Beyond Inflation: The Role of Household Expectations in Consumption Behavior*

Mary Tzaawa-Krenzler
Goethe University Frankfurt

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Abstract

This paper studies the role of economic expectations in shaping household spending behavior. Drawing on household survey data, we analyze how variations in expectations between income groups influence consumption patterns. The findings suggest that inflation is a relatively weak predictor of expected spending, especially for low-income households, while expected tax payments, homeownership and changes in the personal financial situations are strong consumption predictors across the entire income distribution. Negative surprises in home price and tax payment changes tend to raise spending expectations, especially for low- and mid-income households, while unexpected increases in inflation and interest rates tend to reduce expected spending, especially for low-income households or only show muted responses. Following FOMC announcements, high-income households adjust their spending expectations more gradually and less strongly than low-income households, with the most visible effects linked to stock market surprises. These patterns suggest that macroeconomic surprises following FOMC meetings shape household spending expectations in both a time-sensitive and income-specific ways, with low-income households being the most exposed and responsive to shifts in their economic outlook.

*Mary Tzaawa-Krenzler: Goethe University Frankfurt, m.tzaawakrenzler@gmail.com.

1. Introduction

Inflation expectations have taken a central position in the macroeconomic expectations literature. This emphasis largely stems from their role as a key determinant of household behavior in standard macroeconomic models, as highlighted by the Euler equation, which links intertemporal consumption decisions to expected inflation. In particular, households take expected inflation into account when deciding on saving, debt payments, or good purchases. However, inflation expectations are not the only key objective shaping economic behavior. For instance, when making decisions about work, households must also form expectations regarding future income, interest rate fluctuations, housing prices, and debt obligations. Thus, these variables themselves may be significant predictors of households' expected spending. In addition, we know from the growing literature on wealth and income heterogeneity that households, due to their varying financial situations and access to resources, make different consumption-saving decisions and form heterogeneous expectations about the macro economy. Low-income households face significant financial constraints and exhibit a higher sensitivity to short-term economic fluctuations, prioritizing job security, food prices, housing affordability, and access to basic public services. In addition, idiosyncratic income risk forces households to not only form expectations about their levels of income but also its uncertainty, which ultimately translates into according consumption-saving decisions. High-income households, on the other hand, have greater financial resources and are generally able to secure their basic needs relatively quickly. They may instead direct their expenditures toward long-term investments, asset accumulation, and discretionary consumption. Thus, heterogeneity in preferences across income groups may lead low-income households to assign greater weight to indicators associated with basic needs, like goods' price or wage inflation, while high-income households may prioritize financial market indicators, like asset inflation, ultimately affecting their consumption-saving expectations. Furthermore, disagreement in expectations about macroeconomic outcomes has major implications for the transmission of shocks and policy and wealth inequality (Angeletos and Lian, 2018; Paciello and Wiederholt, 2014).

This paper is motivated by the increasing evidence of the effects of socioeconomic heterogeneity on household beliefs. Focusing on income heterogeneity the goal is to uncover the causal relationship between households' macro-financial beliefs and intended consumption by income group. In particular, a relevant question that arises is whether high-income households place greater or even opposing emphasis on variables that may hold little relevance for the spending decisions of low-income households. Some papers have studied the effect of inflation expectations (Coibion and Gorodnichenko, 2015), change in house prices (Qian, 2023; Kuchler and Zafar, 2019), unemployment (Kohlhas and Walther, 2021; Angeletos et al., 2021), earning risk (Guvenen et al., 2021) or the stock market (Das et al., 2020) on household decisions, however, none of them analyzes the variation in salience of particular variables according to household income, suggesting that low- and high-income households prioritize different variables when forecasting their spending decisions, on an aggregate level.

The closest to our paper is Das et al. (2020), who analyze the causal relation between socioeconomic status, precisely income and educational level, and macroeconomic expectations, in particular economic outlook, unemployment rate and stock market returns. They find that people

with higher income and educational levels tend to be more optimistic about future economic conditions, suggesting that socioeconomic status-driven expectations indeed play a role in investment and goods' purchasing decisions. Maćkowiak and Wiederholt (2015) study the implication of inattention for households' consumption and portfolio choices. They find that households have strong incentives to pay attention to aggregate information when making intertemporal decisions, because doing so enhances the quality of their consumption and investment decisions. The present paper extends this analysis by looking at the causal relation between a larger set of macro-financial variables and households' consumption plans and how the significance of these economic indicators change by group and over time or in reaction to monetary surprises. In addition, the paper allows for a more detailed analysis by focusing on household-level expectations, while previous work often focuses on expectations at the macroeconomic levels.

Qian (2023) studies the causal consumption spending implications of being a homeowner in the USA and finds that home price expectations and household spending plans show a stronger correlation among low-income households and among those who have experienced a deterioration in credit conditions over the past 12 months. Complementary to the results in our paper the author finds that low-income households respond more to changes in home price expectations than high-income households, which may be due to limited wealth accumulation possibilities across low-income individuals and the notion that home ownership it a safe asset. Using German Survey Panel data Dräger and Nghiem (2021) test whether individual consumption choices align with the predictions of a standard Euler equation model. They find that the significantly positive link between inflation expectations and current consumption, as these models predict, are mainly driven by high-income households, whose inflation forecasts are accurate relative to the realized inflation. Additionally, the authors observe that low-income households do not incorporate inflation expectations in their spending decisions but react strongly to monetary news. A fact that we also uncover in the present paper using FOMC statements to analyze time varying heterogeneity in household expectations as consumption predictors. Using data from the Survey of Consumer Expectations, Ben-David et al. (2018) show in their research that uncertainty in economic expectations is higher among individuals with lower income or a more precarious financial situation. This result is in line with Maćkowiak and Wiederholt (2015) who find that households pay little attention to the macroeconomic shocks, or more precisely, real interest rates. This has large implications for the transmission of monetary policy as interest rates are the main transmission channel and may therefore be missed by low attentive households. We add to this research by analyzing structural implications of these expectations and household groups for consumption choices.

Analyzing FOMC treatment effects based on the work by Lamla and Vinogradov (2019) or De Fiore et al. (2022), we find similar effects as Ehrmann et al. (2025), that income is positively correlated with monetary policy knowledge. High-income households incorporate macro-financial news quicker into their expectations than low-income households do. Using US survey data, Kuchler and Zafar (2019) show that individuals tend to extrapolate from their recent personal experiences when forming expectations about macroeconomic outcomes, similar to Malmendier and Nagel (2016). They find that individuals who experience unemployment become more pessimistic about national labor market conditions. This behavior is stronger among individuals with lower levels of economic education. We extend this result by analyzing

implications of unemployment rate forecasts for the individuals' consumption choices and find that especially high-income households react negatively to unemployment rate forecasts while low-income households react significantly positive which can be due to different job security or interpretation of macroeconomic indicators.

This paper is structured as follows. Section 2 gives an overview about the survey data used in the paper and presents the main research question of the paper. Section 3 describes the framework used to uncover the causal relation between consumption-spending behavior and macro-financial expectations. This section also presents the main estimation results. To analyze the implications of monetary policy news and uncover the drivers of forecast heterogeneity Section 4 presents an event study in which the effects of FOMC announcements on household beliefs are analyzed across time and income-groups. Lastly, Section 5 concludes.

2. Data

This paper uses the New York Fed's Survey of Consumer Expectations in the United States (SCE). The monthly survey, which started in June 2013, consists of a rotating panel with approximately 1,300 households and focuses primarily on expectations about economic outcomes. In addition, it collects data on the demographic characteristics of households, such as age, income, education, and employment. Each household stays in the panel for a maximum of twelve months before rotating out of the panel. The survey is especially suited for the analysis of households' macro-expectations.

This paper uses the sample from June 2013 to January 2023 and the expectations about 12-months ahead percentage change in income, home prices, aggregate inflation, total taxes and 12-months ahead probabilities of increases in the average interest rate on saving accounts, stock prices and unemployment rate, and a discrete measure of the change in the household's personal finances to establish which of these expectations is the best predictor for a household's expected percentage change in spending and if there is heterogeneity between income groups. Table 1 presents the summary statistics of the data used. The sample is trimmed at the upper and lower 0.5% level based on the quantitatively measured expectations of households' spending, household income, house prices, inflation and tax payment. The results are robust to trimming the sample at 1%. On average households are 50 years old (the sample includes households aged between 17 and 99 years of age), The sample is 48% female and 56% of the population have completed at least a college degree. 3% are unemployed while 67% are employed, either full-time or part-time, while 1% are on leave or laid off (however are still part of the labor force), 21% of the respondents are retired and 8% are not part of the labor force. Based on their annual income, households also fall into either the low-, mid- or high-income category. Low-income households received in the last 12 months a pre-tax income of less than two-third of the median income, where latter is \$60k-\$74k, while low-income households receive more than 200% of the median income and are the top 20% earners. Thus, in the present sample, low-income households had an annual income of less than \$50k, mid-income receive between \$50k and \$149k and high-income households had an annual pre-tax income of at least \$150k. On average, households expect increases in their spending by 4.3%, their income by 4.7%, their home prices by 5.2%, total taxes are expected to increase by 4%, and inflation is assumed to increase by 5.5% over the next 12 months. Changes

Table 1: Summary Statistics

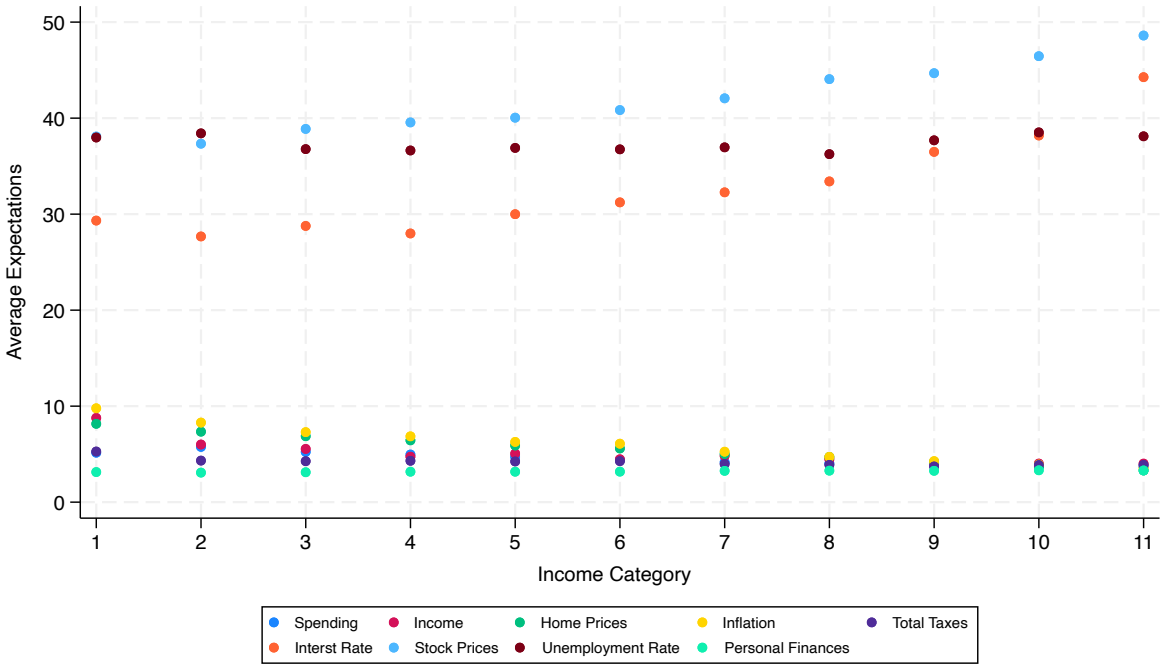
Variable	Mean	StdDev	Min	Max	Observations
Demographics dummy					
Female	0.48	0.50	0.00	1.00	144,974
College degree	0.56	0.50	0.00	1.00	144,974
Age	50.70	15.25	17	99	144,974
Unemployed	0.03	0.18	0.00	1.00	144,974
Full-time employment	0.56	0.50	0.00	1.00	144,974
Part-time employment	0.11	0.32	0.00	1.00	144,974
On leave from work	0.01	0.09	0.00	1.00	144,974
Retired	0.21	0.41	0.00	1.00	144,974
No Work	0.08	0.26	0.00	1.00	144,974
Household income <$50k	0.34	0.47	0.00	1.00	144,974
Household income $50k − $149k	.52	0.50	0.00	1.00	144,974
Household income ≥$150k	0.14	0.34	0.00	1.00	144,974
Expected annual growth rate in %					
Household spending	4.38	11.03	-50.00	60.00	144,739
Household income (wealth)	4.76	13.99	-50.00	100.00	144,680
House prices	5.26	8.50	-25.00	50.00	144,717
Inflation	5.57	9.44	-40.00	70.00	141,003
Tax payment	4.06	7.22	-35.00	50.00	144,603
Expected % chance of an increase in the following in the next 12 months					
Interest rate	33.04	26.24	0.00	100.00	144,656
Stock prices	42.38	23.22	0.00	100.00	144,062
Unemployment rate	37.21	23.31	0.00	100.00	144,651
Discrete measure					
One-year ahead personal finances	3.22	0.84	1.00	5.00	144,914

in financial markets are expected to be much higher with households expecting a 33% chance of an increase in the interest rate on their savings account throughout the following year, a 42.3% chance of increasing stock prices and unemployment is expected to increase with a 37% probability.

Figure 1 presents a more detailed look of the sample by showing the average expectations over the sample period for each variable and income category. Each dot presents the income category specific average over the sample period for each variable's expectation. We observe the following:

- a (non-)linear relation between the income category and the expected increase in stock prices and the interest rate as well as the expected change in inflation, changes in income and home prices
- there are mainly three groups of variables whose trajectories evolve in distinct directions can be observed:
  - Group 1: expectations about increases in stock prices and the nominal interest rate increase with the income level
  - Group 2: expectations about inflation, changes in income and home prices decrease with the income level

Figure 1: Average Expectations by Income



Note: The income categories are the following: Category 1: <$10k, Category 2: $10k-$19k, Category 3: $20k-$29k, Category 4: $30k-$39k, Category 5: $40k-$49k, Category 6: $50k-$59k, Category 7: $60k-$74k, Category 8: $75k-$99k, Category 9: $100k-$149k, Category 10: $150k-$199k, Category 11 $\geq$ $200k

  - Group 3: expectations about the unemployment rate, changes in personal finances, tax payments and spending remain relatively stable across income levels

- the absolute difference between the average expectations of the variables in Group 2 decreases with the income level and eventually vanishes at the very high income level

These patterns may emerge due to several factors. Stock price expectations play an important role for income and wealth developments as they are directly linked to the individuals' access to financial markets and the associated wealth creation. In general, rising stock prices increase the value of investments, boosting the investor's overall wealth and income, which ultimately increases their optimism and risk aversion. Higher-income households are more likely to participate in financial markets and invest in the stock market due to an increase in disposable income, which ultimately increases their wealth level and potentially leads to higher income. The increased wealth and income level translate into a positive outlook about the economy which further boosts the investor's confidence and investments. In addition, income is positively correlated with education and financial literacy, so more informed individuals often believe in the long-term growth of the market and may have greater confidence in its future performance (Arrondel et al., 2018; Agarwal et al., 2022). However, at the same time higher wealth and income levels also increase the households' saving possibility, which also benefits from an expected increase in the interest rate. They are more responsive to financial market gains and interest rate expectations, making them more attuned to macroeconomic signals like central bank communication or interest rate forecasts, which supports forward-looking consumption behavior. On the contrary, lower

income households don't experience the wealth effects from participating in the financial market and therefore may become less optimistic about stock prices or more risk averse, expecting stock prices to increase less.

This dynamic also ultimately translates into one-year-ahead expectations about the household's income. In addition to financially profiting from financial markets and macroeconomic signals, high-income households benefit from greater labor market stability in high paying jobs or performance-linked pay (e.g., bonuses). Low-income households on the other side may be larger affected by uncertain income trajectories or job market instability making them more vulnerable to income shocks. Households however, assume that their personal financial situation will stay about the same over the next 12 months. This may seem contradictory at first, since lower income households expect their income to increase in the future. However, they also expect inflation to increase in the future and almost at the same magnitude (e.g. for households with ¡$10k annual pre-tax income) which suggests that they face more pessimism about their overall financial situation. Further, higher-income individuals likely perceive lower personal risk of job loss, given greater employment stability and skill specialization, contributing to slightly more favorable unemployment outlooks.

Maybe surprisingly, low-income households expect home prices to increase in the future while high-income households don't expect much variation in the household market. Higher income households are either indifferent or pay closer attention to interest rates and credit conditions aligning their expectations closer to the actual market, while low-income households have a more optimistic view about housing markets. The reason being is that home ownership is a significant wealth-building strategy for households in the lowest income quintile, making it their primary or only source of wealth, while higher income households have more possibilities to diversify their wealth accumulation. Coupled with the belief that real estate is a safe asset class, this can lead to systematically optimistic home price forecasts. Tax payment expectations show little variation, but the slight decline for higher-income households could reflect a perception of stable or favorable tax policy at upper income levels or optimism about future tax burdens.

Income is an important dimension of household heterogeneity and is a significant predictor of household behavior. This can be observed in Table 2 which shows the regressions of our main macroeconomic and financial indicators - expected change in spending, home prices, income, inflation, total tax payments, increases in unemployment rate and the interest rate, stock prices and the categorical change in their personal finances - and standard socioeconomic and demographic indicators. To allow for a structured interpretation I from now group the households into low-income ($<$\$50k annual pre-tax income), mid-income (\$50k$-$\$149k annual pre-tax income) or high-income ($\geq$ \$150k annual pre-tax income) households[1]. Other control include sex where we include female or male with female being the reference category, household education fall into either high school education as the reference group, some college or college and we also control for the respondents' age (ranging from 17-99 years) and squared age to allow for nonlinear dynamics. observe that income is a highly significant predictor for all variables. Although education and age are significant across the variables as well, their produce less heterogeneity in the dependent variables and therefore are of less importance for the present analysis of macroeconomic dynamics

1 Extending the analyses to the 11 income categories presented in Figure 3.1 doesn't change the result. Allowing for three income groups eases interpretation and makes the results more comparable

Table 2: Sociodemographic Groups

	(1) Spending	(2) Home Prices	(3) Income	(4) Inflation	(5) Total Taxes	(6) UR	(7) Interest Rate	(8) Stock Prices	(9) Finances
Mid-Income	-1.157***	-1.359***	-1.759***	-1.632***	-0.382***	-1.076***	2.489***	2.076***	0.0675***
	(0.143)	(0.146)	(0.207)	(0.135)	(0.101)	(0.356)	(0.376)	(0.338)	(0.0122)
High-Income	-1.529***	-2.266***	-2.341***	-2.386***	-0.363**	-0.267	8.094***	4.843***	0.120***
	(0.205)	(0.203)	(0.297)	(0.168)	(0.144)	(0.588)	(0.681)	(0.493)	(0.0183)
Male	-0.282**	-1.024***	0.250	-1.830***	-0.586***	1.937***	7.175***	7.604***	0.0329***
	(0.125)	(0.102)	(0.158)	(0.104)	(0.086)	(0.390)	(0.390)	(0.292)	(0.011)
Some College	-0.137	-0.878***	0.346	-1.312***	-0.224	2.039***	2.199***	3.656***	0.034**
	(0.215)	(0.194)	(0.259)	(0.226)	(0.148)	(0.473)	(0.494)	(0.474)	(0.017)
College	-0.317	-1.652***	0.674**	-2.939***	-0.659***	2.870***	8.260***	8.042***	0.0564***
	(0.203)	(0.193)	(0.265)	(0.223)	(0.151)	(0.575)	(0.529)	(0.525)	(0.0184)
Single	-0.247*	0.002	0.096	-0.043	-0.108	0.599*	0.308	1.460***	0.007
	(0.133)	(0.108)	(0.184)	(0.123)	(0.0911)	(0.340)	(0.365)	(0.319)	(0.012)
Age	-0.069***	0.029	-0.245***	0.117***	0.052***	0.122*	-0.604***	-0.317***	-0.0200***
	(0.024)	(0.018)	(0.036)	(0.021)	(0.017)	(0.064)	(0.066)	(0.064)	(0.002)
Age^2	0.001**	-0.000	0.001***	-0.001***	-0.001***	-0.002***	0.006***	0.002***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
Observations	144,393	144,371	144,334	140,673	144,257	144,304	144,309	143,718	144,557

Standard errors in parentheses

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

Notes: "UR" is the abbreviation for Unemployment Rate and "Finances" is the abbreviation for Personal Finances

and household behavior. The results in Table 2 are in line with our observations from Figure 1: relative to low-income households households expect decreases in expected changes in spending, home prices, income, inflation and tax payments as well es unemployment, while they also expect interest rate, stock prices and their personal finances to increase relative to low- or mid-income households. In general, households at the lower income levels have the most pessimistic outlook on macroeconomic and financial markets. These patterns suggest that economic optimism and sensitivity to macro-financial developments are stronger among higher-income households, possibly reflecting greater exposure to financial markets, money markets and macroeconomic information. These findings raise the main questions of the paper: *Which macro-expectations are the best predictors of expected household spending? To what extent does income influence the relative importance households place on these expectations?*

3. Empirical Framework

In this section, we describe the regression specification used to investigate the relationship between consumers' spending intentions and the expectation indicators.

3.1. Linear Regression

For the baseline results, we run the following regression:

$$c_{i,t} = \alpha + \beta' \mathbf{X_{i,t}} + \gamma' \mathbf{M_{i,t}} + \varepsilon_{i,t} \tag{1}$$

where $c_{i,t}$ is the expected change (in percent) in household spending in the next 12 months for the individual i at time t. $\mathbf{X_{i,t}}$ is the vector of explanatory variables that we have described above and $\mathbf{M_{i,t}}$ is a vector of controls. Our coefficients of interest is β which measures the percentage change in expected household spending growth per one percentage point increase in $x_{i,t}$. For the regression, we control for demographic characteristics as they affect both economic perceptions and consumption behavior using age, sex (female/male), education level (high school/some college/college), marital status (single/married), employment status (unemployed/laid off or on leave/full-time working/part-time working/not part of the labor force/retired) and include the survey-date as year-month fixed effects using OLS. Complementary we also estimate the following fixed effects regression:

$$c_{i,t} = \alpha_i + \beta' \mathbf{X_{i,t}} + \gamma' \mathbf{M_{i,t}} + \varepsilon_{i,t} \tag{2}$$

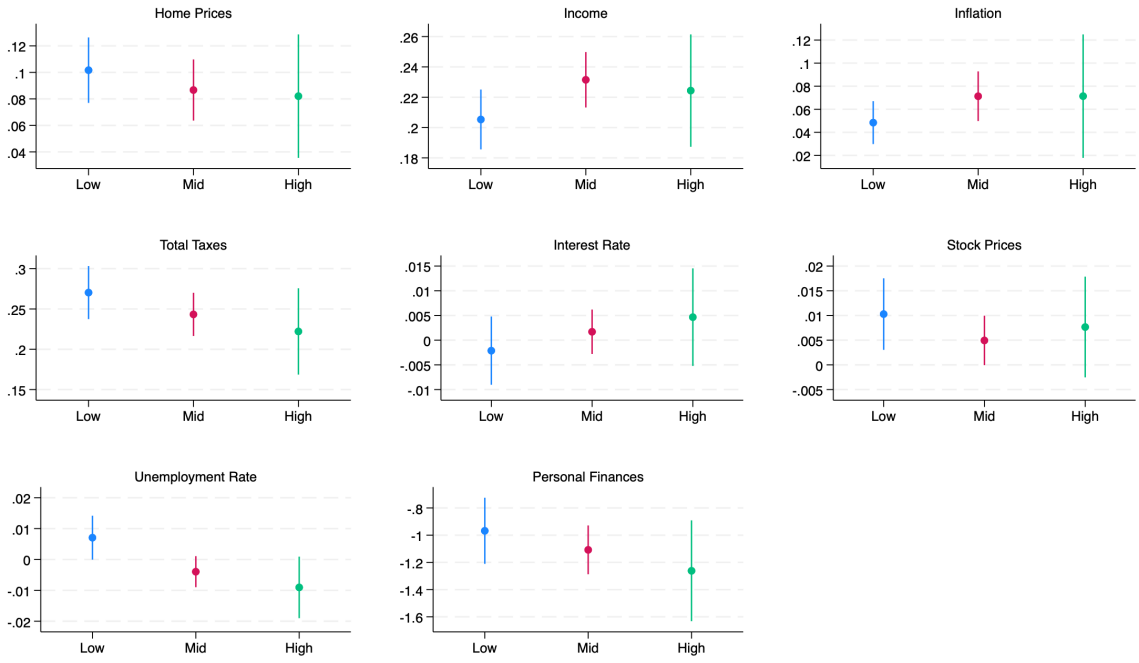
where α_i are individual fixed effects. When estimating fixed effects regression we drop the demographic controls and only control for employment while still keeping year-month fixed effects. To ease interpretation, the models are estimated for each income level separately[2]. Errors are clustered on an individual level. The estimated marginal effects of the explanatory variables from the OLS results are presented in Figure 2. Each panel corresponds to one expectation variable, and shows how the estimated effect of a one-unit increase in expectations on expected spending varies across income groups, with 95% confidence intervals. Table 3 complements the results with the OLS regression in Columns 1, 3 and 5 and fixed effect regression output in Columns 2, 4 and 6 by income group.

Figure 2 shows that across all variables, except unemployment rate changes, we observe a positive association of economic expectations and changes in spending. However the marginal effects differ by income groups, although they seem to be mostly linear. Higher expected home price growth is positively associated with expected spending, especially among lower-income households. This suggests that low-income households perceive rising home prices as a sign of economic strength or future wealth, boosting consumption plans.

Higher expected income is strongly associated with higher spending expectations across all groups. These effects are slightly higher for mid- and high-income individuals, however once we take into account individual fixed fixed effects, the increase in consumption after an expected increase in income is relatively stable across groups, with mid-income being affected the most. If we allow for non-linear effects of income expectations, we find that for low-income households, spending expectations rise consistently with income expectations, with the estimated peak beyond the sample range at 100%. In contrast, for middle- and high-income households, expected spending increases begin to decline at income expectations of approximately 89% and 70%, respectively. This suggests that beyond a certain point, optimism about income gains is no longer associated

2 Alternatively, one can introduce income levels as interaction terms. Results remain the same

Figure 2: Marginal Effects and 95% Confidence Bands by Income Group, OLS



Notes: The figure shows the estimated marginal effects and 95% confidence intervals for the baseline OLS regression $c_{i,t} = \alpha + \beta' \mathbf{X_{i,t}} + \gamma' \mathbf{M_{i,t}} + \varepsilon_{i,t}$ for each income group.

with proportional increases in spending expectations, potentially due to budgeting constraints, saturation of planned expenditures, or precautionary savings behavior among higher-income.

Another factor driving these results is the expected change in total tax payments, who have the highest positive impact on consumption change across mid- and low-income groups while high-income households' spending is mostly predicted by income changes according to Table 3, especially once we take individual fixed effects into account. The increase in expected tax payments reflects expected tightening of disposable income. This is particularly important for liquidity-constrained households as these have no or limited buffers to smooth consumption and thus may cut back in response to high tax payments. In contrast, high-income households may have financial buffers, which allow them to maintain current spending even if they expect tax payments to rise.

Higher inflation expectations are associated with increased expected spending, especially for mid- and high-income households. This reflects households' forward-looking behavior shifting consumption in anticipation of price increases. Surprisingly, this effect is stronger for mid- and high-income households, although low-income households are hurt the most by price changes. However, this is in line with the literature on attention (Shabalina and Tzaawa-Krenzler, 2025; Maćkowiak and Wiederholt, 2015). Although low-income households would benefit from shifting consumption more in response to changes in inflation, they lack liquidity and therefore pay less attention to inflation resulting in a lower marginal effect on expected spending. The higher marginal effects of high-income households may reflect that they recognize the importance of closely tracking inflation dynamics for informed economic decision-making.

Table 3: Main Predictors of Expected Spending by Income Group

	Low-Income		Mid-Income		High-Income	
	OLS	FE	OLS	FE	OLS	FE
Home Prices	0.102***	0.094***	0.086***	0.065***	0.083***	0.054***
	(0.012)	(0.010)	(0.011)	(0.009)	(0.023)	(0.0174)
Income	0.205***	0.199***	0.232***	0.221***	0.225***	0.199***
	(0.010)	(0.008)	(0.009)	(0.008)	(0.018)	(0.0151)
Inflation	0.049***	0.051***	0.071***	0.056***	0.070***	0.045**
	(0.009)	(0.007)	(0.011)	(0.008)	(0.027)	(0.020)
Total Taxes	0.268***	0.208***	0.243***	0.181***	0.222***	0.142***
	(0.016)	(0.014)	(0.013)	(0.011)	(0.027)	(0.020)
Interest Rate	-0.001	0.001	0.001	-0.001	0.004	-0.001
	(0.003)	(0.003)	(0.002)	(0.001)	(0.005)	(0.003)
Stock Prices	0.009***	0.009***	0.004*	0.004**	0.008	0.006
	(0.003)	(0.003)	(0.002)	(0.002)	(0.005)	(0.003)
Unemployment Rate	0.006*	0.006**	-0.003	0.001	-0.008*	0.001
	(0.003)	(0.003)	(0.002)	(0.001)	(0.005)	(0.003)
Personal Finances	-0.958***	-0.577***	-1.106***	-0.497***	-1.265***	-0.563***
	(0.124)	(0.099)	(0.091)	(0.068)	(0.189)	(0.129)
Individual Fixed Effects	No	Yes	No	Yes	No	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,903	47,107	73,246	73,360	19,147	19,158
R-squared	0.143	0.138	0.149	0.144	0.150	0.141

Standard errors in parentheses

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

Higher expected interest rates are weakly negatively associated with spending, but are small and statistically insignificant across income groups. This may reflect limited awareness of or sensitivity to monetary policy among households or that households monitor monetary decisions not through interest rates but rather inflation or stock market movements, where latter's increases are positively associated with spending, particularly for low- and high-income households, likely reflecting wealth effects or broader economic optimism. Although low-income households have limited liquidity to participate in investing in the financial markets, they associate increasing stock prices with positive economic dynamics.

Increasing expected unemployment probability is associated with higher expected spending for low-income households, but it is negatively associated with expected spending for mid- and high-income households. This directly reflects the variation in how different income groups perceive and are affected by macroeconomic risks or labor market changes. Low-income households are greatly concerned with labor market instability and transitory income changes. They may perceive higher unemployment probability with receiving more government support, such as unemployment stimulus measures, which could cushion their own financial situation and even surpass their labor income leading to positive spending expectations. In contrast, mid- and high-income households are more likely to view rising unemployment as a sign of economic downturn, reducing spending.

From Table 3 we see that once we take into account individual fixed effects these effects remain only significant for low-income households and turn slightly positive for higher income groups. This suggests that unobserved time-invariant characteristics, as general economic pessimism for higher income groups, were biasing the baseline estimates downward. By controlling for such heterogeneity, the fixed effects model reveals that within-individual increases in probabilities of unemployment rate increases are actually associated with higher expected spending, potentially reflecting expectations of adaptive consumption smoothing even for high-income households.

Further, consumption is strongly responsive to subjective personal financial confidence which turns out to be the strongest consumption change predictor, however in a negative direction. Thus, an improvement in the household's personal financial situation is associated with a decrease in expected spending. Individuals who anticipate an improvement in their financial situation may plan to wait before spending, after increasing their financial buffers or repay debt. This goes in the opposite direction of the effect of income. This different directions may reflect that households view their income to be more transitory or disposable while their personal financial situation may be a long-term view of their financial situation. Most variables are significant at the 1% level, while interest rate changes are insignificant for all income groups, unemployment rate changes are significant only for low- and high-income households, however with opposite magnitudes and stock price increases are insignificant only for high-income households. Taken together this complements the previous analysis of the economic challenges faced by low-income households but also the fact that high-income households have enough buffers to be relatively indifferent to changes in financial markets.

As a robustness check we estimated the models excluding some of the controls and we observe that the findings remain robust across multiple specifications of controls. The coefficient and significance level of the explanatory variables remain stable as we add or omit controls like education, employment, or age, suggesting that the relationship between the macro-financial expectations and expected spending is not driven by omitted demographic variables.

3.2. Potentially Distorting Factors

Our hypothesis is that low-income households are less attentive to the macroeconomic and financial environment when forming spending expectations. However, the correlation between income-specific spending decisions and economic expectations could potentially be driven by common unobserved factors like financial literacy, credit accessibility, or spurious correlation between key regressors and independent variable. To address these endogeneity issues, we now re-estimate the models for different sub-samples and additionally use IV regression to account for the existence of spurious correlation.

3.2.1. Financial Literacy

Limited financial literacy may lead low-income households to form more pessimistic and potentially misinformed assessments of macroeconomic conditions. Following Das et al. (2020) we re-estimate our regression models (1) and (1) only for the subsample of college-educated households. The results are presented in Table 4. We find the same patterns as in Table 3. The effects of economic expectations remain significant and with similar magnitude compared to those estimated in Table

Table 4: Main Predictor Expected Spending, College-Educated

	Low-Income		Mid-Income		High-Income	
	OLS	FE	OLS	FE	OLS	FE
Home Prices	0.104***	0.083***	0.083***	0.067***	0.076***	0.055***
	(0.022)	(0.019)	(0.016)	(0.012)	(0.026)	(0.019)
Income	0.201***	0.188***	0.228***	0.211***	0.216***	0.195***
	(0.013)	(0.012)	(0.011)	(0.010)	(0.021)	(0.016)
Inflation	0.077***	0.066***	0.075***	0.051***	0.092***	0.050*
	(0.021)	(0.017)	(0.016)	(0.011)	(0.035)	(0.026)
Total Taxes	0.251***	0.178***	0.229***	0.173***	0.238***	0.145***
	(0.026)	(0.024)	(0.017)	(0.013)	(0.030)	(0.021)
Interest Rate	-0.000	0.003	0.003	-0.001	0.007	-0.000
	(0.005)	(0.004)	(0.003)	(0.002)	(0.005)	(0.004)
Stock Prices	0.005	0.007	0.008***	0.009***	0.009	0.005
	(0.006)	(0.005)	(0.003)	(0.003)	(0.006)	(0.004)
Unemployment Rate	0.007	0.004	-0.005	0.000	-0.011**	-0.002
	(0.006)	(0.005)	(0.003)	(0.002)	(0.006)	(0.004)
Personal Finances	-0.868***	-0.253	-1.021***	-0.410***	-1.105***	-0.479***
	(0.202)	(0.163)	(0.106)	(0.084)	(0.210)	(0.141)
Control Variables	Yes	No	Yes	No	Yes	No
Individual Fixed Effects	No	Yes	No	Yes	No	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	16,997	16,997	46,081	46,081	16,050	16,050

Standard errors in parentheses

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

3. However, the magnitude of inflation now increases from low- to high-income households from 0.04 to 0.07 percentage points for low-income households under the basic OLS regression, while high-income households now expect a 0.09 percentage point increase in expected spending for a one percentage point increase in inflation. This effect indicates to the fact that higher educated households, independent of their income level, assign higher importance to understanding inflation for the consumption plans. Hence, even among households with high education, we find that high-income households are more attentive about the implications of future macroeconomic developments for their consumption spending than the low-income households. As robustness check we also estimate the OLS and FE models based on the households' numeracy score. The results in Appendix 15 show the same pattern as for the entire sample and the subsample of highly educated households. Households with high numeracy don't show as much heterogeneity across inflation, however inflation remains to be the most valued by high-income individuals. However, overall we find the same pattern as in the basic model specifications.

3.2.2. Credit Market Accessibility

Another factor potentially driving differences in macroeconomic expectations is the households' access to financial markets as it is directly linked to household's financial situation. To analyze

these effects we again estimate the regression models (1) and (2) for low-, mid- and high-income households groups however grouping households based on how easy/hard they perceive it is to obtain a credit. In particular they answer the question: "Compared to 12 months ago, do you think it is generally harder or easier these days for people to obtain credit or loans?" Households are then grouped based on if they perceive it is much harder/somewhat harder, equally easy/hard or easier/somewhat easier to obtain a credit nowadays compared to one year ago. The Table 5 presents the estimates of OLS regression (1) by income -group and perceived credit accessibility.

Table 5: Main Predictors of Expected Spending by Income Group and Credit Conditions

	Low-Income			Mid-Income			High-Income		
	Hard	Equal	Easy	Hard	Equal	Easy	Hard	Equal	Easy
Home Prices	0.104***	0.091***	0.132***	0.065***	0.115***	0.082***	0.098***	0.074**	0.062
	(0.017)	(0.019)	(0.027)	(0.018)	(0.017)	(0.022)	(0.034)	(0.034)	(0.050)
Income	0.204***	0.207***	0.207***	0.231***	0.230***	0.236***	0.257***	0.190***	0.241***
	(0.015)	(0.015)	(0.020)	(0.015)	(0.014)	(0.017)	(0.028)	(0.023)	(0.044)
Inflation	0.043***	0.057***	0.050**	0.087***	0.074***	0.030	0.113***	0.063	-0.012
	(0.013)	(0.015)	(0.021)	(0.015)	(0.016)	(0.022)	(0.038)	(0.039)	(0.055)
Total Taxes	0.273***	0.273***	0.235***	0.240***	0.235***	0.262***	0.221***	0.271***	0.142***
	(0.024)	(0.025)	(0.037)	(0.024)	(0.019)	(0.023)	(0.040)	(0.039)	(0.047)
Interest Rate	-0.004	0.000	-0.004	-0.000	0.001	0.005	0.015**	-0.001	-0.001
	(0.006)	(0.005)	(0.006)	(0.004)	(0.003)	(0.004)	(0.007)	(0.007)	(0.010)
Stock Prices	0.015**	0.004	0.009	0.004	0.002	0.011**	0.007	0.005	0.016
	(0.006)	(0.005)	(0.007)	(0.005)	(0.003)	(0.004)	(0.008)	(0.007)	(0.010)
Unemployment Rate	0.009	0.005	0.009	-0.007	0.001	-0.010**	-0.008	-0.007	-0.008
	(0.006)	(0.005)	(0.007)	(0.005)	(0.003)	(0.005)	(0.008)	(0.006)	(0.011)
Personal Finances	-0.936***	-1.195***	-0.499**	-1.058***	-1.142***	-1.063***	-1.383***	-1.277***	-1.026***
	(0.194)	(0.174)	(0.235)	(0.152)	(0.120)	(0.158)	(0.288)	(0.244)	(0.385)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	18,046	20,306	8,538	23,234	33,263	16,739	5,676	8,766	4,702

Standard errors in parentheses

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

The results suggest that credit access has a large effect on household's perception about macroeconomic dynamics and strongly affects their consumption patterns. When credit access is perceived to by easy, low-income households respond more strongly to housing and income expectations. Consistent with the findings in Table 3 and Table 4 the household's personal financial outlook is the strongest predictor of expected spending across all income distribution. However the magnitude changes depending on if households perceive the accessibility to the credit market is hard or easy. When credit access is not tight, personal finances has a more positive effect on consumption. Households who have easy access to credit are less likely to increase their buffers but rather use it to spend additional credit for consumption. Expected changes in tax payments remain to be the highest positive indicator of expected spending for all income and credit accessibility groups except for high-income households who assume it is either easy or hard to get access to credit. Those groups' consumption depends largely on their expected change in

income. This is consistent with the baseline results in which higher income households' are not as much concerned with taxes as with their income flows. Latter is also a significant spending predictor for all income groups. The easier households perceive to get access to the credit market, the higher the impact of their expected income on consumption. However, high-income households may react more to income changes under tighter or looser credit access, potentially reflecting investment-driven consumption. Home price expectations remain to be a significant driver of household consumption, except for the high-income households with perceived easy credit accessibility. This complements our hypothesis above that high-income households have additional possibilities to accumulate wealth other than housing assets. Homeownership is an important wealth accumulation strategy for low-income households which is strongly correlated with the access to credit. The easier it is to acquire credit, the higher the significance of the expected changes in home prices for household consumption. This speaks directly to a wealth effect: when credit is more accessible, households react more to expected house price increases with higher spending. Aggregate inflation has slightly different effects on households across income groups, depending on their perception of credit market conditions. Low-income households who expect to access credits easily, increase their consumption by more than those who perceive credit to be difficult to obtain, speaking directly to the effects of being liquidity-constrained and the immediate impact of inflation and credit accessibility on real budgets. High-income households remain indifferent to changes in inflation or even drop consumption slightly in anticipation of increased inflation. However, across all the income groups the effects of financial-market indicators are generally negligible. The effects of unemployment rates are in line with the results in Table 3 but become negligible once credit conditions are taken into account. Low-income households reduce expected spending when they expect unemployment to rise, while high-income decrease their consumption.

3.2.3. Spurious Correlation of Endogenous Expectations

To address the possible endogeneity issue and spurious correlation between the variables, we follow the literature (Das et al., 2020; Ebbes et al., 2016; Arellano and Bond, 1991) and use an Instrumental Variable (IV) approach. The lagged explanatory variables are used as the instrumental variables for the actual variables. This allows us to rule out contemporaneous feedback of the expectational variables, for example inflation and spending expectations might be reacting simultaneously to unobserved macro shocks in the same month. Using lagged variables allows us to infer that household adjustments occur with a temporal lag.

Using 2SLS (Two-Stage Least Square), we estimate the following model:

$$\textit{First Stage}: \qquad x_{i,j,t} = \beta_0 + \delta' \mathbf{Z_{i,t}} + \xi' \mathbf{M_{i,t}} + v_{i,t} \tag{3}$$

$$\textit{Second Stage}: \qquad c_{i,t} = \alpha + \beta' \hat{\mathbf{X}}_{\mathbf{i,t}} + \gamma' \mathbf{M_{i,t}} + u_{i,t} \tag{4}$$

where $x_{i,j,t}$ is the endogenous regressor which can be collected together with the other regressors in the vector of endogenous variables $\mathbf{X_{i,t}}$, $\mathbf{Z_{i,t}}$ is the vector of instruments (here the lagged value of each endogenous regressor $x_{i,t}$), $\mathbf{M_{i,t}}$ is the vector of controls, $u_{i,t}$ is the first-stage error term for regressor j and $u_{i,t}$ is the structural error term. The first-stage results from our IV estimation

Table 6: IV Regression: Main Predictors of Expected Spending by Income Group

	(1) Low-Income	(2) Mid-Income	(3) High-Income
Home Prices	0.087***	0.113***	0.049
	(0.032)	(0.028)	(0.049)
Income	0.235***	0.257***	0.289***
	(0.022)	(0.018)	(0.039)
Inflation	0.042	0.083**	0.199**
	(0.028)	(0.033)	(0.078)
Total Taxes	0.445***	0.362***	0.372***
	(0.048)	(0.034)	(0.068)
Interest Rate	-0.001	0.009*	0.013
	(0.008)	(0.005)	(0.009)
Stock Prices	0.018**	0.013**	0.030***
	(0.008)	(0.005)	(0.011)
Unemployment Rate	-0.007	-0.020***	-0.038***
	(0.008)	(0.005)	(0.011)
Personal Finances	-1.586***	-1.716***	-2.567***
	(0.274)	(0.201)	(0.437)
Control Variables	Yes	Yes	Yes
Individual Fixed Effects	No	No	No
Time Fixed Effects	Yes	Yes	Yes
Observations	34,112	54,114	14,025
R-squared	0.139	0.141	0.131

Standard errors in parentheses

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

are reported in Appendix B.3. The results from the second stage estimation are shown in Table 6. According to the calculated F-statistics and p-values from the First stage all instruments are significant and valid instruments. The results are robust to including additional, more distant lags into the regression.

Compared to the results in Table 3 we find the following patterns in Table 6. The marginal effects of home price expectations now become smaller in magnitude and insignificant for the spending of high-income households, expected changes in income increase with the income level, while it was the biggest predictor for mid-income households in the basic model specification of model (1) and (2). This suggests home price expectations may be endogenous primarily for higher-income individuals, possibly due to larger housing market participation. Income expectations appear to be less affected by endogeneity as they remain strong predictors of households' expected spending and increase across income groups. The IV results reinforce the idea that expected income is a strong and relatively exogenous driver of spending plans. The marginal effect of inflation expectations increases from low- to high-income (and becomes highly

significant for high-income households) in IV regression Table 6. For low-income households, the effect now becomes statistically insignificant. However, the increasing magnitude in the IV model for households at the middle- upper part of the income distribution also reflects that they are better-informed or more attentive individuals forming expectations that are more predictive of their actual spending. Considering that these households are financially more secure, they can react to new information more quickly and adjust consumption accordingly. Expected tax payment changes remain significant indicators across all income groups however coefficients increase largely, especially for low-income households. The result may reflect the intertemporal consumption smoothing behavior of individuals who anticipate higher tax payments. Compared to the effect of inflation, tax payments are highly significant spending predictors for low-income households since taxes are more salient than aggregate inflation, making tax expectations a more concrete, credible signal of future financial burden or relief. Further, low-income households are often more liquidity-constrained, so expected tax hikes, associated with reduced disposable income, might directly affect their ability to maintain current spending while aggregate inflation has delayed effect (e.g. is often experienced only when doing grocery-shopping). The marginal effects of stock prices now increase across all income groups and are significant at the 1% resp. 5% level with high-income households responding the strongest. This directly reflects stronger wealth effects and clearer exogenous forecasting signals due to higher financial market participation and exposure to financial news. The effect for low-income groups may remain muted, as their exposure and forecast quality are lower. The expected increase in the unemployment rate is negatively associated with spending plans across all income groups, however, it becomes insignificant for low-income households. The marginal effect turns more negative and significant for high-income individuals, as lagged expectations better capture anticipatory behavior. Higher-income individuals usually interpret an increase in unemployment rate as a sign of economic downturn and therefore cut consumption in response. The IV regression strengthens the conclusion that personal financial expectations are a strong driver of expected consumption.

Overall, the results from the IV estimation strengthen the hypothesis that expected household spending depends on other macroeconomic expectations than inflation where latter is even insignificant or of reduced importance for households at the lower-mid income distribution. When controlling for exogenous noise in the analysis, the variation in the results can be primarily attributed to differences in how closely households follow macro-financial news and the degree to which households respond to macroeconomic and financial market information.

4. The Role of News in Macro-Financial Expectations

In the previous sections we have established that first, households' consumption plans depend not only on inflation expectations, but also other macro-financial expectations - in particular expected tax payments and the personal financial situation, second, these predictors vary across income levels by magnitude and sign and third, low-income households are less responsive to macro-financial information. Now, we want to understand *how surprises in expectations affect household behavior, if households adjust behavior when they are proven wrong* and *if monetary policy changes how people response to the economy.* Thus, we now evaluate the role of news to explain heterogeneity across consumers within the indicators of spending plans. Mainly, we

are interested in the forecast errors of the regressors. Following the literature, we define the forecast errors for 12 month ahead, made in period t forecasts about inflation, home prices and tax payments as

$$FE_{i,t,t+12} \equiv x_{t+12} - E_{i,t}x_{t+12} \tag{5}$$

where x_{t+12} is the realized value of x in month 12, and $E_{i,t}x_{t+12}$ is the 12 month ahead forecast the household i has about it, formed in period t. For the variables which indicate increases over time, i.e. interest rate, stock prices and unemployment rate, we define the "probability error" made in t as

$$PE_{i,t,t+12} \equiv o_{x_{t+12}} - E_{i,t}P(x_{t+12}) \tag{6}$$

where $E_{i,t}P(x_{t+12})$ is the expected probability P of household i that x increases in 12 months from t and $o_{x_{t+12}}$ defined as $o_{x_{t+12}} = 1\{x_{t+12} > x_t\}$ is an indicator for whether x increased over the next year, matching the question the household predicted a probability about in the survey. These measures allow us to assess whether households display over- and under-reaction. Collected from the St. Louis Fed FRED we use the following realized values, more precisely their percent change from a year ago if needed:

Table 7: Additional Data

Variable	Description	Name
Inflation	Monthly Consumer Price Index	CPIAUCSL
Home Prices	Average Sales Price for New Houses Sold in the United States	ASPNHSUS
Total Taxes	State Tax Collections: Total Taxes for the United States	QTAXTOTALQTAXCAT3USNO
Interest Rate	Federal Funds Effective Rate	DFF
Stock Prices	S&P 500 (percent change from a year ago)	SP500
Unemployment Rate	Unemployment Rate	UNRATE

Table 8 shows the mean forecast errors of inflation, home prices and total tax payments in the first three rows and the mean probability errors for the interest rate, stock prices and unemployment rates in rows 4, 5 and 6 by income group. Due to data limitation, we focus on the effects of forecast errors in inflation, home prices, total tax payments and the errors in likelihood prediction about increases in the interest rate, stock prices and unemployment rate for the years between June 2013 and January 2020. Column 4 shows the pairwise difference between forecast respectively probability errors between mid- and low-income households, column 5 shows the pairwise difference for high- and low-income households and column 6 shows the forecast- and probability error differences between high- and mid-income households. Stars indicate significant differences between the groups shown in the according columns, determined using Bonferroni-corrected test-statistics. Positive estimates of forecast errors are interpreted as underreaction, while negative estimates indicate overreaction of households.

Across all variables we observe that low-income households overreact approximately twice as much as high-income households. The forecast errors are significantly different between groups on a 1% level, except for unemployment rate. The biggest difference between high- and low-income households arises from inflation expectations. Although both groups overreact to inflation, high-income households are relatively close to the actual inflation levels, while

Table 8: Mean Forecast Error, Probability Error and Pairwise Differences by Income Group

	Forecast Error			Pairwise Difference		
	Low-Income	Mid-Income	High-Income	Mid-Low	High-Low	High-Mid
Panel A: Forecast Error						
Inflation	-4.983	-2.814	-1.688	2.169***	3.294***	1.125 ***
	(11.509)	(7.905)	(5.740)			
Observations	34,431	50,253	12,268			
Home Prices	-3.828	-2.260	-1.254	1.568***	2.574***	1.006***
	(10.393)	(8.023)	(6.932)			
Observations	35,385	51,430	12,588			
Total Taxes	-1.331	-0.132	0.617	1.199***	1.949***	0.749***
	(17.742)	(14.538)	(14.749)			
Observations	35,385	51,430	12,588			
Panel B: Probability Error						
Interest Rate	0.507	0.455	0.338	-0.051***	-0.168***	-0.117***
	(0.469)	(0.473)	(0.483)			
Observations	35,355	51,355	12,581			
Stock Prices	0.534	0.492	0.447	-0.042***	-0.087***	-0.045***
	(0.354)	(0.354)	(0.353)			
Observations	23,621	34,164	8,767			
Unemployment Rate	-0.240	-0.231	-0.222	0.009**	0.017***	0.008
	(0.415)	(0.413)	(0.411)			
Observations	35,345	51,354	12,584			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Standard errors in parentheses

Notes: Significance is determined using the Bonferroni-corrected p-value and evaluates the pairwise differences between variables and income groups.

low-income individuals expect them to be higher. However, from Tables 3 and 6 we also observe that high-income households assign a higher significance to inflation for their consumption plan than low-income households. We have also observed from our regression on college-educated households in Table 4 that differences minimize once we consider education, although high-income households still remain highly interested in inflation. Hence, these results show direct evidence for our hypothesis that low-income households don't track inflation as much and therefore have large biases, since controlling for education didn't change the effect, minimizing the likelihood of larger educational or wealth-effects. From Table 3 and Table 6 we observed that home prices are highly predictive for low-income households' consumption planning. However, they seem to overreact strongly to home prices as their forecast error is at least twice as high as that of the high-income individuals, compared to the realized values of newly sold houses in the US. Tax payments were a very significant indicator among all income groups, however from 8 we find that while households at the low-mid income distribution over-react to taxes, high-income household underreact to them. Again, when controling for individual fixed effects in Table

3 we have found that low-income households expect spending to increase by 0.20 percentage points for an additional increase in taxes while high-income expect spendings to increase by 0.14 percentage points. This effect is independent of educational status or credit access. For low-income households, due to income-constraints, even small changes in expected taxes can deduct a significant share of disposable income, making them overreact to it. High-income households' financial decisions are often made in longer time horizons, which mitigates short-term reactions to economic expectations and may result in under-reaction.

On average, low-income households' expectations regarding increases in the interest rate, stock prices, and the unemployment rate deviate more from actual realized increases than those of middle- or high-income households. Compared to high-income households, low-income individuals expect increases in the interest rate 50% and in stock prices 20% more frequently. Again high-income households are making smaller expectational errors. From Figure 1 and Figure 7 in the Appendix we know that high-income households expect these variables to increase systematically which at first could point into the direction of optimism. However together with the results in 8 this becomes unlikely, since these households also made better predictions aligning with actual outcomes on financial markets, which strengthens our hypothesis of highly information high-income households.

4.1. Central Bank Announcements and Economic Beliefs

To analyze how group-specific sensitivity to macroeconomic forecast errors varies around external changes and how households adjust their consumption plans to new information, we now run an event study. The study is similar to Lamla and Vinogradov (2019) and De Fiore et al. (2022) who study the causal effects of central bank announcements on consumers' economic beliefs. Different to De Fiore et al. (2022) we don't analyze the levels of expectations but their forecasting errors and instead of looking at the expectations separately, we look at their effects on the spending behavior of households, after being treated. The identification strategy is as follows. To identify the treatment effect of FOMC announcements on households' expectations and their forecasting errors, we analyze the households' forecasting errors in the window 21 days before the FOMC statement was released and 21 days after. Formally, we estimate the following regression for each income group:

$$c_{i,t} = \delta_0 + \beta \times \mathbf{FE_{i,t,j}} \times \mathbf{D_{i,j}} + \epsilon_{i,j,t} \tag{7}$$

where $\mathbf{FE_{i,t,j}}$ is a vector collecting the households' survey forecasting errors before or after FOMC meeting j made in period t, $D_{i,j}$ is a dummy taking value 1 if the household responded after any FOMC meeting and 0 if the survey was done outside the 21 day window. $\epsilon_{i,j,t}$ is an idiosyncratic error term. We exclude any responses that have been filed on the days of a meeting. The regression outputs as marginal effects are shown in Figure 3 for the forecast errors of tax payments, home prices and inflation and Figure 4 for the marginal effects of the probability errors of interest rate, stock market and unemployment rate increases for expected consumption. Essentially it shows the result to the question *"How does a one-unit increase in forecast error (whether positive or negative) in x affect $c_{i,t}$, before (treatment 0) and after (treatment 1) the FOMC statement?"*. Since we have defined the error to be $FE_{i,t,t+12} \equiv x_{t+12} - E_{i,t}x_{t+12}$ respectively $PE_{i,t,t+12} \equiv o_{x_{t+12}} - E_{i,t}P(x_{t+12})$ an increase in the error can be due to either an unexpected

rise in the actual variable or unexpectedly low expectation, or both. The marginal effect is symmetric since we assume a linear model. An upward slope indicates that the effect of the forecast or probability error in x becomes less negative or more positive after the treatment while a negative slope suggests that the effect of the error becomes more negative or less positive after the treatment.

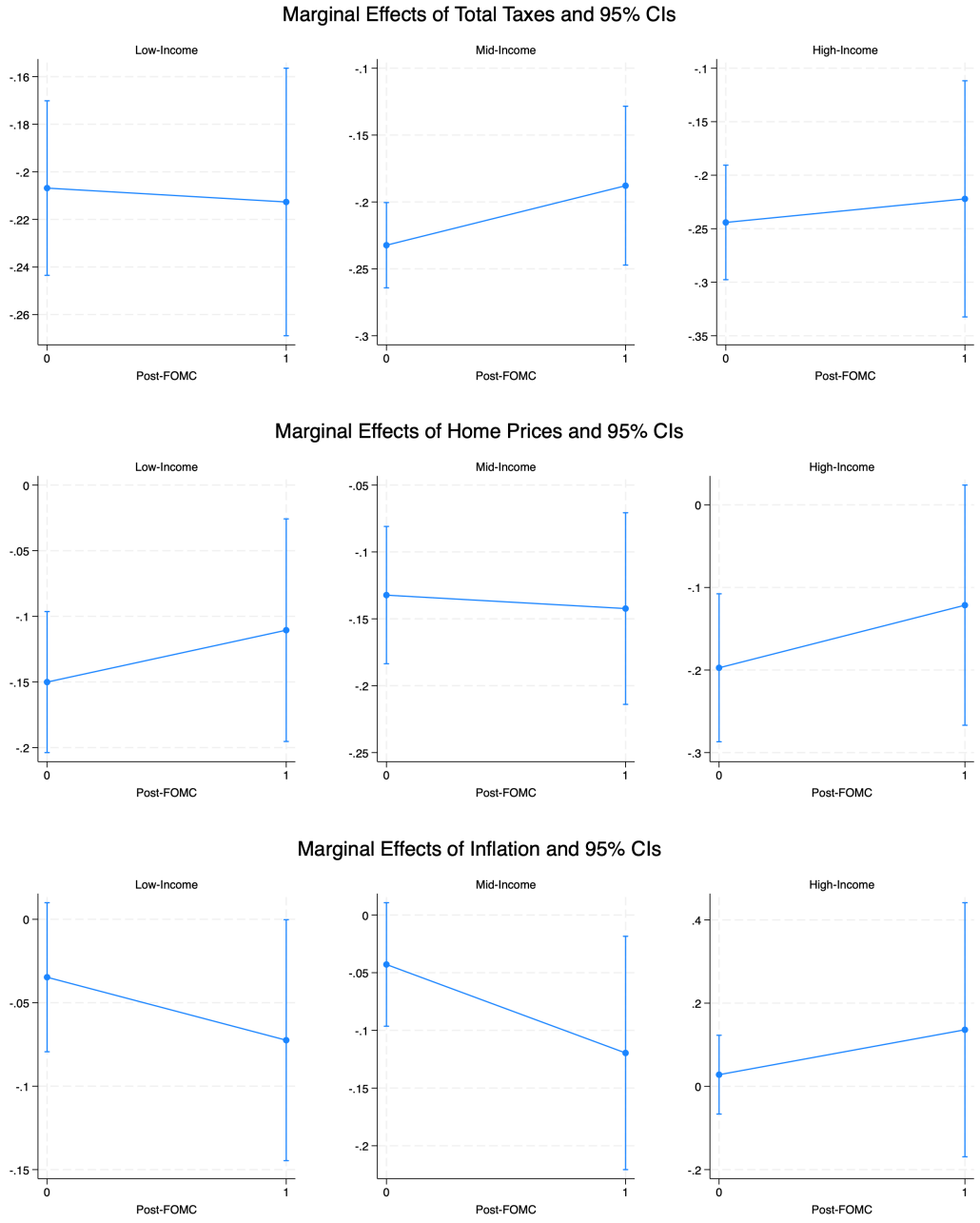
Across most variables and income groups, we find in Figure 3 shifts in the responsiveness of spending to forecast errors following FOMC statements, although partially statistically insignificant. The marginal effects of tax forecast errors are relatively stable for low- and high-income households, while mid-income households react strongly post-FOMC and adjust their spending behavior upwards. The marginal effect of home price errors becomes, except for mid-income households, positive. However, for inflation forecast errors, the marginal effects become more negative for low- and mid-income households post-FOMC, suggesting heightened sensitivity to unexpected inflation after receiving monetary policy communication. In contrast, high-income households show a positive change in responsiveness, which is consistent with being better informed about inflation or being less sensitive to it. Based on Figure 4 stock price probability errors induce a similar sensitivity across households whose consumption planning react less strong to the FOMC statement. Similarly for the interest rate errors, whereby mid-income households's consumption increases after the increase in forecast errors. The sensitivity to unemployment is muted and insignificant across income groups, although high-income households react positively to increases in unemployment error changes.

Figure 8 in the Appendix shows the results for the same regression of 3 while using the actual levels of expectations instead of forecast errors. The results are suggestive evidence for our hypothesis of better informed households and less informed low-income households. We find that high-income households show relatively similar marginal patterns of home prices, inflation and interest rate (although latter is insignificant), as well as tax payments and stock prices in both the forecast error and expectation level regressions. Similar patterns suggest that households' spending responds consistently to their expectations and to surprises relative to those expectations (i.e. forecast errors), which could be consistent with accurate expectations if forecast errors are small. Based on Table 8 we know that the actual forecast accuracy indeed is bigger for high-income households across all the variables. Hence, the pattern observed in Figure 8 and Figure 3 or Figure 4 is consistent with the notion that higher-income households form more accurate macro-financial expectations, experiencing fewer or smaller surprises.

To strengthen our analysis we now analyze if these effects remain stable across FOMC announcement periods. Thus, we extend our previous analysis to a weekly treatment effect by analyzing the dynamics of the forecast errors by weeks after the FOMC statement. In particular, instead of using a post-FOMC dummy like in (7), we evaluate the households' forecast errors relative to the most recent FOMC-meeting before they submitted their survey responses. To make interpretations easier we group answers by weeks, where week 1 collects the responses made 1-7 days after the FOMC meeting, weeks 2 collect the responses from days 8 to 14 until eventually responding 7 weeks after the most recent FOMC-meeting. Formally we estimate

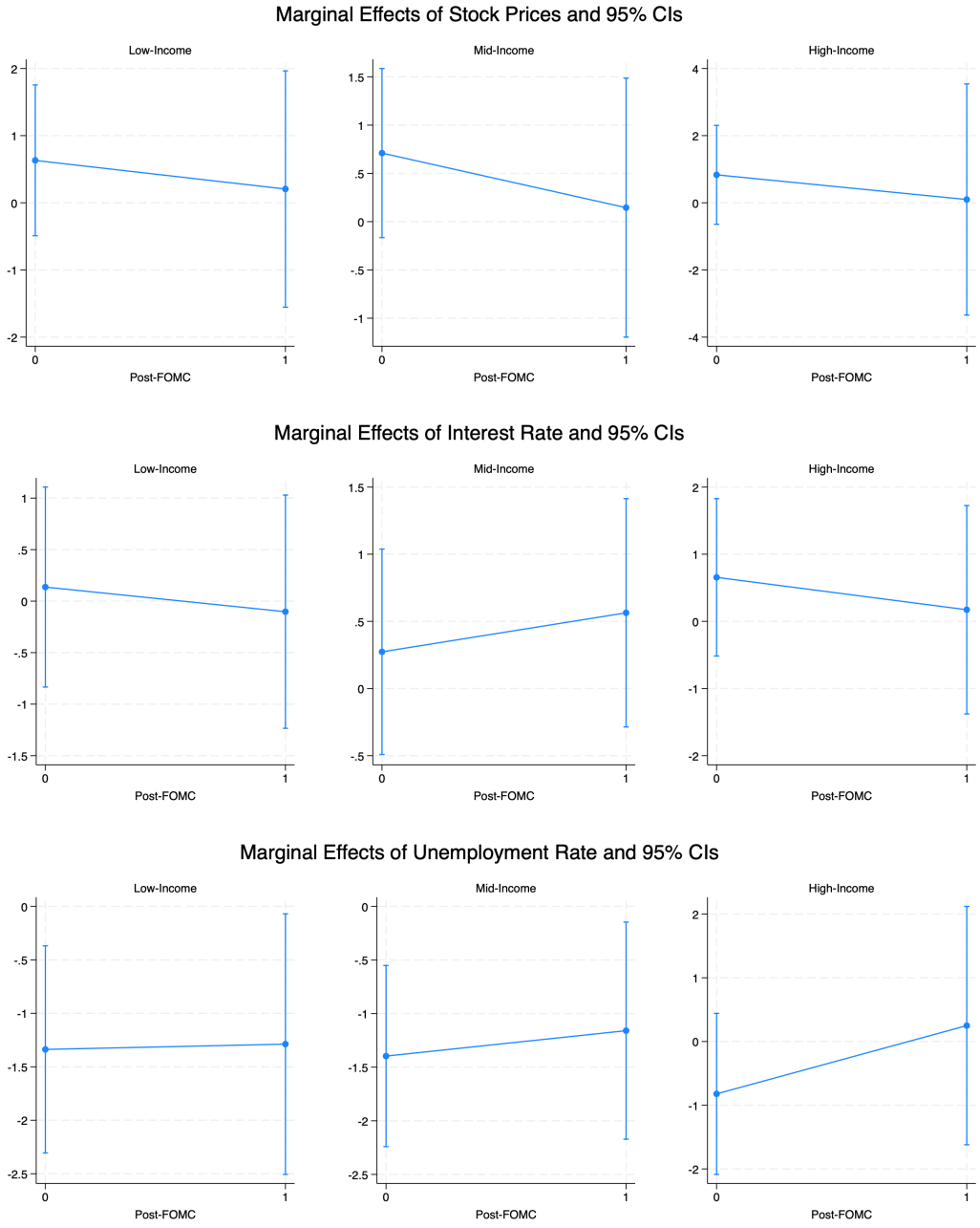
$$c_{i,t} = \delta_0 + \beta \times \mathbf{FE_{i,t,j}} \times \mathbf{W_{i,j}} + \varepsilon_{i,j,t} \tag{8}$$

Figure 3: Post-FOMC Statements and Forecast Errors by Income Group



Note: The figure shows the marginal effects and 95% confidence intervals for forecast errors post-FOMC statement release by income groups and explanatory variables.

Figure 4: ...continued. Post-FOMC Statements and Forecast Errors by Income Group



Note: The figure shows the marginal effects and 95% confidence intervals for forecast errors post-FOMC statement release by income groups and xplanatory variables.

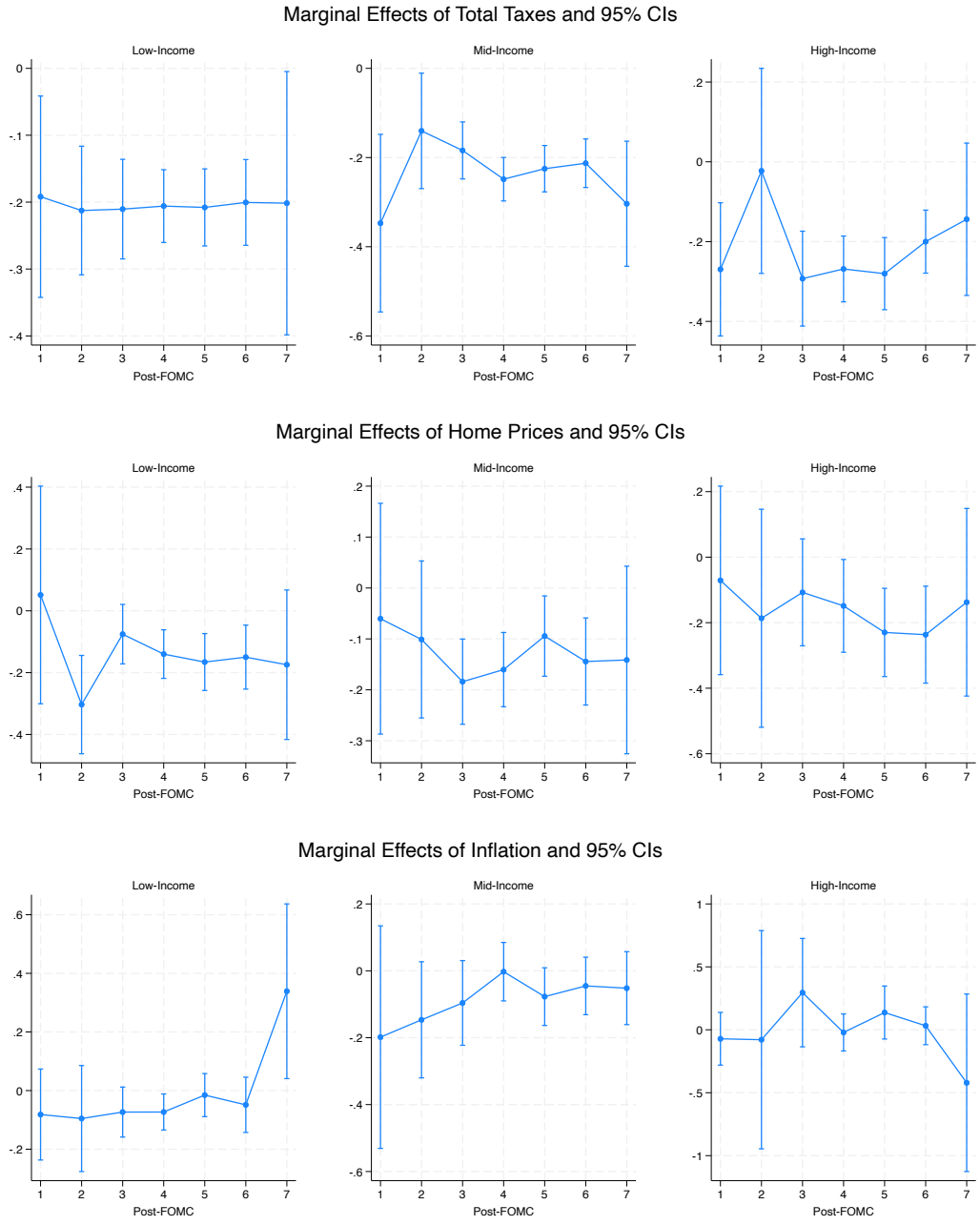
where $\mathbf{W_{i,j}}$ factors responses by weeks into 1-7 week categories. The dynamic marginal effects of forecast errors are shown in Figure 5 for forecast errors of tax payments, home prices and inflation and Figure 6 for probability errors in increases in the interest rate, stock prices and unemployment rate.

Overall we observe some heterogeneity over the weeks after the FOMC statement releases, especially throughout the first three weeks. Across all variables in Figure 5, responses are typically strongest in the first 1 - 3 weeks after the FOMC statements were released and tend to stabilize or fade by week 4. although we also observe some heightened reactions in week 7. Mid-income households show the most pronounced and immediate reactions to surprises, suggesting they may be especially sensitive to macroeconomic uncertainty or adjustments in belief after central bank communication. High-income households respond less consistently - suggesting possibly more accurate expectations or larger financial buffers. Low-income households react more delayed, especially to inflation surprises, perhaps due to slower information updating or delayed behavioral adjustment. Inflation surprises are especially informative in the last 6-7 weeks after the last FOMC meeting, pointing to delayed adjustments of household behavior to changes in expected price levels. While low-income households' consumption plans respond positively at week 7, those of mid- and high-income households respond negatively, indicating forward-looking behavior of the latter income group for future consumption. Taken into account the confidence intervals, the responses of high-income households are overall more stable and less extreme, especially relative to the other income groups.

Across all groups in Figure 6, interest rate forecast errors have immediate positive effects on spending expectations, with the largest impact on high- and low-income households. Although the magnitudes are similar, remember that the probability error between these two groups differs by 0.168 points (see Table 8) the increased reaction to interest rate surprises is likely due to misunderstanding of interest rate signals for low-income households and overreaction to economic conditions, i.e. an indicator of a stable economy, for high-income households. However, the effect diminishes after the second week, suggesting limited persistence. On the other hand stock price forecast errors have an immediate positive effect for high-income households while low- and mid-income households react negatively, pointing out possible wealth effects from financial market participation. After diminishing effects in period 3, the stock price surprises become relevant again at the end of the week 7. Unemployment rate errors have a consistently negative and persistent effects across all income groups with diminishing and insignificant effects on consumption plans. This is in line with the forecast error in Table 8 which is similar and negative across all groups. These patterns suggest heterogeneity in how different income groups incorporate policy-relevant surprises into their spending expectations, with implications for the distributional effects of monetary policy communication. Given the similarity between errors and marginal effects this could reflect general macroeconomic concerns rather than personal job risk alone.

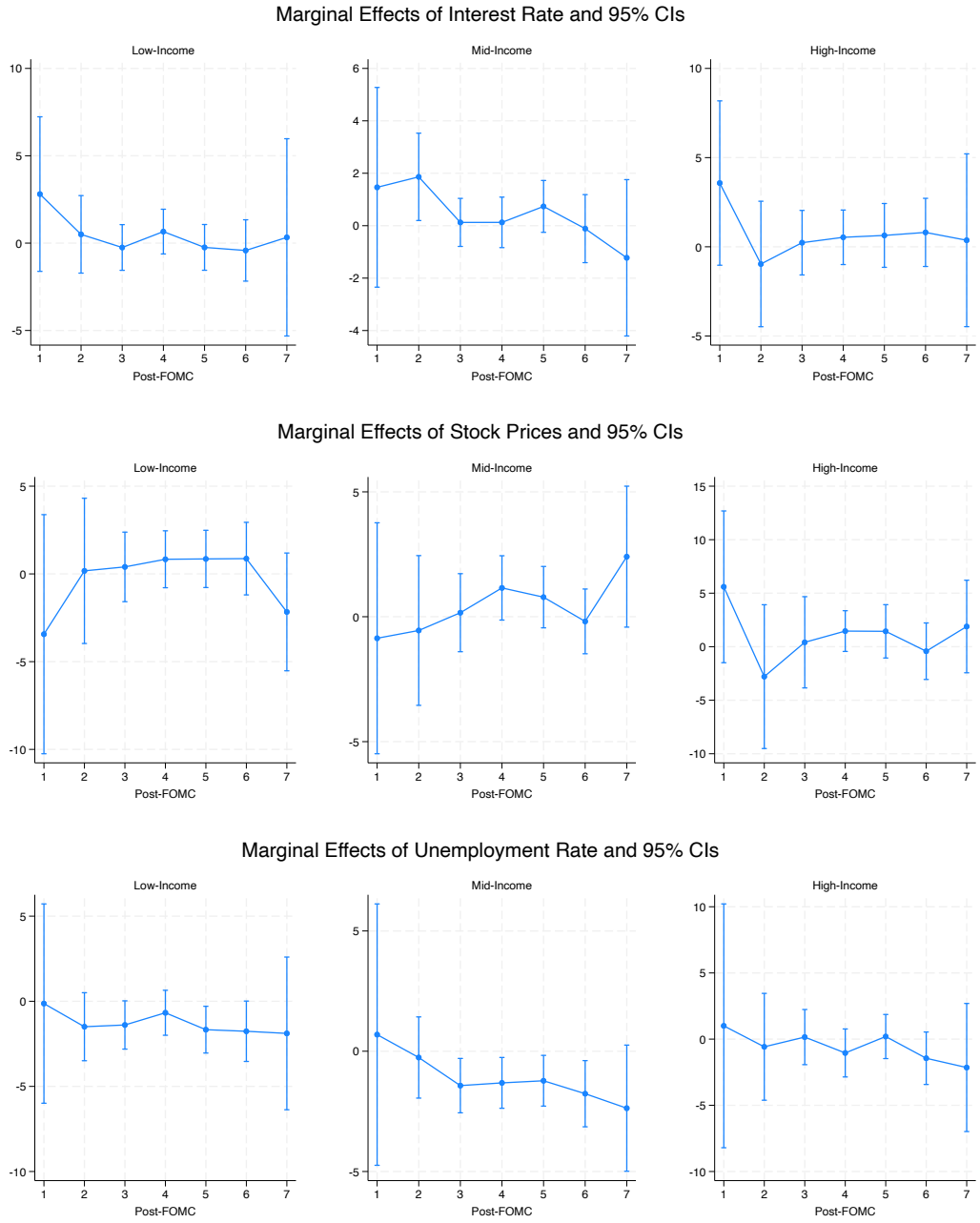
Overall, we find that low-income households tend to exhibit larger forecast errors in explanatory variables relative to high-income households. When combined with the regression evidence in Figure 5 and Figure 6, which shows that low-income households also exhibit larger and more short-lived spending responses to surprises, this points to a pattern of greater forecast error volatility and heightened behavioral reactivity. This may reflect limitations in financial knowledge

Figure 5: Weeks After Closest FOMC Statement and Forecast Errors by Income Group



Note: The figure shows the marginal effects and 95% confidence intervals forecast errors per weeks after the closest FOMC statement release by income groups and explanatory variables.

Figure 6: ...continued. Weeks After Closest FOMC Statement and Forecast Errors by Income Group



Note: The figure shows the marginal effects and 95% confidence intervals forecast errors per weeks after the closest FOMC statement release by income groups and explanatory variables.

or access to macroeconomic information. However, given that we found in Table 4 that patterns differ across households although controlling for education, the results point stronger into the direction of effects from macro information access. High-income households appear to form more accurate expectations and respond more cautiously, consistent with better information processing and more stable income streams. The patterns highlight both temporal dynamics and income-based heterogeneity in how households adjust expectations and intended spending in response to economic news.

Since monetary policy works via different channels we now complement the previous estimation by comparing households' forecasting errors in response to not only an aggregate or weekly post-FOMC measure, by differentiating treatment with different measures. In particular, we take the monetary policy shock and a central bank information shock from **?**, standardized with mean 0 and variance 1 and estimate the causal relation between consumption planning and forecast errors in the weeks after the FOMC statements:

$$c_{i,t} = \delta_0 + \beta \times \mathbf{FE_{i,t,j}} \times \mathbf{W_{i,j}} \times \mathbf{MP}'_{j,t} + \nu_{i,j,t} \tag{9}$$

where $\mathbf{MP}_{j,t}$ is a vector containing the monetary policy measures (i.e. monetary policy shock or information shock) and $\nu_{i,j,t}$ is an idiosyncratic error term. Table 9 reports the regession results for the forecast errors of total tax payments and home prices, Table 10 reports the results for inflation forecast errors, interest rate probabilities and stock price probabilities and Table 11 depicts the results for the unemployment rate probability errors.

Given the observed heterogeneity mainly in the first three weeks in Figure 5 and Figure 6 we will only focus on these first two weeks in the following table. The results for the aggregate post-FOMC treatments are given in the Appendix Table 19 and reinforce our analysis below.

All income groups show substantial changes in expected spending 2 - 3 weeks after the most recent FOMC meeting. High-income households, increase spending substantially after the FOMC meeting (e.g., increase by 9.415 or 11.10 percentage points after 3 weeks), while low-income households reduce spending, suggesting more caution or financial constraint after the announcement. High-income households' spending respond strongly and positively to monetary policy shocks, perhaps interpreting FOMC announcements as sings of stronger economic outlooks or asset revaluations. Low-income households, in contrast, show negative responses possibly due to income insecurity. When the FOMC events are accompanied by monetary policy shocks the interaction terms show that low- and mid-income households significantly increase expected spending whereas high-income households show little or even negative change. This suggests that lower-income households may interpret policy signals less accurately, while high-income households have already reacted to these shocks immediately, in line with their quicker incorporation of financial information.

The effects of tax forecast errors on expected spending are consistently negative across all groups, with milder effects when interacted with monetary shocks. The effects however change 2-3 weeks after the FOMC statement, implying a positive relation between tax surprises and monetary policy. Home price surprises are associated with slight increases in expected spending, particularly among low-income households with and without monetary shocks), consistent with our previous observations that high-income households see homeownership as a safe asset and

Table 9: Weeks After Closest FOMC Meeting and Monetary Policy Channel

	(1) Low-Income	(2) Mid-Income	(3) High-Income	(4) Low-Income	(5) Mid-Income	(6) High-Income
2 Weeks After FOMC	-3.332	2.038	6.547	-7.730	2.786	16.730
	(5.266)	(3.094)	(9.141)	(6.556)	(3.643)	(10.780)
3 Weeks After FOMC	-4.606	-0.642	9.415	-10.690	0.780	11.100
	(5.048)	(3.005)	(8.665)	(5.918)	(3.294)	(9.938)
Monetary Policy Shock	-3.194	7.997	34.860			
	(16.550)	(10.400)	(24.550)			
Information Shock				-10.260	1.994	-1.668
				(9.238)	(5.172)	(13.340)
2 Weeks After FOMC × Monetary Policy Shock	7.232	4.678	-1.314			
	(5.337)	(3.080)	(7.195)			
3 Weeks After FOMC × Monetary Policy Shock	6.366	5.040	-0.620			
	(4.831)	(2.901)	(5.400)			
2 Weeks After FOMC × Information Shock				-1.496	-2.880	-7.547
				(12.070)	(6.632)	(17.780)
3 Weeks After FOMC× Information Shock				7.568	-4.669	-2.870
				(9.233)	(5.166)	(13.250)
Total Taxes	-0.172	-0.351	-0.272	-0.169	-0.374	-0.252
	(0.077)	(0.105)	(0.090)	(0.075)	(0.094)	(0.081)
2 Weeks After FOMC × Total Taxes	0.021	0.261	0.284	-0.159	0.378	0.274
	(0.098)	(0.127)	(0.131)	(0.129)	(0.132)	(0.162)
3 Weeks After FOMC × Total Taxes	-0.046	0.154	-0.061	-0.057	0.178	-0.058
	(0.089)	(0.111)	(0.116)	(0.086)	(0.102)	(0.109)
Total Taxes × Monetary Policy Shock	-0.086	-0.038	-0.215			
	(0.064)	(0.201)	(0.130)			
2 Weeks After FOMC × Total Taxes × Monetary Policy Shock	0.169	-0.059	0.343			
	(0.125)	(0.223)	(0.155)			
3 Weeks After FOMC × Total Taxes × Monetary Policy Shock	0.146	-0.000	0.197			
	(0.078)	(0.204)	(0.143)			
Total Taxes × Information Shock				0.023	-0.129	-0.338
				(0.071)	(0.117)	(0.185)
2 Weeks After FOMC × Total Taxes × Information Shock				0.317	-0.177	0.497
				(0.195)	(0.286)	(0.515)
3 Weeks After FOMC× Total Taxes × Information Shock				-0.046	0.134	0.262
				(0.085)	(0.124)	(0.201)
Home Prices	0.145	-0.062	-0.027	0.114	-0.054	-0.254
	(0.217)	(0.145)	(0.211)	(0.204)	(0.111)	(0.175)
2 Weeks After FOMC × Home Prices	-0.428	0.189	0.272	-0.318	0.065	0.144
	(0.233)	(0.169)	(0.355)	(0.236)	(0.148)	(0.365)
3 Weeks After FOMC × Home Prices	-0.225	-0.108	0.046	-0.219	-0.091	0.272
	(0.223)	(0.153)	(0.235)	(0.214)	(0.123)	(0.203)
Home Prices × Monetary Policy Shock	-0.269	0.290	-0.001			
	(0.201)	(0.135)	(0.282)			
2 Weeks After FOMC × Home Prices × Monetary Policy Shock	0.290	-0.120	0.493			
	(0.230)	(0.180)	(0.520)			
3 Weeks After FOMC × Home Prices × Monetary Policy Shock	0.281	-0.222	-0.057			
	(0.207)	(0.143)	(0.300)			
Home Prices × Information Shock				0.223	-0.370	-0.192
				(0.158)	(0.113)	(0.255)
2 Weeks After FOMC × Home Prices × Information Shock				-0.748	0.592	2.238
				(0.358)	(0.313)	(0.853)
3 Weeks After FOMC× Home Prices × Information Shock				-0.266	0.407	0.332
				(0.169)	(0.125)	(0.283)
Observations	6,464	9,424	2,356	6,464	9,424	2,356

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: ...continued. Weeks After Closest FOMC Meeting and Monetary Policy Channels

	(1) Low-Income	(2) Mid-Income	(3) High-Income	(4) Low-Income	(5) Mid-Income	(6) High-Income
Inflation	-0.058	-0.144	-0.141	-0.014	0.027	-0.072
	(0.072)	(0.166)	(0.125)	(0.074)	(0.164)	(0.143)
2 Weeks After FOMC × Inflation	-0.031	0.021	-0.517	-0.189	-0.138	-0.903
	(0.121)	(0.195)	(0.354)	(0.157)	(0.184)	(0.481)
3 Weeks After FOMC × Inflation	0.005	0.026	0.351	-0.034	-0.131	0.220
	(0.084)	(0.181)	(0.273)	(0.088)	(0.179)	(0.321)
Inflation × Monetary Policy Shock	0.166	-0.430	0.268			
	(0.094)	(0.288)	(0.166)			
2 Weeks After FOMC × Inflation × Monetary Policy Shock	-0.126	0.399	-0.355			
	(0.141)	(0.307)	(0.550)			
3 Weeks After FOMC × Inflation × Monetary Policy Shock	-0.136	0.467	-0.286			
	(0.102)	(0.296)	(0.210)			
Inflation × Information Shock				-0.061	0.444	-0.025
				(0.065)	(0.134)	(0.093)
2 Weeks After FOMC × Inflation × Information Shock				0.621	-0.542	0.439
				(0.387)	(0.333)	(0.980)
3 Weeks After FOMC× Inflation × Information Shock				0.069	-0.321	-0.159
				(0.082)	(0.149)	(0.206)
Interest Rate	3.269	1.330	0.234	3.591	1.843	-0.535
	(4.270)	(2.500)	(6.198)	(3.934)	(2.414)	(5.835)
2 Weeks After FOMC × Interest Rate	-4.195	-0.828	-0.964	-7.675	-0.512	-15.49*
	(4.510)	(2.634)	(6.538)	(5.103)	(2.844)	(8.965)
3 Weeks After FOMC× Interest Rate	-3.850	-0.551	-0.755	-4.090	-1.461	0.181
	(4.357)	(2.544)	(6.323)	(4.004)	(2.458)	(5.981)
Interest Rate × Monetary Policy Shock	2.838	1.880	14.99			
	(4.424)	(2.187)	(10.47)			
2 Weeks After FOMC × Interest Rate × Monetary Policy Shock	-0.981	-1.683	-1.809			
	(5.035)	(2.670)	(12.29)			
3 Weeks After FOMC× Interest Rate × Monetary Policy Shock	-2.394	-2.127	-16.10			
	(4.497)	(2.277)	(10.56)			
Interest Rate × Information Shock				-1.435	-2.104	-6.168
				(3.802)	(2.001)	(4.642)
2 Weeks After FOMC × Interest Rate × Information Shock				7.443	1.586	41.610
				(8.933)	(4.472)	(16.130)
3 Weeks After FOMC× Interest Rate × Information Shock				0.624	1.561	7.046
				(3.910)	(2.094)	(4.861)
Stock Prices	-1.723	-0.396	11.01**	-3.428	-0.881	9.626**
	(4.575)	(2.397)	(4.284)	(4.062)	(2.145)	(4.508)
2 Weeks After FOMC × Stock Prices	2.910	0.472	-4.032	4.295	-0.698	7.913
	(5.173)	(2.919)	(6.058)	(5.942)	(3.457)	(10.24)
3 Weeks After FOMC× Stock Prices	2.705	-0.0851	-10.96**	3.986	0.511	-8.177
	(4.730)	(2.505)	(4.813)	(4.236)	(2.272)	(5.043)
Stock Prices × Monetary Policy Shock	2.661	-6.020*	-20.02***			
	(5.000)	(3.086)	(7.619)			
2 Weeks After FOMC × Stock Prices × Monetary Policy Shock	-4.126	7.255**	12.24			
	(5.677)	(3.616)	(9.358)			
3 Weeks After FOMC× Stock Prices × Monetary Policy Shock	-3.835	5.906*	21.90***			
	(5.180)	(3.190)	(7.860)			
Stock Prices × Information Shock				-6.103	2.922	8.861
				(4.481)	(2.760)	(4.093)
2 Weeks After FOMC × Stock Prices × Information Shock				11.330	1.436	-48.470
				(12.260)	(8.327)	(19.160)
3 Weeks After FOMC× Stock Prices × Information Shock				7.381	-1.751	-7.000
				(4.762)	(2.881)	(4.734)
Observations	6,464	9,424	2,356	6,464	9,424	2,356

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: ...continued. Weeks After Closest FOMC Meeting and Monetary Policy Channels

	(1) Low-Income	(2) Mid-Income	(3) High-Income	(4) Low-Income	(5) Mid-Income	(6) High-Income
Unemployment Rate	0.0932	1.420	5.468	-1.571	0.696	2.806
	(3.218)	(2.816)	(6.432)	(3.035)	(2.678)	(6.110)
2 Weeks After FOMC × Unemployment Rate	0.274	1.426	-1.240	1.400	1.254	14.67
	(3.890)	(3.178)	(7.875)	(4.341)	(3.584)	(9.340)
3 Weeks After FOMC× Unemployment Rate	-3.440	-3.217	-3.717	-1.234	- 1.885	- 2.101
	(3.506)	(2.919)	(6.683)	(3.272)	(2.834)	(6.459)
Unemployment Rate × Monetary Policy Shock	-8.722**	- 2.480	-1.660			
	(3.985)	(3.324)	(6.848)			
2 Weeks After FOMC × Unemployment Rate × Monetary Policy Shock	11.64**	- 0.743	3.970			
	(4.632)	(3.958)	(9.446)			
3 Weeks After FOMC× Unemployment Rate × Monetary Policy Shock	8.074*	1.997	4.839			
	(4.153)	(3.446)	(7.122)			
Unemployment Rate × Information Shock				6.254	1.030	-0.147
				(3.969)	(2.858)	(7.636)
2 Weeks After FOMC × Unemployment Rate × Information Shock				-5.012	1.537	-32.290
				(8.114)	(5.553)	(15.800)
3 Weeks After FOMC× Unemployment Rate × Information Shock				-6.712	-0.326	0.095
				(4.219)	(3.040)	(7.944)
Observations	6,464	9,424	2,356	6,464	9,424	2,356

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

put large emphasis on it. However this effect diminishes quickly. High-income households observe a positive effect only after 2-3 weeks and if a monetary policy or information shock occurred. This is line with wealth effects: low income households aim to own houses, however due to financial constraints they are less likely to do so, while high-income households value homeownership especially after monetary policy shocks, revaluing their assets, encouraging consumption. Information shock interactions generally have similar effects to monetary policy shocks per income group, however across income groups both shocks partially leal to different directional effects. Inflation surprises induce similar behavior across income groups, however with different magnitudes. While low-income households cut back on consumption by 0.058 percentage point on impact high-income households decrease consumption by 0.141. After 3 weeks both groups have very different consumption patters - high-income households increase consumption by 0.351 respectively 0.22 percentage points while low-income households do so only be 0.005 percentage points or even decrease consumption by -0.034. This pattern remain consistent after monetary or informational shocks. This is in line with Figure 5 where we have observed that high-income households react immediately to inflationary surprises while low-income households react delayed and in opposing ways. The marginal effects of interest rates are similar across income groups, however high-income households adjust consumption by more in response do interest rate errors, e.g. drop consumption by 16.10 percentage points for a one standard deviation monetary policy shock or increase consumption by 41.61 percentage points for a one standard deviation information shock after 2 weeks. Similarly for the effects of stock prices which indicue reactions in opposite directions across the income distribution. Unemployment rate surprises induce a somewhat similar reactional pattern between groups, being in line with our previous findings of similar probability errors and marginal effects for consumption plans. However taken together, the results suggest that not all households are equally sensitive.

5. Conclusion

Inflation expectations are believed to play an important role in macroeconomic dynamics since they are the main channel of consumption-spending decisions of households according to current macroeconomic models. However, little attention was given to other expectational variables, much less to their differences across income distributions. This paper investigates which additional individuals' expectations affect their spending decisions and how they differ across low-, mid- and high-income individuals. To uncover the causal effects of macro-financial expectations on household spending, we use a household-level survey that contains information about individuals' macro-financial expectations and their spending attitudes. We find that inflation is a relatively insignificant predictor for low-income households' spending plans, while expected income, tax payments and personal financial situations are significant. Homeownership is highly valued among low-income households. These patterns are consistent among a number of model specifications we consider. The heterogeneity in the predictive strength of the variables can be attributed to differences in how closely households follow macro-financial news and how high their financial buffers are. Additionally we find that monetary policy announcements have heterogeneous but insignificant effects across income groups with high- and low-income groups often responding in opposing directions. By comparing responses dynamics over weeks after the FOMC meetings we find that households are not equally sensitive to monetary policy effects. While low-income households often react less accurately after shocks, high-income households incorporate macro-financial information quicker. The observed patterns highlight both intermporal dynamics and income-based heterogeneity in how households adjust expectations and intended spending in response to economic news.

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A. Additional Tables and Figures on Data Sample

A.1. Correlation by Income Group

Table 12: Correlation by Income Group

	Spending	Income	Home Prices	Inflation	Total Taxes	Interest Rate	Stock Prices	UR	PF
Panel A: Low-Income									
Spending	1								
Income	0.259	1							
Home Prices	0.155	0.047	1						
Inflation	0.129	0.007	0.288	1					
Total Taxes	0.247	0.133	0.208	0.228	1				
Interest Rate	0.011	0.059	0.013	-0.014	-0.013	1			
Stock Prices	0.016	0.071	0.027	-0.043	-0.033	0.471	1		
Unemployment Rate	0.043	-0.017	0.005	0.129	0.119	0.263	0.236	1	
Personal Finances	-0.002	0.370	-0.016	-0.107	-0.062	0.100	0.139	-0.163	1
Panel B: Mid-Income									
Spending	1								
Income	0.283	1							
Home Prices	0.113	0.045	1						
Inflation	0.125	-0.002	0.227	1					
Total Taxes	0.235	0.123	0.167	0.227	1				
Interest Rate	0.002	0.037	-0.029	-0.056	-0.055	1			
Stock Prices	-0.011	0.059	0.026	-0.096	-0.085	0.408	1		
Unemployment Rate	0.026	-0.042	-0.044	0.114	0.125	0.191	0.089	1	
Personal Finances	-0.014	0.351	0.025	-0.112	-0.100	0.089	0.196	-0.210	1
Panel C: High-Income									
Spending	1								
Income	0.292	1							
Home Prices	0.084	0.049	1						
Inflation	0.098	-0.001	0.175	1					
Total Taxes	0.226	0.185	0.106	0.164	1				
Interest Rate	0.015	0.015	-0.013	-0.040	-0.050	1			
Stock Prices	-0.000	0.064	0.058	-0.123	-0.082	0.317	1		
Unemployment Rate	0.001	-0.066	-0.154	0.093	0.091	0.181	-0.021	1	
Personal Finances	0.004	0.370	0.086	-0.096	-0.033	0.039	0.223	-0.230	1

A.2. Survey Question Wording

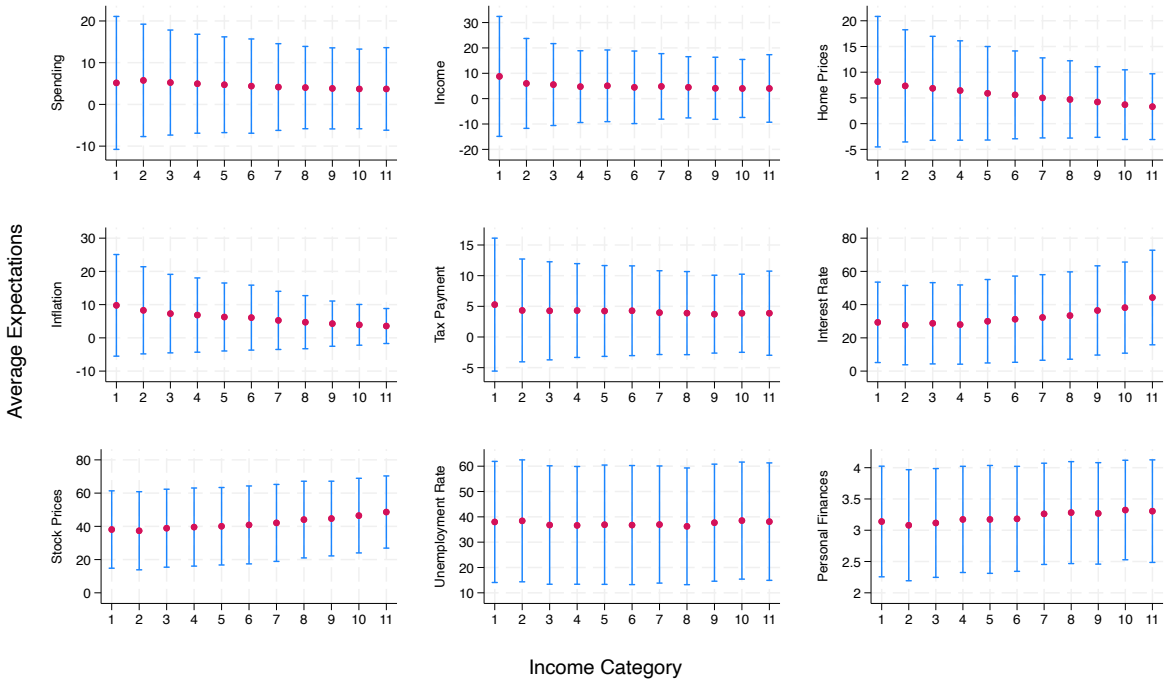
A.2.1. New York Fed SCE

Households are asked the following questions:

- Unemployment rate: "What do you think is the percent chance that 12 months from now the unemployment rate in the U.S. will be higher than it is now?"
- Interest rate: "What do you think is the percent chance that 12 months from now the average interest rate on saving accounts will be higher than it is now?"
- Stock prices: "What do you think is the percent chance that 12 months from now, on average, stock prices in the U.S. stock market will be higher than they are now?"
- Income: "By about what percent do you expect your total household income to [increase/decrease]? Please give your best guess."
- Spending: "By about what percent do you expect your total household spending to [increase/decrease]? Please give your best guess."
- Home Prices: "By about what percent do you expect the average home price to [increase/decrease]? Please give your best guess."
- Inflation: "What do you expect the rate of [inflation/deflation] to be over the next 12 months? Please give your best guess."
- Total taxes: "By about what percent do you expect your total taxes to have [increased/decreased]? Please give your best guess."
- Personal finances (discrete measure): "And looking ahead, do you think you (and any family living with you) will be financially better or worse off 12 months from now than you are these days?"

A.3. Average Expectations and Standard Deviations by Income Category

Figure 7: Average Expectations and Standard Deviations by Income



B. Additional Regression Output

B.1. Regression Results across Income Levels

Table 13: Main Predictors of Expected Spending by Income Category, OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Home Prices	0.150***	0.095***	0.096***	0.071***	0.124***	0.098***	0.095***	0.083***	0.072***	0.086***	0.077**
	(0.038)	(0.025)	(0.029)	(0.025)	(0.026)	(0.026)	(0.027)	(0.018)	(0.023)	(0.030)	(0.039)
Income	0.162***	0.199***	0.210***	0.229***	0.204***	0.245***	0.211***	0.220***	0.247***	0.242***	0.207***
	(0.025)	(0.021)	(0.022)	(0.021)	(0.021)	(0.021)	(0.018)	(0.017)	(0.018)	(0.031)	(0.023)
Inflation	0.039	0.047**	0.052***	0.030*	0.080***	0.086***	0.055**	0.087***	0.048**	0.016	0.150***
	(0.025)	(0.019)	(0.020)	(0.018)	(0.024)	(0.025)	(0.023)	(0.018)	(0.022)	(0.033)	(0.042)
Total Taxes	0.239***	0.355***	0.210***	0.263***	0.272***	0.227***	0.273***	0.267***	0.207***	0.262***	0.183***
	(0.049)	(0.034)	(0.036)	(0.036)	(0.031)	(0.031)	(0.026)	(0.025)	(0.027)	(0.040)	(0.033)
Interest Rate	-0.013	-0.008	0.012*	-0.011*	-0.000	0.003	0.003	0.003	-0.000	0.010	0.001
	(0.016)	(0.010)	(0.007)	(0.007)	(0.006)	(0.006)	(0.005)	(0.004)	(0.004)	(0.006)	(0.008)
Stock Prices	0.023	0.006	0.014*	0.016**	0.001	0.005	0.006	0.004	0.006	0.005	0.009
	(0.017)	(0.009)	(0.008)	(0.007)	(0.007)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.008)
Unemployment Rate	-0.014	0.017*	0.008	-0.001	0.008	-0.006	-0.000	-0.001	-0.008*	-0.006	-0.013*
	(0.015)	(0.009)	(0.008)	(0.007)	(0.007)	(0.006)	(0.006)	(0.004)	(0.005)	(0.007)	(0.008)
Personal Finances	0.710	-0.916***	-0.701***	-1.455***	-1.207***	-0.916***	-1.313***	-0.944***	-1.202***	-1.631***	-0.880***
	(0.478)	(0.286)	(0.255)	(0.252)	(0.231)	(0.217)	(0.183)	(0.178)	(0.164)	(0.259)	(0.272)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,607	8,295	11,355	11,225	12,421	12,450	17,285	20,568	22,943	10,207	8,940

Standard errors in parentheses

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

Table 14: Main Predictors of Expected Spending by Income Category, Fixed Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Home Prices	0.147***	0.082***	0.082***	0.047*	0.135***	0.079***	0.065***	0.061***	0.057***	0.041*	0.073***
	(0.033)	(0.022)	(0.023)	(0.026)	(0.019)	(0.022)	(0.018)	(0.016)	(0.017)	(0.024)	(0.026)
Income	0.192***	0.192***	0.202***	0.215***	0.191***	0.239***	0.203***	0.215***	0.228***	0.226***	0.175***
	(0.023)	(0.017)	(0.020)	(0.018)	(0.019)	(0.019)	(0.016)	(0.014)	(0.016)	(0.023)	(0.020)
Inflation	0.044*	0.036**	0.070***	0.025	0.074***	0.055***	0.052***	0.086***	0.026	0.022	0.084***
	(0.024)	(0.017)	(0.015)	(0.016)	(0.018)	(0.020)	(0.015)	(0.016)	(0.016)	(0.026)	(0.032)
Total Taxes	0.193***	0.271***	0.167***	0.218***	0.207***	0.181***	0.203***	0.183***	0.164***	0.166***	0.120***
	(0.043)	(0.032)	(0.027)	(0.034)	(0.028)	(0.026)	(0.023)	(0.022)	(0.021)	(0.029)	(0.027)
Interest Rate	0.007	-0.013*	0.015**	-0.009	0.004	-0.001	-0.002	0.002	-0.001	0.004	-0.005
	(0.015)	(0.007)	(0.007)	(0.006)	(0.006)	(0.005)	(0.004)	(0.003)	(0.003)	(0.005)	(0.005)
Stock Prices	0.022	0.008	0.006	0.014**	0.009	0.005	0.009**	0.002	0.004	0.009	0.002
	(0.016)	(0.007)	(0.007)	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)
Unemployment Rate	-0.005	0.014*	0.007	0.002	0.007	0.005	-0.000	0.003	-0.001	-0.001	0.000
	(0.015)	(0.007)	(0.006)	(0.006)	(0.005)	(0.005)	(0.004)	(0.004)	(0.003)	(0.005)	(0.005)
Personal Finances	0.095	-0.607***	-0.307	-0.893***	-0.718***	-0.451***	-0.566***	-0.383***	-0.608***	-0.820***	-0.329*
	(0.423)	(0.225)	(0.221)	(0.190)	(0.175)	(0.168)	(0.135)	(0.130)	(0.122)	(0.167)	(0.195)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,612	8,321	11,436	11,293	12,445	12,491	17,302	20,608	22,959	10,209	8,949

Standard errors in parentheses

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

B.2. Regression Results with Numeracy

Table 15: Main Predictors of Expected Spending, High Numeracy

	Low-Income		Mid-Income		High-Income	
	OLS	FE	OLS	FE	OLS	FE
Home Prices	0.099***	0.086***	0.082***	0.059***	0.095***	0.061***
	(0.016)	(0.015)	(0.014)	(0.011)	(0.027)	(0.019)
Income	0.198***	0.190***	0.231***	0.218***	0.222***	0.196***
	(0.012)	(0.011)	(0.011)	(0.009)	(0.020)	(0.015)
Inflation	0.088***	0.064***	0.088***	0.066***	0.097***	0.067***
	(0.015)	(0.012)	(0.015)	(0.011)	(0.029)	(0.024)
Total Taxes	0.265***	0.195***	0.220***	0.156***	0.212***	0.124***
	(0.021)	(0.018)	(0.016)	(0.013)	(0.029)	(0.021)
Interest Rate	0.003	0.003	0.004	-0.000	0.005	-0.001
	(0.004)	(0.004)	(0.003)	(0.002)	(0.005)	(0.003)
Stock Prices	0.006	0.007*	0.005*	0.004*	0.009	0.007*
	(0.004)	(0.004)	(0.003)	(0.002)	(0.006)	(0.004)
Unemployment Rate	0.004	0.007*	-0.004	0.000	-0.006	0.000
	(0.004)	(0.004)	(0.003)	(0.002)	(0.005)	(0.004)
Personal Finances	-0.763***	-0.425***	-1.074***	-0.469***	-1.086***	-0.405***
	(0.160)	(0.124)	(0.099)	(0.072)	(0.199)	(0.129)
Control Variable	Yes	No	Yes	No	Yes	No
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	27,679	27,765	57,054	57,117	17,040	17,051

Standard errors in parentheses

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

B.3. First Stage IV Results by Income Group

In the following, UR is the abbreviation for "Unemployment Rate" and PF is the abbreviation for "Personal Finances".

Table 16: IV Regression: Main Predictor Expected Spending, Low-Income

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Instrument	Home Prices	Income	Inflation	Total Taxes	Interest Rate	Stock Prices	UR	PF
Home Price$_{-1}$	0.477***	0.017*	0.135***	0.046***	0.011	0.061***	-0.007	0.000
	(0.011)	(0.009)	(0.010)	(0.007)	(0.013)	(0.012)	(0.014)	(0.000)
Income$_{-1}$	-0.001	0.509***	-0.004	0.027***	0.008	0.005	0.008	0.006***
	(0.004)	(0.015)	(0.004)	(0.004)	(0.009)	(0.008)	(0.008)	(0.000)
Inflation$_{-1}$	0.077***	0.011	0.404***	0.044***	-0.025**	-0.068***	0.054***	-0.001*
	(0.007)	(0.008)	(0.011)	(0.006)	(0.011)	(0.010)	(0.011)	(0.000)
Total Taxes$_{-1}$	0.032***	0.032**	0.090***	0.374***	0.001	-0.037**	0.117***	-0.003***
	(0.010)	(0.014)	(0.011)	(0.014)	(0.017)	(0.015)	(0.017)	(0.001)
Interest Rate$_{-1}$	-0.007***	0.001	-0.004*	-0.001	0.515***	0.061***	0.021***	0.001***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.009)	(0.006)	(0.006)	(0.000)
Stock Prices$_{-1}$	0.013***	0.005	-0.017***	-0.011***	0.080***	0.540***	0.024***	0.002***
	(0.002)	(0.004)	(0.002)	(0.002)	(0.007)	(0.008)	(0.006)	(0.000)
UR$_{-1}$	-0.004*	0.005	0.021***	0.018***	0.000	0.011*	0.525***	-0.002***
	(0.002)	(0.003)	(0.002)	(0.002)	(0.006)	(0.006)	(0.008)	(0.000)
PF$_{-1}$	0.105	2.038***	-0.248***	-0.287***	0.506***	0.718***	-1.984***	0.565***
	(0.069)	(0.121)	(0.078)	(0.060)	(0.165)	(0.153)	(0.172)	(0.007)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	34,515	34,505	34,440	34,483	34,525	34,394	34,521	34,560

Standard errors in parentheses

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

Table 17: IV Regression: Main Predictor Expected Spending, Mid-Income

	(1) Home Prices	(2) Income	(3) Inflation	(4) Total Taxes	(5) Interest Rate	(6) Stock Prices	(7) UR	(8) PF
Home Price$_{-1}$	0.499***	0.016*	0.100***	0.046***	-0.048***	0.041***	-0.048***	0.000
	(0.009)	(0.008)	(0.008)	(0.006)	(0.014)	(0.012)	(0.014)	(0.000)
Income$_{-1}$	0.003	0.552***	-0.004	0.029***	0.009	-0.001	-0.004	0.007***
	(0.003)	(0.014)	(0.003)	(0.004)	(0.009)	(0.007)	(0.008)	(0.000)
Inflation$_{-1}$	0.053***	0.007	0.365***	0.053***	-0.045***	-0.095***	0.069***	-0.001***
	(0.007)	(0.008)	(0.013)	(0.006)	(0.013)	(0.011)	(0.012)	(0.000)
Total Taxes$_{-1}$	0.040***	0.019	0.092***	0.422***	-0.011	-0.054***	0.135***	-0.004***
	(0.007)	(0.012)	(0.008)	(0.010)	(0.016)	(0.014)	(0.015)	(0.000)
Interest Rate$_{-1}$	-0.005***	0.001	-0.002	-0.003***	0.562***	0.052***	0.024***	0.000***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.006)	(0.004)	(0.004)	(0.000)
Stock Prices$_{-1}$	0.007***	-0.002	-0.015***	-0.009***	0.063***	0.562***	-0.012**	0.002***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.005)	(0.006)	(0.005)	(0.000)
UR$_{-1}$	-0.004***	0.003	0.014***	0.015***	0.004	-0.015***	0.545***	-0.002***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.005)	(0.004)	(0.006)	(0.000)
PF$_{-1}$	0.109**	1.511***	-0.168***	-0.268***	0.400***	1.082***	-1.832***	0.548***
	(0.043)	(0.080)	(0.048)	(0.040)	(0.144)	(0.126)	(0.130)	(0.006)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54,591	54,585	54,504	54,590	54,579	54,328	54,581	54,602

Standard errors in parentheses

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

Table 18: IV Regression: Main Predictor Expected Spending, High-Income

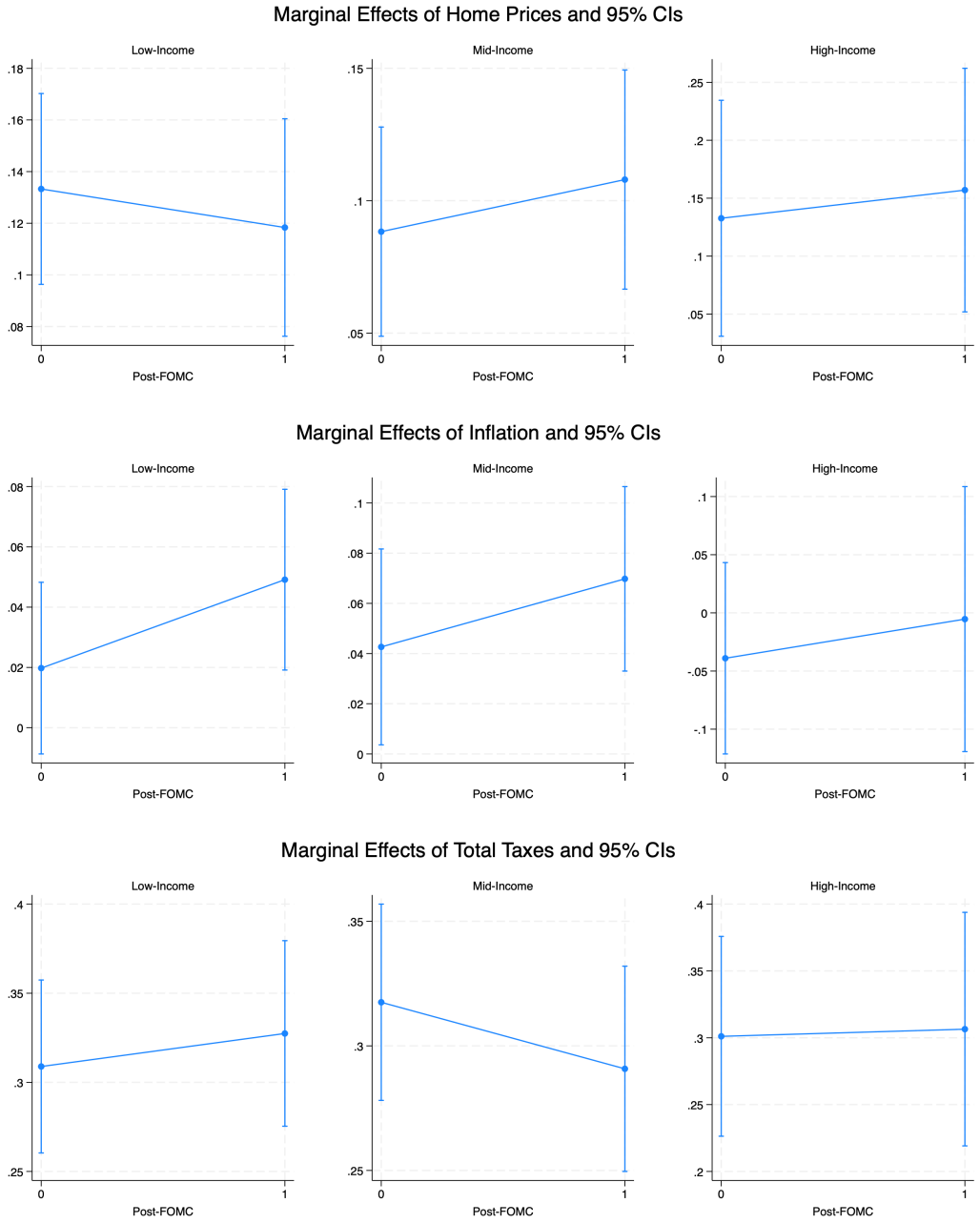
	(1) Home Prices	(2) Income	(3) Inflation	(4) Total Taxes	(5) Interest Rate	(6) Stock Prices	(7) UR	(8) PF
Home Prices$_{-1}$	0.540***	-0.009	0.087***	0.042***	-0.026	0.055*	-0.127***	0.001
	(0.017)	(0.015)	(0.015)	(0.010)	(0.033)	(0.029)	(0.032)	(0.001)
Income$_{-1}$	-0.001	0.558***	-0.005	0.038***	0.020	0.019	0.009	0.007***
	(0.004)	(0.021)	(0.004)	(0.008)	(0.019)	(0.015)	(0.015)	(0.001)
Inflation$_{-1}$	0.047***	0.004	0.345***	0.049***	-0.072*	-0.118***	0.137***	0.001
	(0.013)	(0.014)	(0.037)	(0.010)	(0.037)	(0.032)	(0.037)	(0.001)
Total Taxes$_{-1}$	0.023***	0.061***	0.056***	0.436***	-0.022	-0.078***	0.090***	-0.005***
	(0.009)	(0.020)	(0.010)	(0.020)	(0.033)	(0.025)	(0.026)	(0.001)
Interest Rate$_{-1}$	-0.003*	-0.001	-0.004**	-0.005**	0.598***	0.050***	0.048***	-0.000
	(0.002)	(0.003)	(0.002)	(0.002)	(0.011)	(0.007)	(0.007)	(0.000)
Stock Prices$_{-1}$	0.006**	-0.003	-0.012***	-0.009***	0.049***	0.568***	-0.036***	0.002***
	(0.002)	(0.004)	(0.002)	(0.003)	(0.011)	(0.011)	(0.009)	(0.000)
UR$_{-1}$	-0.009***	-0.008**	0.011***	0.012***	0.014	-0.021***	0.555***	-0.002***
	(0.003)	(0.004)	(0.003)	(0.003)	(0.010)	(0.008)	(0.011)	(0.000)
Personal Finances$_{-1}$	0.171**	1.606***	-0.052	-0.113	-0.246	1.173***	-1.781***	0.550***
	(0.069)	(0.148)	(0.067)	(0.087)	(0.284)	(0.236)	(0.260)	(0.011)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,131	14,131	14,106	14,128	14,134	14,082	14,134	14,136

Standard errors in parentheses

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

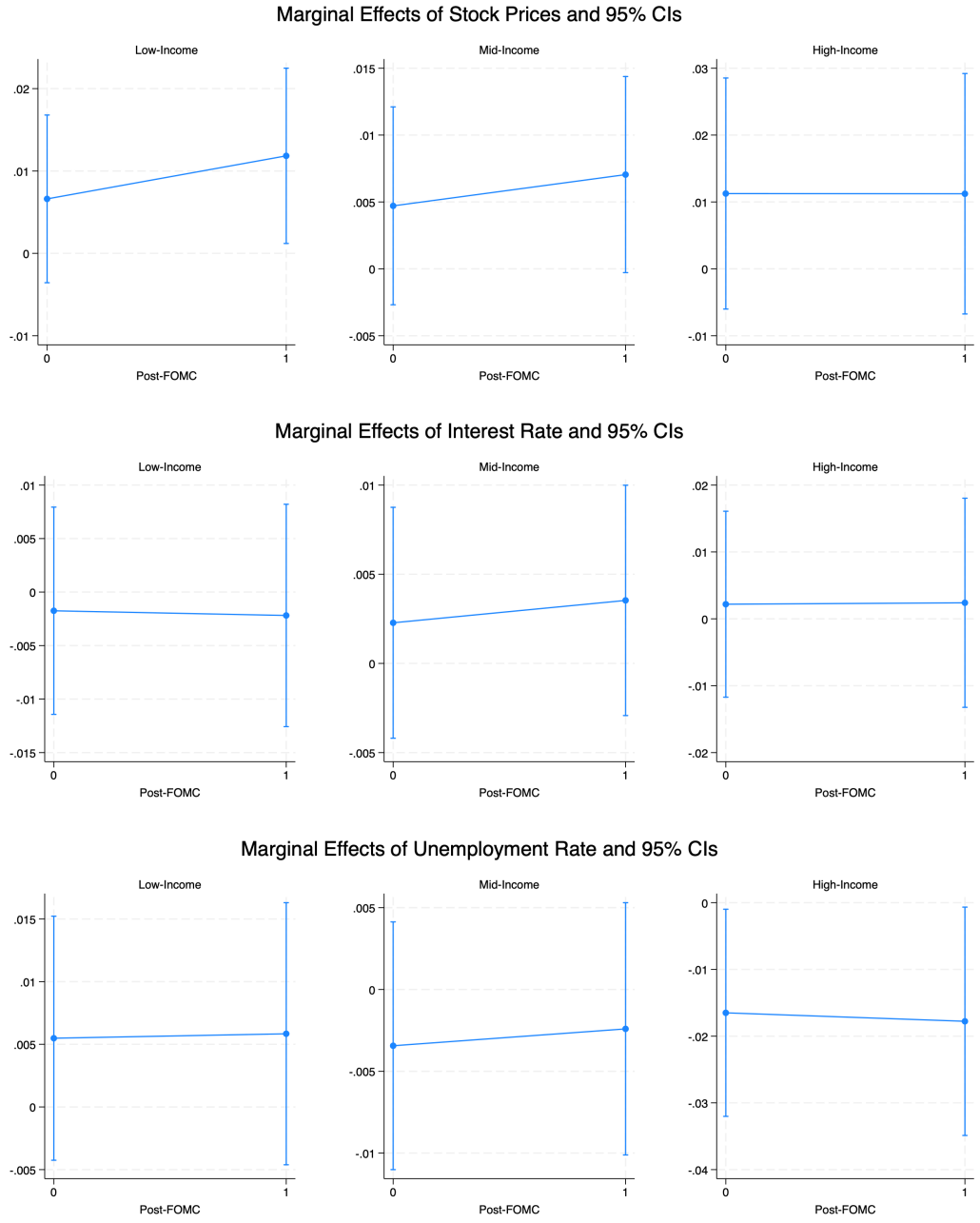
B.4. Post-FOMC and Weeks after Closest FOMC Statement for Level Variables by Income Group

Figure 8: Post-FOMC Statements and Level Expectations by Income Group



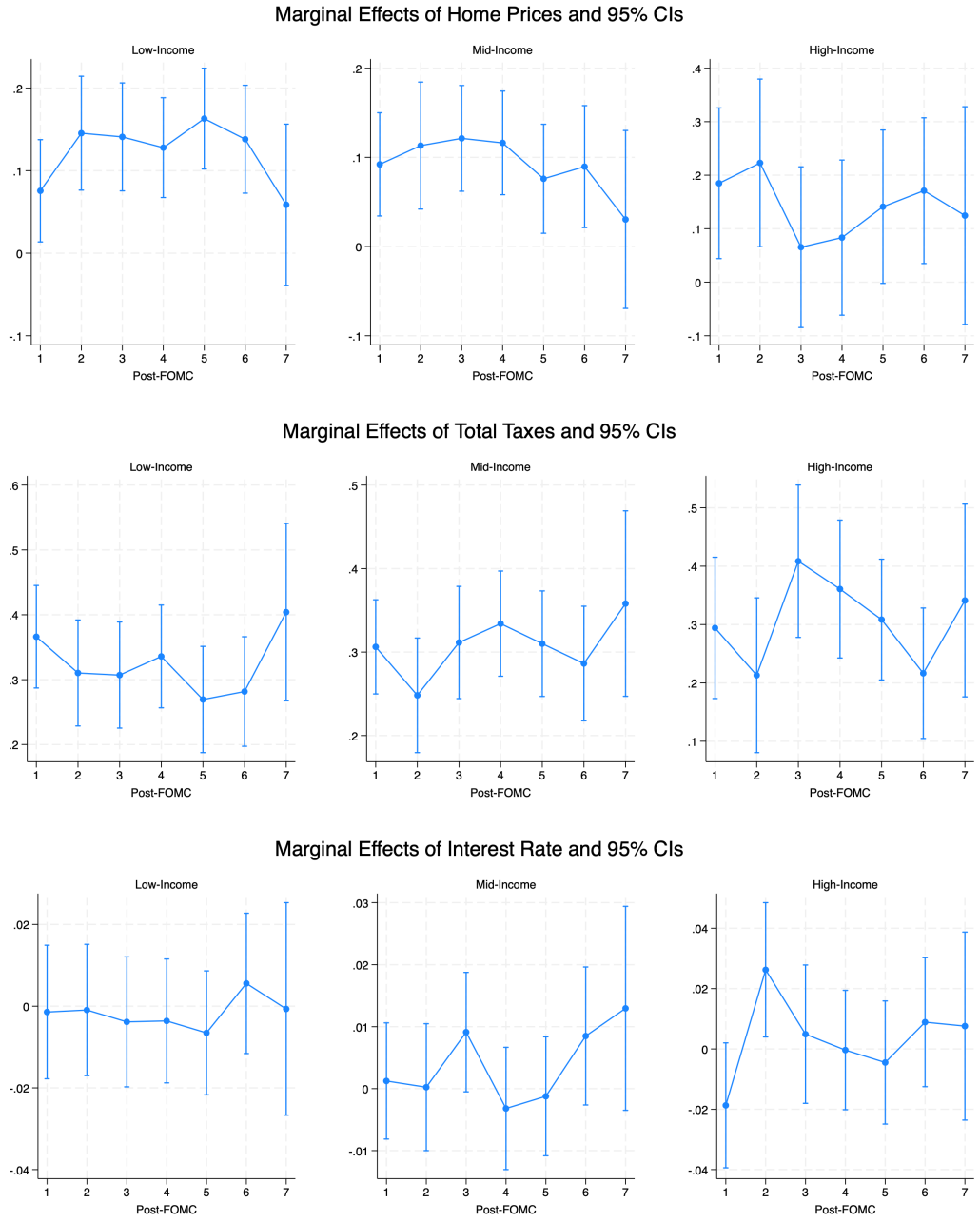
Note: The figure shows the marginal effects and 95% confidence intervals post FOMC statement release by income groups and level of the explanatory variables.

Figure 9: ...continued. Post-FOMC Statements and Level Expectations by Income Group



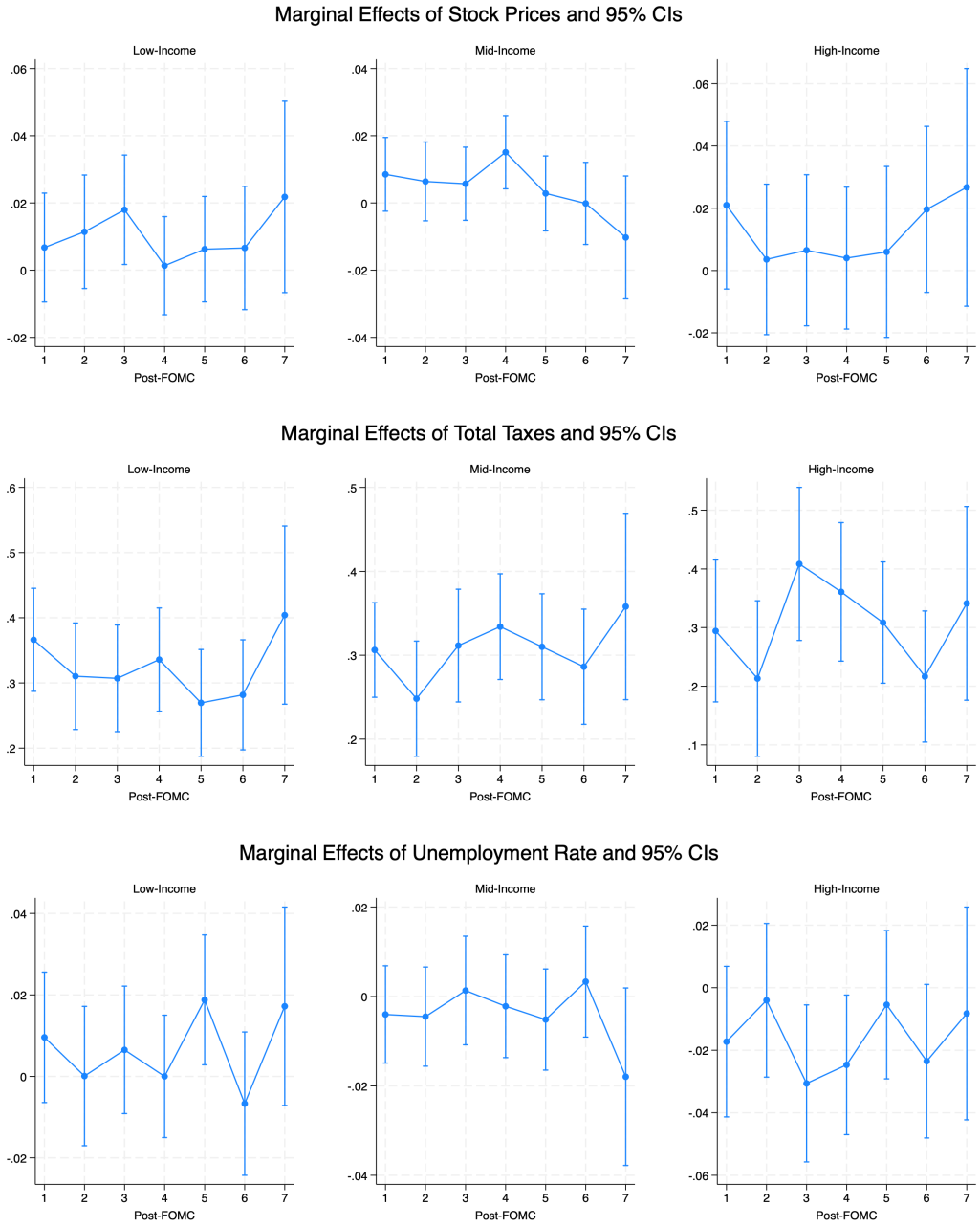
Note: The figure shows the marginal effects and 95% confidence intervals post FOMC statement release by income groups and level of the explanatory variables.

Figure 10: Weeks After Closest FOMC Statement and Level Expectations by Income Group



Note: The figure shows the marginal effects and 95% confidence intervals per weeks after the closest FOMC statement release by income groups and levels of the explanatory variables.

Figure 11: ...continued. Weeks After Closest FOMC Statement and Level Expectations by Income Group



Note: The figure shows the marginal effects and 95% confidence intervals per weeks after the closest FOMC statement release by income groups and levels of the explanatory variables.

B.5. Post-FOMC and Monetary Policy Channels of Level Expectations by Income Group

Table 19: Regression Results: Post-FOMC Meeting and Policy by Income Group

	(1) Low-Income	(2) Mid-Income	(3) High-Income	(4) Low-Income	(5) Mid-Income	(6) High-Income
Post-FOMC × Monetary Policy Shock	-0.394	-0.421	-0.790			
	(0.301)	(0.286)	(0.623)			
Post-FOMC × Information Shock				0.246	-0.020	0.039
				(0.313)	(0.276)	(0.587)
Post-FOMC × Home Prices	-0.013	0.012	0.043	-0.014	0.010	0.044
	(0.026)	(0.025)	(0.059)	(0.026)	(0.025)	(0.058)
Post-FOMC × Home Prices × Monetary Policy Shock	0.001	-0.015	-0.030			
	(0.025)	(0.026)	(0.064)			
Post-FOMC × Home Prices × Information Shock				-0.012	0.023	0.025
				(0.026)	(0.025)	(0.056)
Post-FOMC × Total Taxes	0.012	-0.020	0.016	0.013	-0.022	0.016
	(0.033)	(0.025)	(0.041)	(0.033)	(0.025)	(0.041)
Post-FOMC × Total Taxes × Monetary Policy Shock	-0.023	-0.007	0.052			
	(0.029)	(0.027)	(0.039)			
Post-FOMC × Total Taxes × Information Shock				0.000	0.059**	-0.017
				(0.032)	(0.028)	(0.042)
Post-FOMC × Inflation	0.035*	0.029	0.016	0.035*	0.030	0.017
	(0.019)	(0.023)	(0.063)	(0.019)	(0.023)	(0.064)
Post-FOMC × Inflation × Monetary Policy Shock	0.001	0.024	0.099*			
	(0.020)	(0.026)	(0.058)			
Post-FOMC × Inflation × Information Shock				-0.005	-0.035	-0.005
				(0.020)	(0.024)	(0.055)
Post-FOMC × Interest Rate	0.002	0.000	0.001	0.002	0.000	0.001
	(0.006)	(0.004)	(0.008)	(0.006)	(0.004)	(0.008)
Post-FOMC × Interest Rate × Monetary Policy Shock	0.001	-0.002	0.008			
	(0.006)	(0.004)	(0.008)			
Post-FOMC × Interest Rate × Information Shock				-0.007	-0.002	-0.011
				(0.006)	(0.004)	(0.007)
Post-FOMC × Stock Prices	0.003	0.005	-0.005	0.003	0.005	-0.005
	(0.007)	(0.004)	(0.010)	(0.007)	(0.004)	(0.010)
Post-FOMC × Stock Prices × Monetary Policy Shock	0.003	0.004	0.006			
	(0.006)	(0.004)	(0.009)			
Post-FOMC × Stock Prices × Information Shock				0.002	0.000	-0.001
				(0.006)	(0.005)	(0.009)
Post-FOMC × Unemployment Rate	0.002	-0.002	0.001	0.002	-0.002	0.001
	(0.006)	(0.005)	(0.009)	(0.006)	(0.005)	(0.009)
Post-FOMC × Unemployment Rate × Monetary Policy Shock	0.000	0.007	-0.011			
	(0.006)	(0.005)	(0.010)			
Post-FOMC × Unemployment Rate × Information Shock				0.004	-0.005	0.013
				(0.006)	(0.004)	(0.010)
Observations	29,636	43,333	10,369	29,636	43,333	10,369

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$