

# Inflation, Net Nominal Positions, and Consumption\*

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January 28, 2023

## Abstract

We study redistributive effects of inflation across households with varying nominal wealth positions using a randomized information experiment on clients of a large bank. On average, individuals are well informed about current levels of inflation and are concerned about its impact on their wealth; yet, most individuals are not aware of how inflation erodes nominal asset and debt positions. Once they receive information on this erosion channel, they update perceptions and expectations about their own net nominal positions. Learning about the inflation-induced erosion of nominal positions causally affects choices in hypothetical real-estate transactions and consumption plans. The findings suggest that household wealth mediates the sensitivity of consumption to inflation once households are aware of the balance-sheet effects of inflation.

**JEL codes:** D12, D14, D83, D84, E21, E31, E52

**Keywords:** Inflation Beliefs, Information Treatment, Consumption, Monetary Policy

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\*We thank our partners at a bank for their collaboration and the data necessary to conduct this research. The experiment received IRB approval from the German Association for Experimental Economic Research (Number: 5hjDTgn8) and is preregistered in the AEA RCT Registry (ID: 9735). Weber gratefully acknowledges financial support from the Fama Research Fund at the University of Chicago Booth School of Business and the Fama-Miller Center. The contribution by Philip Schnorpfeil has been prepared under the Lamfalussy Fellowship Programme sponsored by the ECB. Any views expressed are only those of the authors and do not necessarily represent the views of the ECB or the Eurosystem.

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# 1 Introduction

After having been dormant for decades, inflation has reached levels in 2022 not seen by many households during their lifetimes. On average, households dislike high levels of inflation because nominal incomes usually do not keep up with sharp increases in inflation in the short run. However, unexpected increases in the price level do not only generate losers but can also benefit households, among other economic actors. Surprise inflation lowers the real value of nominal assets but also erodes the real value of debt positions with fixed nominal interest obligations (Doepke and Schneider, 2006), redistributing wealth from savers to borrowers. We label this mechanism the erosion channel of nominal positions. Yet, so far little is known about whether households are aware of these distributional consequences of inflation and how they adjust their economic decisions to news about their real net worth.

We study the extent to which households are aware of the erosion channel of inflation, how they adjust perception and expectation of their own net nominal position, as well as how news about their real wealth affect housing and leverage choices in a hypothetical investment choice and their consumption plans. To study these questions, we run a large randomized control trial (RCT) on clients of a major German bank. Some clients receive information on the erosion channel of inflation on either asset or debt positions as part of the RCT. Survey participants are well informed about the current inflation level and highly concerned about the wealth impact of inflation, but they have only limited knowledge about the nominal-wealth-erosion channel of inflation. Consequently, treated respondents update their perception and expectation of their own real net worth, as well as their beliefs about nominal positions. Individuals' updating of perceptions and expectations has real effects: respondents choose more leverage in a hypothetical real-estate investment and plan to spend more if they exogenously perceive higher real net worth because of our treatments.

We implemented the RCT on several thousand bank clients in July 2022 when inflation in Germany was at 8.6%, a 70-year high. The survey respondents are on average better educated than the average German in the population, they have large nominal positions (e.g., 55% have outstanding debt), accurate perceptions of current inflation, and they are concerned about its impact on their wealth. In the survey experiment, we first ask respondents questions on their pre-existing knowledge, such as how various balance-sheet items fare following an unexpected increase in inflation. Respondents also estimate their recent change in real net worth and decompose their balance sheet so we can calculate their net nominal position.

The subsequent information-provision experiment builds the core of our survey. We randomly assign respondents into three groups, two treatment groups and one control group. The treatment groups receive (i) information on the current inflation rate, (ii) an explanation that higher inflation hurts savers / benefits debtors because it erodes nominal positions, and (iii) a calculation of the current change in real value of representative savings products or loans. The single difference between the two treatments is that one discusses the erosion of savings, while the other is on loan erosion. The control group only receives information about (i), current inflation. Hence, we inform all survey participants about prevailing inflation rates but only subjects in the treatment conditions learn about the nominal erosion channel of inflation. By comparing treatment and control groups, we can thus isolate the effect of information about the erosion channel of inflation. Post-treatment, we elicit beliefs about nominal positions, own wealth, and the economy. Moreover, we ask respondents about spending plans and hypothetical real-estate investments.

We report three sets of results. Our first result is on the pre-existing awareness about the erosion channel of nominal positions. One-quarter of respondents believe the impact of surprise inflation on fixed-interest savings products is very negative, and one-half believe

it is negative. This indicates some prior awareness about inflation-induced savings erosion, though the beliefs are close to those about stocks, which individuals believe to provide some protection against inflation (e.g., [Hackethal, Schnorpfeil, and Weber, 2022](#)). Knowledge about loan erosion is more limited. Only 9% of respondents believe the impact is very positive, and 25% believe it is positive.

Which characteristics predict awareness of the erosion channel of nominal positions? First, surprisingly, awareness does not vary by exposure to nominal positions. That is, savers are not less aware and debtors are not more aware of the redistributive effects of inflation. Second, greater general informativeness of and interest in inflation predict knowledge about erosion. For example, those with a more accurate perception of current inflation are more likely to know about the erosion channel. Third, stock ownership, education in business, and wealth correlate with awareness about the channel.

The second result is that randomized provision of information on the erosion channel of nominal positions affects estimates of own real wealth and beliefs about these nominal positions. Conditioning on pre-treatment estimates of real-wealth changes, we find respondents who receive the savings-erosion treatment on average estimate their change in real-wealth 1.4 percentage points (pp) lower than respondents in the control group; respondents learning about inflation-induced loan erosion increase their estimate of the real-wealth change relative to the control group by 2.3 pp. Those with larger exposure to the nominal position they learn about drive these effects: only individuals with a positive net nominal position (“savers”) adjust their real-wealth estimate following the savings treatment; individuals with a negative nominal position (“net debtors”) react more strongly to the loan treatment. For example, among net debtors, those who receive the loan treatment estimate their real-wealth change 4.7 pp more positively on average than net debtors in the control group.

Treated respondents also shift their beliefs about nominal positions. We ask them to rank balance-sheet items in terms of their relative inflation-protection properties. Individuals in the savings-treatment group assign a worse inflation-protection rank to savings products. Respondents receiving the loan treatment rank loans better and savings products slightly worse. The latter result suggests that there may be some cross-inference from learning about loan erosion. Taken together, the findings corroborate that ex-ante knowledge about the erosion channel of nominal wealth is limited. Moreover, learning about the erosion channel of nominal positions affects own wealth estimates and beliefs about these positions.

Our third result is that learning about inflation-induced erosion has real effects.<sup>1</sup> Respondents engage in a hypothetical real-estate transaction. Consistent with modest wealth effects, individuals in the savings-treatment group compared with those in the control group choose slightly cheaper real estate, while the debt/equity ratio of the transaction is similar. Respondents in the loan treatment do not differ in their chosen hypothetical purchase price from respondents in the control group on average, but their preferred debt/equity ratio is more than 10% higher. Moreover, the loan treatment tilts the mortgage choice towards fixed- rather than adjustable-rate mortgages, with longer fixed-rate horizons. These choices likely reflect treatment-induced shifts in beliefs about nominal liabilities.

Another real effect of learning about the erosion channel is on planned consumption. Treatment-induced changes in real-wealth estimates significantly impact planned nondurables spending. We arrive at this result using an instrumental-variables approach, exploiting the treatments as a source of exogenous variation in perceived wealth. This finding implies that real wealth changes affect households' consumption response to inflation, conditional

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<sup>1</sup>For this version of the paper, we can only rely on planned or hypothetical choices that are survey-based. In the future, we can investigate, among other things, treatment effects on actual financial and consumption decisions coming from the data of the bank partner.

on households being aware of balance-sheet effects of inflation.

**Related literature** We contribute to several strands of literature. First, we build on the influential study of [Doepke and Schneider \(2006\)](#) that documents in detail the net nominal positions of different economic actors in the U.S. over time and studies the redistributive effects of different surprise-inflation scenarios within and across these groups. A key finding of their paper is that young households with large existing debt positions benefit at the expense of wealthy middle-aged households. [Auclert \(2019\)](#) studies theoretically the redistributive effects of monetary policy via differential nominal wealth positions. [Coibion et al. \(2017\)](#) document the reallocation of wealth due to monetary policy. We are the first to study how households perceive and adjust to a reallocation of wealth induced by inflation.

Second, the economics literature has started to employ information-treatment experiments to study how ordinary consumers, who make consumption, saving, and investment decisions in the field, understand and perceive economic policies and their intended effects (e.g., [Andre et al., 2022](#); [Bernard, Tzamourani, and Weber, 2022](#); [Capozza et al., 2021](#); [Coibion, Gorodnichenko, and Weber, 2022](#)). We contribute to this stream of the literature by testing experimentally how information about the wealth-erosion channel affect individuals' views on their real net worth and affect choices.

Third, our paper belongs to the recent literature in macroeconomics that studies the formation and effects of consumers' subjective economic beliefs. We combine an information-provision experiment with belief elicitation, building on recent work in this area such as [Armona, Fuster, and Zafar \(2019\)](#), [Coibion, Gorodnichenko, and Weber \(2022\)](#), and [Roth and Wohlfart \(2020\)](#); see [Haaland et al. \(2022\)](#) for a review.<sup>2</sup>

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<sup>2</sup>Studies on the formation of subjective macroeconomic and financial expectations using micro data further include [Bachmann et al. \(2015\)](#), [D'Acunto et al. \(2022\)](#), [D'Acunto, Hoang, and Weber \(2022\)](#), [Das, Kuhnen, and Nagel \(2020\)](#), and [Kuchler and Zafar \(2019\)](#). See [D'Acunto, Malmendier, and Weber \(2022\)](#) and [Weber et al. \(2022\)](#) for recent surveys of work in this area.

## 2 Experimental design and data

### 2.1 Experiment

In this section, we describe the design of the survey, which consists of three sections: (i) a pre-treatment section on demographics, respondents’ balance sheets, and economic beliefs; (ii) an information-provision section; and (iii) a post-treatment section on beliefs, hypothetical and planned economic choices, and additional background characteristics.

**Pre-treatment section** Respondents start by answering two questions on their educational background. We then assess respondents’ marginal changes in savings, consumption, and debt repayment / uptake in the three months following a hypothetical one-time payment of €10k (see, e.g., [Fuster, Kaplan, and Zafar, 2020](#)).<sup>3</sup> Respondents receive the same question again—question ordering is randomized—but this time being asked about the marginal propensities to save, consume, and repay / take on debt when realizing that their own wealth is €10k higher / lower than previously believed. A comparison of answers to these two questions allows to infer differential hypothetical spending responses following unexpected actual payments versus unexpected changes in perceived net worth with no actual cash flow involved.

Respondents then answer questions about the economy and its relation to their wealth situation. These questions cover the importance of macroeconomic factors, such as inflation and GDP, for own wealth; the consumption response to recent changes in these factors; perception of current and forecasts of inflation; and whether holding cash, fixed-interest savings products, stocks, real estate, and loans is positive or negative when there is an unexpected surge in inflation. These questions serve to, among other things, elicit prior

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<sup>3</sup>Respondents either receive this one-time cash flow framed as a gain or as a loss.

knowledge about the erosion of nominal assets and liabilities.

Importantly, we ask respondents to provide a decomposition of their balance sheet into nominal assets (such as cash, bonds, life insurances), stocks, real estate, other assets (such as vehicles and gold), and nominal liabilities (divided into mortgages and consumer loans).<sup>4</sup> Respondents state the value of each balance-sheet item as a fraction of their gross wealth. Because this is a demanding task, the question features a careful explanation of gross wealth as well as two examples.<sup>5</sup> Finally, respondents estimate their real net-worth change over the past 12 months. As this is another difficult task, we first introduce the concept of gross wealth (in the decomposition task), add an example of a real net-worth change, and then have respondents first give a directional estimate before providing a point prediction.

**Treatment section** The next stage administers the information intervention. The objective of the intervention is to shift beliefs about how inflation affects nominal assets and liabilities. For that, we randomly divide the sample into three groups, of which two receive information treatments and one serves as a control group. The two treatments are very similar, other than that one focuses on nominal assets (e.g., cash, savings products, life insurances, bonds), while the other is on nominal liabilities.

The treatment information comprise (i) the current rate of inflation of 8.6%, which is the highest rate for more than 70 years; (ii) an explanation that this increase is relatively harmful for savers (in the case of the asset treatment) / beneficial for debtors (in the case of the loan treatment), as inflation erodes the real value of the savings product (asset treatment) / loan (loan treatment); and (iii) a calculation of the deterioration in the real value of a representative savings product / loan based on the recent surge in inflation and under the

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<sup>4</sup>We follow [Adam and Zhu \(2015\)](#) in classifying life insurances as nominal claims, as insurance companies in the euro area are predominantly invested in nominal claims.

<sup>5</sup>Median time spent on the balance-sheet-decomposition screen is more than two minutes, indicating that respondents take their time to carefully answer the question.



assumption of elevated inflation over the next two years.

Respondents assigned to the control group only receive information on (i), the current rate of inflation. This information might on their own affect post-treatment beliefs and choices. By comparing respondents in the treatment groups with respondents in the control group, we can identify the effect of learning about the erosion of nominal assets and liabilities. We do provide information on (i), however, to emphasize that at the current rate of inflation, the erosion effects are substantial in magnitude.

**Post-treatment section** Following the information intervention, we first elicit 12-month-ahead expectations, on real-estate prices, the unemployment rate, respondent’s income, and interest rates. If the treatments affect some of these expectations, it might be through these expectations that respondents alter their choices. For example, [Coibion et al. \(2021\)](#) show that people’s macroeconomic outlook causally affects their consumption plans.

We then ask about planned spending. Following the approach by [Roth and Wohlfart \(2020\)](#), respondents state their consumption plans for multiple nondurables categories over the next four weeks relative to the previous four weeks. Response options, on a five-point scale, range from “much less” to “much more.” The short time window should mitigate that inflation confounds the responses. On durables spending, we ask whether respondents plan to make major purchases over the next 12 months, such as buying a car or flat. If they do, we ask them to provide the amount they plan to spend.

Respondents move on to wealth-related questions. They re-estimate the past-12-month change in their real net worth, as well as their expectation for the next 12 months. This time, respondents provide a point estimate immediately, which is again bounded between -60% and 60%. They then answer qualitatively a question on the impact of the Ukraine conflict, climate change, COVID-19, GDP growth, and inflation on past-12-month changes in their

real net worth, as well as a question on their beliefs about the relative wealth protection provided by savings products, stocks, real estate, and fixed-rate loans.

The last belief questions relate to savings and debt. Respondents first engage in a hypothetical real-estate transaction. They provide a purchase price and sources of funding, with up to €500k coming from savings and up to €500k coming from a bank loan. Respondents also choose whether they prefer an adjustable- or a fixed-rate mortgage, and if they choose the latter, what the fixed-rate-period length should be. Second, we elicit attitudes more directly, such as by asking about being comfortable with taking on debt (Almenberg et al., 2021) and the belief that their balance sheet provides a hedge against inflation.

The final section of the survey elicits respondents' risk tolerance; financial literacy, based on a question related to money illusion (Shafir, Diamond, and Tversky, 1997); and bins of the euro value of their nominal assets and liabilities. After completion, we ask respondents how interesting they found the survey, they can leave comments, and they decide whether they want to receive the voucher (in case of the sure-voucher variant) or participate in the lottery (in case of the lottery variant).

## 2.2 Data

**Survey administration** We run the survey experiment in partnership with a large German bank. The bank offers the full range of retail-banking and brokerage services. In July 2022, the bank sent out a short email to around 215,000 customers, inviting them to participate in a survey on inflation administered by Goethe University Frankfurt. The survey was continuously available for two weeks. After one week, the bank sent out a reminder email, informing customers they have one week left to complete the survey. The survey period coincided with a rate of inflation in Germany of 8.6%, the highest rate for more than 70

years, which might have sparked interest in survey participation. We offer invitees either a safe payout (21% of all invitees), or lottery participation (79%) for completing the survey. All payoffs are in the form of online-shopping vouchers. The decision to offer a sure voucher vs. lottery to an invitee is randomized, conditional on some customer-group assignments described further below in this section.

Overall, 3,846 bank customers complete the survey. 45% of survey completions happen within the day after the bank sent the invitation email, and 43% of the responses come in within the day after the bank sent the reminder email. That is, the vast majority of responses stem from shortly after reception of the invitation emails. The overall response rate is 1.8% and 45% of those who started the survey finish it, which might reflect the demanding nature of some questions. The median response time is 18.3 minutes.

**Sample selection** Together with the partnering bank, we draw the experimental sample based on two criteria. First, because of the importance of observing respondents' actual consumption choices, all bank customers who activate the bank's personal financial-management (PFM) tool and actively use their bank account receive a survey invitation.<sup>6</sup> Customers need only one click in their online-banking environment to activate the tool. Once the tool is active, the bank can provide data on the respondents' in- and outflows, sorted into various categories. The tool is comparable to personal-finance apps such as Mint; an important difference, however, is that the tool is embedded in the online-banking environment. Bank customers with observable, frequent account transactions randomly receive the survey-participation invitation based on the safe voucher or the lottery participation.

Second, bank customers who do not fulfill the above criteria but have an outstanding mortgage or consumer loan at the partnering bank receive a survey invitation, which comes

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<sup>6</sup>The bank defines bank-account activity based on whether the customer has received any cash inflows over the past six months.

with the lottery incentivization (around 15% of the selected sample). Because these customers' bank-account transactions cannot be (reliably) observed, they cannot be subject to the consumption analysis that relies on the bank data. However, given their outstanding debt at the bank, these customers should particularly care about the erosion of nominal positions. Moreover, we can still observe their other bank activities (such as debt choices) and can analyze their survey responses.

On the sample of bank customers who complete the survey, we take two steps to screen out respondents who seem to not have taken the survey seriously or to have misunderstood essential parts of it. First, we omit respondents who make wrong or implausible entries in the balance-sheet decomposition task: those who enter a negative share of a balance-sheet item relative to gross wealth; a share greater than one, that is, the value of a single balance-sheet item exceeds gross wealth; a share of cash plus savings products equal to zero; or a value of an outstanding mortgage, consumer loan, or the sum of the two that is equal to gross wealth.<sup>7</sup> Second, we drop respondents who take less than eight minutes or more than 120 minutes to complete the survey. After these two steps, 3,190 individuals remain in the baseline sample. The results are robust to not performing any of these two screening steps.<sup>8</sup>

**Sample characteristics** Table 1 reports summary statistics for the estimation sample. The top panel considers respondent characteristics. The educational level is high, with 48% having obtained a higher-education degree, around 20% of them studied business. The respondents' average net nominal position is 26% of gross wealth. This average masks vast heterogeneity: the interquartile range is 60% of gross wealth. We follow [Auclert \(2019\)](#) and

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<sup>7</sup>The largest chunk of respondents filtered out is due to the sum of the value of the mortgage and consumer loan equaling gross wealth (10% of the sample). Because we ask respondents for the sum of asset-side balance-sheet positions to equal 100% of gross wealth, perhaps some respondents emulate this approach for the liabilities side as well.

<sup>8</sup>The only exception is the result reported in Table 4, which requires a relatively precise measurement of the respondents' net nominal position.

Doepke and Schneider (2006) and define the net nominal position as the market value of all nominal assets minus the market value of all nominal liabilities.<sup>9</sup> We operationalize the measure by taking the sum of cash and fixed-interest products minus the sum of mortgage and consumer loans. Respondents estimate the value of their respective balance-sheet positions relative to their estimated gross wealth, so the net nominal position is naturally measured relative to gross wealth. 33% of respondents report having a mortgage, 35% have a consumer loan, 54% own stocks, and 59% own real estate. Mean gross wealth is €355k.

The bottom part of Table 1 reports statistics for respondent beliefs, elicited prior to the information provision. The average perceived rate of inflation is 8.8%. The actual inflation rate is 8.6% during the survey period. 75% of respondents are at most 1.5 percentage points off in their perception of current inflation. Respondents expect inflation to remain high, with a mean one-year forecast of 10.5% and a five-year forecast of 10.8%. However, cross-sectional dispersion increases with the forecast horizon. The estimated change in the respondents' real net worth over the past 12 months is -7.6%, elicited on a scale from -60% to 60%. Respondents state that the rate of inflation matters for their own wealth, more so than do GDP growth and the level of interest rates. Overall, respondents are well educated, have accurate inflation perceptions, and are subjectively (given their beliefs) and objectively (given their large nominal positions) strongly exposed to changes in inflation.

### 3 Prior knowledge about the erosion of nominal wealth

We start by describing respondents' prior knowledge about the erosion of nominal wealth through inflation. Figure 1 shows the distribution of beliefs about how a surprise increase

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<sup>9</sup>In contrast to Doepke and Schneider (2006), this definition does not include indirect nominal positions, which stem from investment intermediaries and the ownership of firms, to reduce complexity for respondents.

in inflation affects nominal positions. 24% of respondents believe that the impact is “very negative” for fixed-interest savings products and 51% believe it is “rather negative.” This result indicates existing knowledge about the inflation-induced erosion of nominal assets. However, 51% of respondents also believe that the impact of surprise inflation on stocks is very or rather negative. Belief differences between fixed-interest savings products and stocks are hence not substantial, despite stocks generally being considered to provide some inflation protection, at least among investors (Hackethal, Schnorpfeil, and Weber, 2022).

Pre-existing knowledge about the erosion of nominal liabilities seems limited. 25% of respondents believe that the impact of a surprise increase in inflation is “rather positive,” and only 9% believe it is “very positive.” In contrast, beliefs about real estate are more favorable: 46% of respondents state that the impact is very or rather positive. Overall, the findings indicate that prior knowledge about the erosion of nominal wealth is limited, in particular for nominal liabilities. Incomplete knowledge about this channel is important for the information intervention to plausibly have scope to affect beliefs and hence choices.

Which individual characteristics explain knowledge about the erosion of nominal wealth through inflation? Table 2 shows results of regressions of beliefs about the impact of a surprise increase in inflation on balance-sheet items.<sup>10</sup> Three results stand out. First, knowledge about nominal-wealth erosion does not vary by exposure to nominal positions: savers, which we define with an indicator variable that equals one if cash and fixed-interest savings make up at least 30% of gross wealth, and mortgagors have similar beliefs to non-savers and -mortgagors. In fact, individuals with consumer debt have more positive beliefs about the impact of surprise inflation on nominal assets (Column 1–2) and more negative beliefs about loans (Column 5). That is, those with relatively little knowledge about the erosion channel

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<sup>10</sup>The number of observations is lower than the 3,190 of the baseline sample because We trim the 1% tails of inflation perception and expectations and of the gross-wealth estimate.

are not particularly exposed to nominal assets; those with relatively large knowledge are not more likely to take on debt (it is the other way around for consumer loans).

The second result is that arguable informativeness about inflation coincides with knowledge about the inflation-induced erosion of nominal positions. Individuals who consider inflation to be important for their wealth situation, have an accurate perception of current inflation, or expect inflation to be lower in five years than they perceive it today have more negative beliefs about the impact of an inflation surge on nominal assets and more positive beliefs about nominal liabilities.<sup>11</sup> The third result is that stockholdings, higher business education, and wealth strongly predict knowledge about the erosion channel.

## 4 Treatment effects on beliefs

In this section, we investigate how knowledge about the impact of inflation on nominal wealth affects beliefs. To characterize average effects of the information interventions with the objective to foster this knowledge, we regress, for each of the two treatment groups combined with the control group, various post-treatment measures of the respondent’s beliefs on a dummy variable for their treatment group (equal to zero if in the control group and one otherwise). The regression equation is

$$posterior_i = const + \sum_{k=1}^2 \beta_j I\{i \in treat\ j\} + \gamma prior\ rnw_i + controls_i + error_i, \quad (1)$$

where  $posterior_i$  is a post-treatment measure of beliefs of respondent  $i$ ,  $I\{i \in treat\ j\}$  is a dummy variable indicating that respondent  $i$  received treatment  $j$ , and  $prior\ rnw_i$  refers to

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<sup>11</sup>This result is consistent with Mikosch et al. (2022) who show that firms report greater exposure to exchange-rate movements than households, which is reflected in firms holding more accurate and less dispersed beliefs about past exchange-rate movements.

the prior belief on real net-worth change. We control for two priors on real net-worth change because the elicitation occurs in two steps, initially with a directional and then with a point estimate. Other *controls<sub>i</sub>* include indicator variables for educational level (equal to one if the respondent obtained a university degree), a business-related university degree, whether the respondent takes the survey based on the voucher instead of the lottery incentive and whether participation is following a reminder email sent to encourage survey participation, as well as risk tolerance measured on an ordinal scale and the log of gross wealth.

#### 4.1 Effects on perceived real net worth

Table 3 quantifies the treatment effects on the respondents' estimated real net-worth change, based on an estimation of Equation 1 with and without controls for individual-level characteristics. Columns 1 and 2 show that the savings treatment lowers the past-12-month estimate of respondents' real net-worth change significantly relative to the estimate provided by the control group. Columns 3 and 4 reveal that the loan treatment increases real net-worth expectations over the next 12 months significantly. Columns 5 and 6 report estimates of the sum of past and expected net-worth changes. Relative to the control group, respondents in the savings-treatment group reduce their real-net-worth-change estimate by 1.4–1.8 pp, while respondents receiving the loan treatment increase their estimate by 1.8–2.3 pp. Because there is a lot of idiosyncratic volatility in reported changes in respondents' real net worth, we use Huber regressions to control for outliers and influential observations (see, e.g., [Coibion, Gorodnichenko, and Ropele, 2019](#)).<sup>12</sup>

In addition to quantitative wealth-change estimates, we analyze treatment effects on qual-

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<sup>12</sup>The variation in the number of observations across specifications is because (i) Huber regressions weight observations, with particularly influential observations receiving a weight of zero, and because (ii) regressions with controls (Columns 2, 4, and 6) include a measure of gross wealth, which we trim (1% tails).



itative wealth beliefs. Appendix Table [A1](#) documents that individuals in the loan-treatment group have significantly more positive beliefs about their wealth (change) in the context of high inflation than individuals in the control group. Specifically, the loan treatment induces more positive responses to a question on the past-12-month effect of inflation on the respondents' real net worth, measured on a five-point ordinal scale ranging from "very negative" to "very positive" (Columns 1–2). The loan treatment also fosters significantly more agreement to the statement that respondents are well equipped for times of high inflation in light of their balance sheet (Columns 3–4). Savings-treatment effects are insignificant.

Do treatment effects on wealth perceptions vary with nominal-wealth exposure? That is, does the savings treatment reduce real net-worth perceptions in particular for those with large positive net nominal positions, and does the loan treatment increase perceived real wealth more among those with more negative net nominal positions? Table [3](#) reports results of regressions of real net-worth changes on treatment indicators interacted with respondents' net nominal position, with and without controls for individual-level characteristics.<sup>13</sup> Estimates of net-worth changes again focus on the past 12 months (Columns 1–2), the next 12 months (Columns 3–4), and the sum of the two (Columns 5–6). The savings treatment reduces perceived real net worth, but only for individuals with a positive net nominal position. Moreover, respondents with negative net nominal positions in particular increase their real-wealth perception and expectation following the loan treatment. The effect's economic magnitude is large; for example, these individuals with a negative net nominal position exposed to the loan treatment increase their real-wealth estimate over the last and next 12 months by 4.7 pp relative to similar individuals in the control group (Column 6).

Appendix Figure [A1](#) graphically presents the treatment effects on wealth perceptions

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<sup>13</sup>We use Huber regressions to reduce the impact of influential observations stemming from estimates of wealth changes and net nominal positions (as a result, the sample size for reported estimates is lower).

among those particularly affected. Specifically, the figure shows the cross-sectional raw-data relationship between prior beliefs about respondents’ past-12-month real net-worth change and posterior beliefs about past- and future-12-month changes in real net worth. In Panel A, we restrict the sample to individuals with a positive net nominal position amounting to at least 25% of gross wealth. The panel reveals that, among these net savers, those who receive the savings treatment have lower posterior wealth-change estimates than those in the control group. Moreover, the slope of the fitted line is lower for the savings-treatment group, indicating that those with relatively positive wealth-change priors react more strongly. In Panel B, the sample includes only those with negative net nominal positions. The panel documents that, among net debtors, posterior wealth-change estimates are higher in the loan-treatment than in the control group. Taken together, the results in this section suggest limited knowledge about inflation-induced nominal-wealth erosion. Knowledge about the erosion in turn implies wealth effects, in particular among those with larger nominal positions. These wealth effects may feed into economic choices (see Section 5).

## 4.2 Effects on beliefs about nominal positions

Table 5 presents the results of estimating Equation 1 to inform about treatment effects on beliefs about nominal assets and liabilities. The dependent variable captures beliefs about relative inflation protection provided by balance-sheet items. The survey question reads: “With which of the following financial instruments would you expect the most positive real net-worth impact in times of unexpectedly high inflation?” Respondents provide a relative ranking of balance-sheet items using numbers 1–4, with a lower number indicating a better ranking and hence a more positive contribution to real net worth.

Respondents in the savings-treatment group attach a significantly poorer inflation-protection

ranking to savings products (Column 1). Information about savings erosion do not trigger cross-inference about nominal liabilities, however, as the ranking of fixed-rate debt does not change. The loan treatment significantly improves the inflation-protection ranking of fixed-rate debt by .19 (Column 4). While rather modest, this improvement almost negates the inflation-ranking gap between stocks (mean ranking in the control group: 2.5) and debt (2.8). Moreover, there seems to be some cross-inference: loan-treatment respondents attach a worse inflation ranking to savings products that is statistically weakly significant. In sum, knowledge about inflation-induced erosion of nominal assets and liabilities impacts savings and debt beliefs, and thereby possibly asset and debt choices (see Section 5).

## 5 Treatment effects on choices

In this section, we examine whether knowledge about inflation lowering the real value of nominal assets and liabilities affects economic choices. Specifically, we analyze whether exogenous variation in knowledge about real-value erosion feeds into hypothetical housing and financing choices as well as planned consumption.

### 5.1 Hypothetical real-estate purchase

Table 6 documents treatment effects on features of a hypothetical real-estate transaction. Respondents can buy real estate hypothetically with up to €500k in equity and €500k in debt, respectively. We elicit preferences on the mortgage type, if any: adjustable versus fixed rate and, conditional on selection of a fixed-rate mortgage (FRM), length of the fixed-rate period. Individuals who receive savings-erosion information choose a hypothetical purchase price that is €16k lower compared to the control group on average (Column 1). This

magnitude is small compared to the €541k that control-group individuals would spend on average. Coefficients on both, the hypothetical equity (Column 2) and debt (Column 3) contribution to the real-estate financing, are negative but insignificant. There is hence no significant impact on the debt/equity ratio of the financing (Column 4); nor does the savings-treatment group differ in terms of choice between an adjustable- versus a fixed-rate mortgage (Column 5). The results suggest that the savings treatment, through perceived wealth effects, modestly impacts the real-estate price in a hypothetical transaction.

Individuals who receive the loan treatment do not choose a hypothetical real-estate purchase price that differs from the one chosen by the control group on average (Column 1), but their financing structure differs significantly. Information about the erosion of nominal liabilities causes a significant mortgage-size increase by €19k (Column 3). Because the equity contribution is insignificantly lower in the loan-treatment group compared to the control group, the debt/equity ratio of the transaction financing differs significantly (Column 4): compared to a mean ratio of 1.19 in the control group, individuals exposed to the loan-erosion information choose a more than 10% higher debt/equity ratio ( $p < 0.01$ ). Moreover, the loan-treatment group is significantly more likely to choose a fixed- over an adjustable-rate mortgage or, conditional on choosing an FRM, a longer fixed-rate period (Column 5). The results indicate that knowledge about the erosion of nominal liabilities affects hypothetical financing choices via its impact on loan beliefs.

## 5.2 Perceived real net worth and spending plans

We characterize how knowledge about erosion of nominal positions, through its impact on real-wealth perceptions, impacts planned spending. For that, we use the following regression:

$$spend_i = \beta \textit{posterior rnw}_i + \gamma \textit{prior rnw}_i + \textit{controls}_i + \textit{error}_i. \quad (2)$$

$spend_i$  measures planned spending on four nondurables categories over the next four weeks relative to the previous four weeks. Elicitation is on a five-point scale, with response options ranging from “much less” to “much more.”  $\textit{posterior rnw}_i$  is the sum of the post-treatment estimate of past- and next-12-month change in real net worth. We instrument this estimate using Equation 1. By using the treatments as a source of exogenous variation in perceived wealth, the instrumental-variables approach can resolve possible endogeneity.  $\textit{prior rnw}_i$  again refers to the pre-treatment directional and point estimate of the past-12-month change in real net worth.  $\textit{controls}_i$  are similar to Equation 1. We use Huber regression in the first stage to control for outliers and influential observations.

Table 7 reports the results from estimating Equation 2. The F-statistic for the first stage is 10.3, quite low but sufficient in generating exogenous variation in real-wealth-change perceptions for identification purposes. The coefficient on posterior wealth changes is significantly positive for the planned change in spending on restaurants (Column 2), leisure (Column 3), and clothing (Column 4). There is no wealth-change effect on planned change in spending on groceries (Column 1), which likely reflects that spending on groceries is relatively sticky.<sup>14</sup> The results indicate that knowledge about the erosion of nominal positions transmits to planned spending through its effect on wealth perceptions.

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<sup>14</sup>The average on planned grocery spending is 2.05 in the control group, that is, very close to “similar” planned spending, while individual in the control group plan to reduce spending for the other categories.

## 6 Conclusion

We causally study the inflation-induced erosion of nominal wealth using a survey-based randomized control trial. On average, individuals are highly concerned about the impact of inflation on their real net worth and they are well informed about prevailing inflation levels. Yet, they know surprisingly little about the reduction in the real value of nominal positions due to surprise inflation. Once we inform individuals about the erosion channel of nominal positions, they update their current and expected real net worth and causally change their planned consumption and leverage choices in a hypothetical real-estate transaction. Our results indicate the redistributive nature of inflation across households and provide causal estimates for how individuals adjust behavior following inflation-induced redistribution.

## References

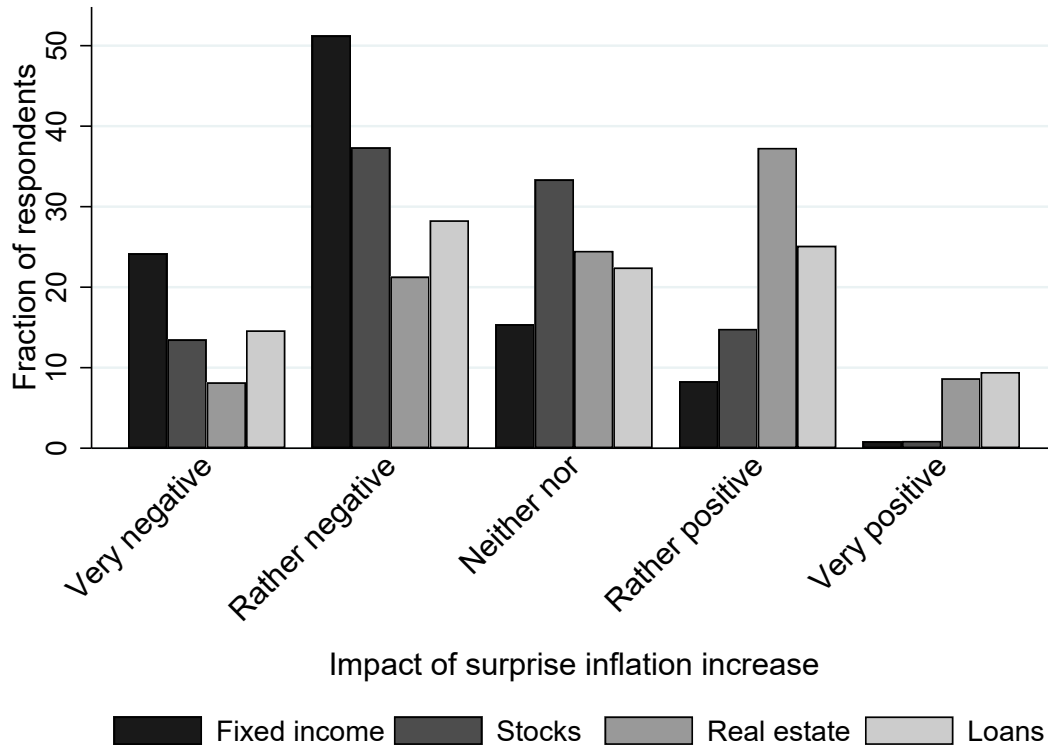
- Adam, K. and J. Zhu (2015). Price-level changes and the redistribution of nominal wealth across the euro area. *Journal of the European Economic Association* 14(4), 871–906.
- Almenberg, J., A. Lusardi, J. Säve-Söderbergh, and R. Vestman (2021). Attitudes towards debt and debt behavior. *The Scandinavian Journal of Economics* 123(3), 780–809.
- Andre, P., C. Pizzinelli, C. Roth, and J. Wohlfart (2022). Subjective models of the macroeconomy: evidence from experts and representative samples. *The Review of Economic Studies* 89(6), 2958–2991.
- Armona, L., A. Fuster, and B. Zafar (2019). Home price expectations and behaviour: Evidence from a randomized information experiment. *The Review of Economic Studies* 86(4), 1371–1410.
- Auclert, A. (2019). Monetary policy and the redistribution channel. *American Economic Review* 109(6), 2333–67.
- Bachmann, R., T. O. Berg, and E. R. Sims (2015). Inflation expectations and readiness to spend: Cross-sectional evidence. *American Economic Journal: Economic Policy* 7(1), 1–35.
- Bernard, R., P. Tzamourani, and M. Weber (2022). Climate change and individual behavior.
- Capozza, F., I. Haaland, C. Roth, and J. Wohlfart (2021). Studying information acquisition in the field: A practical guide and review. *Available at SSRN 3952561*.
- Coibion, O., D. Georganakos, Y. Gorodnichenko, G. Kenny, and M. Weber (2021). The effect of macroeconomic uncertainty on household spending. *Working Paper*.
- Coibion, O., Y. Gorodnichenko, L. Kueng, and J. Silvia (2017). Innocent bystanders? monetary policy and inequality. *Journal of Monetary Economics* 88, 70–89.
- Coibion, O., Y. Gorodnichenko, and T. Ropele (2019). Inflation expectations and firm decisions: New causal evidence. *The Quarterly Journal of Economics* 135(1), 165–219.
- Coibion, O., Y. Gorodnichenko, and M. Weber (2022). Monetary policy communications and their effects on household inflation expectations. *Journal of Political Economy* 130(6), 000–000.
- D’Acunto, F., D. Hoang, M. Paloviita, and M. Weber (2022). IQ, expectations and choice. *The Review of Economic Studies*.

- D’Acunto, F., D. Hoang, and M. Weber (2022). Managing households’ expectations with unconventional policies. *The Review of Financial Studies* 35(4), 1597–1642.
- D’Acunto, F., U. Malmendier, and M. Weber (2022). What do the data tell us about inflation expectations? Technical report.
- Das, S., C. M. Kuhnen, and S. Nagel (2020). Socioeconomic status and macroeconomic expectations. *The Review of Financial Studies* 33(1), 395–432.
- Doepke, M. and M. Schneider (2006). Inflation and the redistribution of nominal wealth. *Journal of Political Economy* 114(6), 1069–1097.
- Fuster, A., G. Kaplan, and B. Zafar (2020). What would you do with \$500? spending responses to gains, losses, news, and loans. *The Review of Economic Studies* 88(4), 1760–1795.
- Haaland, I., C. Roth, and J. Wohlfart (2022). Designing information provision experiments. *Journal of Economic Literature*.
- Hackethal, A., P. Schnorpfel, and M. Weber (2022). Inflation beliefs and portfolio choices. *Working Paper*.
- Kuchler, T. and B. Zafar (2019). Personal experiences and expectations about aggregate outcomes. *The Journal of Finance* 74(5), 2491–2542.
- Mikosch, H., C. Roth, S. Sarferaz, and J. Wohlfart (2022). Uncertainty and information acquisition: Evidence from firms and households. *Working Paper*.
- Roth, C. and J. Wohlfart (2020). How do expectations about the macroeconomy affect personal expectations and behavior? *The Review of Economics and Statistics* 102(4), 731–748.
- Shafir, E., P. Diamond, and A. Tversky (1997). Money illusion. *The Quarterly Journal of Economics* 112(2), 341–374.
- Weber, M., F. D’Acunto, Y. Gorodnichenko, and O. Coibion (2022). The subjective inflation expectations of households and firms: Measurement, determinants, and implications. *Journal of Economic Perspectives* 36(3), 157–184.



# Figures and Tables

Figure 1: Prior beliefs about financial products' inflation-hedging properties



*Notes:* The figure shows the distribution of beliefs about how financial products fare during a surprise increase in inflation. The survey question is as follows: “What do you think, is a surprise increase in inflation positive or negative for owners of the following financial products?”

**Table 1: Descriptive statistics**

<i>Statistics:</i>	Mean	Median	SD	P25	P75
<b>Respondent characteristics</b>					
University completed (0/1)	0.48	0.00	0.50	0.00	1.00
Business at university (0/1)	0.10	0.00	0.30	0.00	0.00
Net nominal position	25.89	20.00	44.90	0.00	60.00
Mortgage debt (0/1)	0.33	0.00	0.47	0.00	1.00
Consumer debt (0/1)	0.35	0.00	0.48	0.00	1.00
Stockholdings (0/1)	0.54	1.00	0.50	0.00	1.00
Real estate (0/1)	0.59	1.00	0.49	0.00	1.00
Gross wealth (€k)	355.28	117.17	571.22	25.00	444.44
<b>Respondent beliefs</b>					
Perceived inflation rate today	8.78	7.90	6.24	7.00	8.00
Expected inflation rate in 12 months	10.39	8.50	9.80	6.00	10.00
Expected inflation rate in five years	10.67	5.00	15.07	3.00	10.50
Real net-worth change over past 12 months	-7.45	-6.00	14.91	-14.00	0.00
Inflation important for own wealth (0–4)	2.37	2.00	1.02	2.00	3.00
GDP growth important for own wealth (0–4)	1.73	2.00	1.06	1.00	2.00
Interest rates important for own wealth (0–4)	1.34	1.00	1.14	0.00	2.00

*Notes:* This table reports summary statistics for respondent characteristics and beliefs elicited in the survey. We present the variables' mean, median, standard deviation (SD), 25th percentile (P25), and 75th percentile (P75). The belief variables reported in the table refer to respondents' priors elicited before the information treatment. The number of observations is 3,190.

**Table 2: Correlates of beliefs about balance-sheet effects of surprise inflation**

<i>Dependent variable:</i>	Unexpected inflation increase positive or negative for...				
	cash	fixed income	stocks	real estate	loans
	(1)	(2)	(3)	(4)	(5)
High savings amount (0/1)	0.043 (0.036)	-0.021 (0.042)	0.017 (0.045)	-0.030 (0.051)	-0.076 (0.054)
Consumer debt (0/1)	0.110*** (0.030)	0.088** (0.034)	-0.030 (0.036)	-0.106** (0.043)	-0.110** (0.044)
Mortgage debt (0/1)	-0.050 (0.036)	0.060 (0.042)	-0.074* (0.044)	-0.048 (0.050)	0.085 (0.056)
Real estate (0/1)	0.157*** (0.041)	0.040 (0.047)	0.027 (0.050)	0.081 (0.058)	-0.152** (0.060)
Stockholdings (0/1)	-0.099*** (0.034)	-0.031 (0.038)	-0.059 (0.041)	-0.007 (0.047)	0.131*** (0.050)
Inflation relatively important	-0.084*** (0.015)	-0.029* (0.017)	0.003 (0.018)	0.084*** (0.021)	0.039* (0.022)
Current-inflation perception gap (0/1)	0.107*** (0.036)	0.071* (0.039)	-0.032 (0.040)	-0.093* (0.048)	-0.020 (0.049)
Inflation rate lower in five years (0/1)	-0.093*** (0.033)	0.026 (0.035)	0.117*** (0.039)	0.106** (0.045)	0.293*** (0.046)
University completed (0/1)	-0.108*** (0.032)	0.068* (0.036)	0.085** (0.038)	-0.024 (0.043)	0.060 (0.047)
Business at university (0/1)	-0.098** (0.042)	-0.021 (0.059)	-0.024 (0.056)	0.062 (0.067)	0.222*** (0.076)
Log gross wealth	-0.066*** (0.010)	-0.053*** (0.011)	0.006 (0.012)	0.080*** (0.014)	0.105*** (0.015)
Risk tolerance	-0.001 (0.016)	0.033* (0.017)	0.066*** (0.018)	0.036* (0.021)	0.069*** (0.022)
LHS mean	0.69	1.12	1.51	2.16	1.81
Observations	3,107	3,107	3,107	3,107	3,107
R-squared	0.07	0.01	0.01	0.04	0.09

*Notes:* This table reports estimates of regressions of beliefs about the impact of a surprise inflation increase on various balance-sheet items, measured on an ordinal scale from 0 (“very negative”) to 4 (“very positive”). *High savings amount* is an indicator for whether a respondent holds at least 30% of gross wealth in cash or fixed-interest products. *Inflation relatively important* measures respondents’ beliefs about the importance of inflation for own wealth relative to the importance of GDP growth, interest rates, and stock prices. *Current-inflation perception gap* is a dummy equal to one if respondents’ estimate of current inflation is at least 1.5pp off actual inflation. *Inflation rate lower in five years* indicates the expectation that inflation will be lower in five years than it is perceived today. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 3: Average treatment effects on perceived changes in real net worth**

<i>Dependent variable:</i>	Posterior real net-worth change over...					
	last 12 months		next 12 months		last + next 12 months	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat: savings erosion	-1.428*** (0.391)	-1.202*** (0.388)	-0.741 (0.508)	-0.537 (0.514)	-1.809** (0.786)	-1.395* (0.795)
Treat: loan erosion	0.441 (0.398)	0.511 (0.393)	1.025** (0.517)	1.393*** (0.521)	1.793** (0.794)	2.292*** (0.800)
Controls for prior beliefs	Y	Y	Y	Y	Y	Y
Controls for demographics	N	Y	N	Y	N	Y
Remove outliers	Y	Y	Y	Y	Y	Y
LHS mean control group	-2.92	-3.06	-3.57	-3.50	-6.36	-6.56
Observations	3,123	3,089	3,165	3,135	3,161	3,131
R-squared	0.46	0.46	0.24	0.24	0.38	0.37

*Notes:* This table reports beliefs elicited after the information-provision stage about changes in the real net worth of individuals in each treatment group relative to those in the control group. Columns 1 and 2 consider real net-worth changes estimated over the past 12 months, Columns 3 and 4 refer to changes estimated over the next 12 months, and Columns 5 and 6 show estimates of changes over the last plus next 12 months. We describe the treatments in detail in Section 2.1. Results are from Huber robust regressions to control for outliers and influential observations. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 4: Treatment effects on changes in real net worth by net nominal position**

<i>Dependent variable:</i>	Posterior real net-worth change over...					
	last 12 months		next 12 months		last + next 12 months	
	(1)	(2)	(3)	(4)	(5)	(6)
Treat: savings erosion	0.070 (0.670)	0.602 (0.665)	-0.108 (0.869)	0.467 (0.889)	0.427 (1.368)	1.332 (1.391)
Treat: loan erosion	1.550** (0.692)	1.887*** (0.686)	2.035** (0.903)	2.544*** (0.914)	3.956*** (1.403)	4.712*** (1.415)
NNP	0.826** (0.327)	0.785** (0.334)	0.241 (0.433)	0.307 (0.458)	0.705 (0.659)	0.732 (0.690)
Treat: savings erosion $\times$ NNP	-1.268*** (0.474)	-1.528*** (0.470)	-0.476 (0.614)	-0.839 (0.623)	-1.794* (0.964)	-2.272** (0.976)
Treat: loan erosion $\times$ NNP	-0.934* (0.479)	-1.166** (0.476)	-0.756 (0.628)	-0.932 (0.633)	-1.684* (0.971)	-1.980** (0.978)
Controls for prior beliefs	Y	Y	Y	Y	Y	Y
Controls for demographics	N	Y	N	Y	N	Y
Remove outliers	Y	Y	Y	Y	Y	Y
LHS mean control group	-2.69	-2.76	-3.15	-2.98	-5.56	-5.67
Observations	3,122	3,091	3,167	3,135	3,160	3,132
R-squared	0.46	0.46	0.24	0.24	0.38	0.38

*Notes:* This table reports beliefs elicited after the information-provision stage about changes in the real net worth of individuals in each treatment group relative to those in the control group. Columns 1 and 2 consider wealth changes estimated over the past 12 months, Columns 3 and 4 refer to changes estimated over the next 12 months, and Columns 5 and 6 show estimates of changes over the last plus next 12 months. We describe the treatments in detail in Section 2.1. *NNP* refers to the respondent's net nominal position as a fraction of gross wealth. It equals zero for a negative net nominal position, one for a position of between one and 25% of gross wealth, and two for greater than 25%. Results are from Huber robust regressions to control for outliers and influential observations. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 5: Treatment effects on inflation-hedging beliefs**

<i>Dependent variable:</i>	Inflation-protection ranking of...			
	savings	stocks	real estate	loans
	(1)	(2)	(3)	(4)
Treat: savings erosion	0.122*** (0.046)	-0.045 (0.043)	-0.026 (0.040)	-0.050 (0.044)
Treat: loan erosion	0.088* (0.046)	0.039 (0.043)	0.044 (0.040)	-0.192*** (0.045)
Controls	Y	Y	Y	Y
LHS mean control group	3.04	2.48	1.65	2.77
Observations	2,948	2,948	2,948	2,948
R-squared	0.08	0.06	0.04	0.01

*Notes:* This table reports regression estimates of beliefs about relative inflation protection provided by balance-sheet items of individuals in each treatment group relative to the control group. To elicit the beliefs, we ask: “With which of the following financial instruments would you expect the most positive real net-worth impact in times of unexpectedly high inflation?” Respondents use numbers 1–4 to rank the instruments relative to each other, with lower numbers indicating better performance. We describe the treatments in detail in Section 2.1. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 6: Treatment effects on features of a hypothetical real-estate transaction**

<i>Dependent variable:</i>	Price (€k)	Equity (€k)	Mortgage (€k)	Debt/equity	FRM
	(1)	(2)	(3)	(4)	(5)
Treat: savings erosion	−15.886** (7.716)	−10.451 (6.439)	−5.832 (6.268)	0.019 (0.032)	0.057 (0.041)
Treat: loan erosion	10.151 (7.678)	−6.006 (6.314)	18.502*** (6.192)	0.124*** (0.033)	0.112*** (0.040)
Controls	Y	Y	Y	Y	Y
Remove outliers	Y	Y	Y	Y	Y
LHS mean control group	540.68	278.27	259.85	1.19	2.22
Observations	3,145	3,158	3,158	2,864	3,158
R-squared	0.16	0.08	0.10	0.03	0.02

*Notes:* This table reports estimates from regressing features of a hypothetical real-estate transaction of individuals in each treatment group relative to those in the control group. Column 1 is on the purchase price; Column 2 considers the equity stake, capped at €500k; Column 3 refers to the mortgage size, also capped at €500k; Column 4 features the debt-to-equity ratio; and Column 5) is on an ordinal-scale variable that takes on 0 if respondents choose an adjustable-rate mortgage, 1 in case of a mortgage with a five-year fixed-rate period, 2 for a 10-year fixed-rate period, 3 for a 20-year fixed-rate period, and 4 for a 30-year fixed-rate period. we describe the treatments in detail in Section 2.1. Results are from Huber robust regressions to control for outliers and influential observations. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

**Table 7: Effect of changes in real net worth on planned spending**

<i>Dependent variable:</i>	Planned change in spending on...			
	groceries	restaurant	leisure	clothing
	(1)	(2)	(3)	(4)
Posterior RNW change	-0.003 (0.010)	0.023** (0.012)	0.026** (0.012)	0.020* (0.011)
Controls for demographics	Y	Y	Y	Y
Remove outliers	Y	Y	Y	Y
Observations	3,131	3,131	3,131	3,131
1 <sup>st</sup> stage F-stat	10.32	10.32	10.32	10.32

*Notes:* This table reports estimates from regressing planned nondurables-spending changes on perceived changes in the respondents’ real net worth. Planned spending changes over the next four weeks relative to the last four weeks is elicited on a five-point scale, ranging from “much less” to “much more.” We instrument real net-worth changes using the information treatments. The changes comprise the sum of last- and next-12-month estimates. We describe the treatments in detail in Section 2.1. Huber regressions in the first stage control for outliers and influential observations. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



Online Appendix:  
Inflation, Net Nominal Positions, and Consumption

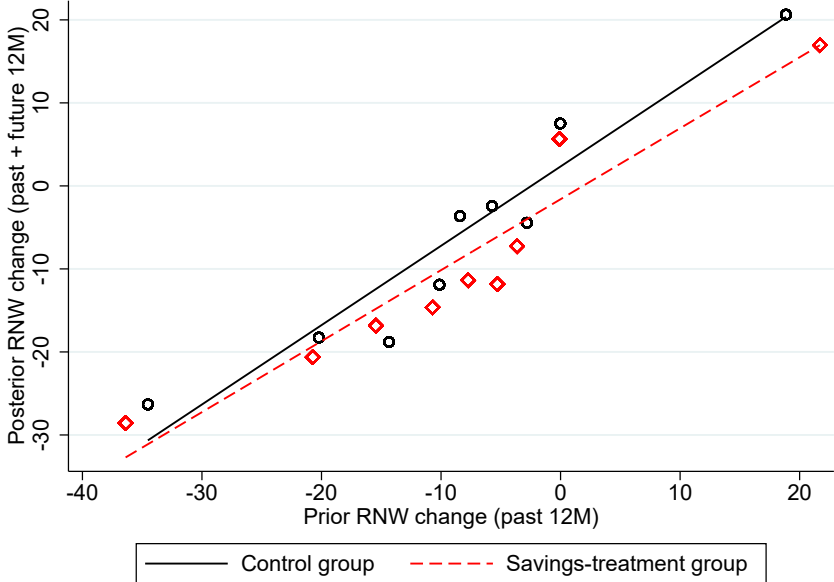
Andreas Hackethal, Philip Schnorpfeil, and Michael Weber

*Not for Publication*

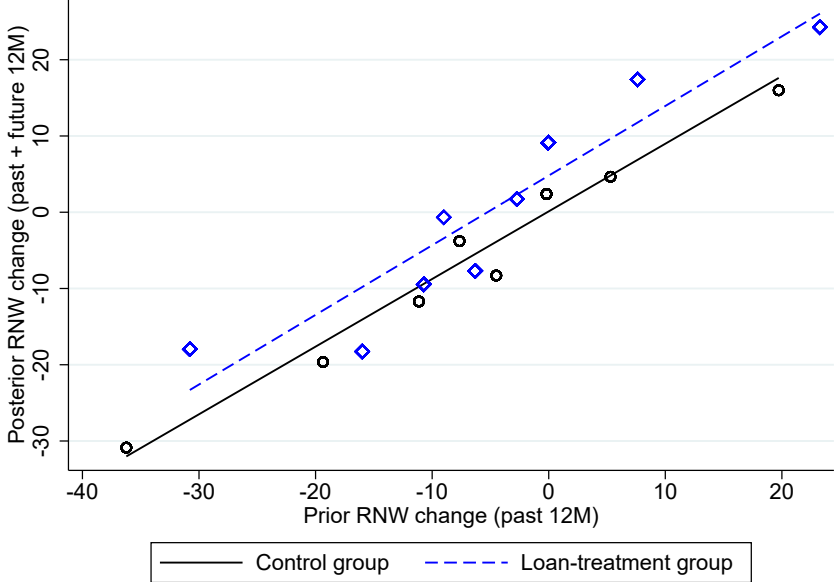
# A Appendix figures and tables

Figure A1: Treatment effects on beliefs about real net-worth changes by NNP

Panel A: Effect of savings-erosion treatment on high-NNP subjects



Panel B: Effect of loan-erosion treatment on low-NNP subjects



Notes: This figure reports binscatter plots of post-treatment beliefs about changes in respondents' real net worth over the last 12 months plus next 12 months, conditional on pre-treatment estimates of past-12-month real net-worth changes. In Panel A, the sample comprises respondents with positive net nominal positions of at least 25% of gross wealth. In Panel B, the sample contains respondents with negative nominal positions.

**Table A1: Treatment effects on wealth beliefs in context of inflation**

<i>Dependent variable:</i>	Inflation effects on RNW		Strong BS for inflation	
	(1)	(2)	(3)	(4)
Treat: savings erosion	-0.031 (0.040)	-0.035 (0.039)	0.042 (0.045)	0.023 (0.042)
Treat: loan erosion	0.100** (0.041)	0.119*** (0.040)	0.072 (0.044)	0.081** (0.040)
Controls	N	Y	N	Y
LHS mean control group	0.82	0.82	1.71	1.71
Observations	3,190	3,158	3,190	3,158
R-squared	0.00	0.06	0.00	0.16

*Notes:* This table reports post-treatment beliefs about the wealth impact of inflation of individuals in each treatment group relative to those in the control group. Columns 1 and 2 consider beliefs about whether inflation has had a positive or negative impact on respondents' real net worth over the past 12 months. Columns 3 and 4 refer to agreement to the statement that the respondent's balance sheet is well suited for high inflation. We describe the treatments in detail in Section 2.1. Robust standard errors are in parentheses. \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .