Real Consumption Plans: the asymmetric effects of symmetric changes in inflation and nominal interest rates.*

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PRELIMINARY DRAFT

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Abstract

We conducted a large-scale representative survey experiment to analyze how individuals adjust their consumption in response to changes in the real interest rate. In one treatment, respondents reported how their consumption would change in response to a higher nominal interest rate, keeping income and future inflation constant. In the other treatment, respondents reported how their consumption would change in response to a decrease in future inflation, keeping real income and the nominal interest rate constant. Since the change in real interest rates is the same in both treatments, respondents should respond similarly if they consider real interest rates. In contrast, we find that consumption declined when the nominal interest rate increased but remained almost unchanged when future inflation decreased. This indicates that the general population treats theoretically equivalent shifts in the nominal interest rate and inflation differently. Finally, we find that respondents who are more educated, older, wealthier, or less indebted respond more similarly across treatments, suggesting that financial illiteracy may partly explain why consumers do not seem to consider real interest rates.

Keywords Consumption & Saving · Real Interest Rate · Inflation Expectations · Household Survey

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1 Introduction

The real interest rate — the difference between the nominal interest rate and expected inflation — has played a prominent role in consumption-saving models since Fisher's seminal work (Fisher, 1930). These models typically suggest that, keeping income constant, a higher real interest rate should lead consumers to defer consumption and save more in the present to benefit from higher future returns (Modigliani and Brumberg, 1954; Jappelli and Pistaferri, 2017).

However, the practical relevance of the real interest rate in shaping consumption decisions is unclear. Empirical evidence suggests that many individuals struggle to understand that higher inflation decreases their real financial returns (Lusardi and Mitchell, 2014; Lusardi, 2019; Kaiser et al., 2022). In fact, recent studies show that most people do not understand inflation (Stantcheva, 2024) and believe that higher interest rates result in higher inflation (Binetti et al., 2024). These results cast doubt on the ability of at least some households to properly account for real interest rates in their consumption decisions.

In this paper, we study the consumption response to a real interest rate increase using a large-scale pre-registered survey of a representative sample of the German population. We presented respondents of the Bundesbank Online Panel - Households (BOP-HH) with two hypothetical vignettes. In the first vignette, the nominal interest rate increased by 5 percentage points, while income and future inflation remained constant. In the second vignette, future inflation decreased by 5 percentage points, while income grew at the same rate as prices, and the nominal interest rate remained constant. In both scenarios, respondents were asked to indicate how these changes would affect their consumption.

Because both vignettes present an equivalent change in the real interest rate, respondents who base their consumption decisions on the real interest rate should adjust their consumption equally in both scenarios. However, our findings reveal a different pattern. On average, respondents considerably reduced their hypothetical consumption in response to an increase in the nominal interest rate, but responded very little to an equivalent decrease in future inflation. This implies that respondents do not treat the components of the real interest rate as interchangeable; instead, they consider nominal interest rates and inflation separately when making consumption decisions. Notably, this behavioral pattern is consistent for durable and non-durable consumption goods. In addition to examining changes in consumption, we also elicited changes in planned saving and borrowing, as a

reduction of consumption should result in higher savings and lower borrowing. Again, respondents' responses vary depending on the vignettes presented. In both scenarios, respondents increase their savings or decrease borrowing, but the magnitude of the effect is substantially larger in the nominal interest increase vignette, in line with the consumption responses.

The rich dataset of the BOP-HH allows us to study the sociodemographic determinants that correlate with greater asymmetries in consumer responses. Older and more educated respondents provided more symmetric responses, which is in line with the results of D'acunto et al. (2023) and Stantcheva (2024) and suggests that financial illiteracy could be a contributing factor to our results. In contrast, higher debt levels, lower wealth, and higher inflation expectations result in greater discrepancies between vignettes. Notably, the asymmetry in responses across vignettes remains large and highly significant even after controlling for the full set of pre-registered covariates.

Our work is closely related to the literature studying the effects of inflation expectations on consumption and savings behavior (Ichiue and Nishiguchi, 2015; Bachmann et al., 2015; Crump et al., 2022; D'acunto et al., 2023; Dräger and Nghiem, 2021; Rondinelli and Zizza, 2020; Duca-Radu et al., 2021; Burke and Ozdagli, 2023). Also related are studies that have explored the effect of interest rates on consumption (Bachmann et al., 2015; Gylfason, 1981; Dräger and Nghiem, 2021). More generally, our vignette approach builds on earlier research relying on surveys that contain hypothetical scenarios (e.g., Jappelli and Pistaferri, 2014; Christelis et al., 2019; Fuster et al., 2020; Andre et al., 2021; Bui et al., 2021; Stantcheva, 2023) or information provision treatments (e.g., Haaland et al., 2023; Coibion et al., 2023, 2022b,a).

Our contribution is to examine whether changes in the real interest rate have the same impact on consumption when induced by an increase in the nominal interest rate compared to a decrease in inflation. Using a within-subject design, our study isolates the variation in behavior across scenarios while keeping other factors—such as respondents' income, wealth, debt, preferences, and demographics—constant. This methodological approach thus provides an ideal test of consumer responses to real interest rate changes eliminating confounding variables that could potentially influence consumer behavior.

Our findings have both theoretical and practical implications. First, they challenge consumption-saving models that assume that consumers integrate changes in inflation and

nominal interest rates, and thus only consider changes in the real interest rate in their decision-making processes. Second, the results have implications for monetary policy communication. The stronger response to nominal interest rate changes implies that adjustments in nominal rates might be a more effective tool for influencing consumption behavior than focusing solely on inflation targeting.

The remainder of this paper is organized as follows: we describe and motivate our survey design in Section 2, present our findings in Section 3, and conclude in Section 4.

2 Survey Design

The experiment was conducted in the August 2023 wave (Wave 44) of the Bundesbank Online Panel—Households (BOP-HH) survey. This monthly online survey, which has been running since 2019, gathers consumer expectations on economic indicators from a representative sample of 6,000 German households.

Our module consisted of two vignettes presented consecutively in a randomized order. The first vignette (*Interest*) introduced a scenario where the real interest rate increased due to a rise in the nominal interest rate, while inflation remained constant. The second vignette (*Inflation*) induced a symmetric increase in the real interest rate through a reduction in inflation, with nominal interest rates held constant. In both scenarios, purchasing power in real terms was kept constant; in the inflation vignette, this was ensured by assuming that income grew at the same rate as inflation. Specifically, the vignettes read:

Vignette 1 (Interest): Imagine that all interest rates increase by five percentage points today. Please also assume that your income and inflation remain unchanged, so your purchasing power (i.e., the amount of goods and services you can buy with your income) is unaffected.

Vignette 2 (Inflation): Imagine that inflation decreases by five percentage points over the next twelve months. Please also assume that all interest rates remain unchanged and your income increases at the same rate as prices, so your purchasing power (i.e., the amount of goods and services you can buy with your income) is unaffected.

Table 1: Description of main variables

Label	Text of the Question	Likert scale 1 - 7
Question: When you think about your plans for the next twelve months, how do you think these higher interest rates (this lower inflation) would affect your consumption and saving plans? Would you be more or less inclined to...		
Durables	... buy consumer durables such as clothing, furniture, electronic equipment	Much less - Much more
Non-durables	... go to restaurants, bars, concerts or similar	Much less - Much more
Save	... save	Much less - Much more
Borrow	... borrow	Much less - Much more

In each vignette, respondents were asked to report how they would adjust their consumption of durable and non-durable goods, as well as their borrowing and saving behavior, using a Likert scale ranging from 1 to 7, as described in Table 1. This approach provided four measures for each participant. By comparing these measures across the two vignettes, we can isolate the variation in behavior induced by an increase in nominal interest rates from that induced by a reduction in inflation, without confounding effects from income, wealth, debt, preferences, or demographic variables.

Because risk and time preference may affect consumption and saving decisions, we elicited participants' willingness to take risks and to delay gratification using two questions from Falk et al. (2023). Finally, we include other variables from the BOP-HH panel for our analysis. These are inflation expectations, wealth, debt, income, age, education, employment status, and gender.

2.1 Discussion

Our experiment uses hypothetical questions in line with the recent literature on survey design (Haaland et al., 2023; Stantcheva, 2023). The advantage of this approach is that it helps us control for macroeconomic confounders. For example, a higher nominal interest rate may result from the attempt by the central bank to tame inflation in a booming economy. In that case, participants may associate a higher nominal interest rate with rising personal income and different future inflation levels, depending on their trust in

the central bank (Andre et al., 2024). By explicitly telling them that their income and future inflation are unchanged, we provide participants with an idealized experiment in which only the nominal interest rate changes and everything else is held constant. This is an advantage compared to surveys that ask respondents about their beliefs about, for example, expected inflation. In these surveys, consumers who expect higher inflation may also expect changes in other variables, such as their personal income or nominal interest rates.

Another advantage of the hypothetical vignettes is that we can consider symmetric scenarios, where, according to theory, participants should react equally. Moreover, presenting participants with hypothetical scenarios allows us to introduce large shifts in the real interest rate (5-percentage-point), instead of the typical changes in interest rates implemented by central banks, which usually range between 25 and 50 basis points. This difference in magnitude makes the change in real interest rates relevant, making changes in consumption and saving behavior easier to detect.

Our design purposefully considers an increase in the real interest rate, not a decrease. A decrease in the real interest rate should increase consumer spending. However, this might be unfeasible if respondents are illiquid or credit-constrained. In contrast, an increase in the real interest rate should lead consumers to decrease their current consumption, which should always be feasible.

Note that our vignettes do not specify an initial level of interest rates or inflation. On the one hand, this could be problematic if participants' inflation expectations were below 5%, as a five-percentage-point inflation decrease would imply deflation. While, theoretically, this should not affect the symmetry in responses across the interest rate increase and inflation drop vignettes, it might still have some unwanted behavioral effects. On the other hand, not anchoring respondents' inflation beliefs has several advantages — First, providing an initial level of interest rates or inflation would distance the vignettes further from the respondents' current situation. The vignettes ask respondents to imagine future changes to macroeconomic variables, which, while substantial, could still potentially happen in the real world. Asking participants to imagine both this future change *and* a potentially counterfactual current economy seemed too demanding. Second, the BOP-HH survey collects high-quality data on inflation expectations, allowing us to use reported

inflation expectations as a control in our analysis.[1] Third, participants are asked about their inflation rate expectations and other questions about the economy in different parts of the survey. Providing an initial value might distort their answers in subsequent survey modules.

It is also important to note that the BOP-HH is a panel, so its participants have been asked to think about inflation expectations, interest rates, and other macroeconomic variables several times before our experiment. Because of this, our sample is relatively sophisticated in inflation and interest rates compared to the average population. Therefore, any effects we see in the differences across vignettes are likely a lower bound, as any asymmetry in response to changes in the real interest rate should be more pronounced among less sophisticated participants.

Next, our main measure of interest concerns changes in *consumption*, not spending. Faced with changing inflation, consumer spending could change either because prices or quantities consumed have changed. This is a problem because our hypothesis concerns quantities consumed. By considering a hypothetical change, we can more easily measure changes in quantities consumed and directly test our hypothesis. This approach is in contrast with many previous studies which measured consumer spending, making it difficult to assess the effect of changes in expected inflation on consumption.

Finally, our survey experiment follows a within-subject design. This means that for each respondent we have observations for both vignettes, allowing us to directly compare their responses to changes in the nominal interest rate and inflation. This design improves statistical power by reducing the variability associated with individual differences, as each participant serves as their own control. Consequently, we can more precisely estimate the effect of changes in real interest rates on consumption behavior.

Moreover, this within-subject design allows us to hold constant individual characteristics such as income, wealth, debt, preferences, and demographics across conditions. This control is crucial because it minimizes confounding factors that could otherwise distort the results. For example, a participant's illiquidity might affect their sensitivity to interest rate changes, but since each participant experiences both vignettes, we can attribute

[1]Besides controlling for inflation in our regressions, to ensure that deflation beliefs do not affect our results, we pre-registered a robustness check in which we restrict our sample to respondents who expect current inflation to be greater than or equal to five percent.

differences in responses more confidently to the treatment effects rather than to individual variability.

3 Results

The entirety of Wave 44 of the BOP-HH, comprising 5,067 representative German households, participated in our experiment. Section 3.1 analyzes the changes in consumption of durable and non-durable goods across vignettes, and 3.2 analyzes changes in savings and borrowing across vignettes. A description of the variables and summary statistics are provided in Table 7 in Appendix A. Additional exploratory analysis on how economic and socio-demographic variables affect consumption and borrowing and saving responses to the real interest rate increase is included in Appendix B. [2] Ten respondents did not provide answers to any of our questions and were therefore excluded from the analysis. In accordance with our pre-registration plan, we excluded variables from our regressions if less than 90% of respondents provided observations. This criterion led us to omit the variables "effect of debt on investments" and "probability of default," as less than 50% of respondents answered these questions.

3.1 Consumption of Durables and Non-Durables

Table 2 summarizes the change in consumption for each type of good across both vignettes. Recall that the Likert scale ranges from 1 to 7, where 1 means that consumers would consume a lot less, 4 that they would not change their consumption, and 7 that they would consume a lot more. Importantly, in addition to allowing respondents not to answer, each question offered the options "does not apply" or "don't know", so the number of answers varies across the different types of consumption and vignettes. Given that in both of our vignettes, the real interest rate is increasing, we would expect respondents to report numbers below 4. The results show an effect in the expected direction, with mean values below 4 in all cases. A Wilcoxon Matched Pairs test shows that the responses are different from 4 ($p < 0.01$), except for the consumption of non-durables in the inflation

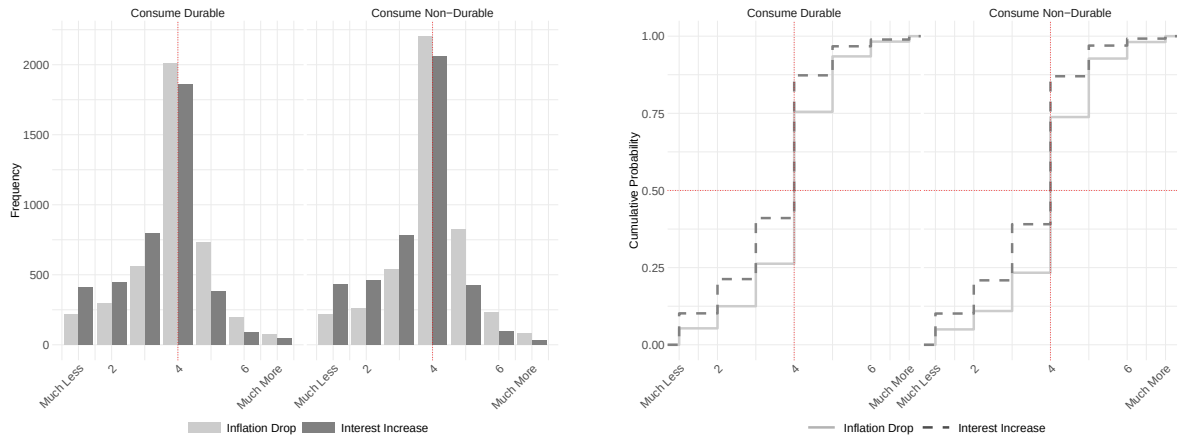
[2] All of the reported analysis in these sections was pre-registered at www.aspredicted.org (#148907). For details on the characteristics of the survey, see https://www.bundesbank.de/en/bundesbank/research/survey-on-consumer-expectations/.

Table 2: Summary statistics consumption

	Inflation			Interest Rates			P-val
	Mean	SD	Count	Mean	SD	Count	
Durables	**3.887**	1.192	4088	**3.445**	1.237	4026	< 0.01
Non-Durables	**3.961**	1.177	4369	**3.468**	1.225	4295	< 0.01
P-val	< 0.01			0.11			

Note: Consumption responses for durable and non-durable goods across the inflation drop and nominal interest rate increase vignettes. The p-values reported in the right column come from Wilcoxon Matched Pairs tests comparing the within-subject changes in consumption for the same good across both types of vignettes. The p-values reported in the bottom row come from Wilcoxon Matched Pairs tests comparing the within-subject changes in consumption across both types of goods within the same vignette.

Figure 1: Frequency plot and cumulative density function of changes in consumption.



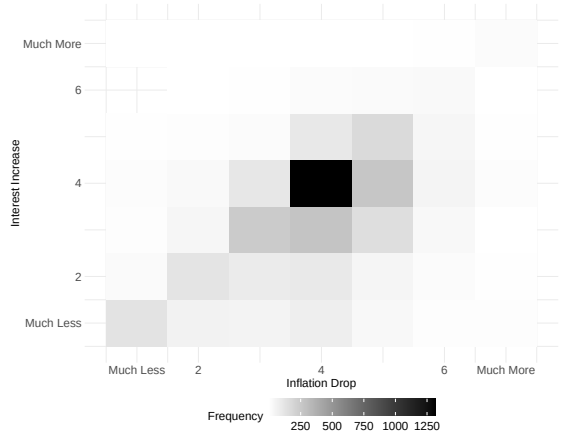
(a) Frequency of changes in consumption across vignettes

(b) CDF of changes in consumption across vignettes

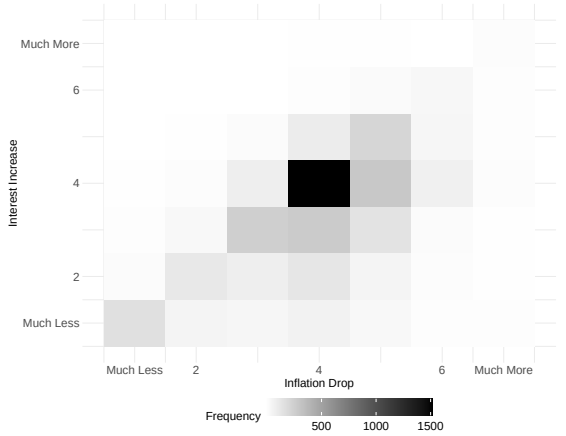
decrease vignette ($p = 0.309$). This implies that, except for non-durable consumption in the inflation vignette, respondents would consume less in response to higher nominal interest rate or lower expected inflation.

Figure 1 shows the histogram (left panel) and cumulative density functions (right panel) of the self-reported changes in consumption for each of the four scenarios. For durables and non-durables, the CDF of consumption changes induced by a drop in inflation first-order stochastically dominates changes induced by an increase in nominal interest rates. In other words, for both types of goods, respondents reduce their consumption more in response to an increase in the nominal interest rate than to an equivalent decrease in inflation. Importantly, these differences are not only across participants but also *within*

Figure 2: Within-participant changes in consumption for Durables (a) and Non-Durables (b)



(a) **Durables**: Within-participant changes in consumption for a symmetric drop in inflation or increase in nominal interest rates



(b) **Non-durables**: Within-participant changes in consumption for a symmetric drop in inflation or increase in nominal interest rates

participant. Figure 4 shows a heatmap with the pairs of choices made by each respondent — for each type of good, on the vertical axis, we plot the change in consumption for a nominal interest rate increase, and on the horizontal axis, the change in consumption for the symmetric drop in inflation. If respondents treated both vignettes symmetrically, all data points should be on the diagonal. However, a large share of the observations lie below the 45 degree line, indicating that the same subject will reduce consumption more in the nominal interest rate vignette than in the inflation vignette. A Wilcoxon matched pairs tests comparing the changes in consumption across vignettes confirms the asymmetry in subjects' behavior ($p < 0.01$ for both types of goods). This result is robust to restricting the sample to respondents who reported an expected inflation of 5% or more.

Result 1: *Respondents reduce their consumption significantly more in response to an increase in the nominal interest rate, compared to a decrease in inflation. While an increase in nominal interest leads to a clear reduction in planned consumption, a decrease in inflation has a weaker effect.*

To analyze what drives the differences across vignettes, we calculate the differences in the respondents' self-reported consumption levels. For each respondent r, we are interested in both the simple and absolute difference in the self-reported changes in consump-

tion c between the inflation and the interest scenarios.[3] That is, we calculate $c_{r,\pi,d} - c_{r,i,d}$ and $|c_{r,\pi,d} - c_{r,i,d}|$, where π and i refer to the inflation and interest scenarios, and d refers to either durable or non-durable goods. We then regress the resulting values on the pre-registered independent variables: *Household Net Income*, *Wealth*, *Debt*, along with economic preferences such as *Risk Aversion* and time preferences (*Impatience*), the point prediction inflation expectations 12 months ahead (*Infl. Exp.*), *Age*, and dummy variables indicating gender (*Female*), whether a respondent has a university degree (*University*) or lived in the German Democratic Republic in November 1989 (*GDR*). Additionally, we include a dummy for the randomized order of the vignettes and region fixed-effects, which are not reported in the tables.

The regressions on both simple and absolute differences are shown in Table 3.[4] First, note that the constant for the simple differences is positive and statistically different from zero across all specifications, indicating that respondents decrease their consumption more for the nominal interest rate vignette than for the inflation one.[5] This finding confirms our main result and demonstrates its robustness to the inclusion of socio-economic controls and potential order effects. Importantly, the direction and statistical significance of the coefficient estimates remain consistent across both durable and non-durable goods, suggesting that the measured variables uniformly influence the differences in responses for both types of goods.

Regarding specific socio-economic variables, we find no effect of household income on the differences in response across vignettes. Larger wealth relates negatively to absolute differences, but not simple differences across vignettes. More outstanding total debt significantly increases the absolute and simple differences across vignettes as respondents are more sensitive to increases in the nominal interest rate than to the drop in inflation. We do not find significant effects of risk aversion or time preferences. However, age is

[3]We use both the simple and absolute differences because they complement each other. The absolute difference captures the total magnitude of change in responses, allowing us to measure the magnitude of the asymmetry in the responses across vignettes. The simple difference allows us to capture any directional effects across vignettes.

[4]The number of observations changes across columns because around 75% of respondents answered the durable goods question across both vignettes, while 80% did so for the non-durable goods.

[5]The absolute difference values are naturally bounded at zero, so they cannot be used to interpret the direction of the difference across vignettes.

Table 3: Differences in Consumption Responses Across Vignettes

	Inflation - Interest		Absolute Difference	
	Durable	Non-durable	Durable	Non-durable
Household Income	-0.095	-0.075	-0.015	-0.092
	(0.112)	(0.102)	(0.097)	(0.092)
Wealth	-0.005	-0.005	-0.011**	-0.009**
	(0.006)	(0.005)	(0.005)	(0.004)
Debt	0.039**	0.038**	0.046***	0.036**
	(0.019)	(0.016)	(0.017)	(0.015)
Risk Aversion	0.001	0.020	0.007	0.007
	(0.016)	(0.014)	(0.014)	(0.013)
Impatience	0.012	0.018	0.013	0.018
	(0.017)	(0.015)	(0.015)	(0.013)
Age	-0.005**	-0.005***	-0.002	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)
Female	-0.016	0.020	-0.029	0.050
	(0.045)	(0.042)	(0.038)	(0.037)
University	-0.020	-0.002	-0.087**	-0.070**
	(0.044)	(0.040)	(0.038)	(0.036)
GDR	0.116	-0.020	0.055	-0.035
	(0.077)	(0.065)	(0.066)	(0.059)
Exp. Inf.	0.003	0.000	0.017***	0.009**
	(0.008)	(0.005)	(0.006)	(0.004)
Constant	0.624***	0.609***	0.683***	0.676***
	(0.188)	(0.165)	(0.161)	(0.147)
Observations	3799	4106	3799	4106
R^2	0.013	0.012	0.016	0.010
Extra Controls	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

significantly negatively correlated with the simple differences but not with the absolute differences.

Finally, we test whether inflation expectations influence our treatment difference. As we did not anchor our respondents' inflation expectations in both vignettes, their intrinsic expectations could influence their responses. We find that a higher expected inflation results in higher absolute differences between both vignettes.

Result 2: *The difference in consumption responses to increased nominal interest rates versus decreased inflation remains robust after controlling for variables that could potentially affect consumption responses, such as wealth, debt, inflation expectations, preferences, and other socio-demographics.*

Result 3: *The difference in consumption responses to increased nominal interest rates versus decreased inflation is smaller for respondents who are wealthier, have less debt, are older, hold a university degree, or expect lower inflation.*

3.2 Changes in Savings and Borrowing

Table 4 reports the average, standard deviation, and number of observations for the self-reported change in borrowing and saving across both interest rate increase and inflation drop vignettes. Consistent with the negative consumption response to an increase in the real interest rate, respondents should respond by saving more and borrowing less. A Wilcoxon Matched Pairs test shows that the chosen values by respondents are statistically different from 4 ($p - val < 0.01$ in all cases).

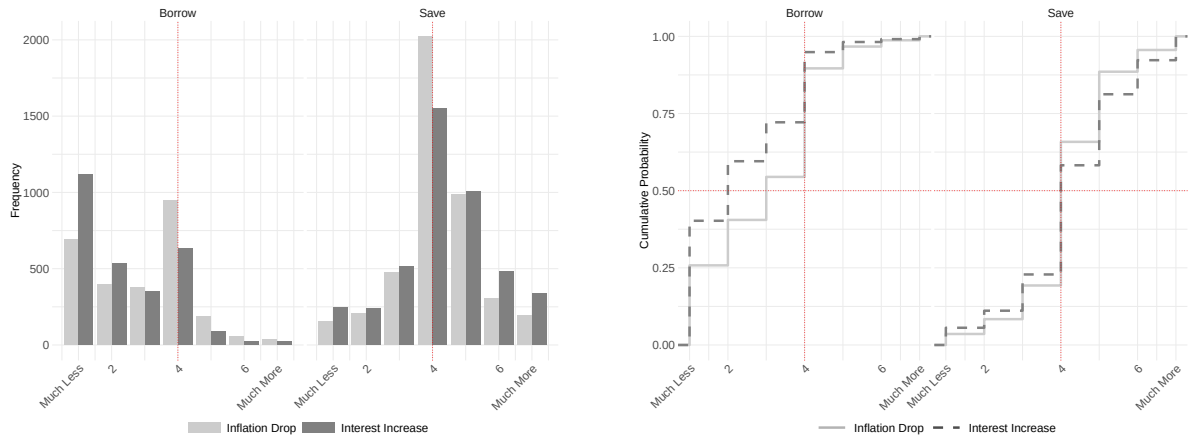
Figure 3 shows the frequency (left panel) and cumulative density functions (right panel) of the self-reported changes in borrowing and saving for each vignette. Respondents decrease their borrowing more following an increase in the nominal interest rate compared to a decrease in inflation. Again, the interest rate vignette CDF first-order stochastically dominates the CDF of the inflation vignette. For savings, it is clear that respondents are less responsive in the inflation vignettes, with the modal respondent not changing behavior and fewer respondents saving much more. Again, such differences in behavior across vignettes are also *within*-respondent. In Figure 4b we plot the pairs of choices made by each respondent for each vignette. For borrowing, the asymmetry in behavior is clear, as the same person will reduce their borrowing much more for an increase in nominal interest rates than for the symmetric drop in inflation. For savings, the results

Table 4: Summary statistics Savings and Borrowing

	Inflation			Interest			P-val
	Mean	SD	Count	Mean	SD	Count	
Savings	**4.188**	1.222	4347	**4.287**	2.125	4376	< 0.01
Borrowing	**2.941**	1.482	2690	**2.358**	1.978	2783	< 0.01
P-val	< 0.01			< 0.01			

Note: Changes in borrowing and saving across the inflation drop and nominal interest rate increase vignettes. The p-values reported in the right column come from Wilcoxon Matched Pairs tests comparing the within-subject changes in consumption for the same good across both types of vignettes. The p-values reported in the bottom row come from a Wilcoxon Matched Pairs test comparing the within-subject changes in consumption across both types of goods within the same vignette.

Figure 3: Frequency plot and cumulative density function of the changes in savings and borrowing



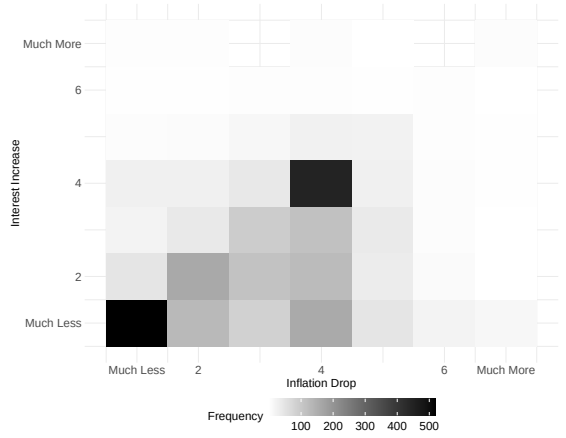
(a) Frequency of self-reported changes in behavior

(b) CDF of the self-reported changes in behavior

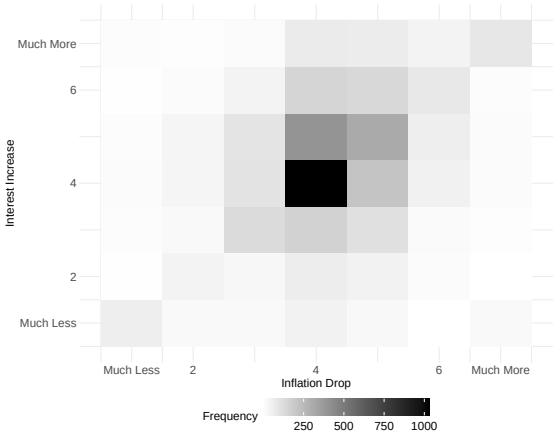
are less stark, but it is also clear that the same respondent will, on average, respond more to changes in the nominal interest rate than to a symmetric drop in inflation. A Wilcoxon Matched Pairs test confirms what we observe visually in 4b, as the differences across the borrowing and saving vignettes are statistically significant in all cases ($p - val < 0.01$ for all comparisons).[6]

[6]These result holds if we restrict our sample to respondents that reported expected inflation of 5 percent or more.

Figure 4: Within-respondent changes in Borrowing (a) and Savings (b)



(a) **Borrowing**: Within-respondent changes in borrowing for a symmetric drop in inflation or increase in nominal interest rates.



(b) **Savings**: Within-respondent changes in saving for a symmetric drop in inflation or increase in nominal interest rates.

Result 4: *Respondents save more and borrow less in response to a higher real interest rate. However, they respond more strongly to increased nominal interest rates compared to decreased inflation.*

Table 5 regresses the differences in self-reported changes in behavior on our list of independent variables. The statistical significance of the constant for the simple differences confirms what we observe in Figure 3 — the treatment effect is present in all cases, with respondents responding less to the inflation vignette than to the interest rate vignette. Similar to the consumption responses, having more debt correlates with a larger absolute difference in behavior across vignettes. Risk aversion only reduces the absolute difference among vignettes for the borrowing behavior. This might be because as risk-aversion increases, respondents are less and less likely to borrow at all in both treatments. Age reduces the absolute difference between vignettes for both savings and borrowing behavior. Interestingly, older respondents are more sensible to the inflation vignette than to the interest rate vignette, which results in a significant and positive coefficient when comparing their saving behavior across vignettes, and a negative value when comparing their borrowing behavior. Education does appear to play some role. University educated individuals are relatively less responsive to between vignettes in their saving response, but (marginally significantly) larger differences in their borrowing response. Inflation expectations also matter for the simple differences. Respondents with higher inflation

Table 5: Differences in Saving and Borrowing Across Vignettes

	Inflation - Interest		Absolute Difference	
	Savings	Borrowing	Savings	Borrowing
Household Income	-0.118	0.032	-0.028	0.200
	(0.141)	(0.181)	(0.106)	(0.150)
Wealth	-0.007	0.005	-0.002	-0.013*
	(0.007)	(0.009)	(0.005)	(0.008)
Debt	0.054**	0.042	0.048***	0.078***
	(0.025)	(0.027)	(0.018)	(0.023)
Risk Aversion	0.022	-0.038	0.019	-0.046**
	(0.019)	(0.024)	(0.015)	(0.020)
Impatience	0.016	0.000	-0.044***	-0.018
	(0.021)	(0.024)	(0.016)	(0.020)
Age	0.011***	-0.013***	-0.009***	-0.010***
	(0.002)	(0.003)	(0.002)	(0.002)
Female	0.021	0.057	0.030	0.103*
	(0.054)	(0.068)	(0.041)	(0.057)
University	-0.180***	0.127*	-0.027	0.031
	(0.054)	(0.068)	(0.041)	(0.058)
GDR	-0.082	-0.045	-0.009	-0.154*
	(0.093)	(0.107)	(0.070)	(0.093)
Exp. Inf.	0.022***	-0.018**	0.007	-0.001
	(0.005)	(0.007)	(0.004)	(0.006)
Constant	-0.817***	1.493***	1.073***	1.623***
	(0.221)	(0.268)	(0.169)	(0.224)
Observations	4115	2461	4115	2461
R^2	0.028	0.062	0.018	0.046
Extra Controls	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

expectations show a larger difference in saving responses between the treatments, while the relationship reverses for borrowing responses.

4 Conclusion

A fundamental assumption in consumption-saving theories is that consumers base their consumption decisions on the real interest rate. Consequently, a change in the real interest rate—whether driven by an increase in the nominal interest rate or a decrease in inflation—should have the same effect on consumption. To test this prediction, we run a large-scale, representative, within-subject survey experiment in the Bundesbank Online Panel-Households in which respondents are exposed to two hypothetical scenarios that have the same impact on the real interest rate: a rise in the nominal interest rate and a drop in inflation.

Our results reveal a significant difference in how individuals adjusted their consumption across both scenarios. Specifically, respondents planned to consume less in response to a higher nominal interest rate, while they barely planned to change their consumption in response to a decrease in inflation. This difference suggests that individuals do not treat the components of the real interest rate as interchangeable, responding more to changes in nominal interest rates than to changes in inflation. This observation persists across both durable and non-durable goods and is robust to a comprehensive set of controls. Moreover, the saving and borrowing responses were consistent with the consumption responses. Respondents planned to save more and borrow less in case of a higher nominal interest rate and they planned to adjust these variables less in case of lower inflation.

The asymmetric behavior of respondents challenges classic consumption-saving models, which assume that consumers integrate nominal interest rates and inflation into real interest rates and base their consumption decisions on that. Future research could expand these models to account for the observed heterogeneity in responses to nominal interest rates and expected inflation. Our results also have important implications for monetary policy and its communication. Central banks could influence consumer spending more effectively by communicating changes in nominal interest rates rather than focusing on inflation targets. Additionally, we show that enhancing financial literacy could further improve the effectiveness of monetary policy by enabling consumers to understand and react to changes in the real interest rate. This implies that policies promoting financial education might be a valuable complement to traditional monetary policy tools.

Future research could build on our findings by exploring the underlying channels for the observed asymmetry. A promising avenue is financial literacy; a closer examination

of its role in consumers' decision-making could help explain why consumers do not fully incorporate inflation expectations into their consumption choices. Additionally, examining whether our findings hold across different economic contexts – such as countries with persistently high inflation, where consumers might be more attentive to changes in inflation rates – could provide valuable insights. Cross-country comparisons of this nature could inform the design of more effective monetary policies tailored to specific economic environments.

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Appendix

A Desriptive Statistics and Variable Coding

Table 6: Number of Answers

	Saving	*Borrowing*	*Non-Durable*	*Durable*
Inflation Vignette	4,347	2,690	4,088	4,369
Interest Vignette	4,376	2,783	4,026	4,295

All of the data comes from Wave 44 of the BOP-HH. The details of the questionnaire can be found at https://www.bundesbank.de/en/bundesbank/research/survey-on-consumer-expectations/questionnaires-850746. In the following, we describe how each variable was constructed along with the alphanumerical code used in the BOP-HH to identify the variables and the translation of the question:

- *Household Net Income* (CS008): "What is the total monthly net income of your household?" to answer participants can pick one out of 13 bins which range from "Less than 500 €" to "10,000 € or more". To construct the variable we took the midpoint of the selected bin, except for highest bin in which case we picked the value 10,000 €.

- *Wealth and Debt* (CQ007a to CQ007g): "How high do you estimate the assets and liabilities of your household to be?" the answers were divided into five types of wealth (bank deposits, real estate, Securities, equity in unlisted business, other assets) and two types of debt (outstanding loans secured by real estate, other outstanding debt). They could pick out of ten different bins for each type of wealth and debt. The range of the bins differs across questions, and in all cases, they can report no loans or wealth of that specific type. To construct our measure of wealth we took the midpoint of the bin selected and aggregated across the five types. To construct our measure of debt, we took the midpoint of the selected bin for each type of existing debt and aggregated across them.

- *Risk Aversion* (P4406a): "In general, I am willing to take risks." To answer, participants could pick a value from 1 (strongly disagree) to 7 (Strongly agree) on a

Likert scale. Because the scale is increasing in risk-seekingness, we flip the scale by subtracting each individual's chosen value from 8. So, if a participant picked 3, the measure of risk aversion would be 8-3=5. This transformation keeps all relative comparisons identical while changing the measure into risk *aversion*.

- *Impatience* (P4406b): "In general, I am willing to give up something that is beneficial to me today if it gives me an even greater advantage in the future." To answer, participants could pick a value from 1 (strongly disagree) to 7 (Strongly agree) on a Likert scale. Because the scale of this variable is increasing in patience , we flip the scale by subtracting each individual's chosen value from 8. So, if a participant picked 3, the measure of impatience would be 8-3=5. This transformation keeps all relative comparisons identical while changing the measure into *impatience*.

- *Inflation Expectations* (CM003): "What do you think the rate of inflation[deflation] will roughly be over the next twelve months?" Participants had to enter a percent value. We take this point prediction as the value for our variable. The question format depended on a previous question in which they stated whether they expected inflation or deflation to be more likely.

- *Age* (-): not part of the survey

- *Female* (-): not part of the survey

- *University* (CS002): "What level of vocational training or university degree do you have? Please think of your highest qualification here." Participants are allowed to pick between ten options, we code the variable *University* to have value one if the choices are one of either: 1) Bachelor's degree, applied sciences degree, completed training at an engineering college, 2) Diploma or master's degree, completed teacher training degree, or 3) Doctorate/postdoctoral qualification obtained. The variable is coded with a value of zero otherwise.

- *GDR* (CO001): "In which part of Germany were you living shortly before the fall of the Berlin Wall on 9 November 1989?" Participants are given three possible answers: 1) "In eastern Germany, the former German Democratic Republic", 2) "In western Germany, the Federal Republic of Germany", 3) "I moved to Germany after

1989". We code GDR as equal to one if the aprticipant selected the first choice and equal to zero for any other choice.

Variable	Type	Description	Observations	Mean	Std Deviation
Household Net Income	Numeric	Household monthly net income (direct question)	5,057	3,806	2,126
Wealth	Numeric	Total wealth of the household (constructed)	5,057	355,548	435,904
Debt	Numeric	Total debt of the household (constructed)	5,057	46,556	113,256
Risk Aversion	Numeric	Participant's risk aversion score (Likert 1 to 7)	5,055	4.58	1.57
Impatience	Numeric	Intertemporal preferences (Likert 1 to 7)	5,052	3.67	1.54
Infl. Exp.	Numeric	Inflation expectations for the next 12 months (direct question)	4,970	6.35	5.47
Age	Numeric	Age of the participant (direct question)	5007	56.88	15.74
Female	Categorical	Gender of the participant (direct question).	5057	0.40	-
University	Categorical	Has university degree (direct question)	5057	0.33	-
GDR	Categorical	Living in the German Democratic Republic in November 1989 (direct question)	5057	0.15	-
Region	Categorical	North, South, East, West	5057	-	-

Table 7: Summary Statistics of Main Variables

B Additional Exploratory Analysis

Table 8 shows the results of regressing the consumption choices ($durable_i$, $non\text{-}durable_i$) on the pre-registered socio-demographic measures along with a treatment dummy (*Interest Vignette*) which takes value one for the interest rate vignette. All errors are clustered at the respondent level.

The coefficient for the treatment dummy is negative and statistically significant, confirming that participants reduce their consumption more in response to an increase in nominal interest rate compared to an equivalent drop in inflation.

Higher household income is significantly positively correlated with non-durable consumption and higher wealth is (marginally) significantly positively correlated with (non-) durable consumption. Similarly, the more debt households have, the more they reduce their consumption. Overall these consumption responses imply that richer households in terms of net wealth and income reduce their consumption less in response to a real interest rate increase. Risk aversion and age are both negatively correlated with consumption in response to a real interest rate increase across both types of goods. Higher impatience is also negatively correlated with consumption, however, this relationship is only statistically significant for durables. Females are less sensitive than males to changes in the real interest rate for non-durable goods; for durable goods the difference in behavior is only marginally statistically significant. Interestingly, participants who were living in the

GDR in November 1989 are more sensitive to real interest rate changes for durable and non-durable goods ($p = 0.012$ and $p = 0.050$, respectively). Higher inflation expectations affect the response of participants to the increase in real interest rates for the consumption of non-durables, but not for durables.

In Table 10 we run the same regression as in Table 8 but with borrowing and saving choices as the dependent variable. The results again confirm the effects of the vignette treatment, with participants increasing significantly more their savings when the nominal interest rate increases than for the equivalent drop in inflation. The mirror effect happens with borrowing behavior, as participants reduce significantly more their their borrowing when the nominal interest rate increases compared to the equivalent drop in inflation. Interestingly, risk aversion results in a reduction of borrowing, but we detect no effect on saving behavior, while we detect a reduction in savings for more impatient participants, but do not detect any effect of impatience on borrowing levels.

Table 8: OLS Consumption

	Durables	Non-Durables
Interest Vignette	-0.436***	-0.490***
	(0.020)	(0.020)
Household Income	0.125	0.332***
	(0.091)	(0.093)
Wealth	0.010**	0.008*
	(0.004)	(0.004)
Debt	-0.062***	-0.086***
	(0.014)	(0.015)
Risk Aversion	-0.044***	-0.080***
	(0.013)	(0.013)
Impatience	-0.035**	-0.017
	(0.014)	(0.014)
Age	-0.011***	-0.006***
	(0.002)	(0.002)
Female	0.072*	0.145***
	(0.037)	(0.036)
University	0.099***	0.160***
	(0.035)	(0.034)
GDR	-0.155**	-0.123*
	(0.062)	(0.063)
Exp. Inf.	-0.003	-0.020***
	(0.004)	(0.004)
Constant	4.691***	4.527***
	(0.117)	(0.115)
Observations	7598	7552
Extra Controls	Yes	Yes

Standard errors in parentheses

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

Table 9: OLS Consumption by Vignette

	Durable		Non-Durable	
	Inflation	Interest	Inflation	Interest
Household Net Income	0.078	0.173	0.296***	0.370***
	(0.108)	(0.114)	(0.109)	(0.113)
Wealth	0.007	0.012**	0.006	0.010*
	(0.005)	(0.006)	(0.005)	(0.006)
Debt	-0.042**	-0.081***	-0.067***	-0.106***
	(0.018)	(0.019)	(0.018)	(0.018)
Risk Aversion	-0.044***	-0.045***	-0.072***	-0.088***
	(0.014)	(0.014)	(0.014)	(0.014)
Impatience	-0.041***	-0.029*	-0.023	-0.012
	(0.014)	(0.015)	(0.014)	(0.015)
Age	-0.014***	-0.009***	-0.009***	-0.003*
	(0.002)	(0.002)	(0.002)	(0.002)
Female	0.063	0.080*	0.143***	0.147***
	(0.042)	(0.044)	(0.042)	(0.043)
University	0.089**	0.109**	0.152***	0.168***
	(0.042)	(0.044)	(0.042)	(0.043)
GDR	-0.097	-0.213***	-0.139**	-0.107
	(0.070)	(0.074)	(0.070)	(0.073)
Exp. Inf.	-0.001	-0.004	-0.021***	-0.019***
	(0.003)	(0.004)	(0.004)	(0.004)
Constant	4.832***	4.113***	4.675***	3.888***
	(0.129)	(0.135)	(0.129)	(0.134)
Observations	3799	3799	3779	3773
Extra Controls	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

Table 10: OLS Savings and Borrowing

	Save	Borrow
Interest Vignette	0.112***	-0.562***
	(0.025)	(0.031)
Household Income	0.392***	0.125
	(0.096)	(0.142)
Wealth	0.004	-0.006
	(0.005)	(0.007)
Debt	-0.077***	0.023
	(0.015)	(0.019)
Risk Aversion	-0.020	-0.052***
	(0.013)	(0.019)
Impatience	-0.059***	-0.030
	(0.014)	(0.019)
Age	-0.012***	-0.011***
	(0.002)	(0.002)
Female	0.086**	0.053
	(0.036)	(0.054)
University	0.064*	0.255***
	(0.035)	(0.053)
GDR	-0.021	-0.129
	(0.062)	(0.090)
Exp. Inf.	-0.004	-0.012***
	(0.005)	(0.005)
Constant	4.913***	3.821***
	(0.124)	(0.162)
Observations	8230	4922
Extra Controls	Yes	Yes

Standard errors in parentheses

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

Table 11: OLS Savings and Borrowing by Vignette

	Savings		Borrowing	
	Inflation	Interest	Inflation	Interest
Household Net Income	0.333***	0.451***	0.141	0.109
	(0.109)	(0.129)	(0.161)	(0.162)
Wealth	0.001	0.008	-0.003	-0.008
	(0.005)	(0.006)	(0.008)	(0.008)
Debt	-0.050***	-0.104***	0.044*	0.001
	(0.018)	(0.021)	(0.024)	(0.024)
Risk Aversion	-0.009	-0.031*	-0.070***	-0.033
	(0.014)	(0.016)	(0.021)	(0.021)
Impatience	-0.051***	-0.067***	-0.030	-0.030
	(0.014)	(0.016)	(0.021)	(0.022)
Age	-0.006***	-0.017***	-0.017***	-0.004
	(0.002)	(0.002)	(0.003)	(0.003)
Female	0.096**	0.075	0.081	0.024
	(0.041)	(0.049)	(0.063)	(0.064)
University	-0.026	0.154***	0.318***	0.191***
	(0.042)	(0.049)	(0.063)	(0.064)
GDR	-0.062	0.020	-0.151	-0.106
	(0.072)	(0.085)	(0.106)	(0.107)
Exp. Inf.	0.008**	-0.015***	-0.021***	-0.003
	(0.003)	(0.004)	(0.005)	(0.005)
Constant	4.496***	5.441***	4.287***	2.793***
	(0.129)	(0.153)	(0.191)	(0.193)
Observations	4115	4115	2461	2461
Extra Controls	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

C Wealth & Debt Interaction

The income and substitution effects might differ across treatments based on the saving and debt positions. While our within-subject design partially mitigates concerns, in this section we investigate whether our results are driven by such differences. To do so, we will interact the wealth and debt of respondents with the the treatment dummy "interest rate vignette".

We begin with the wealth of subjects and present three models. In Table 12 we reproduce the model in Table 8 and add an interaction between the treatment dummy and the reported assets deposited in the bank. These are reported as brackets in teh survey, so we take them as categorical variables for the interaction, the reference point is no money in the bank. Table 13 follows the same logic, but this time, the assets are securities such as bonds or stock. Finally, in Table 14 we combine both types of wealth using the variable $Total_wealth$, which we treat as continuous. In all cases, welath does not interact with the treatment dummy confirming that our results are not driven by subjects' differences in wealth.

To test the effects of debt on our treatment, in Table 15 we use the model of Table 8 and interact the treament variable with the variable $Total_Debt$. The results, in this case, do show an interaction effect — Higher debt levels make households more sensitive to increases in nominal interest rates, as they cut both durable and non-durable consumption significantly more in the Interest Vignette. To test if this interaction is driving our results, in Table 16, we run our main specification (Table 3) but only using those respondents who report having zero debt (60% of our sample). The results show that the differences across vignettes are robust and that even those participants without any debt respond much more to increases in the interest rate than to the equivalent drop in inflation. This result is confirmed if we run the same Wilcoxon Matched Pairs tests reported in Table 2 but only using those subjects that have zero debt, the differences in consumption changes are different across vignettes ($p < 0.001$ in all cases).

Table 12: Interaction Money in Bank x Treatment

	(1)	(2)
	Non-Durable	Durable
Household Net Income	0.021	0.218**
	(0.092)	(0.093)
Wealth	0.003	0.000
	(0.005)	(0.005)
Debt	-0.053***	-0.076***
	(0.014)	(0.015)
Risk Aversion	-0.045***	-0.082***
	(0.013)	(0.013)
Impatience	-0.033**	-0.015
	(0.014)	(0.014)
Age	-0.011***	-0.006***
	(0.002)	(0.002)
Female	0.083**	0.159***
	(0.037)	(0.036)
University	0.087**	0.147***
	(0.035)	(0.034)
GDR	-0.157**	-0.120*
	(0.062)	(0.063)
Exp. Inf.	-0.001	-0.018***
	(0.004)	(0.004)
netwealth_a_mid=1250	0.014	0.085
	(0.077)	(0.079)
netwealth_a_mid=3750	0.143*	0.182**
	(0.085)	(0.088)
netwealth_a_mid=7500	0.170**	0.192***
	(0.071)	(0.073)
netwealth_a_mid=17500	0.157**	0.320***
	(0.066)	(0.065)
netwealth_a_mid=37500	0.276***	0.322***
	(0.070)	(0.068)
netwealth_a_mid=75000	0.213***	0.205***
	(0.076)	(0.074)
netwealth_a_mid=175000	0.109	0.203**
	(0.091)	(0.083)
netwealth_a_mid=375000	0.183	0.132
	(0.141)	(0.134)
netwealth_a_mid=500000	-0.187	0.081
	(0.219)	(0.233)
Interest Vignette	-0.492***	-0.507***
	(0.050)	(0.050)
netwealth_a_mid=1250 × Interest Vignette	-0.024	-0.092
	(0.085)	(0.079)
netwealth_a_mid=3750 × Interest Vignette	-0.050	-0.099
	(0.092)	(0.092)
netwealth_a_mid=7500 × Interest Vignette	0.050	-0.004
	(0.076)	(0.075)
netwealth_a_mid=17500 × Interest Vignette	0.135*	0.043
	(0.070)	(0.069)
netwealth_a_mid=37500 × Interest Vignette	0.088	0.007
	(0.072)	(0.069)
netwealth_a_mid=75000 × Interest Vignette	0.127*	0.099
	(0.076)	(0.073)
netwealth_a_mid=175000 × Interest Vignette	0.043	0.205**
	(0.084)	(0.082)
netwealth_a_mid=375000 × Interest Vignette	0.250	0.185
	(0.157)	(0.145)
netwealth_a_mid=500000 × Interest Vignette	0.569**	0.390*
	(0.277)	(0.205)
Constant	4.617***	4.408***
	(0.123)	(0.125)
Observations	7598	7552
Extra Controls	Yes	Yes

Standard errors in parentheses

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

Table 13: Interaction Securities x Treatment

	(1)	(2)
	Non Durable	Durable
Household Net Income	0.111	0.309***
	(0.092)	(0.094)
Wealth	0.005	0.004
	(0.005)	(0.005)
Debt	-0.057***	-0.081***
	(0.014)	(0.015)
Risk Aversion	-0.041***	-0.076***
	(0.013)	(0.013)
Impatience	-0.033**	-0.015
	(0.014)	(0.014)
Age	-0.011***	-0.006***
	(0.002)	(0.002)
Female	0.075**	0.149***
	(0.037)	(0.037)
University	0.094***	0.152***
	(0.036)	(0.035)
GDR	-0.160**	-0.129**
	(0.062)	(0.063)
Exp. Inf.	-0.003	-0.020***
	(0.004)	(0.004)
netwealth_c_mid=1250	0.068	0.080
	(0.080)	(0.081)
netwealth_c_mid=3750	0.073	0.007
	(0.078)	(0.078)
netwealth_c_mid=7500	0.062	0.116
	(0.073)	(0.074)
netwealth_c_mid=17500	0.038	0.057
	(0.064)	(0.065)
netwealth_c_mid=37500	0.007	-0.023
	(0.071)	(0.066)
netwealth_c_mid=75000	-0.041	0.073
	(0.068)	(0.070)
netwealth_c_mid=175000	-0.052	0.017
	(0.088)	(0.084)
netwealth_c_mid=375000	0.207**	0.026
	(0.096)	(0.100)
netwealth_c_mid=500000	0.073	0.055
	(0.116)	(0.141)
Interest Vignette	-0.470***	-0.528***
	(0.031)	(0.030)
netwealth_c_mid=1250 × Interest Vignette	-0.154*	-0.098
	(0.090)	(0.089)
netwealth_c_mid=3750 × Interest Vignette	-0.030	0.031
	(0.101)	(0.087)
netwealth_c_mid=7500 × Interest Vignette	0.020	-0.049
	(0.076)	(0.083)
netwealth_c_mid=17500 × Interest Vignette	0.087	0.055
	(0.069)	(0.069)
netwealth_c_mid=37500 × Interest Vignette	0.127*	0.150**
	(0.075)	(0.065)
netwealth_c_mid=75000 × Interest Vignette	0.189***	0.234***
	(0.064)	(0.067)
netwealth_c_mid=175000 × Interest Vignette	0.193*	0.110
	(0.102)	(0.084)
netwealth_c_mid=375000 × Interest Vignette	0.054	0.147
	(0.108)	(0.107)
netwealth_c_mid=500000 × Interest Vignette	0.192	0.260*
	(0.198)	(0.152)
Constant	4.665***	4.494***
	(0.121)	(0.119)
Observations	7598	7552
Extra Controls	Yes	Yes

Standard errors in parentheses

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

Table 14: Interaction All Wealth x Treatment

	(1)	(2)
	Non Durable	Durable
Household Net Income	4.593	0.332***
	(15.366)	(0.093)
Debt	3.677*	-0.086***
	(2.061)	(0.015)
Risk Aversion	-3.009	-0.080***
	(1.897)	(0.013)
Impatience	4.729*	-0.017
	(2.475)	(0.014)
Age	-0.214	-0.006***
	(0.262)	(0.002)
Female	14.182**	0.145***
	(6.650)	(0.036)
University	3.751	0.160***
	(6.361)	(0.034)
GDR	-10.400	-0.123*
	(8.496)	(0.063)
Exp. Inf.	-0.327	-0.020***
	(0.230)	(0.004)
Wealth	-0.844	0.006
	(1.142)	(0.005)
Interest Vignette	6.949	-0.507***
	(7.805)	(0.026)
Interest Vignette × Wealth	-2.002	0.005
	(2.231)	(0.004)
Constant	-3.748	4.536***
	(16.505)	(0.116)
Observations	7552	7552
Extra Controls	Yes	Yes

Standard errors in parentheses

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

Table 15: Interaction All Debt x Treatment

	(1)	(2)	(3)	(4)
	Non-Durable	Durable	Savings	Borrowing
Household Net Income	0.125	0.332***	-4.146	50.123**
	(0.091)	(0.093)	(22.699)	(24.878)
Wealth	0.010**	0.008*	1.739	-0.594
	(0.004)	(0.004)	(1.186)	(1.206)
Risk Aversion	-0.044***	-0.080***	1.800	2.287
	(0.013)	(0.013)	(3.799)	(2.676)
Impatience	-0.035**	-0.017	-4.212	-3.669
	(0.014)	(0.014)	(3.343)	(3.663)
Age	-0.011***	-0.006***	-0.874*	-0.229
	(0.002)	(0.002)	(0.520)	(0.329)
Female	0.072*	0.145***	-1.009	10.551
	(0.037)	(0.036)	(9.395)	(6.495)
University	0.099***	0.160***	5.917	-3.539
	(0.035)	(0.034)	(5.576)	(8.311)
GDR	-0.155**	-0.123*	-11.578	-8.131
	(0.062)	(0.063)	(9.475)	(8.299)
Exp. Inf.	-0.003	-0.020***	0.312	1.368*
	(0.004)	(0.004)	(0.824)	(0.709)
Debt	-0.041***	-0.065***	-3.320*	0.379
	(0.015)	(0.016)	(1.837)	(2.332)
Interest Vignette	-0.415***	-0.467***	-12.081	-3.635
	(0.022)	(0.021)	(7.530)	(9.358)
Interest Vignette × Debt	-0.041**	-0.043***	3.078	1.109
	(0.018)	(0.015)	(2.131)	(2.744)
Constant	4.680***	4.515***	45.486*	-26.328
	(0.117)	(0.116)	(25.287)	(22.302)
Observations	7598	7552	7598	7552
Extra Controls	Yes	Yes	Yes	Yes

Standard errors in parentheses

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

Table 16: Main Regression Only With People With no Debt. Robusntess

	(1) Diff Durable	(2) Diff Non-durable	(3) Abs Durable	(4) Abs Non-durable
Household Net Income	0.022	-0.029	-0.096	-0.034
	(0.140)	(0.125)	(0.120)	(0.112)
Wealth	-0.007	-0.012**	-0.013**	-0.015***
	(0.007)	(0.006)	(0.006)	(0.005)
Risk Aversion	-0.013	0.006	0.008	0.008
	(0.019)	(0.017)	(0.016)	(0.015)
Impatience	0.004	0.014	-0.008	0.003
	(0.020)	(0.018)	(0.016)	(0.016)
Age	-0.005**	-0.005**	-0.004*	-0.004*
	(0.002)	(0.002)	(0.002)	(0.002)
Female	-0.020	-0.045	-0.072	-0.021
	(0.055)	(0.050)	(0.046)	(0.044)
University	-0.065	-0.021	-0.152***	-0.068
	(0.055)	(0.050)	(0.047)	(0.044)
GDR	0.045	-0.043	0.007	-0.035
	(0.096)	(0.084)	(0.081)	(0.077)
Exp. Inf.	0.014	0.001	0.016**	0.014*
	(0.009)	(0.008)	(0.008)	(0.007)
Constant	0.624***	0.697***	0.913***	0.729***
	(0.178)	(0.161)	(0.150)	(0.145)
Observations	2151	2366	2151	2366
R^2	0.016	0.020	0.025	0.016
Controls	Yes	Yes	Yes	Yes

Standard errors in parentheses

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