	0.151
N observations	2883

Note: Estimates for wave 1. This table shows the estimated coefficients from Huber robust regressions with time spent reading the treatments in seconds as the dependent variable. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B   Results for wave 2

Table A19: Average Treatment Effects on Posterior Expectations: Wave 2

	(1)	(2)	(3)	(4)
	3 years ahead		5 years ahead	
	$\|\pi^{post,3y} - 2\|$	$\sigma\pi^{post,3y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.21***		0.22***	
	(0.01)		(0.01)	
π^{prior}		0.0064***		-0.00044
		(0.00)		(0.00)
T1: inflation projections	-0.11	-0.065	-0.21	-0.0063
	(0.22)	(0.04)	(0.21)	(0.04)
T2: ECB target	0.11	0.010	-0.050	0.026
	(0.21)	(0.04)	(0.20)	(0.04)
T3: ECB president statement	0.14	0.037	0.089	0.030
	(0.21)	(0.04)	(0.21)	(0.04)
T4: T1+T3	-0.16	-0.018	0.076	0.026
	(0.21)	(0.04)	(0.20)	(0.04)
T5: T2+T3	-0.13	-0.063	0.026	-0.039
	(0.21)	(0.04)	(0.20)	(0.04)
R^2	0.260	0.053	0.294	0.049
N observations	1921	1921	1703	1703

Note: Estimates for wave 2. Demographic controls include age, gender, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A20: Treatment Effects on Posterior Expectations: Bayesian Approach, Wave 2

	(1) $\|\pi^{post,3y} - 2\|$	(2) $\|\pi^{post,5y} - 2\|$
$\|\pi^{prior} - 2\|$	0.25***	0.23***
	(0.02)	(0.02)
T1: inflation projections	-1.15***	-0.84***
	(0.27)	(0.25)
T2: ECB target	-0.29	-0.66***
	(0.27)	(0.25)
T3: ECB president statement	0.86***	0.40
	(0.26)	(0.25)
T4: T1+T3	0.31	0.20
	(0.26)	(0.24)
T5: T2+T3	-0.080	-0.079
	(0.26)	(0.24)
T1: inflation projections $\times \|\pi^{prior} - 2\|$	0.34***	0.28***
	(0.03)	(0.03)
T2: ECB target $\times \|\pi^{prior} - 2\|$	0.15***	0.31***
	(0.03)	(0.03)
T3: ECB president statement $\times \|\pi^{prior} - 2\|$	-0.22***	-0.12***
	(0.03)	(0.03)
T4: T1+T3 $\times \|\pi^{prior} - 2\|$	-0.13***	-0.049*
	(0.03)	(0.03)
T5: T2+T3 $\times \|\pi^{prior} - 2\|$	-0.013	0.039
	(0.03)	(0.03)
R^2	0.417	0.479
N observations	1921	1703

Note: Estimates for wave 2. Demographic controls include age, gender, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A21: Heterogeneous Treatment Effects across Financial Literacy: Wave 2

|	(1)	(2)	(3)	(4)
	Low Financial Literacy		High Financial Literacy	
	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$	$\|\pi^{post,5y} - 2\|$	$\sigma\pi^{post,5y}$
$\|\pi^{prior} - 2\|$	0.24***		0.48***	
	(0.02)		(0.02)	
π^{prior}		0.0028		0.00042
		(0.00)		(0.00)
T1: inflation projections	0.26	0.19*	-0.59**	-0.11*
	(0.63)	(0.11)	(0.25)	(0.06)
T2: ECB target	0.67	0.11	-0.47*	-0.035
	(0.63)	(0.11)	(0.25)	(0.06)
T3: ECB president statement	0.24	0.16	0.27	-0.050
	(0.68)	(0.12)	(0.24)	(0.06)
T4: T1+T3	0.70	0.0095	-0.17	0.011
	(0.65)	(0.12)	(0.24)	(0.06)
T5: T2+T3	0.40	0.029	-0.33	-0.14**
	(0.63)	(0.11)	(0.24)	(0.06)
R^2	0.251	0.039	0.606	0.085
N observations	471	471	621	621

Note: Estimates for wave 2. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. Individuals who answered fewer than two financial literacy questions correctly are categorized as having low financial literacy. Conversely, those who answered all three financial literacy questions correctly are classified as having high financial literacy. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A22: Heterogeneous Treatment Effects across Trust in the Central Bank: Wave 2

	(1)	(2)	(3)	(4)
	Low Trust in the ECB		High Trust in the ECB	
	$\lvert\pi^{post,5y}-2\rvert$	$\sigma\pi^{post,5y}$	$\lvert\pi^{post,5y}-2\rvert$	$\sigma\pi^{post,5y}$
$\lvert\pi^{prior}-2\rvert$	0.16***		0.59***	
	(0.02)		(0.01)	
π^{prior}		-0.0056		-0.0016
		(0.00)		(0.00)
T1: inflation projections	-1.02**	-0.14	0.49	0.071
	(0.46)	(0.09)	(0.33)	(0.07)
T2: ECB target	-0.24	-0.21**	0.31	0.15**
	(0.47)	(0.10)	(0.32)	(0.07)
T3: ECB president statement	-0.39	-0.083	0.42	0.15**
	(0.47)	(0.10)	(0.34)	(0.07)
T4: T1+T3	-0.16	-0.087	0.53	0.16**
	(0.45)	(0.09)	(0.34)	(0.07)
T5: T2+T3	-0.43	-0.18*	0.48	0.12
	(0.46)	(0.09)	(0.33)	(0.07)
R^2	0.171	0.087	0.819	0.074
N observations	507	507	518	518

Note: Estimates for wave 2. Demographic controls include age, gender, education, household income, homeownership status, household size, and region. This table reports estimated coefficients from Huber robust regressions. Standard errors are in parentheses. We categorized individuals with low trust in the ECB as those who expressed their trust within the range of 0 to 3. Conversely, individuals were classified as having high trust in the ECB if they indicated their trust within the range of 7 to 10. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A1: Updating of Inflation Beliefs by Information Treatments
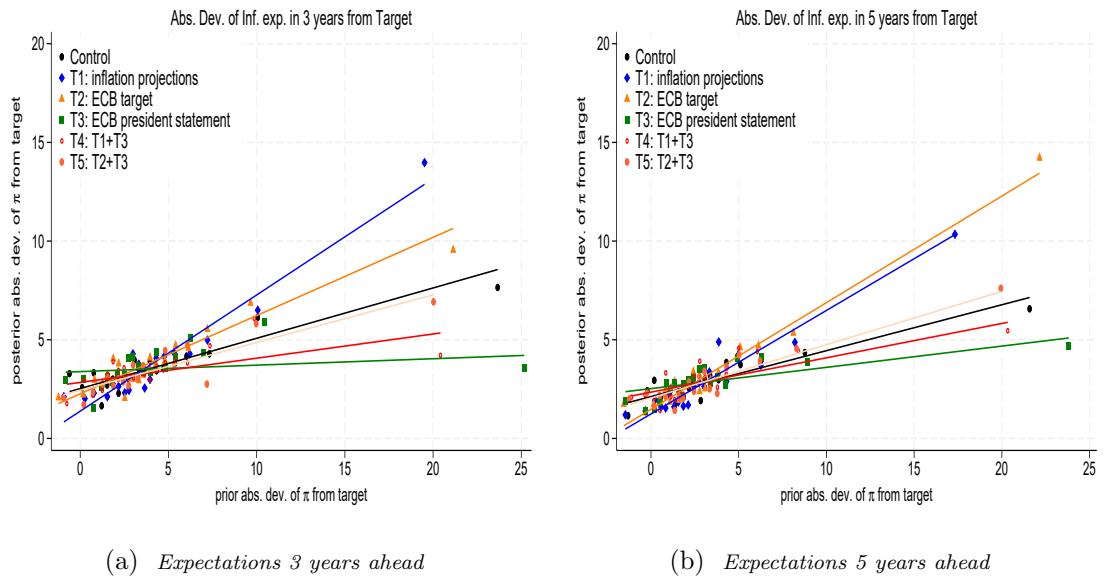
(a) *Expectations 3 years ahead*   (b) *Expectations 5 years ahead*

Note: Binscatter plots for prior expectations from wave 1 and posterior expectations from wave 2, weighted with Huber weights from the regressions in Table A20.

C Questionnaire

This survey deals with your views and expectations regarding inflation, monetary policy, and the economy in general. It is part of a scientific study at Leibniz University Hannover. Answering this survey takes approximately 15 minutes, and all responses are anonymous.

The quality of our data is crucial. To capture your knowledge and opinions as accurately as possible, it is essential that you answer each question to the best of your ability. Do you commit to answering each question in this survey carefully?

1. Yes

2. No

Respondi: Proceed to the rest of the questionnaire only if "Yes" is selected.

1. How old are you? _____ years (Numeric field between 18-100, no decimal numbers allowed)

2. Please specify your gender:

   (a) Male

   (b) Female

   (c) Diverse

3. In which German federal state do you live?

   (a) Baden-Württemberg

   (b) Bavaria

   (c) Berlin

   (d) Brandenburg

   (e) Bremen

   (f) Hamburg

   (g) Hesse

   (h) Mecklenburg-Vorpommern

   (i) Lower Saxony

   (j) North Rhine-Westphalia

   (k) Rhineland-Palatinate

   (l) Saarland

   (m) Saxony

   (n) Saxony-Anhalt

   (o) Schleswig-Holstein

   (p) Thuringia

4. What was the average monthly net income of your household in the last twelve months? (Average over the last 12 months)

   (a) Under 500 Euro

   (b) 500 to 999 Euro

   (c) 1000 to 1499 Euro

   (d) 1500 to 1999 Euro

   (e) 2000 to 2499 Euro

   (f) 2500 to 2999 Euro

   (g) 3000 to 3499 Euro

   (h) 3500 to 3999 Euro

   (i) 4000 to 4999 Euro

   (j) 5000 to 5999 Euro

   (k) 6000 to 7999 Euro

   (l) 8000 to 9999 Euro

   (m) 10,000 Euro and more

   (n) 999 Don't know/No answer

5. What is your highest completed education level?

   (a) (Not yet) general school-leaving qualification, still a student in general education school or basic school leaving certificate without completed apprenticeship/vocational training or basic school leaving certificate with completed apprenticeship/vocational training

   (b) Further education without Abitur (secondary school leaving certificate/middle school/high school) or equivalent qualification

   (c) Abitur, (technical) university entrance qualification without studying or studying (university, college, technical college, polytechnic)

6. Imagine you have 100 € in your account with an annual interest rate of 10%. How much money would you have in your account after two years? (Randomize answer order)

   (a) Exactly 110 €

(b) Exactly 120 €

(c) Exactly 200 €

(d) Slightly more than 120 €

(e) 999 Don't know/No answer

7. Imagine that your net income (income after taxes and deductions) in 2024 is twice as high, but also, the prices of all goods have doubled. How much can you buy with your income in 2024? (Randomize answer order)

(a) More than today

(b) Just as much as today

(c) Less than today

(d) Cannot be determined based on the given information

(e) 999 Don't know/No answer

8. Do you agree with the following statement: "Investing in the stock of an individual company is less risky than investing in a fund of stocks from similar companies"? [Randomize answer order]

(a) I agree

(b) I disagree

(c) 999 Don't know/No answer

9. Next, we would like to ask you about the current and expected inflation. We would like to inquire about the average inflation/deflation rate in Germany in the year 2022. What do you believe was the average inflation/deflation rate in 2022 in Germany? Please enter a number in the field below.

Note: Inflation is the percentage increase in the general price level, usually measured by the Consumer Price Index. A decrease in the price level is commonly referred to as "deflation." If you believe that prices have not changed, enter "0." If you think there was deflation in 2022, enter a negative value. If you think there was inflation in 2022, enter a positive value.

The average inflation/deflation rate in Germany in 2022 was __% (one decimal place possible) [Numeric values with one decimal place in the range of -100 to +100]

(a) 999 Don't know/No answer

10. In your opinion, what will be the average inflation/deflation rate in Germany in the year 2023? Please enter a number in the field below.

If you believe that prices will not change, please enter "0." If you expect deflation, enter a negative value. If you anticipate inflation, enter a positive value.

I expect the average inflation/deflation rate in Germany in 2023 to be _% (one decimal place possible) [Numeric values with one decimal place in the range of -100 to +100]

   (a) 999 Don't know/No answer

11. In your opinion, what will be the average inflation/deflation rate in Germany in the year 2025? Please enter a number in the field below.

If you believe that prices will not change, please enter "0." If you expect deflation, enter a negative value. If you anticipate inflation, enter a positive value.

I expect the average inflation/deflation rate in Germany in 2025 to be _% (one decimal place possible) [Numeric values with one decimal place in the range of -100 to +100]

   (a) 999 Don't know/No answer

12. In your opinion, what will be the average inflation/deflation rate in Germany in the year 2027? Please enter a number in the field below.

If you believe that prices will not change, please enter "0." If you expect deflation, enter a negative value. If you anticipate inflation, enter a positive value.

I expect the average inflation/deflation rate in Germany in 2027 to be _% (one decimal place possible) [Numeric values with one decimal place in the range of -100 to +100]

13. Next, we would like to ask you some questions about the European Central Bank (ECB):

The main goal of the monetary policy of the European Central Bank (ECB) is to [Randomize the order of answers]

   (a) stabilize prices for goods and services

   (b) stabilize prices for corporate bonds

   (c) keep interest rates low and stable

   (d) reduce government debt

   (e) 999 Don't know/No answer

14. What is your estimate of the European Central Bank's (ECB) annual inflation target, which it aims to achieve on average in the medium term (approximately 3 years)?

__% (% annually) [Allow only whole numbers in the range of -100 to +100]

(a) 999 Don't know/No answer

15. To what extent do you trust the European Central Bank (ECB)? Please express your trust on a scale from 0 (no trust at all) to 10 (complete trust).

[Insert number line between 0-10, with whole number increments] __

16. Now we would like to ask you some questions about your personal attitudes. In general, would you say that most people can be trusted, or that people cannot be trusted, and one should therefore be cautious in dealing with them? Please indicate your trust in other people on a scale from 0 to 10. 0 indicates the belief that people cannot be trusted/one must be cautious, and 10 indicates the belief that most people can be trusted.

[Insert number line between 0-10, with whole number increments] __

17. Generally, are you a person who is willing to take risks, or do you tend to avoid risks? Please indicate your willingness on a scale from 0 (not willing at all to take risks) to 10 (very willing to take risks).

[Insert number line between 0-10, with whole number increments] __

18. In the following question, we would like to ask for your assessment of your financial risk tolerance. Are you generally a person who is willing to take financial risks to potentially earn higher returns, or do you tend to avoid financial risks for a lower return? How would you rate yourself on a scale from 0 (very low financial risk with typically lower returns) to 10 (very high financial risk with typically higher returns)?

[Insert number line between 0-10, with whole number increments]

(a) 999 Don't know/No answer

19. Are you generally a patient or impatient person? Please indicate this on a scale from 0 (very impatient) to 10 (very patient).

[Insert number line between 0-10, with whole number increments]

(a) 999 Don't know/No answer

20. Are you generally a more optimistic or pessimistic person? Please indicate this on a scale from 0 (very pessimistic) to 10 (very optimistic).

[Insert number line between 0-10, with whole number increments]

(a) 999 Don't know/No answer

In the following, we would like to provide you with information on the monetary policy of the European Central Bank (ECB). Please read the information carefully.

[Respondi: Random allocation into 6 groups (equally sized): 1 Control Group and 5 Treatment Groups – Marked by variable 'random' with values from 1-6]

Treatment Group 1 (random=1): Average inflation in the euro zone in 2022 was 8.4%. The European Central Bank (ECB) expects average inflation in the euro zone to be 6.3% in 2023, 3.4% in 2024 and 2.3% in 2025.

Treatment Group 2 (random=2): The European Central Bank (ECB) is committed to setting its monetary policy to ensure that inflation stabilizes at its 2% target in the medium term.

Treatment Group 3 (random=3): The chairwoman of the European Central Bank (ECB) said "Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough for many people across the euro area - that is why we have to raise interest rates to tame inflation."

Treatment Group 4 (random=4): Average inflation in the euro zone in 2022 was 8.4%. The European Central Bank (ECB) expects average inflation in the euro zone to be 6.3% in 2023, 3.4% in 2024 and 2.3% in 2025.

The chairwoman of the European Central Bank (ECB) said "Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough for many people across the euro area - that is why we have to raise interest rates to tame inflation."

Treatment Group 5 (random=5): The European Central Bank (ECB) is committed to setting its monetary policy to ensure that inflation stabilizes at its 2% target in the medium term.

The chairwoman of the European Central Bank (ECB) said "Fighting inflation is our mantra, our mission, our mandate. We know that the current situation is tough for many people across the euro area - that is why we have to raise interest rates to tame inflation."

Control Group (random=6): Proceed to Question 23

21. How informative did you find the text? Please rate your response on a scale from 0 (not informative at all) to 10 (very informative). [Insert number line between 0-10, with whole number increments]

    (a) __ [Insert number line between 0-10, with whole number increments]
    (b) 999 I did not understand the text.

22. Was the information in the text new to you?

(a) Yes

(b) No

[Respondi: Show questions 21 and 22 on the same screen as the treatment texts (below the texts)]

23. What do you believe is the lowest and highest value that the average inflation or deflation rate in Germany could reach in 2023?

    (a) Please provide the minimum value: ....% (mm)
    (b) Please provide the maximum value: ....% (MM)

    What is the likelihood that the average price increase in 2023 will be greater than X%? (Respondi: Automatically calculate X as (mm+MM)/2 and display it on the respondents' screen)

    Please provide a response on a scale from 0 to 100, where 0 means "absolutely no chance" and 100 means "absolutely certain".

24. What do you believe is the lowest and highest value that the average inflation or deflation rate in Germany could reach in 2025?

    (a) Please provide the minimum value: ....% (mm)
    (b) Please provide the maximum value: ....% (MM)

    What is the likelihood that the average price increase in 2025 will be greater than X%? (Respondi: Automatically calculate X as (mm+MM)/2 and display it on the respondents' screen)

    Please provide a response on a scale from 0 to 100, where 0 means "absolutely no chance" and 100 means "absolutely certain".

25. What do you believe is the lowest and highest value that the average inflation or deflation rate in Germany could reach in 2027?

    (a) Please provide the minimum value: ....% (mm)
    (b) Please provide the maximum value: ....% (MM)

    What is the likelihood that the average price increase in 2027 will be greater than X%? (Respondi: Automatically calculate X as (mm+MM)/2 and display it on the respondents' screen)

    Please provide a response on a scale from 0 to 100, where 0 means "absolutely no chance" and 100 means "absolutely certain".

26. The European Central Bank (ECB) has committed to shaping its monetary policy to ensure a low and stable inflation rate in the medium term. How much do you trust that the European Central Bank (ECB) is capable of ensuring price stability in the medium term (within approximately 3 years)?

    Please provide your answer on a scale from 0 (no trust at all) to 10 (complete trust). [Number line from 0 to 10, with whole number increments]

    (a) 999 Don't know/No answer

27. Has the current financial situation of your household improved or worsened in the last 12 months?

    (a) Improved significantly

    (b) Improved somewhat

    (c) Stayed about the same

    (d) Worsened somewhat

    (e) Worsened significantly

    (f) 999 Don't know

28. How do you expect the financial situation of your household to evolve in the next 12 months?

    (a) Will improve significantly

    (b) Will improve somewhat

    (c) Will stay about the same

    (d) Will worsen somewhat

    (e) Will worsen significantly

    (f) 999 Don't know

29. How do you think the national economic situation will develop in the next 12 months?

    (a) Will improve significantly

    (b) Will improve somewhat

    (c) Will stay about the same

    (d) Will worsen somewhat

    (e) Will worsen significantly

    (f) 999 Don't know

30. How do you think the national economic situation will develop in the next 5 years?

   (a) Will improve significantly

   (b) Will improve somewhat

   (c) Will stay about the same

   (d) Will worsen somewhat

   (e) Will worsen significantly

   (f) 999 Don't know

31. Do you believe that now is a good or bad time to buy larger household items such as furniture, a refrigerator, a stove, a television, or similar?

   (a) Very good time

   (b) Good time

   (c) Neither good nor bad

   (d) Bad time

   (e) Very bad time

   (f) 999 Don't know

In the following questions, we would like to ask for your assessment of inflation in the next 3 and 5 years under different scenarios. Please keep in mind that there are no right or wrong answers – we are interested in your views.

32. Consider the following scenario: What if the average inflation rate in 2023 were 1% lower than expected by you? What do you expect for the average inflation rate in 2025 and 2027 in this scenario?

   I would expect the average inflation rate in 2025 to be. . .

   (a) significantly higher

   (b) somewhat higher

   (c) roughly unchanged

   (d) somewhat lower

   (e) significantly lower

   (f) 999 don't know/no answer

   I would expect the average inflation rate in 2027 to be. . .

   (a) significantly higher

63

(b) somewhat higher

(c) roughly unchanged

(d) somewhat lower

(e) significantly lower

(f) 999 don't know/no answer

33. Consider the following scenario: What if the average inflation rate in 2023 were 1% higher than expected by you? What do you expect for the average inflation rate in 2025 and 2027 in this scenario?

I would expect the average inflation rate in 2025 to be...

(a) significantly higher

(b) somewhat higher

(c) roughly unchanged

(d) somewhat lower

(e) significantly lower

(f) 999 don't know/no answer

I would expect the average inflation rate in 2027 to be...

(a) significantly higher

(b) somewhat higher

(c) roughly unchanged

(d) somewhat lower

(e) significantly lower

(f) 999 don't know/no answer

Finally, we would like to ask you a few questions about yourself.

34. In which part of Germany did you live shortly before the fall of the Berlin Wall on November 9, 1989?

(a) In the eastern part of Germany, in the former GDR

(b) In the western part of Germany, in the Federal Republic of Germany

(c) I moved to Germany after 1989

(d) I was born after 1989

64

35. Does your household live in rented accommodation or in a property you own, such as a condominium or a house? Please choose the appropriate answer.

    (a) I live in rented accommodation and do not own any other residential property.
    (b) I live in rented accommodation but own other residential property.
    (c) I live in my own apartment.
    (d) I live in my own house.

36. How many people (including yourself) live in your household? __ people [Numeric field, do not allow decimal numbers, the number must be greater than zero (at least 1)]

37. Who is mainly responsible for the following in your household? [Matrix Question] a. Everyday purchases (e.g., groceries) b. Larger purchases (e.g., furniture, car) c. Meal planning and preparation d. Decisions about savings and financial investments

    (a) Me
    (b) Me together with my partner/another household member
    (c) My partner/another household member

38. Would you say that, on average over the last 12 months, the expenses of your household were higher than the household income, roughly equal to the household income, or lower than the household income?

    (a) Higher than the household income
    (b) Roughly equal to the household income
    (c) Lower than the household income
    (d) 999 I don't know/No answer