How do rising temperatures affect inflation expectations?

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Abstract:

The majority of consumers express concern and become increasingly aware of climate change; however, little is known about how climate change affects consumer expectations. We fill this gap by implementing a series of experiments in a large-scale, population-representative survey of euro area consumers. Respondents are randomly assigned to different global temperature change scenarios, after which we elicit their expectations regarding inflation and other macroeconomic variables subject to these scenarios. We find that a 0.5°C rise in global temperatures induces a 65-basis-point increase in five-year-ahead inflation expectations. These effects are most pronounced among consumers who are better informed about climate change. Moreover, consumers expect global warming to be detrimental to economic growth, employment, public debt, tax burden, and their well-being. Despite these broad concerns, many consumers show relatively limited willingness to pay to prevent further temperature increases and assign the primary responsibility for climate action to governments.

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"[…] extreme weather events, and the unfolding climate crisis more broadly, could drive up food prices by more than expected." **Christine Lagarde** – president of the European Central Bank (press conference, 12.12.2024)

"*Present trends are racing our planet down a dead-end 3C temperature rise.*" **Antonio Guterres** – U.N. Secretary-General (Reuters, 13.11.2024)

1. Introduction

Global climate is changing rapidly. The year 2024 was the warmest on record in over 150 years, and the world is not on track to meet the 1.5°C target set by the Paris Agreement. Europe experienced its hottest summer on record in 2024, with wildfires now a recurring summer phenomenon in Portugal, France, and Greece. Shortly thereafter, devastating floods struck Austria and several Eastern European countries, followed by severe flooding in Spain. Beyond Europe, new research highlights the need to revise the classification of hurricanes due to unprecedented wind intensities, and unprecedented wildfires recently engulfed Los Angeles in the US.

The public is generally sensitive to climate change, with growing concern and awareness about its repercussions. A representative survey among European consumers, which we will discuss in detail below, reveals that 44 percent has been financially affected by extreme weather events in the past five years. Moreover, three-quarters of consumers pay at least some attention to the news on climate change, while a similar fraction is concerned about climate change affecting their own financial situation. Despite this high level of consumer awareness regarding climate change, surprisingly little is known about how these changes affect consumer inflation expectations and their beliefs and expectations about their own well-being and the macroeconomy more broadly.

The present paper aims to fill this gap by estimating the effect of various temperature change scenarios - a concept that most people are familiar with and can relate to - on consumers' expectations. Specifically, we implement an experiment in a population-representative survey, randomly assigning respondents to different temperature change scenarios (ranging from a reduction of 1.5°C to a quite extreme increase of 3.0°C over the next five years) and eliciting their inflation expectations along with some idiosyncratic and macroeconomic expectations (incl. about economic growth, unemployment, and tax burden). The random assignment to different scenarios ensures that the average differences in expectations by group are driven

by the varying intensity of temperature scenarios and are not confounded by differences in observed and unobserved respondents' characteristics which net out on average.

Understanding how different climate change scenarios transmit to consumer expectations is important, given the wide-reaching implications of expectations for economic behaviour. The impacted behaviours typically regard consumption patterns, wage demands, risk attitudes and investment choices, beliefs about long-term economic prospects of the country, and support for climate policies or voting behaviour.

To further explore these dynamics, we implemented a number of special-purpose questions along with survey experiments fielded in different waves of the ECB Consumer Expectations Survey (CES). The survey provides representative data covering the eleven largest euro area countries. Our experimental setup involves four distinct groups of respondents, each randomly assigned to one of four global temperature change scenarios. In our baseline survey experiment, fielded in June 2025, we compare responses in scenarios where global temperature increases by 0.5°C or 1.5°C to a baseline group with only a minimal 0.01°C change (that basically represents the no temperature change control group). The fourth scenario involves a 0.5°C decline in global temperature and serves as a consistency check and a reference point for potential asymmetric effects. Respondents report their inflation expectations as well as expectations about GDP growth, stocks and house prices, government debt and taxes as well as own financial well-being, all subject to the scenario they have been assigned to. In addition to economic variables, we measure the impact on non-economic variables such as immigration and biodiversity, and as a placebo test, we examine the impact of temperature changes on the number of Oscar- winning movies.

We gain additional insights by fielding another survey module in September 2024 where we used more extreme whether scenarios (varying from 1.5°C decrease to 3.0°C increase). Taken together, the results from both experiments are qualitatively consistent, reinforcing the robustness of our conclusions. Moreover, the temporal separation between the two surveys (the first after summer 2024 and the second prior to summer 2025) mitigates concerns about seasonal effects influencing consumer responses.

We report several novel findings. First, consumers who are randomly assigned to higher temperature scenarios increase their inflation expectations due to climate change. According to our findings, a 0.5°C rise in global temperatures induces a 65 basis points increase in the five-year-ahead inflation expectations. In follow-up questions, consumers attribute increases in e.g., food prices to supply-side factors (crop failures, higher production costs and supply

chain disruptions) and to a lesser extent to demand and cost-push factors. Moreover, we document that rising global temperature also affects a number of other macroeconomic expectations. For example, higher temperatures induce lower expectations about economic growth and stock prices and higher expectations about unemployment, tax burden, government debt, and housing prices. Consumers also expect rising temperatures to worsen their own financial well-being. Furthermore, consumers expect global warming to be detrimental for biodiversity and increase immigration. On the other hand, we estimate statistically and economically virtually zero effects of temperature changes on the number of Oscar-winning movies (i.e., our placebo outcome).

Second, there is considerable heterogeneity in the estimated effects on inflation expectations, notably with respect to climate knowledge. Consumers who are better aware about the consequences of climate change, form higher inflation expectations in response to a given temperature increase relative to their less knowledgeable counterparts.

Third, the perceived impact of global temperature change is nonlinear. For example, the negative effects on inflation expectations out of a 0.5°C temperature tend to be larger in absolute terms than the counterpart positive effects of a 0.5°C temperature increase. This may reflect that many consumers believe that at least part of the effects due to global warming may have materialized already. Furthermore, a global warming of 3.0°C or 1.5°C have the largest effects, but the anticipated incremental effect of a 0.5°C additional temperature change is relatively smaller than the initial effect out of the 0.5°C temperature change scenario. This implies that for many consumers the increase of 0.5°C is seen already as quite damaging for most of the outcomes under study.

Fourth, the majority of consumers is willing to pay a monthly amount to the government to finance measures that will prevent temperature increases. The conditional average payment accumulates to about 3,600 euro over a five-year period. While non-negligible, these amounts are considerably lower than what consumers would have been willing to pay to smooth business cycle fluctuations or to bring inflation down to their desired levels (see Georgarakos et al. 2025). Consumers primarily consider the government responsible for taking climate actions and expect taxes to increase more across higher temperature scenarios.

Our findings have several policy implications. First, the economic consequences of global temperature changes extend beyond their direct impact through economic damages caused by extreme weather events, as inflation and other economic expectations and attitudes are

also impacted and, in turn, via these channels influence consumer behaviour and the broader macroeconomy.

Second, these results have implications for monetary policy communication and the anchoring of inflation expectations among consumers, given that expectations of climate change and rising temperatures feed into higher inflation expectations. Existing research suggests that inflation expectations among consumers with better knowledge of the economy and monetary policy tend to be better anchored. However, our findings suggest that consumers with higher awareness about climate change associate rising global temperature with higher longer-term inflationary pressures, pointing to some risk of de-anchoring.

Third, these findings are important because they relate to public support for climate action and highlight that climate change is already affecting the economy through household expectations and beliefs. These results suggest consumers will continue to view climate change as a key priority for policymakers. While there is considerable heterogeneity in these views, higher-educated, more financially literate, and higher-income respondents are more likely to prioritize climate change. However, hand-to-mouth consumers, who are more vulnerable to rising prices, while being more concerned about climate change they do also report other policy priorities that they consider more urgent.

Our paper contributes to several strands of literature on the impact of climate change on the economy. A rapidly growing body of research aims to quantify these effects. Many studies have focussed on estimating the aggregate monetary impact of climate change, with more recent findings indicating sizeable and persistent economic losses (e.g., Carleton et al. 2022, Bilal and Känzig 2024, Kotz et al. 2024a) due to rising temperatures through climate change. These effects are likely to vary across countries (Cruz and Rossi-Hansberg 2024). While earlier work, as reviewed by Tol (2009), largely overlooked certain broader costs, more recent studies emphasize additional economic costs in the form of biodiversity loss which can reduce output today and limit growth opportunities for the future (Giglio et al. 2024).

Studies on consumers have primarily shown that they pay attention to and are generally concerned about climate change (Whitmarsh and Capstick 2018, Crispino and Loberto 2024). Work by Dechezleprêtre et al. (2022) investigates how attitudes towards climate policies are formed and demonstrates that educational videos highlighting policy mechanisms can increase support for such policies. Moreover, there is growing evidence that beliefs about climate change also matter for asset prices (Bernstein et al. 2019, Baldauf et al. 2023, Giglio et al. 2021, Fairweather et al. 2024). Stroebel and Wurgler (2021) find in a survey that different

economic experts believe climate risks are underpriced in asset markets. Similarly, a survey of investors by Giglio et al. (2023) suggests that risks from biodiversity loss may also be inadequately reflected in equity prices.

Notably, fewer studies have examined what consumers think will be the macroeconomic effects of climate change. Against this background, our contributions are twofold. First, we document several key facts about consumers' experiences with climate change, their knowledge, attention, and concerns in the euro area located in the fastest-warming regions worldwide. Second, we show how different scenarios of global temperature change shape consumers perceptions about the consequences of climate change for the economy. In a related study, Meinerding et al. (2023) find based on observational data for German consumers that higher concerns about climate change correlate with lower inflation expectations. The authors suggest that consumers might feature a demand side view expecting decreasing aggregate demand and lower inflation expectations in relation to climate change risks. To this end, we also shed light on the underlying channels for how consumers think future prices will be affected by global temperature change.

To establish empirical identification in our study, we leverage recent advances in survey methodology, as reviewed by Stantcheva (2023) and Haaland et al. (2023). Concretely, we randomly vary different scenarios of future global temperature change, allowing us to assess how varying degrees of climate change influence consumers' expectations. Our study is also motivated by previous work by Andre et al. (2022, 2024), which highlights that consumers' narratives about the economy and asset markets can differ substantially from those of experts.

The remainder of this paper is structured as follows. Section 2 presents the data and describes the experimental design that we use for identification. Section 3 presents the empirical analysis, including robustness tests to ensure the integrity of the experimental design. Finally, Section 4 concludes and discusses implications of our findings.

2. Data and experiment design

Global land and ocean average temperature have increased considerably since 1850. The current global temperature is nearly 1.5°C above the 1901-2000 average, and a clear acceleration in global temperatures can be observed over the last four decades.[1] Higher global

[1] See Figure A1 in the Appendix.

temperatures also go hand in hand with an increasing frequency and severity of extreme weather events affecting more consumers around the world.[2]

When asked about the country-wide impact in our survey, on average, consumers in August 2024 believe that there is a 22 percent chance that extreme weather events will affect the economic situation of their country in the next five years. Notably, as global temperatures increase, the topic of global warming has received a vastly increasing amount of attention in the media as is evident from the number of articles containing the word "global warming".[3]

Concerns about climate change can arise for various reasons, as its economic consequences extend beyond the tragic loss of life caused by extreme weather events. Real global damages from weather-related events have more than doubled over the past twenty years (Mauderer and Talbot, 2024; Banerjee et al. 2023). Depending on the type of event, output, productive capital, real estate, or infrastructure are destroyed. An overview study by Mauderer and Talbot (2024) highlights that economic growth is affected negatively, both in the short and in the long run. Climate change exerts upward pressure on inflation, particularly on food prices, especially in the short run when supply constraints and additional costs drive prices higher. In the long run, the overall impact depends on whether supply effects dominate or if lower demand – resulting from reduced wealth – offsets inflationary pressures. The total effect on inflation depends on the nature of the event, the level of insurance coverage, and the government's response. Additionally, the mere expectation of climate change and extreme weather events can shape consumer expectations and behaviour, influencing broader economic developments. This naturally raises the question of how consumers perceive the economic repercussions of climate change.

2.1 The Consumer Expectations Survey

We use micro-level data from the ECB's Consumer Expectations Survey (CES). This internet-based survey is fielded every month in the eleven largest euro area countries offering nationally representative data of the underlying populations. The CES was launched in a pilot phase in January 2020 interviewing households every month in the six largest euro area economies (Belgium, France, Germany, Italy, the Netherlands, Spain). Since January 2022, the

[2] See Robinson et al, (2021); IPCC 2021 (https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/), BBC "A year of extreme weather that challenged billions" on the 29. December 2025, the 2024 report on European Climate Risk Assessment (https://www.eea.europa.eu/publications/european-climate-risk-assessment).
[3] See Figure A2.

survey has been expanded to cover five additional countries (Austria, Greece, Finland, Ireland, and Portugal). The survey covers each month about 19,000 consumers and is described in detail by Christelis et al. (2024), Georgarakos and Kenny (2022) and ECB (2021).

The flexible survey design, the very large number of observations, and its online nature make the CES especially suitable for our research purposes. We make use of the possibility to field a survey experiment in the CES and of additional special-purpose questions that were asked in a fully harmonised way across the euro area while using rich background information on individual socio-demographic characteristics. Specifically, we make use of questions that were part of an annual topical module that was fielded in August 2024, an ad hoc module in December 2024, and two experiments designed for this paper and fielded in September 2024 and June 2025. In what follows we outline the experimental design we use to answer the question how consumers perceive the effects of different climate change scenarios on the macroeconomy.[4]

2.2 Survey information on climate change and experimental design

Consumers' expectations about the effects of climate change on the macroeconomy may be influenced by their socioeconomic characteristics, as well as by idiosyncratic, unobserved factors and beliefs that are likely time varying (e.g., concerns about the future in general, political beliefs, knowledge about the effects of climate change, etc.). Such unobservables most likely also correlate with consumers' awareness about different climate scenarios. As a result, estimating the causal effect of different climate change scenarios on consumers' beliefs about the macroeconomy is empirically challenging and cannot be addressed with standard econometric methods.

To address this empirical challenge, we implement randomised control trials in the September 2024 and June 2025 rounds of the CES as part of special purpose modules fielded after the regular surveys.[5] Respondents are randomly divided into four different groups on the country and recruitment type level. Each of the groups receives a different hypothetical scenario for global temperature change. First, they are explained that "According to historical data, the annual average global temperature in 2023 has increased significantly by about 1 degree Celsius compared to 50 years ago". This information helps putting the total change in temperature in perspective.

[4] Appendix C provides details and the exact wording of questions and response options.
[5] See Table B1 in the Appendix for sample summary statistics of socio-demographics in June 2025.

Thereafter the June 2025 question continues with one of the following four scenarios, i.e., "Suppose that in the next 5 years, the average global temperature will [decrease considerably by 0.5/increase only slightly by 0.01/increase considerably by 0.5/increase considerably by 1.5] degrees Celsius compared to today". In our empirical analysis, we are particularly interested in the scenarios with a temperature increase of 0.5°C and 1.5°C. The scenario with 0.01°C temperature increase serves as the (almost) no change control group. Together with the random assignment, this allows for the causal interpretation of changes in expectations in the scenarios of increasing global temperature compared to the no change scenario. Responses to the 0.5°C lower temperature scenario serve as a validity check and can be used to test the symmetry of effects of higher/lower temperature expectations. The choice of 1.5°C temperature change is chosen as this increase has become a focal point in public discussions and the media after the 2015 Paris agreement to limit the global temperature rise to well below 2°C and ideally to 1.5°C above pre-industrial levels. While the 1.5°C change is tied to a specific reference point in that climate agreement, the public may recognize that a 1.5°C increase represents a significant change in temperature. The September 2024 survey includes a 3.0°C increase scenario to present an even more extreme case, allowing us to investigate potential nonlinear effects of temperature change on consumer expectations. This 3.0°C increase scenario in September 2024 was complemented with -1.5°C, +0.01° and +1.5°C scenario's. Apart from the different temperature changes in the scenario's, the RCT experiment set-up was exactly the same as in the June 2025 scenario. In the remaining of the paper we primarily refer to the June 2025 findings and refer to the September 2024 results where relevant.[6]

Given the scenario presented to them, respondents tell what will happen as a result of the global temperature change to various items. Answer categories are "decrease a lot", "decrease a little", "no effect", "increase a little" and "increase a lot". We are particularly interested in the expected macroeconomic implications. For instance, what will happen to food prices, energy prices and prices of other goods and services. We distinguish these three different categories as global temperature change and various extreme weather events may have different consequences for each of these categories. In particular, food prices tend to respond very directly to extreme weather events, for instance when floods or droughts lead to crop failures (Ciccarelli et al. 2024, Kotz et al. 2024b). However, there may also be more structural changes in production costs, as farmers may have to invest in water transport, for instance.

[6] Sample summary statistics show a nearly identical sample composition in June 2025 and September 2024 and the full set of September 2024 results are available upon request.

Respondents expecting higher food prices are shown a follow-up question where they can indicate the reason for higher food prices.

Next to the consequences for consumer prices, respondents indicate the expected consequences for the macroeconomy (economic growth and unemployment), asset prices (stock prices and house prices), public finances (government debt and taxes) as well as their household financial well-being. Apart from the economic variables, we ask for the consequences for biodiversity and immigration to verify the plausibility of consumer expectations for non-economic variables. Finally, we ask for the consequences for "the number of Oscar-winning movies" which is included as a placebo outcome item as there is no reason to expect a change related to global temperature changes. In case consumers would expect that global temperature systematically affects the number of Oscar-winning movies this would be reason for concern about the experiment design and the presence of survey demand effects on outcome variables. To avoid any order effects influencing our results, we block-randomized the order of the outcome variables, grouping together those that logically belong together, such as the three items related to price expectations.

Other survey questions part of the June 2024 and September 2025 surveys are asked to all respondents to measure the extent of their concern about climate change, as well as their climate knowledge, experiences, expectations, and attention to climate news. Based on these questions, we first present descriptive evidence to assess expectations, knowledge, and attitudes among the public (in Section 3.1) before providing the evidence from our hypothetical experiment to identify the causal effects of global temperature changes on inflation expectations (in Section 3.2).

3. Empirical results

3.1 Consumers climate change experiences, knowledge, attention, and concerns

To assess consumers' awareness of climate change, we include a question on attention to news about climate change as well as several knowledge questions. After explaining that some people might follow news and developments related to climate change and search for information about climate change regularly and others do not, we ask respondents how much attention they pay to climate change news themselves. Figure 1 (panel b) shows that about 6 in 10 consumers pay some or much attention and 14 percent pays a great deal of attention to climate change news. Thus, in total, about three-quarters of consumers pay attention to climate change news to at least some extent, a result that is in line with earlier evidence by

Andre et al. (2024), who show substantial willingness to act among consumers. Overall, this demonstrates that a significant number of people pay attention to climate news. This contrasts with an only slightly higher share of euro area consumers (about 80%) who answer in August 2024 that they pay at least some attention to inflation news and only 22% of consumers who heard about the changed monetary policy strategy of the ECB in 2021 (Ehrmann et al. 2023).

Media attention contributes to knowledge about climate change and the majority of respondents answers 5, 6 or 7 questions out of a total of 7 knowledge questions correctly. Knowledge is measured by seven true/false statements on climate change (all including an "I do not know" option). These questions follow the dimensions set out in Tobler et al. (2012), i.e., physical knowledge about CO2 and the greenhouse effect, knowledge concerning climate change and causes, knowledge concerning expected consequences of climate change and action-related knowledge. Appendix C contains the precise wording of the questions and appendix B reports the results for each individual question.[7] The number of correct answers ranges from 43.1 percent of respondents correctly identifying that the statement "the ozone hole is the main cause of the greenhouse effect" is false, to 82.2 percent of respondents correctly answering that the "the production of 1 kg of beef produces more greenhouse gases than the production of 1 kg of wheat" is true.[8] Figure 1 (panel a) reports the distribution of the total number of correct responses to the climate knowledge questions. While there is considerable heterogeneity in climate knowledge, two-thirds of respondents answered at least five knowledge questions correctly.

Based on respondents' attention to climate change news and their climate knowledge, we conclude that while climate change awareness varies among respondents, there appears to be some basic awareness of climate change in the population overall. At the same time, consumers seem to be rather concerned, though most are not overly concerned about the impact of climate change on the financial situation of their household over the next five years (Figure 2, panel c). The distribution of responses on a scale from 0 (not concerned at all) to 10 (extremely concerned) shows some skewness to the right, with about half of the consumers falling within the categories from 5 to 8, and one in ten consumers in the highest two categories (9-10). At the same time, one in ten consumers reports having very little concerns (categories 0 and 1). There is a strong association between these concerns about

[7] Questions 1, 3, 4, 6 and 7 follow a more extensive item list by Tobler et al. (2012).
[8] See Table B2.

climate change affecting the household financial situation and the perceived importance of climate change as one of the major issues facing their country (Figure A3 in appendix A).

Awareness of climate change may be linked to whether individuals have personally experienced its consequences. One key indicator of this is whether extreme weather events or natural disasters have affected a household's financial situation in the past five years. Figure A4 presents country-level data on the financial effects of various extreme weather events. A significant share of consumers has faced financial losses due to extreme weather. Across all surveyed countries, the most common events leading to financial damage are droughts (22%), floods (18%), and storms (15%). Wildfires have affected 10% of respondents financially. Across all eleven countries, 44 percent of consumers have been financially affected in the past five years by one or more extreme weather events.

However, there are notable cross-country differences. Greek respondents most frequently report a financial impact, particularly from floods, droughts, and wildfires, each of which has affected more than a third of households. In addition to Greece, households in Portugal, France, and Spain have also been disproportionately affected. These cross-country variations are supported by official data on the economic damage caused by extreme weather events (European Environment Agency 2024). While the survey does not assess whether respondents attribute these events to climate change, it is noteworthy that temperature-related events, such as droughts and wildfires, frequently result in financial losses.

To further investigate the heterogeneity among consumers in their knowledge and attitudes, we run multivariate regression linking these variables to socio-demographic characteristics of respondents. Table 1 present the results and reveals a clear age gradient. The elderly have more knowledge about the causes and consequences of climate change and pay more attention to climate change news. At the same time, they are less often concerned about climate change affecting the economic situation of their country or their own household. Respondents with higher levels of education or financial literacy have more knowledge, pay more attention to climate change news, and expect climate change to have consequences for the economic situation of their country. This translates into a higher proportion believing that climate change is one of the most important policy issues facing their country.

This contrasts with hand-to-mouth consumers who are also concerned about climate change affecting the economic situation of their country and their household financial situation, yet more often consider other policy issues to be more urgent. Additionally, hand-to-mouth consumers have lower levels of climate knowledge and pay less attention to climate change

news in the media. Thus, despite their concerns about the negative consequences of climate change for the national economy and their household financial situation, they less often report climate change as a major policy priority. This may be linked to hand-to-mouth consumers having more immediate concerns that they prioritize as policy issues for their country.

The pattern is different for consumers in the highest household income quartiles. Compared to consumers with less household income, they are more knowledgeable on climate change, less worried about the consequences for the national economy or their household's financial situation, yet more often judge climate change as an issue of major policy importance. Finally, homeowners are less worried about the impact of climate change on the national economy but more worried about their household financial situation.

3.2 How do regional temperatures and extreme weather events correlate with inflation expectations?

Data from the monthly CES-questionnaires show a positive correlation between consumer inflation expectations and temperatures in the month these surveys are fielded. Figure A5 shows the correlation between mean expected inflation one year ahead and three years ahead and monthly deviations of regional (NUTS-1) temperatures from its long-term average. Clearly, in months with relatively higher temperatures, expected inflation is higher, which demonstrates temperature and inflation expectations are likely interconnected. This interconnection does not necessarily imply a causal relation. To investigate causation, we have designed RCT experiments with different temperature scenarios.

Taking a broader environmental perspective, we use the expectations data regularly collected in the CES to relate expectations about the likelihood of a concrete outcome of climate change, extreme weather events, and expectations regarding inflation at different horizons. Figure A6 plots the correlation in the form of a binscatter plot for the 1-, 3- and 5-year-ahead expected inflation rates. We find a positive correlation across all horizons, suggesting that consumers who expect a higher likelihood of extreme weather events affecting their country's economy also expect higher rates of inflation. This relationship is most pronounced in the longer term, with the 5-year-ahead inflation expectations.

All in all, many characteristics correlate in various ways with attention to climate change, climate knowledge, concerns about climate change, and the perception of climate change as one of the most pressing issues facing their country. Given the heterogeneity and varying relations between attention, climate knowledge, and attitudes, studying the impact of climate

change on inflation expectations requires causal identification of is effects. In the next section, we present the results from the hypothetical scenarios of global temperature change, which generate causal variation in temperature change and its link to household economic expectations, based on the experimental design outlined in Section 2.

For a well-designed survey, it is important that respondents can relate to the scenarios presented to them, such as a scenario involving a 1.5°C increase in temperature compared to today. The June 2025 survey elicits expectations about global temperature changes over the next five years using a probabilistic question format (cf. Manski, 2004). Figure 2 displays the implied distribution of respondents expected mean change in global temperatures. Two key patterns emerge. First, there is considerable variation in expectations, indicating substantial disagreement among consumers about future temperature changes. Second, a significant share of respondents - approximately one-third - expect an increase of 1.5°C or more. This suggests that the scenarios shown to respondents are seen as realistic and that many consumers can conceptualise them.

3.3 The impact of global warming on inflation expectations

Our survey elicits qualitative as well as quantitative inflation expectations due to temperature changes. Before discussing regression results, we illustrate two important features of our experimental design with four different global temperature scenarios using the qualitative survey questions. Recall, that we randomly assign respondents to one of four different scenarios with a temperature change of -0.5°C, +0.01°C, +0.5°C or +1.5°C. A first test is whether responses across the four scenarios display a monotonic pattern in that progressively higher global temperatures induce a unidirectional change (either increase or decrease) in the underlying expectation. Figure 3 below illustrates that the qualitative 5 year ahead inflation expectations indeed monotonically increase with the different temperature change scenarios (i.e., an increasing fraction of consumers expect inflation to increase a lot or a little if global temperature change is higher). Given that each respondent answers only one of the four scenarios, this monotonic pattern illustrates that the consumer's respond in a consistent way to the different temperature changes presented to them.

A second test is whether consumers react symmetrically to a 0.5°C temperature decline or increase in relation to the base (no change in temperature) scenario (see Figure 3). This comparison shows whether consumes believe the impact of similar temperature decreases and increases have similar (opposite) effects or whether consumers' expectations are

affected in an asymmetric manner. We will formally test for monotonicity and symmetry in the regression analysis below.

We estimate ordered logit models to assess the effect of different global warming scenarios on household inflation expectations as well as a number of other outcome variables (Eq. 1). Specifically, we calculate average marginal effects on the probability that qualitative macroeconomic expectations ($Y_{k,i}$) take the values 1 (decrease), 2 (no effect) or 3 (increase) as a result of randomly assigned, different global temperature scenarios (1.5°C decline, 1.5°C and 3°C increase respectively) vis-à-vis the baseline scenario of a 0.01°C increase which corresponds to a the scenario of virtually no further change to global average temperatures. More specifically, we estimate the following model for k expectation outcomes:

$$\Pr\left(Expected\ inflation = j\right) = \frac{exp\left(\beta T_{m,i}+\omega X_i+\delta_c-\tau_{j-1}\right)}{1+\exp\left(\beta T_{m,i}+\omega X_i+\delta_c-\tau_{j-1}\right)} - \frac{exp\left(\beta T_{m,i}+\omega X_i+\delta_c-\tau_j\right)}{1+\exp\left(\beta T_{m,i}+\omega X_i+\delta_c-\tau_j\right)} \quad \text{(Eq. 1)}$$

where $T_{m,i}$ is the treatment with m treatment levels varying randomly across individuals i. X_i is a vector of socio-economic control variables (age, education, gender, household size, hand-to-mouth, homeownership, financial literacy, income), δ_c is a vector of country and recruitment-type dummies, and a_j are the cut-off parameters.

The inflation expectation variable $Y_{k,i}$ in these regressions takes three possible outcomes "decrease", "no effect" and "increase" (i.e., "increase (decrease) a lot" and "increase (decrease) a little" responses are grouped as "increase (decrease)"). Table 2 (columns 1 to 6) shows the average marginal effects per outcome of the ordered logit for the impact of global temperature change (a decrease/ increase of 0.5°C and an increase of 1.5°C relative to the base of virtually no change) on inflation expectations. In addition, we report the results of two Wald tests for the null hypothesis of an equal impact of the 0.5°C and 1.5°C scenarios, as well as the null hypothesis that the impact of a 0.5°C decline and a 0.5°C increase are equal in absolute value (i.e., the effect of a decline or an increase in global temperature on household inflation expectations is symmetric).[9]

Higher global temperatures increase consumer inflation expectations over the next 5 years. Specifically, the 0.5°C increase scenario, relative to the baseline, implies a 15.8 percentage points higher likelihood in the expectation that prices will increase. A 1.5°C global temperature increase has a relatively larger impact (17.7 percentage points) that according to the Wald test differs statistically from the 0.5°C increase scenario (p-value 0.03). A 0.5°C temperature decline has an opposite but larger (in absolute terms) effect implying a 20 percentage points

[9] See also Figure A7.

lower likelihood in expecting prices to increase. This difference between the impact size of a 0.5°C decline and a 0.5°C increase is statistically significant (p-value=0.01). The findings show that consumers are more likely to expect an inflation increase when global temperature increases. These effects are based on the June 2025 survey, but they are corroborated by the findings from the September 2024 survey that involves more extreme temperature scenarios and also asks about different bundles of goods and services (see section 3.4).

To be able to estimate the numerical impact on inflation expectations, we included a follow-up in the qualitative question where respondents are asked to give an estimate of the impact on five year ahead expected inflation (see Appendix C).[10] We use this continuous measure as dependent variable in equation (1) and estimate it via OLS (see columns 7 and 8 of Table 2). The 0.5°C (1.5°C) increase scenario increases 5 year ahead inflation expectations by 0.65bp (0.85bp). These effects are quite sizeable taking into account that the median of the unconditional five year ahead inflation expectations collected in the regular survey stood at 2% in June 2025. Our estimates also suggest a monotone pattern, where the inflation increase out of the 1.5°C increase scenario significantly exceeds the one from the 0.5°C increase scenario. On the other hand, we fail to reject the null of symmetry.

3.4 The impact of global warming on different bundles of goods and the perceived channels

Do consumers differentiate between the impact of temperature change on different bundles of goods? Findings from the September 2024 survey help us to address this question as we had included separate questions on prices of food, prices of energy (including gasoline) and prices of other goods and services in response to global warming scenarios. Figure A8 and Table B3 show that temperature change leads to higher expected prices for all these bundles.

Zooming in on the impact of global temperature change on food prices (Table B3 – panel a), we find that a 1.5°C increase leads to a higher share of consumers expecting food prices to rise. Specifically, 11.3 percentage points more consumers expect an increase in food prices compared to the 0.01°C increase scenario. A 1.5°C temperature decline has an opposite and much larger effect: compared to the 0.01°C baseline temperature change, 22.4 percentage points fewer consumers expect food prices to increase. This difference between the impact size of a 1.5°C decline and a 1.5°C increase is statistically significant (p-value=0.00). Higher

[10] For respondents, answering there is no effect in the qualitative expectation, we assign 0 in the quantitative inflation question.

(lower) global temperature scenarios do lead to higher (lower) expected energy prices and higher (lower) expected prices for other goods and services as well. The impact on food prices is larger than on energy prices and prices of other goods and services, in particular in the lower temperature scenario. The key take away is that global temperature increases are expected to have a broad-based upward effect for inflation.

Increases in prices can have many causes. For food prices, consumers who expect rising prices were asked to identify the factors they believe are responsible (see Figure A9). The most commonly identified cause for increasing food prices is environmental factors (crop failures). Crop failures are mentioned by 76 percent of consumers as a case of higher food prices in the baseline scenario of 0.01°C temperature increase and 80 percent in the scenario with 3°C higher global temperatures (Table B4). Supply-side factors (crop failures, higher production costs, and supply chain disruptions) dominate over demand factors (consumer demand or firm's desire for profits) and cost-push factors (taxes or tariffs) as determinants of higher food prices, according to consumers (see Figure A9). The prevalence of supply-side explanations varies significantly across global temperature scenarios, with more consumers citing these factors in the context of a temperature increase and fewer mentioning them in the context of a decrease. Although these differences are in general statistically significant, they are relatively small compared to the sample mean in the baseline scenario. Additionally, for crop failures we observe both asymmetry (the favourable impact of declining temperatures is larger than the bad impact of rising temperatures) and nonlinearity, as a 3°C temperature increase has significantly more impact than a 1.5°C increase.

3.5 Heterogeneous treatment effects: climate knowledge and inflation expectations

Consumers differ in their knowledge about climate change. While we generally find a high level of knowledge, there is substantial variation among euro area consumers in their understanding of climate change (Figure 1, panel a). We now assess to what extent the treatment effects are driven by individuals with different levels of knowledge, who might also differ in how they form beliefs about the effects of climate change on the economy and their personal finances. To this end, we estimate the same ordered logit model from equation (1), now including interactions with a binary indicator representing their level of climate change knowledge. In particular, we classify individuals who answered more than the median number of questions correctly as having a higher level of climate change knowledge.

Table 3 present the results for the qualitative and quantitative inflation expectation variables. Consumers with higher levels of knowledge are more likely to perceive rising temperatures as having detrimental effects on inflation. For instance, in terms of food price changes, the effects for consumers with high climate change knowledge are more than 45% larger than for those with low levels of knowledge. The results in Table 3 and Figure 4 highlight that the inflation effects documented in our previous analysis remain consistent in subsamples of respondents with more or less climate knowledge, but they are considerably stronger for consumers with a relatively high understanding of climate change.

Interestingly, our results show that knowledgeable consumers expect relatively higher inflation with rising temperatures. This is a notable finding as it highlights that as consumers may build up knowledge along with an increased exposure to increasing temperatures, inflation expectations may increase as well. This highlights a striking difference; while more knowledge about monetary policy leads to better-anchored inflation expectations, more knowledge about climate change may make it more difficult to maintain price expectations in line with the price stability target of central banks.

3.6 The impact of global warming scenarios on other economic expectations

Rising global temperatures effect inflation expectations upward. This raises the question how these inflation expectations fit into the broader consumer's perspective on the economic impact of temperature rises. Following, the same logit regression analysis, we can assess the impact of temperature rises on a number of different macroeconomic expectations.[11]

A first notable findings is that expected economic growth is lower in scenarios where global temperatures rises (see Figure 5). Consumers appear to perceive temperature change as a supply shock, where higher temperatures have a qualitatively different effect on prices (increasing) and output (decreasing). In particular, a 0.5°C temperature increase leads to 6.1 percentage points fewer consumers expecting higher economic growth, while a similar reduction in global temperature results in 8.7 percentage points more consumers expecting higher economic growth, compared to the baseline scenario of a 0.01°C temperature change (see Table B5). While we find evidence of a statistically different asymmetric effect, the difference between a 1.5°C temperature increase and a 0.5°C increase is only statistically significant at the 10 percent level. In line with the expectation of lower economic growth, increasing global temperatures are also expected to lead to higher unemployment. The impact

[11] See Table B5 for a summary of the regression results for these additional expectations (Eq. 1).

of a 1.5°C temperature change is statistically higher than that of a 0.5°C temperature change, as was also observed for economic growth. Specifically, an additional 12 and 8.6 percentage points of consumers, respectively, expect unemployment to rise.

Similarly, consistent with the negative impact of rising global temperatures on economic growth, the impact on stock prices is negative, where again the empirical estimates are nonlinear. A 0.5°C and a 1.5°C in global temperature cause 4.6 and 6.0 percentage points fewer consumers to expect higher stock prices compared to the baseline scenario.

For house prices, the results suggest that the impact is the other way around. Higher global temperatures cause more consumers to expect higher house prices, with a nonlinear effect for a temperature increase of 0.5°C and 1.5°C. The regression estimates suggest that higher global temperatures lead to an additional 8 and 10 percentage points of consumers expecting higher house prices, respectively. While this may seem surprisingly at first, it is consistent with global temperature change raising construction costs (as houses need to incorporate measures to adapt, such as protection from flooding) and reducing housing supply. Houses are lost due to wildfires, for instance, and the risk of wildfires or floods limits the availability of locations where new houses can be safely built. Note that the upward impact of temperature change is also consistent with houses serving as a sort of safe investment haven when macroeconomic uncertainty increases.

Given the expected impact of rising global temperatures on prices, economic growth, and unemployment, it is not surprising that consumers also anticipate a negative effect on their household financial well-being. Higher global temperatures result in 4.3 and 5.2 percentage points fewer consumers expecting an improvement in their household financial well-being under the 0.5°C and 1.5°C temperature increase scenarios (compared to the baseline scenario). A positive effect of 6.2 percentage points is observed for a 0.5°C decline in global temperature. While these effects are not negligible, it is notable that fewer consumers expect global temperature change to impact their household financial well-being than macroeconomic variables. While this might reflect consumers anticipating a slower 'pass-through' from macroeconomic indicators to their own financial situation, it is also possible that they underestimate the consequences of climate change for their personal circumstances.

Many consumers also expect global temperature changes will affect government debt. Compared to the baseline scenario, an additional 18.3 and 15.2 percentage points of consumers anticipate an increase in government debt under the 0.5°C and 1.5°C temperature

rise scenarios, respectively. These represent the largest effects among the variables considered (alongside with the impact on taxes). While we do not ask consumers about the reasons for the expected rise in government debt, it is likely that they anticipate additional government spending on adaptation measures or costs related to addressing damages from extreme weather events. In fact, the limited impact on consumer financial well-being may also suggest that consumers expect governments to step in by providing financial support to offset losses and shield them from economic hardship.

On the other hand, consumers also expect that taxes that they, as well as firms, have to pay will increase in scenarios with rising global temperatures. For instance, in the 0.5°C higher temperature scenario, an additional 13.7 percentage points of consumers expect increasing taxes. Thus, the increase in government debt will partially be financed through higher taxation. Taken together, this may suggest that consumers believe that even if governments step in to shield the most affected individuals from the direct effects of climate change, the broader cost will still be borne by society as a whole in the for of higher taxes. Building on this interpretation, it is again surprising that consumers relatively rarely anticipate a negative effect of higher global temperatures on their personal financial well-being, suggesting that they may underestimate this impact.

For all the expectation variables, the estimation results indicate larger effects for the 1.5°C increase scenario than for the 0.5°C scenario. With the exception of economic growth and immigration, these differences are statistically significant at the 5 percent level according to the Wald tests. This demonstrates that, in general, consumers anticipate more negative effects as the rise in global temperature becomes more severe.

So far, we have primarily focused on the impact of rising global temperatures on consumers' economic expectations. Turning to the scenario of a 0.5°C decline in global temperature, the estimates indicate an impact in the opposite direction compared to an increase in temperature. Thus, the relationships revealed by the regression estimates remain consistent across scenarios.

There are two important takeaways from this. First, when considered alongside the increase in global temperature observed so far, this suggests that consumers are convinced it has already impacted the economy in many ways. Second, consumers believe the impact is reversible, meaning that a decline in global temperature would undo much of the economic impact caused by the increase.

A notable finding is that a 0.5°C decline in global temperature has a greater impact on consumer economic expectations than a 0.5°C increase. For some expectations, these differences are statistically significant - such as for economic growth or financial wellbeing - while for others, such as stock prices or house prices, they are not. Overall, however, we find some evidence for an asymmetry. While consumers may believe that the impact of additional increases is more limited than what has been observed so far, these results may also indicate that consumers underestimate the consequences of further rises in global temperature.

The perceived impact of global temperature change extends beyond economic effects and has broader political implications. An additional 12.2 and 13.7 percentage points of consumers expect higher immigration when global temperatures rise by 0.5°C and 1.5°C, respectively. Consumers perceive even stronger effects in a scenario where temperatures decrease by 0.5°C, with 20.3 percentage points fewer expecting an increase in immigration compared to the baseline scenario. Thus, it appears that consumers attribute part of ongoing immigration to climate change.

3.7 Willingness to pay and policy priorities

Our experiment reveals that consumers anticipate rising global temperatures to be accompanied by increased inflation and broader negative consequences for the economy, the labour market, and own financial well-being. Clearly, consumers stand to benefit from measures aimed at preventing or mitigating temperature increases. To explore this further, we asked respondents how much they would be willing to pay each month over the next five years to the government for environmental policies designed to prevent temperature increases - or to achieve a temperature decline in the lower-temperature scenario. The results are presented in Table 4.

Several findings stand out. First, there is considerable heterogeneity among consumers. Slightly more than 60 percent are willing to contribute a monthly amount over the five-year period. The conditional mean willingness to pay is approximately €60 per month, amounting to €3,600 over five years. Second, differences in willingness to pay across temperature scenarios are slightly higher in the 1.5C scenario, but overall differences - while statistically significant - are relatively small (see Table 4). This suggests that willingness to pay is a more intrinsic characteristic, likely driven by concern about global warming, rather than by the specific scenario presented. At the individual level, we observe that the younger, those who express greater concern about climate change, the higher educated and those with higher

financial literacy are also willing to pay more while hand-to-mouth consumers report lower willingness to pay.

One may ask whether this level of willingness to pay is high or low. The average contribution, when including all respondents, corresponds to approximately 1.2% of average net household income. Another metric to assess this is the "sacrifice ratio": in this case, households would need to give up 1.3% of their consumption expenditures to finance their stated willingness to pay. However, compared to other studies, this sacrifice ratio is relatively low. For example, Georgarakos et al. (2025) report a sacrifice ratio of 5% or more for eliminating business cycle fluctuations or achieving desired inflation levels. In conclusion, while the willingness to pay is certainly not negligible, it remains on the low side, especially if one considers the broader repercussions of climate change that consumers perceive.

Further insights into the importance consumers attach to preventing rising temperatures can be gained by examining the priority they assign to climate issues and whom they consider responsible for addressing climate change. When asked to identify the most pressing issues facing their country, consumers consistently rank "the environment and climate change" among the top three, closely following concerns such as rising prices and healthcare (see Figure C in the Appendix).

When asked who should take responsibility for addressing climate change, national governments are most frequently cited, more often than businesses and industries, with individual citizens mentioned thereafter (see Figure A10). This indicates that while people assign high priority to climate action, they primarily view it as the responsibility of governments, which can implement collective measures and policies. This perspective is further reflected in the scenario analysis, where tax increases are expected as global temperatures rise. Through this fiscal channel governments may raise collective funds to finance measures to mitigate temperature change.

3.8 Experimental integrity and robustness

Our experiment reveals a clear relationship between global temperature change and inflation expectations. In fact, we find significant impacts on a wide set of economic expectations. A potential concern, however, might be that there are survey demand effects that are purely synthetic in that respondents provide answers that relate to the way questions are asked, rather than revealing their true expectations in response to the temperature change scenarios

shown to them. If that were the case, we would expect to find significant effects for each, and every topic probed with respondents.

To investigate this, we asked respondents about the impact of global temperature change on "the number of Oscar-winning movies". This so-called placebo variable has no reason to be related to global temperature change. If our experiment were to find that consumers perceive such a relationship, it would be concerning. However, the estimation results reported in Figure A11 show that this is not the case; the coefficients are close to zero and statistically insignificant. This provides reassurance that our results are not driven by survey demand effects.

Another potential concern is that consumers may lack knowledge about climate change and its impacts. Several points can be made in this regard. First, the climate knowledge questions show that, on average, awareness of the causes and consequences of climate change is reasonably high. Second, even if knowledge were less robust, the consequences for expectations are real and, in turn, influence people's behaviour. Finally, it is worth noting that our experiment also included a question about the impact of temperature change on biodiversity (the variety of animals, plants, and animal life). We find that higher global temperatures lead more consumers, respectively, to expect a decline in biodiversity compared to the baseline scenario.[12] This plausible link with biodiversity - a concept not necessarily familiar to the average person -suggests that people have a relatively good sense of environmental issues and challenges.

In addition to knowledge about climate change, the attention paid to the experimental questions is an important indicator of survey response quality. We take advantage of the web survey's automatically collected para-data and assess the distribution of response times for the scenario question across the different temperature scenarios.[13] The response time distributions show a similar shape across all scenarios. The peak of the distribution is around 45 seconds, with the median response time being 48 seconds in June 2025. While some respondents take considerably less time, the majority appear to have ample time to answer the scenario question. This suggests that respondents are paying attention and taking the time to carefully read and respond to the given global temperature condition.

The causal interpretation of our findings hinges on the random assignment of consumers to the four different global temperature scenarios. This ensures that any factors potentially

[12] See Table B5.
[13] See Figure A12.

confounding the relation between consumer expectations and climate change are evenly distributed across the four groups. To verify that the randomization was successful, we conduct balance tests for scenario assignment using a wide range of variables that may influence consumer expectations. We find no evidence of a systematic difference between treatment and control groups across countries or along key characteristics such as age, education, gender, income or financial literacy.[14] In particular, we find no meaningful differences in climate concern, climate attention, or experiences with extreme weather events across the four scenario groups. Overall, we conclude from these tests that the randomisation of scenarios has worked as intended.

The successful randomization ensures that it is sufficient to analyse differences in responses across the four scenarios without accounting for additional control variables. As a robustness check, we include the same regressions while controlling for a large set of socio-demographic variables in columns of the regression tables (see Table 2). We find that the results remain virtually unchanged, reinforcing the validity of the random assignment of respondents to the four different global temperature scenarios.

4. Conclusion

Heat records, droughts, wildfires, and floods in Europe and worldwide signal that global warming has significant consequences for everyday life. Such extreme weather events come with casualties, disrupt society, and cause severe economic damages. According to the findings of various studies and the present paper, consumers are increasingly concerned and aware about the broader repercussions of climate change. About three-quarters of consumers pay attention to climate change news, a number that is relatively close to those following inflation news - a topic relevant to daily expenses and the ease or difficulties households face in making ends meet. Many consumers express concern about climate change and an astonishing 44 percent of consumers faced losses due to one or multiple extreme weather events in the past five years.

It is almost inevitable that global warming also influences households' attitudes and economic expectations, their behaviour, and thereby broader macroeconomic developments. Nevertheless, there is very little empirical evidence on this topic. We address this gap by

[14] See Table B6.

conducting an experiment in which consumers, assigned to different global temperature change scenarios, indicate how these changes affect their economic expectations.

We find significant effects on inflation expectations as well as on a broad range of macroeconomic expectations, including economic growth, unemployment, asset prices, taxation, and government debt. A large impact is observed for a broad set of prices, with many consumers expecting that rising global temperatures will lead to higher food prices, energy prices, and prices of other goods and services. When asked, respondents most often attribute higher food prices to supply-side factors, such as crop failures, higher production costs and supply chain disruptions, and to a lesser extent to demand and cost-push factors. This conclusion appears to contradict the suggestion by Meinerding et al. (2023) that demand-related factors may cause a negative correlation between climate concerns and expected inflation. However, it aligns with the positive correlation found between expectations of extreme weather events and inflation expectations one, three and five years ahead.

The impact of global warming is nonlinear. A global temperature increase of 1.5°C has a greater effect on many consumer expectations under study, than a 0.5°C increase, although the incremental effect is relatively smaller than that of the 0.5°C scenario. In other words, consumers already perceive a smaller increase in global temperature as highly damaging to most of the macroeconomic outcome variables under study. In the light of global temperature trends and expert expectations, this suggests that global warming will impact the economy not only directly through the economic damages caused by extreme weather events but also indirectly through consumers' expectations and attitudes.

Evidence supporting the idea that consumer expectations and attitudes may already be affected by recent increases in global temperatures is found by examining the results of the scenario with a 0.5°C decline in global temperature. In fact, the negative effects on inflation expectations (and other macroeconomic outcomes) from reversing a 0.5°C temperature rise are larger in absolute terms than the corresponding positive effects of an additional 0.5°C increase. This suggests that many consumers believe some of the effects of global warming may have already materialized.

A concerning finding is that consumers less often expect global warming to impact their household financial well-being compared to macroeconomic variables. This is consistent with the perception that extreme weather is more likely to affect their country's economy than their personal financial situation. This could suggest that consumers underestimate the

consequences of climate change on their personal well-being, potentially preventing them from adequately preparing for higher global temperatures and extreme weather events.

A natural policy response is to provide citizens with more information on climate change and educate them about its likely effects. However, it should be noted that consumers already pay relatively much attention to climate change news and, on average, possess a reasonably good level of knowledge. Interestingly, our results show that the more knowledge consumers have, the greater their expectations of the economic effects of higher temperatures.

For central banks in particular, a relevant finding is that global temperatures contribute to higher price expectations. Additionally, the findings show that educating people leads to a greater effect on expectations, and thus even higher expectations of price increases, which is relevant for anchoring inflation expectations. Strikingly, while more knowledge about monetary policy leads to better-anchored inflation expectations, more knowledge about climate change may make it more difficult to maintain price expectations in line with the price stability target of central banks.

Despite widespread concern about climate change and its perceived economic consequences, we find that consumers' willingness to pay to prevent further temperature increases is relatively modest. While a majority of respondents express some willingness to contribute financially, and the average amount among those willing to pay totals approximately 3600 euro over a five-year period, these amounts represent only a relatively small share of household income or consumption. One possible explanation is that, although consumers anticipate substantial macroeconomic consequences of global warming, they perceive the direct impact on their personal financial situation to be more limited. Another explanation is that consumers predominantly assign responsibility for climate mitigation to governments, underscoring the importance of public policy in addressing climate risks. Indeed, climate change ranks among the top three policy priorities identified by consumers, closely following concerns about rising prices and healthcare.

Finally, our findings explain why consumers consider climate change one of the key priorities for policymakers and imply that, with rising global temperatures, they will continue to do so. However, support for climate change policies depends on socio-demographic characteristics and personal situations. For instance, hand-to-mouth consumers less often prioritize climate change as a key issue for policymakers, suggesting that while climate change is important, more immediate concerns - such as making ends meet - may take precedence.

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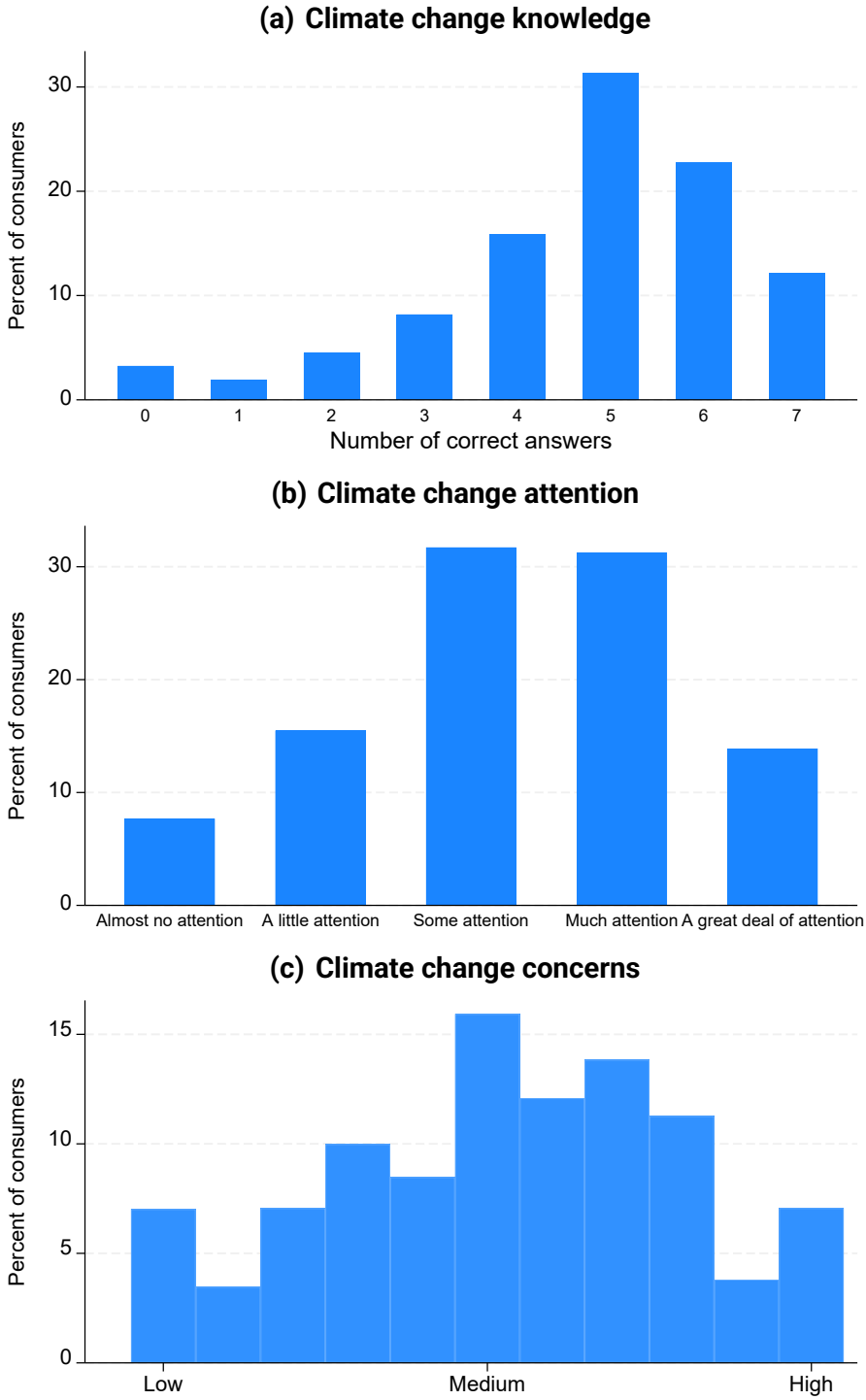
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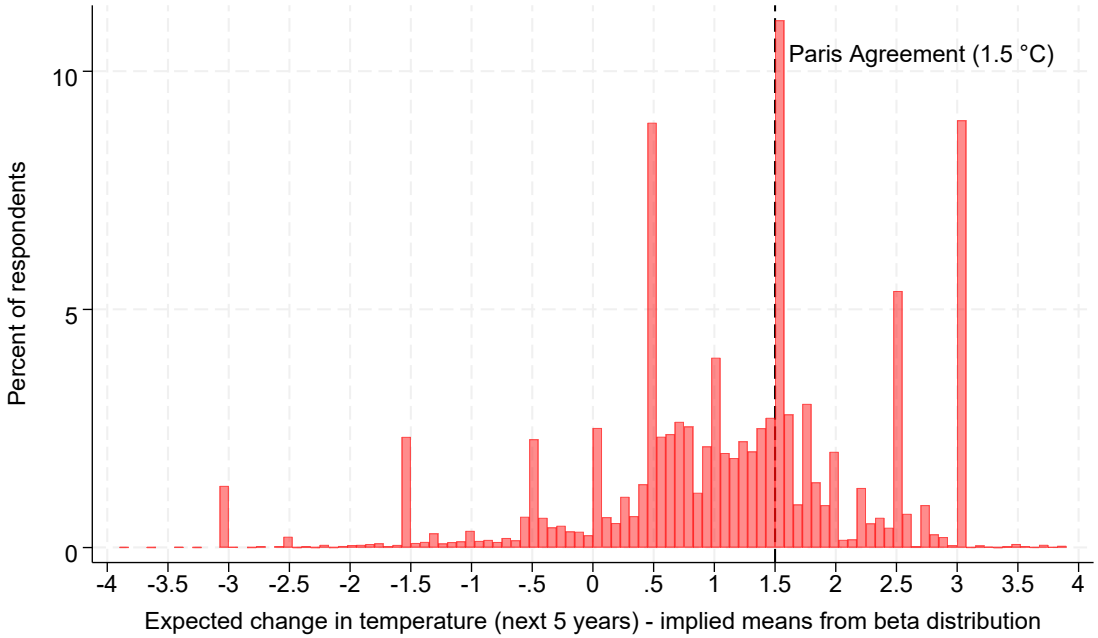
Figures

Figure 1. Consumers' climate change knowledge, attention, and concerns



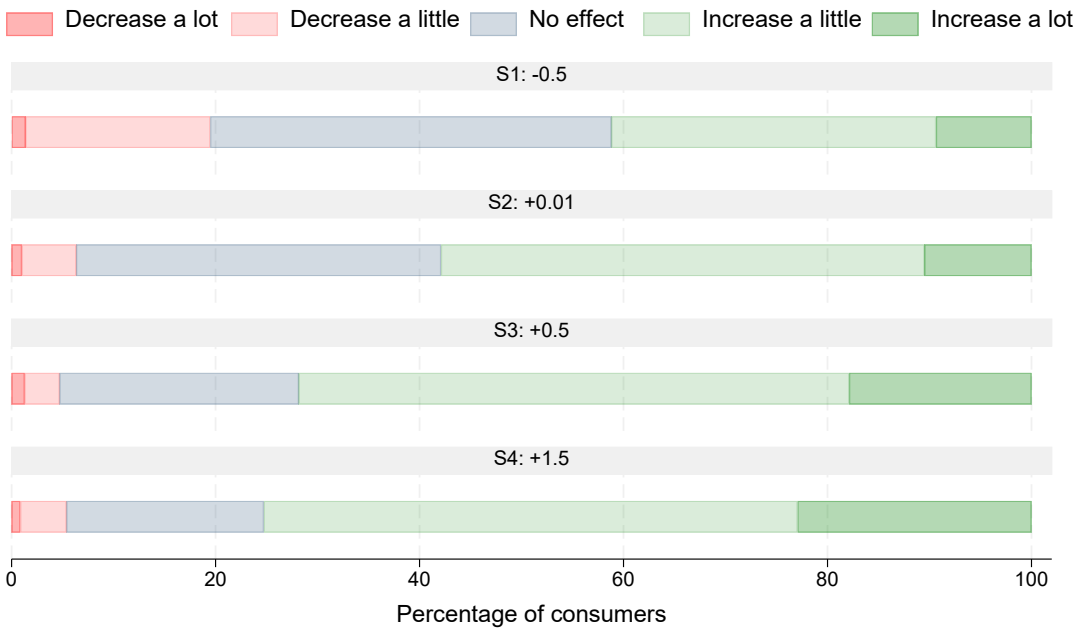
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from special-purpose modules in September (panel b and c) and December 2024 (panel a) – population-weighted statistics. See Appendix C for the detailed question wording.

Figure 2. Consumer expectations about average global temperature change until 2030



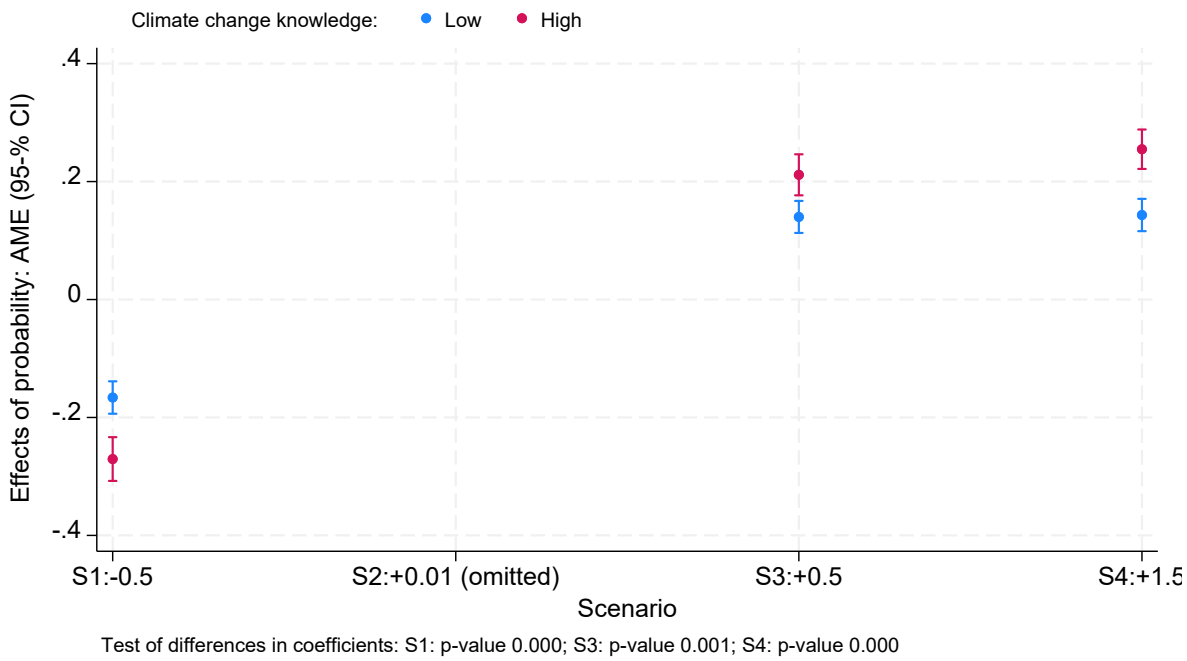
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from special-purpose modules in June 2025 – population-weighted statistics. The figure shows the distribution of individual forecasts about average global temperature change over the next 5 years. Individual beliefs are derived as implied means of consumers subjective belief distributions. See Appendix C for the detailed question wording.

Figure 3. Effects of rising temperatures on inflation expectations



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from special-purpose modules in June 2025 – population-weighted statistics. The figure shows the fraction of consumers expecting a given change in temperatures to decrease, not affect or increase prices over the next 5 years.

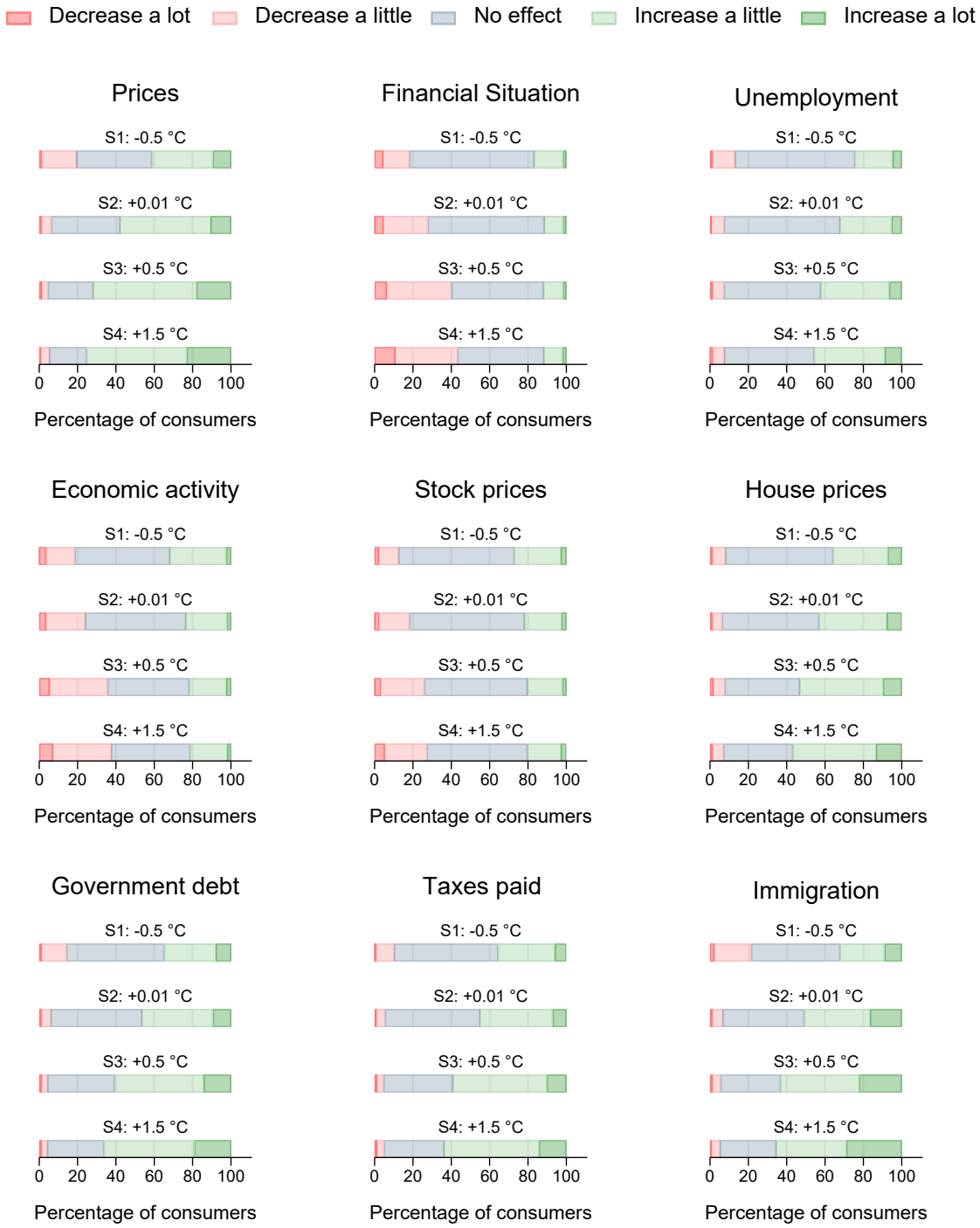
Figure 4. Heterogeneity in effects on inflation expectations



Test of differences in coefficients: S1: p-value 0.000; S3: p-value 0.001; S4: p-value 0.000

Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from special-purpose modules in June 2025 – population-weighted statistics. The figure shows, for three temperature scenarios, the average marginal effects on the probability of respondents expecting temperatures to increase depending on the individual's climate change knowledge measured 6 months before.

Figure 5. Temperature scenarios and consumer expectations (June 2025)



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in June 2025 – population-weighted statistics. The figure shows the fraction of consumers expecting, for each of the different temperature scenarios, the different outcomes to decrease, not be affected or increase.

Tables

Table 1. Heterogeneity in climate change knowledge, beliefs, attention and concerns

	OLS			Logistic Regression, average marginal effects		
Dependent variable:	Climate change knowledge (0-7)	Prob. extreme weather event impacting country economic situation (next 5y) (0-100)	Expected change in average. global temperature (in °C)	Attention to climate change news (0/1)	Climate change concern for own households financial situation (0/1)	The environment as a perceived policy priority (0/1)
	(1)	(2)	(3)	(4)	(5)	(6)
Mean (dep. var.)	4.78	22.04	1.14	0.45	0.48	0.27
35-49 years	0.110***	-0.291	0.084***	-0.024**	0.009	-0.015*
	(0.033)	(0.469)	(0.025)	(0.010)	(0.010)	(0.009)
50-64 years	0.134***	-1.196**	0.181***	0.012	-0.002	-0.006
	(0.034)	(0.472)	(0.025)	(0.010)	(0.010)	(0.009)
65+ years	0.207***	-1.229**	0.285***	0.083***	-0.036***	0.009
	(0.039)	(0.560)	(0.029)	(0.012)	(0.013)	(0.011)
High school	0.159***	1.534***	0.105***	0.006	-0.004	0.022**
	(0.042)	(0.550)	(0.033)	(0.012)	(0.013)	(0.010)
College+	0.435***	2.096***	0.122***	0.073***	0.026**	0.059***
	(0.041)	(0.532)	(0.032)	(0.012)	(0.012)	(0.010)
Women	-0.117***	1.019***	0.244***	-0.018***	0.031***	0.022***
	(0.022)	(0.320)	(0.017)	(0.007)	(0.007)	(0.006)
Household size	-0.032***	-0.135	-0.028***	0.014***	0.025***	-0.012***
	(0.011)	(0.155)	(0.008)	(0.003)	(0.003)	(0.003)
Hand-to-mouth	-0.338***	1.511***	-0.075***	-0.035***	0.031***	-0.063***
	(0.029)	(0.391)	(0.023)	(0.008)	(0.008)	(0.007)
Homeowner	0.002	-0.675*	-0.096***	0.009	0.019**	0.000
	(0.027)	(0.379)	(0.020)	(0.008)	(0.008)	(0.007)
High fin. lit.	0.598***	1.862***	0.044*	0.018**	-0.005	0.046***
	(0.024)	(0.341)	(0.026)	(0.007)	(0.007)	(0.006)
HH inc. Q2	0.085**	-0.477	0.030	-0.020**	-0.021**	-0.005
	(0.034)	(0.472)	(0.027)	(0.010)	(0.010)	(0.009)
HH inc. Q3	0.224***	-0.289	0.042	-0.014	-0.047***	0.007
	(0.034)	(0.494)	(0.028)	(0.010)	(0.011)	(0.009)
HH inc. Q4	0.355***	-1.090**	0.177***	-0.000	-0.111***	0.030***
	(0.036)	(0.517)	(0.018)	(0.011)	(0.011)	(0.010)
Adj. R-2	0.11	0.02	0.04	0.03	0.03	0.04
No. Obs.	20,182	21,106	19,428	21,037	20,565	21,135

Note: Data are drawn from the ECB Consumer Expectations Survey (CES). All columns include country and sample type dummies (not reported). The omitted categories are: 18-34, primary education, men, non-hand-to-mouth, homeowner, low financial literacy and the first income quartile. Hand-to-mouth consumers are identified as those who self-report not being able to finance an unexpected expense of the size of one monthly salary. Financial literacy is measured following Lusardi and Mitchell (2011) by asking three questions on consumers understanding of interest rate compounding, nominal vs. real values and portfolio risk diversification. Respondents who answer all three questions correct are classified as high financially literate. Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Table 2. Effects of temperature scenarios on consumers inflation expectations

	Ordered Logistic Regression, average marginal effects						OLS	
Dependent variable:	Decrease	No effect	Increase	Decrease	No effect	Increase	Point forecast	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Temp. Scenario (base: S2: +0.01°C)								
S1: -0.5 °C	0.089***	0.110***	-0.199***	0.090***	0.109***	-0.200***	-0.574***	-0.577***
	(0.005)	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)	(0.037)	(0.037)
S3: +0.5 °C	-0.042***	-0.116***	0.158***	-0.042***	-0.116***	0.158***	0.646***	0.650***
	(0.003)	(0.007)	(0.009)	(0.003)	(0.007)	(0.009)	(0.038)	(0.037)
S4: +1.5 °C	-0.046***	-0.131***	0.177***	-0.046***	-0.130***	0.176***	0.855***	0.852***
	(0.003)	(0.007)	(0.009)	(0.003)	(0.007)	(0.009)	(0.038)	(0.038)
Controls				Yes	Yes	Yes		Yes
No. obs.	19,759	19,759	19,759	19,617	19,617	19,617	19,747	19,605
Tests				(p-value)				
Symmetry: |S1|=|S3|	0.00	0.56	0.01	0.00	0.50	0.01	0.26	0.25
Monotonicity: S3 = S4	0.03	0.03	0.03	0.04	0.04	0.04	0.00	0.00

Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in June 2025. All columns include country and sample type dummies (not reported). Control variables are identical to Table 1. Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Table 3. Heterogeneous effects of temperature scenarios on inflation expectations

	Ordered Logistic Regression, average marginal effects			**OLS**
Dependent variable:	Decrease	No effect	Increase	Point forecast
	(1)	(2)	(3)	(4)
Temp. Scenario (base: S2: +0.01°C)				
S1: -0.5 °C # **low** climate knowledge	0.070***	0.096***	-0.166***	
	(0.006)	(0.008)	(0.014)	
S1: -0.5 °C # **high** climate knowledge	0.122***	0.149***	-0.271***	
	(0.010)	(0.011)	(0.019)	
S3: +0.5 °C # **low** climate knowledge	-0.042***	-0.116***	0.158***	
	(0.003)	(0.007)	(0.009)	
S3: +0.5 °C # **high** climate knowledge	-0.046***	-0.165***	0.211***	
	(0.004)	(0.014)	(0.018)	
S4: +1.5 °C # **low** climate knowledge	-0.046***	-0.130***	0.176***	
	(0.003)	(0.007)	(0.009)	
S4: +1.5 °C # **high** climate knowledge	-0.053***	-0.202***	0.255***	
	(0.004)	(0.013)	(0.017)	
S1: -0.5 °C				-0.494***
				(0.055)
S3: +0.5 °C				0.553***
				(0.057)
S4: +1.5 °C				0.627***
				(0.057)
S1: -0.5 °C # **high** climate knowledge				-0.262***
				(0.091)
S3: +0.5 °C # **high** climate knowledge				0.369***
				(0.093)
S4: +1.5 °C # **high** climate knowledge				0.702***
				(0.093)
No. obs.	13,164	13,164	13,164	13,157
Tests				
S1: Low vs. High climate knowledge	0.00	0.00	0.00	0.00
S3: Low vs. High climate knowledge	0.11	0.00	0.00	0.00
S4: Low vs. High climate knowledge	0.01	0.00	0.00	0.00

Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in June 2025. Each model includes interactions of the country and sample type dummies with the climate change knowledge score (not shown). The table combines data from June 2025 with the measure of climate change knowledge collected in December 2024 and therefore features a lower number of observations. Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Table 4. Consumers' willingness to pay under different scenarios

	OLS	
	WTP > 5 € (median)	Log(1+WTP €)
Temperature change scenario		
(base: S2: +0.01 °C)		
S1: -0.5 °C	0.014	0.034
	(0.014)	(0.057)
S3: +0.5 °C	0.029**	0.099*
	(0.014)	(0.057)
S4: +1.5 °C	0.043***	0.158***
	(0.014)	(0.058)
Controls	Yes	Yes
Test: +0.5 °C = +1.5 °C (p-value)	0.29	0.31
No. of observations	9,485	9,485
Adj. R-2	0.09	0.10

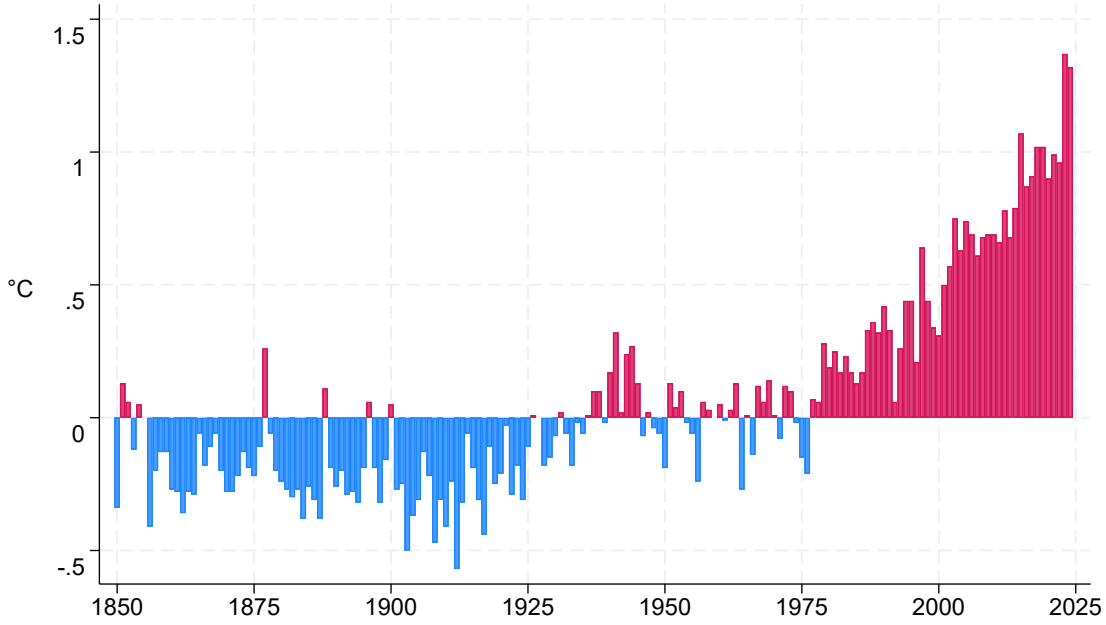
Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in June 2025. The marginal willingness to pay is winsorised at the most extreme 5 percentiles. Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Online Appendix

(for web publication only)

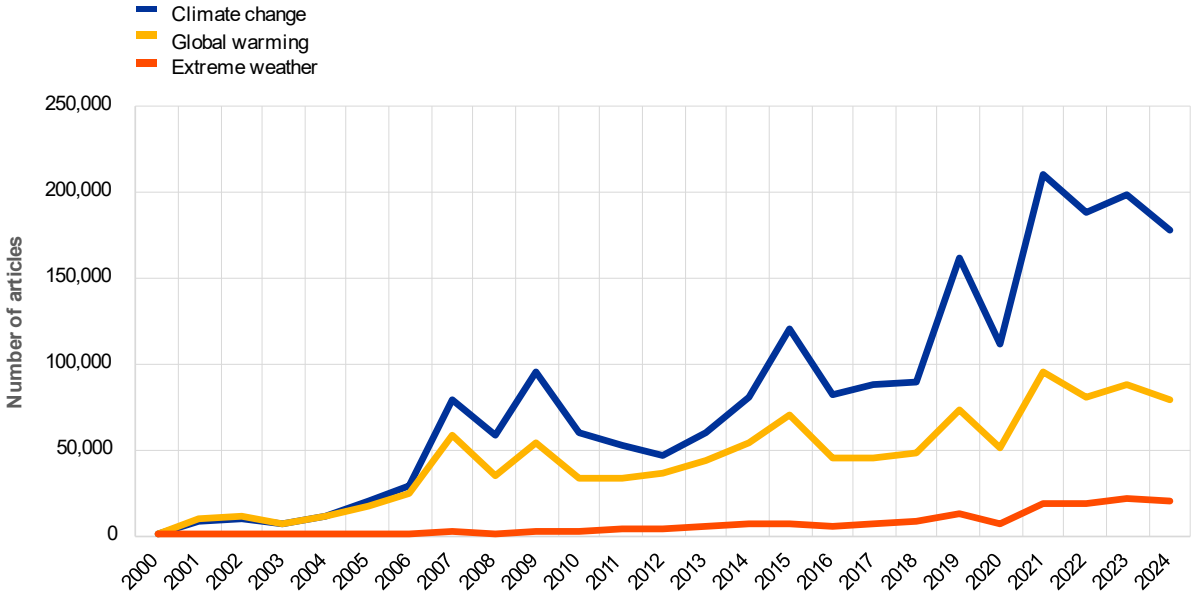
Appendix A – Additional Figures

Figure 1. Global land and ocean average temperature anomalies



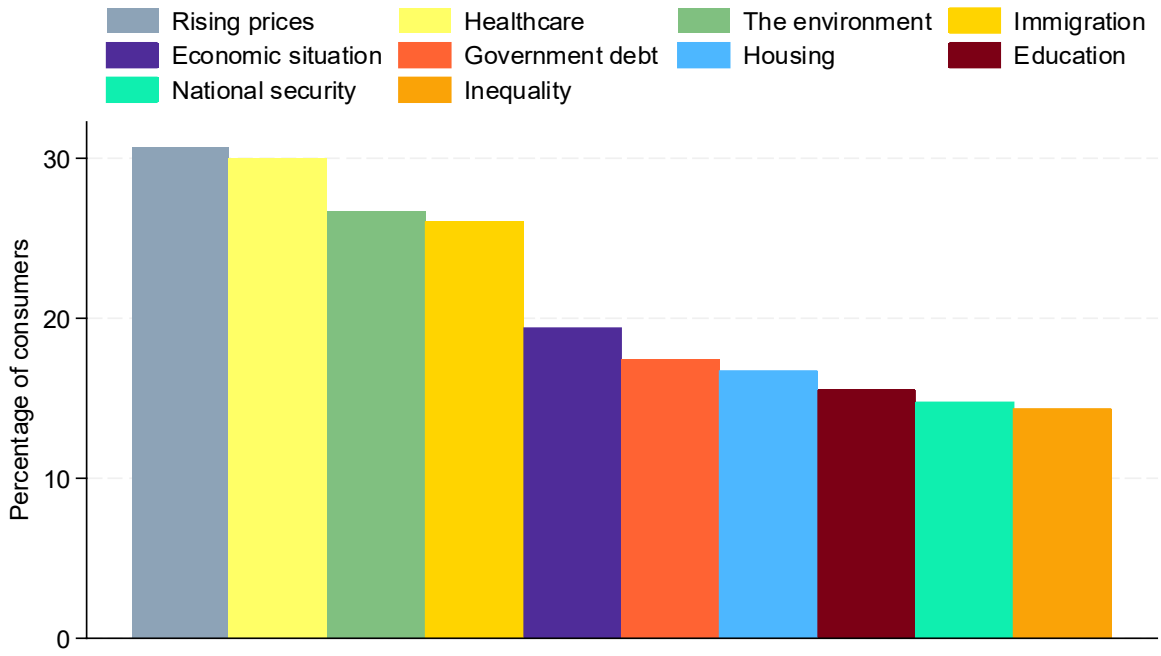
Note: NOAA National Centers for Environmental information, Climate at a Glance: Global Time Series, published November 2024, retrieved on January, 2025 from https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/global/time-series. The global and hemispheric temperature anomalies are calculated with respect to the 1901-2000 average.

Figure A2. News coverage of different climate topics



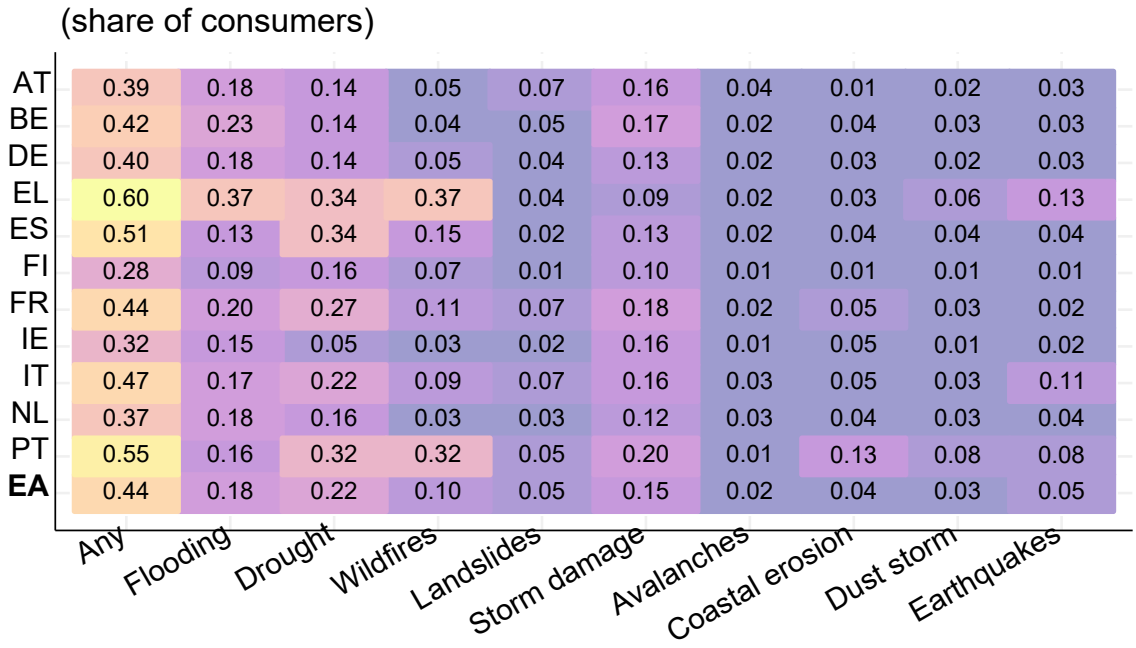
Note: Authors calculations based on Factiva data, as of 25.02.2025. Latest data: 2024. We retrieve data on News coverage using keyword search from Factiva Dow Jones by using the open-text search on all available news sources in all languages (including the languages of the survey countries). To make sure we identify relevant articles and minimise spurious classification we make use of the Factiva pre-classification and select only articles under the category “climate change”. Trends remain, however, comparable when performing a search on the entire database. In particular, we use the following keywords in the open-text search: climate change (blue line); "Global warming" or ("Temperature" and "climate change") or ("Warming" and "climate change") (yellow line); extreme weather (red line).

Figure A3. Perceived policy priorities among consumers



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from August 2024 – population-weighted statistics. The figure shows the percentage of consumers who report that a given topic is among their top three policy topics for their country (multiple choice possible). See Appendix C for the detailed question wording.

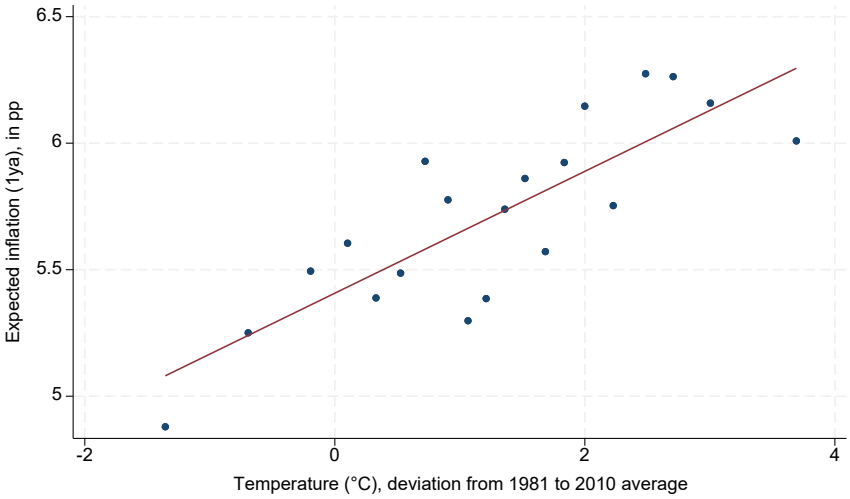
Figure A4. Consumers financially affected by extreme weather events in the past 5 years



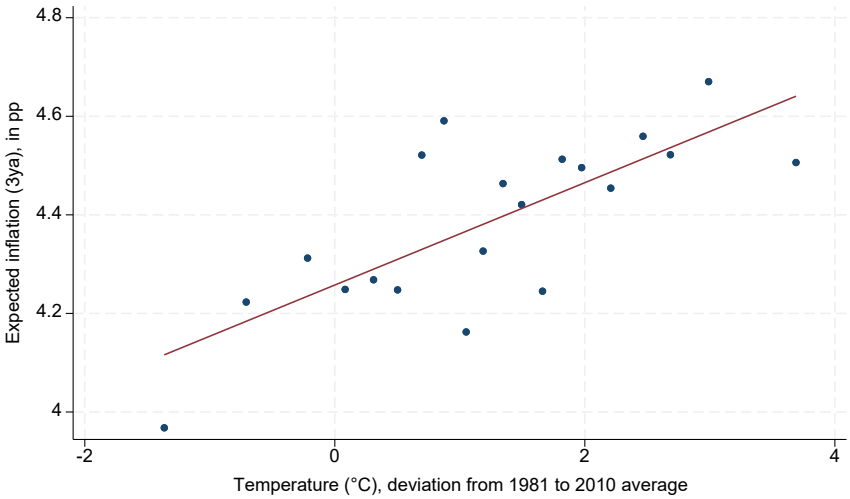
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from August 2024 – population-weighted statistics. The figure shows the share of consumers who report that their financial situation has been affected by an extreme weather event (multiple response possible). The first column shows the share of consumers who report any of the extreme weather events affecting their financial situation. The category "other" is omitted for brevity and consists only of less than 3 percent in each of the countries. See Appendix C for the detailed question wording.

Figure A5. Regional temperature and inflation expectations

(a) One year ahead inflation expectations

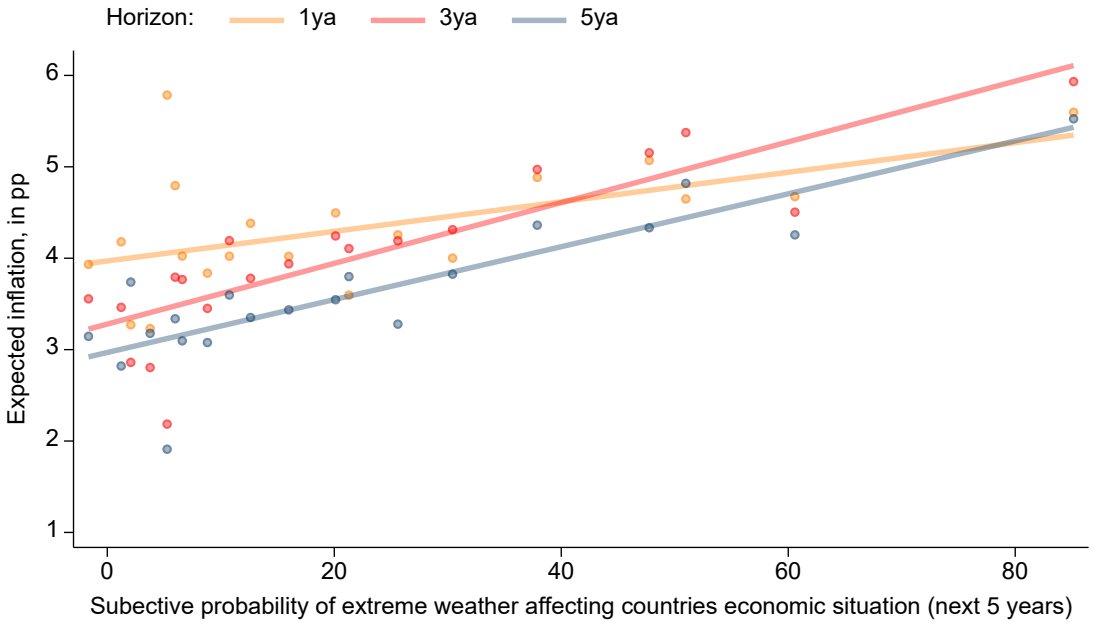


(b) Three year ahead inflation expectations



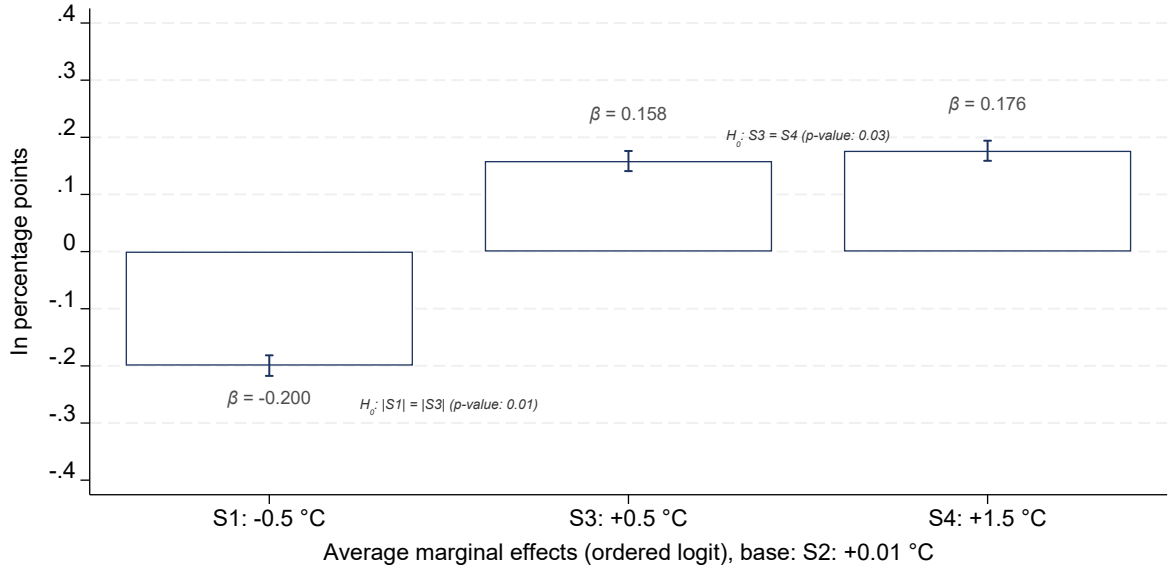
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from January 2020 to December 2023. Data on temperature deviations is obtained from ERA5 (Copernicus Climate Change Services) and population weighted on the respective NUTS-1 level matching CES regional identifiers.

Figure A6. Extreme weather events and consumers inflation expectations



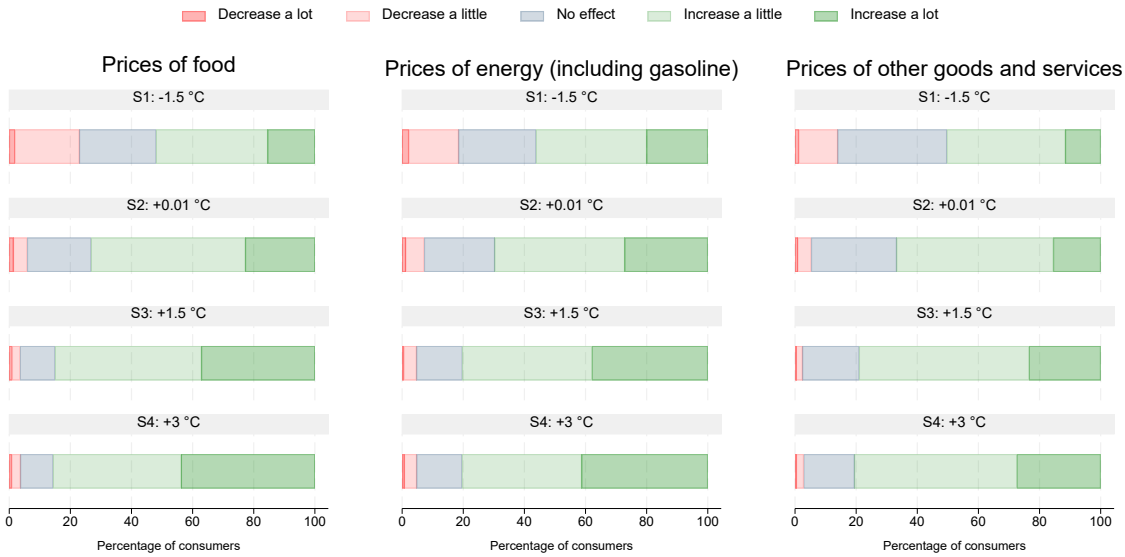
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from August 2024 – the linear fit accounts for country dummies. Inflation expectations are winsorised by the most extreme two percentiles on the country and survey wave level.

Figure A7. Average marginal effects of a change in temperatures on inflation expectations



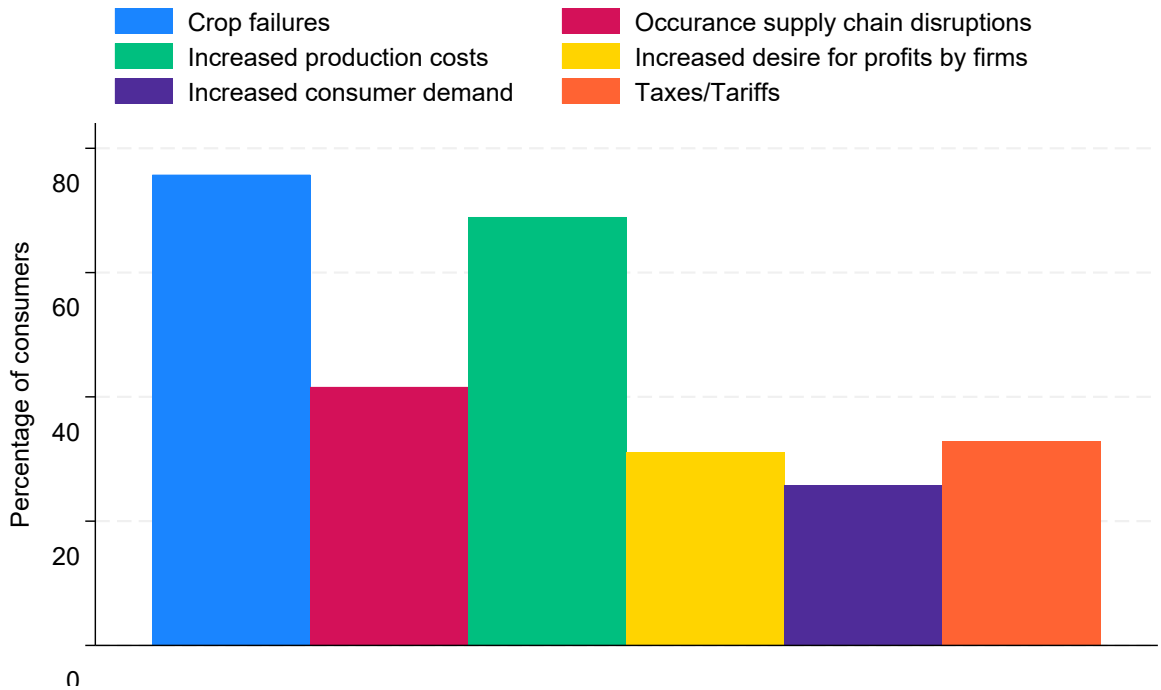
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from special-purpose modules in June 2025 – population-weighted statistics.

Figure A8. Expected effect on inflation, by components



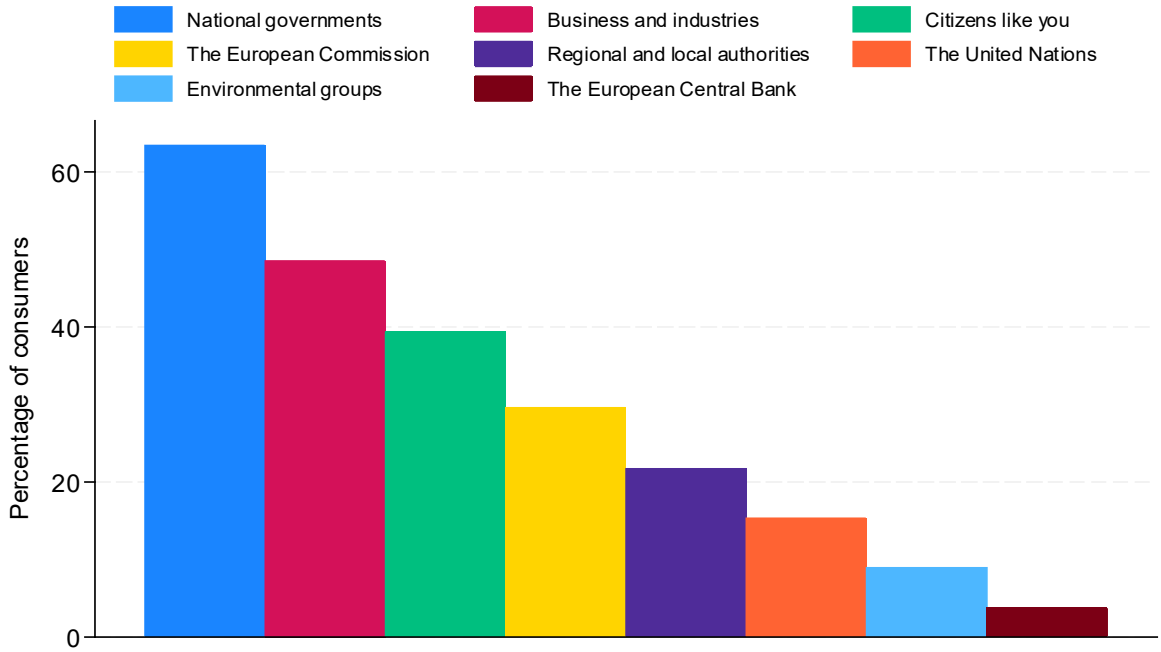
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in September 2024 – the linear fit accounts for country dummies.

Figure A9. Channels: Perceived drivers of price increases



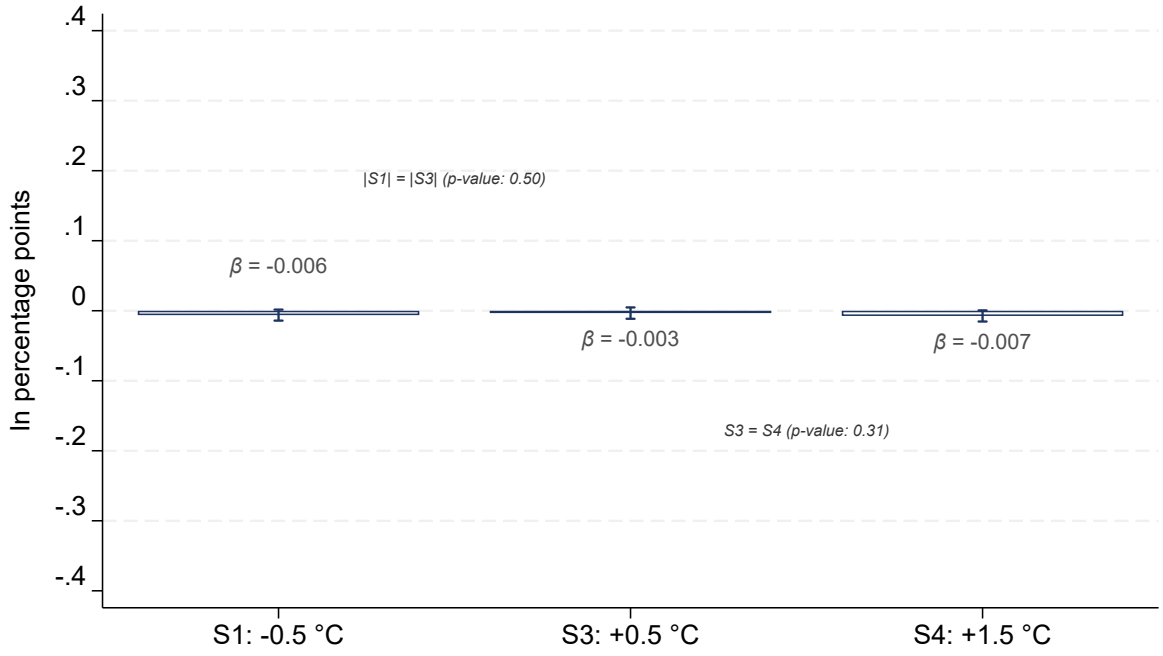
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in September 2024.

Figure A10. Institutions responsible for addressing climate change



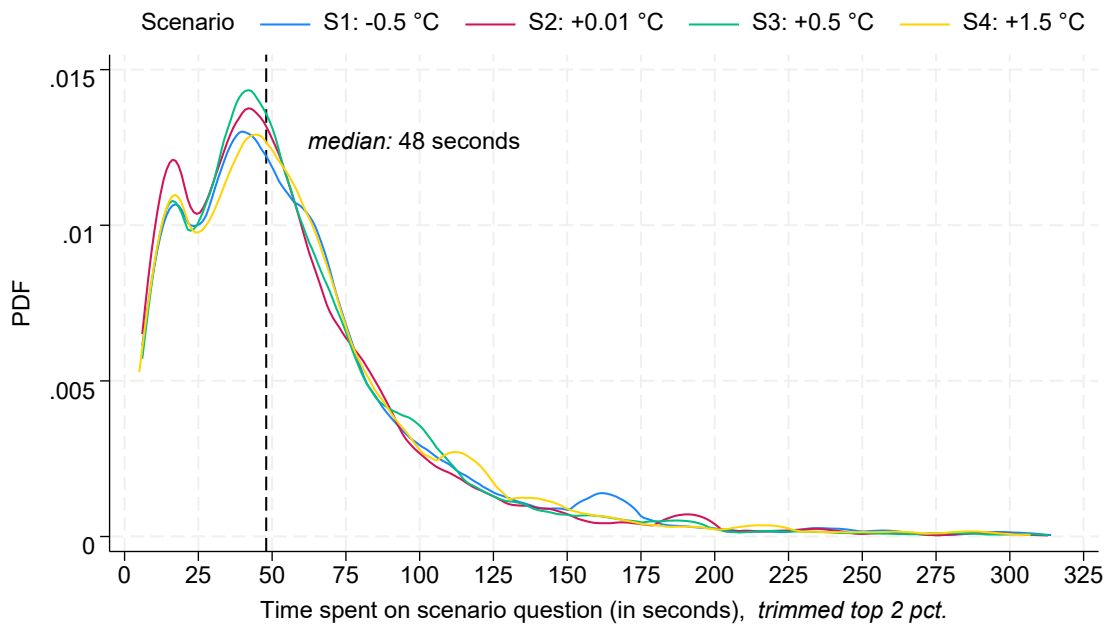
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in September 2024.

Figure A11. Global temperature change scenario question (placebo item), regression estimates (June 2025)



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in June 2025.

Figure A12. Response time distribution for scenario questions in June 2025



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in June 2025.

Appendix B – Additional Tables

Table B1. Sample summary statistics June 2025

Variable	Type	Mean	N
Age	categorical		
18-34 years		0.246	19,698
35-49 years		0.239	19,698
50-64 years		0.268	19,698
65+ years		0.247	19,698
Gender: Women	binary	0.516	19,698
Education	categorical		19,698
Primary		0.118	19,698
Secondary		0.317	19,698
Tertiary		0.565	19,698
Household size	binary	2.485	19,698
Hand-to-mouth	binary	0.277	19,698
Homeowner	binary	0.670	19,698
Household net income (in thousand €)	continuous	39.521	19,698
High financial literacy (Big-3 correct)	binary	0.558	19,556
Countries	categorical		
BE		0.035	19,698
DE		0.260	19,698
ES		0.149	19,698
FR		0.194	19,698
IT		0.185	19,698
NL		0.054	19,698
AT		0.028	19,698
FI		0.017	19,698
EL		0.032	19,698
IE		0.015	19,698
PT		0.031	19,698

Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in June 2025 – population-weighted statistics.

Table B2. Climate change knowledge (detailed overview)

		Response options (correct answer in green)		
Dimension	**Wording of each item**	**False**	**True**	**Don't know**
		(% of consumers, correct in green)		
Climate change and causes	*(1) The ozone hole is the main cause of the greenhouse effect.*	**43.11**	41.59	15.30
	(2) Higher concentration of carbon dioxide (CO_2) in the atmosphere leads to higher temperatures	8.14	**79.93**	11.93
	(3) The increase of greenhouse gases is mainly caused by human activities.	11.40	**80.80**	7.81
	(4) The annual average global temperature in 2023 has increased by about 1 degree Celsius compared to 50 years ago.	15.74	**71.17**	13.09
Expected consequences of climate change	*(5) For the next few decades, the majority of climate scientists expect the climate to change evenly all over the world.*	**44.12**	41.70	14.18
	(6) For the next few decades, the majority of climate scientists expect a warmer climate to increase the melting of polar ice, which will lead to an overall rise of the sea level.	6.15	**87.22**	6.63
Action-related knowledge	*(7) The production of 1 kg of beef produces more greenhouse gases than the production of 1 kg of wheat*	10.53	**71.15**	18.31

Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES) data from a special-purpose module in December 2024 – population-weighted statistics. Except for item (4), all subitems used previously by Tobler et al. (2012).

Table B3. Effects of temperature scenarios on consumers expectations

(a) Prices of food

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -1.5°C°C	0.110***	0.114***	-0.224***	0.112***	0.113***	-0.225***
	(0.005)	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)
S3: +1.5°C	-0.040***	-0.074***	0.113***	-0.040***	-0.073***	0.113***
	(0.003)	(0.005)	(0.008)	(0.003)	(0.005)	(0.007)
S4: +3°C	-0.042***	-0.080***	0.122***	-0.042***	-0.079***	0.122***
	(0.003)	(0.005)	(0.007)	(0.003)	(0.005)	(0.007)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	21,153	21,153	21,153	20,992	20,992	20,992
Tests				P-value		
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.00	0.00	0.00	0.00	0.00	0.00
S3 = S4	0.23	0.23	0.23	0.19	0.19	0.19

(b) Prices of energy (including gasoline)

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -1.5°C	0.072***	0.089***	-0.161***	0.074***	0.089***	-0.163***
	(0.005)	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)
S3: +1.5°C	-0.033***	-0.064***	0.098***	-0.033***	-0.063***	0.097***
	(0.003)	(0.005)	(0.008)	(0.003)	(0.005)	(0.008)
S4: +3°C	-0.032***	-0.062***	0.094***	-0.032***	-0.061***	0.094***
	(0.003)	(0.005)	(0.008)	(0.003)	(0.005)	(0.008)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	21,153	21,153	21,153	20,992	20,992	20,992
Tests				P-value		
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.00	0.01	0.00	0.00	0.00	0.00
S3 = S4	0.65	0.65	0.65	0.71	0.71	0.71

(c) Price of other goods and services

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -1.5°C	0.060***	0.118***	-0.178***	0.061***	0.118***	-0.179***
	(0.004)	(0.006)	(0.009)	(0.004)	(0.006)	(0.009)
S3: +1.5°C	-0.027***	-0.088***	0.114***	-0.027***	-0.087***	0.114***
	(0.002)	(0.006)	(0.008)	(0.002)	(0.006)	(0.008)
S4: +3°C	-0.029***	-0.097***	0.126***	-0.029***	-0.097***	0.126***
	(0.002)	(0.006)	(0.008)	(0.002)	(0.006)	(0.008)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	21,149	21,149	21,149	20,988	20,988	20,988
Tests				P-value		
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.00	0.00	0.00	0.00	0.00	0.00
S3 = S4	0.12	0.12	0.12	0.10	0.10	0.10

Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in September 2024. All columns include country dummies (not reported). Columns (1) to (3) do not include any additional control variables. Columns (4) to (6) include the same set of control variables used in Table 1 (age, education, gender, household size, hand-to-mouth classification, homeownership, financial literacy, income). Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Table B4. Reasons for increasing prices of food and goods and services

	Logistic regression, average marginal effects					
	Crop failure	Supply chain disruptions	Production costs	Desire for profits by firms	Demand of consumers	Taxes or tariffs
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -1.5°C	-0.072***	-0.021*	-0.045***	0.000	0.010	-0.012
	(0.011)	(0.012)	(0.012)	(0.012)	(0.011)	(0.012)
S3: +1.5°C	0.016*	0.025**	0.027***	-0.007	-0.005	-0.012
	(0.009)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)
S4: +3°C	0.037***	0.034***	0.036***	-0.027***	0.028***	-0.016
	(0.009)	(0.011)	(0.010)	(0.010)	(0.010)	(0.010)
No. Obs.	15,606	15,606	15,606	15,606	15,606	15,606
Tests	P-value					
|S1| = |S3|	0.00	0.81	0.33	0.74	0.81	0.93
S3 = S4	0.02	0.39	0.35	0.04	0.00	0.74

Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in September 2024. All columns include country and sample type dummies (not reported). All columns include the same set of control variables used in Table 1 (age, education, gender, household size, hand-to-mouth classification, homeownership, financial literacy, income). Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Table B5. Effects of temperature scenarios on additional consumer expectations (June 2025)

(a) Biodiversity (the variety of animals, plants and animal life)

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	-0.262***	0.016***	0.246***	-0.263***	0.017***	0.246***
	(0.008)	(0.003)	(0.008)	(0.008)	(0.003)	(0.008)
S3: +0.5°C	0.121***	-0.048***	-0.073***	0.124***	-0.049***	-0.075***
	(0.009)	(0.004)	(0.006)	(0.009)	(0.004)	(0.006)
S4: +1.5°C	0.141***	-0.057***	-0.084***	0.141***	-0.057***	-0.084***
	(0.009)	(0.004)	(0.006)	(0.009)	(0.004)	(0.005)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests				P-value		
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.00	0.00	0.00	0.00	0.00	0.00
S3 = S4	0.04	0.04	0.04	0.06	0.06	0.06

(b) Your household's financial wellbeing

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	-0.086***	0.024***	0.062***	-0.086***	0.024***	0.062***
	(0.007)	(0.002)	(0.005)	(0.007)	(0.002)	(0.005)
S3: +0.5°C	0.097***	-0.054***	-0.043***	0.097***	-0.054***	-0.043***
	(0.009)	(0.005)	(0.004)	(0.009)	(0.005)	(0.004)
S4: +1.5°C	0.124***	-0.073***	-0.052***	0.123***	-0.072***	-0.051***
	(0.009)	(0.006)	(0.004)	(0.009)	(0.006)	(0.004)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests				P-value		
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.43	0.00	0.01	0.39	0.00	0.01
S3 = S4	0.01	0.01	0.01	0.01	0.01	0.01

(c) Unemployment

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	0.043***	0.043***	-0.086***	0.043***	0.043***	-0.085***
	(0.004)	(0.004)	(0.008)	(0.004)	(0.004)	(0.008)
S3: +0.5°C	-0.027***	-0.059***	0.086***	-0.027***	-0.059***	0.085***
	(0.003)	(0.006)	(0.009)	(0.003)	(0.006)	(0.009)
S4: +1.5°C	-0.035***	-0.086***	0.121***	-0.036***	-0.087***	0.122***
	(0.003)	(0.007)	(0.009)	(0.003)	(0.007)	(0.009)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests				P-value		
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.01	0.07	0.99	0.01	0.07	1.00
S3 = S4	0.00	0.00	0.00	0.00	0.00	0.00

(d) Economic Growth

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	-0.077***	-0.010***	0.087***	-0.077***	-0.010***	0.087***
	(0.006)	(0.002)	(0.007)	(0.006)	(0.002)	(0.007)
S3: +0.5°C	0.063***	-0.013***	-0.050***	0.063***	-0.013***	-0.050***
	(0.008)	(0.002)	(0.006)	(0.008)	(0.002)	(0.006)
S4: +1.5°C	0.080***	-0.019***	-0.061***	0.080***	-0.018***	-0.061***
	(0.008)	(0.002)	(0.006)	(0.008)	(0.002)	(0.006)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests	P-value					
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.25	0.26	0.00	0.25	0.23	0.00
S3 = S4	0.07	0.07	0.07	0.07	0.07	0.07

(e) Stock prices and other financial assets

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	-0.043***	-0.014***	0.056***	-0.043***	-0.014***	0.057***
	(0.005)	(0.002)	(0.007)	(0.005)	(0.002)	(0.007)
S3: +0.5°C	0.049***	-0.003**	-0.046***	0.050***	-0.003**	-0.046***
	(0.007)	(0.001)	(0.006)	(0.007)	(0.001)	(0.006)
S4: +1.5°C	0.068***	-0.008***	-0.060***	0.068***	-0.008***	-0.060***
	(0.007)	(0.002)	(0.006)	(0.007)	(0.002)	(0.006)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests	P-value					
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.54	0.00	0.35	0.55	0.00	0.32
S3 = S4	0.02	0.02	0.02	0.02	0.02	0.02

(f) House prices

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	0.021***	0.038***	-0.060***	0.021***	0.038***	-0.060***
	(0.003)	(0.006)	(0.009)	(0.003)	(0.006)	(0.009)
S3: +0.5°C	-0.021***	-0.058***	0.080***	-0.022***	-0.059***	0.080***
	(0.003)	(0.007)	(0.010)	(0.003)	(0.007)	(0.010)
S4: +1.5°C	-0.028***	-0.080***	0.107***	-0.028***	-0.080***	0.107***
	(0.002)	(0.007)	(0.010)	(0.003)	(0.007)	(0.010)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests	P-value					
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.96	0.07	0.20	0.93	0.06	0.18
S3 = S4	0.01	0.01	0.01	0.01	0.01	0.01

(g) Government debt

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	0.057***	0.084***	-0.141***	0.057***	0.083***	-0.140***
	(0.004)	(0.005)	(0.009)	(0.004)	(0.005)	(0.009)
S3: +0.5°C	-0.035***	-0.117***	0.152***	-0.035***	-0.117***	0.152***
	(0.002)	(0.007)	(0.009)	(0.002)	(0.007)	(0.009)
S4: +1.5°C	-0.041***	-0.142***	0.183***	-0.041***	-0.143***	0.183***
	(0.002)	(0.008)	(0.009)	(0.002)	(0.008)	(0.009)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests			P-value			
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.00	0.00	0.45	0.00	0.00	0.46
S3 = S4	0.00	0.00	0.00	0.00	0.00	0.00

(h) Taxes paid by consumers and firms (incl. VAT)

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	0.039***	0.074***	-0.112***	0.038***	0.073***	-0.111***
	(0.003)	(0.006)	(0.009)	(0.003)	(0.006)	(0.009)
S3: +0.5°C	-0.029***	-0.107***	0.137***	-0.029***	-0.107***	0.136***
	(0.002)	(0.008)	(0.010)	(0.002)	(0.008)	(0.010)
S4: +1.5°C	-0.036***	-0.141***	0.176***	-0.036***	-0.140***	0.176***
	(0.002)	(0.008)	(0.010)	(0.002)	(0.008)	(0.010)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests			P-value			
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.04	0.00	0.13	0.05	0.00	0.12
S3 = S4	0.00	0.00	0.00	0.00	0.00	0.00

(i) Immigration

	Ordered logistic regression, average marginal effects					
Level of dep. var.	Decrease	Same	Increase	Decrease	Same	Increase
	(1)	(2)	(3)	(4)	(5)	(6)
Temp. Scenario (base: S2: +0.01°C)						
S1: -0.5°C	0.099***	0.104***	-0.203***	0.099***	0.104***	-0.203***
	(0.005)	(0.005)	(0.009)	(0.005)	(0.005)	(0.009)
S3: +0.5°C	-0.033***	-0.089***	0.122***	-0.033***	-0.088***	0.122***
	(0.003)	(0.007)	(0.009)	(0.003)	(0.007)	(0.009)
S4: +1.5°C	-0.037***	-0.101***	0.137***	-0.037***	-0.101***	0.138***
	(0.003)	(0.007)	(0.009)	(0.003)	(0.007)	(0.009)
Controls	No	No	No	Yes	Yes	Yes
No. Obs.	19,759	19,759	19,759	19,617	19,617	19,617
Tests			P-value			
cut(1) = cut(2)	0.00	0.00	0.00	0.00	0.00	0.00
|S1| = |S3|	0.00	0.14	0.00	0.00	0.14	0.00
S3 = S4	0.10	0.10	0.10	0.10	0.09	0.09

Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in June 2025. All columns include country dummies (not reported). Columns (1) to (3) do not include any additional control variables. Columns (4) to (6) include the same set of control variables used in Table 1 (age, education, gender, household size, hand-to-mouth classification, homeownership, financial literacy, income). Robust standard errors are in parenthesis. Statistical significance level: *** p<.01, ** p<.05, * p<.1.

Table B6. Balance tests for scenario assignment (June 2025)

	Scenario				
Factor	**-0.5**	**+0.01**	**+0.5**	**+1.5**	**p-value**
N	4951	4946	4934	4935	
High climate concern	1410 (49.9%)	1382 (49.6%)	1460 (51.1%)	1399 (49.4%)	0.56
High climate attention	1311 (45.4%)	1271 (44.6%)	1329 (45.5%)	1317 (45.6%)	0.87
Age					
18-34 years	960 (19.4%)	949 (19.2%)	941 (19.1%)	932 (18.9%)	0.89
35-49 years	1543 (31.2%)	1586 (32.1%)	1560 (31.6%)	1532 (31.0%)	
50-64 years	1623 (32.8%)	1568 (31.7%)	1609 (32.6%)	1654 (33.5%)	
65+ years	825 (16.7%)	843 (17.0%)	824 (16.7%)	817 (16.6%)	
Gender					
Men	2701 (54.6%)	2701 (54.6%)	2742 (55.6%)	2745 (55.6%)	0.56
Women	2250 (45.4%)	2245 (45.4%)	2192 (44.4%)	2190 (44.4%)	
Education					
Primary	491 (9.9%)	509 (10.3%)	484 (9.8%)	477 (9.7%)	0.41
Secondary	1479 (29.9%)	1490 (30.1%)	1550 (31.4%)	1560 (31.6%)	
Tertiary	2981 (60.2%)	2947 (59.6%)	2900 (58.8%)	2898 (58.7%)	
Household size, median (IQR)	2 (2, 4)	2 (2, 4)	2 (2, 4)	2 (2, 4)	0.45
Hand-to-mouth	1273 (25.7%)	1287 (26.0%)	1274 (25.8%)	1274 (25.8%)	0.99
Homeowner	3483 (70.3%)	3500 (70.8%)	3489 (70.7%)	3483 (70.6%)	0.97
High financial literacy	2850 (58.0%)	2795 (56.9%)	2783 (56.9%)	2873 (58.6%)	0.21
HH Income (tsd), median (IQR)	36 (24, 51.6)	36 (23.16, 50.4)	36 (23.76, 50.4)	36 (22.8, 51.6)	0.38
Country					
BE	221 (4.5%)	251 (5.1%)	251 (5.1%)	248 (5.0%)	0.36
DE	802 (16.2%)	761 (15.4%)	771 (15.6%)	758 (15.4%)	
ES	791 (16.0%)	764 (15.4%)	799 (16.2%)	769 (15.6%)	
FR	801 (16.2%)	768 (15.5%)	804 (16.3%)	768 (15.6%)	
IT	852 (17.2%)	863 (17.4%)	833 (16.9%)	851 (17.2%)	
NL	210 (4.2%)	244 (4.9%)	272 (5.5%)	255 (5.2%)	
AT	247 (5.0%)	263 (5.3%)	234 (4.7%)	244 (4.9%)	
FI	254 (5.1%)	250 (5.1%)	231 (4.7%)	283 (5.7%)	
EL	287 (5.8%)	258 (5.2%)	261 (5.3%)	248 (5.0%)	
IE	226 (4.6%)	261 (5.3%)	217 (4.4%)	257 (5.2%)	
PT	260 (5.3%)	263 (5.3%)	261 (5.3%)	254 (5.1%)	
Experience extreme weather					
Flood	431 (15.8%)	431 (16.1%)	470 (17.4%)	483 (18.0%)	0.096
Drought	630 (23.0%)	592 (22.1%)	657 (24.4%)	630 (23.4%)	0.27
Wildfire	288 (10.5%)	274 (10.2%)	288 (10.7%)	290 (10.8%)	0.93
Landslide	132 (4.8%)	101 (3.8%)	124 (4.6%)	124 (4.6%)	0.25
Storm	375 (13.7%)	391 (14.6%)	431 (16.0%)	378 (14.1%)	0.087
Avalanches	66 (2.4%)	62 (2.3%)	69 (2.6%)	58 (2.2%)	0.80
Coastal erosion	123 (4.5%)	114 (4.3%)	103 (3.8%)	121 (4.5%)	0.57
Dust storms	76 (2.8%)	80 (3.0%)	74 (2.7%)	94 (3.5%)	0.35
Earthquakes	132 (4.8%)	140 (5.2%)	135 (5.0%)	125 (4.6%)	0.78
Other	62 (2.3%)	63 (2.4%)	52 (1.9%)	43 (1.6%)	0.18

Note: Data are drawn from the ECB Consumer Expectations Survey (CES) in June 2025. Information on extreme weather experiences over the past 5 years was collected in August 2024. Continuous variables are compared using the Wilcoxon rank-sum (2 groups) or Kruskal-Wallis (>2 groups) test, categorical and binary are compared using a Pearson's chi-squared.

Appendix C – Special purpose survey questions

August 2024 (Background information)

Variable: X4211
Filtering**: All respondents**
Label: Probability of extreme weather event
Question wording:
Over the next 5 years, what do you think is the **percentage chance** of an extreme weather event that will worsen …
Instruction: *Please provide your best guess.*
Question type: [numeric box]

Suffix	Question Wording	Value field / box **Range: 0-100**
1	**the financial well-being of your household**?	___%
2	**your country's economic situation**?	___%

Coding: Show a box. Range: 0-100
Scripting instruction**:**

- Add a percentage sign next to the numerical box
- Please randomise the order items 1 and 2 are shown include a version variable X4211version: X4211version=1 for the display order 1, 2; and X4211version=2 for the display order 2, 1
- If the respondent clicks next without answering, show the question again, but add a "don't know" option. Show the skipped notification.

-999	Don't know

Translation instruction: replace "the country you currently live in" by the actual country name (Belgian for BE FR/NL, French for FR, German for DE, Italian for IT, Dutch for NL, Spanish for ES, similar for the new countries).
Skipped notification: Please provide a number to answer this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

Variable: X5211
Label: Perceived important political topics – current
Filtering: **All respondents**
Question wording:
What do you think are the most important issues facing the country you currently live in at present?
Instruction: *Please select up to three responses.*

1	Healthcare
2	General economic situation
3	Unemployment
4	Rising prices in general and cost of living
5	Income differences across the population
6	The environment and climate change
7	Government debt
8	The educational system
9	Pensions
10	Immigration
11	Crime
12	Corruption in public services or the government
13	Housing
14	Taxation
15	Terrorism
16	National security and international conflict

17	Energy supply
18	Other issues, not mentioned above

Question type: [multiple response]

Coding:

1	Yes
0	No

Scripting instruction 1: Max 3 answers allowed.
Scripting instruction 2: Randomise items 1 to 17 appear. Item 18 should always be ordered last.
Translation instruction: replace "the country you currently live in" by the actual country name (Belgian for BE FR/NL, French for FR, German for DE, Italian for IT, Dutch for NL, Spanish for ES, similar for the new countries).
Error message: Show if more than 3 answers selected: Please select a maximum of 3 responses.
Skipped notification: Please provide an answer to this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

Variable: X4310
Label: Environment – past experiences
Filtering: **All respondents**
Question wording:
Which of the following extreme weather events or natural disasters (if any) in the country you currently live in have affected **your household's financial situation over the past 5 years**?

Instruction: *Please select all that apply.*

1	Flooding (incl. heavy rain)
2	Droughts or heatwaves
3	Wildfires
4	Landslides / mudslides
5	Storm damage (incl. strong winds and tornadoes)
6	Avalanches
7	Coastal erosion / storm surges
8	Dust storms
9	Earthquakes (incl. volcanic eruptions)
10	Other
11	None of the above

Question type: [multiple response]

Coding:

0	No
1	Yes

Scripting instruction:
- Include question as a tick all that apply list
- Randomise the order items 1-9 appear. Items 10 and 11 should be fixed in order with item 11 shown separately (exclusive)

Skipped notification: Please provide an answer to this question. All your answers will be treated confidentially.
Hard check: respondent cannot proceed without answering

September 2024 (Pilot module)

Variable: AN1010
Label: Climate change attention
Filtering: **All respondents**
Question wording:
Some people are interested in following news and developments related to climate change while others are less interested in this topic. That is some people might follow the news and search for information about climate change regularly while others don't.

Thinking about yourself, how much attention do you pay to climate change news?

Question type: [single response]
Coding:

1	Almost no attention
2	A little attention
3	Some attention
4	Much attention
5	A great deal of attention

Scripting instruction:

- Randomise the order of the response options in two versions. Include a variable version AN1010version indicating either version 1, shows: "Almost no attention" to "A great deal of attention"; version 2: "A great deal of attention" to "Almost no attention".

Skipped notification: Please provide an answer to this question. There is no right or wrong answer
Hard check: Respondent cannot proceed without answering.

Variable: AN1020

Label: Climate change concerns – household financial situation
Filtering: **All respondents**
Question wording:
How concerned are you about the impact of climate change on the **financial situation of your household**, over the next five years?
Question type: [single response]
Coding:

0	0 – Not concerned at all
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10 – Extremely concerned
-999	Do not know

Skipped notification: Please provide an answer to this question. There is no right or wrong answer
Hard check: Respondent cannot proceed without answering.

Variable: AN1030
Label: Climate change responsibility
Filtering: **All respondents**
Question wording:
In your opinion, who is primarily responsible for addressing climate change and its consequences in Europe?
Instruction: *Please select up to three that are the most responsible.*
Question type: [multiple response]

1	The United Nations
2	The European Commission
3	The European Central Bank
4	National governments
5	Regional and local authorities
6	Business and industries
7	Citizens like you
8	Environmental groups
9	Other
10	None of the above

Coding:

0	No
1	Yes

Scripting instruction:

- Up to three items should be possible to select.
- Block-randomize the order of options shown.
    - Include a variable version AN1030version indicating either version 1, shows: 1,2,3,4,5,6,7,8; or version 2, shows: 4,5,6,1,2,3,7,8; or version 3 shows: 7,8, 4,5,6,1,2,3.
    - option 10 should be exclusive, that is when option 10 is selected all other options should be unselected.
- If the respondent clicks next without answering, show the question again, but add a "don't know" option. Show the skipped notification.

-666	Prefer not to answer
-999	Don't know

Error message: Show if more than 3 answers selected: Please select a maximum of 3 responses.
Skipped notification: Please provide an answer to this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

Variable: AN1000
Label: Insert for AN1110
Filtering: **All respondents**
Coding: [Single value]

Group	Dynamic Insert in AN1110: **Z**
1	**decrease** considerably by **1.5**
2	**increase** only slightly by **0.01**
3	**increase** considerably by **1.5**
4	**increase** considerably by **3**

Random assignment of groups, with equal groups for **country** (DE, FR, IT, ES, NL, BE, FL, EL, IE, PT, AT) x recruitment **method** (CATI/CAWI).

Variable: AN1110
Label: Temperature change – Scenario question
Filtering: **All respondents**
Question wording:
According to historical data, the annual average global temperature in 2023 has increased significantly by about 1 degree Celsius compared to 50 years ago.

Suppose that **in the next 5 years**, the average **global temperature** will Z degrees Celsius compared to today.

How do you think this will affect, if at all, each of the following **in the country you currently live in** over the next 5 years?

Question type: [grid question]

1	Prices of food
2	Prices of energy (including gasoline)
3	Prices of other goods and services
4	Number of Oscar winning movies
5	Biodiversity (the variety of animals, plants and animal life)
6	Your household financial wellbeing
7	Unemployment
8	Economic growth
9	Stock prices and other financial asset values
10	House prices
11	Government debt
12	Taxes paid by consumers and firms (incl. VAT)
13	Immigration

Coding:

1	Decrease a lot
2	Decrease a little
3	No effect
4	Increase a little
5	Increase a lot

Translation instruction: replace “the country you currently live in” by the actual country name (Belgium for BE FR/NL, France for FR, Germany for DE, Italy for IT, Netherlands for NL, Spain for ES, similarly for five new countries).

Scripting instruction:

- Unfolding grid with labelled response options
- Block-randomize the order of items grouped together (do not include a variable indicating order), randomize the groups not the order of items within each group.
    - Items are grouped as follows:
        - Group 1: 1,2,3
        - Group 2: 4,5,6
        - Group 3: 7,8,9,10
        - Group 4: 11,12,13

Skipped notification: Please provide an answer to this question. There is no right or wrong answer.

Hard check: respondent cannot proceed without answering

Variable: AN1120

Label: Reason for food price increases

Filtering: If AN1110_1 = 4 or AN1110_1 = 5

Question wording:

You said before that food prices will increase in the next 5 years because of the change in global temperature.

Which of the following do you think will be responsible for this increase in food prices?

Instruction: *Please select all that apply.*

Question type: [multiple response]

1	Increased crop failures
2	Increased occurrence of supply chain disruptions
3	Increased production costs
4	Increased desire for profits by firms
5	Increased demand of consumers for certain goods
6	Increased taxes or tariffs

7	Other

Coding:

0	No
1	Yes

Scripting instruction:

- Randomise the order items 1 to 6 are displayed (do not include a version variable)
- option 7 should be always ordered last
- Don't know options should be recorded per item (i.e. not per extra variable)
- If the respondent clicks next without answering, show the question again, but add a "don't know" option. Show the skipped notification.

-666	Prefer not to answer
-999	Don't know

Skipped notification: Please provide an answer to this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

December 2024 (Additional background information)

Variable: AO1010
Label: Climate change knowledge
Filtering: **All respondents**
Question wording:
Now we would like to ask you some questions concerning the environment.
Which of the statements below regarding **climate change** do you think are true or false?
Instruction: *A don't know option is available in case you do not know the answer.*

1	The ozone hole is the main cause of the greenhouse effect.
2	Higher concentration of carbon dioxide (CO_2) in the atmosphere leads to higher temperatures
3	The increase of greenhouse gases is mainly caused by human activities.
4	For the next few decades, the majority of climate scientists expect the climate to change evenly all over the world.
5	The annual average global temperature in 2023 has increased by about 1 degree Celsius compared to 50 years ago.
6	For the next few decades, the majority of climate scientists expect a warmer climate to increase the melting of polar ice, which will lead to an overall rise of the sea level.
7	The production of 1 kg of beef produces more greenhouse gases than the production of 1 kg of wheat

Question type: [grid question]
Coding:

1	True
0	False
3	Don't know

Scripting instruction:
- Randomize order of statements 1 to 7

Skipped notification: Please provide an answer to this question. All your answers will be treated confidentially.
Hard check: respondent cannot proceed without answering

June 2025 (Main experiment)

Variable: AS2010
Label: Expectation for future temperatures – probabilistic
Filtering: **All Respondents**
Question wording:
Now, we would like you to think about how much average global temperatures (in degree Celsius, °C) might change **over the next 5 years** compared to today.

Below you see possible ways in which the average global temperatures could change **until 2030**. Please distribute 100 points among them, to indicate how likely you think it is that each temperature change will happen. The sum of the points you allocate should total 100.
Instruction: *You can allocate points by typing a number in each box. (Note that your answers should add up to 100 – if the total exceeds 100, you should first decrease the points again in one option before you can add points in another).*
Question type: [numeric grid]

1	Average global temperatures will **increase** by 2 °C or more
2	Average global temperatures will **increase** by 1 °C or more but less than 2 °C
3	Average global temperatures will **increase** by 0 °C or more but less than 1 °C
4	Average global temperatures will **decrease** by more than 0 °C but less than 1 °C
5	Average global temperatures will **decrease** by 1 °C or more but less than 2 °C

6	Average global temperatures will **decrease** by 2 °C or more

Coding:
Numeric box with range 0-100
Scripting instruction:

- Show the grid items (text) to the left and the associated numeric entry box on the right-hand side.
- Randomise order of items 1 to 8 in two ways: version 1 show 1 to 6, version 2 show 6 to 1 (reverse order). Include a version variable AS2010_version.
- Display a final column at the bottom with "**Total** (the points should sum to 100)" and a running total to the right of it.
- Cells in the table should not be pre-filled, hard check on entering a value in at least one cell of the table, soft check for values summing to 100.

Skipped notification: This question takes a little more effort, but please be assured there is no right or wrong answer. Please try to distribute 100 points among the rows in the table.
Hard check: respondent cannot proceed without answering (show if no fields answered); respondent can proceed of at least one field answered.
Error message: The points do not sum to 100. Please check your answer, or click "Next" if you are happy with your answer.
Soft check: Error notification shown once, if respondent clicks 'next' again, move to next question

Variable: AS2100
Label: Insert for AS2110 and AS2120
Filtering: All respondents
Coding: [Single value]

Group	Dynamic insert in AS2110, AS2120 and AS2130: **Z**
1	**decrease** considerably by **0.5**
2	**increase** only slightly by **0.01**
3	**increase** considerably by **0.5**
4	**increase** considerably by **1.5**

Random assignment of groups, with equal groups for **country** (DE, FR, IT, ES, NL, BE, FL, EL, IE, PT, AT) x recruitment **method** (CATI/CAWI).

Variable: AS2110
Label: Temperature change – Scenario question
Filtering: **All respondents**
Question wording:
According to historical data, the annual average global temperature in 2023 has increased significantly by about 1 degree Celsius compared to 50 years ago.

Suppose that **in the next 5 years**, the average **global temperature** will {Z} degrees Celsius compared to today.

How do you think this will affect, if at all, each of the following **in the country you currently live in** over the next 5 years?
Question type: [grid question]

1	Prices of goods and services (including food and energy)
2	Number of Oscar winning movies
3	Biodiversity (the variety of animals, plants and animal life)
4	Your household financial wellbeing
5	Unemployment
6	Economic activity
7	Stock prices and other financial asset values
8	House prices
9	Government debt
10	Taxes paid by consumers and firms (incl. VAT)
11	Immigration

Coding:

1	Decrease a lot
2	Decrease a little
3	No effect
4	Increase a little
5	Increase a lot

Translation instruction: replace "the country you currently live in" by the actual country name (Belgium for BE FR/NL, France for FR, Germany for DE, Italy for IT, Netherlands for NL, Spain for ES, similarly for five new countries).
Scripting instruction:

- Unfolding grid with labelled response options
- Block-randomize the order of items grouped together (do not include a variable indicating order), randomize the groups not the order of items within each group. No version variable to be included.
    - Items are grouped as follows:
        - Group 1: 1
        - Group 2: 2,3,4
        - Group 3: 5,6,7,8
        - Group 4: 9,10,11

Skipped notification: Please provide an answer to this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

Variable: AS2120
Label: Temperature change – Prices – Quantitative response
Filtering: **If AS2110_1 = 1 OR AS2110_1 = 2 OR AS2110_1 = 4 OR AS2110_1 = 5**
Question wording:
You said that you expect the **prices of goods and services** to [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] over the next 5 years in the country you currently live in as a result of [SCRIPTER: if AS2100 = 1, show: a considerable decrease of 0.5 degrees Celsius; if AS2100 = 2 show: a slight increase by 0.01 degrees Celsius; if AS2100 = 3 show: a considerable increase by 0.5 degrees Celsius; if AS2100 = 4 show: a considerable increase by 1.5 degrees Celsius] in average global temperatures.

By about what percentage do you think the **prices of goods and services** will [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] between June 2029 and June 2030 because of this change in temperatures?
Question type: [Single response]
Coding:

1	Will [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] by 3% or more
2	Will [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] by 2% or more but less than 3%
3	Will [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] by 1% or more but less than 2%
4	Will [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] by 0.5% or more but less than 1%
5	Will [SCRIPTER: if AS2110_1 = 4 or 5, show: **increase;** if AS2110_1 = 1 or 2, show: **decrease**] by less than 0.5%

Translation instruction: replace "the country you currently live in" by the actual country name (Belgium for BE FR/NL, France for FR, Germany for DE, Italy for IT, Netherlands for NL, Spain for ES, similarly for five new countries).
Scripting instruction:

- Randomise the order of the items with two versions, version 1: item 1 to 5, version 2 (reverse): item 5 to 1. Include a version variable AS2120_version.
- If the respondent clicks next without answering, show the question again, but add a "don't know" option. Show the skipped notification.

-999	Don't know

Skipped notification: Please provide an answer to this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

Variable: AS2130
Label: Temperature change – Economic growth – Quantitative response
Filtering: **If AS2110_6 = 1 OR AS2110_6 = 2 OR AS2110_6 = 4 OR AS2110_6 = 5**
Question wording:
You said that you expect **economic activity** to [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] over the next 5 years in the country you currently live in as a result of [SCRIPTER: if AS2100 = 1, show: a considerable decrease of 0.5 degrees Celsius; if AS2100 = 2 show: a slight increase by 0.01 degrees Celsius; if AS2100 = 3 show: a considerable increase by 0.5 degrees Celsius; if AS2100 = 4 show: a considerable increase by 1.5 degrees Celsius] in average global temperatures.

By about what percentage do you think **economic activity** will [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] between June 2029 and June 2030 because of this change in temperatures?
Question type: [Single response]
Coding:

1	Will [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] by 3% or more
2	Will [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] by 2% or more but less than 3%
3	Will [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] by 1% or more but less than 2%
4	Will [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] by 0.5% or more but less than 1%
5	Will [SCRIPTER: if AS2110_6 = 4 or 5, show: **increase;** if AS2110_6 = 1 or 2, show: **decrease**] by less than 0.5%

Scripting instruction:
- Randomise the order of the items with two versions, version 1: item 1 to 5, version 2 (reverse): item 5 to 1. Include a version variable AS2130_version.
- If the respondent clicks next without answering, show the question again, but add a "don't know" option. Show the skipped notification.

-999	Don't know

Translation instruction: replace "the country you currently live in" by the actual country name (Belgium for BE FR/NL, France for FR, Germany for DE, Italy for IT, Netherlands for NL, Spain for ES, similarly for five new countries).
Skipped notification: Please provide an answer to this question. There is no right or wrong answer.
Hard check: respondent cannot proceed without answering

Variable: AS2140
Label: Temperature change – Willingness to pay
Filtering: **All respondents**
Question wording:
Governments have to undertake significant investments in environmental projects over the next 5 years in order to [SCRIPTER: if AS2100 = 1, show: achieve a considerable decrease of 0.5 degrees Celsius; if AS2100 = 2 show: achieve only a slight increase of 0.01 degrees Celsius; if AS2100 = 3 show: prevent a considerable increase of 0.5 degrees Celsius; if AS2100 = 4 show: prevent a considerable increase of 1.5 degrees Celsius] compared to today. How much of your own money **would you be willing to pay every month** to the government for this purpose **over the next 5 years**?
Question type: [numeric entry]
Coding:
Numeric box with valid **range: 0 – 100000000**
___ €

-666	Prefer not to answer
-999	Don't know

Skipped notification: Please provide an answer to this question. All your answers will be treated confidentially.