

# Attention to the Macroeconomy\*

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## Abstract

We measure which economic topics are top of mind using quarterly German household and firm panels from 2020 to 2024, a period that spans the post-pandemic inflation surge and the subsequent disinflation. With these data, we study potential determinants and consequences of having inflation top of mind. In line with goal-directed attention, the likelihood that inflation is top of mind rises with proxies for its true payoff relevance. At the same time, prior experiences predict whether respondents have inflation and energy prices top of mind conditional on a large set of controls for payoff relevance, and this relationship strengthens when the environment becomes more inflationary. Having inflation top of mind predicts stronger increases in information acquisition and inflation expectations over the shock period. At odds with goal-optimality, having inflation top of mind is associated with expectations further *away* from multiple *ex-ante* benchmarks. Finally, both key determinants of having inflation top of mind—payoff relevance and prior experiences—are associated with stronger shifts of expectations away from these benchmarks over the shock period.

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# 1 Introduction

How households and firms update their beliefs and adjust their behavior in response to aggregate shocks is a key margin of macroeconomic adjustment. These responses hinge on attention: which economic developments agents notice, how much and what type of information they acquire, and how they process it. In canonical macroeconomic theories of limited attention, attention is modeled as goal-optimal (Maćkowiak et al., 2023): attention improves the quality of forecasts and decisions, and agents rationally trade off these benefits against the costs of gathering and processing information. Yet, whether attention is well-described by goal-optimal models is far from settled. A growing body of work in behavioral economics suggests that what is top of mind may be driven by forces beyond rational cost-benefit considerations—such as salience and context-dependent retrieval of past experiences (Bordalo et al., 2025c)—and that attended information may be processed in biased ways, resulting, e.g., in overreaction to recent signals (Bonaglia et al., 2025; Bordalo et al., 2022a; Gennaioli et al., 2024).

While existing work on attention allocation often uses controlled settings, attention may depend critically on the context and the stakes involved, making it essential to provide field evidence. Doing so requires two ingredients: (i) a direct measure of which economic topics people are occupied with, and (ii) a setting with an actual macroeconomic shock, in which agents' attention allocation should play a key role. Our study builds on both ingredients to distinguish between the two broad views on attention.

We introduce a direct, scalable, individual-level measure of having macroeconomic topics top of mind that draws on open-ended survey responses. Specifically, we ask respondents what comes to mind when thinking about their economic situation. Our main measures are dummy variables indicating whether a respondent writes about a specific macroeconomic topic—such as inflation, monetary policy, or economic growth—or household- or firm-level issues. This measure provides a window into the economic topics respondents are occupied with, without changing what comes to mind through displayed response options. We embed our measure in quarterly panel surveys of German households from a representative online panel and German firms in the ifo Business Survey. Each wave comprises up to 5,000 households and up to 3,700 firms.

Our study period from 2020 to 2024 covers an unusual sequence of macroeconomic conditions: a sharp, unexpected surge in inflation in 2021–22, amplified by energy price shocks following Russia's invasion of Ukraine, and a subsequent disinflation in 2023–24. This setting features (i) substantial stakes for economic agents making decisions about price setting, consumption, investment, and wage bargaining, and (ii) important variation in the context. While our setting offers less control than laboratory environments, it allows us to distinguish between goal-optimal and non-goal-optimal attention in a setting of high relevance and external validity.

We start by outlining the predictions of goal-optimal attention and of salience- and experience-driven attention and how we can distinguish between them in our setting. On the attention *input* side, both classes of models predict that economic exposure to inflation increases the tendency to have inflation top of mind—either because such exposure raises the marginal value of information about inflation or because it makes inflation more salient. Both of these mechanisms should operate more strongly when inflation is more volatile, amplifying the effect of inflation exposure on inflation being top of mind. Theories of salience- and experience-driven attention predict that, beyond actual inflation exposure, prior inflation experiences make it more likely that inflation is top of mind, whereas canonical goal-optimal models feature no such role for experiences. The effect of past experiences should become particularly pronounced when the current environment more closely resembles the context of these past experiences.

On the belief *output* side, both classes of theories predict that inflation being top of mind increases the acquisition of inflation-related information. Under goal-optimality, this information is processed without systematic biases, improving the ex-ante accuracy of inflation expectations. Under non-goal-optimal attention, however, mechanisms such as overweighting of recent signals as in models of diagnostic expectations (Bordalo et al., 2022a) or similarity-based recall of past inflationary episodes (Gennaioli et al., 2024) can generate overreaction to a more inflationary environment. As a result, having inflation top of mind may result in inflation expectations that deviate more strongly upward from ex-ante benchmarks.

We then test these predictions empirically in three steps:

(1) *Determinants of what is top of mind.* First, we show that observable proxies for *payoff relevance* predict what is top of mind, using the fact that energy prices were a major driver of inflation over our sample period. In particular, exposure to energy prices—proxied by the pre-shock energy-cost share in revenues for firms and by fossil heating use for households—is strongly associated with energy and inflation being on households’ and firm managers’ minds.

Second, *prior experiences* are associated with what is top of mind even after conditioning on a rich set of controls for payoff relevance. Households who lived through the 1970s oil crises, or who report past (pre-shock) real income or wealth losses due to inflation, are substantially more likely to have inflation top of mind. For firm managers, our evidence on experience effects is more nuanced: having lived through the oil crises is associated with a greater tendency to think of energy-related topics, but the relationship with overall inflation being top of mind is more muted.

Third, these effects are *state-dependent*: both payoff relevance and prior inflation experiences matter more when the environment becomes more volatile and inflationary, and the effects only partially revert back once conditions normalize.

Thus, our findings support both the shared prediction of the two broad views of attention regarding the role of payoff relevance and the distinct prediction of experience-driven attention regarding the role of prior experiences.

(2) *From top of mind to information acquisition.* We next examine how inflation being top of mind is related to information acquisition. Prior to the shock, respondents who mention inflation in response to the open-ended question consume significantly more inflation-related news. During the shock, when increased media coverage reduces the costs and increases the salience of inflation-related information, respondents with inflation top of mind increase their information acquisition more strongly (after controlling for pre-shock information acquisition). The latter result is robust to instrumenting inflation being top of mind during the inflation shock with having inflation top of mind before the shock hits, although the IV results do not reach statistical significance among firms. Overall, the data are broadly in line with the common prediction of goal-optimal and salience-driven attention regarding the link between a variable being top of mind and the acquisition of related information.

(3) *From top of mind to beliefs.* We then ask how inflation being top of mind is linked to inflation expectations. In the pre-shock period, respondents with inflation top of mind already expect higher inflation, among both households (insignificantly so) and firms (significantly so). Having inflation top of mind is also associated with a stronger increase of inflation expectations in response to the shock, conditional on pre-shock expectations and confidence in these expectations. The stronger updating is robust to instrumenting the shock-period top-of-mind indicator with its pre-shock equivalent. The IV specification shuts down time-invariant heterogeneity in expectations, differential updating by baseline expectations or confidence, and contemporaneous reverse causality. Stronger updating in response to a change in the outlook for the variable of interest confirms another shared prediction of goal-optimal and non-goal-optimal attention.

We next ask whether the stronger updating when inflation is top of mind results in better-calibrated inflation forecasts, as implied by goal-optimality. Before the shock, respondents with inflation top of mind already exhibit *larger* upward deviations from ex-ante benchmarks that serve as proxies for optimal forecasts, although the association only reaches statistical significance among firms. During the shock, these upward deviations *increase significantly more* when inflation is top of mind for both households and firms, in both OLS and IV specifications. These patterns hold for a large range of benchmarks, including professional forecasts, financial market expectations, and time series predictions. These results are difficult to reconcile with goal optimality and consistent with mechanisms such as diagnostic expectations or similarity-based recall, which can generate overreaction to attended signals.

We analyze how two important determinants of whether inflation is top of mind—

actual inflation exposure and prior inflation experiences—matter for whether the associated changes in inflation expectations translate into stronger deviations from ex-ante benchmarks. We find that our proxy for payoff relevance is associated with stronger deviations from benchmarks for both households and firms. Prior inflation experiences are also linked to less well-calibrated forecasts, though this effect is concentrated among households and weaker for firms. These patterns are consistent with the idea that, even when attention reflects actual payoff relevance, it need not result in better-calibrated expectations. While these effects plausibly operate through inflation being top of mind, one caveat is that exposure and prior experiences may also influence expectations through alternative channels, such as heterogeneous processing frictions.

To understand *how* inflation being top of mind shapes belief formation, we employ an additional open-ended question on the main considerations underlying households' inflation expectations. We find that households with inflation top of mind are more likely to base inflation forecasts on current macroeconomic developments and the newest inflation realizations and less likely to consider normal inflation ranges. Together with our evidence on forecast deviations from benchmarks, this suggests that households with inflation top of mind may overreact to recent signals, as under diagnostic expectations (Bordalo et al., 2022a) or similarity-based recall (Gennaioli et al., 2024).

Finally, we ask whether what is top of mind carries over to behavior. Both OLS and IV estimations highlight that firms with inflation top of mind are more likely to raise prices in response to the shock, potentially as a “hedge” against expected further inflation increases. This suggests that agents' attention allocation, which can be non-goal-optimal, is associated with important (and potentially costly) changes in decisions.

*Alternative explanations.* Our setting captures attention and belief formation during a major macroeconomic shock faced by real households and firms, but the relevant variation is not randomly assigned. We therefore assess several alternative explanations for the empirical link between inflation being top of mind, instrumented by its pre-shock equivalent, and changes in information acquisition and inflation expectations over the shock. Confounding factors would need to (i) generate differential changes in the outcome over the shock period and (ii) be correlated with inflation being top of mind before the shock—conditional on background characteristics and the pre-shock levels of the outcome and confidence, which are already included as controls. We examine three such potential confounding channels.

First, inflation being top of mind before the shock might be correlated with a stronger tendency to extrapolate from a given level of perceived recent inflation. Second, financial sophistication and interest in economics could be related both to having inflation top of mind before the shock and a differential acquisition and processing of new inflationary signals. Third, information environments where inflation is discussed more

or differently could make inflation more likely to be top of mind before the shock and directly shape responses of information acquisition and expectations to the shock.

To address these concerns, we probe the sensitivity of our main estimates to controlling for proxies for being an extrapolative type, financial savviness, and information environments. The estimates move little when these controls are added. While we cannot control for unobserved differences in information processing or information environments, the stability of the estimates when adding observable proxies suggests that our results cannot easily be accounted for by the most prominent alternative explanations.

**Contributions and related literature** We build on a growing literature measuring attention to the macroeconomy. Experimental work tests mechanisms operating in models of goal-optimal attention, such as responses to perceived uncertainty (Mikosch et al., 2024) or stake size (Fuster et al., 2022; Roth et al., 2022), but relies on narrow, stylized measures, such as willingness to pay for forecasts. Observational approaches construct proxies for attention using data on beliefs (Bracha and Tang, 2025; Coibion and Gorodnichenko, 2015; Goldstein, 2023; Pfäuti, 2025, 2026; Yotzov et al., 2026), responses to exogenous information (Weber et al., 2025), or internet searches (Korenok et al., 2026), documenting higher attention in volatile environments and, in some cases, attention being associated with improved decisions (Coibion et al., 2018; Flynn and Sastry, 2024; Song and Stern, 2025). We contribute by directly measuring which economic topics are top of mind using a scalable, open-ended survey instrument that complements these proxies. Embedding this measure in large-scale household and firm panels spanning a major macroeconomic shock, we document empirical patterns that are difficult to reconcile with the predictions of goal-optimal theories. In particular, we provide a proof-of-concept from an important real-world context that higher attention can be associated with expectations deviating more strongly from various ex-ante benchmarks.

While macroeconomists have mostly focused on goal-optimal attention, evidence from behavioral economics suggests that attention can be non-goal-optimal. For instance, Bordalo et al. (2026a) highlight that selective attention to particular aspects of a statistical problem can distort agents' predictions. Hartzmark et al. (2021) demonstrate that ownership of a good channels attention to associated information, which in turn leads to over-reaction. Our paper provides field evidence consistent with non-goal-optimal attention in a macroeconomic context.

Finally, we contribute to a literature on how economic beliefs are shaped by personal experiences (D'Acunto et al., 2021; Goldfayn-Frank and Wohlfart, 2020; Malmendier and Nagel, 2011) and memory (Afrouzi et al., 2023; Bordalo et al., 2025b, 2023, 2026a, 2020; Cenzon, 2026; Charles and Sui, 2026; Enke et al., 2024; García-Lembergman et al., 2024; Graeber et al., 2024; Jiang et al., 2025; Taubinsky et al., 2026). Malmendier and Nagel (2016) show that inflation experiences persistently affect households' infla-

tion expectations. Bordalo et al. (2025a) provide evidence that experiences shape belief formation through mental simulation, while Bordalo et al. (2026b) show that uninformative cues and emotions shape macroeconomic expectations depending on prior experiences and similarity. Most closely related, Gennaioli et al. (2024) demonstrate that a model of selective recall can quantitatively account for the post-pandemic increase in inflation expectations and reconcile differences between point and distributional beliefs. Their model and survey evidence on inflation expectations from the US highlight that expectations are rigid when inflation is anchored but unstable when surges in inflation trigger the retrieval of past inflationary episodes. Overweighting of past experiences that are similar to the current context could be one mechanism behind non-goal-optimality of attention. Complementary to Gennaioli et al. (2024), we provide direct evidence on the relationship between experiences and what comes to mind.

## 2 Data and setting

In this section, we describe the macroeconomic environment during our data collection, our samples, and our key survey measure.

### 2.1 Macroeconomic environment

We collected our data from December 2020 to December 2024, covering the time from just before to after the post-pandemic inflation surge. Appendix Figure A.1 displays the evolution of key macroeconomic variables over the sample period. German CPI inflation initially stood at  $-0.3\%$ , rose above the ECB's  $2\%$  target around mid-2021, and accelerated further following Russia's invasion of Ukraine in early 2022, reaching around  $10\%$  by the end of 2022. Inflation declined in 2023 and stabilized around  $2\%$  in 2024. In addition to loose monetary and fiscal policy, labor shortages, and supply chain disruptions, the rise in inflation largely reflected an energy price shock. While inflation reverted back from the end of 2022, energy prices remained elevated until the end of our sample period. In response to higher inflation, the ECB started raising interest rates from the zero lower bound in mid-2022, reaching  $4.5\%$  in September 2023. Interest rates were then gradually lowered to  $3.15\%$  by the end of 2024. Aggregate unemployment fluctuated between  $4.9\%$  and  $6.4\%$  during our study period.

### 2.2 Samples

**Households** We conducted quarterly surveys with German households between December 2020 and December 2024 with the online panel provider Dynata. In each wave, we recontacted all respondents who participated in at least one previous wave. We then supplemented the data collection with new respondents to obtain an overall sample size

of about 5,000 per wave. Between June 2022 and March 2023, we only aimed for a sample size between 2,500 and 3,000 respondents. From June 2023 onward, we only recontacted employed respondents, resulting in sample sizes between 1,300 and 2,000 observations per wave.<sup>1</sup> We drop partial and (rare) duplicate responses.

Panel A of Appendix Table A.1 shows summary statistics of our household sample pooling all waves, and a comparison with the 2020 wave of the German Socio-economic Panel (GSOEP), a representative household survey. Our sample is roughly representative in terms of gender, age, region, and income. The main difference is higher average education in our sample, as it is common in online surveys (Haaland et al., 2023).

**Firms** In parallel to the household surveys, we conducted surveys containing mostly identical questions with firms from the ifo Business Survey (IBS), a large and representative monthly panel survey of German firms.<sup>2</sup> Respondents to the online portion of the regular IBS received a separate link to our module in the invitation email to the regular IBS of the last month in each quarter. More than half of the invited participants responded to our module, resulting in an average sample size of 3,300 per wave.

Panel B of Appendix Table A.1 shows summary statistics. 30% of the firms operate in manufacturing, 39% in service industries, and 9% in construction, and 22% in retail/wholesale. The median firm has 38 employees and the average share of exports in revenue is 17%. 51% identify as firm owners, 35% as managing directors, authorized signatories, or executive board members, and 7% as department heads.

## 2.3 Measuring what is top of mind

**Measurement** We next describe our measurement of what is top of respondents' minds. While we focus on a macroeconomic context, our measure is broadly applicable and could be used in contexts such as consumer finance, political behavior, job search, interpersonal relationships, parenting choices, or human capital investment.

We think of “what is top of mind” as the set of topics that most readily come to people's minds at a given moment. We focus on which *economic* topics are top of mind, including aggregate issues such as inflation, growth, and monetary policy, as well as household- or firm-level issues such as the job situation or investment projects.

A key challenge is that the measurement itself should ideally not change what comes to mind. For example, it should not prime individuals on a specific topic—say, inflation—and thereby alter the topics occupying their minds. We address this challenge with an open-ended question format that asks participants to provide written responses,

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<sup>1</sup>From June 2023, the data were initially collected for another project focused on employed workers.

<sup>2</sup>The IBS is the basis of the ifo Business Climate Index, the most recognized leading indicator of the German business cycle (Sauer et al., 2023). The IBS micro data have been used extensively in economics (e.g., Bachmann et al., 2019, 2026, 2013; Born et al., 2025; Buchheim et al., 2022; Enders et al., 2019).

an approach increasingly common in economics (Haaland et al., 2025). To elicit which *economic* topics are top of mind, we use a prompt that places respondents in the mindset relevant for their economic decision-making without suggesting specific content:

*What topics come to mind when you think about the economic situation of your household/company?*

Participants' written responses provide a snapshot of which topics are top of mind at the time of the survey. Depending on what occupies the respondent, we would expect them to write about aggregate economic developments or household- or firm-specific issues.

Although our prompt may still influence what comes to mind, it is broad, relatively neutral, and avoids priming on specific aggregate or household-/firm-level topics. Unlike closed-ended formats, our open-ended elicitation does not influence or restrict participants' responses through the displayed response options. Overall, the open-ended elicitation reduces concerns that the measurement changes the object of interest.

We classify a response as having a specific topic *top of mind* if the respondent mentions that topic. While responses are coded as having or not having a given issue top of mind, these measures inevitably contain noise, e.g., due to differences in how participants interpret the prompt or in how explicitly they articulate what is currently top of mind (Haaland et al., 2025). For instance, respondents may mention only those issues that are most important to them, leaving other topics unreported. Thus, while our measure captures variation in the extent to which a topic is top of mind, it would be misleading to view it as capturing a binary distinction between full and zero consideration.

**Coding scheme** To analyze the unstructured text data, we devise a scheme with codes for a range of macroeconomic and household- or firm-level topics. Each response can receive multiple codes. Table 1 displays the main factors in our scheme along with example responses, while Appendix B.1 provides the complete list of codes along with the explanations contained in our original manual. Our main codes of interest capture four macroeconomic topics: the Covid-19 pandemic, inflation, interest rates or monetary policy, and economic growth. In some of our analyses, we zoom in on energy costs and shortages, a subset of the issues subsumed under inflation. We also define variables that aggregate all macroeconomic or all household- or firm-level codes ("Any macro topic," "Any household-level topic," and "Any firm-level topic," respectively).

We instruct research assistants to apply the scheme to the text responses. All coders are Bachelor's or Master's students in economics. 87.5% of the household and 98.0% of the firm responses can be assigned at least one code from our scheme. For a subset of the data (1,896 responses from waves 3–6 of the household and 1,540 responses from waves 1–5 of the firm survey), two research assistants code the responses independently of each other, and conflicts are resolved through discussion between reviewers. We detect a high inter-rater reliability: when one coder assigns a given code to a household's

**Table 1** Coding scheme and example responses for the open-ended data

Category	Explanation	Examples
<b>Any macro</b>	Covid-19, inflation, monetary policy, growth, labor market, stock market, housing market, fiscal policy, regulation, structural transformation, trade, pension system, health system, education system, inequality, migration, environment/climate change, uncertainty, other macro topics.	“Taxes”; “The labor market”; “Politics is increasingly burdening me through levies and taxes, and through regulations on the industry, which in the end also affect me again through rising consumer prices”; “The war in Ukraine and the inflation.”; “Debt crisis, financial crisis, economic upswing.”; “I am afraid of the effects of the war.”; “Firstly, climate change and, as a result of it, the energy crisis, which of course is also extremely intensified due to the war in Ukraine. And of course, like everyone else, we are also affected by inflation.”
<b>Inflation</b>	Inflation, rising prices, price level, price increase, purchasing power, energy prices (gas, gasoline, electricity etc.).	“Rising food prices”; “Difficult times and skyrocketing prices”; “Inflation rate and the monetary value of one’s own savings”; “Currently the very high inflation rate”; “Price increase in food, higher energy costs, saving not possible”; “Electricity has become very expensive.”
<b>Inflation: Energy</b>	Subset of category “inflation” that refers to energy prices (gas, gasoline, electricity etc.).	“Price increase in food, higher energy costs, saving not possible”; “Electricity has become very expensive.”
<b>Covid-19</b>	Covid, corona, pandemic, lockdown.	“Due to Corona, I have been on short-time work for a year already. Therefore, my financial situation doesn’t look too rosy. The government urgently needs to take action here.”; “Tense due to Covid-19”; “Income has been halved since Corona”
<b>Monetary policy</b>	Interest rates, monetary policy, central bank, ECB, negative interest rate.	“Interest rates and investment”; “Low interest rates”; “No interest on assets, uncertainty in stock investment.”; “Pension adjustments, interest rates, DAX.”; “That credit interest rates are becoming increasingly expensive and prices are rising. Hopefully, there will be a salary increase soon.”
<b>Growth</b>	Economic growth, GDP, general economic situation, aggregate economy, business cycle, upswing, downturn, insolvencies, company bankruptcies, aggregate demand, overall industrial production, economic crisis, recession.	“Recession, Economic Crisis”; “The faltering economy and rising inflation”; “One economic crisis after another is eroding my retirement savings, so that I will soon become a welfare case.”; “The economic situation in Germany is stable, in my eyes.”; “Economic crisis. High prices for food and energy.”
<b>Any household-level</b>	Overall household situation, spending, income, job situation, saving, financial assets, housing costs, debt, health issues, insurance, uncertainty, other household-level topics.	“Concern about job loss in the future.”; “We are doing well. No debt. A vacation is possible.”; “Relatively secure, due to fixed income from pension”; “old-age poverty”; “I’m just barely making ends meet with my money.”; “The economic situation is bad, with only one earner with a low pension among two adults.”; “We are getting along well and don’t have to cut back. In addition to everyday expenses, there is also enough money left over for vacation and leisure activities.”
<b>Any firm-level</b>	Overall firm situation, costs, supply chain, demand, labor input, profits/profitability, liquidity/solvency, process organization, government aid programs, R&D, regulation, financing, short-time work, capacity utilization, rent/housing costs, uncertainty, other firm-level topics.	“Automation + process optimization”; “Sustainability, innovation, product life cycles”; “increasing material and energy costs, personnel costs, parts supply”; “Liquidity bottlenecks, difficult storage, dissatisfaction with the banks”; “How do I get specialized staff, especially mathematicians and computer scientists?”; “There is hardly any suitable skilled personnel, investment backlog and tough competition”; “Investment in digitization and expansion of our product portfolio.”

*Notes:* This table provides an overview of the main topics in our coding scheme, an explanation for each code, and example extracts from open-text responses (translated to English). All example responses – except for the firm-level categories – draw on the household survey. For the codes “Inflation,” “Inflation: Energy,” “Covid-19,” “Monetary policy,” and “Growth,” the explanations correspond to the instructions in the coding manual handed out to research assistants. For “Any macro,” “Any household-level,” and “Any firm-level,” the explanations include all codes in the coding scheme that are subsumed under these aggregate categories. The complete coding scheme handed out to research assistants can be found in Appendix B.1.

response, there is a 78.6% chance that the other coder does so too. The corresponding number is 79.9% for the firm survey. The inter-rater reliability increases to 88.4% for households and to 87.9% for firms when it is calculated on the subset of topics we mostly focus on, namely Covid-19, inflation, monetary policy, and economic growth.

We conduct two additional quality checks of the hand-coding. First, Appendix Table A.2 shows that the tendency that a response is coded as considering inflation is strongly positively correlated with simple counts of inflation-related words. Second, we use a large language model to code a subset of the March 2023 household wave.<sup>3</sup> Appendix Figure A.2 compares the topic distribution between the hand-coded and the AI-coded data, while Appendix Table A.3 displays cross-sectional correlations for key topics. Both exercises indicate a high degree of agreement between the two methods. Our coding approach thus seems to capture the content of the responses well.

**Validation** We validate our open-ended measure of what is top of mind using two alternative closed-ended survey questions.

First, we apply a closed-ended question with the same wording as our open-ended question, included in an additional data collection with about 500 German households (September 2023, Prolific). We use a separate sample to not contaminate responses to the open-ended question in subsequent waves of our main panel. Participants first respond to our main open-ended question. On the next screen, they are again asked which topics come to their mind when thinking about their household’s economic situation. However, instead of writing their response into a text box, they now select all relevant topics from a list with randomized order. Compared to the open-ended elicitation, the structured elicitation mitigates the concern that respondents may be hesitant or unable to articulate their thoughts. At the same time, the structured elicitation mechanically changes what is top of mind by exposing respondents to the response options. Appendix G provides the instructions in German and translated to English.

As shown in Appendix Figure A.3, the baseline fractions of respondents raising different aggregate and household-level topics are higher in the structured measure, as it is common when comparing structured and open-ended elicitations (see, e.g., Andre et al., 2022). This pattern may indicate a lower effort cost of indicating a particular topic as well as mechanical increases driven by priming through the displayed response options. However, the variation across topics appears very similar in the two elicitation modes. In the cross-section, the open-ended measure is highly correlated with the structured measure for most of the key topics analyzed below (Appendix Table A.4).

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<sup>3</sup>We use Scikit-LLM’s zero-shot multi-label classifier with GPT-4 as the underlying AI model (Pedregosa et al., 2011) and focus on a random subsample ( $n = 200$ ) from the March 2023 wave. The codes are reformulated into whole sentences, as recommended by the Scikit-LLM guidelines, using exclusively information provided in the coding scheme handed to the research assistants who initially hand-coded the responses. The codes assigned by the multi-label classifier (by default, no more than ten per response) are then compared to the codes assigned in the hand-coding.

Second, our notion of what is top of mind is tightly linked to agents' *perceived importance* of different topics. We therefore validate our open-ended measure with a closed-ended measure that directly elicits respondents' perceived importance of different topics for their own economic situation. In several waves of our main household and firm panels, we present respondents with statements such as the following: "*Inflation in Germany is important for the economic situation of my household/firm.*" The respondents indicate the extent to which they agree with the statement on five-point categorical scales ranging from "strongly disagree" to "strongly agree." Appendix Table A.5 shows a strong positive cross-sectional correlation between this measure of perceived importance and our open-ended measure of what is top of mind.

## 2.4 Attrition and repeated participation

**Attrition** Appendix Figure A.4 displays the composition of each wave by the first wave a respondent participated. Among households, 51% of wave-1 respondents participated in wave 2 and 49% in wave 3, with respondents participating on average 5.4 times conditional on participating more than once. Attrition is more limited among firms: 73.2% of wave-1 respondents also participated in wave 2 and 72.8% in wave 3, with an average of 8.1 participations conditional on participating more than once. Appendix C analyzes the predictors of attrition. In the household panel, dropout is higher among respondents who are unemployed, have lower income, or are younger; in the firm panel, owners and respondents from larger firms are less likely to drop out. One possible concern is that respondents who become more worried about inflation in a particular wave might be systematically more likely to drop out. However, conditional on individual fixed effects, within-person variation in whether inflation is top of mind and in measures of inflation expectations does not robustly predict dropout in the next wave. None of our main results vary qualitatively with respondents' survey tenure (see Appendix C).

**Repeated participation** One concern is that after the initial open-ended question, each wave includes several questions on macroeconomic issues. Recontacted respondents may recall the survey topic and express more thoughts about macroeconomic topics in the open-ended question. To assess this, we regress indicators for raising a given topic on an indicator for repeated participation and time and individual fixed effects. Appendix Table A.6 shows that repeated participation is not linked to an increase in households' or firms' tendency to write about aggregate topics such as inflation.

## 3 Conceptual framework and empirical proxies

In this section, we compare the predictions of goal-optimal attention and salience- and experience-driven attention regarding the determinants and consequences of what is

top of mind. We also describe our empirical proxies for key theoretical objects.

### 3.1 Framework and predictions

Macroeconomic theories of limited attention, such as rational inattention, mostly model attention as goal-optimal (e.g., Gabaix, 2019; Maćkowiak and Wiederholt, 2015; Maćkowiak et al., 2023; Pfäuti, 2025, 2026; Reis, 2006; Sims, 2003; Woodford, 2003). We compare the predictions of goal-optimal attention to those of a particular class of non-goal-optimal attention models: salience- and experience-driven attention theories (e.g., Bordalo et al., 2026a, 2022b; Gennaioli et al., 2024; Hartzmark et al., 2021; Kahana, 2012). Table 2 summarizes different theory predictions and highlights whether the two classes of theories agree or disagree regarding the respective prediction.

A key terminological distinction is between attention being *goal-directed* (or goal-relevant) and attention being *goal-optimal*. Attention is goal-directed if agents *pay more attention to variables that are more payoff relevant*. Attention is goal-optimal if it is *chosen to maximize expected payoffs*. That is, agents optimally trade-off the costs and benefits of attending to different variables, and the resulting information is processed optimally, so that attention improves the accuracy of beliefs and the quality of decisions. While related, goal-directed attention is not necessarily goal-optimal. Our data allow us to separately speak to goal-directed and goal-optimal attention.

**Determinants of what is top of mind** Under goal-optimality, what is top of mind is governed by the *marginal value of allocating additional attention* to a variable—that is, the expected improvement in decision quality from acquiring and processing information about that variable, net of the marginal cost of attention. This marginal value not only depends on whether the variable enters an agent’s decision rule (stakes) but also on the agent’s prior uncertainty about that variable. Payoff relevance thus interacts with the environment: higher volatility of a variable—associated with higher prior uncertainty—increases the returns to paying attention to the variable, making it more likely that the variable is top of mind for agents whose optimal decisions depend on that variable (Maćkowiak et al., 2023). Importantly, in goal-optimal models, the marginal value of attention *fully* determines what is top of mind. Conditional on payoff stakes and volatility, other factors—such as personal experiences—play no role.

Over our study period, changes in energy costs were a major driver of inflation. Greater exposure to energy costs can thus be viewed as increasing the payoff relevance of the developments of inflation over our study period. Goal-optimal models therefore predict that agents who are more exposed to energy price fluctuations—whose optimal decisions depend more strongly on such fluctuations—are more likely to have inflation and energy top of mind, and that this effect strengthens with higher energy price volatility. Rows (i)-(iv) in the third column of Table 2 summarize the predictions of

**Table 2** Predictions of goal-optimal and of salience- and experience-driven attention

Prediction	Empirical proxy	Goal-optimal attention	Salience-/ Experience-driven attention	Theories agree?
<i>A. Determinants of what is top of mind</i>				
(i) Payoff relevance → top of mind	Fossil heating (hh.) / high energy cost share (firms) → inflation or energy TOM	+	+	Yes
(ii) Prior experiences → top of mind (conditional on payoff relevance)	Oil crises cohort / past inflation losses → inflation TOM Past recession losses → growth TOM	0	+	No
(iii) Payoff relevance × volatility → top of mind	Energy exposure × current energy price volatility → inflation or energy TOM	+	+	Yes
(iv) Experience × similarity of context → top of mind	Inflation experience × current level & volatility of inflation → inflation TOM	0	+	No
<i>B. From top of mind to information acquisition</i>				
(v) Top of mind → acquisition of related information	Inflation TOM → inflation news consumption	+	+	Yes
(vi) Top of mind × volatility → acquisition of related information	Inflation TOM → change in inflation news consumption in response to the shock	uncertain	uncertain	Yes
<i>C. From top of mind to beliefs</i>				
(vii) Top of mind → updating when there are new signals	Inflation TOM → change in inflation expectations in response to the shock	+	+	Yes
(viii) Top of mind → expectation alignment with ex-ante benchmarks	Inflation TOM → inflation expectation alignment with professional forecasts, financial market expectations, time series predictions	+	uncertain	No

*Notes:* This table summarizes the predictions of goal-optimal and non-goal-optimal (in particular, experience- and salience-driven) attention for the empirical exercises conducted in Sections 4–5. The first column presents the theoretical predictions. The second column maps each prediction to the specific empirical measures we use in our analysis. The third and fourth column present the predicted relationship under goal-optimal and non-goal-optimal attention, respectively, where “+” indicates a positive, “0” a muted, and “uncertain” an ambiguous predicted effect. The last column indicates whether the two classes of models make the same qualitative prediction. “TOM” abbreviates “top of mind.”

goal-optimal models regarding the determinants of what is top of mind.

Under non-goal-optimal attention, attention can also be goal-directed: payoff-relevant variables are more salient—in particular if they are volatile—making such variables more likely to be top of mind. However, there can also be additional influences that are unrelated to current payoffs. In particular, prior experiences may shape which topics agents are concerned with *even conditional on current payoff relevance*. Research on associative memory suggests that such experience effects vary with the environment (Kahana, 2012): when the present context more closely resembles the context in which a past experience was made, that experience is more likely to be recalled, making the associated topic more likely to come to mind (Bordalo et al., 2025c).

In the context of our study period and data, agents with a greater exposure to energy costs—for whom fluctuations in inflation and energy prices are more salient—should be more likely to have inflation and energy top of mind, in particular during the inflationary surge. This prediction coincides with the prediction of goal-optimal models, but the psychological mechanism differs. On top of this, individuals with prior inflation experiences—e.g., those who have lived through the 1970s oil crises—should be more likely to have inflation and energy top of mind, and this link should strengthen once the environment more closely resembles these past experiences—i.e., when inflation and energy prices are more elevated and volatile. This prediction differs from the prediction of goal-optimal attention. Rows (i)-(iv) of the fourth column of Table 2 summarize the predictions of non-goal-optimal attention.

**From top of mind to information acquisition** Under goal-optimal attention, having a topic top of mind reflects a high marginal return to information about it, so agents gather more such information—optimally choosing how much and what type of information to acquire. Under salience-driven attention, topics that are top of mind are more salient, which increases the acquisition of related information. The amount and type of information acquired, however, need not be optimal.<sup>4</sup>

A greater supply of related information increases the acquisition of such information, either because information becomes less costly to identify and process (goal-optimal attention) or because it becomes more salient (salience-driven attention). How information supply and a topic being top of mind interact in shaping information acquisition is ambiguous: the two could be complements or substitutes, both in goal-optimal models (e.g., in Maćkowiak et al., 2023) and, conceivably, under salience-driven attention.

In the context of our data, both theories predict that individuals with inflation top of mind acquire more inflation-related information. This link may strengthen or weaken

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<sup>4</sup>We are not aware of any existing model of non-goal-optimal attention that formally derives this prediction, but in these models, when agents think about a topic, they are more likely to notice and engage with related information.

over the shock when media coverage of inflation increases. This shared prediction is summarized in rows (v) and (vi) of Table 2.

**From top of mind to beliefs** Under goal-optimality, individuals with a particular variable top of mind acquire more relevant information, which is processed optimally—that is, rationally and without systematic biases. As a result, having a variable top of mind should move expectations closer to the ex-ante optimal forecast. Without goal-optimality, having a topic top of mind is also associated with more information acquisition, but the additional information may not be optimally processed.<sup>5</sup> For instance, agents may overweight recent signals they attend to, as in models of diagnostic expectations (Bordalo et al., 2018). Similarly, associative recall of past episodes similar to the current one may distort how new information is processed (Bonaglia et al., 2025; Gennaioli et al., 2024). The net effect of having a topic top of mind on belief accuracy is ambiguous: having more up-to-date information increases belief accuracy, whereas biased processing of that information decreases belief accuracy.

In our setting, the two classes of theories make different predictions about the ex-ante accuracy of inflation expectations: while having inflation top of mind should be unambiguously associated with better-calibrated inflation expectations under goal-optimality, this need not be the case without goal-optimality. Both theories predict that inflation being top of mind makes it more likely that the new inflationary signals are noticed, leading agents to update their inflation expectations. However, only under goal-optimality will this updating leave inflation expectations unambiguously more closely aligned with the new benchmark. Under non-goal-optimal attention, over-weighting of recent signals (diagnostic expectations) or of similar past episodes (associative memory) could generate overreaction to the attended inflationary signals. Updating could then in principle result in *less accurate* inflation expectations. The predictions on belief accuracy are summarized in rows (vii) and (viii) of Table 2.

### 3.2 Empirical proxies

Below, we describe empirical proxies we use to test the predictions of goal-optimal vs. non-goal-optimal attention. Appendix F provides the original and translated key survey instructions. The second column of Table 2 indicates which proxy is used in each test.

**Payoff relevance** As explained above, we use exposure to energy costs to proxy payoff relevance. For firms, we use the ratio of energy costs to revenues in 2021, prior to Russia’s invasion of Ukraine, as elicited in the regular IBS in April 2022. For households, we employ their primary heating energy source as of December 2021—before the en-

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<sup>5</sup>Hartzmark et al. (2021) provide evidence that ownership of an asset channels attention to information associated with that asset but leads to overreaction rather than improved decisions, consistent with attention being goal-directed but not goal-optimal.

ergy price surge—elicited retrospectively in June 2023. Our pre-determined exposure measure is an indicator for using fossil heating sources (gas, oil, wood, distant heating), which were subject to large cost increases over the course of the shock.

**Experiences** We consider two types of experiences. First, we focus on the collective experience of having lived through the 1970s oil crises, when inflation was historically high. We use an indicator for cohorts that were at least teenagers by the late 1970s.<sup>6</sup> Second, we employ survey measures of households’ personal experiences. Specifically, in the March and June 2021 waves—prior to the inflation surge—we elicited whether respondents ever incurred substantial real income drops or real wealth losses due to increases in inflation. These measures capture both *across*-cohort variation from differences in experienced aggregate inflation rates as well as *within*-cohort variation from (i) differential co-movement of one’s income or wealth with inflation, (ii) differences in experienced household-specific inflation, (iii) differential encoding or recall of inflation experiences, or (iv) inflation experiences that immigrants—a subset of our respondents—made in other countries. We also elicit whether a respondent ever incurred an income reduction due to business cycle fluctuations.

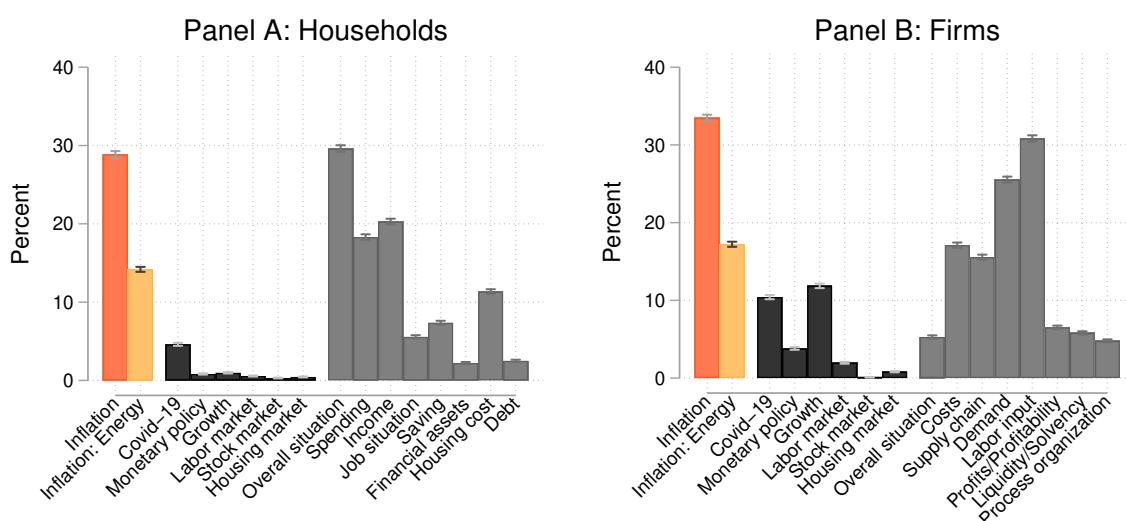
**Information acquisition** Our main measure of information acquisition is based on a question asking respondents how often they informed themselves about inflation in the last three months. This measure is available from December 2020 to March 2023. In some waves, we additionally ask the respondents about the number of reports on inflation they have read in the news, seen on TV, or heard on the radio over the past three months, or the number of minutes they have spent consuming inflation news in the past week. Appendix Figure A.5 shows that these alternative measures are strongly correlated with our main information acquisition measure, supporting its validity.

**Expectations** In each wave, we elicit respondents’ expectations about the inflation rate over the next 12 months. We winsorize these expectations at 30% to reduce the impact of outliers. Our data contain no negative outliers for expected inflation, so we do not winsorize these expectations at the bottom. None of our findings are sensitive to the exact treatment of outliers. Median inflation expectations in our samples closely track median expectations from representative firm and household surveys by the Bundesbank (Appendix Figure A.6). In our analysis, we assess the quality of respondents’ inflation expectations by comparing them to professional forecasts, financial market expectations, and time series predictions. These benchmarks are described in Section 5.3.

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<sup>6</sup>Given differences in how age was elicited, we classify household respondents born in 1968 or earlier, and firm managers born in 1973 or earlier, as having experienced the oil crises.

**Figure 1** What is top of mind across topics



*Notes:* This figure presents the distribution of what is top of mind across different topics including inflation (orange), the subset of respondents with inflation top of mind that also mention energy prices (yellow), further macroeconomic topics (black), and household-/firm-level topics (gray) pooled across all waves from December 2020 to December 2024. The measure of what is top of mind is based on people’s responses to our main open-ended question: “What topics come to mind when you think about the economic situation of your company/household?” Panel A shows results for households. Panel B displays results for firms.

## 4 Determinants of what is top of mind

In this section, we examine the determinants of what is top of mind, including both payoff relevance and prior experiences.

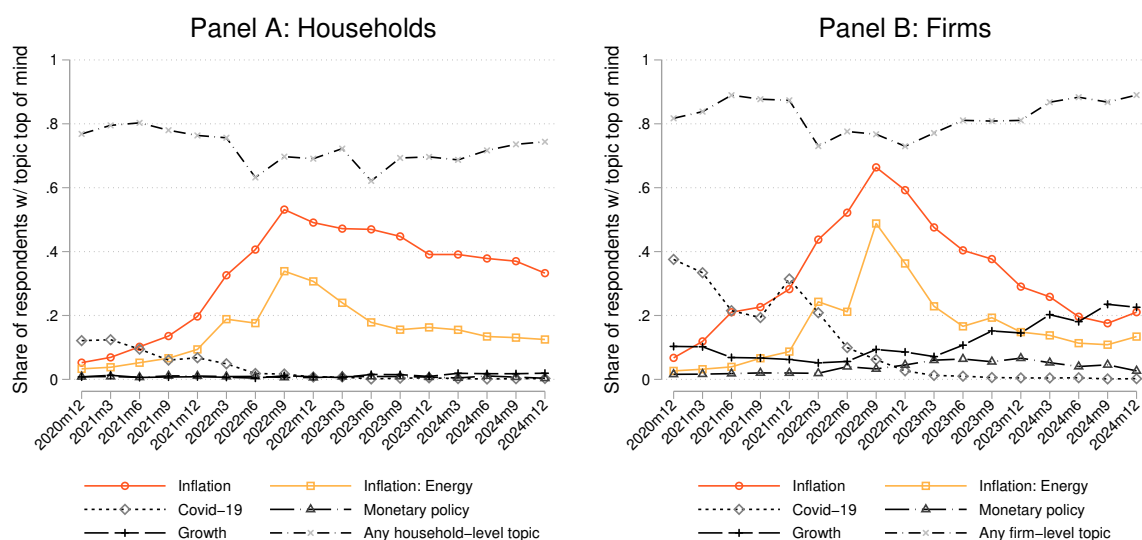
### 4.1 Variation across topics, types of agents and time

**Variation across topics and types of agents** We start by describing which topics are top of respondents’ minds, pooling all waves. 74% of households mention at least one household-level topic, while 37% raise at least one macro issue. Panel A of Figure 1 shows that inflation is the most frequently mentioned macro topic among households (29%)—partly in the form of energy prices (14% of the overall sample)—followed by Covid-19 (5%). Only few households have growth and monetary policy top of mind (1% each). Among household-level topics, the household’s overall economic situation (30%), income (20%), spending (18%), and housing costs (11%) are most frequent.

Among firms, 82% raise at least one firm-specific issue and 64% at least one macro topic. Panel B of Figure 1 shows that, within macro topics, managers mostly write about inflation (33%)—often in the context of energy prices (17% of the full sample)—followed by growth (12%), Covid-19 (10%), and monetary policy (4%). Within firm-level topics, labor input (31%) and product demand (26%) are most important.<sup>7</sup>

<sup>7</sup>Appendix E.1 analyzes the joint distribution of what is top of mind across different topics.

**Figure 2** What is top of mind over time



*Notes:* This figure displays the evolution of the fractions of respondents that raise different topics in the open-ended survey question among households (Panel A) and firms (Panel B) across survey waves. The “Any household-/firm-level topic” summarize all household-/firm-level topics included in the coding scheme that can be found in Appendix B.1. The remaining lines refer to specific macroeconomic topics, i.e., inflation, the subset of respondents with inflation top of mind that also mention energy prices, Covid-19, monetary policy, and growth.

**Variation over time** The time variation in what is top of mind largely mirrors the macroeconomic development described in Appendix Figure A.1. According to Panel A of Figure 2, the fraction of households mentioning Covid-19 falls from around 12% in December 2020 to close to zero by June 2022, reflecting the end of the pandemic. In parallel, the share of households with inflation top of mind rises from 5% in December 2020 to 53% in September 2022—when inflation approached 10% following Russia’s invasion of Ukraine in February 2022—and then declines only gradually during the subsequent periods of disinflation (2023) and inflation near target (2024), remaining elevated at 33% by the end of 2024. Panel B of Figure 2 shows broadly similar patterns for firms: the share mentioning Covid-19 declines, while the fraction writing about inflation increases steadily from 7% in December 2020 to a peak of 66% in September 2022. It then falls to 21% by December 2024. The time variation in the importance of inflation partly reflects variation in the prominence of energy-related topics, both among firms and among households—consistent with energy prices being a major driver of inflation over the study period. The ECB’s sharp rate hikes, from 0% in mid-2022 to 4.5% in September 2023, were not accompanied by notable increases in monetary policy being top of households’ or firms’ mind. Throughout, only few households write about economic growth. Firms begin to focus more on growth from 2023.<sup>8</sup>

<sup>8</sup>Appendix E.2 provides a variance decomposition of what is top of households’ and firms’ minds into systematic time variation, persistent individual-level heterogeneity, and idiosyncratic variation over time.

## 4.2 Payoff relevance, experiences, and what is top of mind

We next analyze the role of payoff relevance and personal experiences pooling all waves.

**Specifications** We regress indicators for whether a particular topic is top of mind on energy exposure, prior experiences, and a broad set of controls. Prior experiences are measured either by belonging to an oil crises cohort or by individually recalled prior losses due to inflation. For households, we control for background characteristics such as gender, whether the respondent is employed, log household income, indicators for educational attainment, indicators for homeowners and stockowners, the federal state, and—when using recalled experienced losses—the respondent’s age. For firms, we include the number of employees (in logs), the export share, an indicator for whether the respondent is the firm owner, and the federal state. These controls can be viewed as capturing fundamental aspects of the decision environment and actual payoff relevance of inflation in a flexible manner.<sup>9</sup> Appendix Figure A.7 shows that our main estimates of how energy exposure and prior experiences are linked to what is top of mind shown below are robust to a wide range of permutations of the set of included controls.

**Results** The results are presented in Table 3. Panel A shows that actual exposure to energy prices is associated with an increased likelihood that inflation and energy are top of mind, among both households (Columns 1 and 2) and firms (Columns 4 and 5). For instance, households using fossil heating are 7.6pp more likely to have inflation top of mind, compared to an overall fraction of 28% being concerned with inflation. This indicates that payoff relevance is linked to what is top of mind, consistent with a basic mechanism present in both goal-optimal and salience-driven attention theories.

We next turn to the role of prior experiences. Panel A focuses on specifications using the cohort-level measure. Experiences strongly predict what is top of mind, even conditional on our rich set of controls for fundamental aspects of the decision environment and payoff relevance. The correlations for households are sizable: households that lived through the oil crises are 6.5pp more likely to have inflation top of mind ( $p < 0.01$ , Column 1), driven mainly by energy-related topics ( $p < 0.01$ , Column 2). For firms, the role of prior experiences appears more specific: managers who lived through the oil crises are 2.5pp more likely to mention energy-related topics ( $p < 0.01$ , Column 5), while the association with mentioning overall inflation is more muted (Column 4). Columns 3 and 6 show smaller and less significant correlations of energy exposure and the oil crisis experience with households’ and firms’ inclination to write about economic growth.

Panel B reports specifications using recalled past losses due to macroeconomic developments as a measure of prior experiences. This measure is available only for house-

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<sup>9</sup>Throughout the paper, missing values for the control variables are coded as zero, and dummies indicating missings are added to the regressions, to maintain the sample size. None of our findings are sensitive to excluding observations with missing values instead.

**Table 3** Potential determinants of what is top of mind: Full period

	Households: ... top of mind			Firms: ... top of mind		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A</b>	Inflation	Inflation: Energy	Growth	Inflation	Inflation: Energy	Growth
Experience: Oil crises	0.065*** (0.008)	0.056*** (0.006)	-0.003*** (0.001)	0.001 (0.010)	0.025*** (0.008)	-0.001 (0.006)
Exposure: Fossil heating	0.076*** (0.018)	0.053*** (0.010)	0.002 (0.003)			
Exposure: High energy cost share				0.061*** (0.008)	0.090*** (0.007)	-0.007 (0.005)
Observations	43,354	43,354	43,354	41,663	41,663	41,663
Distinct respondents	10,760	10,760	10,760	5,057	5,057	5,057
R-squared	0.14	0.08	0.00	0.14	0.13	0.04
Mean dep. var.	0.28	0.14	0.01	0.35	0.18	0.12
	Households: Inflation top of mind			Households: Growth top of mind		
<b>Panel B</b>	(1)	(2)	(3)	(4)	(5)	(6)
Experience: Inflation loss	0.057*** (0.008)		0.048*** (0.009)	0.002 (0.001)		0.000 (0.001)
Experience: Recession loss		0.050*** (0.009)	0.039*** (0.010)		0.006*** (0.002)	0.005*** (0.002)
Exposure: Fossil heating	0.069*** (0.021)	0.080*** (0.021)	0.072*** (0.022)	0.002 (0.003)	0.003 (0.003)	0.003 (0.003)
Observations	30,470	30,380	28,184	30,470	30,380	28,184
Distinct respondents	5,755	5,737	4,982	5,755	5,737	4,982
R-squared	0.15	0.15	0.15	0.00	0.00	0.00
Mean dep. var.	0.27	0.27	0.27	0.01	0.01	0.01
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:* This table displays regressions of having specific topics top of mind on measures of prior inflation experiences and payoff relevance for the entire sample period. In Panel A, the experience measure is an indicator for whether the respondent was at least a teenager during the oil crises of the 1970s as defined in Footnote 6. In Panel B, the experience measures are based on whether the respondent had ever experienced (i) a real income loss or a real wealth loss due to inflation in the past (“Inflation loss”) or (ii) an income loss due to a recession (“Recession loss”), as elicited in the pre-shock period. For households, we proxy payoff relevance using a dummy that is one if the primary heating energy source was fossil in December 2021, and control for gender, employment, education, household income, homeownership and stockownership, federal state, and—in Panel B only—the respondent’s age. For firms, high exposure indicates an above-median ratio of energy costs to revenues in 2021, and we control for firm size, export share, the respondent being the firm owner, and federal state. All specifications include survey wave fixed effects. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

holds. Since these experiences vary within cohorts, we now also control for the respondents’ age on top of energy price exposure and the other previously used characteristics. Households that have ever incurred real income or wealth losses due to inflation are 5.7pp more likely to have inflation top of mind ( $p < 0.01$ , Column 1). Prior income losses due to recessions are also associated with inflation being top of mind ( $p < 0.01$ , Column 2), potentially reflecting the broader impact of “traumatic” experiences asso-

ciated with aggregate economic conditions. That said, the relationship with inflation-related losses is stronger and remains more important in a horse race including both measures (Column 3). The likelihood of mentioning aggregate economic growth is significantly related to past losses from recessions ( $p < 0.01$ , Column 5), but unrelated to prior inflation experiences (Columns 4 and 6). Overall, these results suggest that *within-domain* experiences are most central to whether a topic comes to mind.

### 4.3 Context-dependent roles of payoff relevance and experiences

We next test whether the roles of payoff relevance and prior experiences vary with the macroeconomic context, defining the following subperiods of our quarterly panel:

- (1) **Pre-shock** (December 2020-June 2021): Inflation close to the 2% target or below, stable energy prices.
- (2) **Inflation take-off** (September-December 2021): Inflation increasing from 2% to above 5%, increasing energy prices.
- (3) **Post-invasion** (March-September 2022): Inflation increasing from 5% to 10% following Russia's invasion of Ukraine, skyrocketing energy prices.
- (4) **Disinflation** (December 2022-September 2023): Inflation high but decreasing from 10% to 4%, partial reversal of energy prices.
- (5) **Inflation at target** (December 2023-December 2024): Inflation close to the 2% target, stable but elevated energy prices.

According to the predictions from Section 3.1, the effects of energy exposure (goal-optimal and salience-driven attention) and of past inflation experiences (salience-driven attention) on energy and inflation being top of mind should increase from the first to the third period, with a possible continued impact during the fourth and fifth periods.

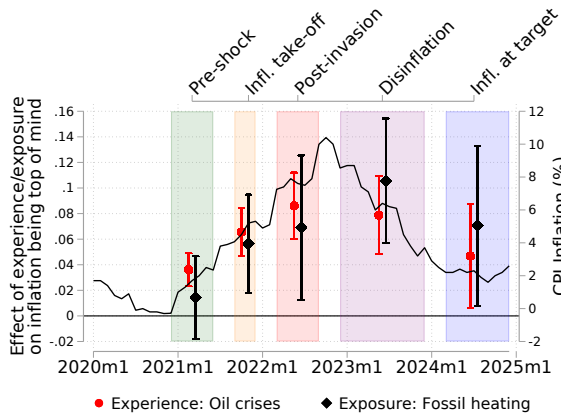
**Specifications** For each of the above five subperiods, we regress an indicator for inflation or an indicator for energy being top of mind on one of our experience measures, energy exposure, and the same set of controls as used in Table 3. Figure 3 plots the estimated coefficients on energy exposure and on the experience measure for each subperiod. Each panel displays the results of one estimation. Appendix Table A.7 highlights that the patterns displayed in Figure 3 are robust to including respondent fixed effects.

**Results** Energy exposure is more strongly linked to households' (Panels A and B) and firms' (Panels C and D) tendency to think of inflation and energy when energy prices are elevated and volatile, consistent with both goal-optimal and salience-driven attention.

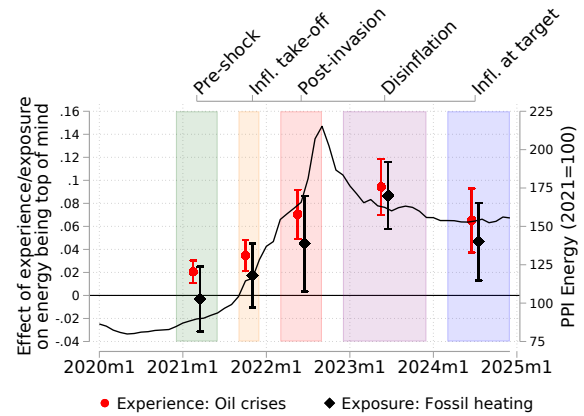
Turning to the role of experiences, households who lived through the 1970s are already 3.6pp ( $p < 0.01$ ) more likely to have inflation top of mind before the shock

**Figure 3** Potential determinants of what is top of mind: Context-dependence

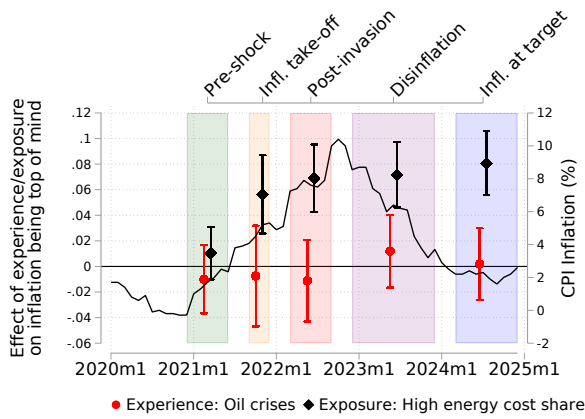
Panel A: Households: Inflation top of mind



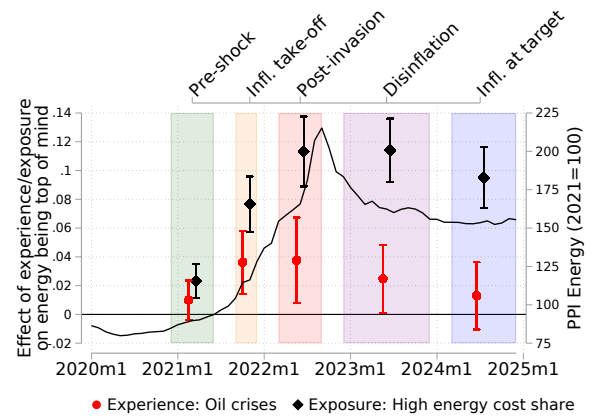
Panel B: Households: Energy top of mind



Panel C: Firms: Inflation top of mind



Panel D: Firms: Energy top of mind



*Notes:* This figure shows how the effects of payoff relevance and prior experiences on what is top of mind vary with the macroeconomic context. Specifically, we run the same regressions as in Table 3 separately for each of the five shaded subperiods. In Panels A and C, the dependent variable is a dummy variable for whether inflation is top of mind. Panels B and D refer to energy top of mind. Payoff relevance and experience measures are defined as in Table 3, while using the measure of having lived through the oil crises. Confidence bands are based on standard errors clustered at the household/firm level and refer to the 95%-level. The solid lines depicted on the right-hand axis display the CPI inflation rate or the energy component of the producer price index (2021=100) in Germany, respectively.

(Panel A). The correlation increases to 6.6pp ( $p < 0.01$ ) when the shock hits in mid-2021, increases further to 8.6pp ( $p < 0.01$ ) following Russia's invasion of Ukraine, and remains elevated at 7.9pp ( $p < 0.1$ ) in the disinflation period. The effect remains positive and significant in 2024, where inflation was close to target but energy prices remained elevated (4.7pp,  $p < 0.01$ ). Panel B displays a similar time-varying relationship of having lived through the oil crises with households' tendency to think of energy-related topics. Panels C and D present results for firms. While the time variation of the correlations with energy being top of mind is similar as for households, the patterns for overall inflation are generally more muted. Thus, consistent with the results in Table 3, experiences appear to have more nuanced effects among managers. Lastly, Appendix

Figure A.8 shows that past experiences of real income or wealth losses due to inflation are more strongly linked to households' tendency to have inflation top of mind when the environment is more inflationary. The state-dependent role of past experiences is in line with the prediction of salience- and experience-driven attention that what is top of mind jointly depends on the context and past experiences depending on similarity.

#### **4.4 Alternative explanations**

An inherent feature of our real-world setting is that potential determinants of what is top of mind such as exposure and past experiences are not randomly assigned. The results presented in the last two subsections therefore do not necessarily reflect causal effects of exposure or experiences. We now discuss several alternative explanations.

First, the effects of prior experiences could partially reflect the influence of omitted variables. For example, the cohort-based experience measure may capture the influence of age, for which we can control when using recalled past inflation losses. The effects of recalled inflation losses may reflect contemporaneous contextual cues that trigger both inflation concerns and the retrieval of past inflation-related memories, a concern to which the cohort measure is immune. We view it as encouraging that we find similar results using these two measures of experiences with distinct strengths and limitations.

Second, there could be reverse causality: inflation being top of mind could shape exposure through inflation-hedging actions. This should work against finding a positive relationship, since agents who worry more about inflation and energy may reduce their exposure, e.g., by choosing non-fossil heating or less energy-intensive production.

Third, energy price exposure may partially capture experienced past shocks to the cost of living or of production. Although we can show for households that the effects of exposure are robust to controlling for recalled past inflation losses, this may not fully remove the influence of past experiences. If the exposure measure partly captures prior experiences, this would strengthen rather than weaken our conclusion that past experiences shape what is top of mind.

In general, we cannot fully rule out biases from omitted variables or reverse causality. That said, potential confounders would need to account for the time-varying nature of the association of exposure and experiences with what is top of mind—for which attention theories provide a parsimonious explanation.

## **5 Consequences of what is top of mind**

In this section, we examine how inflation being top of mind is linked to information acquisition, inflation expectations, and forecast deviations from ex-ante benchmarks, and compare our findings with the predictions of goal-optimal and salience-driven attention.

## 5.1 Information acquisition

We start by examining how inflation being top of mind is related to the acquisition of inflation-related information.

**Pre-shock correlations** We first analyze correlations between whether inflation is top of mind and information acquisition during the pre-shock period from December 2020 to June 2021. In pooled regressions with wave fixed effects and our rich baseline set of controls (demographics, firm characteristics, region), inflation being top of mind is associated with a 0.40 standard deviation higher acquisition of inflation-related information among households ( $p < 0.01$ , Table 4, Panel A, Column 1) and a 0.24 standard deviation higher acquisition among firms ( $p < 0.01$ , Column 4).

**Response to the shock: Specification** We next analyze whether being concerned with inflation during the shock is associated with a stronger increase in information acquisition. We estimate specifications of the following form:

$$(1) \quad \bar{I}_{i,\text{shock}} - \bar{I}_{i,\text{pre}} = \alpha + \beta \overline{\text{TOM}}_{i,\text{shock}}^{\pi} + \delta \bar{I}_{i,\text{pre}} + X_i' \gamma + \varepsilon_i,$$

where  $\bar{I}_{i,\text{shock}} - \bar{I}_{i,\text{pre}}$  is the change in respondent  $i$ 's average information acquisition from the pre-shock (December 2020–June 2021) to the shock period (inflation take-off and post-invasion, September 2021–September 2022),  $\overline{\text{TOM}}_{i,\text{shock}}^{\pi}$  is the average of the top-of-mind indicator for inflation during the shock period, and  $\bar{I}_{i,\text{pre}}$  is the respondent's pre-shock information acquisition. The vector  $X_i$  controls for differential trends by pre-shock confidence in expectations or baseline characteristics.

A natural concern with this specification is reverse causality: acquiring more inflation-related information during the shock could itself cause inflation to be top of mind. To address this concern, we instrument the shock-period top-of-mind indicator,  $\overline{\text{TOM}}_{i,\text{shock}}^{\pi}$ , with its pre-shock equivalent,  $\overline{\text{TOM}}_{i,\text{pre}}^{\pi}$ . The strong individual persistence in inflation being top of mind (see Appendix E.2) supports the relevance of this instrument. Moreover, inflation being top of mind prior to the shock is predetermined with respect to information acquisition during the shock, thereby ruling out contemporaneous reverse causality. That said, the IV could still be confounded if inflation being top of mind before the shock is correlated with other factors—such as extrapolative tendencies, financial sophistication, or information environments where inflation is discussed more or differently—that independently affect responses to the shock. Controlling for the pre-shock outcome, pre-shock confidence, and background characteristics mitigates these concerns, but does not fully rule them out. In Section 5.7, we show that our estimates are insensitive to adding observable proxies for these confounding factors.

We pool the take-off and post-invasion sub-periods into a single shock period (September 2021–September 2022) to increase statistical power. We exclude later periods because, with more temporal distance, the pre-shock top-of-mind indicator becomes

**Table 4** Inflation being top of mind and information acquisition

	Households			Firms		
	(1) OLS	(2) OLS	(3) IV	(4) OLS	(5) OLS	(6) IV
<b>Panel A: TOM and information acquisition pre-shock</b>						
Inflation top of mind	0.398*** (0.044)			0.244*** (0.038)		
<b>Panel B: TOM and change in info. acquisition during shock</b>						
Inflation top of mind (shock-period average)		0.382*** (0.029)	0.438*** (0.103)		0.259*** (0.035)	0.088 (0.112)
Controls:						
Standard controls	yes	yes	yes	yes	yes	yes
Info. acquisition (pre-shock average)		yes	yes		yes	yes
Confidence (pre-shock average)		yes	yes		yes	yes
Weighted by number of obs. per respondent		yes	yes		yes	yes
Observations	7,452	4,720	4,720	6,936	3,221	3,221
Distinct respondents	4,720	4,720	4,720	3,221	3,221	3,221
R-squared	0.08	0.29	0.29	0.06	0.34	0.34
First-Stage F-Statistic			294.36			256.43

*Notes:* This table displays regressions of information acquisition about inflation in the last three months (z-scored) on a dummy for whether inflation is top of mind. Panel A displays cross-sectional correlations for the pre-shock period. Panel B estimates how inflation being top of mind is associated with the *change* in information acquisition during the shock, i.e., the difference between average information acquisition in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021), as specified in Equation (1). All regressions control for the individual's gender, age, employment, education, income, homeownership and stockownership, and federal state for households, as well as for firm size, export share, the respondent being the firm owner, and federal state for firms. In Panel A, additional controls are wave fixed effects, and standard errors are clustered at the respondent level. In Panel B, additional controls are dummies for the waves in which the respondent participated and the pre-shock averages of information acquisition and confidence, observations are weighted by the number of waves a respondent participated, and standard errors are robust to heteroskedasticity. In Columns (3) and (6), the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

an increasingly weak instrument for its contemporaneous counterpart.

**Response to the shock: Results** Panel B of Table 4 presents the results. Among households, inflation being top of mind is associated with a 0.38 standard deviation stronger increase in the acquisition of inflation-related information in response to the shock according to OLS estimates ( $p < 0.01$ , Column 2), which increases to 0.44 standard deviations using IV ( $p < 0.01$ , Column 3). The first-stage F-statistic is 294, indicating that weak instruments are not a concern. Among firms, having inflation top of mind is linked to a 0.26 standard deviations stronger increase in information acquisition ( $p < 0.01$ , Column 5). The corresponding IV estimate is smaller and statistically insignificant (Column 6), though the first-stage F-statistic remains strong at 256. We interpret these results as evidence that inflation being top of mind is associated with a stronger increase in information acquisition in response to the shock, while acknowl-

edging that the evidence is stronger for households than for firms. These patterns are consistent with a complementary role of media coverage and inflation being top of mind in shaping the acquisition of related information. Overall, our data support the shared prediction of goal-optimal and salience-driven attention that inflation being top of mind is associated with greater information acquisition.

## 5.2 Beliefs

We next examine whether having inflation top of mind translates into stronger belief updating in response to new inflationary signals.

**Pre-shock correlations** Respondents with inflation top of mind start off with somewhat higher inflation expectations *before* the arrival of inflationary signals, conditional on our extensive baseline set of controls. This association reaches statistical significance among firms (0.19pp,  $p < 0.05$ , Table 5, Panel A, Column 4), though not among households (0.17pp,  $p = 0.51$ , Column 1).

**Response to the shock: Specification** To study how being concerned with inflation is associated with expectation updating in response to new inflationary signals—which individuals with inflation top of mind are more likely to notice (see Section 5.1 and Table 4)—we estimate the same type of specification as for information acquisition:

$$(2) \quad \overline{Exp}_{i,\text{shock}}^\pi - \overline{Exp}_{i,\text{pre}}^\pi = \alpha + \beta \overline{\text{TOM}}_{i,\text{shock}}^\pi + \delta \overline{Exp}_{i,\text{pre}}^\pi + X_i' \gamma + \varepsilon_i,$$

where  $\overline{Exp}_{i,\text{shock}}^\pi - \overline{Exp}_{i,\text{pre}}^\pi$  is the change in respondent  $i$ 's average 12-month-ahead inflation expectation from the pre-shock (December 2020–June 2021) to the shock period (September 2021–September 2022),  $\overline{\text{TOM}}_{i,\text{shock}}^\pi$  is the average of the top-of-mind indicator during the shock period, and  $\overline{Exp}_{i,\text{pre}}^\pi$  is the respondent's pre-shock inflation expectation.  $X_i'$  includes background characteristics and pre-shock confidence in expectations, which may correlate with inflation being top of mind and directly shape updating. As for information acquisition, we complement the OLS with an IV approach where inflation being top of mind during the shock is instrumented with the pre-shock top-of-mind indicator. The identifying assumption and limitations of the IV approach are discussed in Section 5.1, while Section 5.7 provides supporting evidence.

**Response to the shock: Results** Table 5 presents the results. Both households and firms with inflation top of mind increase their inflation expectations more in response to the shock, consistent with them being more likely to notice new inflationary signals. The OLS estimates using the contemporaneous shock-period top-of-mind indicator are similar in magnitude for both groups (0.56pp,  $p < 0.01$ , Columns 2 and 5). The IV estimates are larger—1.14pp for households ( $p < 0.05$ , Column 3) and 0.92pp for firms ( $p < 0.01$ , Column 6)—and both statistically significant, with first-stage F-statistics of 307 and 271, respectively. The fact that the IV estimates exceed the OLS estimates

**Table 5** Inflation being top of mind and inflation expectations

	Households			Firms		
	(1) OLS	(2) OLS	(3) IV	(4) OLS	(5) OLS	(6) IV
<b>Panel A: TOM and expectations pre-shock</b>						
Inflation top of mind	0.169 (0.258)			0.189** (0.079)		
<b>Panel B: TOM and updating of expectations during shock</b>						
Inflation top of mind (shock-period average)		0.562*** (0.140)	1.143** (0.473)		0.565*** (0.095)	0.922*** (0.314)
Controls:						
Standard controls	yes	yes	yes	yes	yes	yes
Infl. expectations (pre-shock average)		yes	yes		yes	yes
Confidence (pre-shock average)		yes	yes		yes	yes
Weighted by number of obs. per respondent		yes	yes		yes	yes
Observations	7,452	4,720	4,720	6,915	3,216	3,216
Distinct respondents	4,720	4,720	4,720	3,216	3,216	3,216
R-squared	0.10	0.48	0.48	0.08	0.27	0.27
Mean dep. var.	4.66	1.78	1.78	2.43	3.49	3.49
First-Stage F-Statistic			306.92			271.08

*Notes:* This table displays regressions of expected inflation for the next 12 months on a dummy for whether inflation is top of mind. Panel A displays cross-sectional correlations for the pre-shock period. Panel B estimates of how inflation being top of mind is associated with the *change* in inflation expectations during the shock, i.e., the difference between average expectations in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021), as specified in Equation (2). All regressions use the same controls, weighting of observations, and calculation of standard errors as outlined in the note of Table 4, except for controlling for pre-shock inflation expectations instead of information acquisition in Panel B. In Columns (3) and (6), the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

could reflect attenuation bias in the OLS due to measurement error in the contemporaneous top-of-mind indicator, or indicate that the local average treatment effect among compliers—i.e., those with inflation top of mind during the shock *because inflation was already top of mind before the shock*—differs from the average effect. For comparison, being female or having below high school education—key determinants of inflation expectations according to previous literature (Armantier et al., 2016)—are associated with 1.5pp and 1.1pp higher inflation expectations in our data, respectively. Whether inflation is top of mind thus appears to play a sizable role in expectation formation.<sup>10</sup>

### 5.3 Deviations from benchmarks

Next, we study whether inflation being top of mind is associated with better-calibrated inflation expectations, as implied by goal-optimality.

<sup>10</sup>Appendix E.3 shows how inflation being top of mind is associated with confidence in inflation expectations. Appendix E.4 describes how belief disagreement is linked to whether inflation is top of mind.

**Benchmarks** We compare inflation expectations to several *ex-ante* benchmarks. This allows us to assess whether inflation being top of mind moves beliefs closer to a proxy for *the best possible forecast given the information available at the time*. Ex-post forecast errors constructed from the subsequent realizations of inflation are not suited as a benchmark, as our short sample period is characterized by extreme draws from the distribution of potential inflation outcomes that likely had a low probability *ex-ante*.<sup>11</sup>

First, we use the canonical “full-attention” proxy in the literature—professional forecasts—from FocusEconomics (for Germany) and from the ECB Survey of Professional Forecasters (for the euro area). Although professional forecasts may be biased, they are typically much less dispersed than household or firm expectations (Andre et al., 2022; Candia et al., 2024) and exhibit much smaller average forecast errors over long sample periods (Carroll, 2003). One concern is that professional forecasters have incentives to “herd” and to stick to wrong models for too long (Farmer et al., 2024; Ottaviani and Sørensen, 2006). Therefore, in addition to the average professional forecast, we employ subsets of forecasts, such as the most pessimistic forecast and the prediction of the forecaster least correlated with the average professional forecast before our study period. We also note that, even if professional forecasts turn out to be wrong *ex-post*, they would be a natural starting point for a household or firm trying to form better expectations. Second, we rely on financial market-implied expectations constructed from inflation swaps or breakeven inflation (the spread between nominal and real zero-coupon yields from nominal and inflation-indexed bonds). These benchmarks reflect expectations of large institutional investors with strong incentives to gather and optimally process information. Third, we estimate time series models, specifically AR and VAR models, in a pseudo-real-time expanding-window fashion, mimicking the information available in each period. For both the AR and the VAR models, we consider four and eight lags. Appendix D provides details on the different benchmarks.

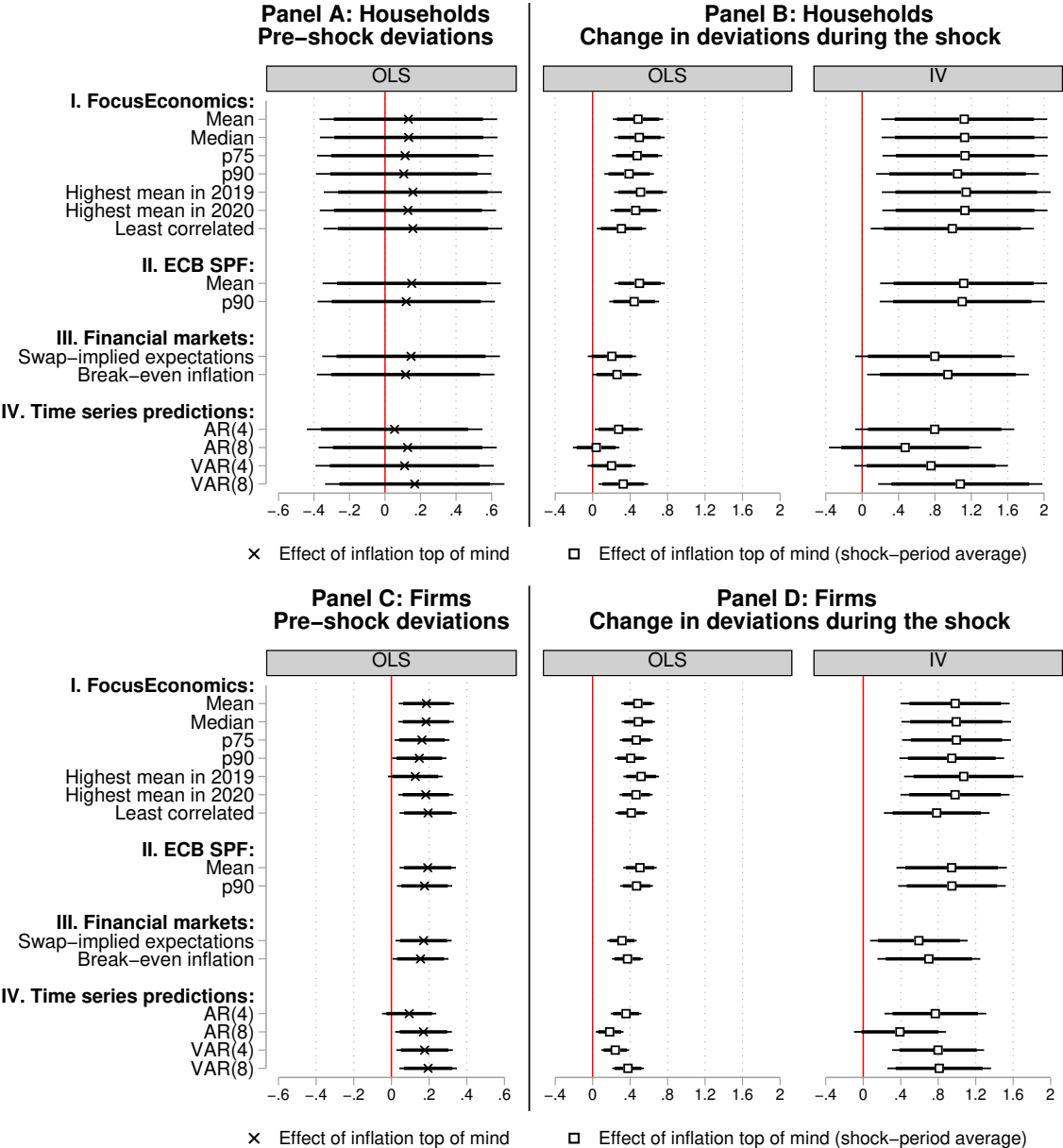
We focus on the *absolute deviation* of a respondent’s forecast from a given benchmark. This ensures that we fully capture whether a respondent is more closely aligned with the benchmark, without allowing over- and under-predictions to cancel each other out.

**Specifications** We start with pre-shock correlations of the absolute deviation of a respondent’s inflation expectation from a given *ex-ante* benchmark with inflation being top of mind, conditional on our standard set of controls. We then estimate how inflation being top of mind is associated with the change in the absolute deviation from a given benchmark in response to the shock, estimating Equation (2) using OLS or IV. In addition to the background characteristics and pre-shock confidence, these specifications control for the absolute benchmark deviation in the base period. They therefore allow

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<sup>11</sup>For instance, using *ex-post* forecast errors would imply that individuals who are permanently extremely pessimistic about inflation are the most well-calibrated during some episodes of our study period.

**Figure 4** Inflation being top of mind and deviations of expectations from benchmarks



*Notes:* This figure displays the relationship between inflation being top of mind and absolute deviations of inflation expectations from different ex-ante benchmarks based on the same empirical specifications as used in Table 5. Panels A and C display cross-sectional correlations for the pre-shock period. Panels B and D present estimates of how inflation being top of mind is associated with the *change* in deviations from benchmarks during the shock, i.e., the difference between average absolute deviations in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021), as specified in Equation (2). In the column on the right, the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. Each row refers to regressions in which the dependent variable is calculated based on a different ex-ante benchmark. The benchmarks are described in detail in Appendix D. Confidence bands refer to the 90%-level (thick lines) and 95%-level (thin lines).

us to test the prediction of goal-optimality that updating in response to new signals should move expectations closer to benchmarks conditional on baseline expectations.

**Results** Figure 4 displays the key coefficient estimates. Prior to the shock, having inflation top of mind is associated with *larger* absolute deviations from benchmarks,

significantly so for firms and more noisily for households (left column). This is already at odds with goal-optimality, which would predict *smaller* deviations. Similarly, for both households and firms, inflation being top of mind is associated with *stronger increases in benchmark deviations* in response to the shock. In the IV specification, this link is statistically significant at least at the 10% level for 14 of the 15 benchmarks among both households and firms (right column). Thus, despite acquiring more information and updating expectations more strongly in response to the new inflationary signals, agents with inflation top of mind become *less* well-calibrated in their forecasts. The consistency across a wide set of benchmarks suggests that these findings are not driven by shortcomings of any particular benchmark, but instead reflect a deviation from goal-optimality. Appendix Figures A.9 and A.10 highlight that the patterns are fully driven by upward deviations from benchmarks, i.e., having inflation top of mind appears to be associated with an overshooting of beliefs in response to the shock.<sup>12</sup>

## 5.4 Different sources of inflation being top of mind and beliefs

In Section 4, we document the importance of two potential determinants of inflation being top of mind: payoff relevance and prior experiences. Both of these drivers are associated with stronger increases in having inflation top of mind in response to the shock. We now examine whether the source of having inflation top of mind matters for (i) the updating of inflation expectations in response to the shock and (ii) changes in the extent to which expectations deviate from ex-ante benchmarks.

**Specification** We estimate the following specification where the two “attention shifters” are interacted with the four shock phases defined in Section 4.3:

$$(3) \quad Y_{it} = \alpha_i + \gamma_t + \sum_{p=2}^5 \beta_p [\text{EXPOSURE}_i \cdot \mathbf{1}(t \in p)] \\ + \sum_{p=2}^5 \gamma_p [\text{EXPERIENCE}_i \cdot \mathbf{1}(t \in p)] + \sum_{p=2}^5 \delta_p [X'_{it} \cdot \mathbf{1}(t \in p)] + \varepsilon_{it},$$

where  $Y_{it}$  is either expected inflation or the absolute deviation of this expectation from an ex-ante benchmark.  $\text{EXPOSURE}_i$  is the proxy for actual payoff relevance of inflation, and  $\text{EXPERIENCE}_i$  is the measure of prior inflation experiences. We interact these measures with indicators for the four shock subperiods (take-off, post-invasion, disinflation, inflation at target). The coefficients  $\beta_p$  and  $\gamma_p$  thus capture how payoff relevance and experience are differentially associated with the outcome in period  $p$  compared to the pre-shock period. We absorb both time-invariant differences across respondents,  $\alpha_i$ , and the common impact of aggregate conditions,  $\gamma_t$ . We control for time-varying effects of

<sup>12</sup>Appendix Figure A.11 provides a visual confirmation of these patterns. It plots differences in inflation expectations between respondents with and without inflation top of mind at baseline, shows how each group updates in response to the shock, and contrasts these patterns with several ex-ante benchmarks.

**Table 6** Different sources of inflation being top of mind and inflation expectations

	Households				Firms			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Expected inflation next 12 months	Abs. dev. from mean professional forecast (FocusEconomics)	Abs. dev. from swap-implied expectations	Abs. dev. from AR(4) prediction	Expected inflation next 12 months	Abs. dev. from mean professional forecast (FocusEconomics)	Abs. dev. from swap-implied expectations	Abs. dev. from AR(4) prediction
<b>Experience: Oil crises</b>								
× 1(Inflation take-off)	0.647*** (0.142)	0.627*** (0.140)	0.565*** (0.139)	0.482*** (0.137)	0.044 (0.084)	0.049 (0.080)	0.060 (0.078)	0.085 (0.074)
× 1(Post invasion)	1.050*** (0.174)	0.941*** (0.169)	0.655*** (0.162)	0.754*** (0.164)	0.082 (0.108)	0.094 (0.105)	0.091 (0.091)	0.098 (0.096)
× 1(Disinflation)	0.895*** (0.191)	0.795*** (0.186)	0.803*** (0.186)	0.809*** (0.185)	0.177** (0.086)	0.153* (0.079)	0.165** (0.080)	0.169** (0.078)
× 1(Inflation at target)	0.405** (0.200)	0.369* (0.196)	0.397** (0.195)	0.410** (0.194)	0.015 (0.076)	-0.003 (0.069)	0.000 (0.070)	0.036 (0.069)
<b>Exposure</b>								
× 1(Inflation take-off)	0.725* (0.378)	0.737** (0.367)	0.744** (0.363)	0.710** (0.357)	0.115 (0.072)	0.148** (0.070)	0.099 (0.068)	0.060 (0.065)
× 1(Post invasion)	1.067** (0.467)	1.041** (0.453)	0.968** (0.438)	0.932** (0.439)	0.270*** (0.091)	0.315*** (0.089)	0.155** (0.078)	0.252*** (0.083)
× 1(Disinflation)	0.937** (0.441)	0.993** (0.419)	0.995** (0.423)	0.924** (0.422)	0.157** (0.075)	0.192*** (0.071)	0.164** (0.071)	0.165** (0.070)
× 1(Inflation at target)	0.731 (0.517)	0.695 (0.489)	0.679 (0.492)	0.628 (0.490)	-0.023 (0.067)	-0.007 (0.063)	-0.021 (0.064)	-0.031 (0.062)
Controls interacted with periods	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm/Individual FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	38,089	38,089	38,089	38,089	35,468	35,468	35,468	35,468
Distinct respondents	6,470	6,470	6,470	6,470	3,124	3,124	3,124	3,124
R-squared	0.63	0.61	0.61	0.61	0.71	0.58	0.51	0.55
Mean dep. var.	6.18	4.11	3.66	3.73	4.62	2.27	1.81	2.13

*Notes:* This table reports estimates of how the association of inflation expectations with prior inflation experience and exposure differs in the four shock periods relative to the pre-shock period, as specified in Equation (3). In Columns (1) and (5), the dependent variable is expected inflation over the next 12 months; the remaining use the absolute deviation of these expectations from the mean professional forecast from FocusEconomics, financial market-implied expectations from inflation swaps, or an AR(4) prediction (see Appendix D). Inflation experience is an indicator for having been at least a teenager during the 1970s oil crises (see Footnote 6). For households, exposure is an indicator for a fossil primary heating energy source as of December 2021; we also interact gender, employment, education, household income, homeownership, stockownership, and federal state with dummies for each shock period. For firms, exposure is an indicator for an above-median ratio of energy costs to revenues in 2021; we also interact firm size, export share, an owner-respondent dummy, and federal state with shock period indicators. All specifications include individual/firm and wave fixed effects. Standard errors, clustered at the household/firm level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct.

respondent characteristics by including our baseline set of controls interacted with fixed effects for the different subperiods of the shock. For our experience measure based on past losses, which varies within cohorts, this includes time-varying effects of age.

Our specification captures how two important pre-determined predictors of having inflation top of mind are associated with the updating of inflation expectations in response to the shock. While these effects plausibly operate through inflation being top of mind, it is worth keeping in mind that these variables may also influence expectation responses through alternative channels, e.g., heterogeneous processing frictions.

**Payoff relevance** Table 6 presents the results. We first examine heterogeneity by the payoff relevance of inflation. Households using fossil heating and firms with energy-

intensive production, which are both associated with larger increases in inflation being top of mind over the shock period (see Figure 3), increase their inflation expectations more strongly when inflation rises (Columns 1 and 5). These stronger increases are associated with movements of expectations *away* from ex-ante benchmarks among both households (Columns 2–4) and firms (Columns 6–8). For instance, in the post-invasion phase, the gap to the average professional forecast widens by about 1pp more for households with fossil heating ( $p < 0.05$ , Column 2). These differences only slowly revert back during the disinflationary period 2023 and when inflation is back at the target in 2024, potentially reflecting continued high energy prices or inertia in expectations.

**Experiences** We next turn to heterogeneity by prior inflation experiences. Households who have lived through the 1970s oil crises increase their inflation expectations significantly more strongly in response to the shock (Column 1), shifting their expectations away from ex-ante benchmarks (Columns 2–4). The effects are largest during the inflation take-off (September–December 2021) and post-invasion (March–September 2022) phases, when macroeconomic conditions most closely resembled past inflationary episodes. For example, the deviations of expectations from average professional forecasts widen 0.6pp more strongly in the take-off phase and 0.9pp more strongly in the post-invasion phase among households from oil crises cohorts ( $p < 0.01$ , Column 2).<sup>13</sup> Appendix Table A.8 shows similar results for within-cohort experiences of past inflation losses among households. The patterns among firms are qualitatively similar though smaller in size and often statistically insignificant (Table 6, Columns 5–8).

Overall, our data are consistent with the notion that both goal-driven and experience-driven attention can be associated with expectations moving away from benchmarks.

## 5.5 Reasoning underlying inflation expectations

Next, we ask how inflation being top of mind is linked to the reasoning underlying inflation expectations.

**Reasoning data** From December 2020 and December 2022, households were asked the following additional open-ended question after reporting their inflation expectation: *“Please let us know how you made your prediction about the inflation rate. Which considerations play the main role for you in making this prediction?”*<sup>14</sup> To analyze the responses, we develop a coding scheme and annotate the answers using OpenAI’s GPT-5 (Asirvatham et al., 2026). We focus on seven broad lines of reasoning, and each response can feature multiple ones. Appendix B.2 presents details and quality checks.

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<sup>13</sup>The effects of experiences on inflation expectations are more persistent than the effects on inflation being top of mind (see Section 4.3). This could reflect inertia in belief formation: people hold on to expectations once formed, whereas what is top of mind changes more quickly.

<sup>14</sup>Due to space constraints, it was not possible to include this question in our firm surveys.

**Table 7** Inflation being top of mind and reasoning underlying inflation expectations

	Household considers topic when forming inflation expectations						
	(1) Any supply- side factor	(2) Any demand- side factor	(3) Geo- politics	(4) Covid	(5) Recent infla- tion	(6) Normal range infla- tion	(7) Guess
<b>Panel A: TOM and reasoning in pre-shock period (OLS)</b>							
Inflation top of mind	0.047*** (0.014)	0.049*** (0.013)	0.001 (0.002)	0.013 (0.014)	0.020* (0.011)	-0.008* (0.005)	-0.037*** (0.012)
Standard controls	yes	yes	yes	yes	yes	yes	yes
Observations	7,452	7,452	7,452	7,452	7,452	7,452	7,452
Distinct respondents	4,720	4,720	4,720	4,720	4,720	4,720	4,720
R-squared	0.07	0.04	0.00	0.04	0.03	0.01	0.03
Mean dep. var.	0.08	0.07	0.00	0.11	0.05	0.02	0.10
<b>Panel B: TOM and change in reasoning during shock (OLS)</b>							
Inflation top of mind (shock-period average)	0.153*** (0.013)	0.054*** (0.010)	0.072*** (0.009)	0.034*** (0.010)	0.052*** (0.012)	-0.002 (0.004)	-0.056*** (0.011)
Standard controls	yes	yes	yes	yes	yes	yes	yes
Weighted by number of obs. per respondent	yes	yes	yes	yes	yes	yes	yes
Observations/Distinct respondents	4,720	4,720	4,720	4,720	4,720	4,720	4,720
R-squared	0.19	0.33	0.12	0.40	0.14	0.27	0.21
Mean dep. var.	0.09	0.01	0.09	0.00	0.09	0.00	0.04
<b>Panel C: TOM and change in reasoning during shock (IV)</b>							
Inflation top of mind (shock-period average)	0.267*** (0.050)	0.154*** (0.037)	0.061** (0.029)	0.080** (0.040)	0.093* (0.048)	-0.028*** (0.010)	-0.108*** (0.035)
Standard controls	yes	yes	yes	yes	yes	yes	yes
Weighted by number of obs. per respondent	yes	yes	yes	yes	yes	yes	yes
Observations/Distinct respondents	4,720	4,720	4,720	4,720	4,720	4,720	4,720
R-squared	0.17	0.31	0.12	0.40	0.14	0.26	0.21
Mean dep. var.	0.09	0.01	0.09	0.00	0.09	0.00	0.04
First-Stage F-Statistic	303.96	310.18	320.01	320.68	316.43	320.41	316.28

*Notes:* This table reports regressions of indicators for whether a household uses a given line of reasoning when forming its inflation expectations, based on answers to an open-ended question from all waves between December 2020 and December 2022 (see Appendix B.2), on a dummy for whether inflation is top of mind. Panel A displays cross-sectional correlations for the pre-shock period. Along the lines of Equation (1), Panel B estimates how the association of inflation being top of mind with each line of reasoning *differs* during the shock, i.e., the difference between the average of the indicator for a topic in the shock period (Sept 2021 to Sept 2022) and in the pre-shock period (Dec 2020 to June 2021). All regressions use the same controls, weighting of observations, and calculation of standard errors as outlined in the note of Table 4, except for controlling for the pre-shock tendency that a topic is mentioned instead of information acquisition in Panels B and C. In Panel C, the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Specifications** Again, we first examine how inflation being top of mind is linked to different lines of reasoning before the shock, conditional on controls. Then, we estimate specifications based on Equation (1) with OLS or IV that capture how having inflation top of mind shifts the tendency to invoke each reason in response to the shock.

**Results** Table 7 presents the results. We detect three broad patterns. First, inflation being top of mind is associated with a greater tendency to reference concrete macro developments relevant for inflation. Before the shock, households with inflation on their

mind are more likely to invoke at least one supply-side ( $p < 0.01$ , Panel A, Column 1) or at least one demand-side factor ( $p < 0.01$ , Panel A, Column 2). Such households also more strongly increase their inclination to cite supply- and demand-side factors in response to the shock, regardless of whether OLS or IV is used (Panels B and C). While there is no difference in the tendency to cite geopolitical developments or the pandemic in the pre-period (Panel A, Columns 3 and 4), having inflation top of mind is associated with stronger increases in the tendency to cite these factors (Panels B and C).

Second, households with inflation top of mind appear to focus more on recent rather than longer-run average inflation. Those with inflation top of mind are already more likely to cite recent inflation rates as the basis for their forecasts in the pre-shock period (Panel A, Column 5,  $p < 0.1$ ), while being less likely to invoke normal inflation ranges (Panel A, Column 6,  $p < 0.1$ ). This gap widens over the shock period (Panels B and C, Columns 5 and 6). Together with the evidence that households with inflation top of mind appear to increase inflation expectations too strongly relative to benchmarks in response to the shock (Sections 5.2 and 5.3), these patterns are consistent with overreaction to recent inflationary signals (Bordalo et al., 2022a; Gennaioli et al., 2024).

Finally, households concerned with inflation rely less on gut feeling or guesses at baseline ( $p < 0.01$ , Panel A, Column 7), and this association becomes more pronounced during the shock ( $p < 0.01$ , Panels B and C, Column 7). This pattern is consistent with the idea that households concerned with inflation have more relevant information available (see Section 5.1 and Table 4) and are thus less likely to fall back on defaults.

## 5.6 Pricing decisions

Finally, we ask how inflation being top of mind is linked to firms' pricing decisions.

**Specification** We employ a qualitative question on price changes over the previous month from the regular IBS and construct a dummy for whether the firm has raised the price of its main product or service. Following the same empirical approach as before, we examine how inflation being top of mind is linked to the level of this indicator in the pre-shock period and its change in response to the shock.

**Results** The results are shown in Table 8. In the pre-shock period, managers with inflation on their mind are 14.5pp more likely to raise their prices ( $p < 0.01$ , Panel A, Column 1). Moreover, having inflation top of mind is associated with an 11.7pp stronger increase ( $p < 0.01$ , Column 2) and a 26.5pp ( $p < 0.01$ , Column 3) stronger increase in the tendency to raise prices in response to the shock according to OLS and IV estimates, respectively, potentially as a "hedge" against expected inflation increases. These results suggests that agents' attention allocation, which can be non-goal-optimal, is associated with (potentially costly) changes in decisions.

**Table 8** Inflation being top of mind and firms' price setting

	(1)	(2)	(3)
	OLS	OLS	IV
<b>Panel A: TOM and price increases pre-shock</b>			
Inflation top of mind	0.145*** (0.017)		
<b>Panel B: TOM and change in price increases during shock</b>			
Inflation top of mind (shock-period average)		0.117*** (0.018)	0.265*** (0.067)
Controls:			
Standard controls	yes	yes	yes
Price increases (pre-shock average)		yes	yes
Confidence (pre-shock average)		yes	yes
Weighted by number of obs. per respondent		yes	yes
Observations	6,811	3,175	3,175
Distinct respondents	3,175	3,175	3,175
R-squared	0.08	0.20	0.19
Mean dep. var.	0.18	0.20	0.20
First-Stage F-Statistic			245.45

*Notes:* This table displays regressions of firms' pricing decisions, defined as a dummy that is one if the firm reports having recently raised the price of its main product or service, on a dummy for whether inflation is top of mind. Panel A displays cross-sectional correlations for the pre-shock period. Along the lines of Equation (2), Panel B estimates how inflation being top of mind is associated with the *change* in the likelihood of price increases during the shock, i.e., the difference between the average of the indicator for price increases in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021). All regressions use the same controls, weighting of observations, and calculation of standard errors as outlined in the note of Table 4, except for controlling for the pre-shock tendency to increase prices instead of information acquisition in Panel B. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

## 5.7 Alternative explanations

In our most demanding specifications, we show that information acquisition, inflation expectations, and forecast deviations from benchmarks respond more strongly to the inflation shock when inflation is top of mind. One interpretation of these patterns is that they reflect consequences of inflation being top of mind. Our IV specifications instrument the shock-period top-of-mind indicator with its pre-shock counterpart and condition on the pre-shock levels of the outcome and confidence in expectations and a rich set of characteristics. For a remaining confounder to explain the IV estimates, it would need to (i) correlate with inflation being top of mind before the shock and (ii) directly affect *changes in* information acquisition and beliefs conditional on these controls. We assess three potential alternative explanations by probing the sensitivity of our estimates to controlling for proxies for each. While these tests cannot definitively rule out all confounding influences, they allow us to gauge whether observable proxies for the most prominent alternative explanations can account for our findings.

**Heterogeneous processing** A potential mechanism behind non-goal-optimality is that attended information is processed in systematically biased ways, for example through overreaction to recent signals as under diagnostic expectations or associative memory. In our interpretation of the results, differences in what is top of mind interact with such a processing friction. A related but distinct possibility is that respondents concerned with inflation also differ in how they process a given signal. In that case, the empirical relationship between inflation being top of mind and changes in information acquisition, expectations, and benchmark deviations could partly reflect heterogeneity in signal processing rather than differences in attention alone.

This possibility is particularly relevant because some of the drivers of inflation being top of mind may also shape the processing of new inflationary signals. First, prior inflation experiences somewhat increase the tendency to have inflation top of mind already before the shock, at least among households (see Section 4.3 and Figure 3). At the same time, such experiences may lead respondents to update more strongly from a given inflationary signal due to similarity-based recall (Gennaioli et al., 2024). While this is highly plausible, our evidence from Section 5.4 suggests that not only experience-driven but also payoff-driven attention is associated with stronger updating and shifts away from benchmarks in response to the shock. To further probe this issue, we repeat our main IV estimations of how households with inflation top of mind differentially change their information acquisition and beliefs while controlling for experienced pre-shock inflation losses. Including this control should reduce the impact of experience-induced heterogeneity, such as in the processing of information, at least to some extent. Appendix Figure A.12 shows that our results remain very similar in magnitude. Moreover, our baseline estimations for households already control for cohort, our other measure of inflation experiences. Appendix Figure A.12 further shows that omitting this control (or adding it for firms) does not meaningfully impact the estimated coefficients of interest.

Second, some respondents may have a persistently stronger tendency to extrapolate perceived recent inflation rates into the future. Since inflation already exhibited a modest increase from negative values to around 2% within the pre-period, such individuals may have been more likely to have inflation top of mind before the shock. During the shock, they may have increased their expectations and information acquisition more strongly simply because they extrapolate more strongly from the new inflationary signals. To address this, we consider several proxies for having an extrapolative tendency. First, we classify households who cite recent inflation rates as a basis for their pre-shock forecasts in response to the open-ended question on the reasoning underlying inflation expectations (see Section 5.5) as extrapolators. Second, we use the extent of updating of inflation expectations within the pre-shock period. Third, we directly elicit beliefs about the autocorrelation of inflation on a five-point categorical scale in a sep-

arate wave of the firm survey.<sup>15</sup> As shown in Appendix Table A.9, our three measures for extrapolative tendencies are not significantly linked to inflation being top of mind before the shock. Moreover, Appendix Figure A.12 shows that our estimates of the responses of information acquisition, inflation expectations, and forecast deviations from benchmarks to the shock do not change materially when controlling for these measures.

**Financial sophistication** Another concern is that inflation being top of mind may proxy for greater financial sophistication or literacy, which could independently shape how individuals respond to changes in the macroeconomic outlook. For example, more financially literate respondents may be more likely to actively seek out macroeconomic information—and this tendency could become especially pronounced when inflation rises and macroeconomic news becomes more abundant and salient. In that case, the differential increases in information acquisition and inflation expectations could reflect greater financial sophistication rather than the effect of inflation being top of mind.

Our main specifications already control for education, income and stock ownership. Appendix Figure A.12 shows that excluding these controls leaves our main estimates unchanged. The figure further shows that adding another proxy for financial sophistication—a measure of numeracy—does not affect our main estimates.

**Heterogeneous information environments** Finally, respondents with inflation on their mind before the shock may be embedded in information environments that respond differently to inflationary developments. For instance, if such respondents also consume media in which inflation coverage becomes disproportionately more frequent or more alarming when inflation rises, the shock could generate a divergence in news exposure that confounds our estimates. Appendix Figure A.12 highlights that our main estimates of the responses of information acquisition and expectations to the shock do not change materially when including an extensive set of dummies for the print, online, and TV news outlets respondents use to inform themselves about the economy. Information environments could also depend on one’s social circle—i.e., one’s family, friends, or professional contacts. As shown in Appendix Figure A.12, our main estimates remain almost unchanged when including more fine-grained regional fixed effects (households) or industry by state fixed effects (firms) as proxies for social environments.

**Summary** These checks suggest that our main findings are not easily accounted for by the most prominent alternative explanations. That said, our proxies for these alternatives are imperfect. We thus view our paper as providing correlational evidence on how measured attention is linked to belief formation, while acknowledging that a definitive causal claim would require fully exogenous variation in what is top of mind.

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<sup>15</sup>This question was included in the March 2026 wave of the IBS. Appendix F provides instructions. One caveat is that the perceived autocorrelation may have changed since our main study period. We did not collect such a measure for households, as recontact rates would have been too low.

## 6 Conclusion

We introduce a direct, scalable measure of which economic topics are *top of mind* based on an open-ended survey question. We embed this measure in panel surveys with German households and firms that span the post-pandemic inflation surge and subsequent disinflation to study the sources and consequences of having inflation top of mind. Organizing the evidence along the chain from what is top of mind to information acquisition and beliefs, we assess central predictions of models of goal-optimal attention against the implications of salience- and experience-driven attention.

We document three central results: (i) what is top of mind varies with proxies for payoff relevance and by prior experiences, in a context-dependent way; (ii) individuals occupied with inflation acquire more inflation-related information, and this gap widens over the shock period; (iii) those with inflation top of mind increase their expectations more strongly in response to the shock, shifting their expectations *away* from ex-ante benchmarks—which seems to hold true regardless of whether having inflation top of mind reflects payoff relevance or prior experiences.

Distinguishing between the attention *input* and the belief *output* side helps organize these findings. On the input side, our results are consistent with some predictions of goal-optimal models—payoff relevance matters for what is top of mind—but also with predictions of non-goal-optimal models, since prior experiences are linked to what is top of mind over and above payoff relevance. On the output side, our evidence is difficult to reconcile with goal-optimality: inflation being top of mind is linked to an overshooting of expectations, consistent with non-goal-optimal models in which attended information is processed in biased ways, e.g., through overweighting of recent signals.

While we view our findings as a proof of concept that measured attention in macroeconomic settings can display patterns consistent with non-goal-optimality, more evidence from other contexts is needed to understand the conditions under which attention may or may not improve alignment with relevant benchmarks.

Methodologically, our measure offers a detailed picture of what is top of economic agents' minds. Our paper underscores the potential of using open-ended survey data to track what comes to mind across a wide range of contexts, from macroeconomic conditions to labor markets, consumer finance, and politics. Such measures could be included in existing panel surveys of households and firms and analyzed routinely, through AI-based coding. Capturing what is top of mind in this way could provide important input for policymakers and generate new empirical insights for theoretical work.

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# Online Appendix: Attention to the Macroeconomy

Sebastian Link   Andreas Peichl   Oliver Pfäuti   Christopher Roth   Johannes Wohlfart

## **Summary of the Online Appendix**

Section A contains supplementary figures and tables.

Section B presents details on the coding of the open-ended data on what is top of mind and on the reasoning underlying inflation expectations.

Section C presents a systematic analysis of attrition.

Section D provides background on our different ex-ante benchmarks.

Section E contains additional empirical results.

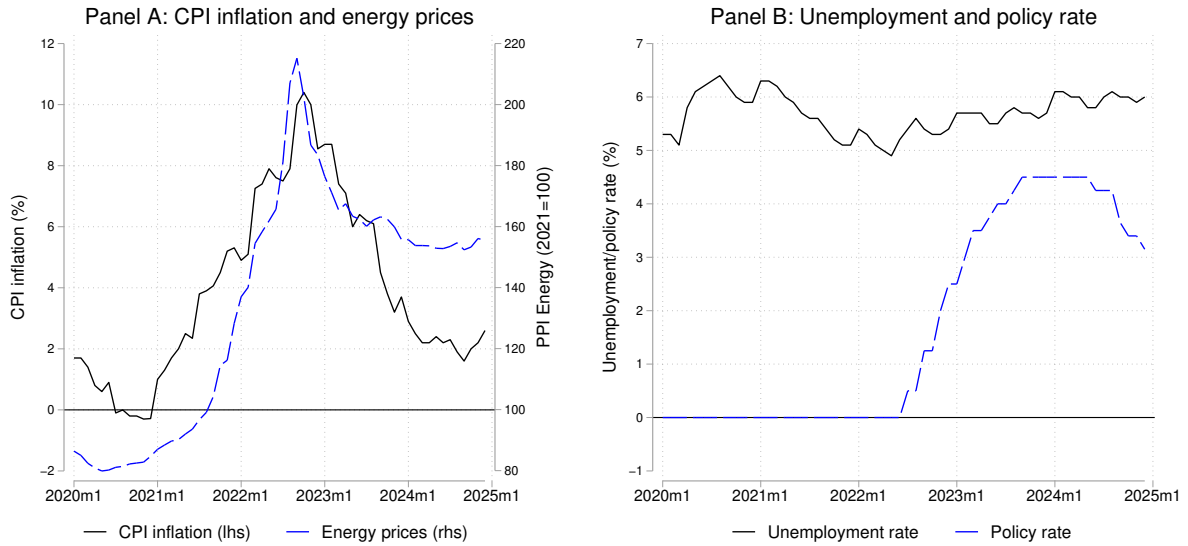
Section F provides the key survey questions from our household and firm panels.

Section G provides the key survey questions from our September 2023 validation survey.

# A Supplementary exhibits

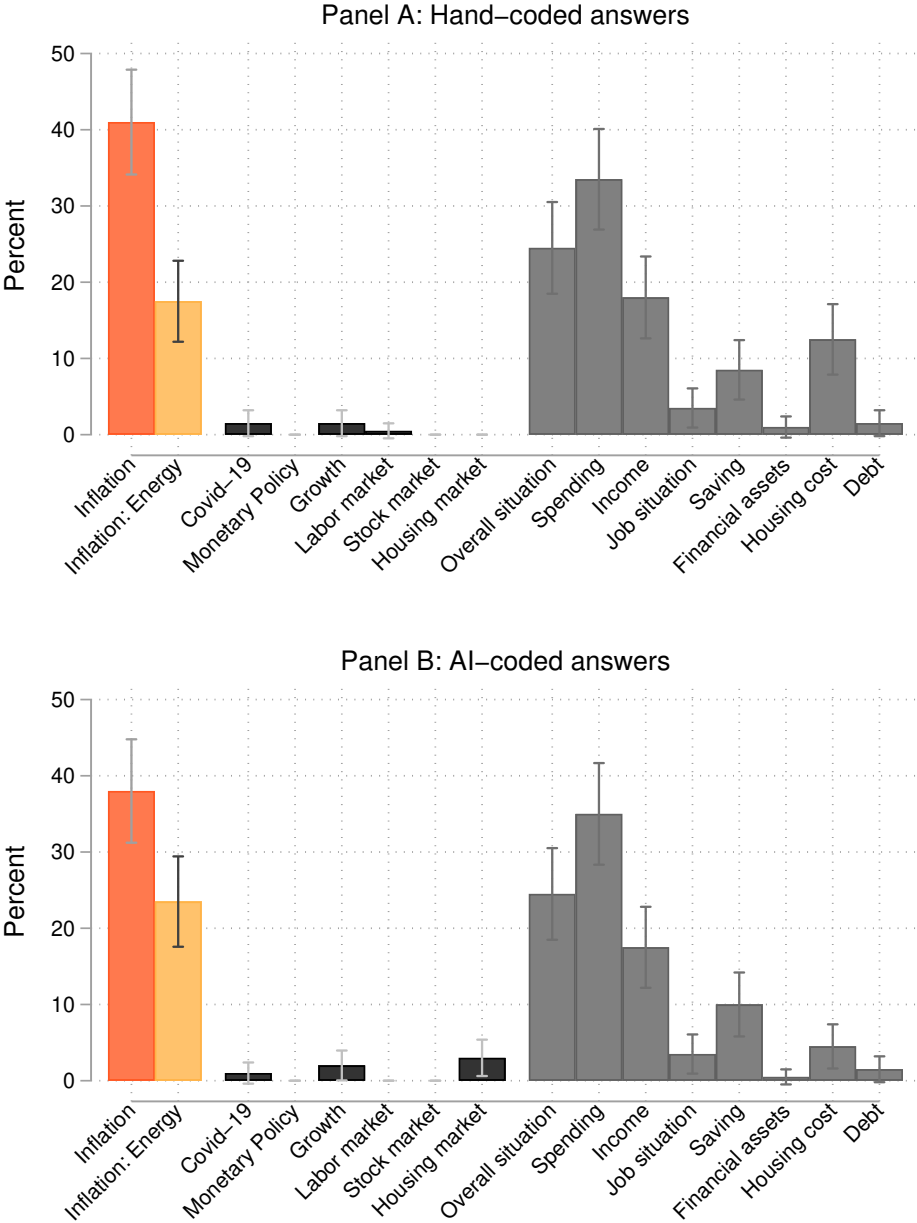
## A.1 Additional figures

Figure A.1 Macroeconomic environment



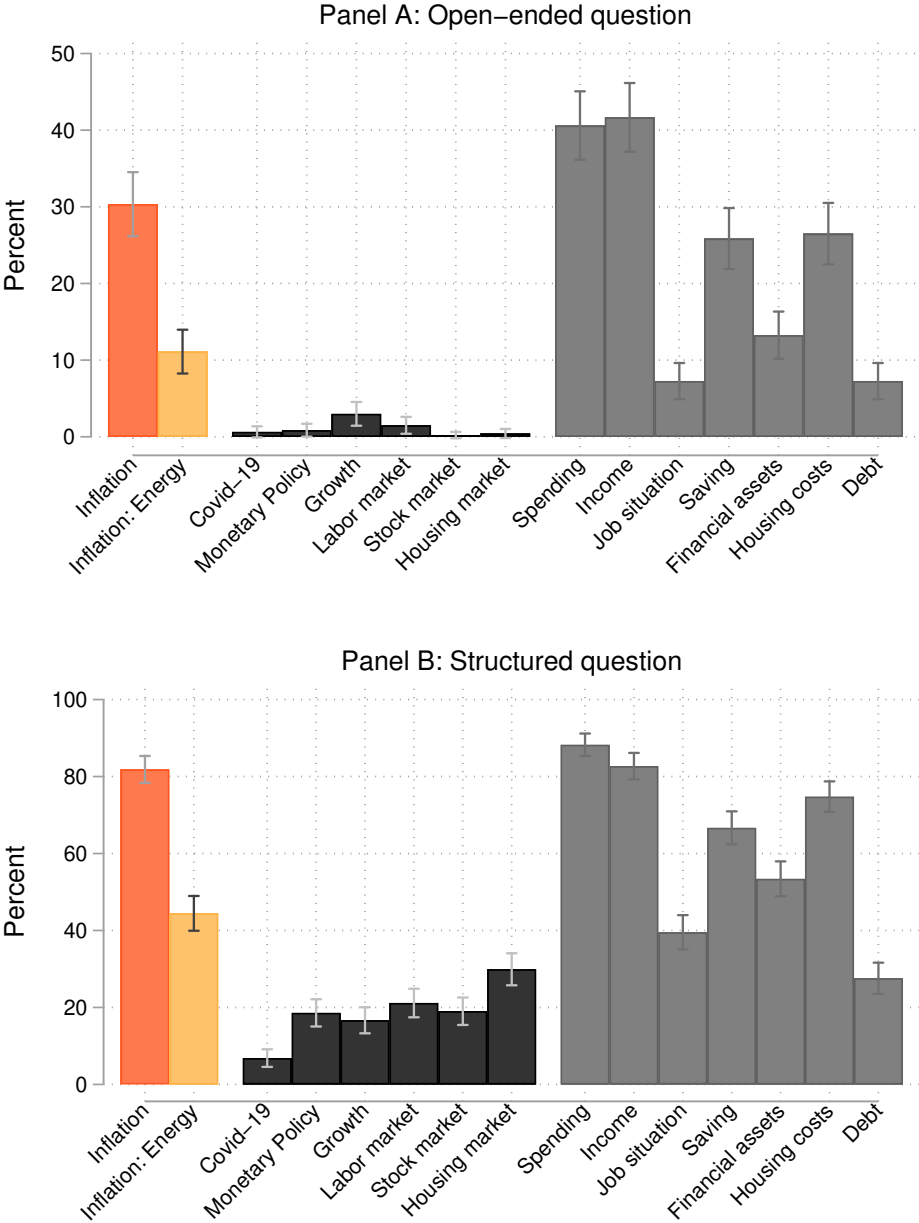
Notes: Panel A displays the CPI inflation rate (left axis) and the energy component of the producer price index (2021=100; right-hand axis) in Germany. Panel B depicts the ECB policy rate and the unemployment rate in Germany. Sources: German Federal Statistical Office; German Federal Employment Agency.

**Figure A.2** What is top of mind across topics as classified using human coding and as classified using AI-coding



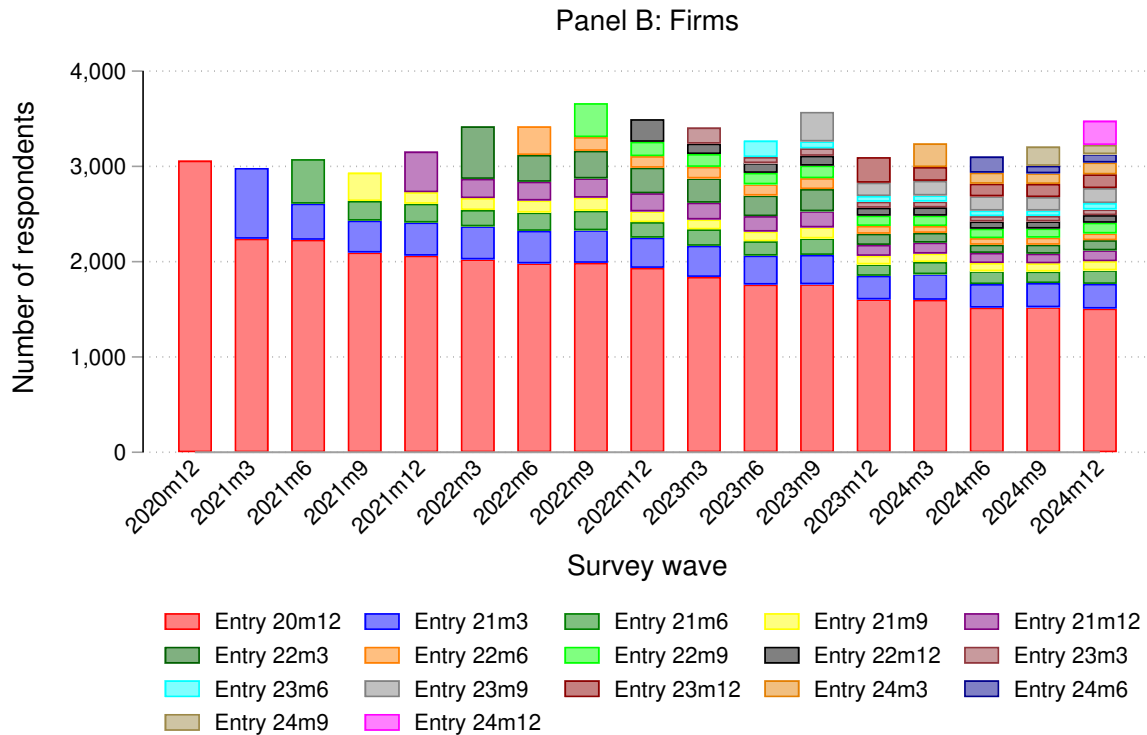
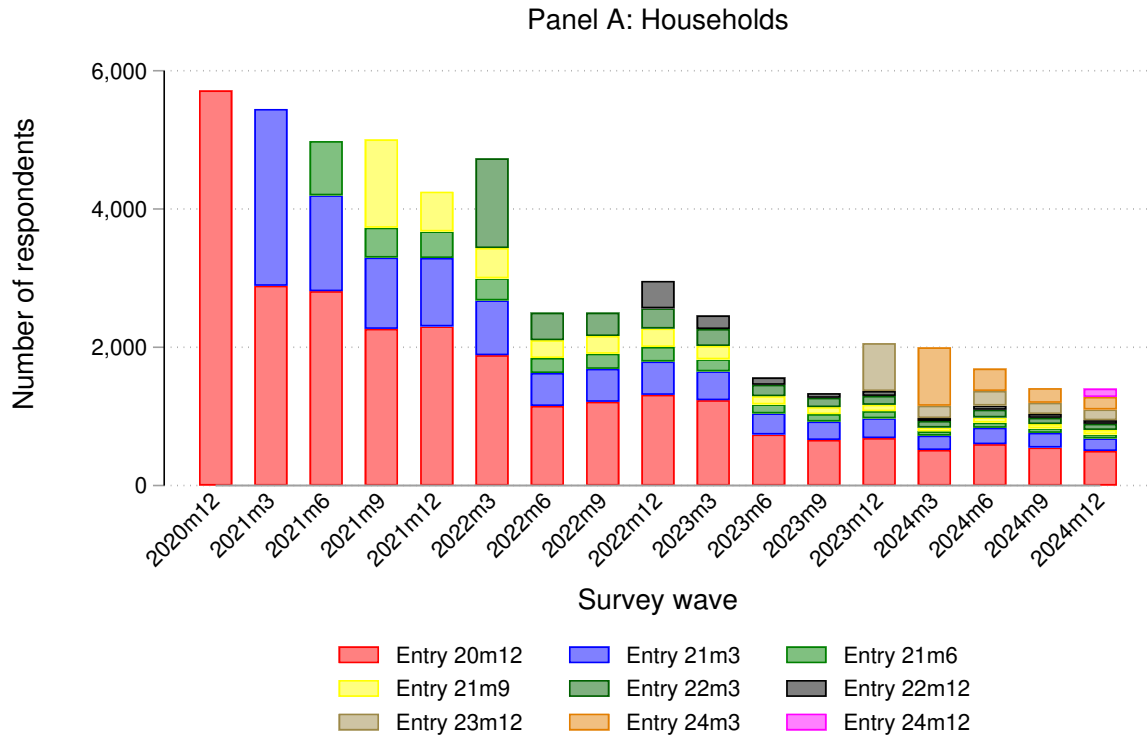
*Notes:* This figure presents a validation exercise for the hand-coding of the open-ended data based on a random subsample from the household survey wave in March 2023, which was both hand-coded and AI-coded using GPT-4. It shows the distribution of what is top of mind across different topics including inflation (orange), the subset of respondents with inflation top of mind that also mention energy prices (yellow), further macroeconomic topics (black), and household-level topics (gray). The measure of what is top of mind is based on people’s responses to our main open-ended question: “What topics come to mind when you think about the economic situation of your household?” Panel A shows results from the hand-coding. Panel B displays results from the AI-coding. Error bars indicate 95% confidence intervals.

**Figure A.3** What is top of mind across topics as measured in the open-ended and as measured in an alternative structured survey question



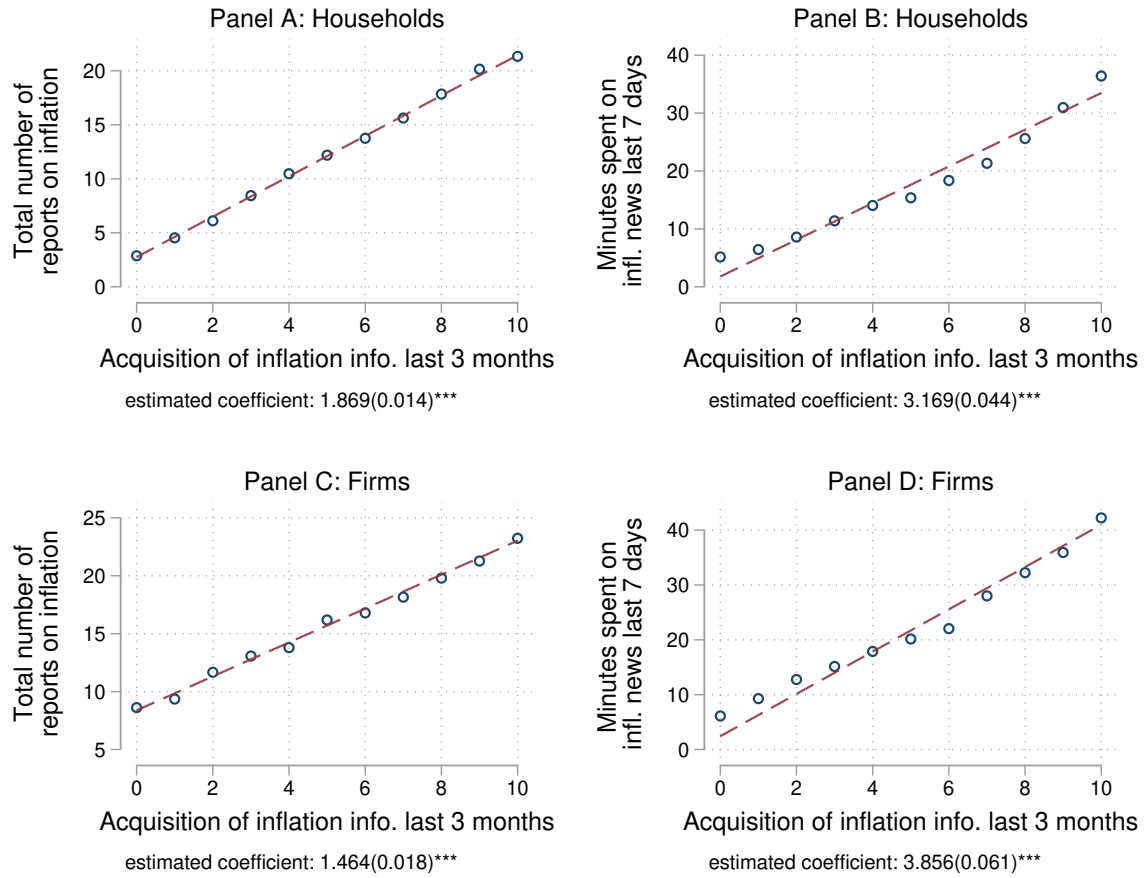
*Notes:* This figure presents a validation exercise of our hand-coded data on what is top of mind based on an additional German household survey run with Prolific in September 2023. It shows the fractions of respondents having different topics top of mind according to the open-ended question (Panel A) and according to a structured question included later in the survey (Panel B), including 95% confidence intervals. Having inflation top of mind is displayed in orange, the subset of respondents with inflation top of mind that also mention energy prices in yellow, further macroeconomic topics in black, while household-level topics are displayed in gray. Error bars indicate 95% confidence intervals.

**Figure A.4** Survey participation across waves



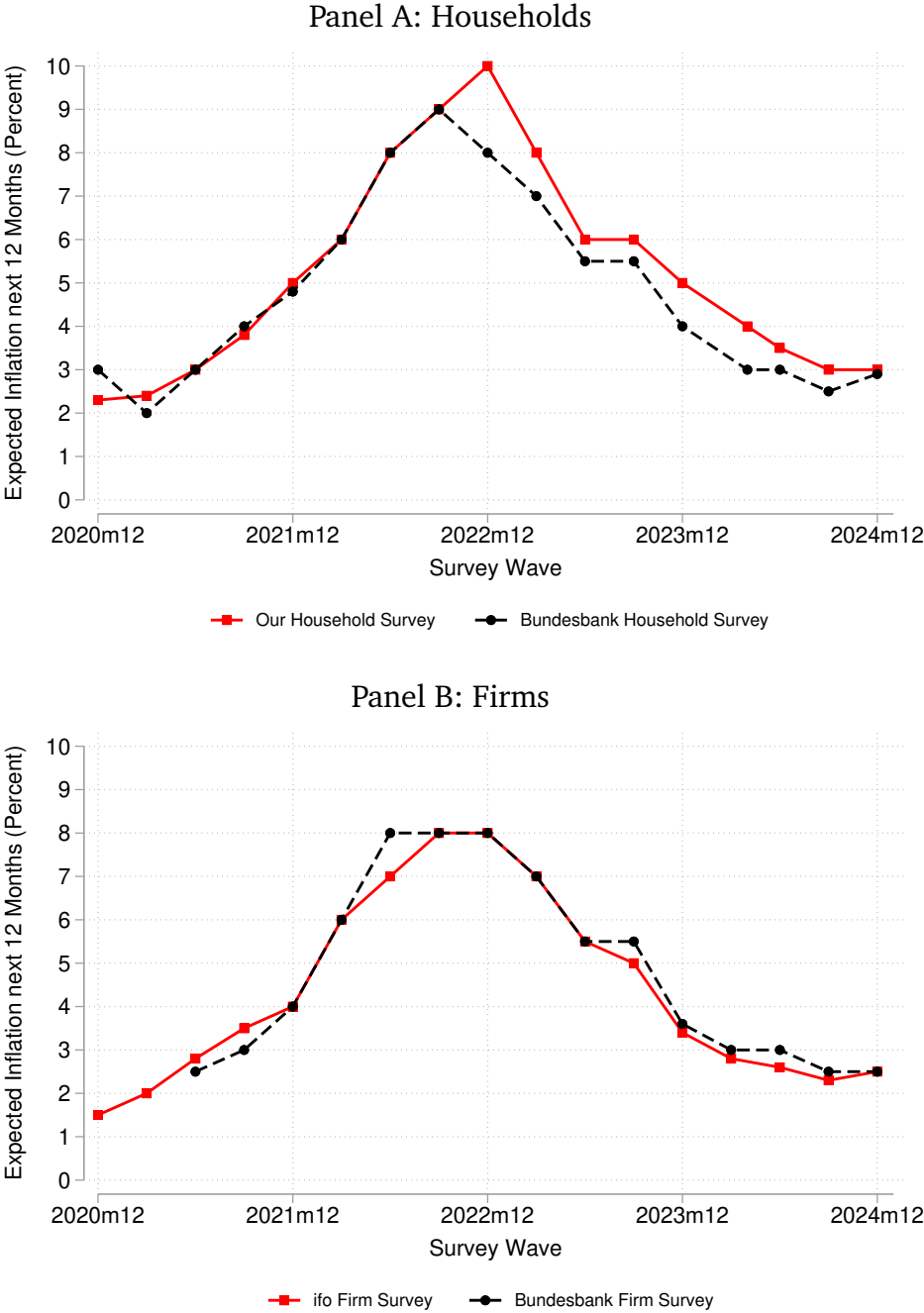
*Notes:* This figure displays the composition of the different survey waves in terms of the wave responding households and firms entered the panel. The drops in the size of the household sample in June 2022 and in June 2023 reflect a reduced target sample size rather than attrition.

**Figure A.5** Validation of information acquisition measure



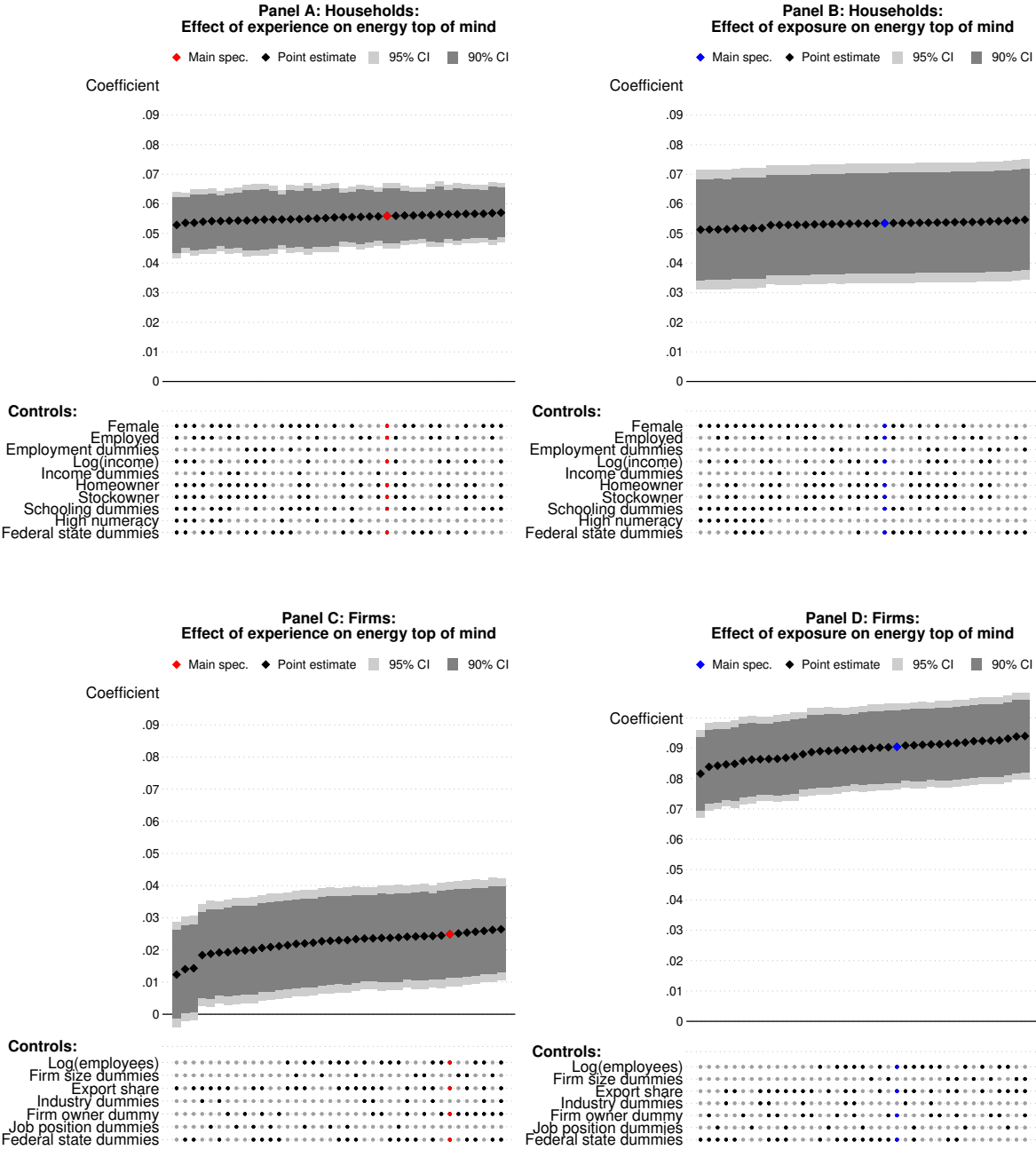
*Notes:* This figure displays binned scatter plots regressing information acquisition – i.e., the number of times the respondent informed herself about inflation in the three months prior to the survey (elicited on scale between 0 and 10+)—on different measures of news consumption regarding inflation. Panels A and C regress information acquisition on the total number of reports on inflation a respondent reports to have read in the news, to have seen on TV, or to have heard on the radio over the last three months. Panels B and D regress information acquisition on the number of minutes a household or firm manager reports to have spent consuming news about inflation over the last week. Panels A and B focus on households, while Panels C and D focus on firms. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Figure A.6** Median inflation expectations in our surveys compared to Bundesbank surveys



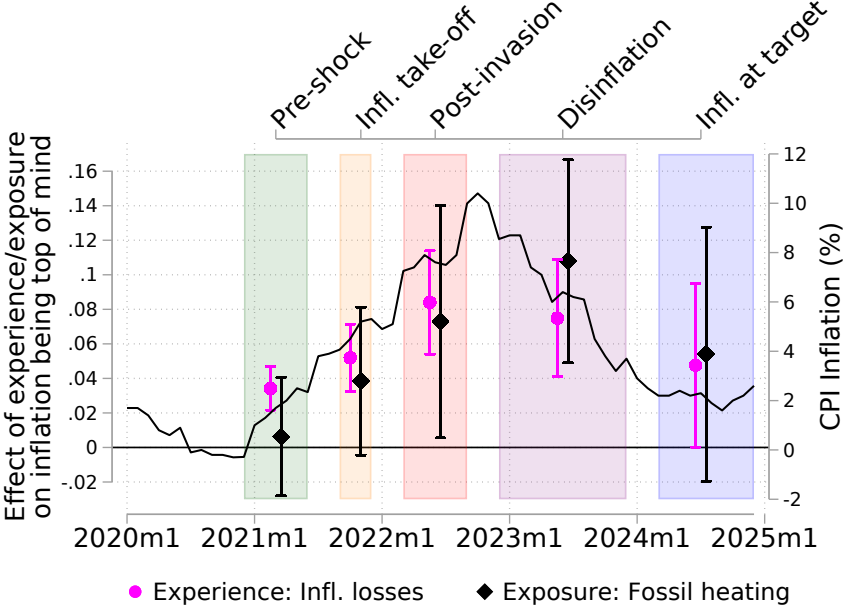
*Notes:* This figure compares the development of the median inflation expectations in our household and firm surveys over time to the development of median expectations in the Bundesbank Online Panels of Firms and of Households (BOP-HH and BOP-F, respectively), which aim to be representative of the underlying populations.

**Figure A.7** Potential determinants of what is top of mind: Robustness of full-period correlations



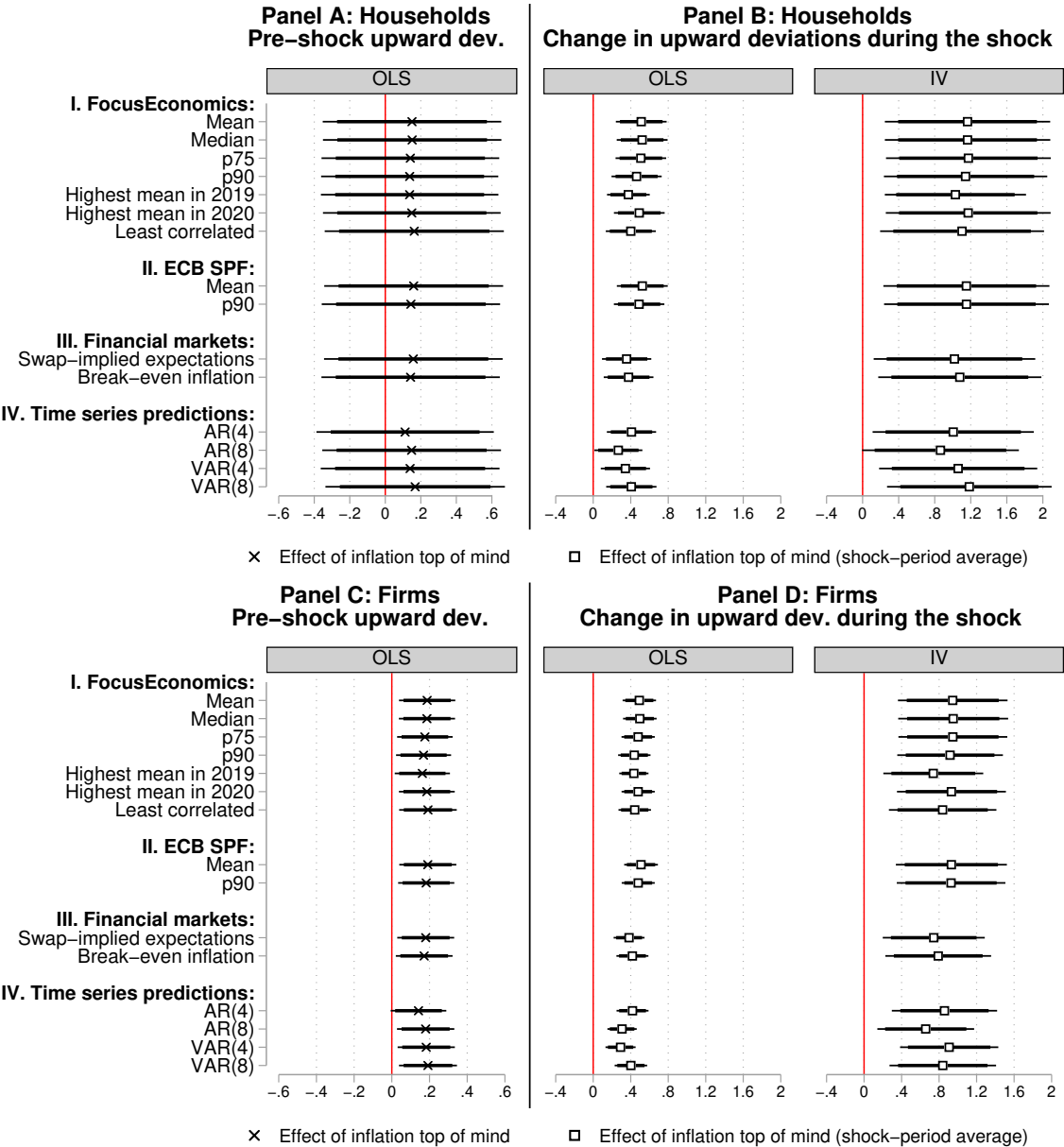
*Notes:* This figure shows that the associations of prior experience and payoff relevance with what is top of mind are robust to a wide range of control sets. For households, Panels A and B replicate the coefficients in Column 2 of Panel A of Table 3—for having experienced the 1970s oil crises and for payoff relevance proxied by a dummy equal to one if the household’s primary heating energy source was fossil in December 2021—across alternative control specifications. These include more detailed employment categories instead of a simple employment dummy, fine-grained income brackets instead of log household income, and an additional dummy for high numeracy. Panels C and D perform analogous robustness checks for firms, based on Column 5 of Panel A of Table 3 and varying the control vector by omitting or redefining variables (e.g., finer size classes, respondent job position, and industry dummies). All specifications include survey-wave fixed effects. Standard errors are clustered at the household/firm level.

**Figure A.8** Context-dependence of potential determinants of what is top of households' minds: Experienced past inflation losses



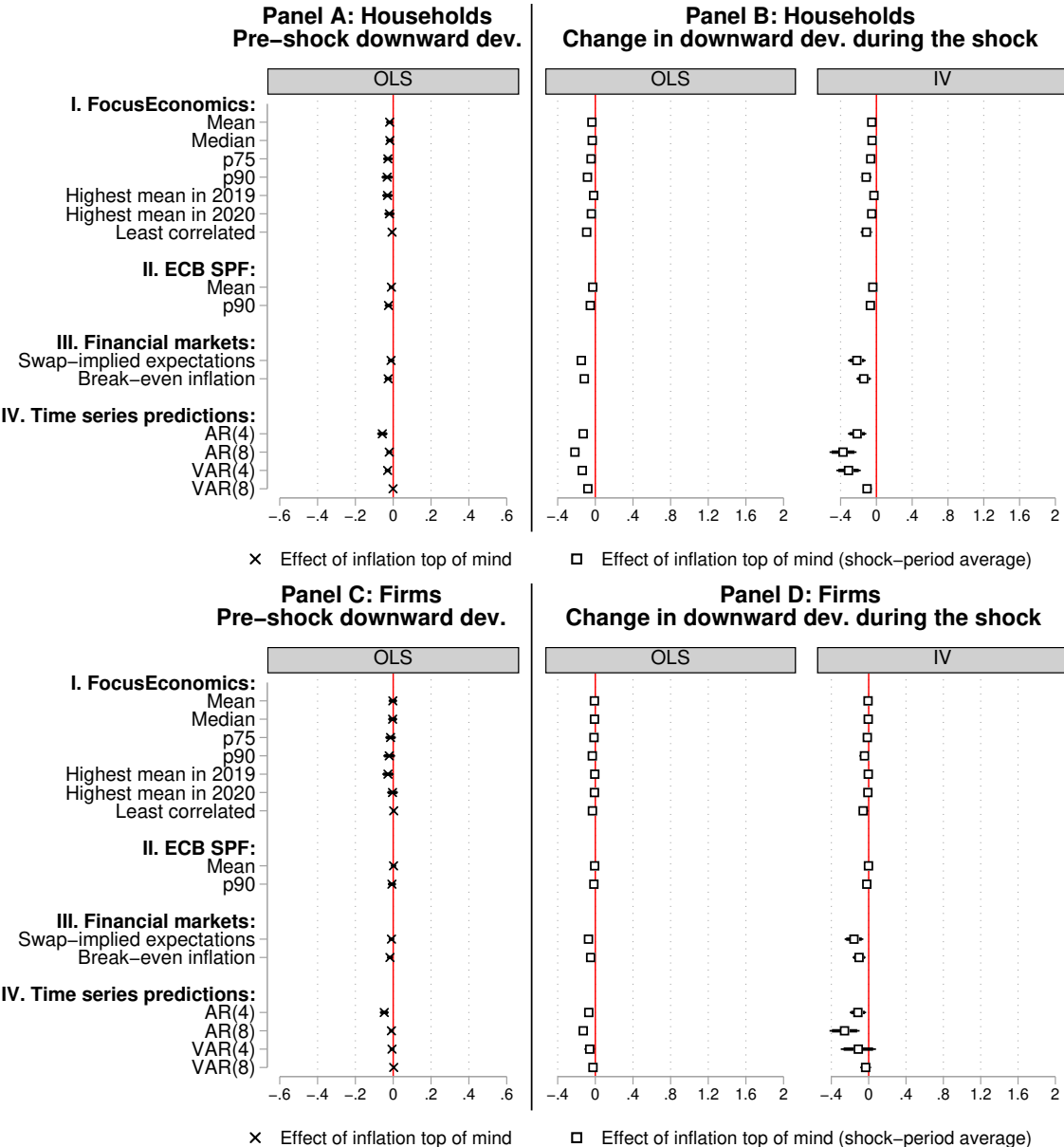
*Notes:* This figure shows how the effects of payoff relevance and prior experiences on what is top of mind vary with the macroeconomic context. Specifically, we re-run the estimation depicted in Panel A of Figure 3 but use households' past experiences of real income or wealth losses as measure of past experiences. Confidence bands are based on standard errors clustered at the household/firm level and refer to the 95%-level. The solid lines depicted on the right-hand axis display the CPI inflation rate or the energy component of the producer price index (2021=100) in Germany, respectively.

**Figure A.9** Inflation being top of mind and *upward* deviations of inflation expectations from benchmarks



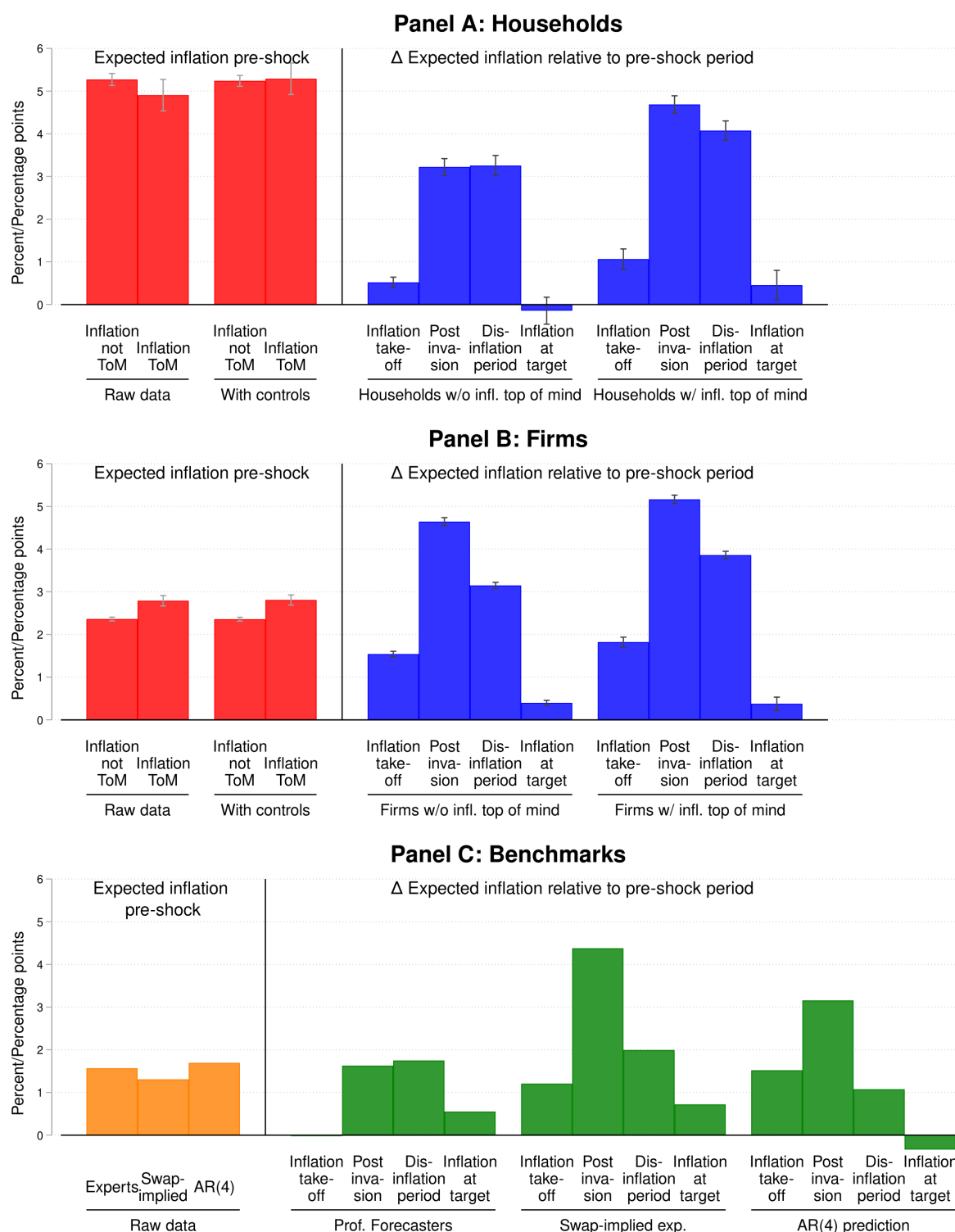
*Notes:* This figure displays the relationship between inflation being top of mind and *upward* deviations of inflation expectations from different ex-ante benchmarks based on the same empirical specifications as used in Table 5. The upward deviation is defined as the difference between the respondent’s inflation expectation and the respective benchmark if this difference is positive and zero otherwise. Panels A and C display cross-sectional correlations for the pre-shock period. Panels B and D present estimates of how inflation being top of mind is associated with the *change* in deviations from benchmarks during the shock, i.e., the difference between upward absolute deviations in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021), as specified in Equation (2). In the column on the right, the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. Each row refers to regressions in which the dependent variable is calculated based on a different ex-ante benchmark. The benchmarks are described in detail in Appendix D. Confidence bands refer to the 90%-level (thick lines) and 95%-level (thin lines).

**Figure A.10** Inflation being top of mind and *downward* deviations of inflation expectations from benchmarks



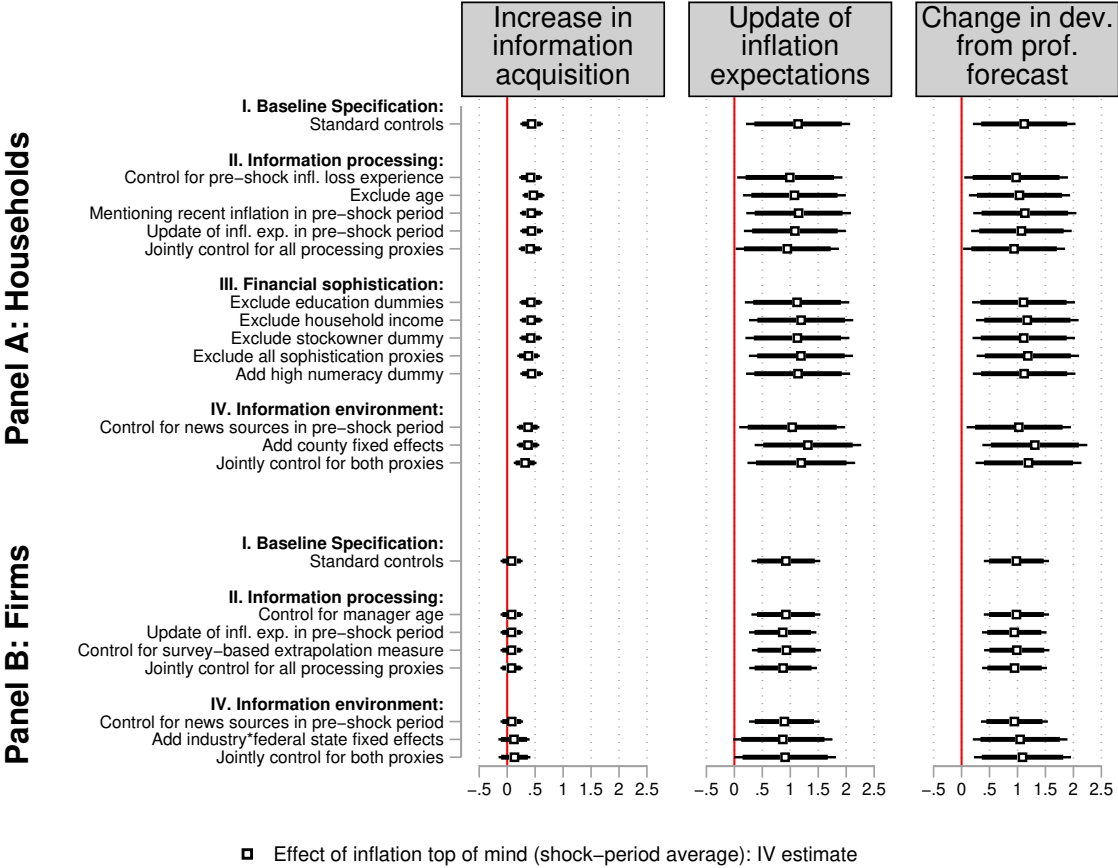
*Notes:* This figure displays the relationship between inflation being top of mind and *downward* deviations of inflation expectations from different ex-ante benchmarks based on the same empirical specifications as used in Table 5. The downward deviation is defined by the difference between the respective benchmark and the respondent's inflation expectation if the benchmark exceeds the beliefs and zero otherwise. Panels A and C display cross-sectional correlations for the pre-shock period. Panels B and D present estimates of how inflation being top of mind is associated with the *change* in deviations from benchmarks during the shock, i.e., the difference between downward absolute deviations in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021), as specified in Equation (2). In the column on the right, the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. Each row refers to regressions in which the dependent variable is calculated based on a different ex-ante benchmark. The benchmarks are described in detail in Appendix D. Confidence bands refer to the 90%-level (thick lines) and 95%-level (thin lines).

**Figure A.11** Pre-shock inflation expectations and updating in response to the shock



*Notes:* This figure contrasts inflation expectations between respondents with and without inflation top of mind in a given survey wave for households (Panel A) and firms (Panel B). The red bars on the left compare average pre-shock inflation expectations in the raw data or after purging them of the standard set of controls (centered at zero). The blue bars on the right plot updating in response to the shock, measured as the change in a respondent's inflation expectation in wave  $t$  relative to her average pre-shock expectation, separately for those with and without inflation top of mind in  $t$ . Panels A and B report 95% confidence intervals. Panel C presents the analogous pre-shock and updating patterns for several ex-ante benchmarks: the mean professional forecast from FocusEconomics, financial market-implied expectations from inflation swaps, and an AR(4) prediction (see Appendix D for details).

**Figure A.12** Sensitivity of IV estimates on the consequences of inflation being top of mind to additional controls



*Notes:* This figure presents a sensitivity analysis of the IV estimates on the consequences of inflation being top of mind on information acquisition, inflation expectations, and absolute deviations of inflation expectations from the mean professional forecast. Group I replicates the baseline specification presented in Tables 4 and 5 and Figure 4 for households (Panels A) and firms (Panel B). Estimations in Group II display the IV estimates when additionally controlling for different proxies for heterogeneity in information processing. On the one hand, we check the sensitivity with respect to prior inflation experiences by additionally controlling for the household having previously experienced a wealth or income loss due to inflation, not controlling for households' age, or including the age of the responding firm manager. On the other hand, we consider several proxies for having an extrapolative tendency: first, we classify households who cite recent inflation rates as a basis for their pre-shock forecasts in response to the open-ended question on the reasoning underlying inflation expectations (see Section 5.5) as extrapolators. Second, we use the extent of updating of inflation expectations within the pre-shock period, i.e., the change in inflation expectations between December 2020 and June 2021. Third, we directly control for different categories of beliefs about the autocorrelation of inflation on a five-point categorical scale elicited in the March 2026 wave of the firm survey (see Appendix F for instructions). Group III examines the impact of proxies for greater financial sophistication on the IV results by either excluding standard controls for education, income and stock ownership, or adding a dummy for high numeracy. Group IV adds proxies for the information environment, i.e., including an extensive set of dummies for the print, online, and TV news outlets respondents use to inform themselves about the economy or including more fine-grained regional fixed effects (households) or industry by state fixed effects (firms). Confidence bands refer to the 90%-level (thick lines) and 95%-level (thin lines).

## A.2 Additional tables

**Table A.1** Summary statistics

	GSOEP	Survey samples					
	(1) Mean	(2) Mean	(3) p25	(4) Median	(5) p75	(6) SD	(7) N
<b>Panel A: Households</b>							
Female	0.51	0.45	0.00	0.00	1.00	0.50	51,617
Age	51.19	51.80	40.00	50.00	60.00	13.42	51,617
East	0.17	0.17	0.00	0.00	0.00	0.38	51,617
Log(HH net income)	7.96	7.84	7.60	8.01	8.36	0.67	51,617
At least highschool	0.39	0.51	0.00	1.00	1.00	0.50	51,594
Employed	0.64	0.68	0.00	1.00	1.00	0.47	49,877
Homeowner	0.49	0.49	0.00	0.00	1.00	0.50	48,930
Stockowner	0.26	0.44	0.00	0.00	1.00	0.50	48,930
Exposure: Fossil heating		0.87	1.00	1.00	1.00	0.33	19,415
Experience: Oil crises		0.45	0.00	0.00	1.00	0.50	52,008
Experience: Inflation loss		0.51	0.00	1.00	1.00	0.50	34,302
Experience: Recession loss		0.29	0.00	0.00	1.00	0.46	34,183
<b>Panel B: Firms</b>							
Employees		272.20	12.00	38.00	118.00	1866.27	55,268
Export share		0.17	0.00	0.04	0.25	0.25	50,671
East		0.14	0.00	0.00	0.00	0.34	50,671
Manufacturing firm		0.30	0.00	0.00	1.00	0.46	55,580
Services firm		0.39	0.00	0.00	1.00	0.49	55,580
Construction firm		0.09	0.00	0.00	0.00	0.29	55,580
Retail/wholesale firm		0.22	0.00	0.00	0.00	0.41	55,580
Respondent is firm owner		0.51	0.00	1.00	1.00	0.50	45,561
Exposure: Energy cost share (pre-shock)		0.06	0.01	0.04	0.08	0.08	37,424
Manager's experience: Oil crises		0.71	0.00	1.00	1.00	0.45	35,554

*Notes:* This table provides summary statistics for the household sample (Panel A) and the firm sample (Panel B). Column 1 shows population benchmarks from the 2020 wave of the German Socioeconomic Panel, which is representative of the German population. Column 7 indicates for how many observations in our panel dataset a particular variable is available, counting repeat respondents multiple times.

**Table A.2** Inflation being top of mind and count of inflation-related words

	Inflation top of mind	Automated word count						Correl- ation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Inflation	Price	Cost	Energy	Expensive	Joint word count	hand-coded vs. joint word count
<b>Panel A: Households</b>								
Wave 1: 2020m12	0.05	0.01	0.02	0.01	0.03	0.03	0.08	0.77
Wave 2: 2021m3	0.07	0.01	0.02	0.01	0.04	0.03	0.09	0.82
Wave 3: 2021m6	0.10	0.02	0.04	0.02	0.05	0.04	0.12	0.87
Wave 4: 2021m9	0.14	0.04	0.05	0.02	0.06	0.05	0.16	0.87
Wave 5: 2021m12	0.20	0.07	0.07	0.02	0.09	0.04	0.21	0.93
Wave 6: 2022m3	0.33	0.09	0.14	0.04	0.18	0.06	0.33	0.94
Wave 7: 2022m6	0.41	0.21	0.17	0.05	0.17	0.06	0.43	0.91
Wave 8: 2022m9	0.53	0.20	0.20	0.08	0.32	0.06	0.53	0.94
Wave 9: 2022m12	0.49	0.23	0.19	0.06	0.30	0.07	0.52	0.92
Wave 10: 2023m3	0.47	0.23	0.18	0.06	0.25	0.08	0.51	0.91
Wave 11: 2023m6	0.47	0.28	0.16	0.06	0.18	0.06	0.47	0.91
Wave 12: 2023m9	0.45	0.25	0.14	0.05	0.16	0.07	0.45	0.90
Wave 13: 2023m12	0.39	0.19	0.13	0.06	0.17	0.07	0.39	0.92
Wave 14: 2024m3	0.39	0.18	0.11	0.05	0.16	0.08	0.40	0.90
Wave 15: 2024m6	0.38	0.19	0.12	0.06	0.13	0.06	0.38	0.92
Wave 16: 2024m9	0.37	0.17	0.09	0.05	0.13	0.08	0.38	0.87
Wave 17: 2024m12	0.33	0.16	0.10	0.05	0.12	0.07	0.35	0.91
Total (Waves 1-17)	0.29	0.12	0.10	0.04	0.14	0.06	0.30	0.92
<b>Panel B: Firms</b>								
Wave 1: 2020m12	0.07	0.01	0.04	0.01	0.03	0.03	0.12	0.70
Wave 2: 2021m3	0.12	0.01	0.07	0.01	0.04	0.04	0.17	0.78
Wave 3: 2021m6	0.21	0.02	0.15	0.03	0.04	0.03	0.25	0.87
Wave 4: 2021m9	0.23	0.03	0.14	0.04	0.06	0.06	0.30	0.80
Wave 5: 2021m12	0.28	0.07	0.16	0.04	0.08	0.02	0.32	0.91
Wave 6: 2022m3	0.44	0.09	0.24	0.07	0.21	0.02	0.47	0.88
Wave 7: 2022m6	0.52	0.19	0.24	0.07	0.18	0.03	0.55	0.89
Wave 8: 2022m9	0.66	0.19	0.28	0.10	0.45	0.02	0.69	0.90
Wave 9: 2022m12	0.59	0.20	0.22	0.09	0.33	0.02	0.59	0.91
Wave 10: 2023m3	0.48	0.20	0.16	0.06	0.21	0.02	0.50	0.90
Wave 11: 2023m6	0.40	0.15	0.13	0.07	0.16	0.02	0.44	0.86
Wave 12: 2023m9	0.38	0.15	0.14	0.08	0.19	0.04	0.45	0.82
Wave 13: 2023m12	0.29	0.08	0.11	0.08	0.15	0.04	0.37	0.79
Wave 14: 2024m3	0.26	0.07	0.10	0.08	0.14	0.04	0.35	0.74
Wave 15: 2024m6	0.20	0.05	0.09	0.06	0.11	0.03	0.29	0.73
Wave 16: 2024m9	0.18	0.04	0.08	0.05	0.12	0.04	0.28	0.71
Wave 17: 2024m12	0.21	0.04	0.10	0.07	0.14	0.04	0.32	0.71
Total (Waves 1-17)	0.34	0.10	0.15	0.06	0.16	0.03	0.39	0.84

*Notes:* Column 1 indicates the fraction of respondents mentioning inflation in response to the open-ended survey question based on manual coding by RAs. Columns 2 – 5 show the fractions of respondents mentioning specific words based on automated counts of the following words “inflation” (Column 2), “preis” (Column 3), “koste” + at least one out of the following: “stieg”, “stieg”, “erhöh”, “anheb”, or “hoch” (Column 4) ; “energie”, “öl”, “gas”, “sprit”, “diesel”, “benzin” or “strom” (Column 5); “teuer” or “teurer” (Column 6). Column 7 shows the fraction of respondents for which at least one of the words and word combinations from Columns 2–6 is mentioned. Column 8 depicts the correlation coefficient between hand-coded data (Column 1) and automated word count (Column 7). Panel A focuses on households, while Panel B focuses on firms.

**Table A.3** What is top of mind: Correlation between hand-coded and AI-coded open-ended data

	Hand-coded				
	(1)	(2)	(3)	(4)	(5) Any household-level topic
	Inflation	Covid-19	Growth	Any macro	
AI-coded: Inflation	0.794*** (0.045)	0.014 (0.014)	0.016 (0.012)		
AI-coded: Covid-19	0.001 (0.077)	0.993*** (0.008)	-0.002 (0.006)		
AI-coded: Growth	0.302* (0.178)	-0.010 (0.011)	0.744*** (0.219)		
AI-coded: Any macro topic				0.727*** (0.051)	0.014 (0.045)
AI-coded: Any household-level topic				0.004 (0.050)	0.680*** (0.058)
Mean dep. var.	0.41	0.01	0.01	0.45	0.72
Observations	200	200	200	200	200
R-squared	0.64	0.67	0.75	0.53	0.52

*Notes:* This table presents a validation exercise for the hand-coding of the open-ended data based on a subsample from the household survey wave in March 2023, which was both hand-coded and AI-coded using GPT-4. It regresses dummy variables indicating whether a respondent has a given topic top of mind according to the AI-coding on dummy variables indicating whether a respondent has a given topic top of mind according to the hand-coding. Robust standard errors are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table A.4** What is top of mind: Correlation between open-ended and structured measure

	Open-ended					
	(1)	(2)	(3)	(4)	(5)	(6)
	Inflation	Covid-19	Monetary policy	Growth	Any macro topic	Any household-level topic
Structured: Inflation	0.151*** (0.045)	0.008* (0.005)	0.008* (0.004)	0.002 (0.014)		
Structured: Covid-19	-0.041 (0.087)	0.098* (0.053)	-0.012* (0.007)	0.012 (0.040)		
Structured: Monetary policy	0.034 (0.060)	-0.008 (0.005)	0.032 (0.024)	0.039* (0.023)		
Structured: Growth	0.091 (0.063)	-0.018* (0.010)	-0.006 (0.020)	0.072** (0.029)		
Structured: Any macro topic					0.119** (0.054)	-0.032 (0.050)
Structured: Any household-level topic					-0.196 (0.223)	0.469** (0.192)
Observations	468	468	468	468	468	468
R-squared	0.03	0.10	0.02	0.04	0.01	0.02
Mean dep. var.	0.30	0.01	0.01	0.03	0.33	0.79

*Notes:* This table presents a validation exercise of our hand-coded data on topics top of mind based on an additional German household survey run with Prolific in September 2023. It regresses dummy variables indicating whether a respondent has a given topic top of mind according to the open-ended data on dummy variables indicating whether a respondent has a given topic top of mind according to a structured survey question included later in the survey. Robust standard errors are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table A.5** What is top of mind and perceived importance

	Households: ... top of mind			Firms: ... top of mind		
	(1)	(2)	(3)	(4)	(5)	(6)
	Inflation	Monetary policy	Growth	Inflation	Monetary policy	Growth
Perceived importance of inflation (z)	0.078*** (0.003)	-0.000 (0.001)	0.000 (0.001)	0.057*** (0.004)	-0.002* (0.001)	-0.002 (0.002)
Perceived importance of monetary policy (z)	0.001 (0.003)	0.008*** (0.001)	0.001** (0.001)	0.020*** (0.004)	0.026*** (0.002)	0.005** (0.002)
Perceived importance of growth (z)	0.030*** (0.004)	-0.002** (0.001)	0.002*** (0.001)	0.006* (0.004)	-0.005*** (0.001)	0.016*** (0.002)
Time FE	yes	yes	yes	yes	yes	yes
Observations	30,729	30,729	30,729	23,025	23,025	23,025
R-squared	0.17	0.01	0.00	0.16	0.02	0.01

*Notes:* This table reports regressions of indicator variables for whether a respondent has a given topic top of mind on measures of the perceived importance of inflation, monetary policy, and growth for the economic situation of their household/firm and survey wave fixed effects. These perceptions were elicited on five-point scales from “strongly disagree” to “strongly agree” between December 2020 and March 2023 for households, and in December 2020 as well as between September 2021 and March 2023 for firms, and are standardized (z-scores) for interpretability. Standard errors, clustered at the household/firm level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table A.6** What is top of mind: New vs. recontacted respondents

	Topic top of mind						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Inflation	Inflation: Energy	Covid-19	Monetary policy	Growth	Any macro topic	Any household- or firm-level topic
<b>Panel A: Households</b>							
Recontact	0.011 (0.009)	0.007 (0.007)	-0.003 (0.006)	-0.000 (0.002)	-0.002 (0.002)	-0.009 (0.010)	0.005 (0.009)
Distinct respondents	7,209	7,209	7,209	7,209	7,209	7,209	7,209
Observations	39,803	39,803	39,803	39,803	39,803	39,803	39,803
R-squared	0.47	0.38	0.36	0.23	0.20	0.45	0.39
Mean dep. var.	0.29	0.15	0.05	0.01	0.01	0.37	0.74
<b>Panel B: Firms</b>							
Recontact	0.014 (0.009)	0.008 (0.006)	-0.002 (0.007)	-0.002 (0.004)	-0.016** (0.006)	-0.018* (0.010)	-0.007 (0.008)
Distinct respondents	6,212	6,212	6,212	6,212	6,212	6,212	6,212
Observations	46,916	46,916	46,916	46,916	46,916	46,916	46,916
R-squared	0.41	0.42	0.38	0.30	0.27	0.33	0.29
Mean dep. var.	0.33	0.17	0.10	0.04	0.12	0.64	0.82
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual/Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:* This table displays regressions of whether a household (Panel A) or firm (Panel B) has a given topic top of mind (indicated at the top) as measured in the open-ended data on a dummy taking value zero for respondents that participate in the panel for the first time and one for those being recontacted after participating in a previous wave. All regressions control for survey wave fixed effects as well as household or firm fixed effects. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table A.7** Determinants of what is top of mind: Robustness of context-dependent correlations to individual fixed effects

	Panel A: Households: Experience: Oil crises		Panel B: Firms: Experience: Oil crises		Panel C: Households: Experience: Inflation loss	
	(1)	(2)	(3)	(4)	(5)	(6)
	Inflation top of mind	Energy top of mind	Inflation top of mind	Energy top of mind	Inflation top of mind	Energy top of mind
Inflation experience						
× 1(Inflation take-off)	0.025** (0.012)	-0.001 (0.009)	0.016 (0.022)	0.025** (0.012)	0.027** (0.011)	0.013 (0.008)
× 1(Russia’s invasion of Ukraine)	0.046*** (0.015)	0.038*** (0.013)	0.008 (0.022)	0.036** (0.018)	0.053*** (0.015)	0.031** (0.013)
× 1(Disinflation)	0.037** (0.016)	0.057*** (0.013)	0.026 (0.021)	0.022 (0.016)	0.052*** (0.017)	0.015 (0.013)
× 1(Inflation close to target)	0.018 (0.019)	0.029** (0.014)	0.039* (0.020)	0.016 (0.015)	0.032 (0.021)	0.009 (0.015)
Exposure						
× 1(Inflation take-off)	0.044* (0.026)	0.009 (0.019)	0.045*** (0.017)	0.049*** (0.011)	0.039 (0.027)	0.010 (0.020)
× 1(Russia’s invasion of Ukraine)	0.080** (0.033)	0.045* (0.027)	0.069*** (0.017)	0.096*** (0.015)	0.083** (0.034)	0.041 (0.027)
× 1(Disinflation)	0.120*** (0.032)	0.102*** (0.022)	0.071*** (0.017)	0.103*** (0.014)	0.115*** (0.033)	0.100*** (0.023)
× 1(Inflation close to target)	0.080** (0.034)	0.059** (0.023)	0.078*** (0.017)	0.084*** (0.013)	0.075** (0.035)	0.045* (0.024)
Controls interacted with periods	Yes	Yes	Yes	Yes	Yes	Yes
Age interacted with periods					Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm/Individual FE	Yes	Yes	Yes	Yes	Yes	Yes
Distinct respondents	5,697	5,697	3,030	3,030	4,925	4,925
Observations	33,008	33,008	32,360	32,360	29,640	29,640
R-squared	0.47	0.37	0.38	0.39	0.46	0.37
Mean dep. var.	0.28	0.14	0.34	0.17	0.28	0.13

*Notes:* This table shows that the patterns in Figures 3 and A.8 are robust to including individual or firm fixed effects. Adopting Equation (2), the dependent variables are indicators for having inflation (odd-numbered columns) or energy (even-numbered columns) top of mind. In Columns (1)—(4), the experience measure is an indicator for having been at least a teenager during the 1970s oil crises (Footnote 6); in Columns (5) and (6), it captures whether the respondent had ever experienced a real income or real wealth loss due to inflation, as elicited in the pre-shock period. For households, exposure is a dummy equal to one if the primary heating energy source was fossil in December 2021; we also control, separately by subperiod, for gender, employment, education, household income, homeownership, stock-ownership, federal state, and (in Columns (5) and (6) only) age. For firms, high exposure indicates an above-median ratio of energy costs to revenues in 2021; we additionally control, by subperiod, for firm size, export share, an owner-respondent dummy, and federal state. All specifications include survey-wave fixed effects. Standard errors, clustered at the household/firm level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table A.8** Different sources of inflation being top of mind and inflation expectations: Alternative experience measure

	Households			
	(1)	(2)	(3)	(4)
	Expected inflation next 12 months	Abs. dev. from mean professional forecast (FocusEconomics)	Abs. dev. from swap-implied expectations	Abs. dev. from AR(4) prediction
Experience: Inflation loss				
× 1(Inflation take-off)	0.200 (0.135)	0.212 (0.132)	0.139 (0.131)	0.098 (0.129)
× 1(Post invasion)	0.572*** (0.174)	0.544*** (0.171)	0.337** (0.164)	0.465*** (0.165)
× 1(Disinflation)	0.369* (0.201)	0.317 (0.195)	0.326* (0.195)	0.372* (0.194)
× 1(Inflation at target)	0.008 (0.242)	-0.017 (0.235)	-0.000 (0.234)	0.042 (0.233)
Exposure: Fossil heating				
× 1(Inflation take-off)	0.683* (0.402)	0.708* (0.391)	0.700* (0.387)	0.682* (0.380)
× 1(Post invasion)	1.008** (0.484)	1.006** (0.471)	0.972** (0.458)	0.917** (0.458)
× 1(Disinflation)	0.865* (0.461)	0.944** (0.440)	0.934** (0.443)	0.853* (0.442)
× 1(Inflation at target)	0.614 (0.541)	0.574 (0.512)	0.555 (0.516)	0.508 (0.514)
Standard controls interacted with periods	Yes	Yes	Yes	Yes
Age interacted with periods	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes
Individual FE	Yes	Yes	Yes	Yes
Observations	33,723	33,723	33,723	33,723
Distinct respondents	5,405	5,405	5,405	5,405
R-squared	0.62	0.60	0.60	0.60
Mean dep. var.	6.16	4.09	3.63	3.69

*Notes:* This table reports panel estimates of how the association of inflation expectations with measures of households' prior inflation experience and payoff relevance differs in the four shock periods relative to the pre-shock period, as specified in Equation (3). In Column (1), the dependent variable is expected inflation over the next 12 months; the remaining columns use the absolute deviation of these expectations from, respectively, the mean professional forecast from FocusEconomics, financial market-implied expectations from inflation swaps, or an AR(4) prediction (see Appendix D). The experience measure captures whether the respondent had ever suffered a real income or real wealth loss due to inflation, as elicited in the pre-shock period. Payoff relevance is a dummy equal to one if the primary heating energy source was fossil in December 2021. The controls (gender, age, employment, education, household income, homeownership, stockownership, and federal state) are interacted with each shock period. All specifications include individual and wave fixed effects. Standard errors, clustered at the household level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct.

**Table A.9** Inflation top of mind in pre-shock period and potential confounding factors

	Inflation top of mind					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A: Households</b>						
Female	-0.000 (0.006)	0.001 (0.006)	-0.000 (0.006)	0.000 (0.006)	0.000 (0.006)	0.001 (0.006)
Employed	-0.016** (0.007)	-0.017** (0.007)	-0.016** (0.007)	-0.016** (0.007)	-0.016** (0.007)	-0.017** (0.007)
Household income (in logs)	-0.014*** (0.005)	-0.011** (0.005)	-0.014*** (0.005)	-0.014*** (0.005)	-0.015*** (0.005)	-0.012*** (0.005)
Homeowner	0.006 (0.006)	0.005 (0.006)	0.006 (0.006)	0.006 (0.006)	0.006 (0.006)	0.005 (0.006)
Stockowner	-0.006 (0.006)	-0.007 (0.006)	-0.006 (0.006)	-0.006 (0.006)	-0.006 (0.006)	-0.007 (0.006)
Middleschool	0.020** (0.010)	0.019* (0.010)	0.019** (0.010)	0.020** (0.010)	0.019* (0.010)	0.018* (0.010)
Highschool	0.014 (0.010)	0.012 (0.010)	0.013 (0.010)	0.013 (0.010)	0.012 (0.010)	0.011 (0.010)
University	0.002 (0.010)	0.000 (0.010)	0.001 (0.010)	0.001 (0.010)	-0.000 (0.010)	-0.002 (0.010)
Other education	0.006 (0.038)	0.006 (0.039)	0.006 (0.038)	0.006 (0.038)	0.006 (0.038)	0.006 (0.039)
Age	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)
Experience: Inflation loss		0.034*** (0.006)				
Mentions recent inflation (pre-shock)			0.012 (0.012)			
Update of infl. exp. Dec 2020-Jun 2021 (pre-shock)				0.001 (0.001)		
High numeracy					0.005 (0.006)	0.004 (0.006)
Observations	10,572	10,572	10,572	10,572	10,572	10,572
R-squared	0.02	0.02	0.02	0.02	0.02	0.02
Mean dep. var.	0.08	0.08	0.08	0.08	0.08	0.08
<b>Panel B: Firms</b>						
Number of employees (in logs)	0.011*** (0.003)	0.010*** (0.003)	0.011*** (0.003)	0.011*** (0.003)	0.010*** (0.003)	0.010*** (0.003)
Export share	0.084*** (0.020)	0.084*** (0.020)	0.084*** (0.020)	0.084*** (0.020)	0.083*** (0.020)	0.083*** (0.020)
Respondent is firm owner	-0.014 (0.011)	-0.012 (0.011)	-0.014 (0.011)	-0.014 (0.011)	-0.012 (0.011)	-0.012 (0.011)
Age of responding manager		-0.001 (0.001)			-0.001 (0.001)	
Update of infl. exp. Dec 2020-Jun 2021 (pre-shock)			0.002 (0.002)		0.002 (0.002)	
Inflation surge → increases further				-0.005 (0.016)	-0.006 (0.016)	
Inflation surge → continued high inflation				-0.009 (0.016)	-0.010 (0.016)	
Observations	7,845	7,845	7,845	7,845	7,845	7,845
R-squared	0.04	0.04	0.04	0.04	0.04	0.04
Mean dep. var.	0.13	0.13	0.13	0.13	0.13	0.13
Time FE	yes	yes	yes	yes	yes	yes
Federal state FE	yes	yes	yes	yes	yes	yes

Notes: Column 1 displays cross-sectional regressions of whether a household (Panel A) or firm (Panel B) has inflation top of mind on the standard vector of controls, using the sample of the pre-shock period (Dec 2020 and June 2021). In the remaining columns, we add proxies for potential confounding factors used and described in the sensitivity analysis presented in Figure A.12. All specifications include wave fixed effects. Standard errors, clustered at the household/firm level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct.

## B Details on classification of open-ended data

### B.1 Classification of open-ended data on what is top of mind

In this appendix, we present the full list of codes and explanations that we initially handed out to research assistants to code the open-ended responses to the question: *What topics come to mind when you think about the economic situation of your household/company?* Each response could receive multiple codes. Some topics appear both as a macro and as a household- or firm-level code, which were meant to be used depending on the context. Research assistants were instructed to err on the side of using the household- or firm-level instead of the macro code in unclear or ambiguous cases.

**Table B.1** List of codes for classification of open-ended data: Macroeconomic topics

Category	Explanation
<b>Covid-19</b>	Everything related to the pandemic (also if personal consequences of the pandemic for the respondent's household are mentioned – in that case indicate “corona” under “macro topic” and the specific personal consequences under the respective “personal topic”), Covid, corona, pandemic, lockdown.
<b>Inflation</b>	Inflation, rising prices, price level, price increase, purchasing power, energy prices (gas, gasoline, electricity etc.).
<b>Inflation: Energy</b>	Subset of category “inflation” that refers to energy prices: Energy, oil, gas, gasoline/Diesel, electricity, heating, heat pump, carbon tax.
<b>Monetary policy</b>	Interest rates, monetary policy, central bank, ECB, negative interest rate.
<b>Growth</b>	Economic growth, GDP, general economic situation, aggregate economy, business cycle, upswing, downturn, insolvencies, company bankruptcies, aggregate demand, overall industrial production, economic crisis, recession.
<b>Labor market</b>	Short-time work, employment, labor market, unemployment rate.
<b>Stock market</b>	DAX, stock exchange, stock market.
<b>Housing market</b>	Housing/residential market, real estate prices, rents
<b>Fiscal policy</b>	tax policy; general generosity of welfare system, government debt: overall financial situation of the government/state, deficit, public debt, public budget (deficit/surplus), value-added tax (reduction).
<b>Regulation</b>	Regulation, minimum wage, subsidies (R&D grants/funding).
<b>Structural transformation</b>	Long-term trends in the economy, digitalization, structural change, structural problems.
<b>Trade</b>	Imports, exports, outsourcing, foreign countries (e.g., “US elections”, “Brexit”), globalization, etc.
<b>Pension system</b>	Pension system, old-age poverty.
<b>Health system</b>	Healthcare system, nursing care, shortage of nurses.
<b>Education</b>	Education system, vocational training, universities, schools, research, development.
<b>Inequality</b>	Inequality, income distribution, wealth distribution, social gap, poverty, social equity, gender inequality.
<b>Migration</b>	(Im-)migration, asylum seekers, refugees.
<b>Environment/Climate</b>	Environment, pollution, climate, climate crisis, climate change.
<b>Uncertainty</b>	Uncertainty about macroeconomic development.
<b>Other</b>	Residual code for macro topics.

*Notes:* This table lists all macroeconomic topics in our coding scheme and provides an explanation for each topic.

**Table B.2** List of codes for classification of open-ended data: Household-level topics

Category	Explanation
<b>Overall situation</b>	General financial and economic situation of the household.
<b>Spending</b>	Expenditure/spending, consumption.
<b>Income</b>	Income, liquidity, money troubles, shortage/lack of money, insufficient financial security, etc.
<b>Job situation</b>	Job loss, job security, job search, short-time work.
<b>Saving</b>	Capital accumulation, retirement provision, old-age provision, building up reserves.
<b>Financial assets</b>	Shares, other financial investments, investment decisions.
<b>Housing costs</b>	Rental costs, house prices, ancillary leasing costs.
<b>Debt</b>	Debt, loans, amortisation payments, interest payments on existing debt, etc.
<b>Health issues</b>	Health risks, medical expenses.
<b>Insurance</b>	Insurance, protection, provision.
<b>Uncertainty</b>	Uncertainty about the financial and economic future of the household/the individual.
<b>Other</b>	Residual code for household-level topics.

*Notes:* This table lists all household-level topics in our coding scheme and provides an explanation for each topic.

**Table B.3** List of codes for classification of open-ended data: Firm-level topics

Category	Explanation
<b>Overall situation</b>	Overall situation of firm.
<b>Costs</b>	Material costs, purchase prices, prices of intermediate inputs, labor costs, freight costs.
<b>Supply chain</b>	Problems with supply chain, bottlenecks in primary products/raw materials, logistics problems, suppliers.
<b>Demand</b>	Sales, demand, customers, orders/order situation/order backlog, competitive pressure.
<b>Labor input</b>	Labor shortage, shortage of skilled workers, vacancies, layoffs, personnel development, (vocational) training.
<b>Profits/ Profitability</b>	profits, margin, EBIT, profitability.
<b>Liquidity/ Solvency</b>	Liquidity, reserves, equity, insolvency.
<b>Process organization</b>	Work processes, digitalization, work-from-home, restructuring, process optimization.
<b>Government aid programs</b>	KfW loans (Investment Bank of German Government), financial aid and governmental crisis response programs (e.g., in response to Covid crisis) (all if related to own firm, only).
<b>R&amp;D</b>	Innovation, quality improvement, product development.
<b>Regulation</b>	Approval processes/authorization procedures, bureaucracy/relation to public/tax authorities, public tender offers, taxation system/tax burden, environmental requirements (all if related to own firm, only).
<b>Financing</b>	Financing conditions, lending, debt.
<b>Short time work</b>	Employees put to short-time work, short-time work announced by the firm to the Federal Employment Agency.
<b>Capacity utilization</b>	Utilization of production capacities.
<b>Rent and housing costs</b>	Rent, housing costs.
<b>Investment</b>	Investment.
<b>Uncertainty</b>	Uncertainty regarding future development of firm.
<b>Other</b>	Residual code for firm-level topics.

*Notes:* This table lists all firm-level topics in our coding scheme and provides an explanation for each topic.

## B.2 Classification of open-ended data on reasoning underlying inflation expectations

In Section 5.5, we present evidence using an open-ended question asking respondents about the considerations underlying their inflation expectations. In this appendix, we provide a detailed description of the LLM-based coding procedure we employ, the full list of codes and explanations included in the prompt for OpenAI’s GPT-5, along with some examples from participants’ answers, and quality checks to validate the accuracy of the method.

**Coding procedure** To analyze the unstructured text data, we devise a coding scheme that includes the survey context, the original question about the reasoning underlying the participants’ inflation expectations, specific task instructions for the large language model, the complete list of codes with clear explanations and keywords for each category, and the desired final output format. Our main codes of interest, as presented in Table B.4, capture four supply-side factors: energy, labor input, supply chain, and other supply-related topics, aggregated in the “Any supply-side factor” category in our analysis, five demand-side factors: household spending, firm investment, monetary and fiscal policy, and other demand-related topics, aggregated in the “Any demand-side factor” category, and six general or macroeconomic factors: geopolitics, Covid-19, recent inflation, the normal range of inflation, , and other non-categorized topics. In particular, the large language model receives the following prompt:

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### Coding Manual: Considerations Underlying Inflation Forecasts

**Original survey question** following a numerical elicitation of a participant’s expected rate of inflation over the next 12 months, included in a panel survey with a representative household sample from December 2020 to December 2022, i.e. prior to and during the post-pandemic inflation shock:

(original, German): “Bitte lassen Sie uns wissen, wie Sie Ihre Vorhersage zur Inflationsrate gemacht haben. Welche Überlegungen spielen für Sie bei dieser Vorhersage hauptsächlich eine Rolle?”

#### Task:

- Assign one or more codes to each response based on the content.
- A response can receive multiple codes if multiple distinct ideas are mentioned.
- Do not infer unstated reasons—code only what is explicitly mentioned.

- German keywords: Use common synonyms and related terms (examples provided per code) to recognize the concept.

### **Codes and definitions:**

energy Mentions prices or costs of oil, gas, electricity, heating, energy shortages.

Keywords: Energie, Gas, Strom, Öl, Diesel, Heizung, Energiepreise.

labor\_input Mentions developments to labor as a production input, such as labor shortages or wage costs.

Keywords: Arbeitskräftemangel, Lohnkosten, Löhne, Gehälter, Tarif, Gewerkschaft, Lohnforderungen.

supply\_chain Mentions supply chain developments such as supply chain disruptions.

Keywords: Lieferkette, Engpass, Logistik, Fracht, Container, Suez, Rhein.

other\_supply Mentions other supply-side developments to the extent they do not specifically cite topics related to energy, labor input or supply chains.

Keywords: Produktionskosten, Rohstoffe, Materialkosten, Verpackung.

household\_spending Mentions aggregate consumer demand for goods/services. Only use this if it is clear that household/consumer spending is meant, not for broader references to demand without specifying households or consumers.

Keywords: Konsum, Kauflaune, Konsumentenstimmung.

firm\_investment Mentions overall investment expenditure by firms.

Keywords: Investitionen, Capex, Anlageinvestitionen.

mon\_policy Mentions monetary policy/interest rates/money supply/central bank actions.

Keywords: Zentralbank, EZB, Bundesbank, Zinsen, Leitzins, "Geld drucken", Quantitative Easing, Anleihekäufe, Geldmenge, Inflationsziel.

fiscal\_policy Mentions government spending, taxes, subsidies, stimulus programs, VAT, CO<sub>2</sub> levy, price brakes.

Keywords: Staat, Staatsausgaben, Subvention, Steuern, MwSt., CO<sub>2</sub>-Preis, Preisbremse.

other\_demand Mentions other demand-side developments to the extent they do not specifically concern household spending, firm investment, monetary policy or fiscal policy.

Keywords: Exportnachfrage, Nachfrage, Binnennachfrage.

geopolitics Mentions wars, sanctions, trade embargoes, geopolitical tensions.

Keywords: Krieg, Ukraine, Russland, Sanktionen, Embargo.

covid Mentions direct impacts of COVID-19 (lockdowns, pandemic, aid programs).

Keywords: Pandemie, Covid, Lockdown, Impfung.

recent\_infl Mentions recent or current overall realized inflation or inflation rates, from which the respondent (implicitly) seems to extrapolate to future inflation. Do not use this for restatements of the respondent's earlier forecast of what future overall inflation will be, nor for broader statements to current economic conditions that do not mention current or realized inflation.

Keywords: derzeitige Inflationsrate, Inflationsrate über das letzte Jahr.

normal\_range Mentions the normal or typical level of inflation, that the inflation rate will go back to its normal levels or a generic return to normality.

Keywords: langfristige Inflationsrate, typische Inflationsrate, normalerweise.

guess Admits guessing, intuition, or reliance on gut feeling.

Keywords: Bauchgefühl, Schätzung, Geraten, Gefühl.

other Use this in case none of the above codes applies. Also use this for simple restatements of the forecast about future inflation made earlier that do not give any information on underlying considerations (e.g., "I think inflation will be 5%."), and for junk responses of gibberish.

Keywords: Weiß nicht, keine Ahnung, qwasasfasdf.

### Final output format:

- Use exactly this header row and order:  
ResponseId text\_responses energy labor\_input supply\_chain  
other\_supply household\_spending firm\_investment mon\_policy  
fiscal\_policy other\_demand geopolitics covid recent\_infl  
normal\_range guess other
- For each response: output one row with the provided ResponseId and full text\_responses, then one value (1 or 0) for every code column above.
- Write 1 only if the response explicitly matches that code's definition; otherwise write 0.
- Fill every code column; no blanks.
- Output the tab-separated table only—no explanations or extra lines.

**Implementation details** The coding procedure is implemented in an RStudio script that loads the coding prompt as a string, extracts the open-text data from the dataset into vectors, organizes the responses into batches of 100, and submits them sequentially to OpenAI’s model via an HTTPS API request. The model returns, for each participant’s response, a structured output of 0 or 1 for each code depending on whether the category is mentioned in the text, and the script then parses these outputs into a table that can be used directly in the empirical analysis.

**Human validation** To assess the quality of the AI coding, we randomly sampled 200 categorized open-text responses and hand-coded them using the same coding scheme as applied by OpenAI’s GPT-5. More specifically, for each response we compared the AI’s category assignments to the corresponding hand-coded assignments across all 15 categories. To do so, we computed overall validation rates by pooling category assignments across the full sample: (i) the fraction of all AI-assigned category labels that are confirmed by hand coding, and (ii) the fraction of all hand-coded category labels that are recovered by the AI. The resulting overall agreement rates are 86% and 72%, respectively, indicating a high degree of agreement between the two methods, and validating the accuracy of the LLM-based coding.

**Table B.4** List of codes for classification of open-ended data: Inflation expectations

Category	Explanation	Examples
<b>Any supply-side factor</b>		
<i>energy</i>	Mentions prices or costs of oil, gas, electricity, heating, energy shortages.	"It is getting more and more expensive, as energy prices will continue to rise."; "The rising prices for oil and electricity, and therefore for food."
<i>labor_input</i>	Mentions developments to labor as a production input, such as labor shortages or wage costs.	"The development of the labor market makes the prices increase."; "The rising prices depend on the development of collective bargaining agreements."
<i>supply_chain</i>	Mentions supply chain developments such as supply chain disruptions.	"The development of the global economy is leading to a shortage of resources (materials, supplies, etc.) and to significantly higher prices in raw materials industries."
<i>other_supply</i>	Mentions other supply-side developments to the extent they do not specifically cite topics related to energy, labor input or supply chains.	"Current price development, especially for raw materials, in connection with the latest figures on this topic."; "The current price increases and the ones expected due to raw material shortages."
<b>Any demand-side factor</b>		
<i>household_spending</i>	Mentions aggregate consumer demand for goods/services. Only when it is clear that household/consumer spending is meant, not for broader references to demand without specifying households or consumers.	"Because I can afford fewer groceries"; "I notice it when shopping; there is hardly an item, especially food, that hasn't increased enormously."
<i>firm_investment</i>	Mentions overall investment expenditure by firms.	"Because of the global economic development, and the investments in renewable energy"; "If the economy invests more, then maybe things will get better."
<i>mon_policy</i>	Mentions monetary policy/interest rates/money supply/central bank actions.	"The inflation rate will not decline significantly. The ECB is also sticking to its interest rate policy and thus is preventing a lower rate."
<i>fiscal_policy</i>	Mentions government spending, taxes, subsidies, stimulus programs, VAT, CO <sub>2</sub> levy, price brakes.	"The developments of recent months play a role, and the new government will take on more debt, which will drive the inflation rate up."
<i>other_demand</i>	Mentions other demand-side developments to the extent they do not specifically concern household spending, firm investment, monetary policy or fiscal policy.	"There is high demand in the markets, low production, and a boom in some subsidized markets."; "The assessment of the economic situation in connection with import-export policy."
<i>geopolitics</i>	Mentions wars, sanctions, trade embargoes, geopolitical tensions.	"The current situation regarding the war in Ukraine and the associated economic effects on global trade."
<i>covid</i>	Mentions direct impacts of COVID-19 (lockdowns, pandemic, aid programs).	"More and more companies are being pushed to the brink of existence due to the pandemic."; "Based on experiences from the past, the economy will be better again after corona."
<i>recent_infl</i>	Mentions recent or current overall realized inflation or inflation rates, from which the respondent (implicitly) seems to extrapolate to future inflation (no restatements of future forecasts - no general economic conditions).	"Given the current inflation rate, I do not believe the market will calm down."; "Since we are now at almost 4 percent, it will certainly increase even more."
<i>normal_range</i>	Mentions the normal or typical level of inflation, that the inflation rate will go back to its normal levels or a generic return to normality.	"Inflation will continue to increase over the next few years before everything returns to normal."; "I think it will normalize a bit again."
<i>guess</i>	Admits guessing, intuition, or reliance on gut feeling.	"I estimated this figure based on my gut feeling; however, I don't know it for sure."
<i>other</i>	When none of the above codes applies, for simple restatements of the forecast about future inflation. for no underlying considerations and for junk.	"The price increases in all areas"; "I've heard the 3% figure several times now."; "The development from 2021 to 2022 and then, in addition, the constraints due to the current crises."

*Notes:* This table lists all categories in our coding scheme for the reasoning underlying inflation expectations and provides an explanation and several examples for each topic. The categories *energy*, *labor\_input*, *supply\_chain* and *other\_supply* are aggregated into the "Any supply-side factor" category, while the categories *household\_spending*, *firm\_investment*, *mon\_policy*, *fiscal\_policy* and *other\_demand* are aggregated into the "Any demand-side factor" category.

## C Survey attrition

This appendix provides a detailed analysis of survey attrition in both the household and the firm panel. We document patterns of recontact, continued participation, and dropout over time, and assess whether attrition is systematically related to observables, inflation-related beliefs or inflation being top of mind, and how our main results depend on respondents' tenure in the survey.

Figure C.1 summarizes recontact rates and participation dynamics across waves. Panels A and B show that, for both households and firms, the majority of responses in each wave come from recontacted participants rather than new entrants. Recontact rates decline over time for households, whereas they remain relatively stable for firms. Panels C and D document the probability of continued participation and the implied hazard rates, restricting the samples to observations that could in principle be recontacted for the next waves. While households exhibit a declining probability of continued participation as tenure increases, hazard rates remain moderate and display no pronounced trend breaks. Firms exhibit higher and more stable continuation probabilities and correspondingly lower hazard rates throughout the sample period.

Table C.1 relates attrition to a broad set of observable characteristics. In the household sample, dropout is systematically associated with being unemployed, having lower household income, and being younger. These patterns are robust across alternative sample restrictions. In the firm sample, respondents from larger firms and firm owners are significantly less likely to drop out, while export exposure is not systematically related to attrition.

Table C.2 examines whether attrition is related to inflation being top of mind or to the absolute deviation of inflation expectations from professional forecasts. While Panel A uses the full sample, we restrict to the survey waves until September 2022 in Panel B to keep the analysis consistent with our time-varying main specifications presented in Section 5. Across both households and firms, neither inflation being top of mind nor deviations of inflation expectations from mean professional forecasts predict an economically relevant extent of dropout in the next wave once time fixed effects and, in particular, individual or firm fixed effects are included. This indicates that selective attrition along these dimensions is unlikely to bias analyses that exploit within-respondent variation in inflation being top of mind or in expectations.

Tables C.3 and C.4 investigate whether the determinants of what is top of mind vary systematically with survey participation tenure. For this purpose, we extend the analyses presented in Table 3 and Figure 3 by interacting proxies for prior experiences and for exposure with indicators for below-median survey tenure. While economic experiences and exposures strongly predict inflation, energy, or growth being top of mind, these relationships mostly do not differ by respondents' tenure in the survey.

Finally, Table C.5 assesses whether the relationship between inflation being top of mind and the updating of inflation expectations, documented in Table 5, varies with survey tenure. For consistency, the indicator for below-median participation is defined based on the observations used in the corresponding estimations of Table 5. Our results are qualitatively robust across these sub-samples: across both panels and across respondents with above- and below-median tenure, the estimated relationship between inflation being top of mind and the size of belief updates during the shock is positive and economically meaningful in both OLS and IV. Taken together with the within-person dropout test in Table C.2, these patterns suggest that selective attrition along the dimensions we can measure is unlikely to drive our findings.

**Figure C.1** Recontact rates and survey dropout



*Notes:* Panels A and B plot recontact rates across waves in the household and firm panels, respectively. The declines in the household sample size in June 2022 and June 2023 reflect a lower target sample size rather than attrition. Panel C shows, for households (solid line) and firms (dashed line), the frequency of participation in wave  $n$  after a respondent’s first participation, conditional on being recontacted. Panel D shows the implied hazard rate, i.e., the probability of dropping out of the survey after participating in  $n + 1$  waves, conditional on remaining in the sample through wave  $n$  and being in the recontact pool in  $n + 1$ .

**Table C.1** Determinants of survey attrition

	Panel A: Households			Panel B: Firms
	(1) Drop- out next wave	(2) Drop- out next wave	(3) Drop- out next wave	(4) Drop- out next wave
Female	-0.000 (0.005)	-0.003 (0.005)	0.013 (0.010)	
Employed	-0.108*** (0.005)	-0.103*** (0.006)		
Log(household income)	-0.013*** (0.004)	-0.015*** (0.004)	-0.022** (0.010)	
At least highschool	-0.006 (0.005)	-0.007 (0.005)	-0.003 (0.010)	
Homeowner	-0.004 (0.005)	-0.003 (0.005)	-0.003 (0.011)	
Stockowner	-0.004 (0.005)	-0.002 (0.005)	-0.021* (0.011)	
Age	-0.004*** (0.000)	-0.005*** (0.000)	0.001 (0.000)	
Log(Employees)				-0.008*** (0.001)
Export Share				-0.006 (0.005)
Firm Owner				-0.005* (0.003)
Sample	All except 2023m3& 2024m12	Waves b/w 2020m12& 2022m12	Waves b/w 2023m6& 2024m9	All except 2024m12
Time FE	Yes	Yes	Yes	Yes
Federal state FE	Yes	Yes	Yes	Yes
Observations	45,526	38,092	7,434	52,102
Distinct respondents	12,026	12,026	2,308	7,971
R-squared	0.04	0.05	0.03	0.13
Mean dep. var.	0.22	0.23	0.19	0.09

*Notes:* This table relates survey attrition to a broad set of observable characteristics. The dependent variable is a dummy that is one if the respondent is observed in the sample in the current wave for the last time. All specifications include survey-wave and federal-state fixed effects in addition to the covariates shown. Column (1) uses the household sample for all waves except March 2023—when the sample was restricted to employed respondents—and the final wave in December 2024. Columns (2) and (3) restrict the household sample to the periods before and after this break, respectively. Column (4) uses the full firm sample excluding the final wave in December 2024. Standard errors, clustered at the household/firm level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table C.2** Survey attrition and inflation top of mind/expected inflation

	Households: Dropout next wave				Firms: Dropout next wave			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A: Full Sample (Dec 2020-Dec 2024)</b>								
Inflation top of mind	-0.007 (0.005)	-0.001 (0.005)			-0.001 (0.003)	0.004 (0.003)		
Abs. dev. from mean prof. forecast			0.004*** (0.000)	0.000 (0.000)			0.001 (0.001)	-0.001* (0.001)
Observations	42,410	40,586	47,986	45,671	46,460	44,891	50,950	49,412
Distinct respondents	10,760	7,851	12,026	8,626	7,625	6,056	7,926	6,388
R-squared	0.06	0.33	0.06	0.33	0.13	0.29	0.13	0.28
Mean dep. var.	0.23	0.16	0.23	0.16	0.09	0.07	0.09	0.07
<b>Panel B: Restricted Sample (Dec 2020-Sep 2022)</b>								
Inflation top of mind	-0.003 (0.006)	-0.006 (0.006)			-0.004 (0.003)	-0.001 (0.003)		
Abs. dev. from mean prof. forecast			0.004*** (0.000)	-0.000 (0.001)			0.000 (0.001)	-0.001 (0.001)
Observations	29,556	25,971	35,132	31,092	22,705	21,289	25,259	23,871
Distinct respondents	10,331	6,746	11,630	7,590	5,876	4,460	6,167	4,779
R-squared	0.04	0.39	0.05	0.37	0.14	0.36	0.14	0.36
Mean dep. var.	0.22	0.13	0.23	0.13	0.06	0.03	0.06	0.03
Standard controls	Yes	No	Yes	No	Yes	No	Yes	No
Individual/Firm FE	No	Yes	No	Yes	No	Yes	No	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:* This table examines whether survey attrition is related to inflation being top of mind or to the absolute deviation of inflation expectations from the mean professional forecast collected by FocusEconomics. The dependent variable is a dummy equal to one if the respondent is observed in the sample for the last time in the current wave. Odd-numbered columns include standard controls: gender, age, employment, education, household income, homeownership, stockownership, and federal state for households, and firm size, export share, firm ownership, and federal state for firms. Even-numbered columns instead include household/firm fixed effects. All specifications include survey-wave fixed effects. While Panel A uses the full sample, we restrict to the sample until September 2022 in Panel B to keep the analysis consistent with our time-varying main specifications presented in Section 5. Standard errors, clustered at the household/firm level, are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table C.3** Determinants of what is top of mind: Interactions with survey participation tenure

	Households: ... top of mind			Firms: ... top of mind		
	(1) Inflation	(2) Inflation: Energy	(3) Growth	(4) Inflation	(5) Inflation: Energy	(6) Growth
<b>Panel A</b>						
Experience: Oil crises	0.068*** (0.011)	0.064*** (0.008)	-0.004** (0.001)	-0.001 (0.010)	0.012 (0.008)	0.004 (0.006)
× 1(total # waves participating < median)	-0.009 (0.013)	-0.018* (0.010)	0.001 (0.002)	0.016 (0.013)	0.009 (0.011)	-0.008 (0.009)
Exposure: Fossil heating	0.080*** (0.019)	0.052*** (0.011)	0.002 (0.003)			
× 1(total # waves participating < median)	-0.039** (0.018)	0.008 (0.013)	0.000 (0.003)			
Exposure: High energy cost share				0.067*** (0.011)	0.095*** (0.009)	-0.008 (0.007)
× 1(total # waves participating < median)				-0.020 (0.013)	-0.009 (0.012)	0.003 (0.008)
Observations	43,354	43,354	43,354	41,663	41,663	41,663
Distinct respondents	10,760	10,760	10,760	5,057	5,057	5,057
R-squared	0.14	0.08	0.00	0.14	0.13	0.04
Mean dep. var.	0.28	0.14	0.01	0.35	0.18	0.12
	Households: Inflation top of mind			Households: Growth top of mind		
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel B</b>						
Experience: Inflation loss	0.064*** (0.011)		0.054*** (0.012)	0.001 (0.002)		-0.000 (0.002)
× 1(total # waves participating < median)	-0.022 (0.014)		-0.021 (0.016)	0.003 (0.002)		0.001 (0.003)
Experience: Recession loss		0.056*** (0.013)	0.046*** (0.013)		0.005*** (0.002)	0.005** (0.002)
× 1(total # waves participating < median)		-0.017 (0.016)	-0.023 (0.017)		0.002 (0.003)	0.002 (0.003)
Exposure: Fossil heating	0.071*** (0.021)	0.080*** (0.021)	0.072*** (0.022)	0.002 (0.003)	0.003 (0.003)	0.003 (0.003)
× 1(total # waves participating < median)	-0.023 (0.025)	-0.003 (0.026)	-0.005 (0.028)	-0.001 (0.004)	0.000 (0.005)	0.001 (0.005)
Observations	30,470	30,380	28,184	30,470	30,380	28,184
Distinct respondents	5,755	5,737	4,982	5,755	5,737	4,982
R-squared	0.15	0.15	0.15	0.00	0.01	0.00
Mean dep. var.	0.27	0.27	0.27	0.01	0.01	0.01
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes

*Notes:* This table extends the analyses presented in Table 3 by interacting experience- and exposure-based predictors with indicators for below-median survey tenure. In the household sample, the median is defined separately for the sample of employed individuals (sampled until March 2023 only) and other individuals (all survey waves). The dependent variables are indicators for having specific topics top of mind. In Panel A, the experience measure is an indicator for whether the respondent was at least a teenager during the oil crises of the 1970s as defined in Footnote 6. In Panel B, the experience measures are based on whether the respondent had ever experienced (i) a real income loss or a real wealth loss due to inflation in the past (“Inflation loss”) or (ii) an income loss due to a recession (“Recession loss”), as elicited in the pre-shock period. For households, we proxy payoff relevance using a dummy that is one if the primary heating energy source was fossil in December 2021, and control for gender, employment, education, household income, homeownership and stockownership, federal state, and—in Panel B only—the respondent’s age. For firms, high exposure indicates an above-median ratio of energy costs to revenues in 2021, and we control for firm size, export share, the respondent being the firm owner, and federal state. All specifications include survey wave fixed effects. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table C.4** Context-dependence of determinants of what is top of mind: Interactions with survey participation tenure

	Households: ... top of mind				Firms: ... top of mind	
	(1)	(2)	(3)	(4)	(5)	(6)
	Inflation	Inflation	Inflation: Energy	Inflation: Energy	Inflation	Inflation: Energy
<b>Inflation experience</b>						
× 1(Pre-shock period)	0.043*** (0.010)	0.038*** (0.010)	0.027*** (0.007)	0.015** (0.007)	-0.008 (0.014)	0.012* (0.007)
× 1(total # waves participating < median)	-0.011 (0.012)	-0.007 (0.013)	-0.009 (0.009)	-0.006 (0.009)	-0.004 (0.020)	-0.007 (0.011)
× 1(Inflation take-off)	0.066*** (0.014)	0.057*** (0.014)	0.032*** (0.009)	0.016* (0.010)	-0.004 (0.021)	0.036*** (0.012)
× 1(total # waves participating < median)	-0.000 (0.018)	-0.012 (0.020)	0.007 (0.013)	0.008 (0.014)	-0.018 (0.029)	0.004 (0.017)
× 1(Post invasion)	0.089*** (0.017)	0.093*** (0.018)	0.069*** (0.014)	0.042*** (0.014)	-0.019 (0.018)	0.039** (0.017)
× 1(total # waves participating < median)	-0.018 (0.025)	-0.045 (0.034)	0.003 (0.021)	-0.022 (0.027)	0.026 (0.023)	0.005 (0.021)
× 1(Disinflation)	0.075*** (0.018)	0.077*** (0.018)	0.096*** (0.014)	0.025* (0.014)	-0.002 (0.017)	0.021 (0.014)
× 1(total # waves participating < median)	0.011 (0.031)	-0.015 (0.048)	-0.007 (0.025)	0.003 (0.039)	0.032 (0.020)	0.013 (0.016)
× 1(Inflation at target)	0.038* (0.022)	0.038 (0.025)	0.061*** (0.015)	0.009 (0.016)	0.002 (0.016)	0.007 (0.013)
× 1(total # waves participating < median)	0.051 (0.054)	0.127* (0.077)	0.036 (0.041)	0.114** (0.053)	0.002 (0.020)	0.028 (0.017)
<b>High exposure</b>						
× 1(Pre-shock period)	0.016 (0.017)	0.008 (0.018)	-0.003 (0.015)	-0.008 (0.015)	0.009 (0.013)	0.023*** (0.007)
× 1(total # waves participating < median)	-0.025 (0.019)	-0.023 (0.021)	-0.004 (0.015)	-0.002 (0.016)	0.004 (0.020)	0.002 (0.012)
× 1(Inflation take-off)	0.058*** (0.020)	0.042* (0.022)	0.018 (0.014)	0.006 (0.017)	0.049** (0.020)	0.080*** (0.013)
× 1(total # waves participating < median)	-0.013 (0.027)	-0.045 (0.028)	-0.002 (0.018)	-0.013 (0.021)	0.020 (0.030)	-0.008 (0.019)
× 1(Post invasion)	0.075** (0.029)	0.074** (0.034)	0.046** (0.022)	0.027 (0.026)	0.083*** (0.018)	0.112*** (0.017)
× 1(total # waves participating < median)	-0.061* (0.032)	-0.022 (0.061)	-0.006 (0.026)	-0.002 (0.047)	-0.032 (0.024)	0.004 (0.023)
× 1(Disinflation)	0.113*** (0.025)	0.109*** (0.030)	0.086*** (0.015)	0.081*** (0.018)	0.082*** (0.017)	0.123*** (0.015)
× 1(total # waves participating < median)	-0.045* (0.026)	-0.008 (0.048)	0.007 (0.020)	0.056 (0.036)	-0.028 (0.023)	-0.025 (0.020)
× 1(Inflation at target)	0.078** (0.032)	0.056 (0.038)	0.046*** (0.017)	0.020 (0.022)	0.081*** (0.016)	0.104*** (0.013)
× 1(total # waves participating < median)	-0.093** (0.044)	-0.088 (0.084)	0.008 (0.029)	0.039 (0.069)	0.001 (0.023)	-0.028 (0.021)
Experience measure	Oil	Loss	Oil	Loss	Oil	Oil
Exposure measure	Heating	Heating	Heating	Heating	Energy costs	Energy costs
Controls interacted with periods	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	43,354	30,470	43,354	30,470	41,663	41,663
Distinct respondents	10,760	5,755	10,760	5,755	5,057	5,057
R-squared	0.14	0.16	0.09	0.09	0.15	0.14
Mean dep. var.	0.28	0.27	0.14	0.13	0.35	0.18

*Notes:* This table extends the analyses presented in Figure 3 by multiplying the interaction terms of experience- and exposure-based predictors and dummies for each subperiod with additional indicators for below-median survey tenure. In the household sample, the median is defined separately for the sample of employed individuals (sampled until March 2023 only) and other individuals (all survey waves). The dependent variables are indicators for having specific topics top of mind. In Columns (1), (3), (5), and (6), the experience measure is an indicator for whether the respondent was at least a teenager during the oil crises of the 1970s as defined in Footnote 6. In Columns (2) and (4), the experience measures are based on whether the respondent had ever experienced a real income loss or a real wealth loss due to inflation in the past as elicited in the pre-shock period. For households, we proxy payoff relevance using a dummy that is one if the primary heating energy source was fossil in December 2021, and control—separately for each subperiod—for gender, employment, education, household income, homeownership and stockownership, federal state, and—Columns (2) and (4) only—the respondent’s age. For firms, high exposure indicates an above-median ratio of energy costs to revenues in 2021, and we control—separately for each subperiod—for firm size, export share, the respondent being the firm owner, and federal state. All specifications include survey wave fixed effects. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

**Table C.5** Inflation being top of mind and inflation expectations: Split by survey participation

	Households			Firms		
	(1) OLS	(2) OLS	(3) IV	(4) OLS	(5) OLS	(6) IV
<b>Panel A: TOM and expectations pre-shock</b>						
Inflation top of mind	0.232			0.215*		
	(0.325)			(0.128)		
× 1(total # waves participating < median)	-0.176			-0.058		
	(0.507)			(0.149)		
<b>Panel B: TOM and updating of expectations during shock</b>						
Inflation top of mind (shock-period average)	0.752***	1.561***		0.362***	0.843**	
	(0.171)	(0.544)		(0.127)	(0.365)	
× 1(total # waves participating < median)	-0.493*	-0.738		0.476***	0.495	
	(0.287)	(0.827)		(0.145)	(0.382)	
<b>Controls:</b>						
Standard controls	yes	yes	yes	yes	yes	yes
Infl. expectations (pre-shock average)		yes	yes		yes	yes
Confidence (pre-shock average)		yes	yes		yes	yes
Observations	7,452	4,720	4,720	6,915	3,216	3,216
Distinct respondents	4,720	4,720	4,720	3,216	3,216	3,216
R-squared	0.10	0.45	0.45	0.08	0.35	0.34
First-stage F-statistic (direct term)			291.05			297.16
First-stage F-statistic (interaction term)			449.45			684.54

*Notes:* This table extends the analyses presented in Table 5 by interacting the dummies for having inflation top of mind with indicators for below-median survey tenure. Panel A displays cross-sectional correlations for the pre-shock period. Panel B estimates of how inflation being top of mind is associated with the *change* in inflation expectations during the shock, i.e., the difference between average expectations in the shock period (Sept 2021 to Sept 2022) and the pre-shock period (Dec 2020 to June 2021), as specified in Equation (2). All regressions use the same controls and calculation of standard errors as outlined in the note of Table 4, except for using weights in the regressions and controlling for pre-shock inflation expectations instead of information acquisition in Panel B. In Columns (3) and (6), the average shock-period top-of-mind indicator is instrumented with its pre-shock equivalent. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

## D Ex-ante forecast benchmarks

### D.1 Professional forecasts

We construct benchmarks from the survey of professional forecasters conducted by FocusEconomics, which provides one-year-ahead inflation forecasts for inflation in Germany. We construct seven alternative benchmarks from the underlying micro data. In particular, we calculate for each period (i) the mean, (ii) the median, (iii) the 75th percentile, and (iv) the 90th percentile of the individual forecasts. Additionally, we calculate the mean forecast among the four professional forecasters with the highest average forecasts in (v) 2019 and (vi) 2020. Finally, we calculate the mean forecast among the four professional forecasters with (vii) the lowest correlation with the average forecast before 2021 to address the issue that professional forecasters may be herding (Ottaviani and Sørensen, 2006).

In addition, we employ the Survey of Professional Forecasters conducted by the European Central Bank, in which forecasters predict one-year-ahead Harmonised Index of Consumer Prices (HICP) inflation in the euro zone. For the ECB survey, we include the per-period mean and 90th percentile of forecasts for parsimony. In unreported regressions, we detected similar results using the remaining five measures listed above.

### D.2 Financial market expectations

We consider two financial-market based measures of inflation expectations. The first one, the euro area one-year breakeven inflation rate, is derived from the spread between nominal and real zero-coupon yields. For the nominal yields we use the ECB's zero-coupon yield curve at the one-year maturity<sup>1</sup>, while for the real side we rely on Refinitiv/Datastream data<sup>2</sup>. The breakeven rate is computed as the difference between these two series, which by construction reflects the compensation investors require for expected inflation over the horizon. The raw series consists of daily observations expressed in annual percentage terms. We aggregate the daily breakeven rates to a quarterly frequency by taking the average across all available trading days within a quarter.

The second measure we consider, the euro area 1-year inflation swap rate, is obtained from Refinitiv/Datastream<sup>3</sup> and corresponds to the standard one-year zero-coupon inflation swap (ZCIS) referencing the euro area HICP. This instrument exchanges fixed payments in euros for realized one-year inflation and is quoted directly in percent per annum. We use the mid-point between bid and ask quotes. As with the breakeven series, we aggregate the daily swap rates to quarterly frequency by averaging across

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<sup>1</sup>[https://data.ecb.europa.eu/data/datasets/YC/YC.B.U2.EUR.4F.G\\_N\\_A.SV\\_C\\_YM.SR\\_1Y](https://data.ecb.europa.eu/data/datasets/YC/YC.B.U2.EUR.4F.G_N_A.SV_C_YM.SR_1Y), series key = YC.B.U2.EUR.4F.G\_N\_A.SV\_C\_YM.SR\_1Y

<sup>2</sup>Series ticker: EUILREAL1Y=

<sup>3</sup>Series ticker: EUHICP1Y=

trading days within each quarter. The resulting series thus captures the mean level of market-implied one-year inflation expectations as priced in inflation swaps during the respective reporting quarter.

### D.3 Time series predictions

For our time-series-model-based forecasts we rely on four key macroeconomic variables: the quarterly CPI inflation (year-over-year), the unemployment rate, real GDP growth (YoY, calendar-adjusted and chain-linked), and the ECB main refinancing rate. The raw monthly data is transformed into quarterly frequency by selecting the last observation of each quarter, resulting in a quarterly time series for Germany, spanning from 1991Q1 to 2024Q4. To generate out-of-sample forecasts of inflation expectations, we consider two model classes:

- (1) Univariate Autoregressive (AR) Models, and
- (2) Multivariate Vector Autoregression (VAR) Models.

We generate four-quarter-ahead ( $H = 4$ ) forecasts using both  $AR(p)$  and  $VAR(p)$  models, with lag orders  $p = 4, 8$ . All forecasts are computed in a pseudo-real-time expanding-window fashion. Specifically, for each target quarter  $t$ , models are re-estimated using only data available up to the forecast origin  $t - H$ , closely mimicking a real-time setting. It is *pseudo*-real-time because we have to rely on the current releases of those variables and cannot use the version that was available at that particular time as these data are not consistently available.

For the AR models, the dependent variable is the quarterly year-on-year CPI inflation. A minimum sample size of  $p + 9$  observations is required to ensure estimation stability. Forecasts are constructed recursively and dynamically for each available quarter where the sample is sufficient.

For the VAR models, the forecast system includes four jointly determined macroeconomic variables: CPI (YoY), real GDP growth (YoY), the unemployment rate, and the ECB policy rate. A smaller minimum of  $p + 5$  observations is used. We require that the input data must be complete (no missing values at the forecast origin or in the estimation window). Thus, any quarter with incomplete data at the origin is skipped, ensuring internal consistency across all inputs.

In both model classes, forecast availability starts dynamically: the first forecastable quarter for each  $p$  is determined by when the required data and sample sizes become available. Forecasts are then produced recursively up to four quarters beyond the last available observation ( $T_{\text{last}} + 4$ ).

While CPI inflation and the unemployment rate are available continuously throughout the sample, GDP growth is missing in early years and near the series end due to

national accounts reporting lags. The ECB policy rate is only available from mid-1999 onward, following the launch of the euro. The AR forecasts depend only on CPI inflation and can be produced from the earliest quarter where the required sample and lags are available. In contrast, VAR forecasts require full multivariate data. Thus, for the VAR, missing values are handled by dropping incomplete rows from the estimation window and skipping any forecast whose origin has missing entries, ensuring that forecasts are always based on well-defined and consistent model states.

## E Additional empirical results

### E.1 Joint variation of what is top of mind across topics

In this appendix, we study the joint variation of different topics being top of mind. We estimate specifications of the following type:

$$(4) \quad \text{Topic A top of mind}_{it} = \beta_0 + \beta_1 \text{Topic B top of mind}_{it} + \mathbf{X}'_{it} \boldsymbol{\Pi} + \phi_t + \epsilon_{it},$$

where the top-of-mind variables are dummy variables indicating whether topic A or topic B is mentioned in response to the open-ended question, respectively.  $\mathbf{X}_{it}$  includes our standard set of controls, which in some specifications is replaced by individual fixed effects. In addition, all specifications include survey wave fixed effects,  $\phi_t$ .

Panel A of Table E.1 shows the results for households. The tendencies of inflation and monetary policy being top of mind are strongly positively correlated. Specifically, monetary policy being top of mind increases the likelihood that inflation is top of mind by 27.1pp according to pooled OLS estimates (Column 3,  $p < 0.01$ ) and by 12.6pp conditional on individual fixed effects (Column 4,  $p < 0.01$ ). Aggregate economic growth being top of mind is weakly positively related to inflation or monetary policy being top of mind (Columns 1, 2, 5, and 6). Lastly, the tendency to write about household-level topics is strongly negatively associated with the tendency to write about macroeconomic topics: at least one household-level topic being top of mind reduces the likelihood of at least one aggregate topic being top of mind by 18.1pp and 26.2pp according to pooled OLS and individual fixed effects estimates, respectively (Columns 7 and 8,  $p < 0.01$ ). Panel B of Table E.1 shows broadly similar results for firms. Figure E.1 displays pairwise correlation coefficients for a broader set of macroeconomic and household- or firm-level topics.

One concern is that the open-response format might mechanically produce negative relationships between different topics being top of mind, as respondents may only provide a response of a certain length. Given that there is a strong *positive* correlation across some topics (e.g., inflation and monetary policy), this concern appears less severe. Moreover, the length of responses could reflect limits to respondents' actual cognitive capacity rather than additional filtering through the response format. A related concern is that respondents may interpret the prompt differently, leading them to refer either to aggregate or to local topics. However, (i) the interpretation of the prompt will at least partly reflect what is top of respondents' mind, and (ii) more stable differences in response behavior are shut down by individual fixed effects.

Table E.2 shows that the negative relationship between macroeconomic and more local topics being top of mind is robust to various checks. Columns 1 and 2 display the baseline specifications using dummy variables for writing about at least one macro-, household-, or firm-level topic. Columns 3 and 4 instead use continuous variables for

**Table E.1** Joint variation of what is top of mind across topics

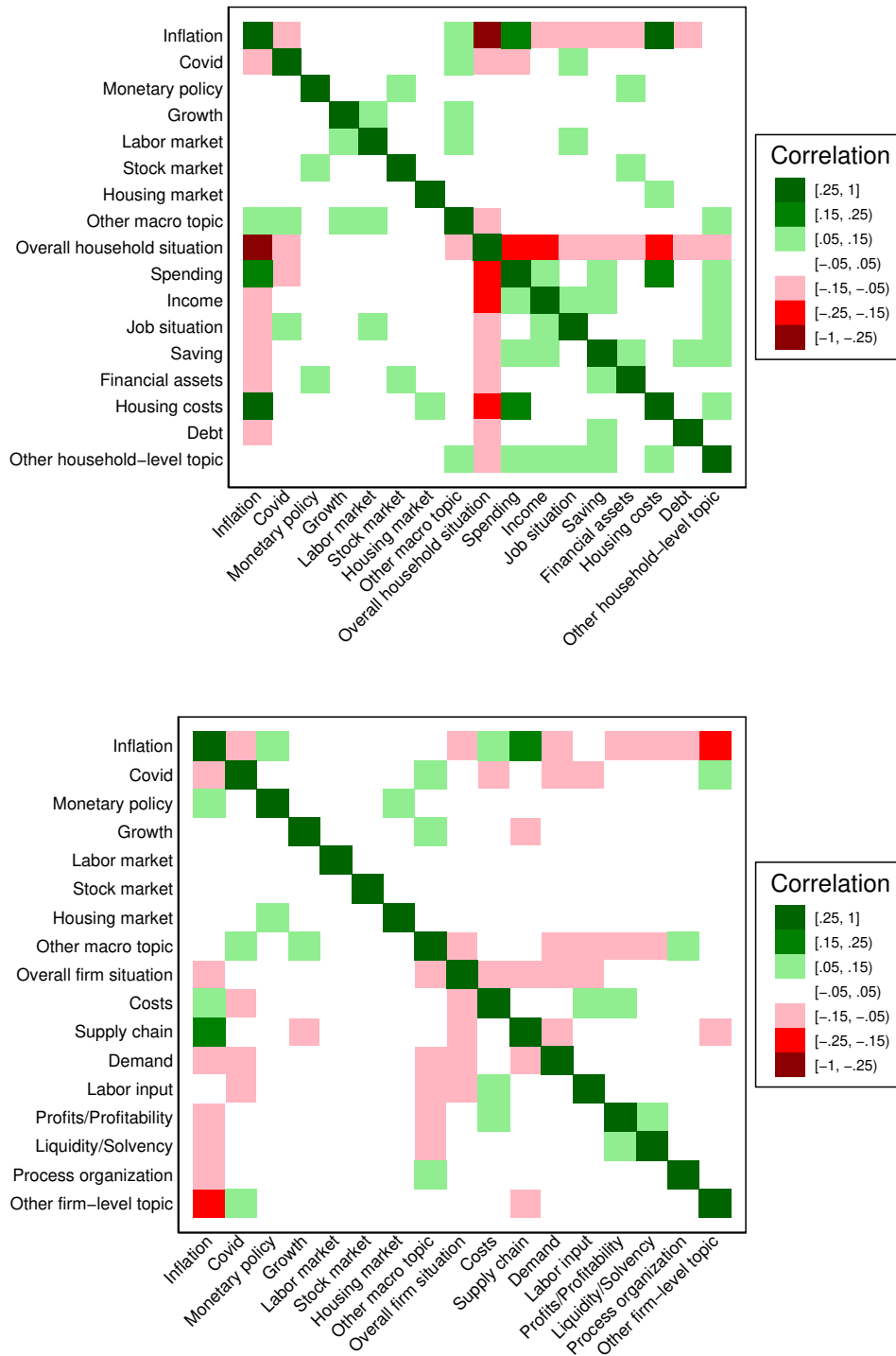
	Inflation top of mind				Monetary policy top of mind		Any macro topic top of mind	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A: Households</b>								
Growth top of mind	0.117*** (0.024)	0.030 (0.024)			0.021** (0.008)	0.019** (0.008)		
Monetary policy top of mind			0.271*** (0.027)	0.126*** (0.026)				
Any household-level topic top of mind							-0.181*** (0.007)	-0.262*** (0.006)
Distinct respondents	10,760	7,890	10,760	7,890	10,760	7,890	10,760	7,890
Observations	43,354	41,906	43,354	41,906	43,354	41,906	43,354	41,906
R-squared	0.14	0.48	0.14	0.48	0.01	0.24	0.09	0.48
<b>Panel B: Firms</b>								
Growth top of mind	0.021*** (0.007)	-0.014** (0.007)			0.023*** (0.004)	0.009** (0.004)		
Monetary policy top of mind			0.174*** (0.014)	0.105*** (0.013)				
Any firm-level topic top of mind							-0.291*** (0.006)	-0.272*** (0.006)
Distinct respondents	7,855	6,266	7,855	6,266	7,855	6,266	7,855	6,266
Observations	49,535	47,946	49,535	47,946	49,535	47,946	49,535	47,946
R-squared	0.14	0.41	0.15	0.41	0.01	0.31	0.08	0.36
Controls	Yes	No	Yes	No	Yes	No	Yes	No
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual/Firm FE	No	Yes	No	Yes	No	Yes	No	Yes

*Notes:* This table displays regressions of dummy variables indicating households (Panel A) and firms (Panel B) having a given topic top of mind—i.e., an indicator taking value one if the topic is mentioned in response to the open-ended survey question—on dummy variables indicating to have another topic top of mind. Having macroeconomic topics top of mind in general (Columns 7 and 8) includes all macro topics. Having any household-level or firm-level topic top of mind covers all local-level topics. Odd-numbered columns control for the individual’s gender, age, education, employment status, household income, homeownership, stock ownership, and federal state of residence as well as the firm’s number of employees (in logs), export share, the federal state of location, and a dummy that is one if the respondent is the firm owner, respectively. Even-numbered columns instead control for individual and firm fixed effects, respectively, and thus drop singleton observations. All specifications control for survey wave fixed effects. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

the number of topics from a given family. Columns 5 and 6 exclude topics from the macro-, household-, and firm-level variables for which the classification into macro vs household-/firm-level may at times not be clear-cut.<sup>4</sup> Lastly, Columns 7 and 8 show that the negative relationships between writing about aggregate and writing about

<sup>4</sup>Specifically, we exclude “housing market”, “regulation”, “uncertainty”, “labor market”, and “monetary policy” from the macro topics, “housing costs”, “uncertainty”, “job situation”, and “debt” from the household-level topics, and “costs”, “rent/housing costs”, “uncertainty”, “labor input”, “regulation”, “government aid programs”, “short-time work”, and “financing” from the firm-level topics. Hence, only 14 out of 19 macro topics, 8 out of 13 household-level topics, and 10 out of 19 firm-level topics listed in Appendix Tables B.1–B.3 are still included.

**Figure E.1** Joint variation of what is top of mind across topics



*Notes:* This figure presents correlation coefficients between indicators for having different topics top of mind as measured in the open-ended data. Positive correlation coefficients within specific ranges are presented in varying shades of green, while negative correlation coefficients are presented in varying shades of red. Panel A focuses on households, while Panel B focuses on firms. The categories “Other macro topic”, “Other household-level topic”, and “Other firm-level topic” subsume all macro, household-level, and firm-level topics in our coding scheme that are not displayed in their own columns/rows in the figure (i.e., the categories in the figure are broader than the original “other” categories in our coding scheme displayed in Appendix Tables B.1, B.2, and B.3).

**Table E.2** Joint variation of what is top of mind across topics: Robustness

	Any macro topic top of mind (baseline)		Number of macro topics top of mind		Any macro topic top of mind (narrow definition)		Any macro topic top of mind excl. Covid-19	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Panel A: Households</b>								
Any household-level topic top of mind	-0.181*** (0.007)	-0.262*** (0.006)					-0.159*** (0.007)	-0.237*** (0.006)
Number of household-level topics top of mind			-0.040*** (0.005)	-0.132*** (0.005)				
Any household-level topic top of mind (narrow definition)					-0.228*** (0.006)	-0.265*** (0.006)		
Distinct respondents	10,760	7,890	10,760	7,890	10,760	7,890	10,760	7,890
Observations	43,354	41,906	43,354	41,906	43,354	41,906	43,354	41,906
R-squared	0.09	0.48	0.05	0.45	0.12	0.49	0.13	0.49
<b>Panel B: Firms</b>								
Any firm-level topic top of mind	-0.291*** (0.006)	-0.272*** (0.006)					-0.275*** (0.006)	-0.260*** (0.006)
Number of firm-level topics top of mind			-0.132*** (0.005)	-0.200*** (0.005)				
Any firm-level topic top of mind (narrow definition)					-0.155*** (0.006)	-0.149*** (0.005)		
Distinct respondents	7,855	6,266	7,855	6,266	7,855	6,266	7,855	6,266
Observations	49,535	47,946	49,535	47,946	49,535	47,946	49,535	47,946
R-squared	0.08	0.36	0.04	0.38	0.06	0.34	0.10	0.36
Controls	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual FE	No	No	No	No	No	Yes	No	No

*Notes:* This table displays regressions of dummy variables indicating households (Panel A) and firms (Panel B) having macroeconomic topics top of mind—i.e., an indicator taking value one if any macroeconomic topic is mentioned in response to the open-ended survey question—on dummy variables indicating having any household-level or firm-level topic top of mind, respectively. Columns 1 and 2 replicate the baseline results displayed in Columns 7 and 8 of Table E.1. Columns 3 and 4 use continuous variables for the number of topics top of mind from a given family. Columns 5 and 6 exclude topics for which the classification into macro vs household-/firm-level may at times not be clear-cut (see Footnote 4 for details). In Columns 7 and 8, Covid-19 is dropped from the macroeconomic topics (and also not coded as a household- or firm-level topic). Odd-numbered columns control for the individual’s gender, age, education, employment status, household income, homeownership, stock ownership, and federal state of residence as well as the firm’s number of employees (in logs), export share, the federal state of location, and a dummy that is one if the respondent is the firm owner, respectively. Even-numbered columns instead control for individual and firm fixed effects, respectively, and thus drop singleton observations. All specifications control for survey wave fixed effects. Standard errors clustered at the household/firm level are in parentheses. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

household-/firm-level topics are robust to excluding Covid-19 from the macroeconomic topics, suggesting that the patterns are not driven by the specific circumstances of the pandemic at the beginning of our sample period.

## E.2 Variance decomposition

How much of the empirical variation in what is top of mind is explained by persistent individual-level heterogeneity and how much by changes in the macroeconomic environment? To see this, we regress our main measures of what is top of mind on

**Table E.3** Variance decomposition of what is top of mind

	Households				Firms			
	$R^2$ (%) of panel regression			(4)	$R^2$ (%) of panel regression			(8)
	(1)	(2)	(3)		(5)	(6)	(7)	
	Indiv. FE	Time FE	Time FE + Indiv. FE	Obs.	Indiv. FE	Time FE	Time FE + Indiv. FE	Obs.
<b>Panel A: At least two non-missing observations</b>								
<i>Any macro topic</i>	41.5	5.4	45.1	41,906	30.5	2.1	32.4	47,946
Inflation	40.1	11.8	47.7	41,906	29.3	12.5	40.5	47,946
Inflation: Energy	34.2	6.3	39.0	41,906	32.2	10.1	41.5	47,946
Covid-19	34.2	3.9	36.5	41,906	24.9	17.1	38.2	47,946
Monetary policy	23.8	0.1	23.9	41,906	30.0	0.8	30.6	47,946
Growth	22.4	0.2	22.5	41,906	24.3	3.3	26.9	47,946
<i>Any household-/firm-level topic</i>	37.8	1.5	38.8	41,906	27.6	1.9	28.9	47,946
<b>Panel B: At least four non-missing observations</b>								
<i>Any macro topic</i>	38.0	5.3	42.1	34,302	28.5	2.1	30.5	44,005
Inflation	36.2	11.2	44.8	34,302	27.3	12.5	39.0	44,005
Inflation: Energy	30.7	6.2	35.9	34,302	30.2	10.0	39.8	44,005
Covid-19	26.5	3.9	29.4	34,302	21.5	17.0	35.6	44,005
Monetary policy	20.3	0.1	20.4	34,302	28.6	0.8	29.2	44,005
Growth	17.4	0.2	17.6	34,302	22.0	3.3	24.7	44,005
<i>Any household-/firm-level topic</i>	33.6	1.6	34.7	34,302	25.2	1.8	26.6	44,005
<b>Panel C: At least six non-missing observations</b>								
<i>Any macro topic</i>	36.4	5.0	40.7	26,109	27.3	2.2	29.4	39,108
Inflation	34.0	10.6	43.3	26,109	25.5	12.8	37.8	39,108
Inflation: Energy	28.3	5.9	33.8	26,109	28.9	10.3	38.8	39,108
Covid-19	22.4	4.2	26.0	26,109	19.2	17.0	34.2	39,108
Monetary policy	17.9	0.1	18.0	26,109	27.3	0.7	28.0	39,108
Growth	13.7	0.3	14.0	26,109	19.9	3.4	22.9	39,108
<i>Any household-/firm-level topic</i>	31.1	1.7	32.5	26,109	24.0	1.7	25.4	39,108

*Notes:* This table displays the R-squared from regressing dummies for mentioning different topics in the response to the open-ended question on individual fixed effects (Columns 1 and 5), time fixed effects (Columns 2 and 6), and both time and individual fixed effects (Columns 3 and 7). Columns 4 and 8 display the number of observations. For each variable, only respondents with at least two (Panel A), four (Panel B), and six non-missing observations (Panel C) for the corresponding variable are included, respectively.

(i) individual fixed effects only, (ii) time fixed effects only, and (iii) both sets of fixed effects jointly, and compare the R-squared of these regressions (see Giglio et al., 2021, for such a decomposition in the context of stock return expectations). We focus on dummy variables indicating specific individual macroeconomic topics and dummy variables for at least one macro or at least one household- or firm-level topic being top of mind.

The results are shown in Table E.3. Panel A uses the largest possible samples, i.e., respondents with at least two non-missing observations. Individual fixed effects are the dominant source of systematic variation in what is top of mind. For households, they explain between 22% (growth) and 40% (inflation) of the variation in topic mentions (Column 1), while time fixed effects explain at most 12% (Column 2). Systematic time variation is most pronounced for inflation and energy. Including individual and time fixed effects together leaves between 55% and 77% of the variation in whether a given topic is mentioned unexplained (Column 3). This variation reflects idiosyncratic time variation at the household level. Similarly to the patterns for households, individual fixed effects are a central source of variation in what is top of mind among firms

**Table E.4** Inflation being top of mind and confidence

	Households			Firms		
	(1) OLS	(2) OLS	(3) IV	(4) OLS	(5) OLS	(6) IV
<b>Panel A: TOM and confidence pre-shock</b>						
Inflation top of mind	0.230*** (0.039)			0.074* (0.038)		
<b>Panel B: TOM and change in confidence during shock</b>						
Inflation top of mind (shock-period average)		0.143*** (0.028)	0.292*** (0.099)		0.131*** (0.037)	0.039 (0.131)
Controls:						
Standard controls	yes	yes	yes	yes	yes	yes
Confidence (pre-shock average)		yes	yes		yes	yes
Weighted by number of obs. per respondent		yes	yes		yes	yes
Observations	7,452	4,720	4,720	6,696	3,188	3,188
Distinct respondents	4,720	4,720	4,720	3,188	3,188	3,188
R-squared	0.15	0.24	0.24	0.01	0.23	0.22
First-Stage F-Statistic			307.61			262.25

*Notes:* This table displays regressions of households' and firms' confidence in their inflation expectations (z-scored) on a dummy for whether inflation is top of mind. Panel A displays cross-sectional correlations for the pre-shock period. Panel B estimates how inflation being top of mind is associated with the *change* in confidence during the shock, i.e., the difference between average confidence in the shock period (Sept 2021 to Sept 2022) and its pre-shock average (Dec 2020 to June 2021), as specified in Equation (2). All regressions use the same vector of controls, weighting of observations, and calculation of standard errors as outlined in the note of Table 4 except for controlling for pre-shock information acquisition in Panel B. \* denotes significance at 10 pct., \*\* at 5 pct., and \*\*\* at 1 pct. level.

(Column 5). The importance of time fixed effects among firms mirrors that among households, the only difference being stronger systematic time variation in whether Covid-19 is mentioned (Column 6). Between 58% and 73% of the variation in what is top of mind is idiosyncratic time-variation at the firm-level (Column 7). Panels B and C restrict the samples to households or firms that appear at least four or six times in our panels, leaving the results very similar.

### E.3 Confidence

We also examine how inflation being top of mind is linked to households' and firms' confidence in their inflation expectations. We use the same empirical approach as in Sections 5.1 and 5.2: we first estimate cross-sectional conditional correlations in the pre-shock period and then examine how having inflation top of mind is linked to the change in confidence over the shock period, conditional on pre-shock confidence. We also include instrumental variable estimates instrumenting the shock-period top-of-mind indicator with its pre-shock equivalent.

Table E.4 presents the results. Panel A shows that, in the pre-shock period, having inflation top of mind is associated with a 0.23 standard deviations higher confidence for

households ( $p < 0.01$ , Column 1) and a 0.07 standard deviations higher confidence for firms ( $p < 0.10$ , Column 4). These patterns are consistent with the Bayesian prediction that higher information acquisition among those with inflation top of mind should be more confident in their beliefs. Moreover, these patterns suggest that the stronger belief updating among those with inflation top of mind (see Section 5.2 and Table 5) reflects a greater likelihood to notice the change in the inflationary outlook rather than weaker priors about future inflation.

Panel B examines the relationship between inflation being top of mind and changes in confidence over the shock period. In OLS estimations, inflation being top of mind during the shock is associated with a 0.14 standard deviations stronger increase in confidence among households ( $p < 0.01$ , Column 2) and a 0.13 standard deviations stronger increase among firms ( $p < 0.01$ , Column 5). For households, this patterns is robust to instrumenting the shock-period top-of-mind indicator with its pre-shock equivalent ( $p < 0.01$ , Column 3). For firms, the IV estimate is still positive but smaller than the OLS estimate and statistically insignificant.

#### **E.4 Belief disagreement**

Table E.5 presents different measures of belief dispersion separately for respondents with inflation top of mind and those concerned with other topics. To only capture within-wave disagreement, the inflation expectations are purged of wave fixed effects before calculating dispersion. For households, the table displays dispersion in both nowcasts and forecasts, while for firms, only forecasts are available.

For both forecasts and nowcasts, households with inflation top of mind exhibit lower dispersion as captured by the cross-sectional standard deviation and the difference between the 90th and the 10th percentile. Differences in the interquartile range are less pronounced. For firms, the differences in expectation dispersion depending on whether inflation is top of mind are smaller and less systematic. If anything, dispersion appears somewhat higher among firms with inflation top of mind.

**Table E.5** Inflation being top of mind and belief disagreement

	Households			Firms		
	(1) SD	(2) IQR	(3) p90-p10	(4) SD	(5) IQR	(6) p90-p10
<b>Expected inflation</b>						
Inflation top of mind (a)	4.88	3.16	7.61	2.39	1.88	4.33
Inflation not top of mind (b)	6.13	3.07	9.25	2.07	1.36	3.41
p-value: (a)=(b)	0.00	0.35	0.00	0.00	0.00	0.00
<b>Perceived current inflation</b>						
Inflation top of mind (c)	4.33	3.00	6.25			
Inflation not top of mind (d)	5.54	2.83	7.63			
p-value: (c)=(d)	0.00	0.00	0.00			
p-value: (a)=(c)	0.00	0.13	0.00			

*Notes:* This table displays the standard deviation, the interquartile range, and the range between the 90th and 10th percentile of inflation expectations (both samples) and perceived current inflation (for households only) separately for respondents that have inflation top of mind according to our text-based measure and those who do not. Before calculating the dispersion measures, the data are purged of survey wave fixed effects. The displayed p-values refer to tests of the equality of standard deviations (Columns 1 and 4, Levene's test) and tests of the equality of the interquartile range and the range between the 90th and 10th percentile (remaining columns, bootstrapped) between respondents that have inflation top of mind (a) and those not (b) according to the open-ended measure. The samples are restricted to waves between September 2021 and December 2024, as perceived current inflation is only elicited in these waves.

## F Instructions of panel surveys

This appendix provides an overview of the translated and original survey instructions of the key questions in the household and firm surveys. We provide an overview of the main questions (asked in all waves) as well as additional questions only asked in subsets of the waves. In principle, the survey is identical for the household and firm panels. However, some questions are only asked in the household panel due to space constraints in the firm survey. Moreover, the wording of some questions is slightly tailored to better fit the respective situation of households and firms. Section F.1 provides instructions translated to English, while Section F.2 provides the original instructions in German.

### F.1 English translation

#### F.1.1 Core instructions included in all waves

##### Topics top of mind:

What topics come to mind when you think about the economic situation of your company/household? \_\_\_\_\_

##### Expected inflation:

What do you think, what will the inflation rate (measured by the consumer price index) likely be in Germany over the next 12 months (i.e., until XXX)? \_\_%

##### Confidence in forecast:

How certain are you about your previous estimate?  
very uncertain      very certain

#### F.1.2 Additional instructions included in subsets of the waves

##### Perceived current inflation (households only, starting 2021m9):

What do you think was the inflation rate in Germany over the last 12 months (i.e., from XXX to XXX)? \_\_%

##### Experience: Inflation loss (wealth) (households only, 2021m3 & 2021m6):

Has your wealth ever lost significant value due to inflation?  
 Yes  No

##### Experience: inflation loss (income) (households only, 2021m3 & 2021m6):

Has your household income ever increased significantly less than the general price level?  
 Yes  No

##### Experience: Recession loss (households only, 2021m3 & 2021m6):

Have you ever suffered a loss of income due to economic fluctuations?  
 Yes  No

**Exposure: Energy cost share** (regular firm survey 2022m4):

What share of revenue do you estimate your company had to spend on energy expenses in 2021 (energy intensity)? \_\_\_%

**Exposure: Fossil heating** (households: 2023m6):

Which energy source did you mainly use to heat your house/apartment in December 2021 (i.e., before the massive increase in energy prices)?

- Gas
- Heating oil
- Wood/wood pellets, etc.
- Solar, photovoltaics, self-produced electricity
- Electricity (purchased externally)
- Remote heating
- Other/don't know

**Information acquisition about inflation** (2020m12-2023m3):

What do you think: How frequently did you gather information about each of the following topics in the last 3 months before taking this survey?

- Development of inflation in Germany  
0 times             10 times or more

**Minutes spent on inflation news** (households: 2021m12-2022m12; firms: 2021m12-2022m9):

What do you think, how much time have you spent consuming news on inflation from various media (TV, newspaper, news websites, radio etc.) in the past 7 days?

- Less than 5 minutes
- Between 5 minutes and 10 minutes
- Between 10 minutes and 30 minutes
- Between 30 minutes and 60 minutes
- More than 60 minutes

**Consumed reports on inflation** (2021m9-2022m12):

How many reports on inflation in Germany do you estimate you have seen or heard in the last 3 months in the following media?

- Television  
none            10 or more
- Newspapers/News websites  
none            10 or more
- Radio  
none            10 or more

**Perceived importance** (Households: 2020m12-2023m3, firms: 2020m12; 2021m9-2023m3):

To what extent do you agree with the following statements?

- Inflation in Germany is important for the current economic situation of my firm/household.  
strongly disagree      strongly agree
- Monetary policy of the ECB (e.g., interest rate policy) is important for the current economic situation of my firm/household.  
strongly disagree      strongly agree
- Economic growth in Germany is important for the current economic situation of my firm/household.  
strongly disagree      strongly agree

**Reasoning underlying inflation expectations (households only, 2020m12-2022m12)**

Please tell us how you formed your forecast of the inflation rate. Which considerations played the main role for you in making this prediction?

Please answer in a few sentences. \_\_\_\_\_

**Price changes of own goods/services** (regular firm survey, all waves):

Retrospective - Developments over the last month:

Compared to the month before, our sales prices were

- increased
- remained unchanged
- decreased

**Numeracy** (households only, in the first wave in which the household participates):<sup>5</sup>  
Next, we would like to ask you a few questions to learn how people use numbers in their everyday lives.

1. Suppose you have €200 in a savings account. The account earns ten percent interest per year, which is paid on each anniversary of the account. How much money will you have in the account after two years if you never withdraw any money or interest payments from the account? \_\_\_\_ €
2. Suppose the interest rate on your savings account is 1% per year and the inflation rate is 2% per year. What do you think: After one year, will you be able to buy the same amount, more, or less with the balance in your savings account than you can today?
  - More than today
  - Exactly the same amount
  - Less than today

**News sources** (households and firms: 2021m6):

1. **Print media:** Which print media do you use to inform yourself about economic topics? (Please check all that apply)

---

<sup>5</sup>Respondents are classified as having “high numeracy” if they provided correct answers to both questions.

- Süddeutsche Zeitung (SZ)
- Zeit
- Frankfurter Allgemeine Zeitung / Sonntagszeitung (FAZ/FAS)
- Handelsblatt
- Spiegel
- Bild / Bild am Sonntag
- Welt / Welt am Sonntag
- Trade journals, namely: \_\_\_\_
- Local newspaper, namely: \_\_\_\_
- Other, namely: \_\_\_\_
- I do not use print media to inform myself about economic topics.

2. **Online media:** Which online media do you use to inform yourself about economic topics? (Please check all that apply)

- sueddeutsche.de
- zeit.de
- faz.net
- handelsblatt.com
- spiegel.de
- bild.de
- tagesschau.de
- Local newspaper, namely: \_\_\_\_
- Other, namely: \_\_\_\_
- I do not use online media to inform myself about economic topics.

3. **TV channels:** Which TV channels do you use to inform yourself about economic topics? (Please check all that apply)

- ARD
- ZDF
- SAT1
- RTL
- Pro7
- n-tv
- Other TV channels, namely: \_\_\_\_
- International TV channels
- I do not use television to inform myself about economic topics.

## **Beliefs about the autocorrelation of inflation** (regular firm survey, 2026m3):

The following question helps us understand how companies generally view inflation; there is no right or wrong answer.

Imagine that, at a certain point in time, the inflation rate in Germany has just risen significantly above the long-term average.

What trend would you most likely expect over the next 12 months?

- The inflation rate will rise even further.
- The inflation rate will remain at the elevated level.
- The inflation rate will fall, but remain above the usual level.
- The inflation rate will fall to the usual level.
- The inflation rate will fall below the usual level.

## **F.2 Original instructions in German**

### **F.2.1 Core instructions included in all waves**

#### **Topics top of mind:**

Welche Themen kommen Ihnen in den Sinn, wenn Sie an die wirtschaftliche Situation Ihres Unternehmens/Haushalts denken? \_\_\_\_\_

#### **Expected inflation:**

Was denken Sie, wie hoch wird die Inflationsrate (gemessen am Verbraucherpreisindex) über die nächsten 12 Monate (also bis zum XXX) in Deutschland wahrscheinlich sein? \_\_\_%

#### **Confidence in forecast:**

Wie sicher sind Sie sich bei dieser Einschätzung?  
sehr unsicher      sehr sicher

### **F.2.2 Additional instructions included in subsets of the waves**

#### **Perceived current inflation** (households only, starting 2021m9):

Was denken Sie, wie hoch war die Inflationsrate in Deutschland über die letzten 12 Monate (also über den Zeitraum von XXX bis XXX)? \_\_\_%

#### **Experience: inflation loss (wealth)** (households only, 2021m3 & 2021m6):

Hat Ihr Vermögen schon einmal aufgrund von Inflation stark an Wert verloren?  
 Ja  Nein

#### **Experience: inflation loss (income)** (households only, 2021m3 & 2021m6):

Ist Ihr Haushaltseinkommen schon einmal deutlich weniger stark gestiegen als das allgemeine Preisniveau?  
 Ja  Nein

**Experience: recession loss** (households only, 2021m3 & 2021m6): Haben Sie schon einmal aufgrund von konjunkturellen Schwankungen Einkommenseinbußen

hinnehmen müssen?

Ja  Nein

**Exposure: Energy cost share** (regular firm survey 2022m4):

Was schätzen Sie, welchen Anteil des Umsatzerlöses musste Ihr Unternehmen 2021 für Energiekosten aufwenden (Energieintensität)? \_\_\_%

**Exposure: Fossil heating** (households: 2023m6):

Welchen Energieträger nutzten Sie hauptsächlich für die Heizung Ihres Hauses/Ihrer Wohnung im Dezember 2021 (also vor dem massiven Anstieg der Energiepreise)?

- Gas
- Heizöl
- Holz/Holzpellets u.ä.
- Solar, Photovoltaik, Eigenstrom
- Strom (extern bezogen)
- Fernwärme
- anderer/weiß nicht

**Information acquisition about inflation** (2020m12-2023m3):

Was schätzen Sie, wie oft haben Sie sich in den letzten 3 Monaten zu den folgenden Themen informiert?

- Entwicklung der Inflation in Deutschland  
gar nicht             10 mal und öfter

**Minutes spent on inflation news** (households: 2021m12-2022m12; firms: 2021m12-2022m9):

Was schätzen Sie, wieviel Zeit haben Sie in den letzten 7 Tagen insgesamt damit verbracht, Nachrichten zur Inflation in verschiedenen Medien (Fernsehen, Zeitung, Nachrichten-Websites, Radio, etc.) zu konsumieren?

- Weniger als 5 Minuten
- Zwischen 5 Minuten und 10 Minuten
- Zwischen 10 Minuten und 30 Minuten
- Zwischen 30 Minuten und 60 Minuten
- Mehr als 60 Minuten

**Consumed reports on inflation** (2021m9-2022m12):

Was schätzen Sie, wie viele Berichte zur Inflation in Deutschland haben Sie in den letzten 3 Monaten in den folgenden Medien gesehen bzw. gehört?

- Fernsehen  
keine             10 und mehr
- Zeitungen/Nachrichten-Websites  
keine             10 und mehr
- Radio  
keine             10 und mehr

**Perceived importance** (Households: 2020m12-2023m3, firms: 2020m12; 2021m9-2023m3):

Inwiefern stimmen Sie den folgenden Aussagen zu?

- Die Inflation in Deutschland ist wichtig für die derzeitige wirtschaftliche Situation unseres Unternehmens/meines Haushalts.  
stimme nicht zu      stimme voll zu
- Die Geldpolitik der EZB (z.B. Zinspolitik) ist wichtig für die derzeitige wirtschaftliche Situation unseres Unternehmens/meines Haushalts.  
stimme nicht zu      stimme voll zu
- Das Wirtschaftswachstum in Deutschland ist wichtig für die derzeitige wirtschaftliche Situation unseres Unternehmens/meines Haushalts.  
stimme nicht zu      stimme voll zu

**Reasoning underlying inflation expectations** (households only, 2020m12-2022m12):

Bitte lassen Sie uns wissen, wie Sie Ihre Vorhersage zur Inflationsrate gemacht haben. Welche Überlegungen spielten für Sie bei dieser Vorhersage hauptsächlich eine Rolle? Bitte antworten Sie in einigen Sätzen. \_\_\_\_\_

**Price changes of own goods/services** (regular firm survey, all waves):

Rückblick - Tendenzen im letzten Monat:

Unsere Preise wurden im Vergleich zum Vormonat

- erhöht
- nicht verändert
- gesenkt

**Numeracy** (households only, first wave a household participates):

Als nächstes möchten wir Ihnen gerne einige Fragen stellen, um zu erfahren, wie Menschen in ihrem täglichen Leben mit Zahlen umgehen.

1. Nehmen Sie an, Sie haben 200 Euro auf einem Sparkonto. Das Konto erzielt zehn Prozent Zinsen pro Jahr, welche zu jedem Jahrestag des Kontos anfallen. Wie viel Geld werden Sie nach zwei Jahren auf dem Konto haben, wenn Sie niemals Geld oder Zinszahlungen von dem Konto abheben? \_\_\_\_ €
2. Angenommen, die Verzinsung Ihres Sparkontos beträgt 1% pro Jahr und die Inflationsrate beträgt 2% pro Jahr. Was glauben Sie: Werden Sie nach einem Jahr mit dem Guthaben des Sparkontos genauso viel, mehr oder weniger als heute kaufen können?
  - Mehr als heute
  - Genau gleich viel
  - Weniger als heute

**News sources** (households and firms: 2021m6):

1. **Printmedien:** Welche Printmedien nutzen Sie, um sich über wirtschaftliche Themen zu informieren? (Bitte alles Zutreffende ankreuzen)

- Süddeutsche Zeitung (SZ)
- Zeit
- Frankfurter Allgemeine Zeitung / Sonntagszeitung (FAZ/FAS)
- Handelsblatt
- Spiegel
- Bild / Bild am Sonntag
- Welt / Welt am Sonntag
- Fachzeitschriften, und zwar: \_\_\_\_
- Lokalzeitung, und zwar: \_\_\_\_
- andere, und zwar: \_\_\_\_
- Ich nutze keine Printmedien, um mich über wirtschaftliche Themen zu informieren.

2. **Onlinemedien:** Welche Onlinemedien nutzen Sie, um sich über wirtschaftliche Themen zu informieren? (Bitte alles Zutreffende ankreuzen)

- sueddeutsche.de
- zeit.de
- faz.net
- handelsblatt.com
- spiegel.de
- bild.de
- tagesschau.de
- Lokalzeitung, und zwar: \_\_\_\_
- andere, und zwar: \_\_\_\_
- Ich nutze keine Onlinemedien, um mich über wirtschaftliche Themen zu informieren.

3. **TV-Sender:** Welche TV-Sender nutzen Sie, um sich über wirtschaftliche Themen zu informieren? (Bitte alles Zutreffende ankreuzen)

- ARD
- ZDF
- SAT1
- RTL
- Pro7
- n-tv
- Andere TV-Sender, und zwar: \_\_\_\_

- Internationales Fernsehen
- Ich nutze kein Fernsehen, um mich über wirtschaftliche Themen zu informieren.

**Beliefs about the autocorrelation of inflation** (regular firm survey, 2026m3):

Die folgende Frage hilft uns zu verstehen, wie in Unternehmen grundsätzlich über Inflation gedacht wird; es gibt keine richtige oder falsche Antwort.

Stellen Sie sich vor, die Inflationsrate in Deutschland ist zu einem bestimmten Zeitpunkt gerade deutlich über den langjährigen Durchschnitt angestiegen.

Welche Entwicklung würden Sie über den Zeitraum der darauffolgenden 12 Monate am ehesten erwarten?

- Die Inflationsrate steigt noch weiter.
- Die Inflationsrate bleibt auf dem erhöhten Niveau.
- Die Inflationsrate fällt, aber bleibt über dem üblichen Niveau.
- Die Inflationsrate fällt auf das übliche Niveau.
- Die Inflationsrate fällt unter das übliche Niveau.

## G Instructions of validation survey

This appendix provides an overview of the translated and original survey instructions of the key questions in the validation survey that we conducted with a sample of German households in September 2023 on the platform Prolific. Section G.1 provides instructions translated to English, while Section G.2 provides the original instructions in German.

### G.1 English translation

**Attention: open-ended:**

What topics come to mind when you think about the economic situation of your household? \_\_\_\_\_

**Attention: structured** (randomized order of response options, except last):

Now please think again about the economic situation of your household. Which of the following topics come to mind? Please check all that apply.

- Covid-19 pandemic
- Inflation in Germany
- Interest rates and monetary policy of the European Central Bank (ECB)
- Economic growth in Germany
- The German labor market
- The German stock market
- The German real estate market
- Consumption spending of your household
- Your household income
- Job situation of the household members
- Savings behavior of your household
- Financial assets of your household
- Your expenditure on rent and housing
- Your household's cost of living
- Your household's debt
- None of the topics mentioned

### G.2 Original instructions in German

**Attention: open-ended:**

Welche Themen kommen Ihnen in den Sinn, wenn Sie an die wirtschaftliche Situation Ihres Haushalts denken? \_\_\_\_\_

**Attention: structured** (randomized order of response options, except last):

Denken Sie nun bitte nochmals an die wirtschaftliche Situation Ihres Haushalts. Welche der folgenden Themen kommen Ihnen dabei in den Sinn? Bitte kreuzen Sie alle zutreffenden Themen an.

- Covid-19 Pandemie
- Inflation in Deutschland
- Zinsen und Geldpolitik der Europäischen Zentralbank (EZB)
- Wirtschaftswachstum in Deutschland

- Der deutsche Arbeitsmarkt
- Der deutsche Aktienmarkt
- Der deutsche Immobilienmarkt
- Konsumverhalten Ihres Haushalts
- Ihr Haushaltseinkommen
- Arbeitsplatzsituation der Haushaltsmitglieder
- Sparverhalten Ihres Haushalts
- Finanzanlagen Ihres Haushalts
- Ihre Ausgaben für Miete und Wohnen
- Lebenshaltungskosten Ihres Haushalts
- Schulden Ihres Haushalts
- Keines der genannten Themen