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**Do People Have Economic Expectations?**

Peter Andre  
Luca Michels

Felix Chopra  
Johannes Wohlfart

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**UNIVERSITÄT  
ZU KÖLN**

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Peter Andre      Felix Chopra      Luca Michels      Johannes Wohlfart

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## Abstract

Expectations are central to models of economic and financial decision-making. Yet in practice, individuals are often inattentive and, when asked, report fragile, context-dependent expectations that are only weakly linked to decisions. This raises the question to what extent they hold such expectations in the first place. Against this backdrop, we ask two questions: When people think about an economic issue, can they build on expectations they formed before? And does it matter if they cannot? We develop and validate a survey measure that distinguishes between individuals who can recall expectations formed in the past and those who must form expectations from scratch. We show that while many households have expectations about key economic variables, a large share of households do not — even among those close to decisions for which the expectation should be relevant. This matters: individuals without a previously-formed expectation (i) express expectations that are more context-dependent, (ii) update expectations more strongly but less persistently in response to new information, (iii) report expectations that are less relevant to decisions, and (iv) rely more on heuristics that do not require expectations when making economic decisions.

**Keywords:** Expectations, Belief Formation, Previously-Formed, Context-Dependence, Learning, Decision Relevance, Heuristics

**JEL codes:** C83, C91, D83, D84, D91, E71, G41, G53

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Andre: SAFE and the Goethe University Frankfurt, andre@safe-frankfurt.de; Chopra: Frankfurt School of Finance & Management, f.chopra@fs.de; Michels: University of Bonn, Bonn Graduate School of Economics, luca.michels@uni-bonn.de; Wohlfart: University of Cologne, ECONtribute, Max Planck Institute for Behavioral Economics Bonn, wohlfart@wiso.uni-koeln.de. **Acknowledgments:** We would like to thank participants at various conference and seminar talks for valuable comments. Egshiglen Batbayar and Giorgos Louvaris provided excellent research assistance. We thank Katrin Demmelhuber, Agnesa Nimanaj and Klaus Wohlrabe from the ifo institute for help with the ifo Management Survey. **Funding:** Andre acknowledges funding by SAFE, the UniCredit Foundation Modigliani Research Grant, and the Stiftung für Wissenschaft (Savings Bank Finance Group). Wohlfart acknowledges funding by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2126/1-390838866. **Ethics approval:** Ethics approval was obtained from the Frankfurt School of Finance & Management and the University of Cologne. **Preregistration:** All data collections were preregistered at the OSF Registry (<https://osf.io/3u4ra/registrations>); see Appendix C.1 for further details.

# 1 Introduction

Expectations are pivotal in economic models, where they shape behavior and market outcomes. As a result, a large empirical literature measures expectations, studies how they are formed, and examines their consequences — in many fields of economics, including macroeconomics, financial economics, labor economics, and political economy (*e.g.*, Adam and Nagel, 2023; Coibion and Gorodnichenko, 2026; Kuchler et al., 2023; Mueller and Spinnewijn, 2023; Weber et al., 2022). Despite the central role expectations play in theory, empirical work often finds that agents are inattentive and poorly informed about the development of relevant variables (Link et al., 2025; Maćkowiak et al., 2023), report expectations that are fragile, context-dependent, and only weakly correlated with behavior (Bordalo et al., 2026; Giglio et al., 2021), and frequently struggle to answer expectation questions in surveys (*e.g.*, de Bruin et al., 2000).

This contrast between the clear role expectations play in economic models and the difficulty researchers face when studying expectations in practice raises a fundamental question: to what extent do individuals actually hold such economic expectations in the first place? Specifically, when people think about an economic issue, can they build on expectations they formed before? We study this question in four steps. First, we develop and validate an easy-to-implement survey measure of having previously-formed expectations. Second, we document whether individuals have expectations, who does so, and for which variables, using a large survey of US households, which we complement by smaller surveys in the UK, Germany, France, Turkey, and Argentina, and a separate survey of firm managers. We then conduct a series of experiments to examine how having previously-formed expectations is linked to — third — expectation formation and — fourth — decision-making.

Our objective is descriptive in nature, and we believe that all possible empirical answers are informative. If households typically have formed expectations, this would reassure standard models and empirical research that elicits such expectations. If many households do not have previously-formed expectations, it seems critical to explore whether, where, and how this matters. If it does not matter, an “as if” interpretation of economic expectations would remain appropriate. If it does matter, then the phenomenon warrants careful study.

**Measurement** Our measurement approach is simple, can be easily integrated into any survey, and can be applied to basically any expectation or belief (we use both terms interchangeably). We first elicit the quantitative expectation of interest — such as expectations about future inflation or stock returns. Immediately afterward, we ask respondents whether they had an expectation already before starting the survey or whether they formed an expectation only during the survey. We classify respondents who report having had a precise or rough expectation as holding previously-formed expectations. These respondents can draw on prior expectations — which they may adjust — when reporting their current expectations. Respondents who report that they did not even have a rough expectation before the survey must instead construct their

expectations from scratch.

Four validation tests show that our measure captures genuine variation in whether individuals formed expectations prior to the survey. First, almost all households report having previously-formed expectations on integral matters where we expect them to do so (*e.g.*, whether one's own life will eventually end), while few do so in domains where we expect the opposite (*e.g.*, this season's winner of the Malaysian Super League). Second, we prompt a random subset of respondents to form expectations about either future inflation or stock returns and show that our measure successfully detects the induced increase in previously-formed expectations in an obfuscated follow-up survey. Third, we find that respondents with previously-formed expectations report their expectations more quickly, consistent with the idea that constructing an expectation from scratch takes more time. Finally, we explore plausible alternative wordings of our measure and reassuringly find very similar shares of respondents with previously-formed expectations across them.

**Descriptive Evidence** Equipped with this measure, our next goal is simple: to document whether households have previously-formed expectations, which households do so, and for which variables. To this end, we field a large, broadly representative survey of 3,017 US households and apply our measure to 30 expectations commonly studied in economics. These include, among others, expectations about future aggregate inflation, economic growth, recession risk, stock returns, interest rates, home price growth, income, retirement, and life expectancy, as well as outside options on the labor market, inequality, climate change, and social norms.

We illustrate our main finding in the domain of macroeconomic expectations. 60% of households report having previously-formed expectations about aggregate inflation, and approximately 50% report having previously-formed expectations about unemployment or the likelihood of a recession. In contrast, only about 35% do so for GDP growth, and just 30% for the federal funds rate — the smallest share across all variables we study. These results suggest that while large portions of the population have previously-formed economic expectations, a substantial share does not. We detect similar patterns in other domains: for example, expectations about aggregate stock returns, home price growth, and interest rates on savings accounts or credit cards are held by 41–45% of respondents.

This phenomenon is not unique to the US. In complementary surveys conducted in the UK, Germany, France, Turkey, and Argentina, we find qualitatively similar patterns, though with notable quantitative differences across countries. For instance, in the high-inflation environments of Turkey and Argentina, substantially more households report having inflation expectations. In addition, we survey a sample of German firm managers from the ifo Management Panel, which includes decision-makers from firms across Germany. These managers often have the highest shares of previously-formed expectations, *e.g.*, 81% for aggregate inflation and 77% for economic growth.

We analyze heterogeneity in whether an individual has an expectation using the rich economic and sociodemographic background data from our US sample. Respondents with higher education, high numeracy, and those who closely follow economic news are 4, 5, and 11 percentage points (pp), respectively, more likely to report having previously-formed expectations. Personal experience appears to matter as well: for example, individuals who lived through the high inflation of the 1970s are 11 pp more likely to hold previously-formed inflation expectations. Moreover, respondents report higher rates of previously-formed expectations for variables they rate as more relevant to their well-being. On average, above-median perceived relevance of a variable is associated with an 8 pp higher likelihood of having an expectation.

While relevance matters, it cannot fully account for the absence of expectations among households. Even among households who say a variable “matters a lot”, more than one-third report not having a previously-formed expectation. Likewise, many households lack expectations even when they engage in the types of decisions for which economic models suggest expectations should matter. For instance, among households who either recently traded or plan to trade stocks, 33–40% report not having an expectation about aggregate stock returns. Similarly, among respondents who recently bought or plan to buy a durable good or recently negotiated or plan to negotiate their wage, 35–41% report not having a previously-formed expectation about future inflation.

***Result 1.** While many households have previously-formed economic expectations, a large share of households do not — including individuals who are close to making decisions.*

**Expectation Formation** Because many households report not holding previously-formed economic expectations, we next ask: does this matter? We explore whether knowing who has previously-formed expectations helps predict systematic patterns in how expectations are formed.

We begin by studying contextual influences. Prior work shows that even seemingly irrelevant contextual cues can shape reported beliefs (*e.g.*, Bordalo et al., 2026, 2022; Conlon and Kwon, 2025; Taubinsky et al., 2025; Tversky and Kahneman, 1974). Households without previously-formed expectations must form them from scratch, using whatever information comes to mind. As a result, they may be especially sensitive to contextual cues. To test this, we use a classic manipulation: the anchoring effect. In an experiment, UK households report their return expectations under two anchoring conditions embedded in a brief explanation of returns. In passing, we mention how either a low (2%) or high (20%) return affects how an investment develops. We find that, on average, reported return expectations are 4.1 pp higher in the high anchor than in the low anchor condition. This effect is nearly twice as large (4.9 pp versus 2.6 pp) among households who form expectations from scratch than among those who can build on their previously-formed expectations. Two additional experiments show that this phenomenon extends to other expectations, is robust to controlling for unobserved heterogeneity

across individuals using individual fixed effects, and remains unchanged when controlling for respondents' confidence in their expectations. Thus, households without previously-formed expectations form expectations in a more context-dependent manner.

Next, we study expectation formation in an information experiment, a standard paradigm used to investigate learning (Fuster and Zafar, 2023; Haaland et al., 2023). We focus on a widely studied case: US households either receive no information or an expert forecast of future inflation. We find that, on average, the expert forecast reduces average inflation expectations by 3.1 pp. This effect is 0.8 pp larger among households who formed expectations from scratch. However, the effect does not persist. In a follow-up survey two to three days later, we detect a larger decay in learning among those who formed expectations from scratch. This means that households without previously-formed expectations react more strongly to new information, but these reactions fade more quickly.

***Result 2.** Individuals without previously-formed expectations express expectations that are more context-dependent and update expectations more strongly but less persistently in response to new information.*

We then turn to the expectation data from our large survey of US households. We focus on 14 expectations about aggregate outcomes, which allows us to compare expectations across households. In 13 out of the 14 cases, we find statistically significant differences in the distribution of expectations. For many variables, respondents who had an expectation before the survey report expectations that appear more informed: they are less dispersed, more closely aligned with benchmarks such as professional forecasts, and more certain.

Finally, we examine how households reason when constructing the expectations they report. We use AI-conducted qualitative interviews (Chopra and Haaland, 2025) to probe how households came up with their reported inflation expectations. Households who construct expectations from scratch more often reveal simple reasoning approaches: they rely on past shopping experiences or guesses, and they frequently express uncertainty. By contrast, households with previously-formed expectations are more likely to reason about macroeconomic factors, information seen in news media, or past inflation statistics.

***Result 3.** Households who have to form expectations from scratch often report expectations that are more dispersed, less aligned with benchmarks, and accompanied by greater uncertainty, and they rely on simpler reasoning (e.g., personal experiences, guesses).*

**Decision-Making** Does having previously-formed expectations also relate to the role of expectations in decision-making? Recent work shows that expectations predict behavior much less

strongly than standard economic models suggest. Given that this work largely centers on stock return expectations and investment choices, we also focus on this setting.

In an experiment, respondents report their expected stock-market return and are asked how much of £10,000 they would invest in the stock market. The average result replicates findings from previous research: a one-percentage-point higher return expectation predicts only a 0.82-percentage-point increase in the stock investment share — far below the magnitude implied by standard models. However, we find that this relationship is roughly 80% stronger among households with previously-formed return expectations than among those without. For these households, beliefs appear to be more “decision-relevant”.

One potential reason for the smaller behavior-belief sensitivity is that households without expectations are more likely to rely on simple heuristics that place no weight on beliefs. To explore this mechanism, we turn to one of the most extensively studied heuristics in economics: sticking to a default. In a separate experiment, households choose how to allocate £100 between stocks and a safe asset under one of two conditions. In the low-default condition, the pre-selected stock share is 20%; in the high-default condition, it is 80%. We find that the default exerts a large influence: the stock investment share is 24 percentage points higher under the high default. Importantly, this effect is nearly twice as strong (29 pp versus 15 pp) among households who do not have previously-formed expectations than among those that do.

We corroborate these experimental findings with evidence on households’ real-world investment behavior. Households without return expectations are more likely to stick to default retirement investment allocations and contribution rates, rely more on advice and peer imitation, optimize less, and acquire less information on risk and returns.

***Result 4.** Individuals without previously-formed expectations express expectations that are less decision-relevant and rely more strongly on heuristic approaches that do not require expectations when making decisions.*

**Related Literature and Implications** This paper relates to a vast literature on economic expectations, how they are formed, and how they matter for behavior (*e.g.*, Adam and Nagel, 2023; Coibion and Gorodnichenko, 2026; Fuster and Zafar, 2023; Kuchler et al., 2023; Mueller and Spinnewijn, 2023). The literature is so extensive and spans so many fields that it is impossible to do full justice to it here.<sup>1</sup> For example, reported inflation expectations and return expectations — the two cases we study most extensively in this paper — are known to be highly heterogeneous (Adam and Nagel, 2023; Weber et al., 2022), shaped by individuals’ personal experiences (D’Acunto et al., 2021; Malmendier and Nagel, 2016), and correlated with economically relevant behaviors, although their quantitative impact is often smaller than predicted by standard models (Coibion and Gorodnichenko, 2024; Giglio et al., 2021).

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<sup>1</sup>A comprehensive review is provided in the *Handbook of Economic Expectations* (Bachmann et al., 2023). Appendix Table D.1 lists additional references for the specific cases we study.

This body of empirical work has also made a series of observations that motivate our study. Individuals tend to be inattentive and poorly informed about how key economic variables evolve (Link et al., 2025; Maćkowiak et al., 2023; Weber et al., 2025). The expectations they report are often noisy (Drerup et al., 2017), shaped by (survey) context (Bordalo et al., 2026; Tversky and Kahneman, 1974), and exhibit a surprisingly weak relationship with actual behavior (Giglio et al., 2021). And while early pioneering work summarized in Manski (2004) concludes that households are capable of providing meaningful numerical expectations, empirical work also acknowledges that individuals are often cognitively uncertain about what to report (Enke and Graeber, 2023) and common responses such as 50% can signal considerable insecurity about which number to choose (de Bruin et al., 2000; Manski, 2004).

We make three key contributions to this important stream of work. First, we develop and validate an easy-to-use measure of whether individuals hold previously-formed expectations or form expectations from scratch. Second, we show that, while many households hold previously-formed expectations, a large share of households do not, including those on the verge of making (or having just made) decisions for which economic theory assumes expectations are relevant. Third, we show that not holding previously-formed expectations matters: for example, individuals who form expectations from scratch (i) express expectations that are more context-dependent, (ii) update expectations more strongly but less persistently in response to new information, (iii) report expectations that are less relevant to decisions, and (iv) rely on heuristics that do not require expectations when making economic decisions.

We highlight four implications in our concluding discussion. First, our findings offer both “good” and “bad” news for the large empirical literature on economic expectations. On the one hand, many households — and most firm managers — report holding previously-formed expectations. This means that economic expectations are empirically prevalent, and measuring them, studying their empirical properties, and assessing their relevance for behavior is critical. On the other hand, there are important limits. Researchers need to be aware that many respondents may be considering an expectation question for the first time when being asked in a survey, making them more sensitive to framing and survey design. Our simple measure can help identify respondents who have to form expectations from scratch. Second, holding expectations is likely a core aspect of economic literacy, relevant for decisions such as saving, wage bargaining, and stock market participation. Third, widespread absence of expectations may have macroeconomic consequences. Individuals without expectations may appear inactive — for example, underreacting to changes in the inflation outlook simply because they do not form expectations. However, their expectations are less anchored and more responsive to unusually salient events, a potential source of overreaction in expectations. Finally, our findings point to exciting research opportunities: the extensive margin of expectation formation, theory that captures this margin, and decision-making models that do not rely on expectations.

## 2 Measurement

### 2.1 Measurement Strategy

In this paper, we contrast two cases: when people consider an economic issue, they might (i) be able to build on expectations they previously formed, or (ii) have to construct expectations from scratch. We say that individuals hold a previously-formed expectation if they have formed an expectation in the past and can recall it when reconsidering the issue. Forming an expectation means integrating available information into an estimate; recalling it requires that the estimate was retained in memory and remains accessible. Individuals with a previously-formed expectation can therefore draw on an earlier estimate when forming current expectations. By contrast, if an agent cannot access a previously-formed expectation, she must construct one from scratch, relying on whatever information is available in the moment. This does not necessarily mean that she is clueless: she might recall other relevant information that she can use to form an expectation, but she must distill an estimate from scratch using whatever information comes to mind.

Our goal is to develop a measure that captures variation in whether people hold previously-formed expectations and that can easily be integrated into surveys. Our approach is very simple. We start with a short introduction to an economic variable, *e.g.*, the return of the US stock market, and ask for respondents' quantitative expectation using standard wording: "What do you expect the return of the US stock market to be over the next 12 months?" Immediately afterward, we ask respondents whether they had an expectation already before starting the survey or whether they had to form such an expectation from scratch when taking the survey:

**Did you have an expectation about the [future stock market return] already before starting today's survey, or did you form your expectation only during today's survey?**

- I had a pretty precise expectation already before today's survey. (*→ has previously-formed exp.*)
- I had a rough expectation already before today's survey. (*→ has previously-formed expectation*)
- I formed my expectation only during today's survey. (*→ does not have previously-formed expectation*)

*(Single choice. The order of response options is randomly flipped.)*

This approach directly extends to other economic expectations and perceptions, *e.g.*, the future inflation rate, recession risk, or beliefs about the current gender wage gap.<sup>2</sup>

We classify respondents as holding a previously-formed expectation when they report having had a "pretty precise" or a "rough" expectation already before the survey. We preregistered

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<sup>2</sup>Earlier data collections did not include the word "only". While the intended meaning should be clear from context, omitting "only" leaves a small possibility that respondents might not interpret the response options as strictly mutually exclusive. For this reason, our preferred wording is forming an expectation "only during today's survey", as stated above. Reassuringly, the validation experiment reported in the next subsection shows that the precise wording of the third response option does not materially affect our results.

this classification rule and do not distinguish further between these two subcategories. The reason why we list “pretty precise” and “rough” expectations as separate options is that this way we know that respondents who say they “formed their expectation only during the survey” did not even hold a rough expectation beforehand. So, effectively, we measure not holding a previously-formed expectation as reporting the absence of even a rough expectation prior to the survey.

## 2.2 Discussion

Our measure rests on the assumption that individuals are aware and can articulate whether they already had an expectation before the survey. Research in cognitive psychology shows that people possess introspective access to whether relevant knowledge is available in memory — a capacity known as metamemory (see Dunlosky and Thiede, 2013, and Metcalfe and Dunlosky, 2008, for reviews). This allows individuals to make metacognitive judgments such as “I’ve thought about this before” versus “This feels entirely new.”

We first ask respondents to report their beliefs to facilitate this introspection. When answering the expectation question, respondents directly experience how familiar the question feels and how easily — if at all — a previous estimate comes to mind. Doing so also clarifies to respondents what we mean by an “expectation”, namely an answer to the type of question we have just asked. In this sense, our measure of previously-formed expectations may depend on the specific expectation question. Accordingly, we focus on the standard quantitative expectation questions commonly used in the economics literature, which correspond closely to the expectations that matter in economic models.

Whether individuals hold previously-formed expectations naturally reflects past attention allocation and memory constraints: individuals who paid little attention to an issue in the past are arguably less likely to have formed an expectation about it; and individuals with weak memory may be less likely to retain and recall an estimate they previously formed. This is important for the interpretation of our measure. We view having a previously-formed expectation as an inseparable expression of past attention allocation and memory constraints.

For the same reasons, we expect previously-formed expectations to be closely tied to individuals’ uncertainty about their expectations — a relationship that we later confirm empirically. One reason is that, when attention is low and information is scarce, individuals may have no prior expectation and little certainty in whatever expectation they construct from scratch. Moreover, those who form expectations from scratch may recognize the fleeting nature of these expectations and therefore have lower confidence in them. On the one hand, this is a key mechanism for why holding previously-formed expectations could matter for expectation formation and decision-making. On the other hand, our later results highlight that previously-formed expectations can matter above and beyond differences in confidence. In multiple surveys and experiments, we elicit confidence alongside our main measure and show that many key patterns extend beyond

what can be accounted for by differences in confidence.

Finally, like most survey-based measures, our measure is unlikely to be error-free. For example, our measure yields a categorical assessment (holding versus not holding a previously-formed expectation). It is not designed to detect finer distinctions in prior engagement, which we expect would be difficult, if not impossible, to measure reliably. Such noise could attenuate the estimated relationship of our measure with other variables. Another potential concern is social desirability: respondents could be more likely to mistakenly classify themselves as having (rather than not having) previously-formed expectations because they want to appear informed and knowledgeable. A closely related issue is overconfidence, where individuals may genuinely believe that they had an expectation before participating in the survey, even when they did not. Social desirability bias and overconfidence would upward bias our estimated share of individuals holding an expectation, a possibility that should be taken into account when interpreting our evidence, though any such bias would work against finding that respondents lack previous expectations. Nevertheless, even in this case, comparisons across groups remain informative as long as those who say that they formed their expectation only during the survey are indeed more likely to have done so.

### **2.3 Validation**

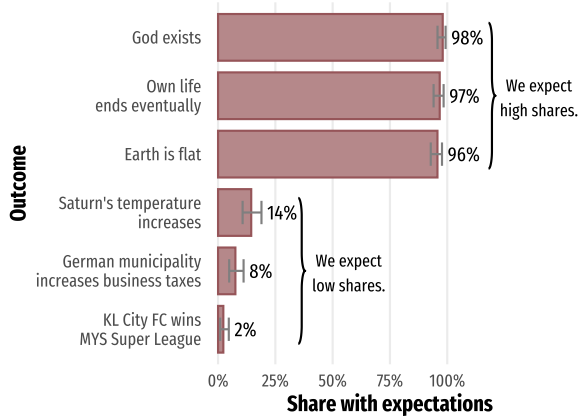
We test whether our measure captures genuine variation in whether individuals have previously-formed expectations. Although the underlying “ground truth” is typically unobservable, we can investigate our measure’s validity using controlled approaches. For brevity, we keep the discussion concise. Appendix Table A.1 provides an overview of all data collections presented in the paper, along with links to sample compositions and survey instructions.

First, we test whether individuals report having previously-formed expectations about variables that are highly plausible *a priori* candidates for holding previously-formed expectations, specifically, the chance that God exists, that one’s own life ends eventually, and that the earth is flat. These are “integral” matters, and we expect most individuals to have formed expectations about them beforehand. Conversely, we test whether individuals typically report *not* holding previously-formed expectations for variables that are highly plausible *a priori* candidates for not having expectations, namely, changes in Saturn’s surface temperature, business tax changes in a small German municipality, and the winner of the Malaysian Super League. We collect data from 304 US households (*Validation Study 1*). The results presented in Figure 1a strongly support our measurement approach: on average, individuals report holding previously-formed expectations in 97% of cases where we expected them to, and in only 8% of cases where we did not.

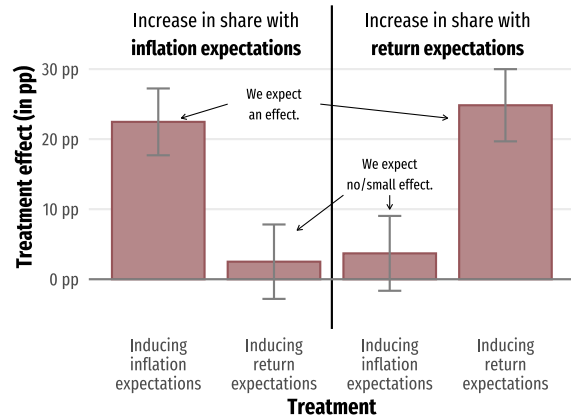
Second, we conduct a two-wave experiment with 1,980 US households in which we deliberately prompt a subset of respondents to form expectations and later assess if our measure successfully detects an increase in previously-formed expectations (*Validation Study 2*). In the

Figure 1: Validation results

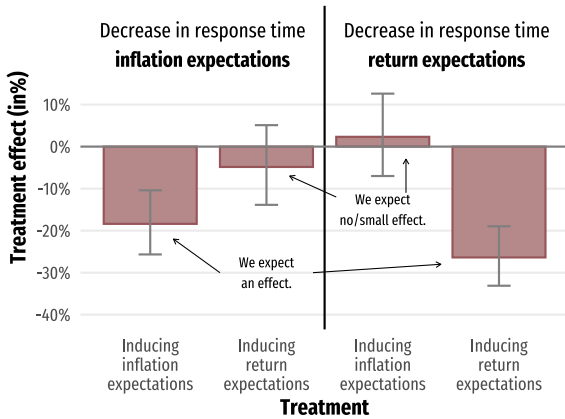
(a) High shares for “integral”, low shares for “distant” matters (*Validation Study 1*)



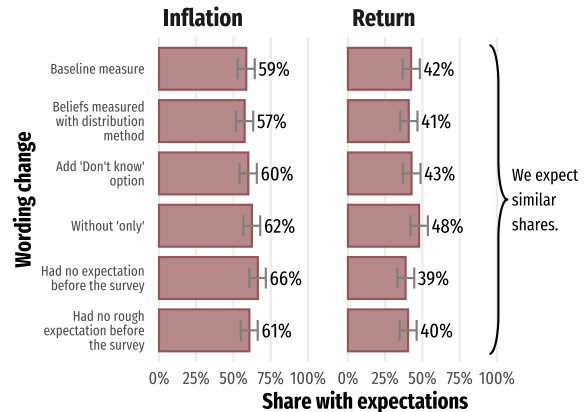
(b) Higher shares after inducing expectations in an experiment (*Validation Study 2*)



(c) Lower response times after inducing expectations in an experiment (*Validation Study 2*)



(d) Measure yields similar results across plausible alternative wordings (*Validation Study 3*)



Notes: Panel (a) reports results from *Validation Study 1*. Gray bars indicate conservative Clopper-Pearson 95% confidence intervals. Panel (b) reports results from *Validation Study 2*. The figure reports the treatment effects of inducing either inflation or return expectations (relative the control group) on the share of households reporting having previously-formed expectations for inflation (left side) or stock returns (right side). Gray bars indicate 95% confidence intervals with robust standard errors. Panel (c) reports results from *Validation Study 2*. Analogous to Panel (b), the figure reports the treatment effects on the time spent on the expectation screen for inflation (left side) or stock returns (right side). Panel (d) reports results from *Validation Study 3*. The figure reports the share of households with previously-formed expectations across various plausible alternative variants of our measure (with Clopper-Pearson 95% confidence intervals).

first wave (Wave 1), we ask respondents a set of expectation-related questions focusing on either future inflation (*Treatment 1*), stock market returns (*Treatment 2*), or population growth (*Control*). Respondents are also given five minutes to inform themselves about the topic using the internet. One day later, in an obfuscated follow-up (Wave 2), we re-invite these respondents and ask them to predict both stock returns and inflation. Additionally, we ask respondents whether they had already formed expectations about these variables prior to the survey. We expect that our Wave 1 intervention increases the share of respondents with previously-formed expectations as measured in Wave 2, though not universally, as some participants will engage with the intervention only superficially or may not retain the expectation they form. Figure 1b shows that exposure to

inflation-related questions and information in Wave 1 substantially increases the probability of reporting having a previously-formed expectation about inflation by 22.5 percentage points ( $p < 0.001$ ) relative to a control group mean of 58.3%. Similarly, engagement with stock market returns in Wave 1 raises the likelihood of respondents reporting having a previously-formed expectation about stock returns by 24.8 percentage points ( $p < 0.001$ ), relative to the control group share of 46.2%.

Third, we use response times as a proxy for processing time and test whether respondents who can recall expectations formed in the past provide expectations more quickly. Using data from *Validation Study 2*, we find that exogenously prompting respondents to form an expectation in Wave 1 reduces their average response time when reporting an expectation in Wave 2 by 18%–26% (Figure 1c). This aligns with the intuition that constructing an expectation from scratch requires more time.<sup>3</sup>

Finally, we examine whether our measure is sensitive to variations in wording and question format. Because there is no obvious first-best phrasing and several plausible alternatives exist, the results should ideally not depend materially on the specific wording of the survey question. To test this, we conduct an experiment with 1,781 US households in which we vary the phrasing of the question (*Validation Study 3*). In addition to our standard wording (“formed my expectation only during today’s survey”), other conditions ask whether respondents “did not even have a rough expectation before today’s survey” or “had no expectation before today’s survey”. In additional conditions, we also include a “Don’t know” option (which only 5% of respondents select), drop the “only” from “formed my expectation only during today’s survey”, and vary whether we elicit point estimates or distributional beliefs — the two most common formats for eliciting quantitative expectations. Across all variants, we find very similar shares of respondents reporting that they had previously formed an expectation, confirming that our measure yields similar results across plausible wording alternatives (Figure 1d).

These four validation tests suggest that our measure reliably captures variation in whether respondents hold an expectation, giving us confidence in applying the measure at full scale.

### **3 Do People Have Previously-Formed Expectations?**

This section presents our main evidence on whether individuals hold previously-formed economic expectations, which variables they hold expectations about, and who holds them. We present results from a large survey of US households that covers 30 expectations commonly studied in economics. We present additional evidence from an international household survey and a survey of firm managers.

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<sup>3</sup>Our main survey with 3,017 US households and 30 different expectations corroborates these findings. We find that, in cases where households enter the survey without an expectation, they spend on average 16% more time on the expectation screen ( $p < 0.001$ ).

### 3.1 Surveys and Samples

**US Household Survey** We conducted our main survey with 3,017 US households in July 2025, using the online survey company Prolific. The sample approximates the adult US population in terms of age, gender, education, and income (Appendix Table A.2). Appendix Table A.1 summarizes all data collections used in the paper and includes links to sample compositions and survey instructions.

Each household answers ten expectation questions, drawn at random and presented in random order from a set of 30 that are widely elicited and studied in economic research. These include questions about future aggregate inflation, personal inflation (*i.e.*, for one’s own consumption basket), economic growth, recession risk, stock returns, interest rates, price growth of one’s home, income, retirement, and life expectancy, as well as current outside options in the labor market, gender differences in wages, inequality, climate change, and social norms regarding race, gender, and paying taxes. Appendix Table D.1 provides an overview and links each question to relevant literature. Crucially, each question is paired with our main measure: whether the respondent had an expectation about the issue prior to the survey.

For the first expectation a respondent reports, we also ask them to explain — in their own words — why they did or did not have an expectation before the survey. We later use these qualitative responses to add nuance to our quantitative findings. We also elicit respondents’ uncertainty: for each estimate, households report the probability that the actual quantity falls within a specified interval around their point estimate. For instance, for inflation, we ask for the chance that the true rate falls within  $\pm 2$  percentage points of their estimate. The survey concludes with questions about the respondent’s background and economic situation, which we use to analyze variation in whether individuals hold expectations.

**International Household Survey** To study the same phenomena in other macroeconomic contexts, we fielded a shorter version of the survey in the UK, Germany, France, Argentina, and Turkey. In collaboration with Bilendi, we recruited roughly 500 respondents per country in November 2025, except in the UK, where recruitment was done via Prolific. Each sample approximates the general population in terms of age and gender.

Each respondent answered six expectation questions paired with our measure of having previously-formed expectations, presented in random order. To keep the survey concise, we focused on a fixed set of questions: expectations about future aggregate inflation, personal inflation, economic growth, recession risk, stock market returns, and the monetary policy rate.

**Firm Manager Survey** Firm managers’ expectations are central in economic models and are measured by a growing empirical literature (Born et al., 2023; Candia et al., 2023). While our paper mostly draws on household data, we also field a targeted survey of firm managers to document the basic descriptive patterns for this group. Specifically, in November 2025, we

surveyed 286 firm managers through the ifo Management Panel, which mostly consists of CEOs or owners of firms across Germany. The panel comprises managers from the manufacturing, construction, trade, and service sectors, with an emphasis on medium-sized and large firms.

We elicit expectations paired with our measure of having previously-formed expectations for aggregate inflation, energy prices, economic growth, the ECB’s main policy rate, as well as sales prices and average labor cost per hour of work in the firms’ sector.

## 3.2 Results

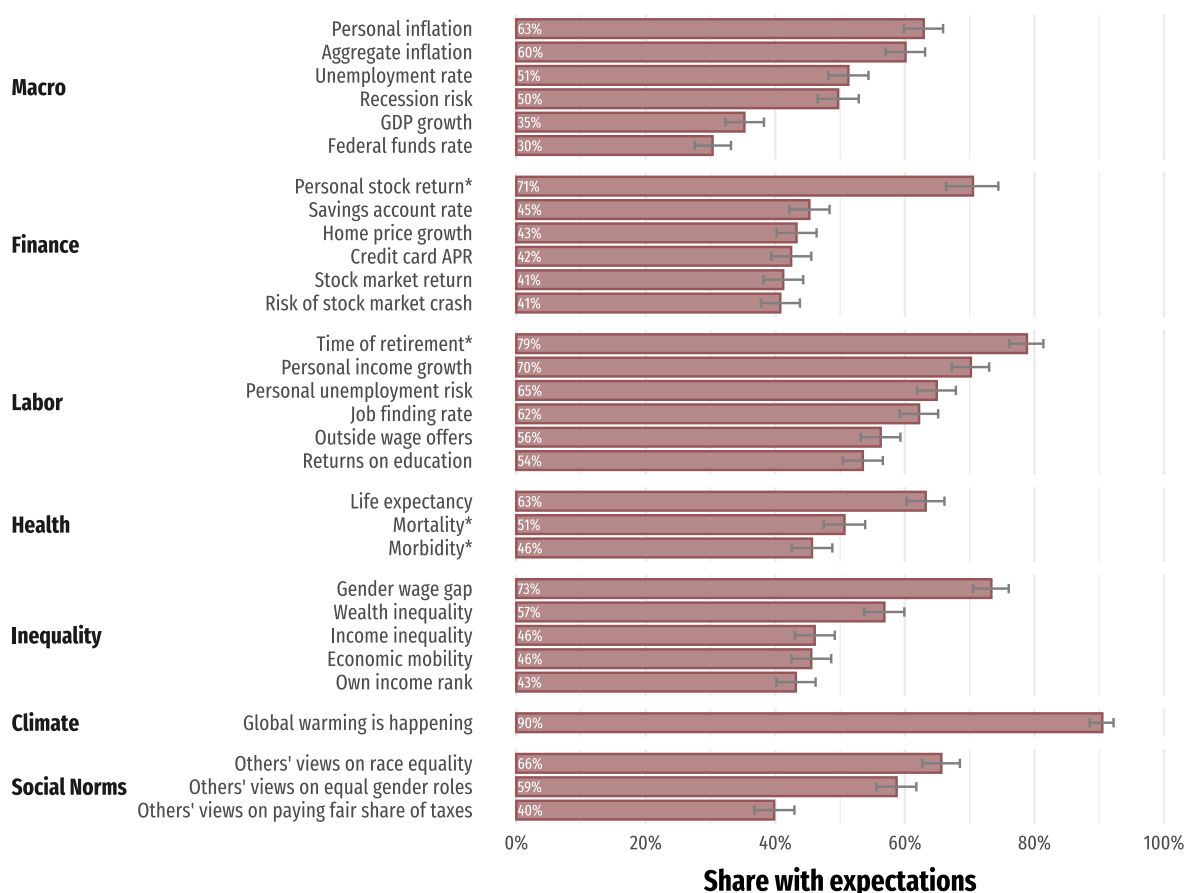
**US Households** Figure 2 shows the shares of households with previously-formed expectations about a given issue, broken down by topic (*e.g.*, macroeconomics, finance, labor, health). For instance, in the domain of macroeconomic beliefs, 60% of households report having expectations about aggregate inflation, and 63% hold previously-formed expectations about the inflation rate relevant to their own consumption basket. Close to 50% report having expectations about the unemployment rate or the risk of a recession. In contrast, only 35% do so for expectations about GDP growth, and just 30% for the federal funds rate — the lowest share across all included variables. These figures suggest that meaningful segments of the US population have previously-formed economic expectations, yet a significant fraction of households do not. We also observe notable variation across topics: more households hold expectations about inflation, a highly salient and widely discussed topic, than about monetary policy, which is arguably more technical, abstract, and less visible in everyday discourse.

In other domains, shares also remain well below 100%. Previously-formed expectations about aggregate stock returns, the price growth of one’s home, and interest rates on savings accounts or credit cards are not very common (41%–45%), although we find an exception in expectations about one’s own stock portfolio. We ask this question only to households who report participating in the stock market; among those, 71% report having previously-formed expectations about the return on their personal investments.

Previously-formed expectations about retirement (79%), household income growth (70%), and personal unemployment risk (65%) are relatively common. By contrast, only around half of the sample — restricted to respondents below age 65 — report having previously-formed expectations about health risks, such as mortality (dying before age 65) or morbidity (becoming unable to work before age 65).

Turning to social and political topics, 90% of households report having an expectation about whether climate change is happening — the highest share across all variables. Similarly, 73% hold previously-formed expectations about the gender wage gap. By contrast, many other beliefs relevant in the political domain are less commonly held, for example, beliefs about income inequality (*i.e.*, the income share of the top 10%), one’s own income rank, or others’ views on egalitarian gender roles in the workplace.

Figure 2: Which share of US households have a previously-formed expectation about ...?



Notes: Results from the US household survey. The figure shows which share of US households reports having previously-formed expectations for various variables. Appendix Table D.1 provides an overview of how each variable is described in the survey. Gray bars indicate conservative Clopper-Pearson 95% confidence intervals. As preregistered, we classify respondents as holding a previously-formed expectation when they report having either a “pretty precise” or a “rough” expectation before the survey; Appendix Figure A.1 reports both shares separately.

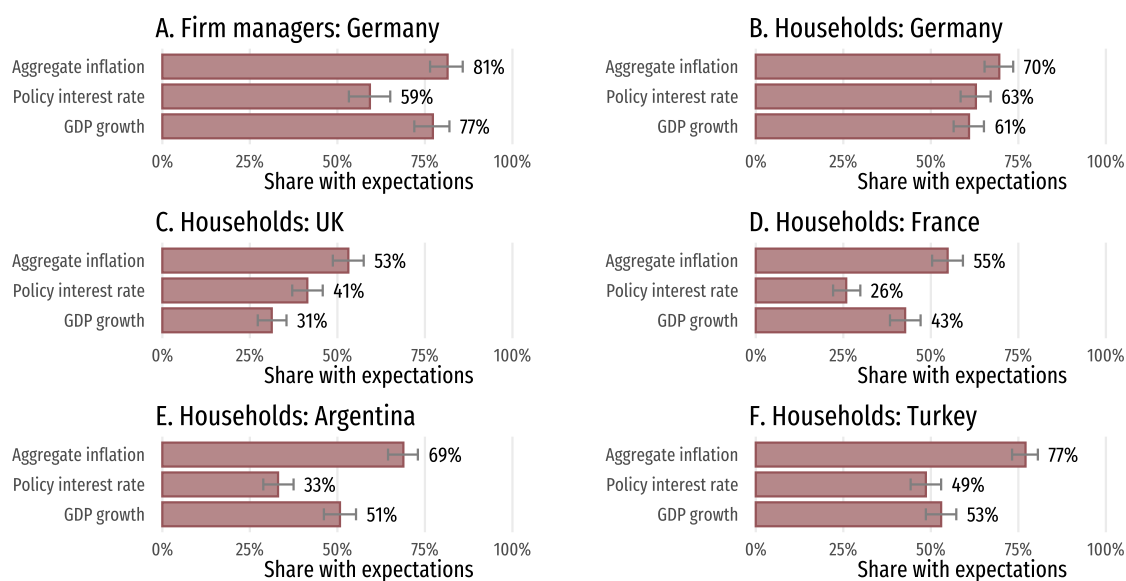
\*Personal stock return: Asked if stock owner. Time of retirement, Mortality, Morbidity: Asked if age below 65.

Our main conclusion does not hinge on the precise quantitative shares or the differences across variables. This is not our focus, and since the variables differ along various dimensions, it would be difficult to isolate the exact source of variation. Instead, our key takeaway is that, while many households hold previously-formed expectations, not holding a previously-formed expectation is a common phenomenon across all domains we examine. Many households must form expectations from scratch when they consider important economic variables.

**Households in Other Countries** Do we observe similar patterns outside the US? Our international household survey shows that we do. Figure 3 presents the share of households in different countries who hold expectations about future inflation, economic growth, or the central bank’s policy rate; Appendix Figure A.2 presents the remaining results. The share of households who report having expectations about these variables typically remains far below 100%.

We also observe meaningful variation across countries. Although explaining these cross-country differences is not our focus, the pattern for inflation expectations is notable: the share

Figure 3: **International households and firm managers — same phenomenon**



Notes: Results from the international household survey and the firm manager survey. Appendix Figure A.2 provides additional results. Gray bars indicate conservative Clopper-Pearson 95% confidence intervals.

of households with previously-formed inflation expectations is higher in Turkey and Argentina, where inflation is very high and more volatile. This pattern is consistent with our later finding that households are more likely to hold previously-formed expectations when they consider a variable to be more relevant for their own economic situation. One exception is Germany, where 70% of households report having previously-formed expectations about inflation, perhaps reflecting the historically-rooted German “inflation anxiety” (Braggion et al., 2025).

**Firm Managers** Firm managers may have stronger incentives than households to form expectations. They may also be more likely to hold expectations simply because they are more frequently confronted with economic topics in their everyday life. Figure 3 supports this intuition. Compared to German households, German firm managers more frequently report holding expectations about inflation (81% vs. 70%,  $p < 0.001$ ) and economic growth (77% vs. 61%,  $p < 0.001$ ). For the central bank’s policy rate, the shares are roughly similar between firm managers and households (59% vs. 63%,  $p = 0.361$ ). At the same time, a substantial minority of firm managers report not holding an expectation — underscoring that this phenomenon extends beyond households. Appendix Figure A.2 shows similar patterns for managers’ expectations about energy prices, wage costs, and sector-level sales prices.

**Who Has Previously-Formed Expectations? (Qualitative Evidence)** Households’ responses reveal substantial heterogeneity. On average, only about half of the respondents report holding previously-formed expectations for a given issue. To contextualize our results, we ask: who are these individuals? To build intuition, we first turn to households’ own explanations for why they did or did not have an expectations when entering the survey.

Among those who report holding previously-formed expectations, several common themes emerge. One is the *relevance* of the issue for one's personal situation and decisions:

"I am planning to retire soon. [...] Because I self-manage my assets, I follow the stock and bond markets to make necessary adjustments to my portfolio. This is why I had a pre-existing expectation of future market performance."

"I'd like to sell my house and downsize in the next few years, so I keep my eye on neighborhood price trends as well as broader city and national trends."

Another theme is that expectations can arise more "passively" from exposure to *macroeconomic events* or *personal experiences*:

"Price fluctuations for goods and services have been on my mind ever since tariffs went into effect earlier this year, and especially how unstable the economy and economic policy is executed."

"I had a prior expectation about increasing inflation rates due to the difference in prices from when I was younger, till now."

Similarly, some respondents cite *incidental exposure* to a topic in everyday life as the reason for forming an expectation prior to the survey.

"Gender roles are already a big topic amongst social media, peers, and even in the workplace. You kind of form an opinion or thought on this just so."

"It is a well discussed topic throughout many online and offline discussions, and has been a talking point for a long time."

By contrast, households who report not having a previously-formed expectation often cite low personal relevance, lack of knowledge, or simple inattention:

"These are not things that I regularly think about. Future percentage rate on a savings account mean nothing to me, there is nothing important about it and nothing I could do to change it, so there is no need for me to consider it."

"I don't think about the future federal funds rate. I am not very knowledgeable about finances and fiscal policy. This is something I'd like to learn more about but have not yet taken the time to learn much about."

"I just haven't really thought about credit card interest rates before. It's not something I usually pay attention to, so I didn't have any expectations going into the survey."

Thus, households' explanations suggest that households form expectations for two broad reasons. Some expectations arise actively when individuals have personal stakes and deliberately monitor relevant information. Others arise passively through incidental exposure to salient macroeconomic developments, media coverage, or everyday discussions. (In Appendix C.2, we corroborate these conclusions by systematically coding and analyzing all open-ended responses.)

**Who Has Previously-Formed Expectations (Quantitative Evidence)** Motivated by these patterns, we examine which characteristics quantitatively predict whether households have a previously-formed expectation.

*Relevance.* We begin by considering how relevant the variables are for households. In our survey, respondents rate the relevance of each belief variable for their own economic situation. Pooling across all thirty belief measures, we regress an indicator for holding an expectation on a dummy for whether the respondent considers the variable to matter, controlling for variable fixed effects and households' background characteristics. The results show that high perceived relevance increases the likelihood of holding an expectation by 8 pp ( $p < 0.001$ , Column 1, Appendix Table A.10), relative to an overall mean of 54%; this relationship remains equally strong and statistically significant when including individual fixed effects (Column 2). Importantly, while relevance matters, it is far from providing a complete explanation for why many households lack previously-formed expectations. Even among households who say a variable “matters a lot”, 37% do not report having previously-formed expectations.

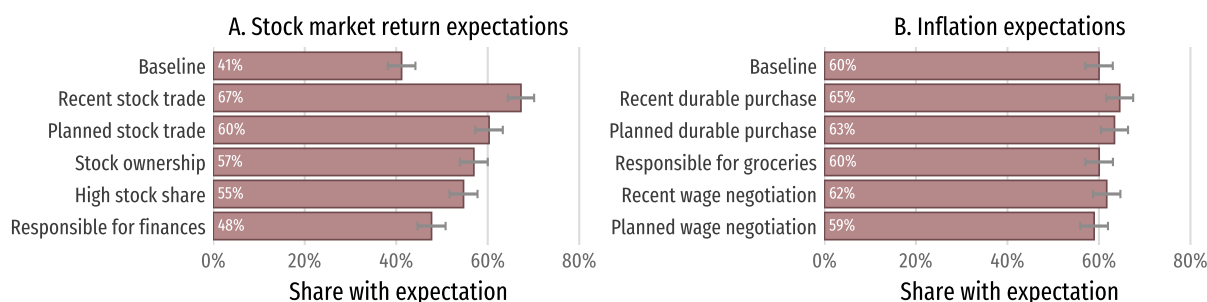
*Decision proximity.* A related question is whether respondents have no expectation because they are not currently making economic decisions that would require one. To assess this, we examine whether the share of households reporting previously-formed expectations is higher among respondents close to making a relevant economic decision for which the expectation should matter. We begin with two examples.

Figure 4a shows that the share of respondents having an expectation about stock market returns rises from 41% in the full sample to 67% among those who recently traded stocks, 60% among those planning to trade soon, 57% among current stockholders, 55% among respondents with an above-median risky asset share, and 48% among those managing their household's finances. Thus, while “decision proximity” increases the likelihood of reporting having an expectation, the shares remain well below 100%.

Figure 4b highlights that, for inflation expectations, decision proximity is at most weakly associated with holding an expectation. The baseline share of 60% increases only modestly to 65% among those who recently purchased a durable good and 63% among those planning such a purchase. Responsibility for grocery shopping (60%) and recent or planned wage negotiations (62% and 59%, respectively) are also only weakly related to holding an inflation expectation.

Appendix Figure A.3 shows similar results for expectations about the likelihood of a stock market crash, the federal funds rate, credit card interest rates, job finding, wage offers, and aggregate unemployment. Decision proximity often moderately increases the likelihood of holding an expectation but leaves a substantial fraction of respondents without an expectation. This is important because it implies that many households do not have previously-formed expectations even when they engage in the types of decisions for which economic models suggest expectations are important.

Figure 4: Close to relevant economic decisions — same phenomenon



Notes: This figure shows the share of US households who report having previously-formed expectations about stock market returns (Panel A) and inflation (Panel B) with 95% confidence intervals. Across rows, we report results for households with high “decision proximity”, that is, households with characteristics suggesting that the respondent has recently made, or is close to making, a decision for which the expectation is relevant according to standard economic models. The first row (“Baseline”) reports results for the full sample.

*Experiences.* We use the case of inflation expectation to illustrate the role of personal experience. In particular, we construct an indicator for cohorts born before 1962, who were at least teenagers during the 1970s oil crises, when inflation had reached historically high levels. Those who lived through the oil crises are 11–16 pp more likely to hold an expectation about aggregate inflation, relative to an overall mean of 60%, depending on whether we control for the perceived relevance of inflation and consumption of economic news or not (Columns 3 and 4,  $p = 0.050$  and  $p = 0.005$ , Appendix Table A.10). These patterns suggest that personal experiences shape not only the level of expectations (Malmendier and Nagel, 2016) but also whether individuals form retrievable expectations at all.

*News consumption, numeracy, and other characteristics.* Respondents who report high levels of news consumption about the economy are 11 pp more likely to have a previously-formed expectation — consistent with both top-down information acquisition or more passive, incidental exposure to information. Moreover, respondents with higher education or numeracy are more likely to hold expectations, suggesting a role for knowledge and cognitive skills. In addition, men and individuals with lower incomes are more likely to hold expectations (Column 1, Appendix Table A.10).

Stepping back from these details, we summarize the key pattern in our survey evidence as follows.

**Result 1.** While many households hold previously-formed expectations, a large share of households reports not having previously-formed expectations about key economic variables such as inflation, stock returns, or interest rates, even when they are close to making relevant economic decisions for which these expectations should matter.

## 4 Expectation Formation

Many households report not having a previously-formed expectation, raising the question of whether and how this matters. This section investigates how having previously-formed expectations is linked to expectation formation, while the next section focuses on decision-making. To study expectation formation, we begin by examining the effect of contextual cues and updating in response to information. Then, we return to our expectation data from Section 3 and contrast reported expectations between households with and without previously-formed expectations. Finally, we collect additional qualitative data on how people arrived at their reported expectations.

### 4.1 Context Dependence

Individuals who do not have previously-formed expectations must construct expectations from scratch, drawing on whatever information is most accessible in the moment. This suggests that they could be more sensitive to contextual cues — including those that should, in principle, have little relevance for expectations. Context shapes what comes to mind, and prior work on belief formation has repeatedly shown that even seemingly irrelevant contextual features can shape beliefs (*e.g.*, Bordalo et al., 2026, 2022; Conlon and Kwon, 2025; Li and Camerer, 2022; Taubinsky et al., 2025; Tversky and Kahneman, 1974). Are such context effects more pronounced when households lack previously-formed expectations?

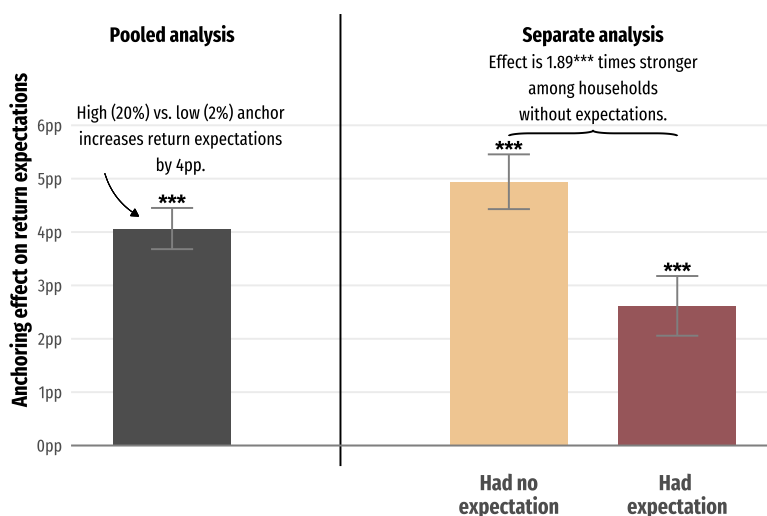
To investigate this, we study the role of contextual cues using a classic experimental paradigm: an anchoring manipulation (Tversky and Kahneman, 1974). Anchoring offers several advantages for our purposes. It illustrates how context affects judgment, can be integrated seamlessly and unobtrusively into our survey, and produces a clear directional prediction: if context matters, a higher anchor should lead to a higher reported belief.

**Data and Design** 2,953 UK households, recruited via Prolific in September 2025, report their expectations about the return of the UK stock market over the next twelve months and indicate whether they had an expectation already prior to the survey. We focus on return expectations for the sake of concreteness and simplicity, and because they have been the subject of a large literature (Adam and Nagel, 2023). We integrate the anchoring manipulation in a short primer on stock returns. Households are randomly assigned to one of two conditions that differ only in an illustrative return example: either a 2% return (low anchor) or a 20% return (high anchor):

The **return of the UK stock market** is the change in value, in percent, that you receive over a given period from investing in a portfolio that holds all stocks listed on the UK stock market. It includes both dividends and capital gains/losses. A positive return means that the value increases; a negative return means that the value decreases.

**For example, a return of [2%/20%]** means that £1,000 invested today will yield £[1,020/1,200] in twelve months.

Figure 5: **More sensitive to anchoring without previously-formed expectations**



Notes: Results from the main *Anchoring Experiment*. The pooled analysis on the left shows the mean difference in return expectations between the high-anchor and the low-anchor condition. On the right side, we report separate treatment effects for households with previously-formed expectations (red) and those without (yellow). Return expectations are winsorized at the 5% and 95% percentiles, as preregistered. Gray bars indicate 95% confidence intervals. \*\*\* denotes a  $p$ -value below 1%.

**What do you expect the return of the UK stock market to be over the next 12 months?**

*Please provide your response as percentage (for example, “[2%/20%]” as in the example above).*

**Results** The anchor strongly shifts reported return expectations. Figure 5 plots the treatment effect of being assigned to the high anchor instead of the low anchor condition. On average, participants in the high-anchor condition report return expectations that are 4.1 pp higher ( $p < 0.001$ ) — a 74% increase relative to a mean of 5.5% in the low-anchor condition. The average effect reflects a pronounced rightward shift of the distribution (Appendix Table A.7): in the high-anchor condition, households are 10 pp less likely to report expectations below 3%, 36 pp less likely to report expectations below 5%, and 31 pp less likely to report expectations below 10%.

These effects are concentrated among households who report not having previously-formed return expectations. In this group, the anchoring effect is 2.3 pp larger — nearly twice as large as among those with pre-existing expectations (Figure 5,  $p < 0.001$ ). This gap is visible throughout the distribution (Appendix Table A.7): for example, the high anchor makes households without previously-formed expectations 13 pp less likely to report expectations below 3% (versus 5 pp with previously-formed expectations,  $p < 0.001$ ), and 39 pp less likely to report expectations below 10% (versus 19 pp,  $p < 0.001$ ).

**Extensions** We replicate these findings in two additional experiments. First, we conduct an analogous anchoring experiment on inflation expectations in the US. While the average effect is sensitive to how we handle outliers, the distributional patterns are similar to those in the main

experiment (see Appendix Table A.8).

Second, we run an experiment in which each UK respondent reports expectations for future stock returns, recession risk, credit card APRs, and current wealth inequality. The high- and low-anchor conditions are randomized across questions within respondents, which allows us to include individual fixed effects. These fixed effects control for differences in cognitive skills, knowledge, or other individual characteristics that could be correlated with holding an expectation. The main result remains essentially unchanged: respondents without previously-formed expectations exhibit a substantially stronger anchoring effect (Appendix Table A.9). This design also addresses two additional potential concerns. First, we collect respondents' subjective confidence in their expectations and show that differences in confidence cannot statistically account for the results (Column 4), suggesting that the effect does not exclusively operate through uncertainty. Second, we take additional steps to ensure that respondents understand the anchor to be irrelevant. We explicitly inform the respondents that the anchor is randomly selected, included to illustrate the response format, and neither a relevant forecast nor an expert estimate.

In short, households who report not holding previously-formed expectations are more susceptible to anchoring. In their case, what comes to mind is less stable and more responsive to irrelevant contextual cues.

## 4.2 Response to Information and Updating Decay

Beyond the influence of contextual cues, a crucial factor in belief formation is how individuals respond to new information that is objectively relevant, such as expert forecasts or news about the economy. We therefore turn to a conventional information experiment, a design widely used to study belief updating and learning (Fuster and Zafar, 2023; Haaland et al., 2023).

In light of our earlier findings, it seems likely that individuals who form their expectations from scratch are particularly responsive to new information. They must work with whatever information is available to them at that particular moment, and any new information plausibly receives a high weight. In addition, we focus on the *persistence* of the updating effects. We investigate whether individuals without previously-formed expectations are less likely to retain their estimate in memory. Intuitively, they form their expectation ad hoc but might not “keep track” of it. While they respond to information in the moment, this response could be short-lived.

**Data and Design** In a standard information experiment, we study inflation expectations among 3,056 US households, recruited via Prolific in August 2025. As before, we focus on a specific expectation — here, inflation expectations — for simplicity and concreteness and because a large literature has studied inflation expectations in information experiments (Armantier et al., 2016; Cavallo et al., 2017; Coibion et al., 2023, 2022).

The experiment proceeds in four steps. First, we elicit participants' prior inflation expect-

tations, along with our measure of whether they had such an expectation when entering the survey. Second, a randomly selected half of participants receive information that, on average, professional forecasters from the Survey of Professional Forecasters expect inflation over the next 12 months to be 2.7%. The control group receives no information. Third, we elicit participants’ posterior inflation expectations immediately after the information intervention, as is standard in the literature. Finally, we re-elicite posterior inflation expectations in an obfuscated follow-up survey two to three days later.

**Results** We regress posterior inflation expectations on a dummy for the information treatment and estimate separate treatment effects on immediate posteriors versus posteriors elicited 2–3 days later. We control for prior beliefs. Figure 6 presents the estimated treatment effects.<sup>4</sup>

Averaged across all households, the information treatment strongly reduces inflation expectations by 3.1 pp ( $p < 0.001$ ), nearly halving the control group mean of 7.3%, which exhibits the typical upward “bias” in households’ inflation expectations. The effect decays over time: it is 1.1 pp weaker 2–3 days later ( $p < 0.001$ ) — a known pattern in information experiments (Cavallo et al., 2017; Haaland et al., 2023).

When we estimate separate effects for households with versus without previously-formed inflation expectations, two patterns emerge. First, the initial updating effect is stronger among those without previously-formed expectation: they revise their beliefs by 0.8 pp more than those who enter the survey with an expectation ( $p = 0.015$ ). Second, the treatment effect on beliefs decays more sharply over time among those without a pre-existing expectation: for these participants, the treatment effect shrinks by 1.7 pp over 2–3 days, compared to a 0.8 pp decline among households who hold expectations. This difference is statistically significant ( $p = 0.014$ ). In other words, individuals who report not holding expectations prior to the survey are more likely to lose track of their estimates. They react strongly to new information in the moment, but these reactions fade quickly.

**Result 2.** Individuals without previously-formed expectations report expectations that are more context-dependent and update more strongly but less persistently in response to new information.

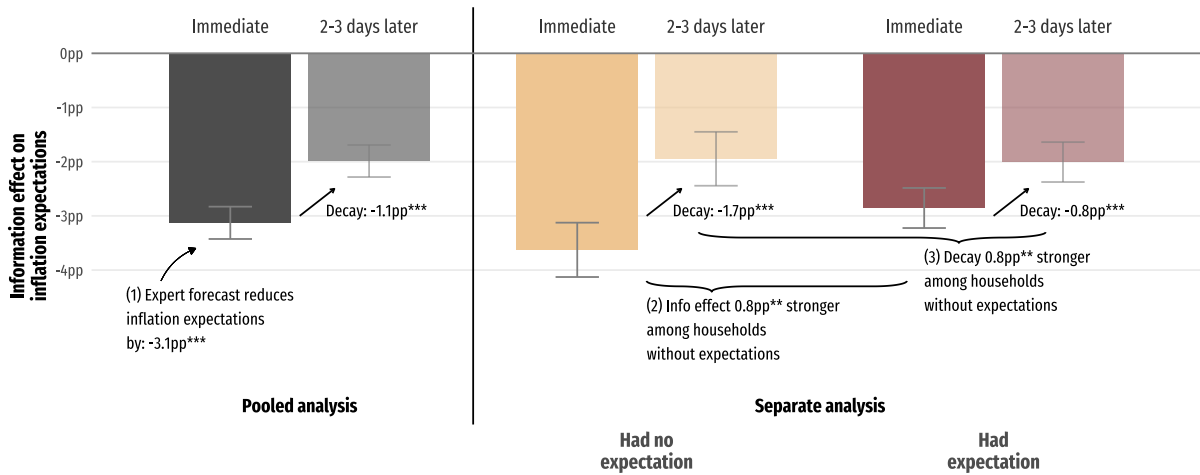
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<sup>4</sup>Specifically, we derive these treatment effects by pooling main and follow-up sample and running a regression of posterior inflation expectations  $\mathbb{E}\hat{\pi}_{i,t}^{\text{post.}}$  on fully interacted dummies for the information treatment ( $\text{Info}_i$ ), the follow-up ( $\text{Follow-up}_t$ ), and reporting previously-formed expectations ( $\text{Prev.-Formed}_i$ ), controlling for prior beliefs:

$$\begin{aligned} \mathbb{E}\hat{\pi}_{i,t}^{\text{post.}} = & \alpha_1 + \beta_1 \text{Info}_i + \gamma_1 \text{Follow-up}_t + \delta_1 \text{Info}_i \times \text{Follow-up}_t \\ & + \text{Prev.-Formed}_i \times (\alpha_2 + \beta_2 \text{Info}_i + \gamma_2 \text{Follow-up}_t + \delta_2 \text{Info}_i \times \text{Follow-up}_t) + \zeta \mathbb{E}\hat{\pi}_i^{\text{prior}} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

For example,  $\beta_1$  is the immediate treatment effect for households without previously-formed inflation expectations,  $\beta_1 + \delta_1$  is the treatment effect for the same households in the follow-up 2–3 days later,  $\beta_1 + \beta_2$  is the immediate treatment effect for households with previously-formed expectations, and so on ... To study treatment effects averaged across *all* households, we estimate an analogous regression without the interactions with  $\text{Prev.-Formed}_i$ . We cluster standard errors on the participant level  $i$ . To handle extreme outliers, we winsorize expectations at the 5% and 95% percentile of the prior belief distribution (pre-registered).

Figure 6: **Updating stronger but decays faster without previously-formed expectations**



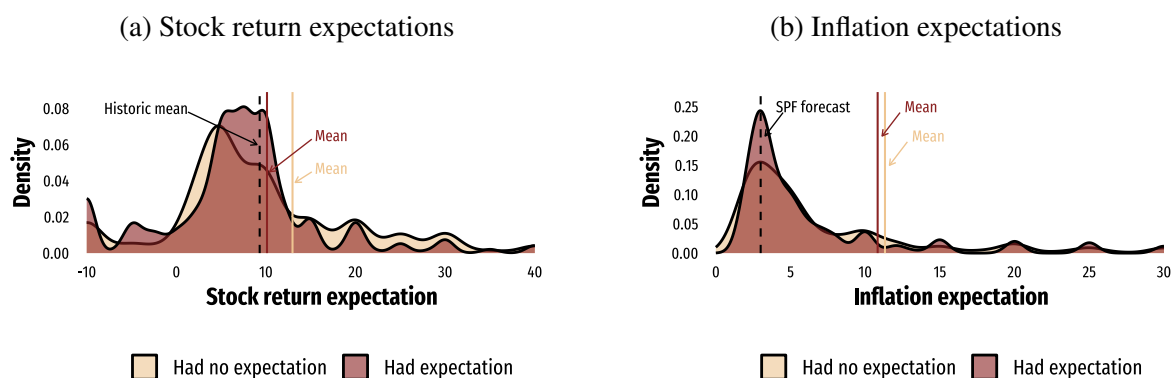
Notes: Results from the *Information Experiment*. The figure reports treatment effect estimates of receiving expert forecasts of future inflation on inflation expectations estimated from equation (1) (see footnote 4). The pooled analysis on the left shows results for the full sample. On the right side, we report separate treatment effects for households with previously-formed expectations (red) and those without (yellow). Inflation expectations are winsorized at the 5% and 95% percentiles of the prior belief distribution, as preregistered. Gray bars indicate 95% confidence intervals. \*\* denotes a  $p$ -value below 5%, \*\*\* denotes a  $p$ -value below 1%.

### 4.3 Properties of Reported Expectations

So far, we have examined how expectations respond to external inputs — contextual cues and economic information. Such responses are central to understanding expectation formation. However, in many situations, economists and policymakers may not only be concerned with the process of expectation formation but also with its outcome. We therefore return to the expectation data collected in our descriptive surveys in Section 3 and ask whether and how reported expectations differ between individuals who report holding expectations prior to the survey and those who do not. In particular, we explore differences in the deviation of reported expectations from benchmarks, their cross-sectional dispersion, and uncertainty.

While theory offers some guidance, these relationships could go in either direction. For example, in models with rational expectations but limited information (Maćkowiak et al., 2023), investing more effort in acquiring and processing information results in more accurate forecasts. Accordingly, individuals with previously-formed expectations — indicating greater attention to an issue in the past — may report forecasts that are closer to benchmarks. By contrast, if previously-formed expectations are shaped by systematic biases, they may provide misleading guidance and could in principle be less well-calibrated than expectations formed from scratch. The theoretical relationship between expectation dispersion and the amount of information acquisition and processing is also ambiguous, even in canonical models with rational expectations (Maćkowiak et al., 2023). Finally, while standard models predict that more information acquisition and processing reduces uncertainty, it is conceivable that, when forming an expectation in the past, individuals learned that external uncertainty is high, which makes them less certain about their forecasts today.

Figure 7: **Distribution of stock return and inflation expectations**



Notes: Results from the US household survey. The figure reports the distribution of stock return expectations (a) and inflation expectations (b), separately for households with (red) and without (yellow) previously-formed expectations.

Throughout our analysis, we focus on expectations about aggregate outcomes. This allows for a clear interpretation of expectation dispersion, as — unlike in the case of expectations about personal outcomes — all respondents report expectations about the same underlying object. In addition, we restrict our attention to expectations for which benchmarks are available. This leaves us with expectations about 14 outcomes.

**Overall differences** Using Kolmogorov–Smirnov tests to compare expectation distributions between individuals with and without previously-formed expectations, we find highly significant differences on average ( $p < 0.001$ ) and in 13 of the 14 cases (Appendix Table A.11, Column 1,  $p < 0.01$ ). Figure 7 provides two concrete examples and illustrates these distributional differences for stock return and inflation expectations. While stock return expectations differ significantly across the two groups, reported inflation expectations do not — the only exception among the 14 cases we study.

**Deviation from benchmarks** Do individuals who had an expectation before the survey report more “reasonable” expectations? To explore this, we compare expectations to plausible *ex ante* benchmarks. For example, we use mean projections from the Survey of Professional Forecasters (SPF) for inflation, unemployment, and GDP growth; the FOMC’s mean federal funds rate projection from its Summary of Economic Projections; and the historical long-run average annual return of the US stock market (see Appendix C.3 for details). For each expectation, we compute the absolute deviation from the benchmark.

On average, expectations deviate 8% of a standard deviation more strongly from benchmarks when participants have to form expectations from scratch (Appendix Table A.11, Column 10,  $p < 0.001$ ). Again, there is heterogeneity across the 14 variables. In eight cases, expectations among those with a prior expectation are significantly closer to benchmarks — especially for the federal funds rate and stock market returns. In three cases, there are no meaningful differences. In the remaining three — in particular, disaster risk (recession or stock market crash), central to portfolio choice and asset pricing (*e.g.*, Bansal and Yaron, 2004) — individuals

with previously-formed expectations deviate significantly *more* and report more pessimistic expectations.

**Dispersion** We next examine the cross-sectional dispersion of expectations, which can affect outcomes such as the transmission of macroeconomic shocks and policies (Angeletos and Lian, 2018; Ball et al., 2005) and trading volume in financial markets (Adam and Nagel, 2023). We focus on the interquartile range, though results are similar using standard deviations or interdecile ranges. Dispersion is, on average, 13.7% higher among respondents who report having no expectation before the survey (Appendix Table A.11, Columns 16,  $p < 0.01$ ). This average masks heterogeneity across the 14 variables: dispersion is higher in seven cases (notably for the federal funds rate, stock returns, and inequality), similar in six, and lower in one (recession).

**Uncertainty** Individuals who have to form their expectations from scratch need to rely on whatever information is available in the moment, which — as we have seen — makes their expectations more fragile and context-dependent. If individuals are aware that their expectations are less “grounded”, they should also express lower confidence in these expectations. To measure subjective certainty, we ask respondents to report the perceived probability that the outcome will fall within a specific moderately sized interval around their point forecast. We find that respondents with previously-formed expectations are significantly more certain in all 14 cases (all  $p < 0.01$ ). In many cases, they assign 30–40% more probability mass to the event that the actual outcome is close to their point forecast.

**Conclusion** Overall, having a previously-formed expectation is associated with significant differences in reported expectations — often lower cross-sectional dispersion and closer alignment with benchmarks. It is also strongly associated with higher confidence.

In Appendix C.4, we complement these descriptive patterns with causal evidence from *Validation Study 2*, which creates exogenous variation in whether respondents hold an expectation before the survey. This study qualitatively confirms our key takeaways.

## 4.4 Reasoning Behind Expectation Formation

In a final step, we ask whether and how the reasoning underlying expectations differs when respondents have to form expectations from scratch. We explore this question for the case of inflation expectations. We work with AI-conducted qualitative interviews, which allow iterative probing of respondents’ thinking and thus provide rich insights into their reasoning (Chopra and Haaland, 2025).

**Data and Design** In a survey of 502 US households recruited via Prolific in January 2026, we first elicit respondents’ expectations about the rate of inflation over the next 12 months, together with our standard measure of whether respondents already had an expectation prior to the survey. Afterward, the short AI-based interview begins. The first question is identical for everyone:

*“Please let me know how you came up with your prediction of future inflation. What was the main consideration underlying your prediction?”* Subsequent questions are generated dynamically by the chatbot based on respondents’ previous answers. Importantly, the AI interviewer is instructed not to ask leading questions or introduce factors that respondents have not raised themselves. Instead, it probes more deeply into the topics mentioned by respondents and asks clarification questions when needed. The interview consists of eight questions and takes about eight minutes on average. We develop a coding scheme to categorize participants’ responses. Details on the interview procedure and the coding scheme are provided in Appendix Section C.5.

**Results** Respondents without previously-formed expectations more often reveal simple reasoning approaches, reflected in five patterns.

First, individuals who had an expectation before the survey mention 0.55 considerations more, relative to 3.99 considerations when expectations are formed from scratch ( $p = 0.005$ ). Appendix Figure A.4 presents the share of respondents mentioning different considerations in the AI interview.

Second, households with previously-formed expectations are more likely to cite macroeconomic factors. For example, they are 9 pp more likely to refer to trade issues, mostly reflecting the tariffs imposed by President Trump at the time of our survey ( $p < 0.001$ ), and 8 pp and 14 pp more likely to refer to fiscal policy ( $p < 0.001$ ) or monetary policy ( $p < 0.001$ ), respectively.

Third, households with prior expectations are 14 pp more likely to talk about recent inflation rates and 10 pp more likely to refer to information from the news media.

Fourth, respondents who have to form expectations from scratch are more likely to rely on personal experiences. In particular, they are 11 pp more likely to mention their recent shopping experiences ( $p < 0.001$ ). This suggests that the well-known tendency to extrapolate from experienced grocery price changes to future aggregate inflation (D’Acunto et al., 2021) is particularly pronounced when households form expectations on the spot, potentially because such experiences are the first thing that comes to mind.

Fifth, respondents who form their expectations from scratch are also 23 pp more likely to report that their expectation was based on a simple guess or gut feeling ( $p < 0.001$ ) and 19 pp more likely to express uncertainty about their expectation ( $p < 0.001$ ).

**Result 3.** Households who have to form expectations from scratch often report expectations that are more dispersed, less aligned with benchmarks, and accompanied by greater uncertainty. They also rely on simpler approaches when forming these expectations, such as extrapolation from personal experiences or guesses.

## 5 Decision-Making

Our previous evidence illustrates that holding an expectation can matter for expectation formation. We now turn to its link to decision-making. A large literature documents that expectations can shape behavior (*e.g.*, Augenblick et al., 2024; Bottan and Perez-Truglia, 2025; Chopra et al., 2025; Coibion et al., 2022; Jensen, 2010; Laudenbach et al., 2024). This finding is well-established, allowing us to turn to a more foundational question: does the mapping from expectations to behavior differ between households who hold previously-formed expectations and those who do not? There are at least two reasons to suspect it might. First, households without previously-formed expectations must form expectations from scratch. They report higher uncertainty and recognize the unreliability of their expectations, potentially attenuating their behavioral responses (Enke and Graeber, 2023; Woodford, 2020).<sup>5</sup> Second, households may lack expectations for a reason: they might rely on alternative, heuristic decision rules that bypass expectations altogether.

In this section, we examine how well expectations predict behavior among households with and without previously-formed expectations, and explore differences in the use of heuristics. For concreteness, we focus on stock investment decisions, a domain that has received substantial attention and that lends itself to analysis in a controlled experimental environment.

### 5.1 Decision Relevance of Expectations

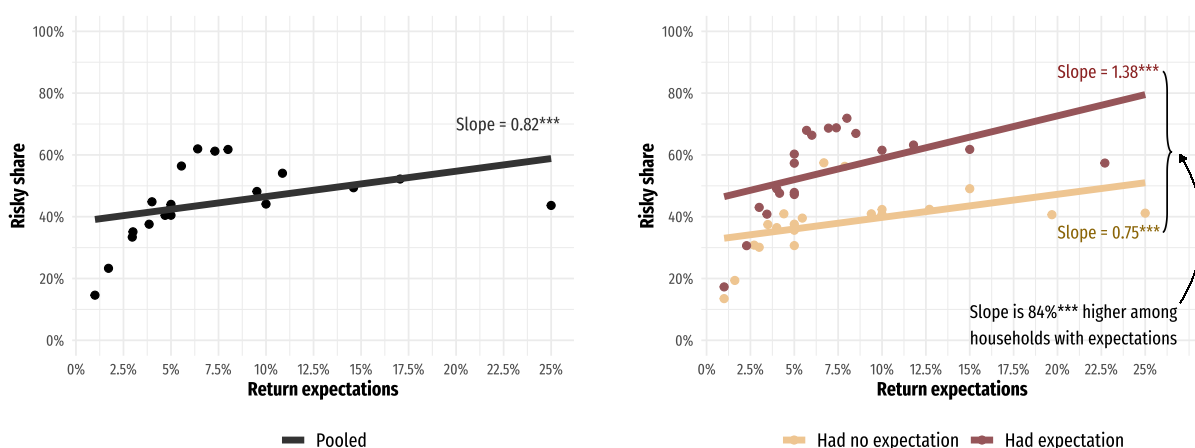
Empirical work often finds a weak quantitative relationship between expectations and behavior in settings where economic theory predicts a strong elasticity to expectations (Ameriks et al., 2020; Andries et al., 2025; Charles et al., 2024; Giglio et al., 2021; Laudenbach et al., 2024; Liu and Palmer, 2026; Yang, 2025). For example, a back-of-the-envelope calculation using the Merton (1969) model suggests that the risky portfolio share should rise by 4–6 percentage points for each percentage point increase in expected returns (Giglio et al., 2021). By contrast, Giglio et al. (2021) estimate an empirical relationship of approximately 0.7 — close to what we find in our own data below. Against this backdrop, we ask whether reported expectations translate less into behavior among households who did not previously have an expectation.

**Data and Design** We use data from the *Anchoring Experiment* with 2,953 UK households, described in Section 4.1. After reporting their return expectations for the UK stock market, households face a hypothetical portfolio choice problem. They decide how they would allocate £10,000 of savings over the next 12 months between a stock index fund tracking the UK market and a savings bond paying a guaranteed 3% annual return. This method is a common approach

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<sup>5</sup>Attenuation may arise from noisy cognition of the belief itself (Enke and Graeber, 2023) or from noisy cognition of how beliefs should be mapped into behavior (Yang, 2025). Even standard models often predict attenuation when uncertainty reduces the relevance of the first moment — for example, when higher uncertainty about returns diminishes their impact on behavior because a given return differential translates into a smaller difference in risk-adjusted returns. Our aim is not to disentangle these closely related mechanisms. Rather, we simply aim to document the descriptive pattern in the data.

Figure 8: Weaker belief-behavior relationship without previously-formed expectations



Notes: The binned-scatter plots show the relationship between respondents' risky share (out of a £10,000 investment) and their return expectations. The lines represent individual-level regressions of the risky share on return expectations. The pooled analysis on the left shows results for the full sample. On the right side, we report separate analyses for households with previously-formed expectations (red) and those without (yellow). The data are from the *Anchoring Experiment*. Return expectations are winsorized at the 5% and 95% percentiles, as preregistered. \*\*\* denotes a  $p$ -value below 1%.

to study investment behavior in a controlled setting (*e.g.*, Armona et al., 2019; Beutel and Weber, 2025; Cohn et al., 2015). We select £10,000 because it is a realistic and meaningful savings amount, even though this amount prevents us from incentivizing the choice.<sup>6</sup>

**Results** Figure 8 shows that, averaged across all households, a 1 pp increase in reported return expectations is associated with a 0.82 pp increase in the share invested in stocks. As noted above, this relationship is much smaller than predicted by standard models.

Splitting the sample by whether respondents report holding expectations before the survey reveals systematic heterogeneity. The belief-behavior elasticity is substantially lower for households who did not have an expectation (0.75) than for those who do (1.38) ( $p = 0.008$ ). In general, the elasticity is higher for return beliefs below 10%, as is evident in Figure 8. But even in this range, we observe a pronounced gap between the two groups: among households with return beliefs below 10 percent, the elasticity is 2.75 for those without previously-formed expectations and 5.39 for those with previously-formed expectations ( $p < 0.001$ ). In short, households who report not holding expectations make investment decisions that are less sensitive to their stated return beliefs.<sup>7</sup>

We can also examine how households respond to the exogenously induced change in beliefs generated by the anchor (see Section 4.1). Here, we find the *opposite* pattern. Households without previously-formed expectations invest 6.0 pp more in the stock index fund ( $p < 0.001$ ) in the high anchor than in the low anchor condition, consistent with a 4.9-pp difference in return expectations across these conditions. By contrast, the investment behavior of households

<sup>6</sup>Studies typically find at most weak differences in the answers to incentivized and non-incentivized questions (Stantcheva, 2023); *e.g.*, Hackethal et al. (2023) find no effect of incentives on behavior in an investment task.

<sup>7</sup>This pattern remains similar if we control for whether a respondent is part of the high- or low-anchor condition.

with previously-formed expectations is similar across conditions (1.0 pp,  $p = 0.602$ , difference:  $p = 0.035$ ), despite 2.6-pp-higher return expectations when exposed to the high anchor. This adds an important nuance: while households not holding previously-formed expectations display a weaker relationship between stated return beliefs and investment decisions in general, they remain susceptible to contextual influences that shift both beliefs and behavior.

## 5.2 Heuristic Decision-Making

In contrast to standard economic models, households who report not holding expectations may rely on decision rules that place no weight on expectations at all. Without previously-formed expectations, it may be easier to rely on such rules than forming expectations and using them in decisions. Conversely, some households may not have formed expectations before the survey precisely because they follow decision rules that require no expectations. Economic research has suggested many plausible alternative decision rules, such as simple heuristics, habits, reinforcement learning, or the imitation of peers (*e.g.*, Andre et al., 2025; Barberis and Jin, 2023; Gigerenzer and Selten, 2002; Kahneman, 2003; Webb et al., 2025).

We start investigating this possibility in a controlled experiment. We focus on the *default effect*: the tendency to stick with a pre-selected option rather than actively choosing an alternative. Defaults have been widely analyzed in the literature, are highly relevant in investment choices, and thus provide a natural setting for a proof-of-principle experiment (Chetty et al., 2014; Choi et al., 2004; Choukhmane, 2025; Madrian and Shea, 2001; Samuelson and Zeckhauser, 1988). Are households who report not having a previously-formed expectation more prone to default effects?

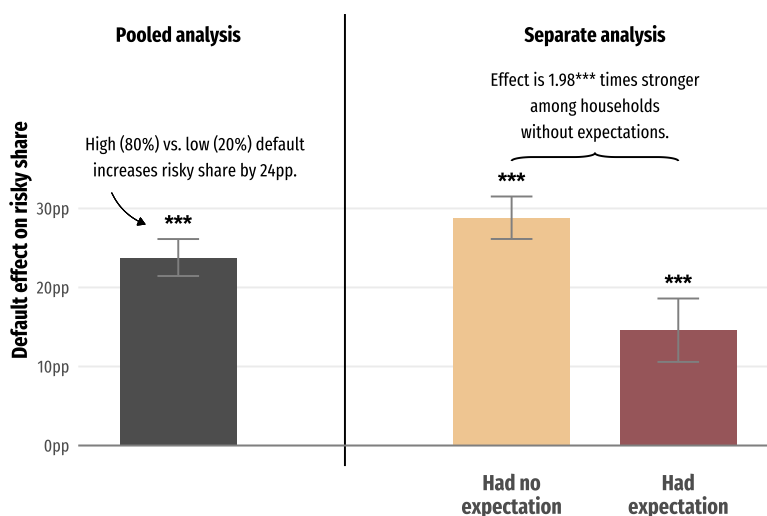
**Data and Design** 2,063 UK households, recruited via Prolific in October 2025, report their return expectations for the UK stock market over the next 12 months and indicate whether they held an expectation already prior to the survey. Afterward, they make an investment decision: they allocate £100 in savings over the next twelve months between a stock index fund tracking the UK market and a savings bond paying a guaranteed 3% annual return. This time, we choose an amount of £100 so that we can incentivize decisions (at the cost of making the choice more stylized). Participants know that ten randomly selected participants will receive the realized value of their portfolio 12 months later.

Households are randomly assigned to one of two conditions that differ only in the default allocation: either a 20% stock investment share (low default) or an 80% stock investment share (high default). Households can choose to deviate from the default and set their own allocation, in which case they have to specify the precise portfolio shares. The low default is introduced as follows, and instructions for the high-default condition are analogous:

**Default allocation (if you make no changes):**

- You invest £20 in the UK stock index fund

Figure 9: **Stronger default effect without previously-formed expectations**



Notes: Results from the *Default Experiment*. The pooled analysis on the left shows the mean difference in the risky share (out of a £100 investment) between the high-default and the low-default condition. On the right side, we report separate treatment effects for households with previously-formed expectations (red) and those without (yellow). Gray bars indicate 95% confidence intervals. \*\*\* denotes a  $p$ -value below 1%.

- You invest £80 in the savings bond

**What would you like to do?**

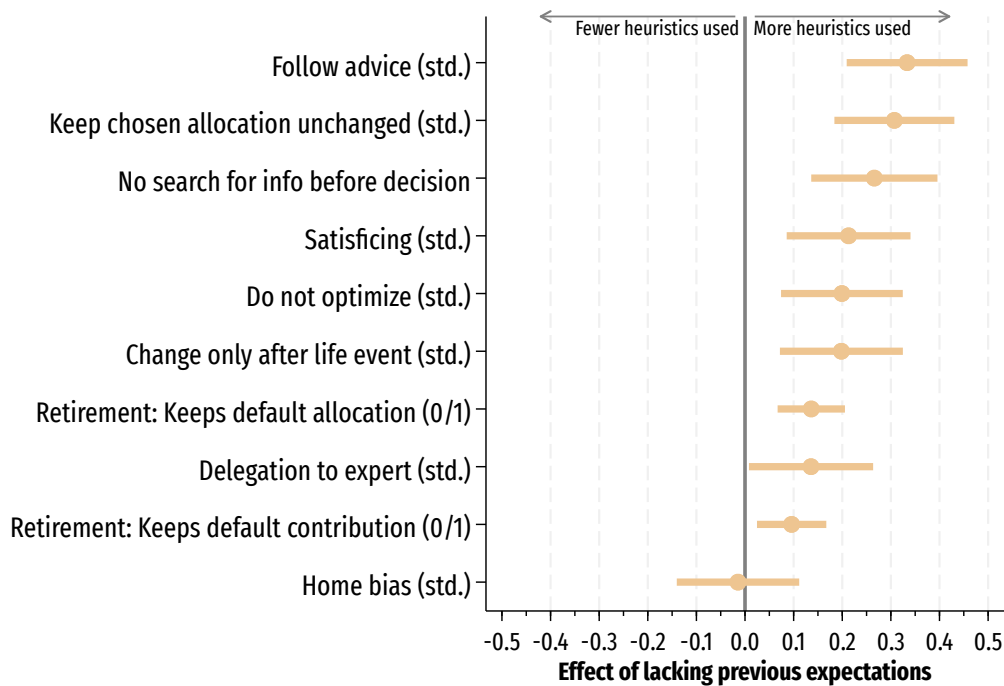
- Keep the default allocation: Invest £20 in stock index fund and £80 in savings bond
- Set my own allocation

**Results** Figure 9 presents the average default effect by comparing investment choices in the high-default and low-default conditions. Across all households, the stock investment share is 24 pp higher ( $p < 0.001$ ) under the high default — a sizable effect.

This effect is concentrated among households who report not having previous expectations: their stock investment share increases by 29 pp ( $p < 0.001$ ) in the high-default condition. Households who report having previous expectations also respond to the default, but their response is only about half as large (15 pp,  $p < 0.001$ ; difference:  $p < 0.001$ ). This “default-effect gap” is driven by households’ differential tendency to adopt the default: 43% of households without previously-formed expectations do so, compared with only 26% of households holding previously-formed expectations (difference:  $p < 0.001$ ).

Three additional observations shed further light on the nature of the default-effect gap. First, the experiment includes an unrelated dictator game with an analogous default manipulation (low default: keep all; high default: share half). Whether households hold return expectations has no effect on default behavior in this domain (Appendix Table A.13). This indicates that the main result does not reflect a general propensity to follow defaults, but rather a domain-specific reliance on heuristic decision rules. Second, we also elicit households’ subjective uncertainty about future returns. The gap in default effects between households holding and not holding

Figure 10: **Stronger reliance on heuristics without previously-formed expectations**



Notes: Results from the *Investment Behavior* survey. We plot differences in the use of heuristic approaches and rules of thumb between households without previously-formed return expectations and those with such expectations. For measures of heuristic and rule-of-thumb use elicited on a 5-point categorical response scale, we standardize responses to mean zero and standard deviation one; labels marked “std.” indicate these cases.

expectations remains similar in magnitude when we control for belief uncertainty (see Appendix Table A.13), suggesting that the effect of not having a previously-formed expectation does not exclusively operate through higher uncertainty. Finally, we observe that, even among households who do *not* adopt the default, those who report not holding expectations are almost twice as likely to choose a 50–50 allocation — a choice with a clear heuristic character (Benartzi and Thaler, 2001).

**External relevance** We complement these experimental findings with evidence on households’ real-world investment behavior. We survey 965 US households who hold financial investments (inside or outside retirement accounts), recruited via Prolific in March 2026. Participants answer various questions on their investment behavior. Subsequently, we elicit their expectations about the aggregate US stock returns and whether they had such an expectation prior to the survey.

Figure 10 corroborates our experimental findings. Individuals without stock market expectations are more likely to report that they had left the default allocations and contribution rates in their retirement accounts unchanged when they first enrolled (14 pp and 10 pp, both  $p < 0.001$ ). They also report a stronger tendency to stick to their investment allocations once chosen (0.31 standard deviations (sd) on a “Strongly disagree” to “Strongly agree” scale,  $p < 0.001$ ). Likewise, they are more likely to follow a “satisficing” approach, whereby they stop searching for alternatives once a first solution is found (0.20 sd,  $p = 0.001$ ), and to adjust only after major life

events (0.20 sd,  $p = 0.002$ ).

Moreover, individuals without expectations are more likely to rely on advice from others (0.33 sd,  $p < 0.001$ ) and to delegate their investment decisions to an expert (0.14 sd,  $p = 0.037$ ). By contrast, they are less likely to optimize their investments (0.20 sd,  $p = 0.002$ ) and to collect data on the risk and return of different options before making investment decisions (0.27 sd,  $p < 0.001$ ). We find no differences in the extent of home bias in stock investments ( $p = 0.822$ ).

Taken together, these patterns point to stronger default effects and inertia, more reliance on advice and imitation of peers, and less optimizing behavior among individuals without expectations. These differences are qualitatively robust to controlling for background characteristics, including financial literacy and respondents' uncertainty about future stock market returns (Appendix Figure A.5). We summarize our final main result as follows.

**Result 4.** Individuals without previously-formed expectations express expectations that are less decision-relevant and rely more strongly on heuristic approaches that do not require expectations when making decisions.

## 6 Concluding Discussion

Our paper makes three central contributions. First, we develop and validate a simple, easy-to-use measure of whether individuals have previously-formed expectations. Second, we show that many — but crucially *far from all* — households hold previously-formed expectations. Not holding an expectation is also common among individuals who are close to making decisions for which economic theory assumes expectations are relevant. Third, we show that not holding previously-formed expectations matters: for example, individuals who report not holding one are more likely to (i) express expectations that are context-dependent, (ii) update expectations more strongly but less persistently in response to new information, (iii) report expectations that are less relevant to decisions, and (iv) rely on heuristics that do not require expectations.

Given the central role that expectations play in economic models and the volume of empirical work devoted to studying them, we conclude with a few more speculative reflections on the potential takeaways from our findings.

First, in empirical work, researchers need to take into account that many respondents may be considering an expectation question for the first time. These respondents are especially susceptible to framing effects and differences in survey design. For example, in information experiments, they amplify initial treatment effects on expectations and help explain the puzzling limited pass-through to downstream outcomes: their expectations decay more quickly and translate less readily into behavior. Fortunately, our measure is simple to incorporate into any survey or experiment and helps identify households who have to form expectations from scratch.

Second, whether individuals hold expectations is likely a critical component of economic

literacy. For example, individuals who lack inflation expectations may struggle to factor them into decisions such as retirement savings or wage negotiations. Likewise, given that many households do not participate in the stock market, individuals without stock return expectations remain unaware of the opportunity costs of not investing.

Third, the presence or absence of expectations could have aggregate repercussions. On the one hand, individuals without expectations will often appear inactive: for example, they may underreact to changes in the inflation outlook simply because they do not form expectations about inflation. On the other hand, their outlooks are less “anchored” and more responsive to unusually salient events, a potential source of overreaction in beliefs. Relatedly, policies like forward guidance that aim to work through the belief channel will be more effective if they not only provide information but also ensure that people form and retain expectations in the first place.

Finally, our findings raise several promising questions for future work. The “extensive margin” of belief formation — the extent to which households form and retain expectations at all — deserves further study. We contribute novel empirical data, but future research could explore which theoretical frameworks best capture this new phenomenon. Moreover, because many households do not form expectations but must still make key economic decisions — such as how much to consume, invest, or work — it is essential to explore models of decision-making that do not rely on expectations.

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## **Do People Have Economic Expectations?**

Peter Andre      Felix Chopra      Luca Michels      Johannes Wohlfart

### **Summary of the online appendix**

Section A contains additional figures.

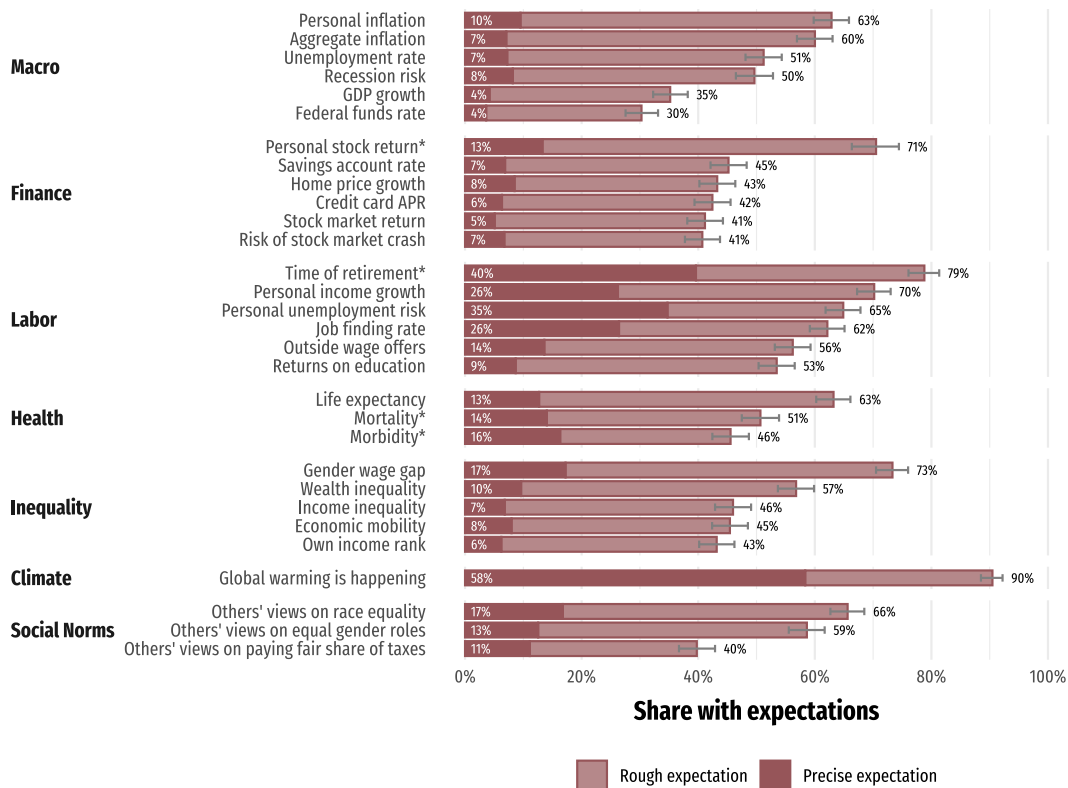
Section B contains additional tables.

Section C contains information on research transparency, additional details, empirical analyses, and results.

Section D contains the core experimental instructions.

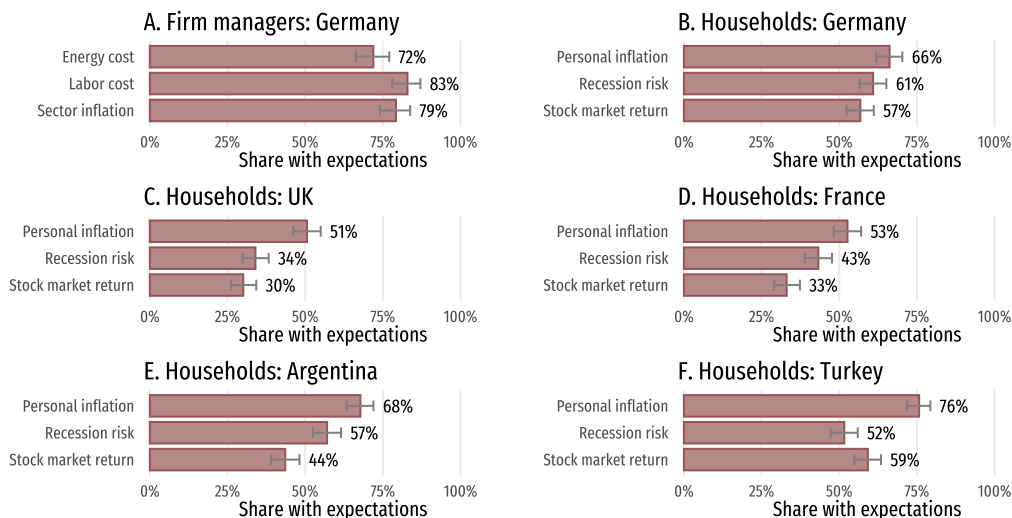
# A Additional Figures

Figure A.1: US household survey: Share of precise previously-formed expectations



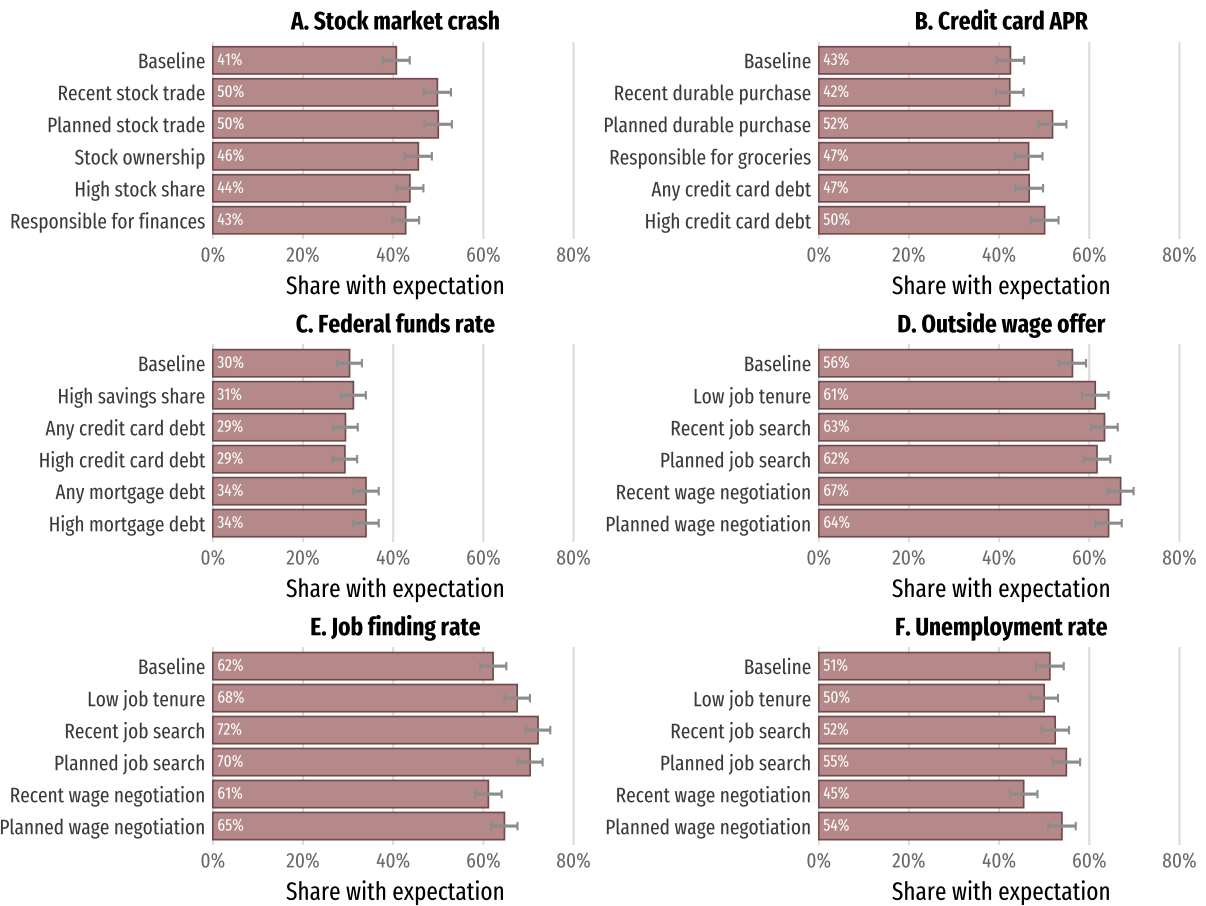
Notes: This figure shows the shares of households who report having a rough or precise previously-formed expectations about various variables. Gray bars indicate conservative Clopper-Pearson 95% confidence intervals.  
 \*Personal stock return: Asked if stock owner. Time of retirement, Mortality, Morbidity: Asked if age below 65.

Figure A.2: International households and firm managers: Additional evidence



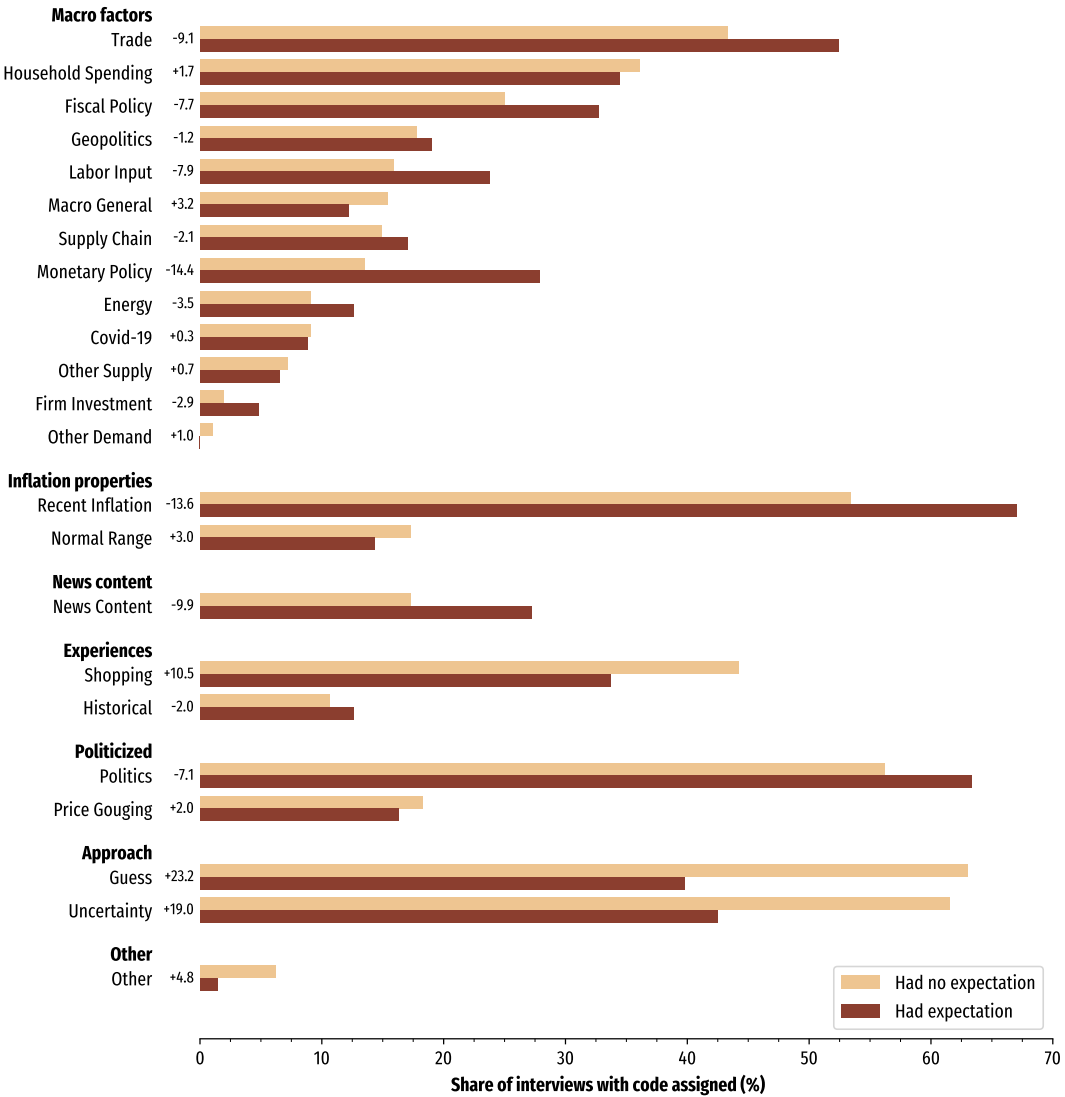
Notes: This figure shows the share of households or firm managers that report having previously-formed expectations about the variable indicated in the respective row. Panel A presents evidence from firm managers, while Panels B-F present evidence from households in different countries.

Figure A.3: Decision proximity: Additional evidence



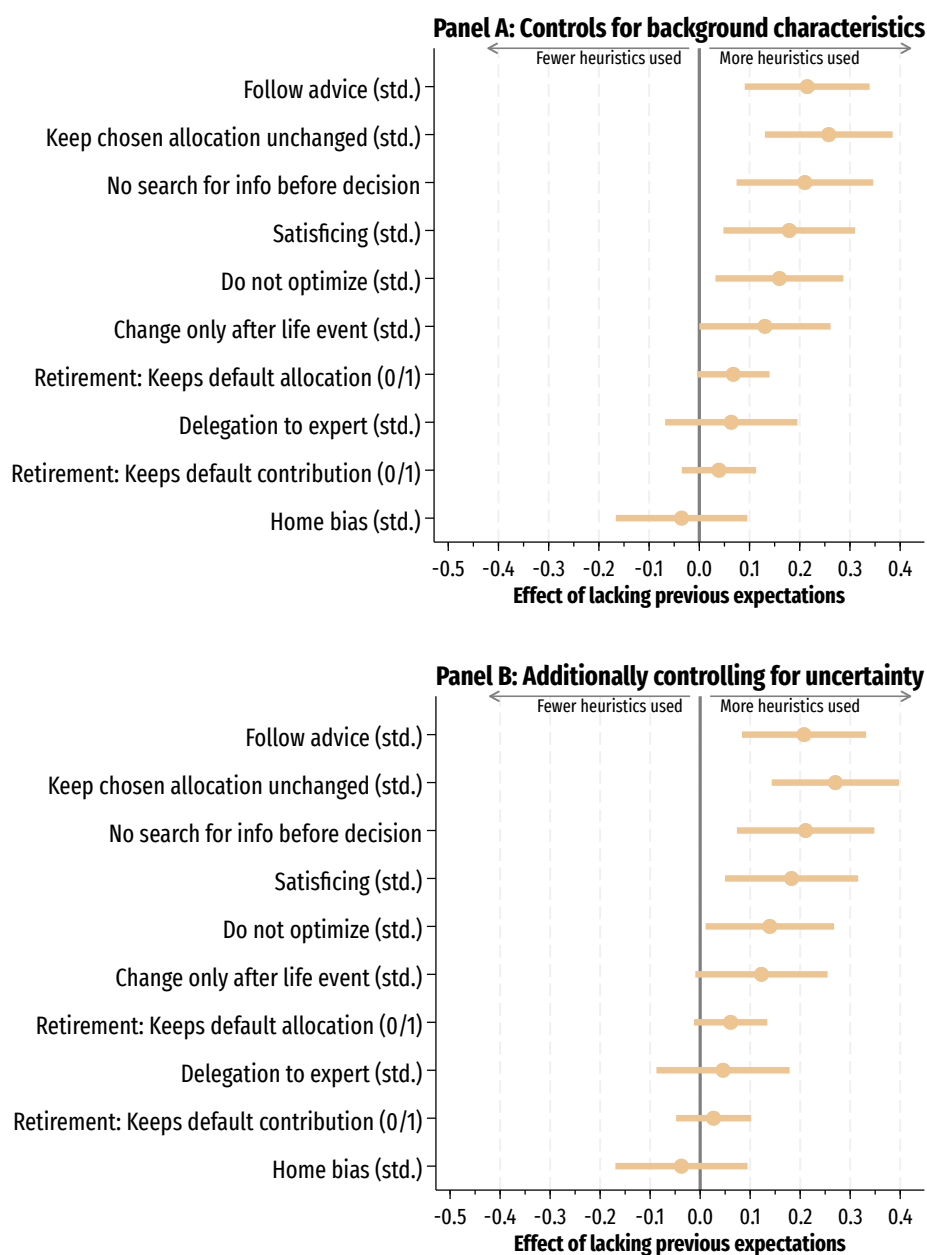
Notes: This figure shows the share of US households who report having previously-formed expectations about the variable indicated in the panel title. Across rows, we report results for households with high “decision proximity”, that is, households with characteristics suggesting that the respondent has recently made, or is close to making, a decision for which the expectation is relevant according to standard economic models. The first row (“Baseline”) reports results for the full sample.

Figure A.4: Reasoning underlying reported expectations: Evidence from AI-led interviews



Notes: This figure plots data from the AI-led qualitative interviews about the reasoning underlying respondents’ reported expectations. The unit of observation is an interview. We then plot the share of interviews that are assigned a given code separately for respondents who have no previously-formed expectation and for respondents who report having a previously-formed expectation. For each code, we indicate the percentage point (pp) difference in the code frequencies between the two groups to the left of the horizontal bars. Details about the coding manual and the coding procedure are provided in Appendix Section C.5.

Figure A.5: **Reliance on heuristic approaches: Robustness**



Notes: This figure plots data from the *Investment Behavior* survey. We plot the effect of lacking a previously-formed expectations on the use of different heuristic approaches and rules-of-thumb, as indicated by the row labels. Where heuristic and rules-of-thumb use is elicited on a 5-point categorical response scales, we standardize the measure to have a mean of zero and a standard deviation of one. Panel A includes controls for age, gender, education, income, and financial literacy. Panel B additionally includes fixed effects for quintiles of the stated uncertainty about one's stock market return expectations.

## B Additional Tables

Table A.1: Overview of data collections

Study and population	Recruitment	$n$	Study description
<b>Validation Study 1</b> US households	Prolific, Sep 2025	304	Elicit the share holding previously-formed expectations about variables for which we would <i>a priori</i> expect either almost everyone or very few to hold an expectation. <i>Main position in paper:</i> Section 2.3. <i>Sample composition:</i> Table A.3. <i>Instructions:</i> Section D.4
<b>Validation Study 2</b> US households	Prolific, May 2025	1,980	Two-wave experiment that experimentally prompts respondents to form an expectation in Wave 1 (inflation or stock returns vs. control) and then measures holding a previously-formed expectation in Wave 2. <i>Main position in paper:</i> Section 2.3. <i>Sample composition:</i> Table A.3. <i>Balance test:</i> Table A.6. <i>Instructions:</i> Section D.5
<b>Validation Study 3</b> US households	Prolific, Mar 2026	1,781	Elicit the share holding previously-formed expectations using alternative wordings for our measure. <i>Main position in paper:</i> Section 2.3. <i>Sample composition:</i> Table A.3. <i>Instructions:</i> Section D.6
<b>Main descriptive survey</b> Representative sample of US households	Prolific, Jul 2025, quota-based	3,017	Descriptive survey covering 30 economic expectations. <i>Main position in paper:</i> Section 3. <i>Sample composition:</i> Table A.2. <i>Instructions:</i> Section D.1
<b>International household surveys</b>			
Argentina	Bilendi, Nov 2025	477	Cross-country study eliciting whether respondents hold previously-formed expectations. <i>Main position in paper:</i> Section 3. <i>Sample composition:</i> Table A.4. <i>Instructions:</i> Section D.3
France	Bilendi, Nov 2025	511	Analogous study design.
Germany	Bilendi, Nov 2025	509	Analogous study design.
Turkey	Bilendi, Nov 2025	527	Analogous study design.
UK	Prolific, Nov 2025	512	Analogous study design.
<b>Firm manager survey</b> Firm managers (Germany)	ifo Management Panel, Nov 2025	286	Elicit the share of previously-formed macroeconomic and firm-relevant expectations among German firm owners, managers, and CEOs. <i>Main position in paper:</i> Section 3. <i>Sample composition:</i> Table A.5. <i>Instructions:</i> Section D.2

Table A.1 (continued) Overview of data collections

Study and population	Recruitment	<i>n</i>	Study description
<b>Anchoring experiment: Stock returns</b>			
UK households	Prolific, Sep 2025	2,953	Respondents are randomized into a high- or low-anchor condition (2% vs. 20% return example). We then elicit expectations about stock market returns. <i>Main position in paper:</i> Section 4.1. <i>Sample composition:</i> Table A.3. <i>Balance test:</i> Table A.6. <i>Instructions:</i> Section D.7
<b>Anchoring experiment: Inflation</b>			
US households	Prolific, Sep 2025	4,204	Analogous anchoring experiment for inflation expectations. <i>Main position in paper:</i> Section 4.1. <i>Sample composition:</i> Table A.3. <i>Balance test:</i> Table A.6. <i>Instructions:</i> Section D.7
<b>Anchoring experiment: Within-subject design</b>			
UK households	Prolific, Mar 2026	1,188	Analogous anchoring experiment with stock return, credit card APR, recession, and inequality expectations. The high- and low-anchor conditions are randomized across questions within respondents. <i>Main position in paper:</i> Section 4.1. <i>Sample composition:</i> Table A.3. <i>Instructions:</i> Section D.8
<b>Information experiment</b>			
US households	Prolific, Aug 2025	3,056	Two-wave design. Information treatment providing expert inflation forecasts to a subset of respondents in Wave 1. We then elicit inflation expectations both in Wave 1 and 2-3 days later in an obfuscated follow-up (Wave 2). <i>Main position in paper:</i> Section 4.2. <i>Sample composition:</i> Table A.3. <i>Balance test:</i> Table A.6. <i>Instructions:</i> Section D.9
<b>Qualitative interviews: Reported expectations</b>			
US households	Prolific, Jan, 2026	502	AI-conducted interviews probe how respondents' construct the inflation expectations they report. <i>Main position in paper:</i> Section 4.4. <i>Sample composition:</i> Table A.3. <i>Instructions:</i> Section D.10
<b>Default experiment</b>			
UK households	Prolific, Oct 2025	2,063	Incentivized investment experiment that randomizes a high vs low default allocation (20% vs. 80% stocks). <i>Main position in paper:</i> Section 5.2. <i>Sample composition:</i> Table A.3. <i>Balance test:</i> Table A.6. <i>Instructions:</i> Section D.11
<b>Investment Behavior survey</b>			
US households	Prolific, March 2026	965	Elicit reliance on heuristics and rules-of-thumb when making investment decisions among households with financial investments. <i>Main position in paper:</i> Section 5.2. <i>Sample composition:</i> Table A.3. <i>Instructions:</i> Section D.12

Table A.2: **Summary statistics: US household survey**

	(1) Main Survey	(2) US population (CPS)
Age	40.390 (13.985)	48.162
Female	0.504 (0.500)	0.512
College degree	0.388 (0.487)	0.358
Household income (thousands)	74.668 (52.368)	83.081
Employed	0.702 (0.457)	0.613
White/Caucasian	0.753 (0.431)	0.765
Black/African American	0.135 (0.342)	0.130
Hispanic origin	0.105 (0.307)	0.179
Northeast	0.144 (0.351)	0.172
Midwest	0.211 (0.408)	0.204
South	0.388 (0.487)	0.387
West	0.257 (0.437)	0.237
Observations	3,017	

*Note:* This table presents summary statistics for the US households sample (Column 1) and the US general population, which we derive from the Current Population Survey. Each row presents the mean and the standard deviation in parentheses for our survey sample and the corresponding mean in the general population. “Age” is the respondents’ age in years. “Female” takes value one for female respondents. “College degree” is a dummy for having completed at least one college degree. “Household income” is the annual household income after taxes and transfers in thousands of US dollars, which is top-coded at 200,000. “Employed” is a dummy for being currently employment or self-employed. “White/Caucasian” and “Black/African American” and “Hispanic origin” are dummy variables for race and ethnicity. “Northeast”, “Midwest”, “South” and “West” are dummies for the region of residence.

Table A.3: Summary statistics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Validation Study 1	Validation Study 2	Validation Study 3	Anchoring Experiment: Stocks	Anchoring Experiment: Inflation	Anchoring Experiment: Within-design	Information Experiment	Default Experiment	Qualitative Interviews	Investment Decisions Survey
Age	41.33 (13.23)	38.77 (13.61)	36.29 (13.03)	43.09 (14.04)	39.78 (13.29)	38.54 (12.77)	43.17 (13.71)	38.19 (12.61)	39.75 (12.53)	35.85 (12.36)
Female	0.56 (0.50)	0.51 (0.50)	0.55 (0.50)	0.51 (0.50)	0.57 (0.50)	0.59 (0.49)	0.52 (0.50)	0.65 (0.48)	0.50 (0.50)	0.58 (0.49)
College degree	0.72 (0.45)	0.82 (0.38)	0.67 (0.47)	0.64 (0.48)	0.72 (0.45)	0.78 (0.42)	0.70 (0.46)	0.68 (0.47)	0.74 (0.44)	0.74 (0.44)
Income (thousands)	80.37 (48.72)	92.70 (58.01)	78.83 (49.07)	51.73 (33.42)	78.65 (48.56)	53.06 (33.45)	78.46 (48.81)	52.74 (32.05)	82.51 (52.51)	91.69 (52.27)
White/Caucasian	0.76 (0.43)	0.66 (0.47)	0.72 (0.45)	0.87 (0.34)	0.72 (0.45)	0.81 (0.39)	0.74 (0.44)	0.85 (0.36)	0.76 (0.43)	0.69 (0.46)
Black/African American	0.15 (0.36)	0.26 (0.44)	0.13 (0.34)	0.04 (0.19)	0.13 (0.33)	0.05 (0.21)	0.12 (0.33)	0.05 (0.21)	0.12 (0.33)	0.15 (0.35)
Hispanic origin	0.06 (0.24)	0.06 (0.23)	0.10 (0.30)		0.10 (0.30)		0.08 (0.27)		0.10 (0.30)	0.10 (0.30)
Republican	0.25 (0.44)	0.40 (0.49)	0.19 (0.40)		0.21 (0.41)		0.27 (0.44)		0.17 (0.38)	0.18 (0.38)
Democrat	0.41 (0.49)	0.39 (0.49)	0.48 (0.50)		0.49 (0.50)		0.45 (0.50)		0.51 (0.50)	0.52 (0.50)
Independent	0.34 (0.47)	0.21 (0.41)	0.32 (0.47)		0.30 (0.46)		0.29 (0.45)		0.32 (0.47)	0.30 (0.46)
Northeast	0.25 (0.44)	0.18 (0.39)	0.21 (0.40)		0.18 (0.39)		0.17 (0.38)		0.17 (0.38)	0.21 (0.41)
Midwest	0.19 (0.39)	0.17 (0.38)	0.21 (0.41)		0.20 (0.40)		0.21 (0.41)		0.18 (0.38)	0.20 (0.40)
South	0.44 (0.50)	0.47 (0.50)	0.39 (0.49)		0.39 (0.49)		0.40 (0.49)		0.43 (0.50)	0.36 (0.48)
West	0.12 (0.33)	0.18 (0.38)	0.19 (0.39)		0.22 (0.41)		0.21 (0.41)		0.22 (0.41)	0.23 (0.42)
Observations	304	1,980	1,781	2,953	4,204	1,188	3,056	2,063	502	965

Note: This table presents summary statistics for the studies indicated in the column header. Each row presents the mean and the standard deviation in parentheses. Ethnicity and region of residence data is only available for US respondents and are therefore set to missing in Columns 4, 6, and 8. “Age” is the respondents’ age in years. “Female” takes value one for female respondents. “College degree” is a dummy for having completed at least one college degree. “White/Caucasian” and “Black/African American” and “Hispanic origin” are dummy variables for race and ethnicity. “Republican”, “Democrat” and “Independent” are indicators for self-identified political orientation. “Northeast”, “Midwest”, “South” and “West” are dummies for the region of residence.

Table A.4: **Summary statistics: Cross-country survey**

	(1) Argentina	(2) France	(3) Germany	(4) Turkey	(5) UK
Age	43.64 (16.80)	44.95 (15.21)	45.67 (14.91)	36.34 (11.67)	41.29 (14.57)
Female	0.49 (0.50)	0.49 (0.50)	0.51 (0.50)	0.41 (0.49)	0.49 (0.50)
College degree	0.53 (0.50)	0.77 (0.42)	0.49 (0.50)	0.65 (0.48)	0.52 (0.50)
Income (in thousands of local currency)	12,133.12 (10,912.25)	39.90 (24.39)	49.39 (32.91)	819.54 (685.14)	49.85 (31.80)
Observations	477	511	509	527	512

Note: This table presents summary statistics for the five cross-country surveys. Each column corresponds to a different country. Each row presents the mean and the standard deviation in parentheses. “Age” is the respondents’ age in years. “Female” takes value one for female respondents. “College degree” is a dummy for having completed at least one college degree. “Income” is measured in thousands of local currency units.

Table A.5: **Firm manager survey**

	(1)
<b>Firm size</b>	
Small (less than 50 employees)	29.4%
Medium (50–249 employees)	36.7%
Large (250 or more employees)	33.9%
<b>Sector</b>	
Manufacturing	53.8%
Services	29.4%
Trade	16.8%
<b>Respondents’ position</b>	
Firm owner	35.3%
Top management ( <i>e.g.</i> , CEO)	40.6%
Department head	10.8%
Other	13.3%
<b>Respondents’ decision power</b>	
(Very) large influence on investment decisions	76.9%
(Very) large influence on production decisions	65.0%
(Very) large influence on personnel decisions	74.5%
Observations	286

Note: This table presents summary statistics for the firm manager survey conducted in Germany via the ifo Management survey.

Table A.6: Test of balance

	(1)	(2)	(3)	(4)	(5)	(6)
	Validation Study 2 (Stock vs Control)	Validation Study 2 (Inflation vs Control)	Anchoring Experiment: Stocks (High vs low)	Anchoring Experiment: Inflation (High vs low)	Information Experiment (Info vs Control)	Default Experiment (High vs low)
Age	0.80 (0.28)	0.78 (0.29)	0.16 (0.76)	0.39 (0.35)	-0.09 (0.86)	0.10 (0.86)
Female	0.00 (0.96)	0.02 (0.58)	0.03 (0.13)	0.02 (0.31)	-0.02 (0.27)	-0.01 (0.80)
College degree	0.03 (0.14)	-0.02 (0.45)	-0.02 (0.19)	-0.01 (0.60)	-0.01 (0.63)	0.01 (0.70)
Income (thousands)	-0.19 (0.95)	0.15 (0.96)	-0.12 (0.92)	-0.60 (0.69)	1.56 (0.38)	-2.47* (0.08)
White/Caucasian	-0.02 (0.39)	-0.03 (0.26)	0.00 (0.70)	-0.00 (0.73)	0.03** (0.04)	0.00 (0.86)
Black/African American	0.04 (0.11)	0.04 (0.14)	0.01 (0.43)	-0.00 (0.74)	-0.02 (0.17)	0.02* (0.09)
<i>p</i> -value of joint <i>F</i> -test	0.323	0.495	0.468	0.787	0.332	0.258
Observations	1,313	1,344	2,953	4,204	3,056	2,063

*Note:* This table presents differences in means between the treatment group and the control group in different experiments. The between-group comparison is explained in the column header (*e.g.*, stock treatment arm vs population control in Column 1). The *p*-value for differences in means is shown in parentheses. We also present the *p*-value for a joint *F*-test obtained from regressing a binary treatment dummy on the set of observables listed in this table. “Age” is the respondents’ age in years. “Female” takes value one for female respondents. “College degree” is a dummy for having completed at least one college degree. “White/Caucasian” and “Black/African American” are dummy variables for race and ethnicity.

Table A.7: **Anchoring experiment: Stock market returns**

	Average effect		Effects on distribution		
	(1) Winsorized	(2) Trimmed	(3) Below 3%	(4) Below 5%	(5) Below 10%
High anchor	4.939*** (0.262)	4.260*** (0.214)	-0.134*** (0.015)	-0.422*** (0.020)	-0.387*** (0.020)
Had expectation	0.349 (0.227)	0.534*** (0.183)	-0.080*** (0.018)	-0.121*** (0.026)	0.023 (0.017)
<b>High anchor x Had expectation</b>	-2.322*** (0.387)	-1.860*** (0.318)	0.085*** (0.022)	0.161*** (0.033)	0.201*** (0.031)
Constant	5.365*** (0.153)	5.026*** (0.123)	0.185*** (0.013)	0.542*** (0.017)	0.865*** (0.011)
N	2,952	2,767	2,952	2,952	2,952
R <sup>2</sup>	0.141	0.163	0.036	0.159	0.150

*Note:* This table presents regression estimates using data from the *Anchoring Experiment*. The dependent variables in columns 1 and 2 are stock market return expectations (in %). Expectations are winsorized at the 5<sup>th</sup> and 95<sup>th</sup> percentile in Column 1, while Column 2 trims the sample at these percentiles. In Columns 3–5, the dependent variables are dummy variables for reporting expectations below 3%, 5% and 10%, respectively. “High anchor” is a dummy for being shown the high anchor (20%). “Had expectation” is a dummy for having reported to hold an expectation prior to the survey. Robust standard errors shown in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A.8: **Anchoring experiment: Inflation expectations**

	Average effect		Effects on distribution		
	(1) Winsorized	(2) Trimmed	(3) Below 3%	(4) Below 5%	(5) Below 10%
High anchor	5.476*** (0.358)	4.903*** (0.317)	-0.131*** (0.018)	-0.369*** (0.023)	-0.376*** (0.022)
Had expectation	0.486** (0.247)	0.184 (0.198)	-0.069*** (0.018)	0.003 (0.022)	-0.027* (0.015)
<b>High anchor x Had expectation</b>	-0.339 (0.466)	-0.887** (0.406)	0.058*** (0.022)	0.081*** (0.030)	0.096*** (0.027)
Constant	5.387*** (0.191)	5.228*** (0.155)	0.216*** (0.015)	0.600*** (0.018)	0.884*** (0.011)
N	4,204	3,833	4,204	4,204	4,204
R <sup>2</sup>	0.111	0.112	0.026	0.105	0.124

*Note:* This table presents regression estimates using data from the anchoring experiment on inflation expectations. The dependent variables in columns 1 and 2 are inflation expectations (in %). Expectations are winsorized at the 5<sup>th</sup> and 95<sup>th</sup> percentile in Column 1, while Column 2 trims the sample at these percentiles. In Columns 3–5, the dependent variables are dummy variables for reporting expectations below 3%, 5% and 10%, respectively. “High anchor” is a dummy for being shown the high anchor (20%). “Had expectation” is a dummy for having reported to hold an expectation prior to the survey. Robust standard errors shown in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table A.9: Anchoring experiment: Within-subject design — robustness to controlling for individual differences and uncertainty**

	Dependent variable: Expectation (std.)			
	(1)	(2)	(3)	(4)
High anchor	1.089*** (0.035)	1.090*** (0.035)	1.076*** (0.041)	1.003*** (0.073)
Had expectation	0.432*** (0.038)	0.438*** (0.039)	0.458*** (0.047)	0.425*** (0.049)
<b>High anchor x Had expectation</b>	<b>-0.312*** (0.053)</b>	<b>-0.316*** (0.053)</b>	<b>-0.273*** (0.061)</b>	<b>-0.345*** (0.063)</b>
N	4,752	4,752	4,752	4,752
R <sup>2</sup>	0.257	0.259	0.449	0.456
Question fixed effects		Yes	Yes	Yes
Respondent fixed effects			Yes	Yes
Nonparametric uncertainty controls				Yes

*Note:* This table presents regression estimates using data from the anchoring experiment with within-subject design. The dependent variable is the reported expectation. We winsorize (as preregistered) and standardize expectations by question, and pool observations across the four domains (stock market return expectations, probability of a recession, wealth inequality, annual percentage rate). “High anchor” is a dummy for being shown the high anchor. “Had expectation” is a dummy for having reported to have had an expectation about the variable prior to the survey. Columns 2–4 include order and variable fixed effects. Columns 3–4 include respondent fixed effects. “Nonparametric uncertainty controls” are fixed effects for quintiles of the stated uncertainty about one’s reported expectation and their interaction with the high-anchor dummy. Robust standard errors clustered at the respondent level shown in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table A.10: Who has previously-formed expectations? Relevance, exposure, and personal experiences**

	Dependent variable: Had expectation (0/1)			
	(1)	(2)	(3)	(4)
Expectation variable matters	0.081*** (0.008)	0.078*** (0.006)	0.081* (0.044)	
Closely follows economic news	0.108*** (0.011)		0.183*** (0.031)	
College degree	0.040*** (0.011)		0.074** (0.033)	0.115*** (0.033)
High numeracy	0.045*** (0.012)		0.100** (0.039)	0.107*** (0.039)
Male	0.034*** (0.010)		0.055* (0.030)	0.074** (0.030)
Above-median income	-0.024** (0.010)		0.019 (0.032)	0.024 (0.032)
Above-median age	-0.000 (0.011)			
Born before 1962			0.109** (0.055)	0.156*** (0.055)
N	30,170	30,170	1,020	1,020
R <sup>2</sup>	0.104	0.398	0.080	0.044
Share holding expectations	0.542	0.542	0.601	0.601
Expectation variable and order fixed effects	Yes	Yes		
Respondent fixed effects		Yes		

*Note:* This table presents regression estimates using data from the main study at the respondent-variable level. The dependent variable is a dummy for reporting to have had an expectation about a variable prior to the survey. Columns 1 and 2 include variable and order fixed effects. Column 2 includes respondent fixed effects. Columns 3 and 4 focus only on responses to the inflation expectation question. Expectations are winsorized at the 5<sup>th</sup> or the 95<sup>th</sup> whenever the variable is not naturally bounded from above or below (preregistered). “Expectation variable matters” is a dummy for reporting that the variable matters somewhat or a lot for the respondent. “Closely follows economic news” is a dummy for following economic news closely or very closely. “High numeracy” is a dummy for above-median numeracy, measured in a four-item numeracy test. Robust standard errors clustered at the respondent level shown in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A.11: Properties of reported expectations: Distributional summary statistics

	KS-test	Mean			Median			Abs. dist. to benchmark			SD			IQR			P90-P10			N	
	(1) p-value	(2) W/O	(3) W/	(4) Diff.	(5) W/O	(6) W/	(7) Diff.	(8) W/O	(9) W/	(10) Diff.	(11) W/O	(12) W/	(13) Diff.	(14) W/O	(15) W/	(16) Diff.	(17) W/O	(18) W/	(19) Diff.	(20) W/O	(21) W
All expectations	0.000	-0.1	0.0	<b>-0.11***</b>	-0.3	-0.1	<b>-0.14***</b>	0.8	0.7	<b>0.08***</b>	1.0	1.0	<b>0.06***</b>	1.2	1.0	<b>0.14***</b>	2.3	1.9	<b>0.38***</b>	7096	7232
Credit card interest	0.000	18.8	22.6	<b>-3.74***</b>	20.0	24.0	<b>-4.0***</b>	7.9	6.4	<b>1.5***</b>	9.5	7.9	<b>1.56***</b>	15.0	9.0	<b>6.0***</b>	25.0	18.4	<b>6.6**</b>	580	429
Economic mobility	0.000	16.5	12.3	<b>4.22***</b>	10.0	5.0	<b>5.0***</b>	12.5	9.8	<b>2.75***</b>	18.4	15.8	<b>2.61*</b>	15.0	13.0	2.0	40.9	34.0	6.9	568	472
Federal funds rate	0.000	12.5	8.8	<b>3.71***</b>	6.0	4.4	<b>1.63***</b>	9.0	5.4	<b>3.6***</b>	14.2	12.0	<b>2.14**</b>	7.8	2.2	<b>5.57***</b>	37.0	18.5	<b>18.5*</b>	749	326
GDP growth	0.000	9.2	5.5	<b>3.74**</b>	3.0	1.7	<b>1.3***</b>	12.8	13.0	-0.26	19.4	19.6	-0.13	13.0	9.5	3.5	57.7	55.0	2.7	662	359
Gender wage gap	0.010	79.8	80.9	-1.17	85.0	82.0	3.0	14.0	10.5	<b>3.5***</b>	20.0	15.2	<b>4.72***</b>	17.0	15.0	2.0	50.0	29.0	<b>21.0**</b>	274	753
Global warming	0.000	57.7	85.8	<b>-28.13***</b>	60.0	99.0	<b>-39.0***</b>	42.3	14.2	<b>28.13***</b>	28.3	24.7	<b>3.63**</b>	45.0	20.0	<b>25.0***</b>	80.0	50.0	<b>30.0***</b>	97	920
Income inequality	0.000	53.6	70.0	<b>-16.41***</b>	56.0	80.0	<b>-24.0***</b>	32.0	45.1	<b>-13.16***</b>	28.5	27.1	1.43	50.0	39.2	<b>10.75***</b>	80.0	70.0	<b>10.0*</b>	555	472
Inflation	0.128	11.3	10.9	0.46	5.0	4.0	1.0	8.6	8.1	0.55	14.6	15.3	-0.67	8.5	7.0	1.5	28.0	27.6	0.4	407	611
P(Recession)	0.000	38.8	56.5	<b>-17.65***</b>	36.0	60.0	<b>-24.0***</b>	22.4	31.2	<b>-8.81***</b>	26.3	29.3	<b>-3.02***</b>	45.0	50.0	<b>-5.0*</b>	70.0	80.0	<b>-10.0*</b>	491	485
P(Stock market crash)	0.010	28.8	32.2	<b>-3.42**</b>	24.0	20.0	4.0	27.9	31.4	<b>-3.48**</b>	23.0	29.2	<b>-6.2***</b>	40.0	45.0	-5.0	55.6	79.0	<b>-23.4***</b>	625	429
Savings account interest	0.000	4.7	3.5	<b>1.27***</b>	3.0	2.5	0.5	4.4	3.1	<b>1.27***</b>	5.5	4.5	<b>1.04**</b>	3.0	2.7	0.3	10.8	4.5	<b>6.3***</b>	557	461
Stock market return	0.000	13.0	10.2	<b>2.82***</b>	8.0	8.0	0.0	10.8	8.7	<b>2.14***</b>	15.4	13.7	<b>1.69*</b>	16.0	6.4	<b>9.57***</b>	39.5	34.1	5.43	600	420
Unemployment rate	0.000	13.3	12.4	0.93	8.0	6.0	<b>2.0**</b>	9.1	8.3	0.87	12.4	13.5	-1.13	13.0	7.5	<b>5.5*</b>	31.0	31.0	0.0	497	523
Wealth inequality	0.000	59.3	76.6	<b>-17.25***</b>	68.5	85.0	<b>-16.5***</b>	22.8	18.7	<b>4.11***</b>	27.8	22.6	<b>5.19***</b>	40.0	20.0	<b>20.0***</b>	80.0	46.8	<b>33.2***</b>	434	572

Note: This table presents summary statistics using data from the US household survey. Column 1 shows the  $p$ -value from a Kolmogorov-Smirnov test for equality of distributions. Columns 2-4 show means, Columns 5-7 medians, Columns 8-10 absolute distance to benchmark estimates, Columns 11-13 standard deviations, Columns 14-16 interquartile ranges (IQR), Columns 17-19 interdecile ranges (the difference between the 90th and 10th percentiles, P90-P10), and Columns 20-21 show the sample sizes. Columns with the subheader “W/O” show statistics for respondents who reported not having previously-formed expectations. Columns with the subheader “W/” show statistics for respondents who have previously-formed expectations. Columns with the subheader “Diff.” show the difference between the two groups. We calculate  $p$ -values for tests of differences in distributional statistics across groups with a bootstrap procedure.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A.12: **Properties of reported expectations: Uncertainty**

	Confidence (mass in interval around guess)			N	
	(1) W/O	(2) W/	(3) % change	(4) W/O	(5) W/
Credit card interest	48.69	67.29	<b>38.21</b> ***	580	429
Economic mobility	55.92	67.5	<b>20.71</b> ***	568	472
Federal funds rate	41.21	66.2	<b>60.67</b> ***	749	326
GDP growth	43.89	62.11	<b>41.5</b> ***	662	359
Gender wage gap	65.99	74.37	<b>12.7</b> ***	274	753
Global warming	64.97	89.9	<b>38.37</b> ***	97	920
Income inequality	50.11	69.58	<b>38.85</b> ***	555	472
Inflation	55.32	66.68	<b>20.54</b> ***	407	611
P(Recession)	50.99	66.82	<b>31.04</b> ***	491	485
P(Stock market crash)	48.2	64.53	<b>33.86</b> ***	625	429
Savings account interest	52.56	69.42	<b>32.08</b> ***	557	461
Stock market return	46.45	65.61	<b>41.24</b> ***	600	420
Unemployment rate	52.74	69.61	<b>31.99</b> ***	497	523
Wealth inequality	53.78	73.41	<b>36.52</b> ***	434	572

Note: This table presents summary statistics using data from the US household survey. Columns 1-3 show average confidence (mass in interval around point forecast) and Columns 4-5 show the sample sizes. Columns with the subheader “W/O” show statistics for respondents who report not having had an expectation. Columns with the subheader “W/” show statistics for respondents who report having had an expectation prior to the survey. In Column 3, we report the percent increase in the probability mass in the interval around the point forecast for respondents with previously-formed beliefs relative to those without.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Table A.13: **Default experiment: Investment (Panel A) and placebo decision (Panel B)**

	Dependent variable: Risky asset share (0-1)		
	(1)	(2)	(3)
<b>Panel A</b>			
High default	0.238*** (0.012)	0.288*** (0.014)	0.328*** (0.022)
Had expectation		0.216*** (0.019)	0.184*** (0.021)
High default × Had expectation		-0.140*** (0.025)	-0.127*** (0.027)
N	2,023	2,023	2,023
R <sup>2</sup>	0.160	0.229	0.244
Control group mean	0.487	0.487	0.487
Nonparametric uncertainty controls			Yes
	Dependent variable: Dictator giving share		
	(1)	(2)	(3)
<b>Panel B</b>			
High default (Dictator game, give half))	0.096*** (0.010)	0.109*** (0.012)	0.113*** (0.020)
Had expectation		-0.008 (0.016)	-0.008 (0.016)
High default × Had expectation		-0.034* (0.021)	-0.029 (0.022)
N	2,016	2,016	2,016
R <sup>2</sup>	0.045	0.049	0.054
Control group mean	0.279	0.279	0.279
Nonparametric uncertainty controls			Yes

Note: This table presents regression estimates using data from the default experiment. The dependent variable in Panel A is the risky asset share. The dependent variable in Panel B is the share of the \$10 given to the receiver in the dictator game. Expectations are winsorized at the 5<sup>th</sup> and 95<sup>th</sup> percentile. “High default” is a dummy for being shown the high default (80%) in the investment game (Panel A) or the high default of giving half of the \$10 to the receiver in the dictator game (Panel B). “Had expectation” is a dummy for having a previously-formed expectation about the stock market return. “Nonparametric uncertainty controls” are fixed effects for quintiles of the stated uncertainty about one’s stock market return expectations and their interaction with treatment assignment. Robust standard errors shown in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## C Additional Details, Empirical Analyses, and Results

### C.1 Research transparency

**Preregistration** We preregistered our surveys and experiments at the OSF Registry. All preregistrations are available online at <https://osf.io/3u4ra/registrations>. The preregistrations include details on the survey design, survey instructions, sampling process, planned sample size, exclusion criteria, and research questions. We deviate from the preregistration plan in the following case:

- We do not report results from Japan — also part of the international household survey — in the main text. Across all questions, Japanese households report previously-formed expectations in fewer than 25% of cases. This may reflect Japan’s stable macroeconomic environment or norms of modesty. To remain conservative, we place little weight on these results and report them here only for transparency.

**Ethics approval** The study obtained ethics approval from the Ethical Review Board of the Faculty of Management, Economics, and Social Sciences at the University of Cologne (Ref: 240084JW) and the Ethics Committee at the Frankfurt School of Finance & Management.

**Data and code availability** We will make all our data and code available upon publication.

**Conflicting interests** We declare that we have no conflicting interests.

### C.2 Open-Ended Explanations for (Not) Holding Previously-Formed Expectations

For the first expectation question in our main survey, respondents are asked to explain in their own words why they did or did not hold an expectation before participating in the survey. For example, if respondents report having had an expectation before the survey, we ask:

Earlier you indicated that you already had **an expectation** about **the future inflation rate** before participating in today’s survey.

**Please explain why you had an expectation before participating in today’s survey.**

We are not asking you to justify your estimate, but rather to describe why you had an expectation before taking the survey.

This is a particularly important question in our study. Please take your time and answer thoughtfully.

In this appendix, we present a systematic analysis of these open-ended explanations.

**Coding** In a first step, we develop a coding manual from an inductive thematic analysis of respondents’ explanations. We create a separate set of codes for reasons for holding an

expectation before the survey and reasons for not holding an expectation. Each response can receive multiple codes. The coding manual and examples are shown in Table C.1.

We then apply the coding scheme to our data using a large language model (here: GPT-4o). The coding was conducted in December 2025. The LLM receives the following inputs: (i) the full survey instructions for the questions measuring expectations, whether expectations were held already before the survey, and why expectations were held or not held; (ii) the full coding manual; (iii) the participants’ open-ended responses. The prompt then instructs the LLM to make a binary decision whether a given code should be assigned to the response or not. The LLM makes decisions sequentially, *i.e.*, each query to the LLM asks the model to consider only a single code.

To validate the quality of the AI coding, we manually annotate a hold-out validation set of 400 responses using our classification scheme. We report three metrics. First, for a randomly selected respondent–code combination, there is 92% agreement between the AI and human coding. Second, conditional on either the AI or a human assigning a code, there is a 53% probability that the same code is also assigned by the other party. Third, the mean absolute difference in code frequencies is only 2.8 pp. These figures illustrate that many individual responses are not easy to classify unambiguously across related categories. However, the aggregate frequencies align closely, indicating that the AI coding procedure reliably captures the relevant themes in the responses. Moreover, the discussion in the main text does not rely on the exact quantitative occurrence of these codes.

The responses appear to be somewhat easier to classify for expectations about aggregate variables. When we zoom in on the nine aggregate macro and finance variables, agreement on whether a code is assigned increases to 94%, the probability that a code is assigned conditional on the other coder assigning that code increases to 60%, while the mean absolute difference in code frequencies remains largely unchanged at 2.9 pp.

**Results** Figure C.1 presents the frequency of different arguments raised by respondents.

**Table C.1: Coding manual: Explanations for having vs not having previously-formed expectations**

Code	Description	Example
<b>A. Not holding previously-formed expectations</b>		
Low stakes	A topic is not relevant for the respondent’s or the respondent’s family’s life, situation or decisions.	“I work in education. My job is secure and stable. It does not depend on the situation of the economy.”
Not following news	The respondent does not follow the news on the topic.	“I do not follow news on the economy that much.”

**Table C.1 (continued) Coding manual: Explanations for having vs not having previously-formed expectations**

Code	Description	Example
Low mental bandwidth	References to mental load and limited cognitive capacities, having no time to think about the topic, or being occupied with other things.	“It’s so hard to keep track of all the important things in life – I simply have no room left to consider this.”
Low knowledge	References to lack of understanding or knowledge of the topic.	“I just don’t know that much about the Federal Reserve.”
Unpredictability	The outcome in question or the future in general is hard to predict.	“This is too difficult to predict.”
Avoidance	The respondent does not like to think about the topic or about the world/the future in general.	“I avoid thinking about my portfolio as this stresses me out.”
Low attention	The respondent never thinks about the topic or is not interested in the topic without providing further explanation.	“I never think about this topic.”, “I don’t care about this.”, “I don’t remember having ever considered this.”
Imprecise expectation	The respondent does not hold the type of numerical belief we ask for but rather a coarser, qualitative one.	“I think of inflation as going ‘up’ or ‘down’, not in terms of specific percentage.”
<b>B. Holding previously-formed expectation</b>		
High stakes	A topic is relevant for the respondent’s or the respondent’s family’s life, situation or decisions.	“Home prices are super important for our financial well-being.”, “We have no large savings. The risk of job loss looms large in our decisions about how much to spend.”
High knowledge	References to general understanding or knowledge of the topic.	“I work for the government and knowing about these things is part of my job.”, “This is a topic I am very familiar with.”
High attention	The respondent often thinks about the topic or is interested in the topic.	“It is something that I am genuinely interested in.”, “This has been on my mind.”
Following news	The respondent follows the news on the topic.	“I always keep track of what the media reports on this issue.”
Academic exposure	Reference to things heard in school, college or university, or to things “science” or the “evidence” says.	“I took a class at university on economic mobility, where we learned a lot about this stuff.”
Statistics	Reference to having heard particular statistics or to particular statistics. Reference to the typical range in which a variable fluctuates or the recent values of the variable. References to forecasts heard or seen somewhere.	“I recently looked up the BLS statistics on this issue.”
Incidental exposure	Having come across a topic a lot, a topic being very widely debated, something being common knowledge, getting confronted with a topic a lot or a topic being impossible to miss.	“With all that’s being discussed at the moment, it’s just something one has heard about.”

Table C.1 (*continued*) **Coding manual: Explanations for having vs not having previously-formed expectations**

Code	Description	Example
Macro event	References to particular macroeconomic or societal events or trends. This is about aggregate events in the entire country, not about respondent-specific events.	“Economic mobility has been declining in the US.”, “The Fed will react to pressure from the White House and cut rates.”
Personal event	Reference to personal or local events, such as, <i>e.g.</i> , shopping experiences, observations made in the neighborhood or at the workplace, the development of one’s own portfolio, labor market situation, or savings, or previous life experiences. This is not about aggregate current events in the entire country, economy or society.	“Because I noticed price increases when going shopping.”, “I have seen this development over my lifetime.”
Social interactions	Having heard things from friends, family or colleagues or something coming up in conversations, including things heard or seen on social media.	“My friends talk a lot about this issue.”, “There has been a lot of talk at work about how safe our jobs will be.”
Survey participation	Holding a belief due to participation in another survey.	“I took a survey some days ago asking about these topics. This got me interested.”

### C.3 Benchmarks

In Section 4.3, we examine how closely expectations are aligned with benchmarks depending on whether a respondent reports having a previously-formed expectation or not. We focus on expectations about aggregate variables, for which the benchmark does not vary across respondents. We rely on benchmarks that were released prior to the start of our data collection in July 2025 and were therefore public information at the time. Table C.2 provides an overview of these benchmarks.

We acknowledge that each benchmark is imperfect and plausible alternatives are available in some cases. Fortunately, the benchmarks tend to be closely aligned with such alternatives. For example, the SPF inflation forecast of 3.0% is close to the 2.8% implied by inflation-indexed vs. non-inflation-indexed treasury yields and the 3.2% forecast from a quarterly VAR(4)-forecast including inflation, unemployment, and GDP growth.

Table C.2: **Benchmarks for beliefs**

Variable	Value	Explanation and source
— <i>Macroeconomics</i> : —		
<b>Future aggregate inflation</b>	3.0%	Mean forecast of aggregate inflation over the next four quarters in the May 2025 wave of the Philadelphia Fed’s <i>Survey of Professional Forecasters</i> .

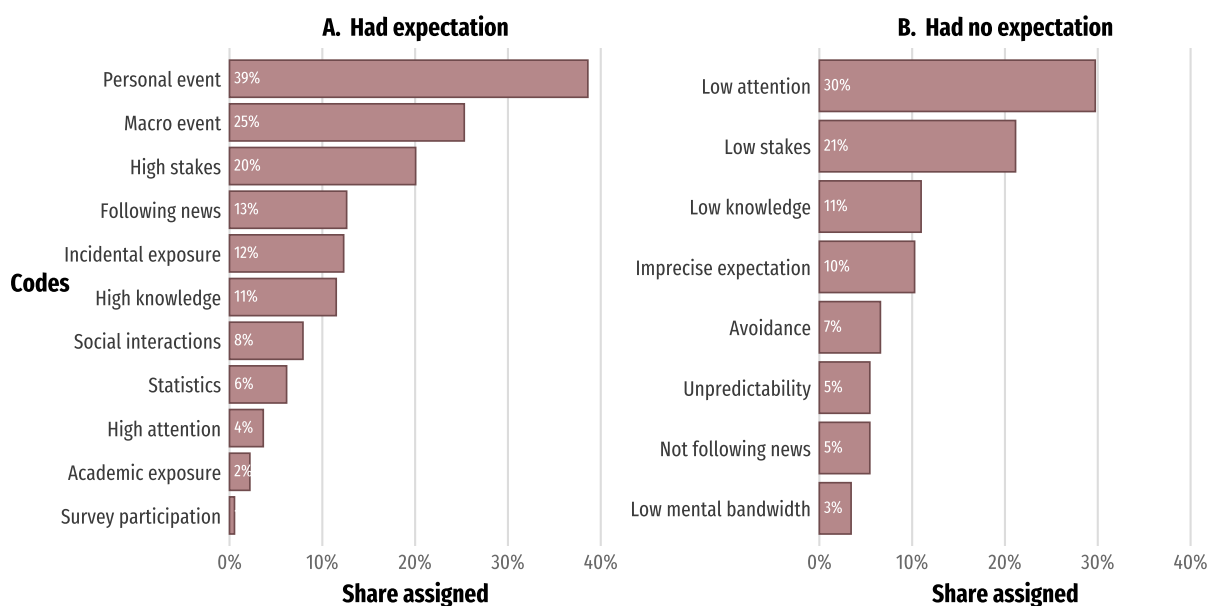
Table C.1 (*continued*) **Benchmarks for beliefs**

<b>Variable</b>	<b>Value</b>	<b>Explanation and source</b>
<b>Future unemployment rate</b>	4.6%	Mean forecast of the aggregate unemployment rate four quarters from now in the May 2025 wave of the Philadelphia Fed's <i>Survey of Professional Forecasters</i> .
<b>Future nominal GDP growth</b>	4.3%	Mean forecast of nominal US GDP growth over the next four quarters in the May 2025 wave of the Philadelphia Fed's <i>Survey of Professional Forecasters</i> .
<b>Likelihood of a recession</b>	36.1%	Mean estimated probability of a contraction of real US GDP from the second to the third quarter 2025 in the May 2025 wave of the Philadelphia Fed's <i>Survey of Professional Forecasters</i> .
<b>Future federal funds rate</b>	3.8%	Interpolated from the mean projected federal funds rates at the end of 2025 (3.6%) and at the end of 2026 (3.9%) in the June 2025 <i>Summary of Economic Projections</i> by the Federal Reserve.
<b>— Finance: —</b>		
<b>Future stock market return</b>	9.3%	Long-run average 12-month nominal return of the US stock market, calculated using data from 1871 until June 2025 from <i>Shiller Data</i> .
<b>Likelihood of stock market crash</b>	0.9%	Fraction of the time in which the 12-month nominal return of the US stock market was lower than $-30\%$ , calculated using data from 1871 until June 2025 from <i>Shiller Data</i> .
<b>Future average savings account interest rate</b>	0.4%	Current average rate calculated using data from <i>Federal Reserve Economic Data</i> .
<b>Future average credit card APR</b>	21.2%	Current average rate calculated using data from <i>Federal Reserve Economic Data</i> .
<b>— Inequality: —</b>		
<b>Top 10% income share</b>	29.1%	Share of overall income earned by the top 10% after taxes and transfers in 2023 according to <i>Our World in Data</i> and the <i>Luxembourg Income Study</i> .
<b>Top 10% wealth share</b>	71.2%	Share of overall wealth owned by the top 10% in 2023 according to the <i>World Inequality Database</i> .
<b>Gender wage gap</b>	\$79	Average amount earned by a woman for every \$100 earned by a man with the same education, age and working hours, calculated using data from the 2023 <i>American Community Survey</i> .
<b>Economic mobility</b>	7.8%	Probability of ending up in the highest quintile when born in the lowest income quintile as calculated by Alesina et al. (2018) using data from Chetty et al. (2014).

## C.4 Experimental Evidence on Properties of Reported Expectations

In Section 4.3, we compare the reported expectations of individuals entering the survey with or without previously-formed expectations. In addition, *Validation Study 2* described in Section 2.3 allows us to compare the reported expectations of individuals who are exogenously prompted to form an expectation before the survey with those who are not. In that study, respondents in the first wave are prompted to inform themselves and respond to multiple expectation questions about inflation (Treatment 1), stock market returns (Treatment 2), or population growth (Control),

Figure C.1: **Reasons for having versus not having previously-formed expectations**



Notes: This figure presents the results from the AI coding of respondents’ open-ended explanations of why they had or had not formed an expectation prior to our main survey. Panel A and B present the frequencies of codes from our coding manual separately for respondents who had formed a belief prior to the survey (A) or not (B).

respectively. We re-elicite their expectations and uncertainty in a second wave one day later. This design allows us to test whether exogenous variation in holding an expectation before Wave 2 affects the properties of the expectations reported in Wave 2. Relevant for the interpretation of the results is that the variation in holding an expectation induced by our intervention is necessarily specific, as it depends on which particular information respondents choose to acquire.

Table C.3 compares the properties of expectations between respondents in either treatment group with the control group. Being prompted to form an expectation about inflation substantially reduces the cross-sectional dispersion of inflation expectations: the interquartile range of inflation expectations decreases by 1.3 pp in the inflation treatment from a level of 2.6 pp in the control group ( $p = 0.017$ , Column 1). Moreover, the inflation treatment reduces the average absolute deviation of inflation expectations from the SPF forecast from 3.4 pp to 1.5 pp ( $p < 0.01$ , Column 2). Treated respondents also become 3.4 pp more certain about their point forecasts ( $p < 0.05$ , Column 3). We observe similar effects of the stock market treatment on return expectations, although the effects on certainty are less precisely estimated. There are no strong spillovers of the inflation treatment on return expectations or vice versa. Taken together, these patterns broadly align with our descriptive findings.

### C.5 Qualitative Interviews about Reasoning Underlying Reported Beliefs

In Section 4.4, we report evidence from AI-led qualitative interviews about the reasoning underlying reported beliefs. In this section, we provide details about the interviews.

Interviews always started with the question: “Please let me know how you came up with

Table C.3: **Experimental evidence on properties of reported expectations**

	Inflation expectations			Stock market return expectations		
	(1)	(2)	(3)	(4)	(5)	(6)
	IQR	Absolute deviation from benchmark	Certainty about own estimate	IQR	Absolute deviation from benchmark	Certainty about own estimate
Inflation treatment	-1.300** (0.546)	-1.875*** (0.273)	3.421** (1.594)	-0.200 (0.503)	-0.452* (0.269)	-2.009 (1.552)
Stock market treatment	0.400 (0.683)	0.169 (0.332)	-0.586 (1.513)	-2.000*** (0.325)	-0.971*** (0.275)	2.013 (1.492)
N	1,980	1,980	1,980	1,980	1,980	1,980
R <sup>2</sup>		0.029	0.005		0.006	0.004
Control group mean / IQR	2.600	3.410	64.798	7.000	5.977	63.031
p-value: Stock vs infl. treatment		0.000	0.012		0.050	0.009
Order effects controls		Yes	Yes		Yes	Yes

*Note:* This table presents regression estimates using data from *Validation Study 2* and bootstrap estimates for measures of dispersion. Columns 1-3 focus on inflation and Columns 4-6 in stock market return expectations. The coefficients in Columns 1 and 4 indicate the difference in the interquartile range in the indicated treatment group compared to the control group, for which we calculate bootstrap standard errors. The dependent variables in Columns 2 and 5 are absolute deviations of stated expectations from benchmarks (see Table C.2). Columns 3 and 6 use participants' confidence in their stated expectation as an outcome, which is measured as the percent chance that the actual realization of the variable is within a narrow band of one's stated expectation. Expectations are winsorized at the 5<sup>th</sup> and 95<sup>th</sup> percentile. All regressions control for the order in which expectations are elicited. The table reports the *p*-value from a test for equality of the estimated treatment effect of the stock market and the inflation treatment arm. Robust standard errors are shown.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

*your prediction of future inflation. What was the main consideration underlying your prediction?"* Afterwards, the chatbot asked three probing questions that seek to better understand the respondent's answer and clarify ambiguities. If the respondent stated multiple considerations, the chatbot is instructed to explore them sequentially.

In a next step, the chatbot asks *"What, if any, was the second most important consideration on your mind when predicting future inflation?"* if participants previously only stated a single consideration. For those that already stated multiple considerations, we ask instead: *"Did you have any other considerations on your mind when predicting future inflation?"* This consideration is then explored with another two probing questions. If, however, a respondent indicates no further considerations, the interview stops at this point.

We conclude the interview by asking: *"Are there any other considerations that played a role in your prediction of future inflation?"* This structure ensures that we elicit the top three considerations and have sufficient conversational space to understand these considerations in detail, while at the same time ensuring that we do not force participants to come up with considerations by stopping the interview whenever they indicate not to have had any further considerations when reporting their belief.

We developed a coding manual based on a review of the interview transcripts. The coding manual is shown in Table C.4 below. Each interview can receive multiple codes. We then annotate interview transcripts using gpt-4o-mini. The annotation was conducted in January 2026. The LLM receives the code definition and the example keywords listed in Table C.4 as inputs in addition to general guidelines for how to annotate interviews. We annotate each interview three times and randomize the order of codes in the coding manual within the input prompt of the model. We then assign a code if it was assigned in a majority of coding rounds by the LLM.

**Table C.4: Coding manual: Factors mentioned in AI-led interview**

Code	Description	Example keywords
<b>A. Macro factors</b>		
Trade	Mentions trade policy, tariffs, exports, or imports.	Customs duties, free trade, protectionism, trade barriers, trade war, trade agreement
Household spending	Mentions aggregate consumer demand for goods or services. Only use this if it is clear that household or consumer spending is meant.	Consumption, buying mood, consumer sentiment
Fiscal policy	Mentions government spending, taxes, subsidies, stimulus programs, VAT, price brakes, or austerity.	State, government spending, subsidy, taxes, VAT
Geopolitics	Mentions wars, sanctions, trade embargoes, or geopolitical tensions.	War, Ukraine, Russia, sanctions, embargo, Venezuela, Greenland
Labor input	Mentions developments to labor as a production input, such as labor shortages or wage costs.	Labor shortage, labor costs, wages, salaries, collective agreements, union, wage demands
Macro general	Mentions general economic conditions without specifying a particular factor.	Economic situation, business cycle, recession, upswing
Supply chain	Mentions supply chain developments such as disruptions.	Supply chain, bottleneck, logistics, freight, container
Monetary policy	Mentions monetary policy, interest rates, money supply, or central bank actions.	Central bank, Fed, Federal Reserve, FOMC, interest rates, federal funds rate, printing money, bond purchases, money supply, inflation target
Energy	Mentions prices or costs of oil, gas, electricity, heating, energy shortages, or abundance.	Energy, gas, electricity, oil, diesel, heating, energy prices, Venezuela
Covid-19	Mentions direct impacts of COVID-19, such as lockdowns or pandemic-related policies.	Pandemic, Covid, lockdown, vaccination
Firm investment	Mentions overall investment expenditure by firms.	Investments, capex, capital expenditures
Other supply	Mentions other supply-side developments not covered by energy, labor, or supply chains.	Production costs, raw materials, material costs, packaging
Other demand	Mentions other demand-side developments not covered by household spending, investment, or policy.	Export demand, demand, domestic demand

**B. Inflation properties**

**Table C.4 (continued) Coding manual: Factors mentioned when explaining inflation expectations**

Code	Description	Example keywords
Recent inflation	Mentions recent or current realized inflation from which future inflation is inferred.	Current inflation rate, inflation rate over the past year
Normal range	Mentions typical or long-run inflation levels or a return to normal.	Long-term inflation rate, typical inflation rate, normally
<b>C. Information sources</b>		
News content	Mentions having seen or heard something in the news or media.	TV, radio, press, internet
<b>D. Experiences</b>		
Shopping	Mentions personal price observations from daily life ( <i>e.g.</i> , groceries, rent, bills).	Supermarket, shopping, rent, bills
Historical	Mentions particular historical episodes used as reference points.	Oil crisis, 1970s, financial crisis, Gulf war, 9/11, dot-com bubble
<b>E. Politicized interpretations</b>		
Politics	Mentions political actors or decisions as drivers of inflation.	Politics, government failure, political decisions, politicians, elections
Price gouging	Attributes inflation to corporate greed or excessive profits.	Price gouging, greedy corporations, profiteering, greedflation, excessive profits
<b>F. Approach</b>		
Guess	Admits guessing, relying on intuition/gut feeling.	Gut feeling, estimate, guess, feeling
Uncertainty	Expresses uncertainty or difficulty in forecasting.	Not sure, unpredictable, uncertain
<b>G. Other</b>		
Other	Use if none of the above applies, including restatements without explanation or gibberish.	Don't know, no idea, qwasasfasdf

## D Experimental Instructions

We provide the key experimental instructions for the experiments and data collections presented in this paper.

### D.1 US household survey

For each participant, we randomly draw 10 out of 30 variables from Appendix Table D.1. For each expectation, we elicit the expectation using the wording in Table D.1. We then elicit whether participants had an expectation about this variable, using our measure presented in the main text (Section 2.1). Here are the instructions for the example of stock returns.

**Did you have an expectation about the [future stock market return] already before starting today’s survey, or did you form your expectation only<sup>1</sup> during today’s survey?**

- I had a pretty precise expectation already before today’s survey. (*→ has previously-formed exp.*)
- I had a rough expectation already before today’s survey. (*→ has previously-formed expectation*)
- I formed my expectation only<sup>1</sup> during today’s survey. (*→ does not have previously-formed expectation*)

*(Single choice. The order of response options is randomly flipped.)*

For the first expectation, we additionally include an open-ended question on why they had or did not have an expectation about the variable (see Appendix C.2).

Afterwards, we elicit confidence, *e.g.*, for the stock returns:

Previously, you stated the expectation that the future return of the US stock market will be 5%. How confident are you in this estimate?

What do you think is the probability that the actual future return of the US stock market will be somewhere between 1% and 9%? \_\_\_\_ %

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<sup>1</sup>Earlier data collections — including the US household survey — did not include the word “only”. While the intended meaning should be clear from context, omitting “only” leaves a small possibility that respondents might not interpret the response options as strictly mutually exclusive. For this reason, our preferred wording is forming an expectation “only during today’s survey”, as stated above. Reassuringly, the validation experiment reported in the next subsection shows that the precise wording of the third response option does not materially affect our results.

Table D.1: US household survey: Overview of elicited expectations

Variable	Survey question	Example references
<i>— Macroeconomics: —</i>		
<b>Future personal inflation</b>	<p>Now, please think about the future development of the <b>prices for goods and services that you currently purchase</b>.</p> <p>The <b>inflation rate for the goods and services you currently purchase</b> is the percent change over a given period in the price level of the goods and services you currently purchase. It reflects the rate at which prices you currently pay are rising (or falling) and indicates changes in the purchasing power of money. A positive inflation rate means that prices increase; a negative inflation rate means that prices decrease.</p> <p><b>What do you expect the inflation rate for the goods and services you currently purchase to be over the next 12 months?</b></p>	Christelis et al. (2020); Pavlova (2025)
<b>Future aggregate inflation</b>	<p>Now, please think about the future development of <b>prices for goods and services in the US</b>.</p> <p>The <b>inflation rate</b> is the percent change over a given period in the general price level of goods and services. It reflects the rate at which prices are rising (or falling) and indicates changes in the purchasing power of money. A positive inflation rate means that prices increase; a negative inflation rate means that prices decrease.</p> <p><b>What do you expect the US inflation rate to be over the next 12 months?</b></p>	Armantier et al. (2016); Cavallo et al. (2017); Coibion et al. (2022, 2018)
<b>Future unemployment rate</b>	<p>Now, please think about the <b>future US unemployment rate</b>.</p> <p>The <b>unemployment rate</b> is the percentage of the labor force who do not have a job. (The labor force includes those who are either employed or unemployed but actively seeking work.)</p> <p><b>What do you expect the unemployment rate in the United States to be in 12 months from now?</b></p>	Binetti et al. (2024); Boumans et al. (2024); Kuchler and Zafar (2019)
<b>Future nominal GDP growth</b>	<p>Now, please think about the future development of the <b>US Gross Domestic Product (GDP)</b>.</p> <p>The total output of the US economy is measured by the <b>GDP (in USD)</b>, which is defined as the value of all goods and services produced within the US over a specific period of time.</p> <p><b>By how much (in percent) do you expect the annual GDP in the US to change over the next 12 months?</b> A positive rate means that you expect the GDP to increase; a negative rate means that you expect it to decrease.</p>	Boumans et al. (2024); Coibion et al. (2024); Knotek et al. (2025)
<b>Likelihood of a recession</b>	<p>Now, please think about the future development of the <b>US Gross Domestic Product</b>.</p> <p>The total output of the US economy is measured by the <b>Gross Domestic Product (GDP)</b>, which is defined as the value of all goods and services produced within the US over a specific period of time.</p> <p>A <b>recession</b> entails a fall of real (price-adjusted) GDP which means that in a given quarter the economy produces fewer goods and services than in the preceding quarter. A fall of real GDP is normally reflected in a decline of real income, employment, industrial production, and wholesale-retail sales.</p> <p><b>What do you think is the percent chance that real US GDP will fall in the third quarter of 2025 relative to the second quarter of 2025?</b></p>	Beutel and Stockerl (2025); Menkhoff (2025); Roth and Wohlfart (2020)
<b>Future federal funds rate</b>	<p>Now, please think about the future <b>US federal funds rate</b>.</p> <p>The <b>federal funds rate</b> is the most important interest rate in the economy, and it is frequently discussed in the news. The federal funds rate is controlled by the Federal Reserve (Fed). The value of the rate influences how “costly” it is for banks to acquire money, thereby influencing interest rates on important financial products, such as savings accounts, consumer loans, mortgages, or loans to firms.</p> <p><b>What do you expect the US federal funds rate to be in 12 months from now?</b></p>	Link et al. (2023)

Table continued on next page.

Table D.1 (*continued*): US household survey: Overview of elicited expectations

Variable	Survey question	Example references
— Finance: —		
<b>Future personal stock return</b> (Asked if stock owner)	<p>Now, please think about the future development of your <b>own stock portfolio</b>: the stocks, exchange-traded funds (ETFs), and stock mutual funds you hold.</p> <p>The <b>return of your own stock portfolio</b> is the change in value, in percent, that you receive over a given period from your stock portfolio. It includes both dividends and capital gains/losses. A positive return means that the value increases; a negative return means that the value decreases.</p> <p><b>What do you expect the return of your own stock portfolio to be over the next 12 months?</b></p>	Dominitz and Manski (2007); Hurd et al. (2011)
<b>Future stock market return</b>	<p>Now, please think about the future development of the <b>US stock market</b>.</p> <p>The <b>return of the US stock market</b> is the change in value, in percent, that you receive over a given period from investing in a portfolio that holds all stocks listed on the US stock market. It includes both dividends and capital gains/losses. A positive return means that the value increases; a negative return means that the value decreases.</p> <p><b>What do you expect the return of the US stock market to be over the next 12 months?</b></p>	Ameriks et al. (2020); Giglio et al. (2021); Dominitz and Manski (2011)
<b>Likelihood of stock market crash</b>	<p>Now, please think about the future development of the <b>US stock market</b>.</p> <p>The <b>return of the US stock market</b> is the change in value, in percent, that you receive over a given period from investing in a portfolio that holds all stocks listed on the US stock market. It includes both dividends and capital gains/losses. A positive return means that the value increases; a negative return means that the value decreases.</p> <p><b>What do you think is the percent chance that the return of the US stock market over the next 12 months will be lower than -30%?</b> This would mean that a US stock market portfolio would lose more than 30% of its value.</p>	Giglio et al. (2021); Goetzmann et al. (2017)
<b>Future average savings account interest rate</b>	<p>Now, please think about the future <b>average annual percentage rate on savings accounts in the US</b>.</p> <p><b>Savings account percentage rates</b> are the annual interest rates, in percent, that banks pay to consumers for keeping money in a savings account. These rates can vary across banks and account types. Here, we are interested in the average percentage rate across all savings accounts in the US.</p> <p><b>What do you expect the average annual percentage rate on savings accounts to be in 12 months from now?</b></p>	Bańkowska et al. (2021); Federal Reserve Bank of New York (2024)
<b>Future price growth of main residence</b>	<p>Now, please think about the future development of the <b>value of your home</b>. If you are currently renting, please think about the future development of the value of the home you live in. By value, we mean how much your home would approximately sell for.</p> <p>The <b>growth rate of your home's value</b> is the change in its value, in percent, over 12 months. A positive growth rate means that your home increases in value; a negative rate means that it decreases.</p> <p><b>What do you expect the growth rate of your home's value to be over the next 12 months?</b></p>	Armona et al. (2019); Bailey et al. (2019); Kuchler and Zafar (2019)
<b>Future average annual percentage credit card interest rate</b>	<p>Now, please think about the future <b>average annual percentage rate (APR) on credit cards in the US</b>.</p> <p>The <b>annual percentage rate on credit card debt</b> is the interest rate that consumers pay when carrying a balance on their credit card over one full year. This rate varies based on individual creditworthiness. Here, we are interested in the average rate across all credit card holders in the US.</p> <p><b>What do you expect the average annual percentage rate on credit cards in the US to be in 12 months from now?</b></p>	Federal Reserve Bank of New York (2024); European Central Bank (2024)

Table continued on next page.

Table D.1 (continued): US household survey: Overview of elicited expectations

Variable	Survey question	Example references
— Labor: —		
<b>Time of retirement</b> (Asked if age below 65)	Now, please think about your <b>future retirement age</b> . <b>Retirement</b> means that you permanently stop working for pay or substantially reduce working hours, relying primarily on retirement income or savings. <b>What do you think is the percentage chance that you will retire before the age of 65?</b>	Giustinelli et al. (2022)
<b>Future household income growth</b>	Now, please think about the future development of your <b>total monthly household income</b> . Your <b>total household income</b> is the combined gross income, in dollars, earned by all members living in your household (including you, but excluding roommates and renters) over a specific period of time. Please consider income from all sources before taxes and transfers. <b>By how much (in percent) do you expect your total monthly household income to change over the next 12 months?</b> A positive rate means that you expect your monthly household income to increase; a negative rate means that you expect it to decrease.	Bańkowska et al. (2021); D'Acunto et al. (2024)
<b>Future unemployment risk</b>	Now, please think about your <b>future unemployment risk</b> . <b>Being unemployed</b> means that you do not have a job but are actively looking for a job. <b>What do you think is the percent chance that you will be unemployed in 12 months from now?</b>	Bańkowska et al. (2021); Manski (2004)
<b>Job finding probability</b>	Suppose you are actively looking for a new job. If you are currently employed, suppose you leave your current job. Now, please think about your future <b>chances of finding a new job</b> . <b>What do you think would be the percent chance that, within the next 3 months, you will find a new job that you will accept, considering the pay and type of work?</b>	Bańkowska et al. (2021); Mueller et al. (2021)
<b>Outside wage offers</b>	Suppose you are actively looking for a new job. If you are currently employed, suppose you leave your current job. Now, please think about the <b>(pre-tax) pay of the job offers</b> that you may receive within the coming three months. <b>What do you expect the average annual pre-tax pay for these offers to be for the first year?</b>	Jäger et al. (2024)
<b>Returns to education</b>	Now, please think about the <b>effect of completing a college education on future income</b> . Consider a typical high school student in the United States with average intelligence, skills, motivation, and work ethic. Imagine two scenarios: <b>Complete high school:</b> The person completes high school by finishing their senior year and earning their high school diploma, but does not pursue any further education. <b>Complete college:</b> The person continues their education, completes at least their senior year of college, and earns a bachelor's degree. <b>How much higher (in percent) do you expect annual income at age 40 to be if the person completes college compared to only completing high school?</b>	Jensen (2010); Giustinelli (2023); Wiswall and Zafar (2015)
— Health: —		
<b>Life expectancy</b>	Now, please think about your <b>life expectancy</b> . <b>About how long do you think you will live?</b> Please indicate the age that you expect to reach.	Hamermesh (1985); Hurd and McGarry (1995)
<b>Mortality risk</b> (Asked if age below 65)	Now, please think about your risk of dying before reaching the age of 65. <b>What do you think is the percent chance that you will die before the age of 65?</b>	Giustinelli et al. (2022); Hudomiet and Willis (2013); Rappange et al. (2016)
<b>Morbidity risk</b> (Asked if age below 65)	Now, please think about your risk of <b>becoming so ill or disabled that you are permanently unable to work before reaching the age of 65</b> . <b>What do you think is the percent chance that you will become permanently unable to work before reaching the age of 65?</b>	University of Michigan (2024)

Table continued on next page.

Table D.1 (*continued*): US household survey: Overview of elicited expectations

Variable	Survey question	Example references
<i>— Inequality: —</i>		
<b>Top 10% income share</b>	Net income is defined as the income a household has available after deducting taxes and adding transfers. Now, please think about <b>inequality of net income in the US</b> . Income inequality can be measured by the <b>share of total net income earned by the 10% of households with the highest net income</b> in the United States. <b>What do you think is the share of total net income earned by the 10% of US households with the highest net income?</b>	Bellani and Bledow (2025); Douenne et al. (2024)
<b>Top 10% wealth share</b>	Now, please think about <b>wealth inequality in the US</b> . Wealth inequality can be measured by the <b>share of total net wealth owned by the wealthiest 10% of households</b> in the United States. <b>What do you think is the share of total net wealth owned by the wealthiest 10% of US households?</b>	Bellani and Bledow (2025); Douenne et al. (2024)
<b>Gender wage gap</b>	Now, please think about the <b>(pre-tax) wages of men and women in the US</b> . Please think of all individuals in the US, men and women, with the same age, education, and working hours. <b>How many dollars, do you think, does a woman make on average for every \$100 made by a man with the same characteristics?</b> An answer below 100 means that you expect women to earn less than men; an answer above 100 means that you expect women to earn more than men.	Settele (2022)
<b>Economic mobility</b>	Now, please think about <b>economic mobility</b> in the US. Consider <b>children who are born into the bottom 20% of households in terms of income</b> , that is, the poorest fifth of households in the US. <b>Once these children grow up and form their own households, how many out of 100 do you think will make it from the bottom 20% to the top 20% of households?</b>	Alesina et al. (2018); Bellani et al. (2021)
<b>Own income position</b>	Now, please think about the <b>income distribution in the US in 2024</b> . Please consider total income in 2024 from all sources before taxes and transfers. <b>Which share of adults in the US had a lower income in 2024 than you?</b>	Cruces et al. (2013); Douenne et al. (2024); Karadja et al. (2017)
<i>— Climate: —</i>		
<b>Likelihood global warming happening</b>	Now, please think about <b>global warming</b> . <b>Global warming</b> refers to the idea that the world's average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world's climate may change as a result. <b>What do you think is the percent chance that global warming is happening?</b>	Leiserowitz et al. (2024); van der Linden et al. (2015); Većkalov et al. (2024)
<i>— Social norms: —</i>		
<b>Others' views on race equality</b>	Now, please think about <b>what other people in the US think about race equality</b> . <b>Out of 100 people in the US, how many do you think believe that people of all races should be treated equally?</b>	Kraus et al. (2017)
<b>Others' views on equal gender roles</b>	Now, please think about <b>what other people in the US think about gender roles</b> . <b>Out of 100 people in the US, how many do you think believe that men and women should have equal roles in the workplace?</b>	Bursztyn et al. (2024)
<b>Others' views on paying fair share of taxes</b>	Now, please think about what <b>other people in the US think about paying taxes</b> . <b>Out of 100 people in the US, how many do you think believe that people should pay their fair share of taxes, even if they could get away with cheating?</b>	Nathan et al. (2025)

Notes: This table provides an overview of the different expectations in the US household survey, including example references to literature studying these expectations.

## D.2 Firm Manager Survey

The German firm manager survey includes our standard measure of having previously-formed expectations for the following expectations:

Table D.2: Firm manager survey: Overview of elicited expectations (translation)

Variable	Survey question
<b>Future aggregate inflation</b>	As in Table D.1, adapted to the German context.
<b>Future nominal GDP growth</b>	As in Table D.1, adapted to the German context.
<b>Future monetary policy rate</b>	As in Table D.1, adapted to the German context.
<b>Future labor costs</b>	Now, please think about the future development of the <b>average cost per hour worked in your sector</b> . The <b>average cost per hour worked</b> describes the average cost of one hour of labor in your sector. Labor costs include direct wages and salaries as well as indirect labor costs, such as social security contributions or accident insurance. <b>What do you expect the percentage change in the average cost per hour worked in your sector to be over the next 12 months?</b> If you expect labor costs to increase, enter a positive number. If you expect labor costs to decrease, enter a negative number.
<b>Future energy prices</b>	Now, please think about the future development of <b>energy prices in Germany</b> . The <b>change in energy prices</b> describes the percentage change in the price of energy (e.g., electricity, gas, heating oil, fuels) over a certain period of time. It indicates how strongly energy prices rise (or fall), and thus reflects changes in energy costs for households and businesses. <b>What do you expect the percentage change in energy prices in Germany to be over the next 12 months?</b> If you expect energy prices to increase, enter a positive number. If you expect energy prices to decrease, enter a negative number.
<b>Future sales prices</b>	Now, please think about the future development of the <b>prices of goods and services sold in your sector</b> . The development of <b>sales prices in your sector</b> is described by the percentage change in the average price level of goods and services sold in your sector over a certain period of time. It indicates how strongly these prices rise or fall. <b>What do you expect the percentage change in the prices of goods and services sold in your sector to be over the next 12 months?</b> If you expect prices to increase, enter a positive number. If you expect prices to decrease, enter a negative number.

Notes: This table provides an overview of the different expectations in the German firm manager survey. English translation. Original in German.

## D.3 International Household Survey

The international household survey includes our standard measure of having previously-formed expectations for the following expectations: aggregate inflation, personal inflation, economic growth, recession risk, stock market returns, and the monetary policy rate. We use the wording from Appendix Table D.1. We translate the original English instructions into the local language and adapt the questions to the local context.

## D.4 Validation Study 1

The *Validation Study 1* includes our standard measure of having previously-formed expectations for the following expectations:

Table D.3: **Validation Study 1: Overview of elicited expectations**

Variable	Survey question
<b>Future temperature on Saturn</b>	Now, please think about the <b>future development of the temperature on Saturn</b> . The <b>temperature of Saturn</b> refers to the average surface temperature on the planet over time. <b>What do you think is the percent chance that Saturn’s temperature will rise over the next 10 years?</b>
<b>Malaysia Super League</b>	Now, please think about the <b>ongoing season of KL City FC in the Malaysia Super League</b> . The <b>Super League</b> is the top national soccer league for men in Malaysia. <b>KL City FC</b> is a soccer club from Kuala Lumpur. Winning the league means finishing the season with the highest number of points. <b>What do you think is the percent chance that KL City FC will win the national league in the ongoing season?</b>
<b>Troisdorf’s tax policy</b>	Now, please think about the <b>future local business tax rate in Troisdorf</b> , a small town in Germany. The <b>business tax rate</b> in a municipality is a legally set percentage of corporate profits that businesses must pay to the municipality. <b>What do you think is the percent chance that Troisdorf will reduce its corporate tax rate in the next 12 months?</b>
<b>Mortality</b>	Now, please think about your own life. <b>What do you think is the percent chance that you will die someday?</b>
<b>Existence of God</b>	Now, please think about the <b>existence of god</b> . <b>What do you think is the percent chance that god exists?</b>
<b>Shape of the Earth</b>	Now, please think about the <b>shape of the planet Earth</b> . The <b>Earth’s shape</b> describes its physical form. Some people claim that the Earth is flat, rather than round (or spherical). <b>What do you think is the percent chance that the Earth is flat?</b>

Notes: This table provides an overview of the different expectations in the *Validation Study 1*.

## D.5 Validation Experiment 2

### D.5.1 Wave 1

#### *Step 1: Instructions for the inflation expectations treatment arm*

##### **The inflation rate**

The expected inflation rate in the US is the percentage change in the general price level of goods and services in the US that you expect over a given period. It reflects the rate at which prices are rising (or falling) in the US and indicates changes in the purchasing power of money.

What do you expect the inflation rate in the US to be over the next 12 months? \_\_ %

#### *Step 1: Instructions for the stock market return expectations treatment arm*

##### **The stock market return**

The expected return of the US stock market is the change in value, in percent, that you expect to receive over a given period from investing in a portfolio that holds all stocks listed on the US stock market. It includes both dividends and capital gains/losses.

What do you expect the return of the US stock market to be over the next 12 months? \_\_ %

***Step 1: Instructions for the population growth expectations treatment arm***

**Population growth**

The expected population growth in the US is the percentage change in the US population size that you expect over a given period. It reflects the rate at which the population in the US is growing (or shrinking).

What do you expect the population growth in the US to be over the next 12 months? \_\_ %

***Step 2: Inform yourself***

Please take 5 minutes to inform yourself about the future [*inflation rate in the US / US stock market return / population growth in the US*] online and answer the questions below. You can use a separate browser window to browse the internet and return to the survey in approximately 5 minutes. We will ask you again about your expectations about the future [*inflation / US stock market return / population growth*] later in the survey. Informing yourself about future [*inflation / US stock market returns / population growth*] will prepare you for this task.

Please paste links to the websites that you visited during your online search below. Separate links with a comma or paragraph break. \_\_\_\_\_

Please summarize what you have learned. Use your own words. \_\_\_\_\_

***Step 3: Additional expectation questions, each on a different page***

(1) What do you think will be the main drivers of [*inflation in the US / the US stock market return / population growth in the US*] over the next 12 months? Please write at least 10 words. \_\_\_\_\_

(2) We would like to ask you again about the expected [*inflation / return of the US stock market / population growth*]. What do you expect the [*inflation rate in the US / return of the US stock market / population growth in the US*] to be over the next 12 months? \_\_\_\_\_ %

(3) In this question we present you with eight possible scenarios for [*inflation in the US / US stock market return / population growth in the US*] over the next 12 months. Please let us know how likely you think it is that each scenario will occur.

Please type in the number to indicate the probability (in percent) that you attach to each scenario. The probabilities of the scenarios have to sum up to 100 percent.

The [*inflation rate in the US / US stock market return / population growth in the US*] over the next 12 months will be ... [*eight bins follow, their range varies depending on the variable*]

**D.5.2 Wave 2**

We elicit inflation and stock market return expectations and use our standard measure of previously-formed expectations (see Table D.1). The order of the inflation and stock market return expectation block is randomized. The order of the categorical response options is randomly flipped across participants. We also elicit respondents' uncertainty.

## D.6 Validation Experiment 3

Respondents are randomized into one of six conditions that differ in how expectations are measured or the wording of the question of holding an expectation. We elicit inflation and stock market return expectations in random order. We present instructions for the inflation expectation version of each condition. The stock market return versions are analogous.

**Condition 1: Baseline version:** As in main text.

**Condition 2: Beliefs measured with distribution method**

### The future inflation rate

Please think about the future development of **prices for goods and services in the US**.

The **inflation rate** is the percent change over a given period in the general price level of goods and services. It reflects the rate at which prices are rising (or falling) and indicates changes in the purchasing power of money. A positive inflation rate means that prices increase; a negative inflation rate means that prices decrease.

**In your view, what would you say is the percent chance that, over the next 12 months...**

Your answers have to sum to 100 across all events.

- The rate of inflation will be 12% or higher. \_\_\_\_\_ %
- The rate of inflation will be between 8% and 12%. \_\_\_\_\_ %
- The rate of inflation will be between 4% and 8%. \_\_\_\_\_ %
- The rate of inflation will be between 2% and 4%. \_\_\_\_\_ %
- The rate of inflation will be between 0% and 2%. \_\_\_\_\_ %
- The rate of inflation will be between 0% and -2%. \_\_\_\_\_ %
- The rate of inflation will be between -2% and -4%. \_\_\_\_\_ %
- The rate of inflation will be between -4% and -8%. \_\_\_\_\_ %
- The rate of inflation will be between -8% and -12%. \_\_\_\_\_ %
- The rate of inflation will be -12% or lower. \_\_\_\_\_ %

[Standard measure of previously-formed expectation follows.]

**Condition 3: Add ‘Don’t know’ option**

[Start with standard measure of inflation expectations]

**Did you have an expectation about the future US inflation rate already before starting today’s survey, or did you form your expectation only during today’s survey?**

[I had a pretty precise expectation already before today’s survey; I had a rough expectation already before today’s survey; I formed my expectation only during today’s survey; Don’t know.]

**Condition 4: Without ‘only’**

[Start with standard measure of inflation expectations]

**Did you have an expectation about the future US inflation rate already before starting today’s survey, or did you form your expectation during today’s survey?**

[I formed my expectation during today’s survey; I had a rough expectation already before today’s survey; I had a pretty precise expectation already before today’s survey]

### ***Condition 5: Had no expectation before survey***

[Start with standard measure of inflation expectations]

**Did you have an expectation about the future US inflation rate already before starting today's survey?**

[I had no expectation before today's survey; I had a rough expectation already before today's survey; I had a pretty precise expectation already before today's survey]

### ***Condition 6: Had no rough expectation before survey***

[Start with standard measure of inflation expectations]

**Did you have an expectation about the future US inflation rate already before starting today's survey?**

[I did not even have a rough expectation before today's survey; I had a rough expectation already before today's survey; I had a pretty precise expectation already before today's survey]

## **D.7 Anchoring Experiment**

We present instructions for the *Anchoring Experiment* with stock market return expectations. The experiment with inflation expectations uses analogous instructions, but does not include the investment decision on the second page. The key treatment variation in both experiments is whether a 2% or 20% anchor is shown.

### **The future return of the UK stock market**

Please think about the future development of the **UK stock market**.

The **return of the UK stock market** is the change in value, in percent, that you receive over a given period from investing in a portfolio that holds all stocks listed on the UK stock market. It includes both dividends and capital gains/losses. A positive return means that the value increases; a negative return means that the value decreases.

**For example, a return of [2% / 20%]** means that £1,000 invested today will yield [*£1,020 / £1,200*] in twelve months.

**What do you expect the return of the UK stock market to be over the next 12 months?**

Please provide your response as percentage (for example, [*"2%" / "20%"*] as in the example above). \_\_\_\_ %

**Did you have an expectation about the future return of the UK stock market already before starting today's survey, or did you form your expectation during today's survey?**

- I had a pretty precise expectation already before today's survey
- I had a rough expectation already before today's survey
- I formed my expectation during today's survey

[Page break]

### Your investment

Imagine you want to **save** an additional £10,000 for the next 12 months. What would you do if you had the following choice?

Two investment options are available:

- **Investing in a stock index fund that follows the UK stock market.** The return on your investment in this stock index fund will be the actual return of the UK stock market over the next 12 months.
- **Investing in a savings bond that pays 3 percent interest per year for sure.** The return on your investment in this savings bond will be 3 percent for sure.

**Please decide. How much of the £10,000 would you invest in the stock index fund, and how much in the savings bond?** (Note: The sum of the investments must amount to £10,000).

- My investment in the stock index fund: £ \_\_\_\_
- My investment in the savings bond: £ \_\_\_\_

## D.8 Anchoring Experiment: Within-subject design

The main part starts as follows:

### Main part

What follows is the main part of this survey which is about your **thoughts and expectations regarding how the future might look.**

**Illustrative examples:** Each question begins with a short introduction to the topic. You will provide your answers in numerical form. To help you become familiar with the numerical response format, each introduction also contains an **illustrative example**. Importantly, the example values are randomly selected and help demonstrate the numerical response format. They are not forecasts or expert estimates, but randomly selected numbers.

We elicit four expectations in the within-subject design, in random order. The main treatment variation is whether a high or a low anchor is shown as an illustrative example before an expectation is elicited. For example, here is the recession risk block:

### The likelihood of a future recession

Now, please think about the future development of the **UK Gross Domestic Product**.

The total output of the UK economy is measured by the **Gross Domestic Product (GDP)**, which is defined as the value of all goods and services produced within the UK over a specific period of time.

A **recession** entails a fall of real (price-adjusted) GDP which means that in a given quarter the economy produces fewer goods and services than in the preceding quarter. A fall of real GDP is normally reflected in a decline of real income, employment, industrial production, and wholesale-retail sales.

**Illustrative example:** A *[10% / 70%]* chance that the UK enters a recession in the second quarter of 2026 means that there is a *[10% / 70%]* chance that real UK GDP will fall in the second quarter of 2026 relative to the first quarter of 2026.

**What do you think is the percent chance that real UK GDP will fall in the second quarter of 2026 relative to the first quarter of 2026?** Please provide your response as percentage (for example, “*[10% / 70%]*” as in the example above). \_\_\_\_ %

**Did you have an expectation about the likelihood of a future recession in the UK already before starting today’s survey, or did you form your expectation only during today’s survey?**

[I formed my expectation only during today’s survey; I had a rough expectation already before today’s survey; I had a pretty precise expectation already before today’s survey]

[A final questions elicits respondents’ belief uncertainty.]

We summarize key instructions from the other three blocks below:

***[APR block]***

**The annual percentage rate on credit card debt** is the interest rate that consumers pay when carrying a balance on their credit card over one full year. This rate varies based on individual creditworthiness. Here, we are interested in the average rate across all credit card holders in the UK.

**Illustrative example:** An APR of *[5% / 35%]* means that £1,000 in credit card debt carried for one year will result in *[£50 / £350]* in interest charges over the year.

**What do you expect the average annual percentage rate on credit cards in the UK to be in 12 months from now?** Please provide your response as percentage (for example, “*[5% / 35%]*” as in the example above). \_\_\_\_ %

***[Stock market return block]***

**The return of the UK stock market** is the change in value, in percent, that you receive over a given period from investing in a portfolio that holds all stocks listed on the UK stock market. It includes both dividends and capital gains/losses. A positive return means that the value increases; a negative return means that the value decreases.

**Illustrative example:** A return of *[2% / 20%]* means that £1,000 invested today will yield *[£1,020 / £1,200]* in twelve months.

**What do you expect the return of the UK stock market to be over the next 12 months?** Please provide your response as percentage (for example, “*[2% / 20%]*” as in the example above). \_\_\_\_ %

*[Wealth inequality block]*

**Wealth inequality** can be measured by the share of total net wealth owned by the wealthiest 10% of households in the United Kingdom.

**Illustrative example:** A share of [25% / 75%] means that out of every £1000 of total net wealth in the UK, about [£250 / £750] is owned by the wealthiest 10% of households.

**What do you think is the share of total net wealth owned by the wealthiest 10% of UK households?** Please provide your response as percentage (for example, “[25% / 75%]” as in the example above). \_\_\_\_ %

## D.9 Information Experiment

### D.9.1 Wave 1

#### *Prior beliefs*

##### **The future inflation rate**

Please think about the future development of **prices for goods and services in the US**.

The **inflation rate** is the percent change over a given period in the general price level of goods and services. It reflects the rate at which prices are rising (or falling) and indicates changes in the purchasing power of money. A positive inflation rate means that prices increase; a negative inflation rate means that prices decrease.

**What do you expect the US inflation rate to be over the next 12 months?** \_\_\_\_ %

**Did you have an expectation about the future US inflation rate already before starting today’s survey, or did you form your expectation during today’s survey?**

[I had a pretty precise expectation already before today’s survey; I had a rough expectation already before today’s survey; I formed my expectation during today’s survey]

#### *Information treatment instructions below (not shown to respondents in the control group)*

##### **Which inflation rate do experts expect?**

The Survey of Professional Forecasters (SPF) gathers forecasts from leading experts, including economists from financial institutions, universities, and research organizations. These experts analyze economic trends, data, and policy developments to provide informed projections about key economic indicators.

So, what do these experts predict for inflation in the US over the next twelve months?

**According to the August 2025 wave of the SPF, professional forecasters on average expect the US inflation rate over the next 12 months to be 2.7%.**

[Page break]

##### **Summary**

According to the August 2025 wave of the SPF, professional forecasters on average expect the US inflation rate over the next 12 months to be **2.7%**.

*Posterior beliefs. From now on, instructions are identical for all respondents.*

### **Your expectation**

Please consider the following question once more.

**What do you expect the US inflation rate to be over the next 12 months? \_\_\_\_ %**

## **D.9.2 Wave 2**

Wave 2 elicits posterior beliefs in a similar manner to the prior belief question of Wave 1.

## **D.10 Qualitative Interviews: Reported Expectations**

### **Interview**

In this study, you'll participate in an interview with a chatbot.

This interview is a very important part of the study. Please answer thoughtfully and take your time.

You have two options to answer the questions: You type the answers using your **keyboard**. You use the **voice recording** feature, see how it works in the video below. *[Embedded video]*

[Page break]

### **The future inflation rate**

Please think about the future development of **prices for goods and services in the US**.

The **inflation rate** is the percent change over a given period in the general price level of goods and services. It reflects the rate at which prices are rising (or falling) and indicates changes in the purchasing power of money. A positive inflation rate means that prices increase; a negative inflation rate means that prices decrease.

**What do you expect the US inflation rate to be over the next 12 months? \_\_\_\_ %**

**Did you have an expectation about the future US inflation rate already before starting today's survey, or did you form your expectation only during today's survey?**

[I had a pretty precise expectation already before today's survey; I had a rough expectation already before today's survey; I formed my expectation only during today's survey]

[Page break]

### **Interview topic**

On the next page, you will participate in an interview with an AI chatbot about how you formed your expectation about the future inflation rate.

To ensure that the interview is as meaningful as possible, it's important that your responses provide sufficient detail. Please aim to write full sentences in your answers to allow for a meaningful conversation. There are no right or wrong answers.

We expect the interview to take about **10 minutes** to complete on average.

[Page break]

## **Interview**

**You previously stated that you expect the US inflation rate to be [X]%.**

*[Interview chat interface, chat starts with:]* Please let me know how you came up with your prediction of future inflation. What was the main consideration underlying your prediction?

## **D.11 Default Experiment**

After measuring return expectations and whether respondents had such an expectation before the survey, respondents face the following investment decision.

### **An investment decision**

**In the following, we ask you to make a decision on how you would invest £100 for the coming 12 months.**

**You have the chance to earn your investment outcome as bonus payment.**

Upon completion of the research project, we will randomly select ten participants who will receive a payout equal to the value of their investment after 12 months. If you are selected, this payout will depend on your investment decision, so please consider your decision carefully. The payout will be made in 12 months (plus processing time). You will be contacted and invited to a bonus study in which you will receive your bonus payment.

**Two investment options are available:**

- **Investing in a stock index fund that follows the UK stock market.** The return on your investment in this stock index fund will be the actual return of the UK stock market over the next 12 months.
- **Investing in a savings bond that pays 3 percent interest per year for sure.** The return on your investment in this savings bond will be 3 percent for sure.

**Default allocation (if you make no changes):**

- You invest [£20 / £80] in the UK stock index fund
- You invest [£80 / £20] in the savings bond

**What would you like to do?**

- **Keep the default allocation:** Invest [£20 / £80] in stock index fund and [£80 / £20] in savings bond
- **Set my own allocation**

*[If the default is overruled, participants see the following:]*

**Please decide. How much of the £100 would you invest in the stock index fund, and how much in the savings bond?** (Note: The sum of the investments must amount to £100).

- My investment in the stock index fund: £\_\_\_\_\_ (with [£20 / £80] as pre-filled default)
- My investment in the savings bond: £\_\_\_\_\_ (with [£80 / £20] as pre-filled default)

Subsequently, respondents face a standard dictator-game giving decision that is introduced analogously. The decision is incentivized: ten respondents are randomly chosen and their decisions are implemented. We cross-randomize whether participants face a default of sharing equally or keeping everything.

## D.12 Investment Behavior Survey

*[The order of questions below is randomized. The categorical scales are flipped for a random half of respondents.]*

People use different approaches when making investment decisions. We are interested in which approaches you actually use to manage your money. There is no right or wrong answer.

**Once I find investment options that seem acceptable, I stop searching for alternatives.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**Once I choose an investment allocation, I usually leave it unchanged.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**I mainly follow the investment choices suggested by my employer, advisor, or people I trust.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**Before making an investment decision, I collect information about the risks and potential returns of different options.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**Whenever possible, I try to outsource my investment decisions to an expert.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**I mainly invest in U.S. companies because they feel more familiar.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**I occasionally check my investments to make sure nothing looks obviously wrong, but I do not try to optimize them.**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**I only reconsider my investment choices when a major life event happens (such as marriage, a new job, or having children).**

[Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree]

**When I first enrolled in my retirement account, I kept the investment allocation that was already selected for me.**

[Yes; No]

**When I first enrolled in my retirement account, I kept the contribution rate that was already selected for me.**

[Yes; No]

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